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ARCHITECTURAL RECORD

November 1958 **11**

207 *Building Types Study: Schools*

165 *Recent Work of Eliot Noyes*

187 *Eight Houses*

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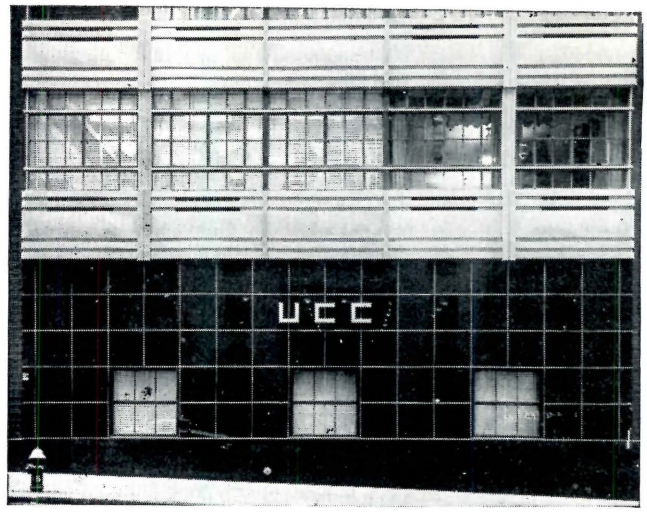

Addition to Union Carbide Building, New York — Constructed 1932
Architects: Shreve, Lamb & Harmon

First National Bank Building, Tulsa — Constructed 1950
Architects: Carson & Lundin

The First Pennsylvania Banking and Trust Company, Philadelphia — Constructed in 1949
Architect: Howell Lewis Shay

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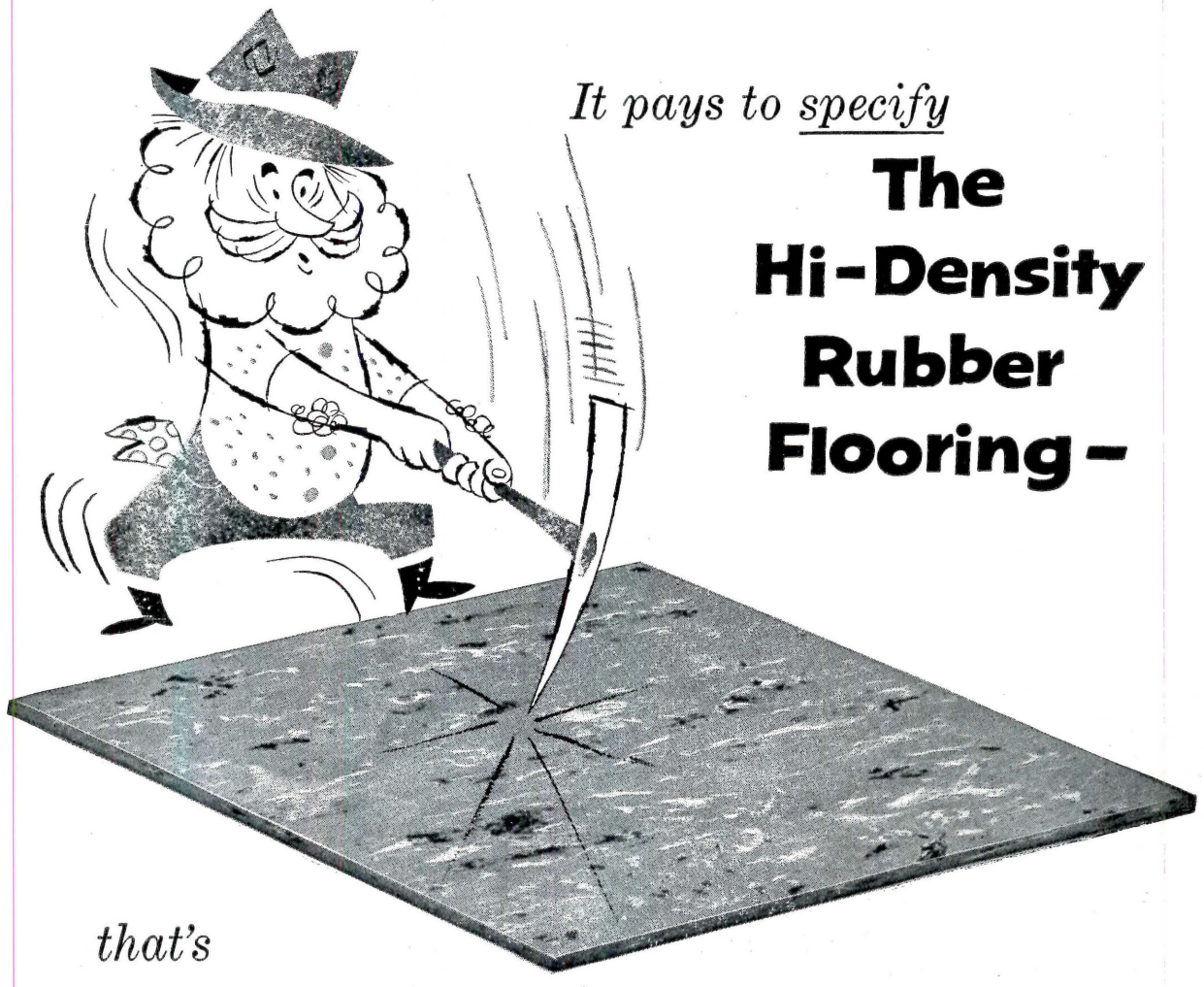

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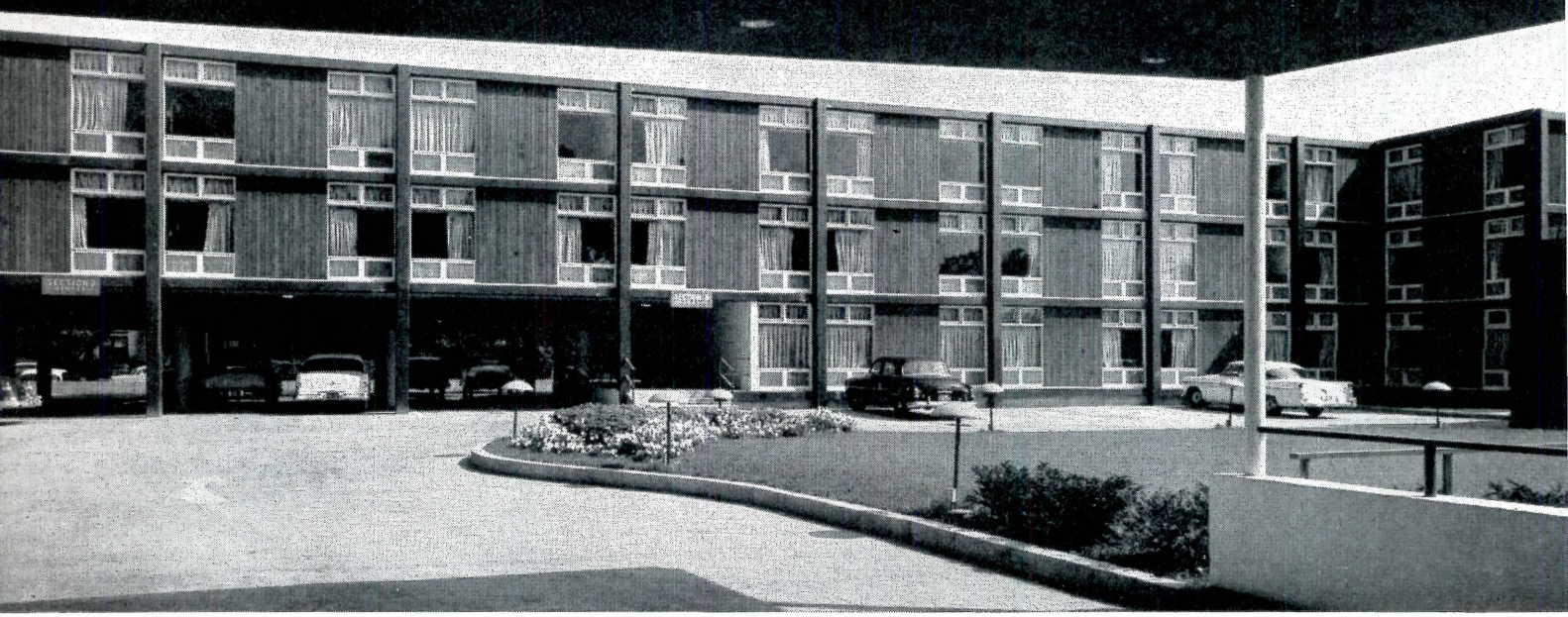

No-penthouse elevator aids building design, helps economize on construction costs

The vertical building has arrived in the motel field. As locations move downtown, toward the heart of city business activity, multi-story motels become a familiar sight.

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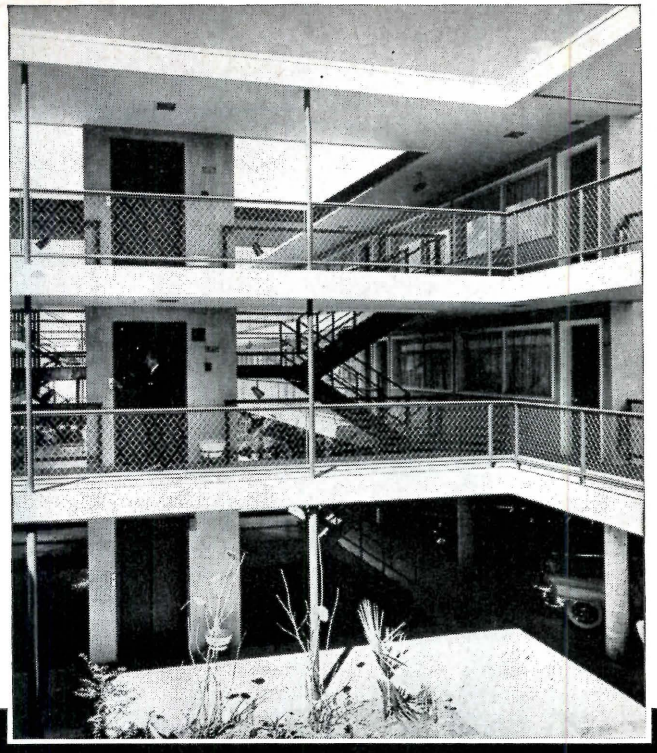
LEFT: Shore Drive Motel, Chicago, Illinois. ARCHITECT: A. Epstein & Sons, Inc. GENERAL CONTRACTOR: Welso Construction Co. Rotary Oildraulic Elevators sold and installed by Gallaher and Speck, Inc., Chicago.

RIGHT: Motel de Ville, New Orleans, Louisiana. ARCHITECT: *Charles R. Colbert.* GENERAL CONTRACTOR: Shelby Construction Co., Inc. Rotary Oildraulic Elevators sold and installed by Louisiana Elevator Corp., New Orleans.



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November 1958

CONSTRUCTION OUTLOOK FOR *1959*

"Onward and Upward: Growth Trends Resumed."
The annual F. W. Dodge Corporation analysis of future construction potential, by Thomas S. Holden, with the collaboration of George Cline Smith, Clyde Shute and Edwin W. Magee Jr.

THE RECORD REPORTS: *Perspectives* 9

A Record Special Report: Toronto City Hall Competition 10

Architecture Abroad: UNESCO Opens Paris Headquarters 14

Buildings in the News 20

Meetings and Miscellany 25

A Washington Report by Ernest Mickel 32

News from Canada by John Caulfield Smith 36

Washington Topics by Ernest Mickel 52

Construction Cost Indexes 56

Required Reading 60

Calendar and Office Notes 342

Current Trends in Construction 404

RECENT WORK OF ELIOT NOYES 165

HOSPITAL BASED ON RESEARCH

Davis Medical Foundation
Marion, Ind. Harry Weese, Bruce Adams, John van der Meulen, Architects 181

EIGHT HOUSES DESIGNED AND BUILT WITH BUDGET IN MIND 187

1. Venice, Fla. Paul Rudolph, Architect 188
2. Litchfield, Conn. Thomas C. Babbitt, Architect 190
3. Raleigh, N. C. George Matsumoto, Architect 192
4. Weston, Conn. Olindo Grossi, Architect 194
5. St. Petersburg, Fla. Mark Hampton, Architect 196
6. Weston, Conn. Designers & Builders, Architects 198
7. Berkeley, Calif. Henry Hill, Architect 200
8. Orange, Conn. Richard B. McCurdy, Architect 202

A LARGE MODULE FOR MOTOR COMPANY GENERAL OFFICES

Ford Division, Ford Motor Company. General Office Building, Dearborn, Mich. Welton Becket and Associates, Architects 203

BUILDING TYPES STUDY *264*: *Schools*

Introduction 207

Planning for Student Dining by Charles W. Brubaker 208

East Grand Rapids Jr. High School Mich. Perkins & Will, Architects 211

Regional District No. 8 Jr.-Sr. High School
Hebron, Conn. Louis J. Drakos, Architect 213

Underwood Elementary School Andrews, Tex. Caudill, Rowlett and Scott, Architects 216

Southgate Elementary School Colonie, N. Y. Office of Henry L. Blatner, Architect 220

Lillian C. Schmitt Elementary School
Columbus, Ind. Harry Weese & Associates, Architects 223

Warson Woods Elementary School
Warson Woods, Mo. Hellmuth, Obata & Kassabaum, Architects
Caudill, Rowlett & Scott, Assoc. Architects 226

Greenfield High School Greenfield, Mass. James A. Britten, Architect 228

ARCHITECTURAL ENGINEERING

Introduction 231

Lighting: A Key to Spatial Character by John Flynn & Wilber Riddle, A.I.A. 232

TECHNICAL ROUNDUP 243

PRODUCT REPORTS 244

TIME-SAVER STANDARDS: *Public Swimming Pools: 4, 5, 6 & 7* 247

OFFICE LITERATURE 292

INDEX TO ADVERTISING 406

Cover:

Photograph and plan of the Warson Woods Elementary School, Warson Woods, Mo. Hellmuth, Obata & Kassabaum, Architects. Caudill, Rowlett & Scott, Assoc. Architects. Piaget Studio photo

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November 1958 Vol. 124 No. 5

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Coming in the Record

BUILDING TYPES STUDY: RELIGIOUS BUILDINGS

Perhaps no other building type presents so exacting a challenge to architects in the fulfillment of emotional as well as physical requirements of a program. This study will feature a group of churches and synagogues which constitute notable response to this challenge.

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OFFICES: FLEXIBLE, FUNCTIONAL, ELEGANT

New York's garment district has a new office building which is especially interesting for its attention to the provision of highly flexible and functional working space which also was to be—and is—pleasantly elegant. An unusual fenestration scheme is part of the story. Architects for the Deering-Milliken Building are Carson and Lundin; interior design by Knoll Associates.

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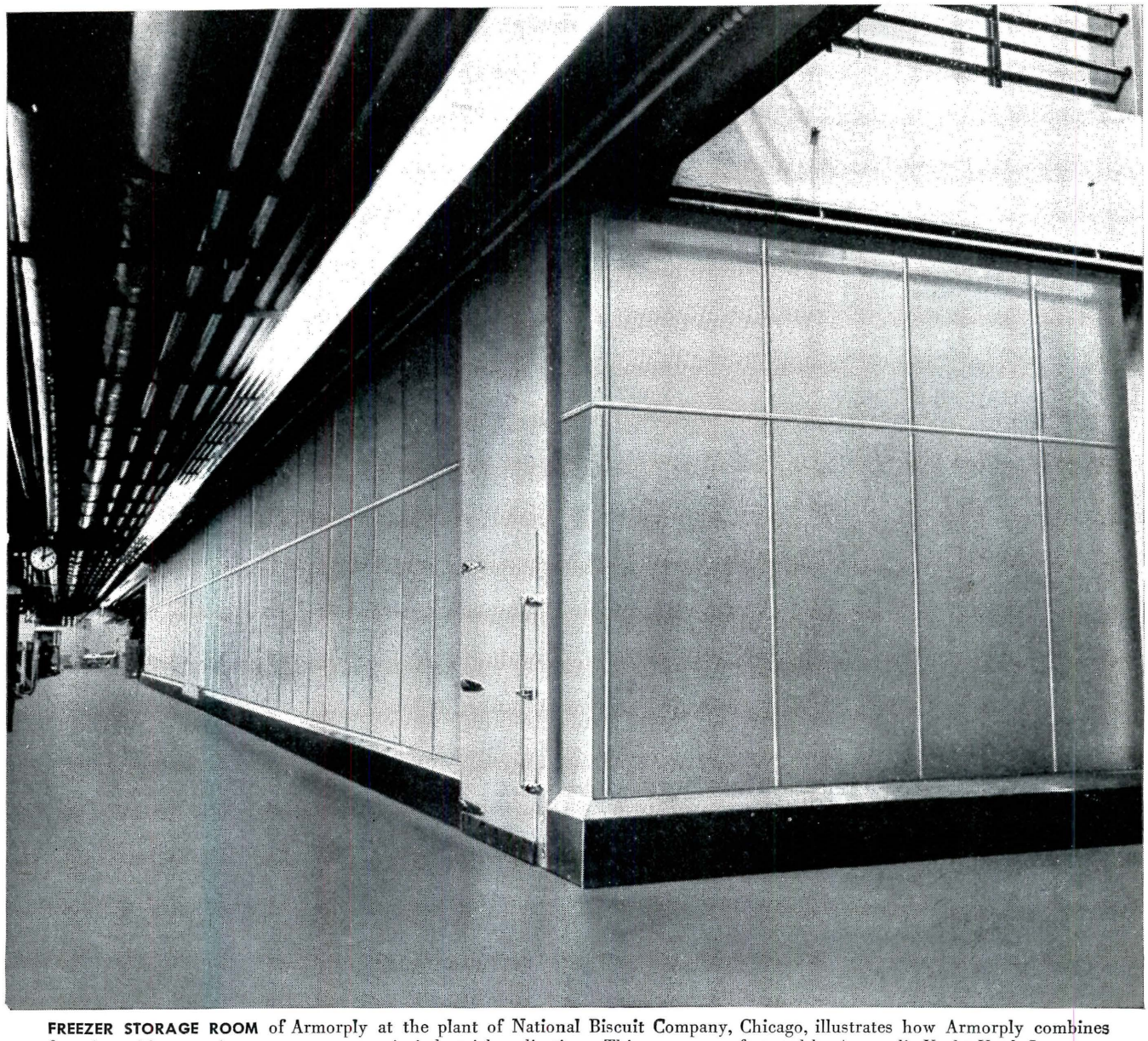

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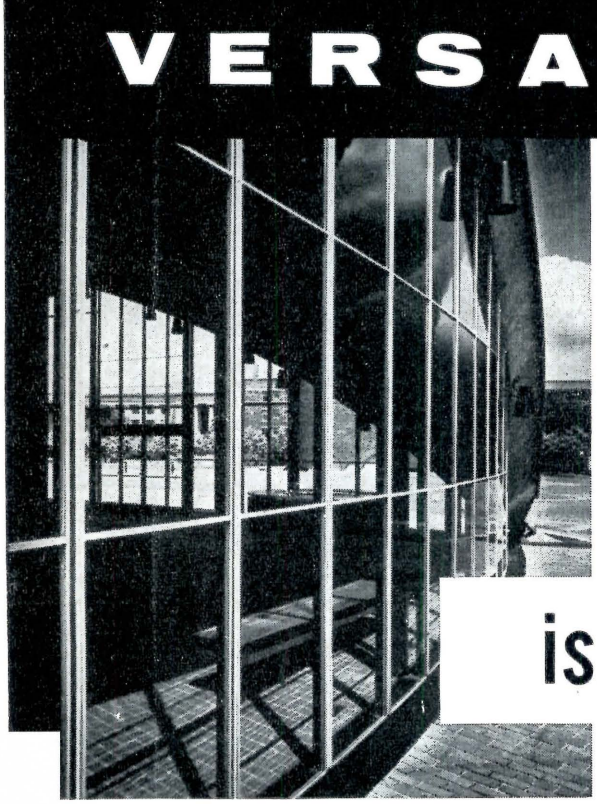

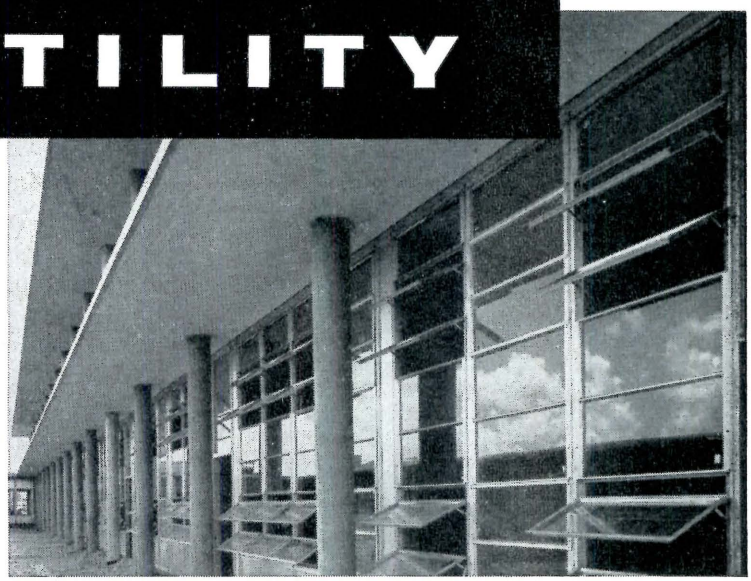

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As Others See Us

"Your architecture," said visiting architect Ahmed Sidky of Saudi Arabia last month, "shows the same sense of urgency that an outsider notes in everything American."

Creativeness

This is the year creativeness—or creativity, as it is also called—publicly and perhaps forever lost its ancient status as a wonderful and mysterious gift of God and came under the cool and determined scrutiny of ever so many cool and determined (whether gifted or ungifted) people. In California last month, the theme of the annual meeting of the California Council of the American Institute of Architects was "Creativeness in Architecture" and some highly gifted architects and one highly gifted engineer were asked to address themselves to it. The final convention speaker, architect Harry Weese of Chicago, offered a sort of checklist of "enemies of creativeness" which could be tacked over any drafting board. The seven enemies: 1. Dogma —"We are being honest to the machines but dishonest to architecture. This is a generation of extruders and glaziers." 2. Pressures—major among them the overemphasis on the superhighway—"Highway engineers have the bull by the horns and they are running away with it." 3. Convention—"copying the masters results in sterility, which is more dangerous than ugliness. "4. Fashion— especially in new structural forms—"unless we are careful we can kill these new forms before they have a chance to develop. We have to learn the clichés and how to avoid them." 5. Difference for difference's sake—"a very deep trap." 6. Lack of courage, strength and conviction, and especially in matters concerned with the total environment—"Urban renewal has to be solved. We have to stop running away from it." And on preservation of historic monuments: "If we can't keep some continuity in the development of our buildings, we will be wiping out history." 7. Self-seeking and lack of empathy—"Architects have to understand others' problems in order to design creatively. We cannot withdraw. We must find out what's happening. Understanding is the prerequisite of a solution."

Art as Product

Paintings which function as wall, ceiling and floor sections were for sale at the Herman Miller Furniture Company Showroom in New York last month. The paintings, ranging in size from 82 by 38 in. to 144 by 81 in., were displayed in a special exhibit which made them parts of the room settings at the showroom. These handy partitions were a group of "dance paintings" by Xanti Schawinsky of which architect and designer George Nelson, whose company designed the installations, had this to say: "Speaking as an architect and designer rather than as a critic of painting, it appears to me that a very significant development is in the making with Schawinsky as one of the leading forces. The methods used by this group of contemporary artists have resulted quite inevitably in a kind of esthetic expression which has far more meaning as a *wall* than as a painting in its traditional sense. Furthermore, due to the relative rapidity with which paintings of this type are executed, the costs—omitting the inflationary tendencies aided and abetted by the art dealers—are such that these large works can often be comfortably fitted into the budgets of modern interiors. A new and healthy merger of painting and architecture, quite comparable to much that has been going on in sculpture, therefore seems to be in the offing." The paintings are created by Schawinsky by fastening shaped pads to his feet and literally "dancing" on the canvas.

Art, Science and Engineers

As all engineers know, all engineers would be philosophers if they were sure this would not disturb their reputation as "practical" as well as inventive men. At one session of the recent American Society of Civil Engineers convention in New York, two engineering educators gave them a chance to reflect on the art and science of engineering under the impeccably practical title "The Importance of Balance in Engineering Education." Prof. L. E. Grinter of the College of Engineering of the University of Florida emphasized the importance of sciences competence among engineers, reminding them that "the greatest need for engineers is always on the *frontiers* of knowledge." Prof. J. B. Wilbur of the Department of Civil Engineering at M.I.T. raised the question of whether the "new emphasis" on science is wise in view of the urgent current need for "well-balanced engineers and, indeed,well-educated men." He asserted that the need for scientists and engineer-scientists must not be allowed to obscure the need for engineers and engineer-humanists. "In engineering the art is still clearly of the essence," Prof. Wilbur declared, adding that optimum balance between science and art must be sought. The art of engineering he defined as "that means by which we are sometimes able to reach understandings and results not attainable purely through the orderly process of scientific analysis." And he added that perhaps the most important function of the truly professional engineer is "to harmonize and relate the conflicting tendencies and situations which are and always will be found outside the realm of pure science."

For the Whole Architect

The principal of London's Architectural Association, Michael Pattrick, urging in a recent speech the need for raising educational standards, had some things to say about the results that must be sought by architectural educators. "When training is finished all architects must be prepared to be part artist, part constructor, part businessman and part leader. I do not think it matters much in what order you place them; perhaps the artist ought to come first, as the purely creative side is the sole responsibility of the architect and if he cannot do this with reasonable competence, he really should not call himself an architect at all. But it is no good possessing this quality at the expense of all the rest. Architecture is essentially something built, not just drawn and talked about. . . . The essence of our work is compromise—compromise between all factors affecting building, not just some of them; and the perfect balance can only be sought in one brain, not in a committee. . . . The architect whether he likes it or not has got to be an all-rounder and we had better accept the situation of being a jack-of-all-trades even if we are master of none."

FINNISH ENTRY WINS TORONTO CIVIC CENTER COMPETITION OVER JURY RESERVATIONS

Viljo Rewell, 48-year-old architect from Helsinki, has won the $25,000 international architectural competition for a new city hall and civic square for Toronto.

The competition, which had the warm praise of the jury for its exemplary conduct under the guidance of Prof. Eric Arthur of Toronto as professional adviser, attracted in its final stage eight proposals which are certain to provoke wide discussion among architects. (Rewell's winning design is shown on this page—with its designer in the lower photo; the other seven final entries are shown on pages 12-13.) Are the proposals addressed to a program or a jury? Is there a basic assumption that an architecture of novelty is the only route to success with a jury? Do competitions, in fact, produce architecture? Such questions may be followed by an even more heretical one: *are* competitions good for architecture?

The international jury, consisting of Sir William Holford of England, Ernesto Rogers of Italy, Eero Saarinen of the United States and C. E. Pratt and Gordon Stephenson of Canada, had some reservations about the winner which did not prevent a "unanimous" decision but which did produce a "minority report" strongly criticizing the design on functional grounds.

Text of the jury report follows:

September 25, 1958

Dear Mr. Chairman:

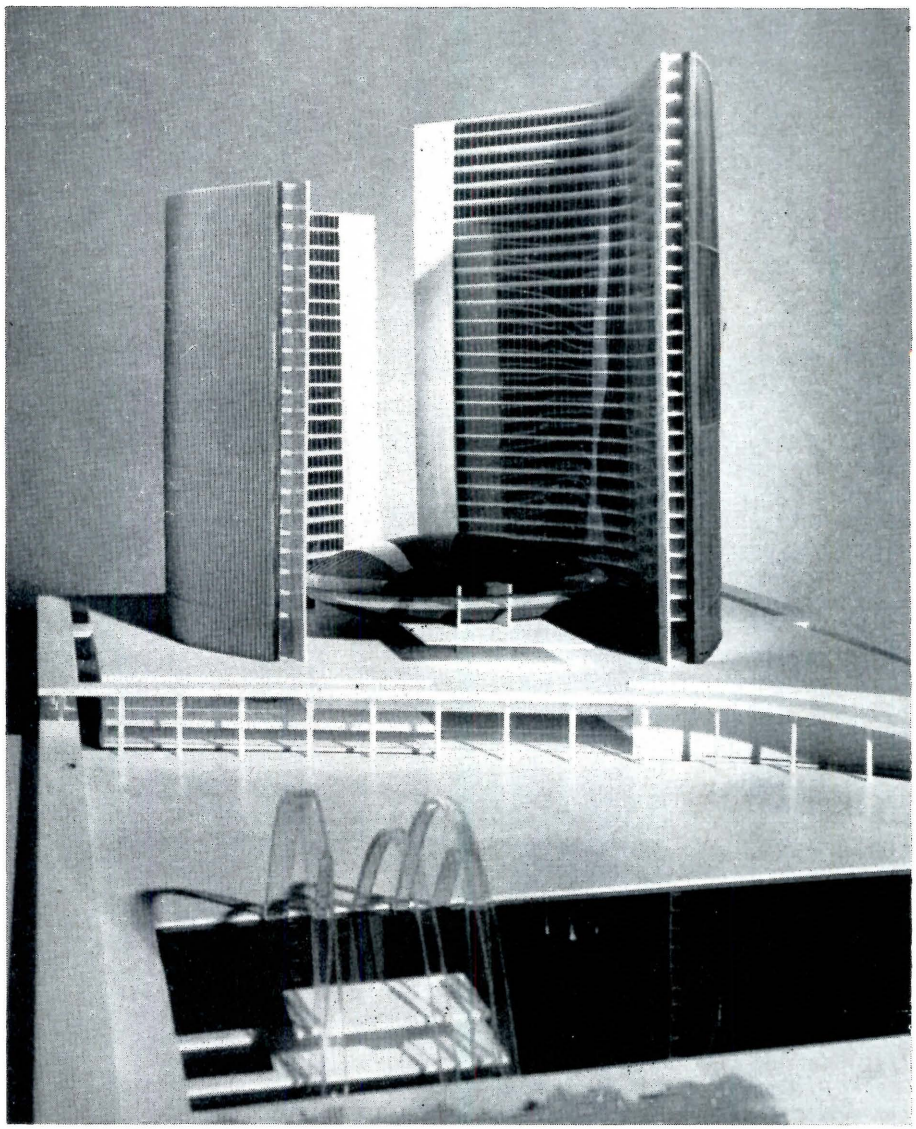
Before proceeding to report on its findings the Jury wishes to commend the City of Toronto and the Professional Adviser on an extremely well run professional international competition. It also wishes to extend its highest compliments to the 520 competitors from 42 different countries on the excellence of their submissions. The standard was unusually high and it was a most exacting task to select the eight finalists.

In this last stage of the competition these competitors have again developed and presented their proposals excellently. The drawings and models were of an exceptionally high standard. Altogether the Jury is convinced of the great merit of an international competition as a means of arriving at a design for such an important project as the City Hall and Square of Toronto.

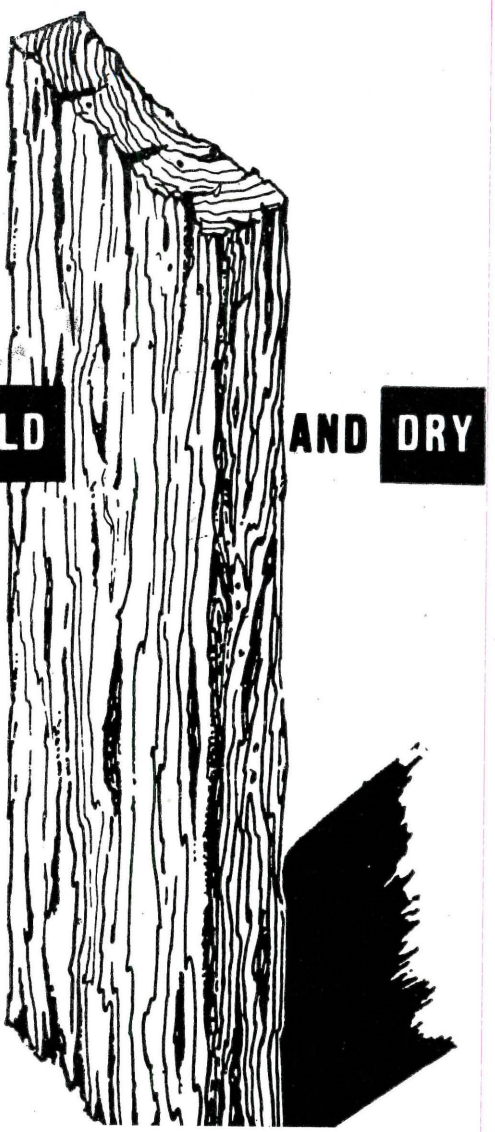
The Decision

All members of the Jury unanimously accept the majority decision that

Continued on page 12



WOOD WON'T ROT WHEN IT'S COLD AND DRY



Living fungi, which break down the substance of wood are microscopic and abundant. But they need WARMTH and DAMPNESS to develop. Dampness will also peel off paint, crumble plaster, cause iron and steel to rust.

Vapor can flow through asphalt, paper, plaster and most building materials. It condenses when, upon striking a colder surface, the air in which it is suspended reaches a dew-point.

An empty air space is a good insulator against heat flow by Conduction because of its low density. But air does not prevent heat flow by Radiation and Convection. Of all heat transferred through structural spaces, 67% to 93% is by Radiation, depending on direction of heat flow. All but 7% of the rest is Convection. The surfaces of scientific multiple aluminum have a high 97% reflectance for heat rays; a low 3% absorptance and emittance. Its layers of aluminum and air spaces drastically retard Convection. Conduction is slight through its preponderant low density air spaces.

Scientific multiple aluminum insulation is long and continuous and almost completely impervious to water vapor. Vapor infiltration under its flat, stapled flanges is slight.

Where multiple aluminum is used, fortuitous vapor and water (for instance rain) which intrude into wall and similar spaces, will gradually flow out as vapor through exterior walls and roofs as vapor pressure develops within; because vapor flows from areas of greater to less density. The vapor cannot back up through the almost impervious aluminum, so it flows out, because exterior walls and roofs have substantial permeability in comparison to aluminum, far greater than the required 5 to 1 ratio.

To obtain maximum uniform depth protection against heat loss and condensation formation, it is necessary to use **edge-to-edge** multiple aluminum, **each** layer of which stretches from joist to joist.

The U. S. National Bureau of Standards brochure: "Moisture Condensation in Building Walls," discusses vapor and heat flow, and the causes and prevention of condensation. Use the coupon. Get a copy at our expense.

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*Determined by method of National Bureau of Standards in H.H.F.A. Research Paper 32.

†Calculated on basis of limiting thermal values cited in Fed. Specs. LLL-f-321b; HH-I-585; HH-I-521c; HH-I-551a.

§Average installation rate is 2000 sq. ft. per day per man.

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Viljo Rewell is the winner of the competition. The Jury is unanimous in regarding his entry as the most original in conception of any of those submitted. Its monumental qualities are of a high order and it is a composition of great strength. Its shape is distinctive and dramatic, setting it apart from other structures in Toronto and from administrative and office buildings everywhere.

The Jury is unanimous in the view that the best interests of the City will be served by the implementation of the winning design, and that a concerted effort should be made to give it the finest possible expression. To achieve this the architect should be given full cooperation and the maximum support of all concerned.

The Jury agrees that, accepting the basic design submitted by Mr. Rewell, there are possibilities for modification which would improve it.

(Sgd) William Holford

C. E. Pratt
Ernesto N. Rogers
Eero Saarinen
Gordon Stephenson

The minority, Sir William Holford and Professor Gordon Stephenson, have reservations on several important aspects of the winning design.

Majority Report

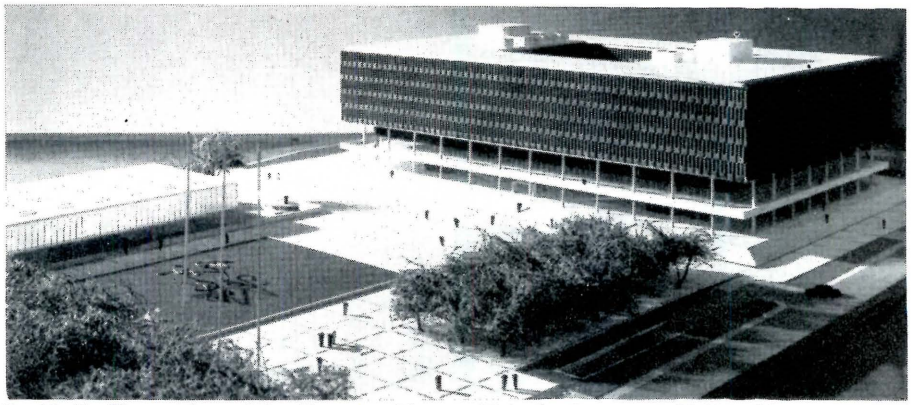
Basic Considerations

In the competition conditions the following statement is made: "In the eighteenth century, the cathedral and the town hall frequently dominated the urban scene both physically and spiritually. The City Hall in Toronto is largely overshadowed physically, but it still dominates by its presence. The City Hall in Toronto differs, in that respect, from those centers of civic administration in North America where the 'Hall' is just another office building hardly differentiated from the commercial structures which surround it.

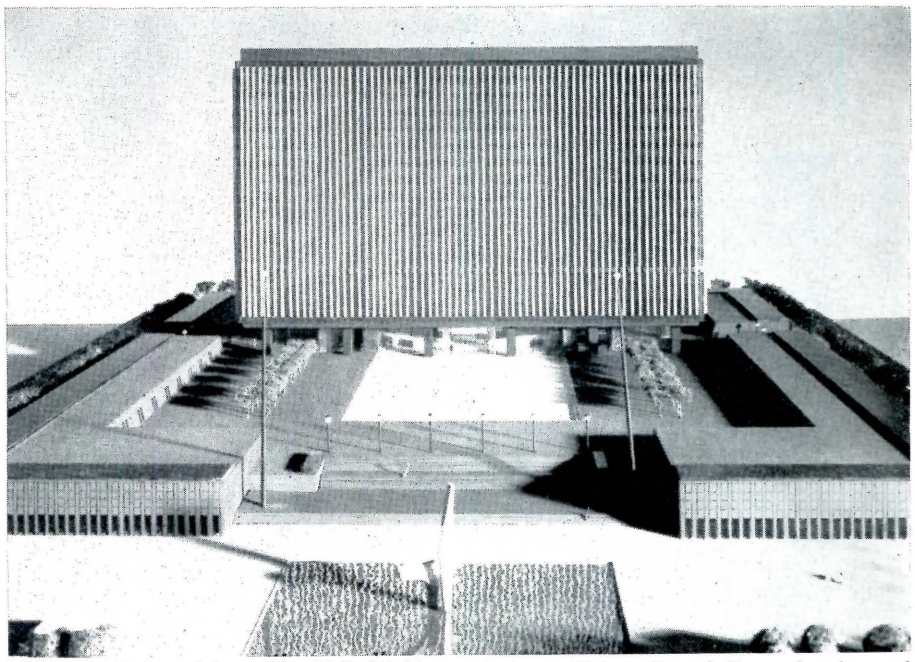
"One of the reasons for this competition is to find a building that will proudly express its function as the center of civic government. How to achieve an atmosphere about a building that suggests government, continuity of certain democratic traditions and service to the community are problems for the designer of the modern city hall. These were qualities that the architects of other ages endeavoured to embody in the town halls of their times."

The Jury regarded this as the most important consideration in the competition and considered it very care-

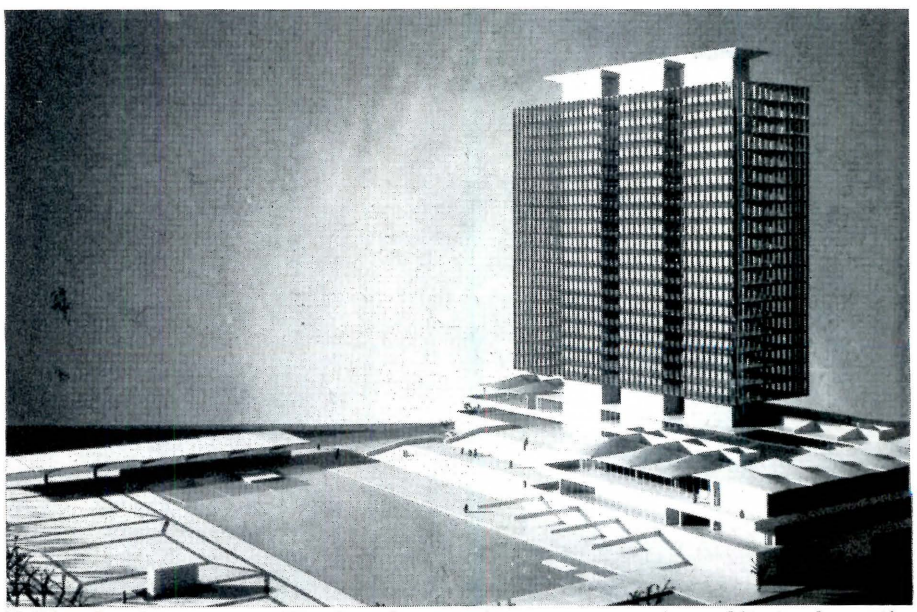
OTHER ENTRIES IN FINAL STAGE OF TORONTO COMPETITION



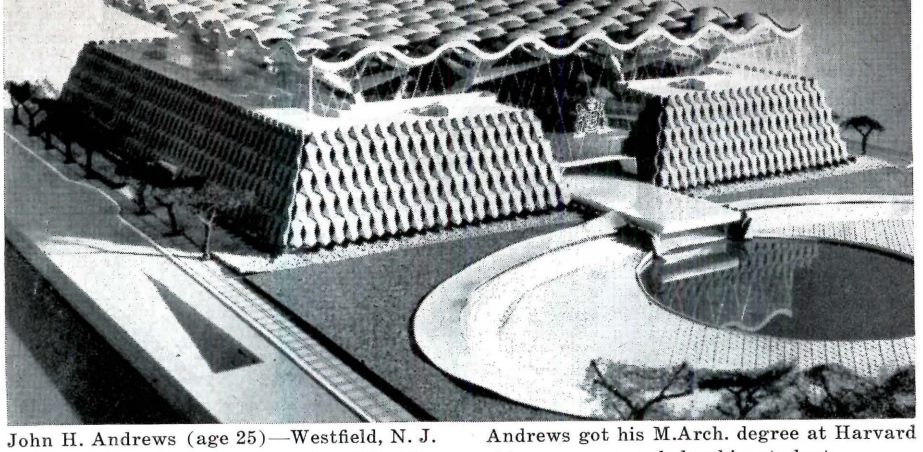
David E. Horne (age 30)—Toronto. Mr. Horne, the only Canadian finalist, got his M.Arch. degree at M.I.T. this year on an R.A.I.C. College of Fellows grant



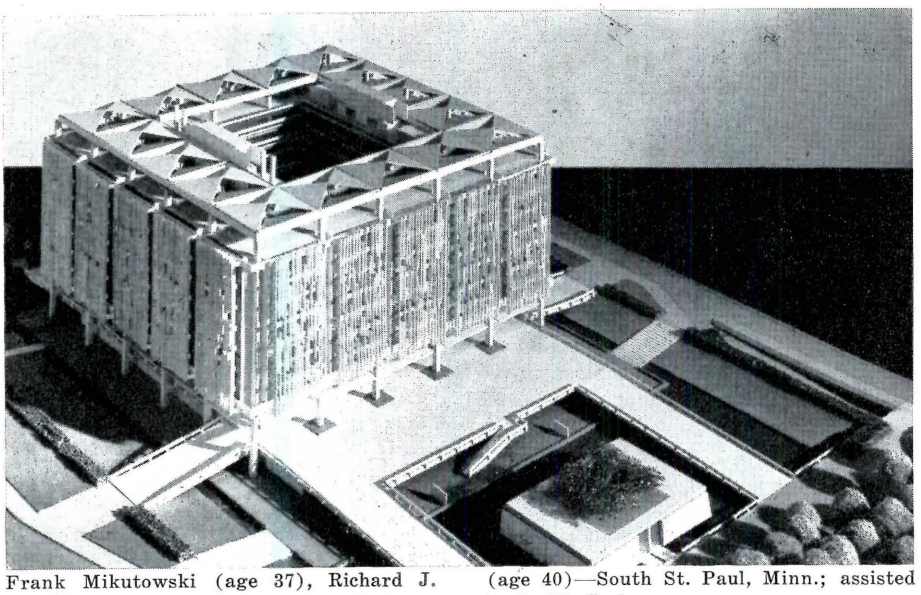
William B. Hayward (age 28)—Philadelphia—assisted by Harold J. Borkin and Joseph J. Wehrer, Ann Arbor, Mich. Mr. Hayward, an instructor in the Department of Architecture, University of Pennsylvania, and the only registered architect of the three, notes that the design was a three-way collaboration



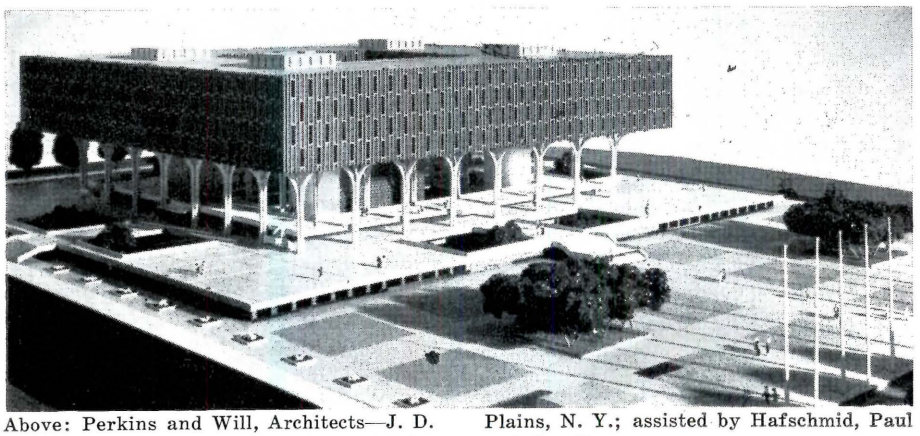
Halldor Gunnlogsson (age 40)—Copenhagen—and Jorn Nielsen (age 39)—Copenhagen, partners in architectural practice in that city



John H. Andrews (age 25)—Westfield, N. J. Australian, registered there in 1957, Mr. Andrews got his M.Arch. degree at Harvard this year as a scholarship student

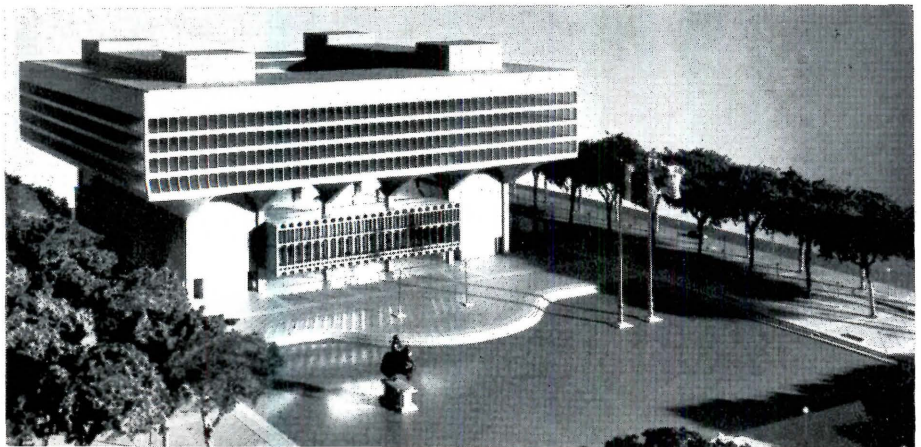


Frank Mikutowski (age 37), Richard J. Rafferty (age 34) and George E. Rafferty (age 40)—South St. Paul, Minn.; assisted by D. W. Grebner



Above: Perkins and Will, Architects—J. D. Lothrop (age 37), partner in charge, White Plains, N. Y.; assisted by Hafschmid, Paul and Capelle

Below: I. M. Pei (age 41), Architect—New York; assisted by Anthony N. Candido, Henry N. Cobb, Araldo Cossutta, Ervin Y. Galantay (structural engineer), William C. Henderson, Vincent de Pasciuto-Ponte (city planner), Pershing Wong



fully. In a project of this sort the City Hall must bear a significant conscious relationship to its surroundings. Toronto being a dynamic city, many buildings of various heights and shapes will be erected near the Square, each adding to the varied silhouette against which the City Hall must be seen. In this situation a choice must be made between several approaches.

1. The City Hall could be made similar to surrounding buildings and be absorbed into the downtown landscape. Any distinctiveness it would have would derive from its setting in the Square, but the building itself would be basically similar to many office buildings. In the opinion of the Jury such an approach was inadequate and did not meet the requirements.

2. The City Hall might be made so tall that it soared above all others in the downtown area, to become the dominant feature of the Toronto skyline. Certain competitors attempted to achieve this. However, to the Jury this did not seem practical as it resulted in a very expensive and, in certain regards, inefficient building, and there was no way of ensuring that the effect would be maintained.

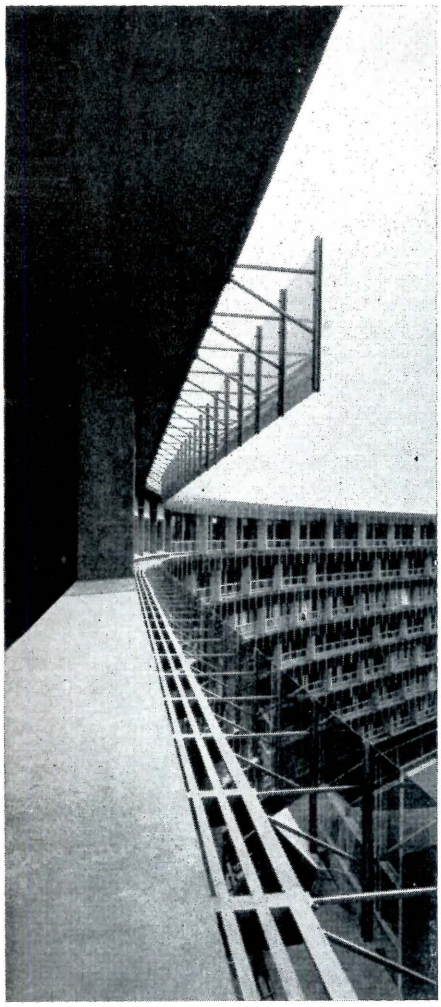
3. A relatively low, horizontal building placed within the Square could stand detached from the buildings around it, achieving an effect of dignity by its simple contrast with its background. The Jury regarded this concept as very promising and, indeed, five of the final proposals are in this category.

4. The City Hall could be a distinctive building, different in form and materials from standard commercial buildings. It would be impressive when seen from the Square and its immediate neighborhood, and also a distinctive feature of the silhouette of Toronto as seen from the distance.

In appraising the eight finalists the majority concluded that the winning architect had achieved a design which fulfilled this last approach excellently.

Many other considerations were also carefully weighed in arriving at a decision. The design of the Square is very important. The winner not only achieves a handsome space but successfully emphasizes the present City Hall, a building which the whole Jury regards as a most handsome example of its period. He takes full advantage of the continuity of the Square with the open space in front of Osgoode Hall and encourages the extensions to lead to University Avenue, creating a larger space within which Osgoode Hall is placed. The

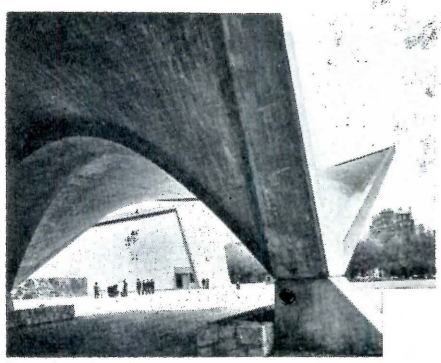
continued on page 312



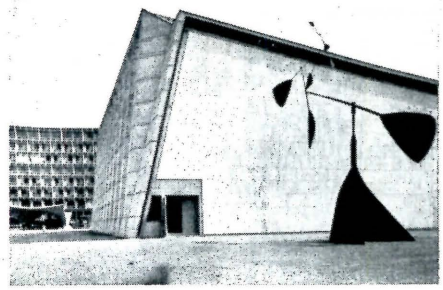
UNESCO House Completed; Will Open This Month

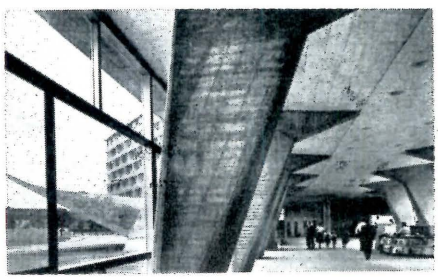
UNESCO House opens to the public on November 3, four and a half years after groundbreaking. The building (AR, Dec. 1952, July 1953, April 1955, and Feb. 1958), which UNESCO itself describes as "the most international building in Paris," is the work of Marcel Breuer of the U. S., Bernard Zehrfuss of France, architects, and Pier-Luigi Nervi of Italy, engineer. Their design was approved by a panel of five architects: Le Corbusier, Sven Markelius, Lucio Costa, Walter Gropius and Ernesto Rogers. Eero Saarinen was also consulted.

Of the three buildings comprised in the site (see site-plan at right) the Y-shaped secretariat and the trapezoidal conference hall are completed, and the square, four-story building which will house permanent delegations and non-governmental organizations (at upper right in the site plan) was started last autumn, and will be finished at the end of this year. The site, south of the Eiffel Tower, is one half of the semicircular Place de Fontenoy, whose other half is taken up by French government offices. One of the reasons for the form of the secretariat is to allow one of its three curving facades to continue the shape of the Place.

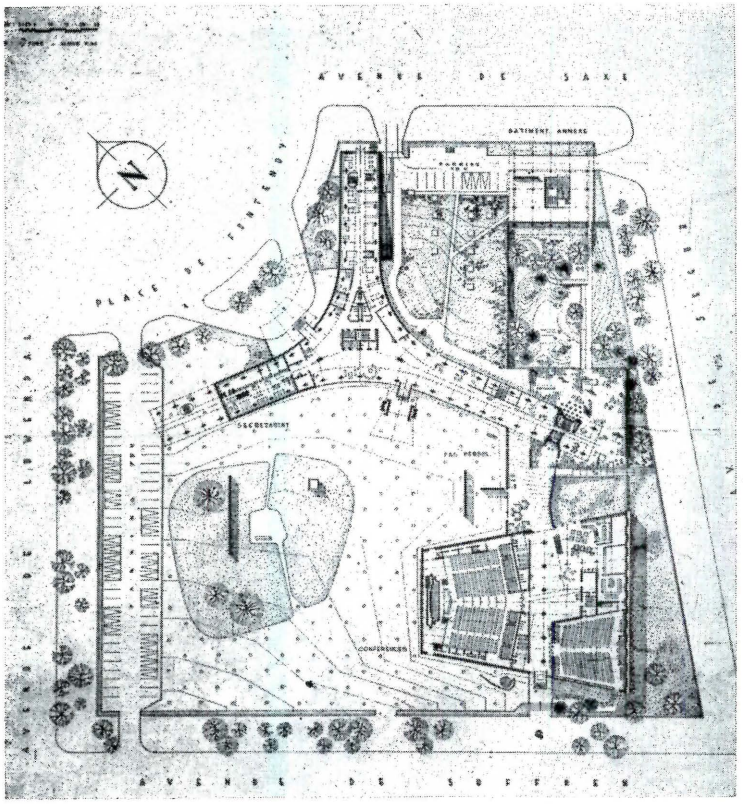


Detail of entrance marquee

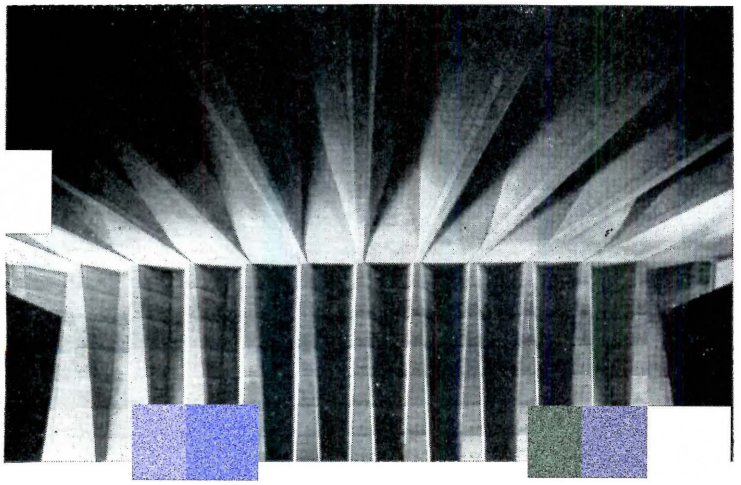


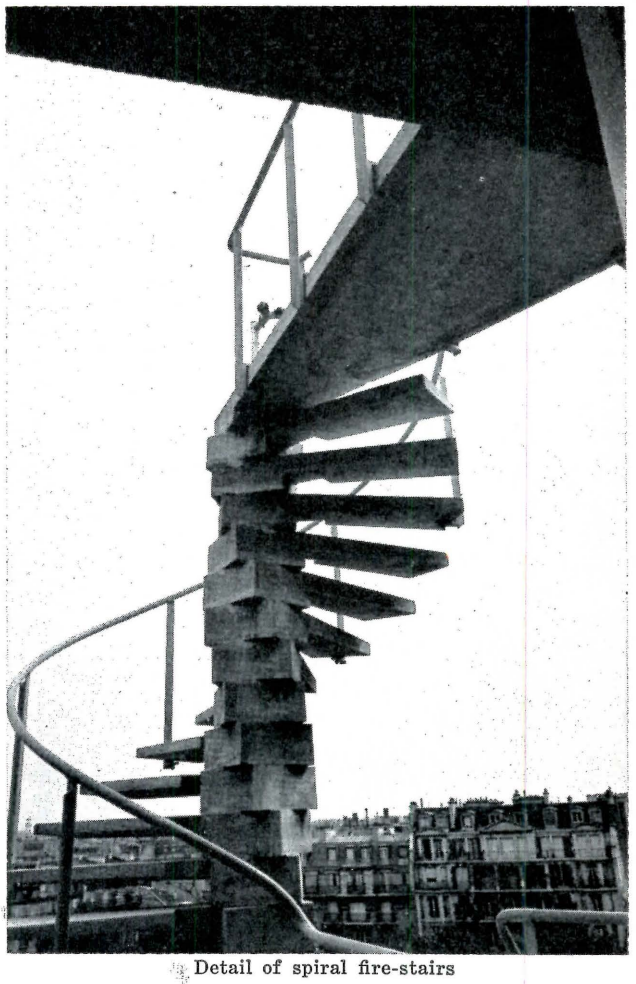


Jane Davis Doggett photos

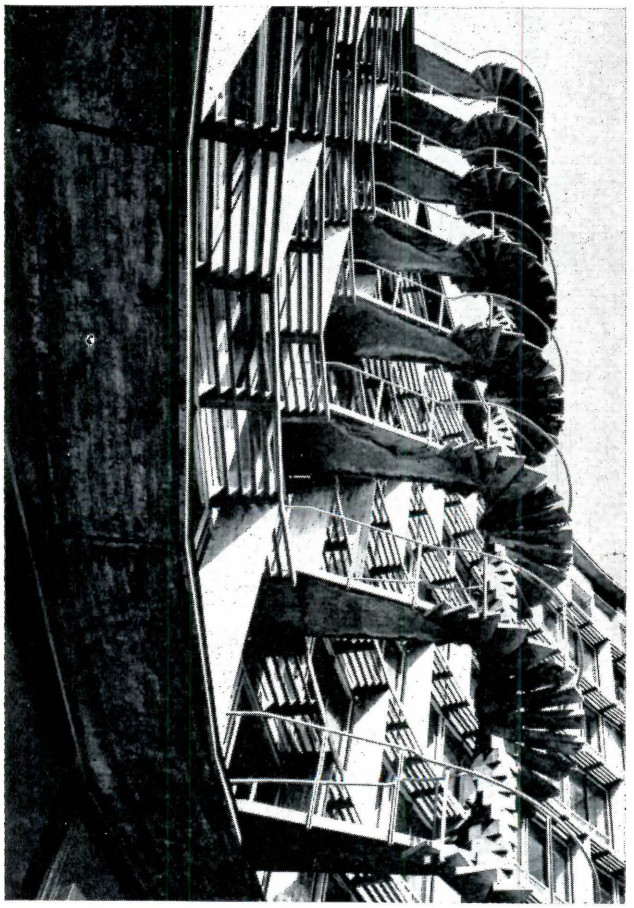


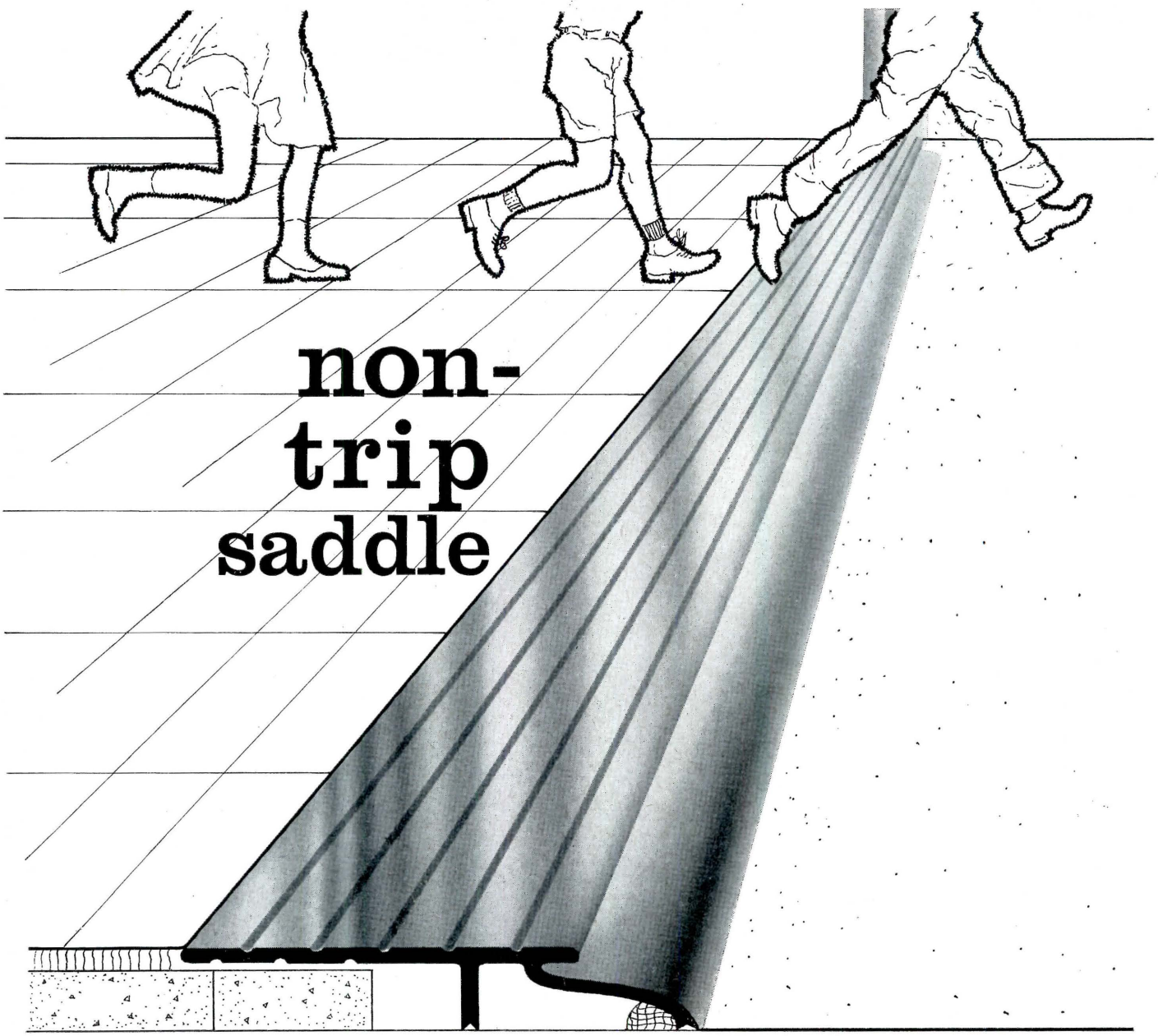
Interior of conference hall





Detail of spiral fire-stairs





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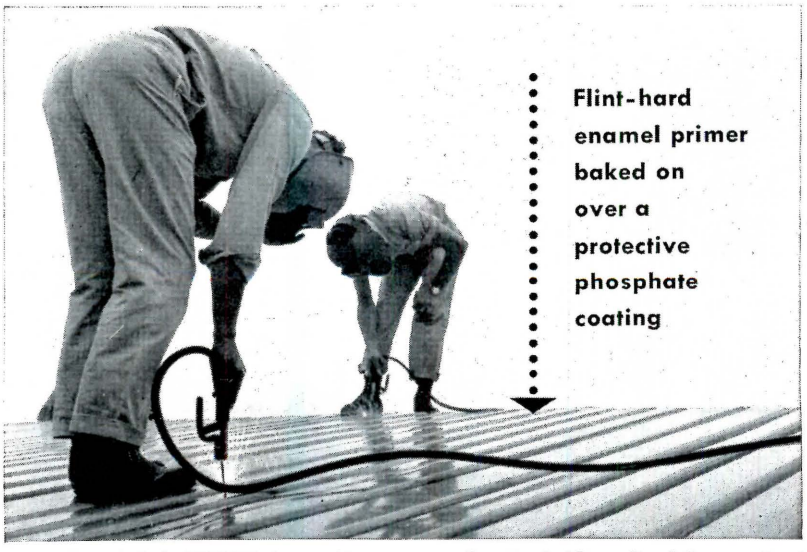

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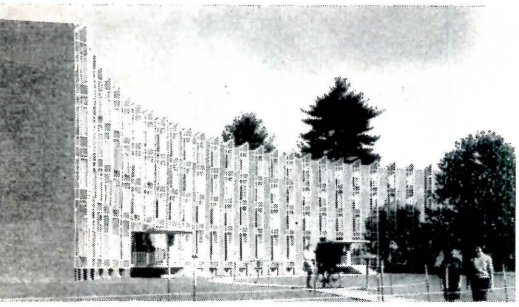
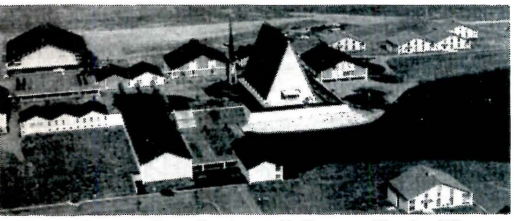
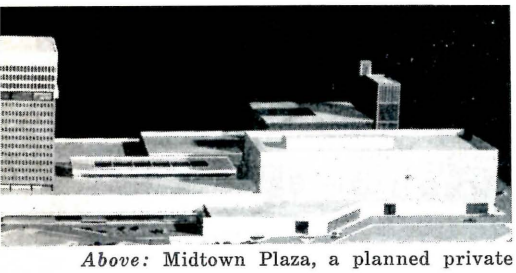
Buildings in the News



The Emma Hartman Noyes House, student residence at Vassar College, Poughkeepsie, N. Y., was dedicated last month. The building, which cost $1.4 million, curves around "The Circle," a large grass area; it has four stories and houses 156 students and two house fellows and their families. Each of the 51 front double rooms has a triangular bay window over a window seat. There are 54 single rooms at the back. Architect: Eero Saarinen. General contractor: Gilbane Construction Co.

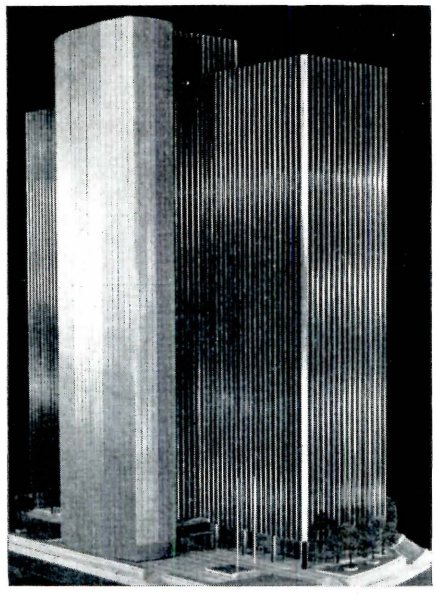


Concordia Senior College, Fort Wayne, Ind., recently dedicated by the Lutheran Church, Missouri Synod. Architects: Eero Saarinen & Associates. General contractors: Hagerman Const. Corp.; Wermuth, Inc.; Grewe Contractor, Inc.

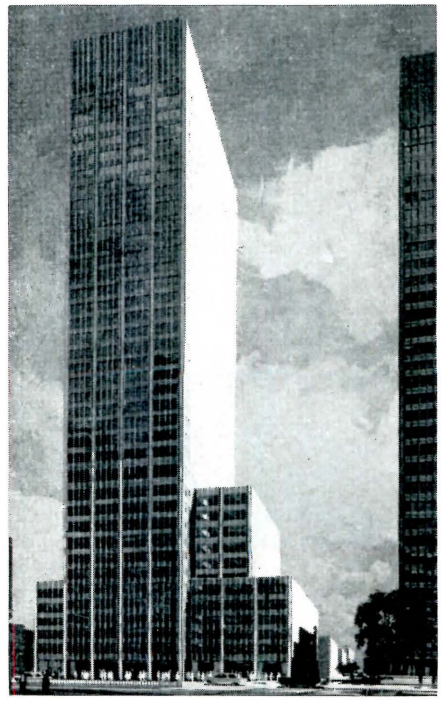


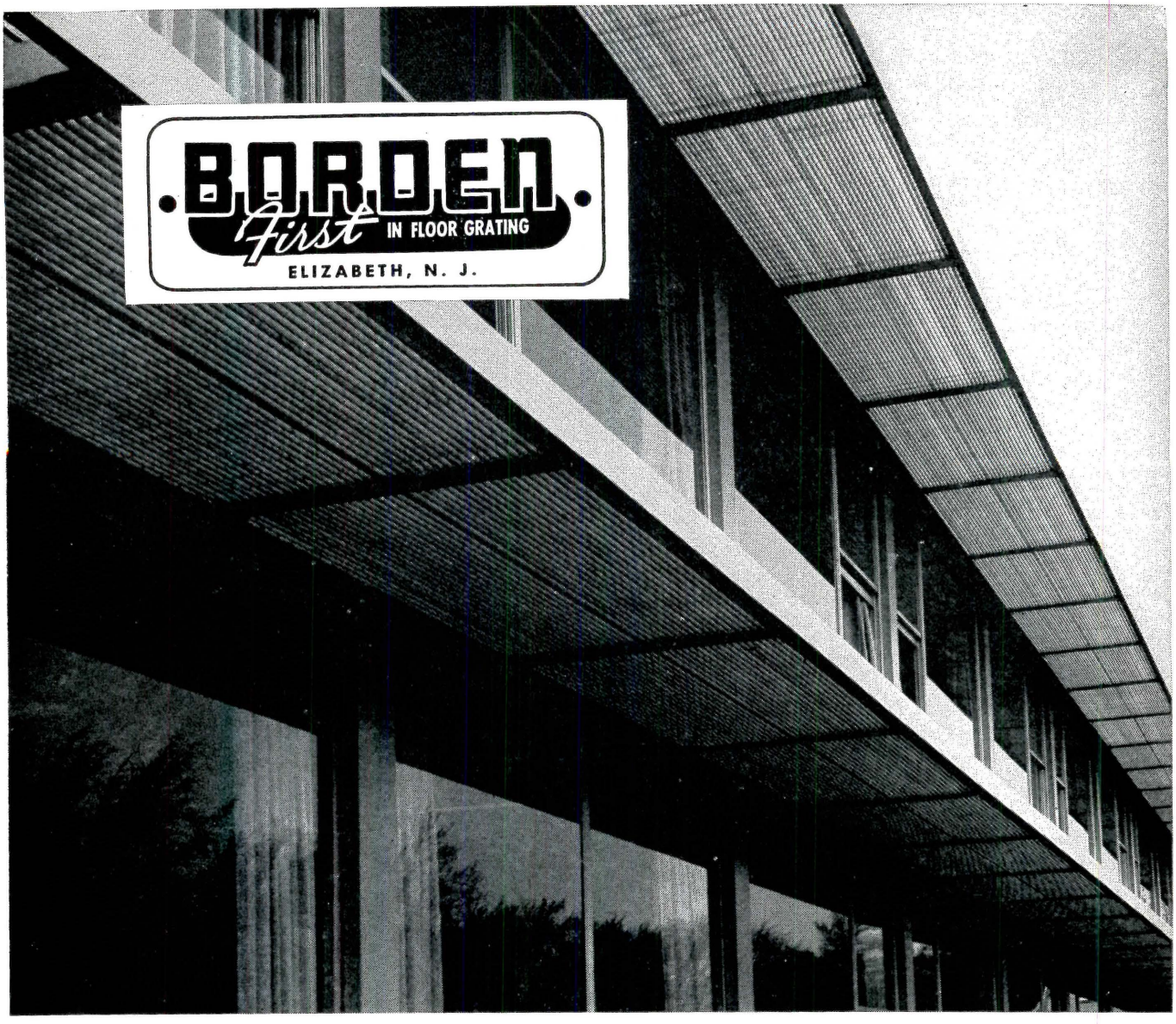
Above: Midtown Plaza, a planned private $15-million redevelopment in downtown Rochester, N. Y., would cover more than seven acres and include an air-conditioned pedestrian mall, underground parking for 2000 cars, underground truck deliveries, and about 300,000 sq ft of retail expansion. Most of the land has been acquired by the Midtown Holdings Corporation, sponsor, whose president is Gilbert J. C. McCurdy, also president of McCurdy's, a large department store, shown expanded and modernized at right. An 18-story office building, left, is also planned; it would include three hotel floors and a restaurant. Architect: Victor Gruen. *Right:* Construction has started on Four Gateway Center in Pittsburgh, being built by the Equitable Life Assurance Society of the United States. The 22-story stainless steel office building is to have 415,000 sq ft; each floor will give 264 by 62 ft of unobstructed space. Elevators and other service facilities are to be in the separate external core. Completion of the building, on the "Golden Triangle," is scheduled for 1960. Architects: Harrison & Abramovitz. General contractor: George A. Fuller Co.

The new 20-story Crown Zellerbach Headquarters Building in San Francisco, above, is expected to be occupied next summer. The landscaped plaza around it, below, will include a pool, 59 by 14 ft, in which will be a large bronze fountain designed by David Tolerton. The circular building is a branch bank. Architects: Skidmore, Owings & Merrill and Hertzka & Knowles. General contractor: Haas & Haynie



Above: Canada House, 26-story, 175,000-sq ft office building in New York, cost $6.5 million. Architects: Eggers & Higgins. General contractor: Walsh Construction Co. Cram, Goodhue & Ferguson's St. Thomas' Church (1913) is at left. *Below:* Completion is planned in 1961 for the First National City Bank of New York's 41-story office building, on Park Avenue next to the Seagram Building, visible at right. Estimated cost is $50 million. Architects: Carson & Lundin and Kahn & Jacobs. Structural engineer: Charles Mayer. Mechanical engineer: Meyer, Strong & Jones. General contractor: George A. Fuller Co.





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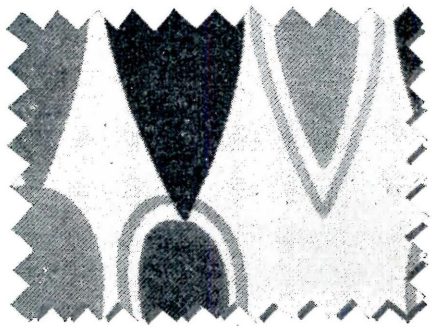

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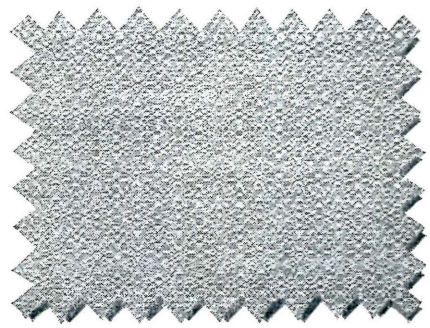

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Meetings and Miscellany

—Drawn for the RECORD by Alan Dunn

North Central A.I.A. Convention

Three hundred forty-five architects, 45 wives, and 170 exhibitors attended the North Central States Regional A.I.A. Conference and 24th annual convention of the Minnesota Society of Architects, held in St. Paul on October 2 and 3.

The proceedings, in the Hotel St. Paul, featured eight seminars on current architectural work whose subjects and architect presenters were: Toronto City Hall Competition, Philip Will, Jr., and Frank Mikutowski; Lutheran Brotherhood Building, Minneapolis, Perkins and Will; St. Peter's Lutheran Church, Minneapolis, Ralph Rapson; Milwaukee Veterans Memorial Building (Eero Saarinen, architect), Maynard W. Meyer of the associate architects; General Mills Building, Minneapolis, John Weese of Skidmore, Owings & Merrill; St. John's University Buildings, Collegeville, Minn., Marcel Breuer; First Lutheran Church, Virginia, Minn., E. A. Jyring of Jyring and Whiteman; new University of Minnesota School of Architecture, John Rauma of Thorshov and Cerny.

In the Minnesota Society of Architects' Second Annual Honor Awards Program, awards were given to: St. Mary's Greek Church, Minneapolis, Thorshov and Cerny; Dormitory, Faribault School, Haarstick and Lundgren; Shepherd House, St. Paul, Ralph Rapson; Girl Scout Camp, Cass Lake, Magney, Tusler & Setter. There also were nine Merit Awards. The jury consisted of Ralph W. Hammett, Harold Spitznagel, and Richard M. Bennett.

A high point in the meeting was the presentation of citations to five professors emeriti of the University of Minnesota for their long service and devoted attention to architectural students. The five were: Frederick Mann, F.A.I.A., Roy C. Jones, F.A.I.A., Leon Arnal, F.A.I.A., Robert T. Jones, F.A.I.A., and Rhodes Robertson, A.I.A.

Distinguished guests present at the meeting included A.I.A. National President John N. Richards (and Mrs. Richards); Alfred Bendiner, F.A.I.A.; and Ned Axt, all of whom gave stimulating talks.

New officers of the Minnesota Society elected were: Clair Armstrong, Minneapolis, president; George Townsend, St. Paul, vice president; Kenneth Backstrom, Minneapolis, secretary; Milton Bergstedt, St. Paul, treasurer.

—James S. Hornbeck

New England Architects Meet

The New England Regional Council of the A.I.A. met September 12-14 at the Motor Hotel in Bar Harbor, Maine; the gathering numbered about 90 people, including architects and their wives from all six New England states. Also present were members of the New Brunswick and Nova Scotia Royal Architects Institute of Canada with their wives and John Noble Richards, president of the A.I.A., and his wife.

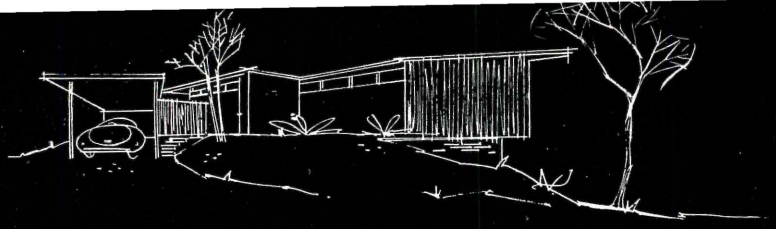
The meeting got underway Friday with dinner and a talk by Dr. C. Harry Atkinson on "Building and Equipping for Christian Education." Robert Denny then presented the first showing of a new film, "A Place to Worship"; the film was developed by the A.I.A. and the *Saturday Evening Post* for public relations purposes.

Saturday morning got off to a good start with a business meeting of the New England Regional Council delegates followed by a panel discussion on "Religious Art and Liturgical Requirements in the Design of Religious Buildings." The panel members were: Maurice Lavanoux, Liturgical Arts Society, New York; Dr. Arland A. Dirlam, architect, Boston; Willis N. Mills, architect, Sherwood, Mills & Smith, Stamford, Conn.; Dr. C. Harry Atkinson, editor, *Protestant Church*, New York. The moderator was Walter Campbell, Boston architect.

The evening was devoted to the banquet, at which Alonzo J. Harriman, the new Regional Director, presided. John Noble Richards introduced our Canadian guests. Maurice Lavanoux gave us a most interesting talk on "The Evolution of Religious Art and Architecture in Many Lands."

Sunday, some people made tours of the island before returning to their homes. We were blessed with beautiful fall weather.

Philip A. Gatz, Chairman,
New England Regional Council
Fall Meeting



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composition: chips are tinted, opaque vinyl; grouting is translucent vinyl; **surface resistance:** excellent for grease, alkalis; very good for solvents, detergents; **ease of maintenance:** superior; **static load limit:** 75 lbs. per sq. in.; **underfoot comfort and quietness:** good; **over-all thickness:** .090″; **wearing-surface thickness:** .058″; **available in:** seven monochromatic styles, in 6′ wide rolls; **installed price:** 75-90¢ per sq. ft.

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Producers' Council Meets

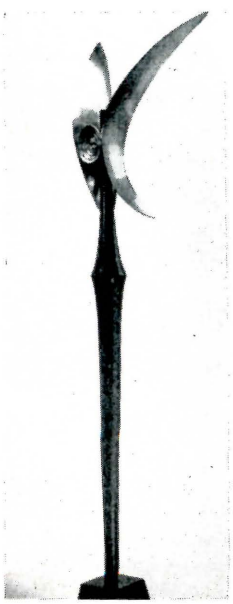
The 37th annual meeting of the Producers' Council, Inc., in Miami, September 17-19, was the kick-off for a major distribution process study aimed at lowering the cost of marketing construction products. The effort is headed by Robert W. Lear, American Radiator and Standard Sanitary Corp., who is chairman of the Council's distribution study committee. Committee meetings are working out details.

With "Dynamics of Distribution" as its theme, the convention at the new Dupont Plaza Center focused attention on the theoretical as well as the actual problems of distributing manufactures and left most of the delegates with the feeling their concerns could profit by adaptation of some of the techniques outlined.

A P.C. Chapter Officers' Conference, running concurrently with the distribution conference, proved again to be the annual opportunity for chapter executives to exchange ideas and brush up on good operating procedure. The chapter officers were told by Walter A. Taylor, director of education and research for the American Institute of Architects, that in this day of highly complex building technology, it is necessary for the architect to absorb all possible useful outside information to help him with his professional task. Mr. Taylor urged the producers to train their representatives to "think, act, and talk like consulting engineers" when selling to architects.

The Council elected H. Dorn Stewart, president of the Barrett Division, Allied Chemical Co., New York, as its new president, succeeding Fred M. Hauserman, E. F. Hauserman Co., Cleveland, who had served for two years.

—Ernest Mickel



A ceremonial mace, commissioned by the Class of 1957 of Adelphi College, Garden City, N. Y., and recently presented to the president. Sculptor Robert Cronbach, assistant professor of art at the college, designed and executed the mace, which is more than six ft high. The wings and seal are polished brass, the staff polished mahogany, the base, black wood

I.I.T. Names Acting Director

Illinois Institute of Technology in Chicago announces the appointment of Reginald F. Malcolmson as acting director of and associate professor in the department of architecture, following the retirement of the former director, Ludwig Mies van der Rohe. Mr. Malcolmson, who was educated and practiced architecture in Ireland, is an associate in the R.I.B.A. He came to this country in 1947 to study with Mr. Mies and received an M.Arch. degree from I.I.T. He joined the faculty in 1949 and was appointed assistant to Mr. Mies in 1953.

Architectural Photos Needed

The American Institute of Architects is planning its third exhibition of architectural photography, to be selected by a jury of three from prints submitted by photographers. The exhibit will be shown in the A.I.A.'s Gallery early in 1959 and then will be circulated. Entries, due by November 10, should be sent to Mrs. Alice G. Korff at the A.I.A., 1735 New York Ave., N.W., Washington 6.

First Rasch Award to Gropius

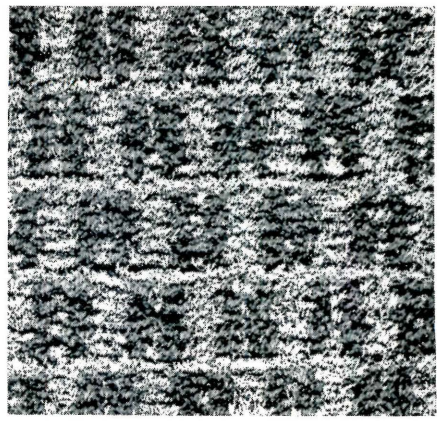
Walter Gropius, F.A.I.A., recently received the first Rasch Award at the opening of an exhibition, "Fine Arts and Design," in the galleries of Associated American Artists, New York. Dr. Gropius was honored for his "significant contribution to the integration of creative art and industrial utility and for his dedication to a higher living standard for all mankind." The award, founded by Emil Rasch, head of a German wallpaper firm, is intended to be given periodically. Dr. Rasch personally made the presentation to Dr. Gropius.

Magenau Joins A.I.A. Staff

Eugene F. Magenau has joined the staff of the American Institute of Architects as director of professional relations. He succeeds Byron C. Bloomfield, now with the M.B.S.A. (AR, Oct. '58, p. 25). Mr. Magenau, from Concord, N. H., is a member of Lyford & Magenau there.

Scheick Now With T.E.C.O.

William H. Scheick recently was appointed vice president-research and development for the Timber Engineering Co., research-engineering affiliate of the National Lumber Manufacturers Assn. He succeeds Carl A. Rishell, soon to retire. Before joining T.E.C.O., Mr. Scheick was for nine years executive director of the Building Research Institute and Building Research Advisory Board.



"Blush," carpet design by Liisa Suvanto, won first prize in the design competition conducted in Finland by the Bigelow-Sanford Carpet Co., Inc., in cooperation with the Finnish Society of Crafts and Design. The colors are bright orange, vermilion, and pink

At B.R.I. and B.R.A.B., meanwhile, a temporary administrative setup, until there is a definite replacement for Mr. Scheick, puts Milton S. Coon, Jr., and Robert M. Dillon in the top spots, respectively, of the two organizations.

Building Center in Georgia

The Architects and Engineers Institute, Inc., of Atlanta, Ga., celebrated its second birthday last month. The Institute is owned and sponsored by the Georgia Chapter, American Institute of Architects, and the Georgia Engineering Society.

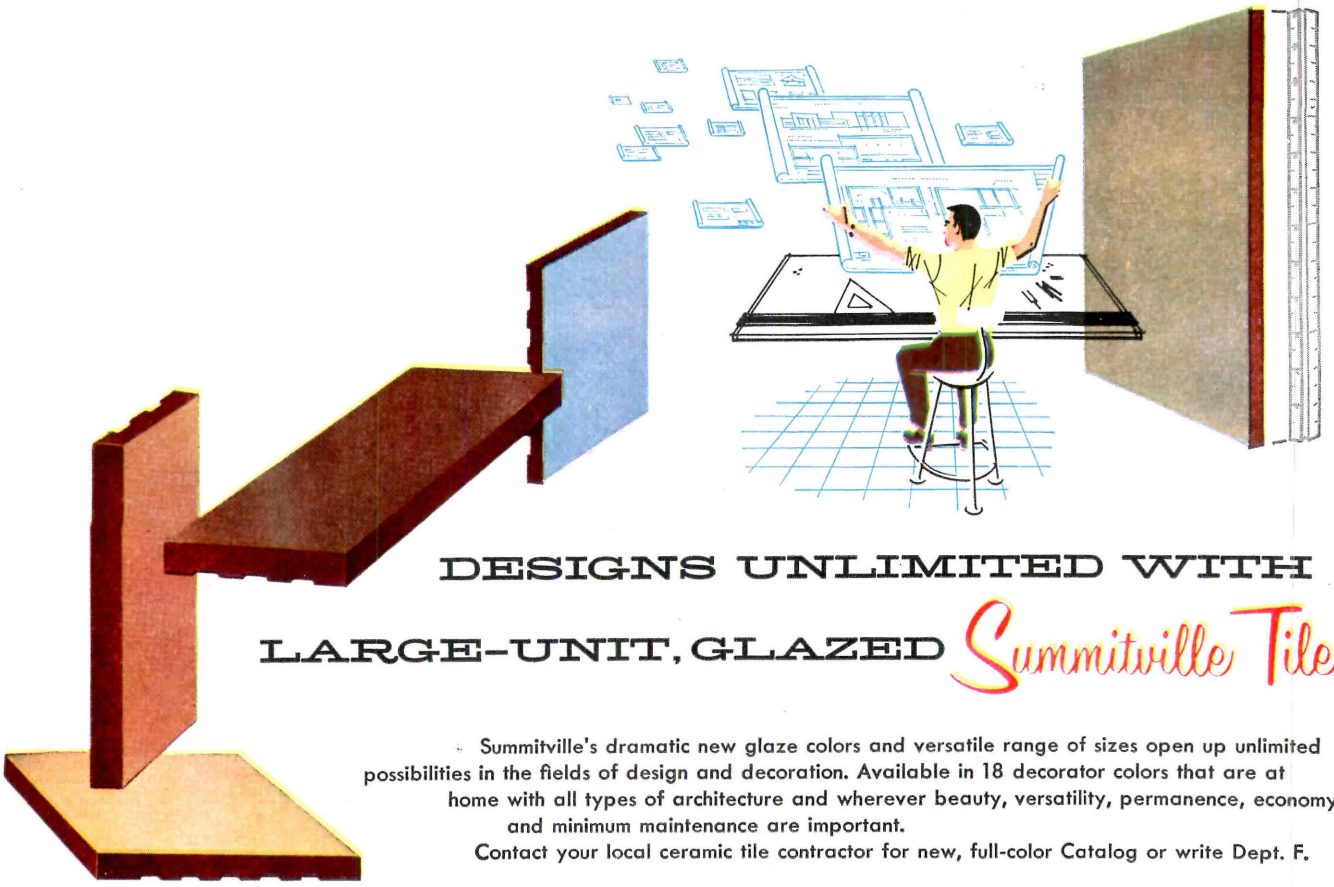
The Institute's four-story, 80,000-sq ft building is gradually becoming a regional center for the building industry; not only architects and engineers, but also the general public visit the structure, much of which is rented to exhibitors of building, engineering, and electrical products. The building also contains offices for the two sponsoring groups, the Georgia Society of Professional Engineers, and other societies; a technical reference library; and dining facilities.

The Institute, a non-profit organization, is governed by a nine-member board, four each from the two sponsors and a lawyer who is legal counsel. Three ex officio board members are the presidents of the two sponsors (Clement J. Ford is president of the Georgia Chapter, A.I.A.) and an Exhibitors' Association representative.

Cuban Medal to Neutra House

The De Schulthess house in Havana, presented in the October issue of AR (pp. 187-188), was recently awarded a gold medal by the Cuban Institute of Architects. The architect was Richard J. Neutra.

continued on page 352



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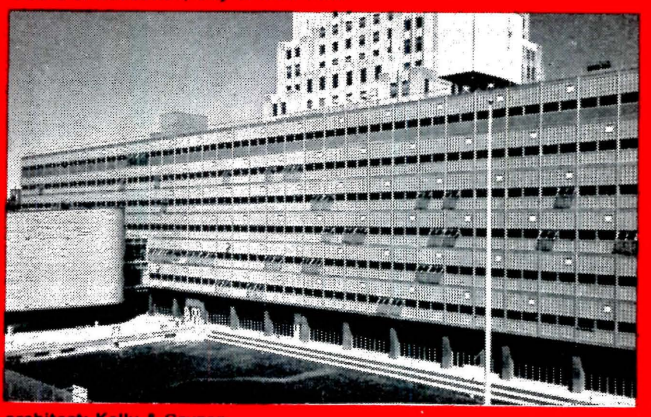

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FOREIGN BUILDINGS PROGRAM: 11 PROJECTS COMPLETED, 29 UNDER WAY, 16 IN DESIGN

Eleven of the 16 new building projects in the program of the State Department's Office of Foreign Buildings have had their architects approved and are moving into the design stage under the same guiding principles that have motivated two score earlier buildings in this continuing plan. Eleven projects in the program have been completed.

Congress voted the same amount of money for the current year's operations in OFB—$18.5 million—as it did for the last fiscal period. Considering inevitable attrition due to inflationary pressures, this means that the fiscal 1959 program cannot stay at the same level as that of 1958, but will fall back a little. The Department has no means of measuring the exact losses occurring from inflation, but it knows they are there, hobbling the program to some extent.

Here is the list of new projects in the program by location, building and architect, on which architects have received final approval:

Algiers, Algeria—office building; John Lyon Reid, San Francisco.

Canberra, Australia—annex to office building; Milton L. Grigg, Charlottesville, Va.

Dublin, Ireland—office building; John Johansen, New Canaan, Conn.

Fukuoka, Japan—office building; Hervey Parke Clark and John F. Beuttler, San Francisco.

Mexico City—embassy office building; Southwestern Architects-Engineers, Austin, Tex.

Niagara Falls, Canada—office building and residence; Thornton Ladd & Associates, Pasadena, Cal.

Saigon, Vietnam—office building; Nathaniel C. Curtis Jr., and Arthur Q. Davis, New Orleans.

São Paulo, Brazil—office building; Mies van der Rohe, Chicago.

Singapore—office building, A. Quincy Jones and Fred E. Emmons, Los Angeles.

Taipei, Taiwan—office building; Walter E. Campbell and Nelson W. Aldrich, and Lawrence B. Anderson, Herbert L. Beckwith, and William E. Haible, all of Boston.

Warsaw, Poland—office building and staff housing; Welton Becket and Associates, Los Angeles.

Other current projects on which architects have not yet been approved finally, but where selected architects are visiting sites, include an embassy office building at Montevideo, Uruguay; a consulate office building and residence at Palermo, Sicily; an embassy office building annex at Ottawa, Canada; a consulate office building and staff apartments at Rotterdam, The Netherlands; and a consulate office building and staff housing at Tabriz, Iran.

The final selection of architects and the approval of design in this program of building acquisition abroad lies with the State Department; but since 1953 an advisory commission of private architects has been an important part of this selection and approval. Furthermore, the program's architectural objectives have since then reflected the philosophy set out by an original panel member, Pietro Belluschi, dean of the School of Architecture and Planning at Massachusetts Institute of Technology, who wrote in part:

"To the sensitive and imaginative designer [the building] will be an invitation to give serious study to local conditions of climate and site, to understand and sympathize with local customs and people, and to grasp the historical meaning of the particular environment in which the new building must be set. He will do so with a free mind without being dictated to by obsolete or sterile formulae or clichés, be they old or new; he will avoid being either bizarre or fashionable, yet he will not fear using new techniques or new materials, should these constitute real advances in architectural thinking.

"It is hoped that the selected architects will think of style not in its narrower meaning, but as a quality to be imparted to the building, a quality reflecting deep understanding of conditions and people. His directness and freshness of approach will thus have a distinguishable American flavor.

"The committee feels that if the above philosophy is adhered to, we need not fear criticism; on the other hand, if we act timidly, solely in the hope of avoiding any and all criticism from whatever quarters, we shall surely end up in dull compromises, with the result that we shall have nothing but undistinguished buildings to represent us abroad. We would thereby have forfeited our opportunity to display the high American cultural achievements in the field of architecture generally recognized by architects of the more advanced nations of the world."

The membership of the advisory commission is a changing one with the appointees rotating singly from time to time. The present panel consists of Eero Saarinen, Bloomfield Hills, Mich.; Edgar Williams, New York; and the latest member appointed, William Wurster, dean of the College of Architecture, University of California, Berkeley. Mr. Wurster succeeded Richard Bennett, Chicago.

The panel last met in May this year and at this writing was tentatively scheduled to convene again in October. It reviews all aspects of the program and advises the State Department on the many architectural phases of building abroad.

There has been general agreement since the panel was organized and the program has taken shape under its guidance that the arrangement constitutes the most successful of its kind in government. The American Institute of Architects at its Centennial Convention in Washington, D. C., on May 19, 1957, conferred on the Office of Foreign Buildings a Citation of Honor recognizing the excellence of this undertaking.

To help the selected architect adapt his design to the site, the State Department sends each man to visit the location before he starts design, and the architect may make a second visit during the construction of his building.

The eleven OFB structures which now have reached the stage of completion and occupancy are:

Hong Kong, office building; Kobe, Japan, office building and staff housing: Bangkok, Thailand, staff apartments; Lagos, Algeria, office building and staff housing; Accra, Ghana, West Africa, office building and staff housing; New Delhi, India, office building and staff housing; Leopoldville, Belgian Congo, office building and staff apartments; Djakarta, Indonesia, office building; Tegucigalpa, Honduras, residence and office building; Nagoya, Japan, office building and staff housing; and Basra, Iraq, office building and residence.

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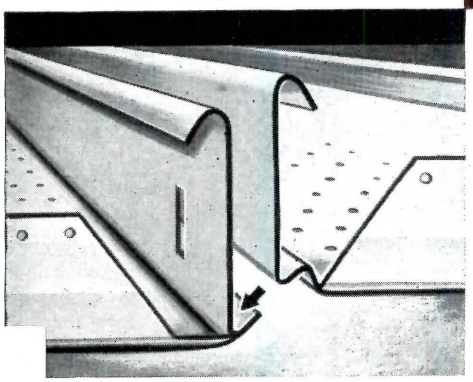

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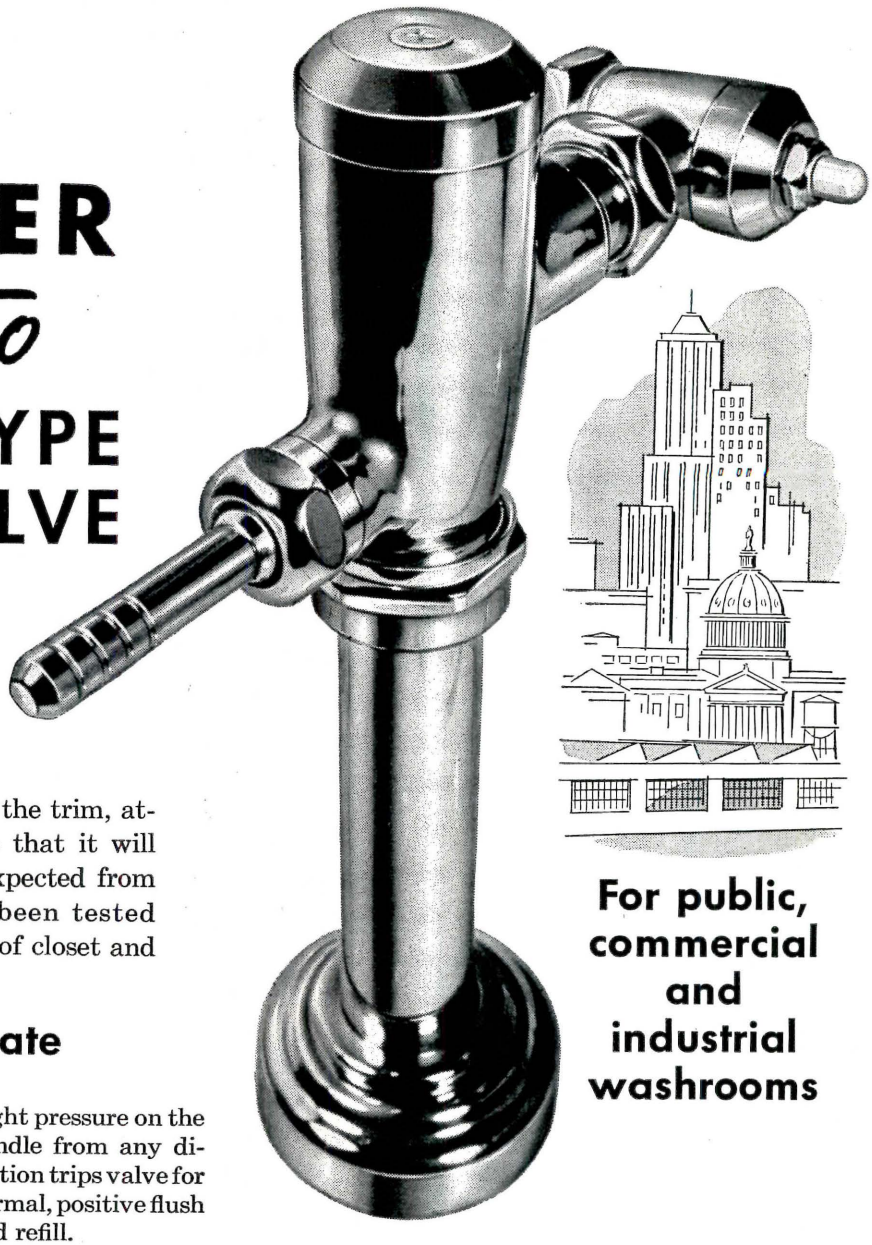

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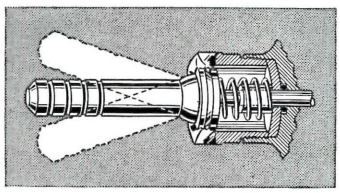

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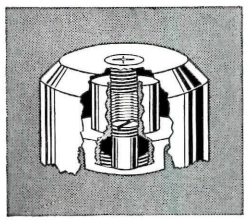

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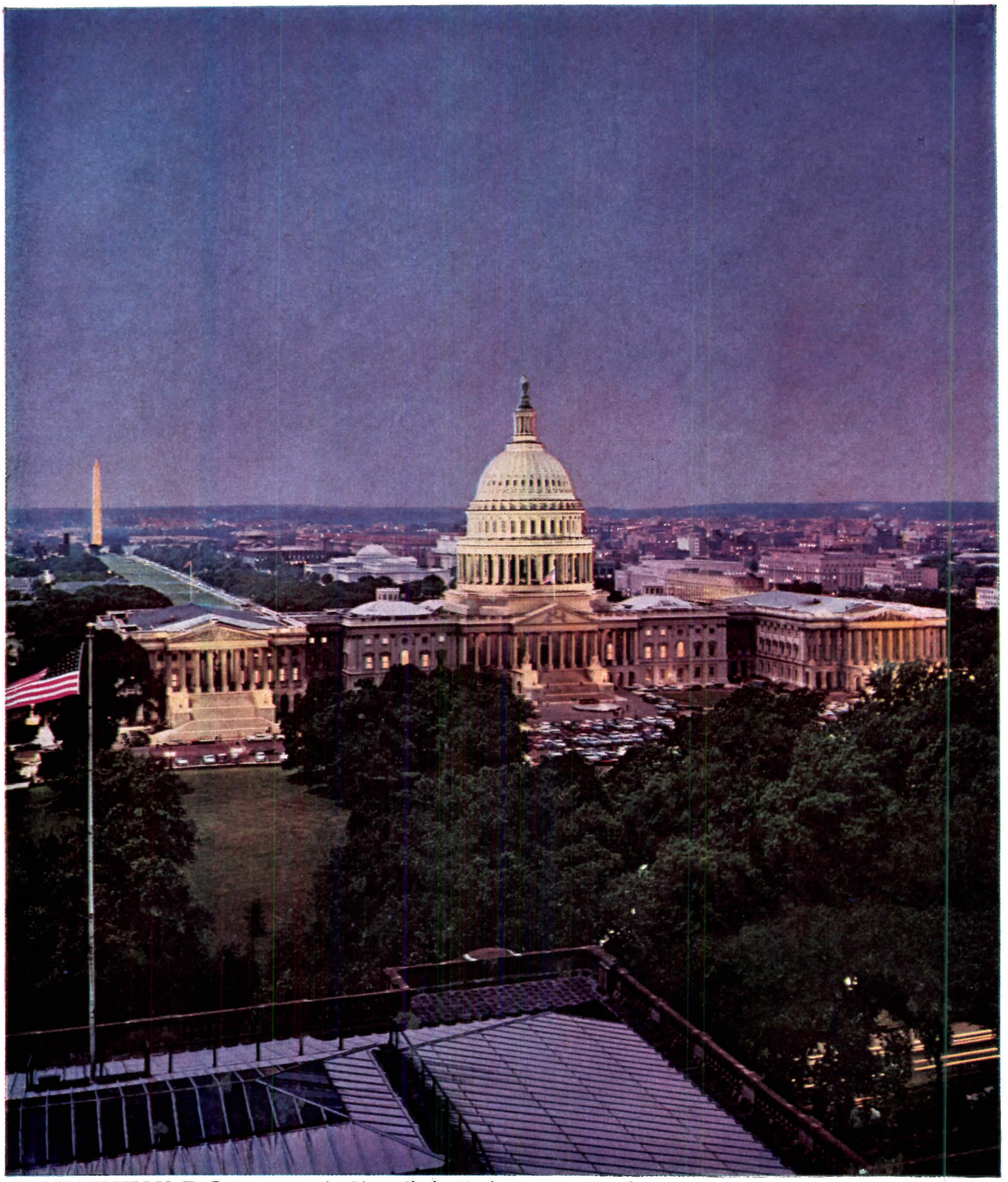

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NEW CAMPUS DEVELOPMENT UNDER WAY FOR OTTAWA'S CARLETON UNIVERSITY

Carleton University, founded in 1942 in a residential section of Ottawa, has obtained and begun development of a 130-acre tract of land for a new campus. A special group of architects formed for the project and known as "Architectural Associates for Carleton University" is composed of Watson Balharrie of Ottawa (Balharrie, Helmer and Morin); Hart Massey of Ottawa; Prof. John Bland of Montreal (director, School of Architecture, McGill University); Prof. Eric Arthur of Toronto (School of Architecture, University of Toronto); and Campbell Merrett of Montreal (Barott, Marshall, Merrett and Barott). Adjeleian, Goodkey, Weedmark and Associates Ltd. of Ottawa are the consulting engineers for structural, mechanical and electrical work.

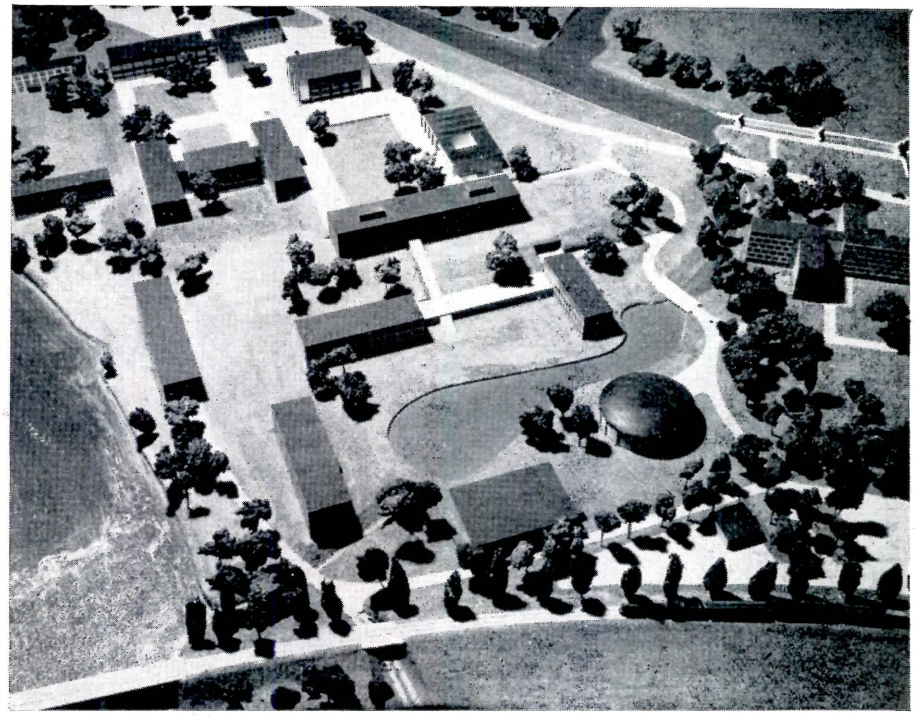
Development of the site, which is bounded on two sides by the Rideau River and the Rideau Canal, has been influenced by the natural contours of the land—a high area, with three abrupt changes of level, will become the focal point of the campus. Some 65 acres are level and will be used for athletic facilities and, if necessary in years to come, for some buildings.

The master plan anticipates an eventual enrollment (in 50 years or more) of between 5000 and 6000 students (from 700 full daytime students and 1400 part-time evening students in 1957-58); and the development is planned so that at several interim stages the campus will present a harmonious and finished appearance.

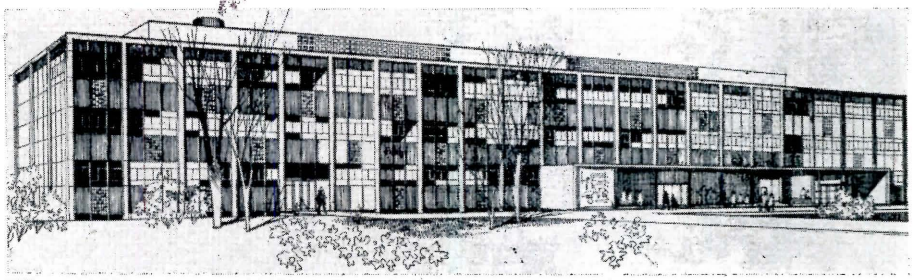
In the first stage, now under way, the Main Court will be created. It is planned to accommodate the entire college up to an enrollment of 2000, which is considered possible by 1965. Subsequent expansion will create an Arts Court, the lower level colleges, a Bywash Water Court and a Northern Extension.

Three buildings (shown in photos of renderings at right) are now under construction on the Main Court —the Henry Marshall Tory Building for Science; the Maxwell MacOdrum Library; and the Arts Building. The first two of these buildings will be completed during this academic year, when the entire college will be moved from its present cramped quarters.

Other major buildings contemplated within the next few years, though not yet fully planned, include a student union, to make a fourth building on the main court, an administration building and additional athletic facilities.



Above: photo of section of master plan model showing (background) Main Court, where three buildings shown in photos of renderings below are under construction. Architectural Associates for Carleton University (see story) are architects for all. 1. Science Building, estimated cost about $1.5 million; general contractor, George A. Crain & Sons Ltd. 2. Library Building, estimated cost about $1 million; general contractor, Doran Construction Co. Ltd. 3. Arts Building, estimated cost about $1 million; general contractor, Queensview Construction and Development Ltd.



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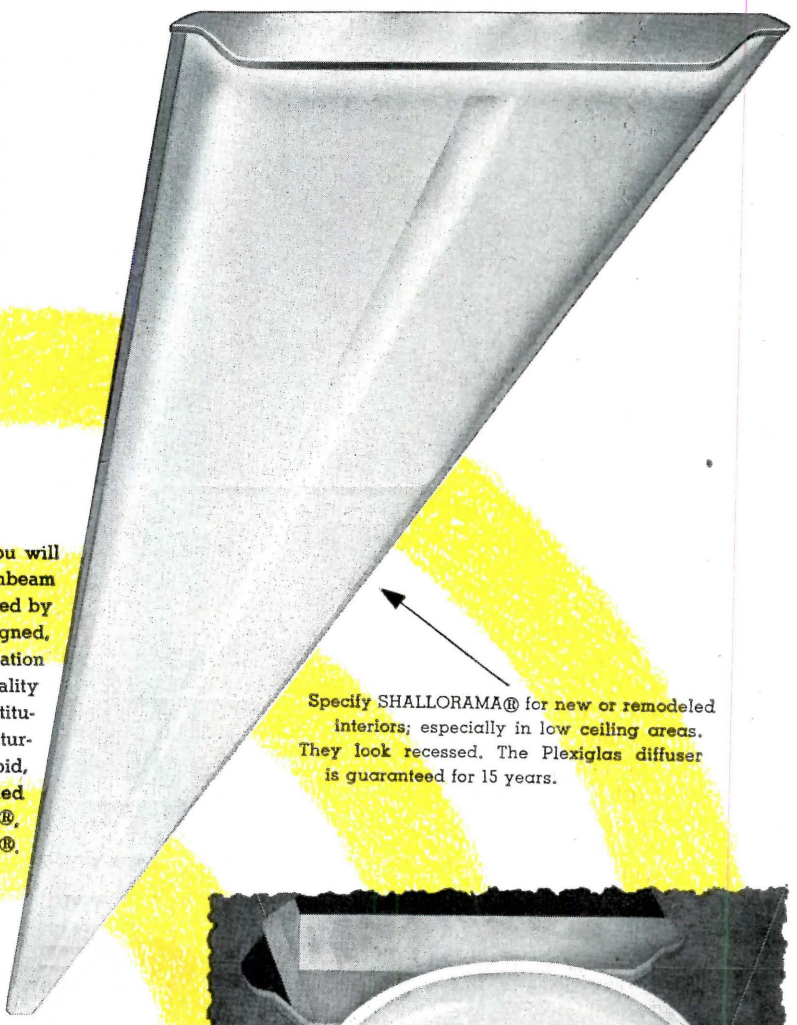

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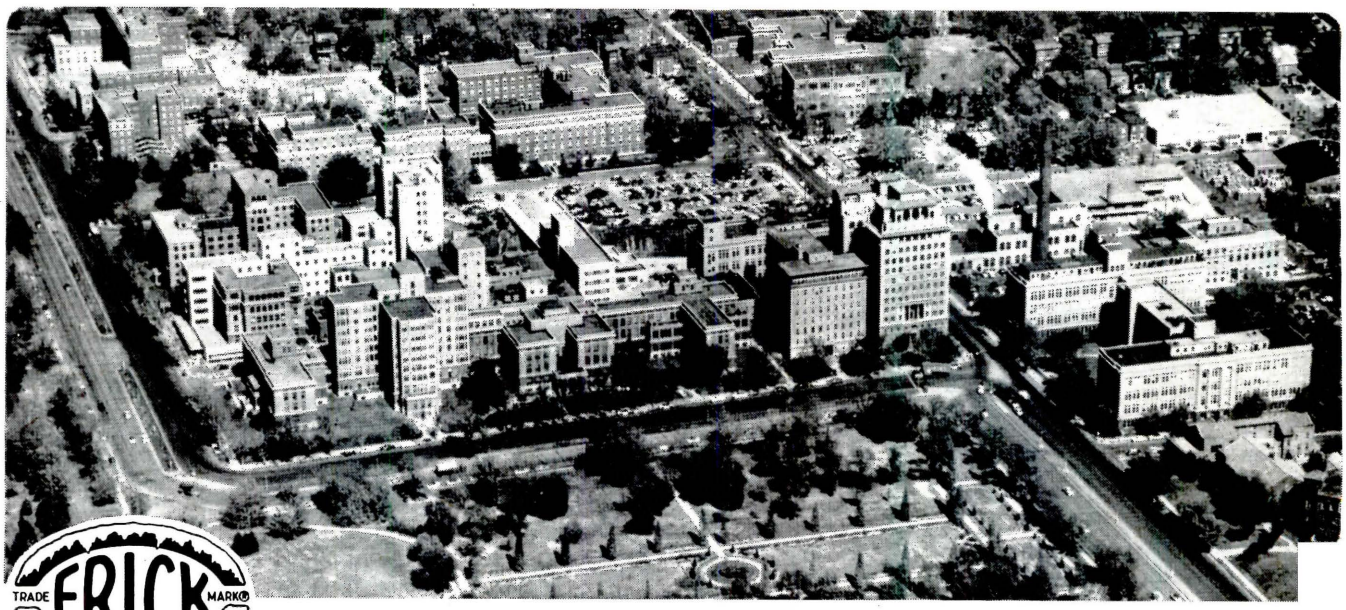

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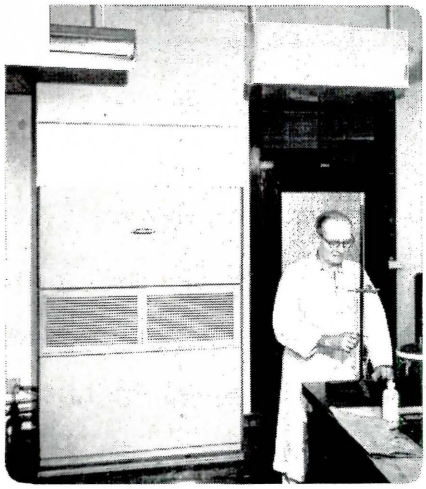

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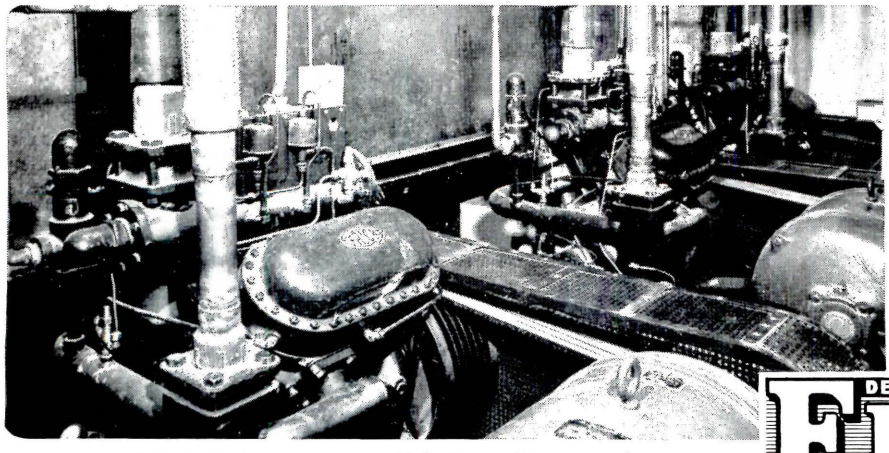

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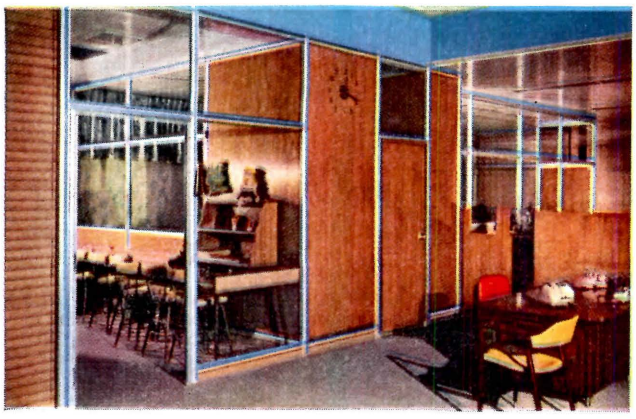

INTERIOR: Lincoln Federal Savings & Loan office, Berwyn, Ill.
ARCHITECT: Frank Velat, Berwyn, Ill.
PARTITIONS: The Mills Company, Cleveland, Ohio

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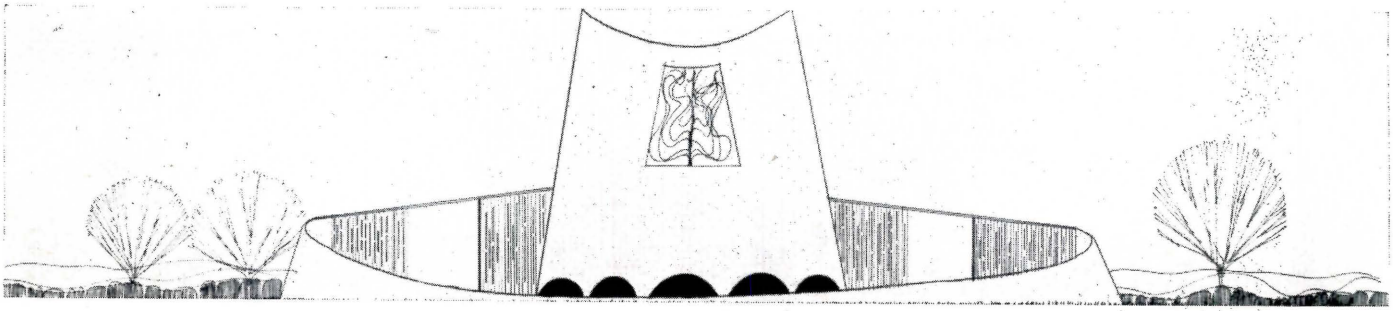

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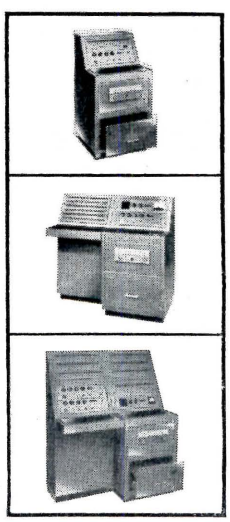

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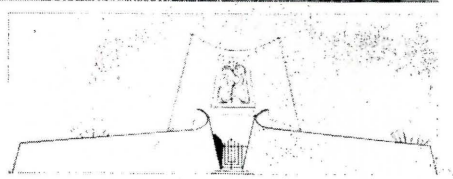
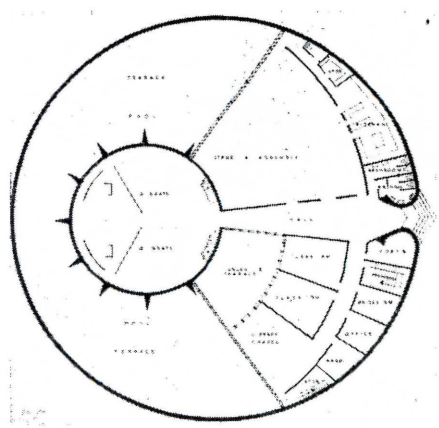


Beth-El Synagogue Designed As "Oasis" of Tradition

To be built at an estimated cost of about $90,000, this contemporary concrete structure for Beth-El Synagogue, Oakville, Ont., represents its architects' effort to "return to the simplicity of the original eastern temples, which stood like oases in the community, protected from secular intrusion by a high wall." A. Bruce Etherington and Associates are the architects.

The building will be one story, with a balcony in the sanctuary. It will include facilities for religious education and social functions; and the plan will permit carrying on several functions simultaneously without interference. Total area is about 8000 sq ft. Relationship between the interior and the surrounding walled garden is an important aspect of the design; sliding doors will give access from interior to garden.

Walls are reinforced concrete and concrete block. Roof is built-up felt and gravel, with plastic dome over the sanctuary. Heating is zoned forced warm air.



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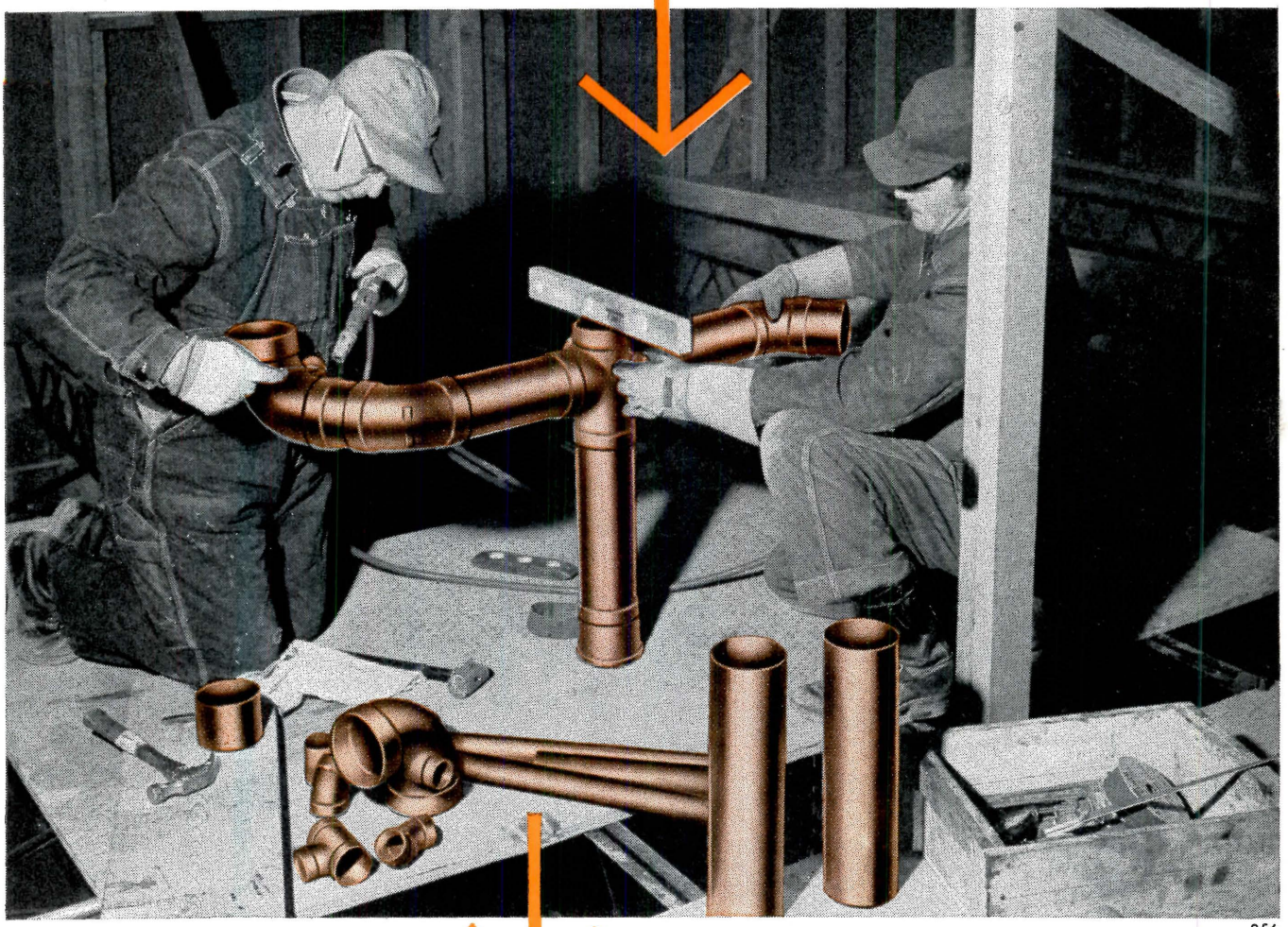

256

The plumbers here are preparing a Streamline DWV prefabricated assembly for a multiple bath sanitary drainage system. The strong, rigid assembly will be placed into position and completed with a very little additional work.

Because of the ease of this prefabrication type of installation, contractors report DWV copper tube and fittings can be installed in half the time required with caulked or threaded piping materials. And because it cuts installation costs, Streamline DWV copper tube and fittings naturally lower building costs. Streamline DWV copper tube and fittings also improve the quality of any home or building by providing a lifetime of corrosion and rust resistant, leak-proof sanitary drainage that never clogs.

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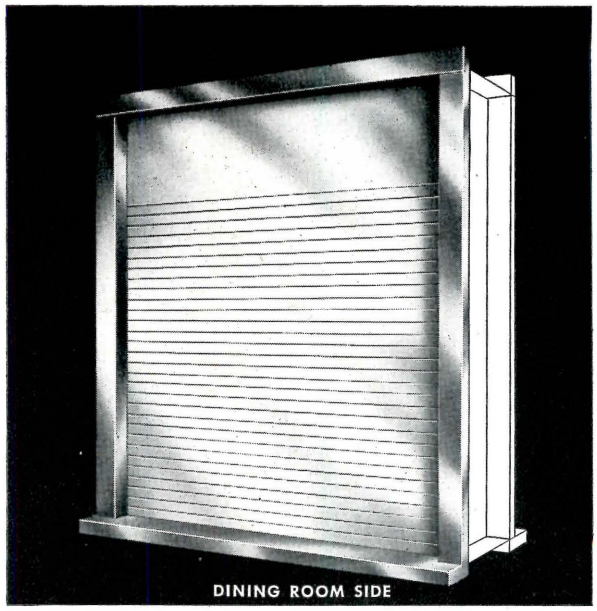

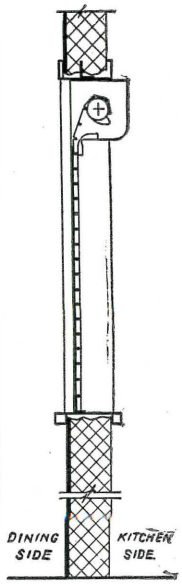

PEELLE ROLLING ALUMINUM PASS WINDOW UNIT

Combined in the above completely assembled unit are a stainless steel frame, guides and a shutter of extruded aluminum flat-slats which rolls compactly into the head.

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These desirable features account for the wide-spread use of Peelle Pass Windows in so many carefully planned school and institutional dining rooms and cafeterias. The three basic window designs shown at the right, allow great flexibility of choice in planning service access between kitchen and dining room.

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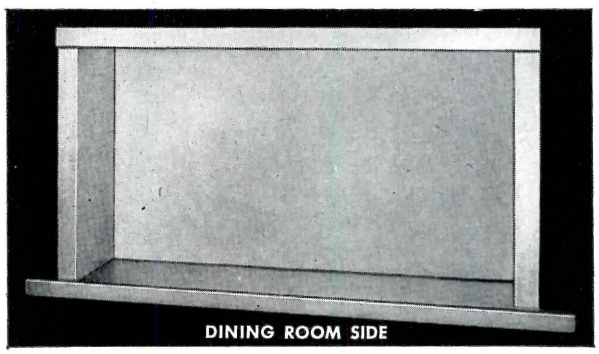
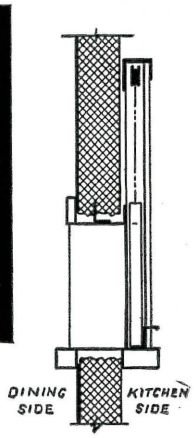
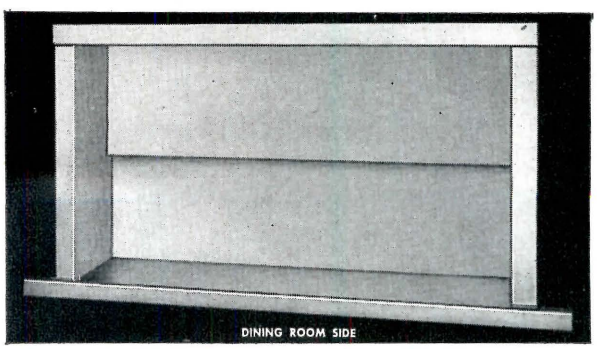
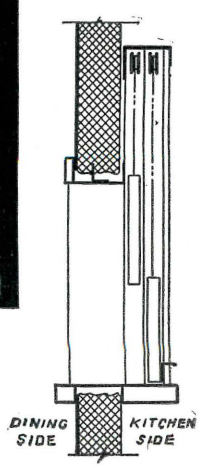




PEELLE ORIGINAL PASS WINDOW UNIT

The above completely assembled unit consists of a hollow metal door with steel guides and frame, designed for quick, economical installation. Special extended sills furnished when specified.





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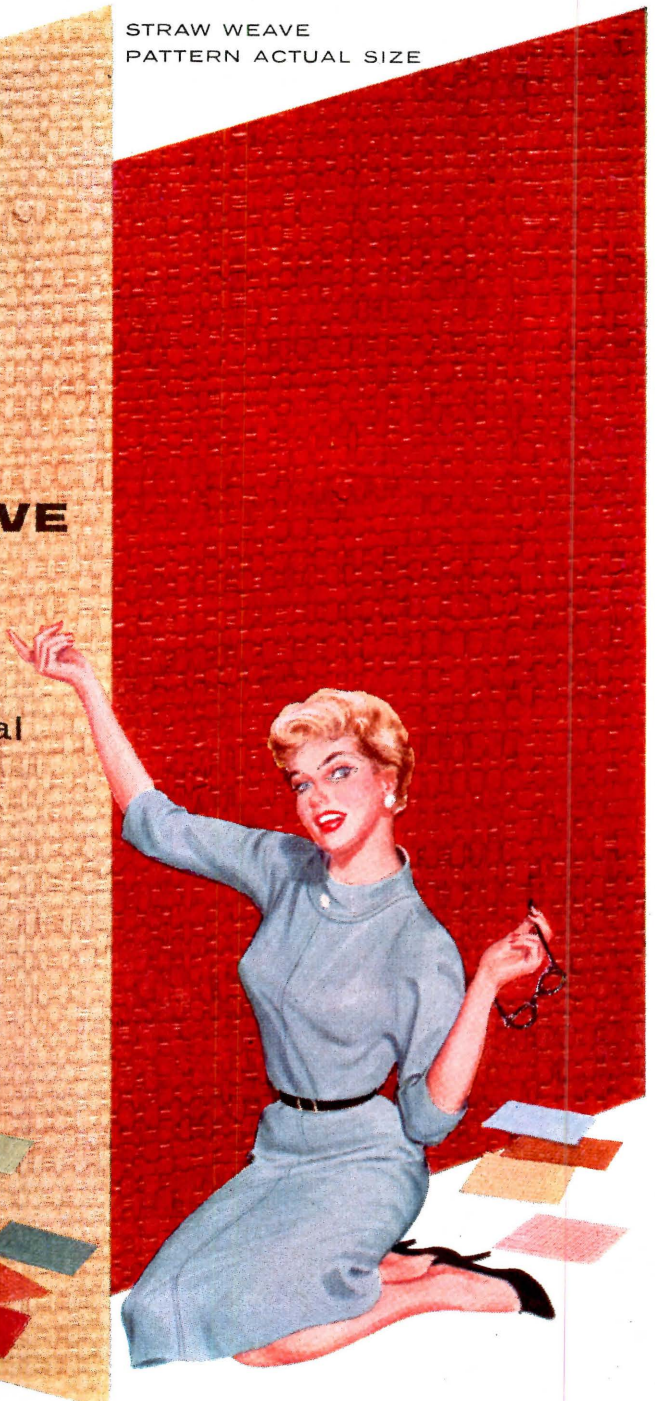

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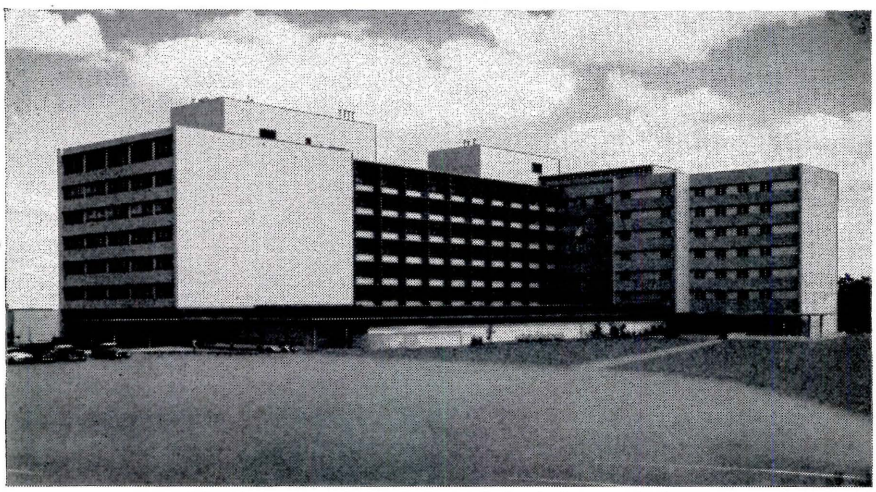
Edmonton's Milner Building Is Nearing Completion

A $4 million office building for Northwestern Utilities Ltd. and Canadian Utilities Ltd. (photo of rendering at right) is nearing completion in Edmonton. Architects are Rule, Wynn and Rule; consulting engineers, Angus, Butler and Associates Ltd. and Allsop and Simpson Ltd.; general contractor, Christensen and Macdonald Ltd.

The building will have a 12-story tower 85 ft wide and 163 ft long and a two-story annex adjoining the tower on the north. On two sides the ground floor of the annex is set back 10 ft from the building lines; the resulting overhang of the second story provides protection for sidewalks along the façades and a driveway along the north face leading to a drive-in wicket. Services are grouped in a utility core in the tower; a two-story penthouse will house mechanical and air conditioning equipment.

Structure is steel, exteriors of masonry curtain wall construction.



The University of Mississippi Medical Center, Jackson

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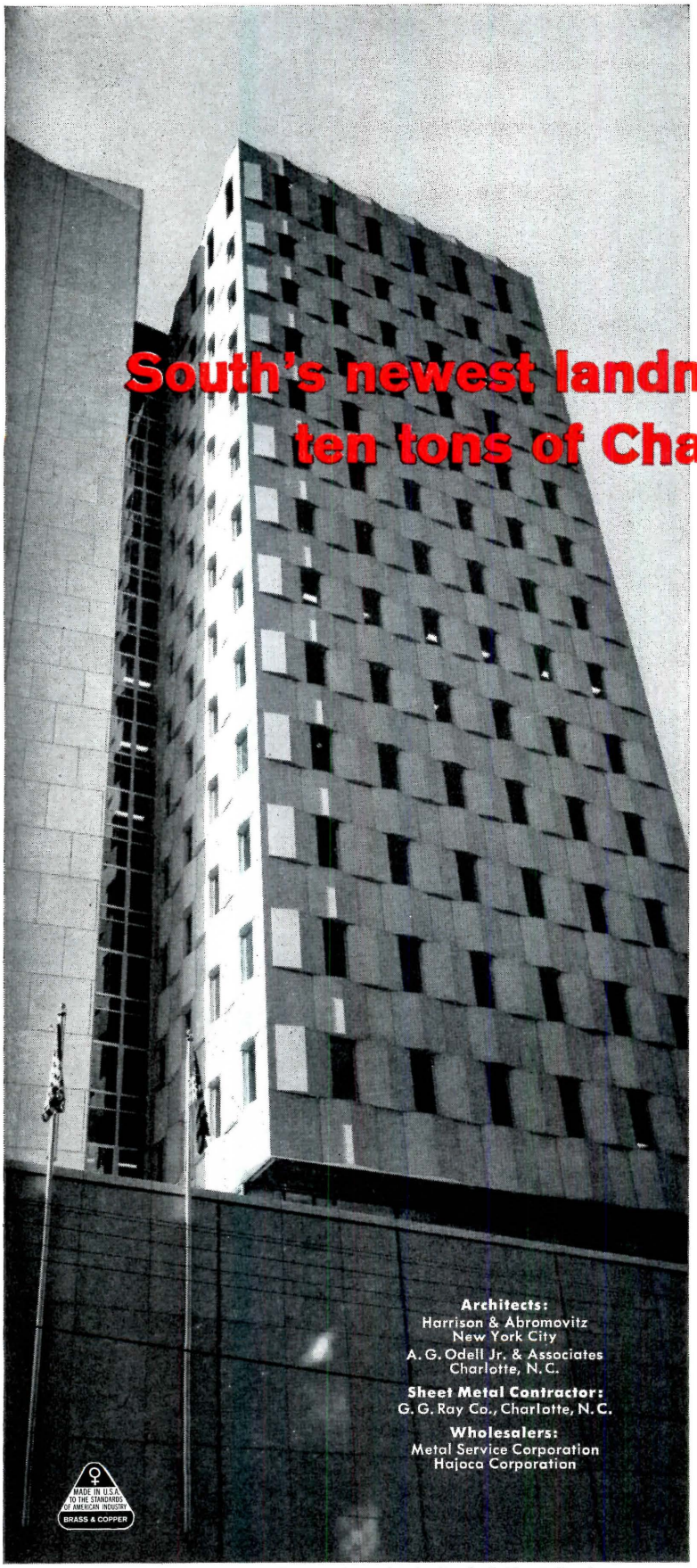
Three Units Comprise Building For Sisters of Charity

The "General Home" of the Sisters of Charity in Giffard, P. Q. (photos below), provides a 250-bed hospital in one wing, living quarters for 200 to 250 resident or visiting nuns in a parallel "community wing"; and in a central connecting link all the general services necessary for the whole institution, including a chapel which can accommodate 1000 persons. Architects are Robert Blatter and G.-Fernand Caron; associate architect for the chapel, B. Gagnon; mechanical engineers, Leblanc, Montpetit and Dorval.

The hospital wing reserves the main floor for general medicine, four surgery rooms, X-ray and therapeutic rooms. There are five floors above, each containing 50 single rooms, solarium, day room and nursing services.

Construction is concrete framing, with concrete slab floors on steel joists. Exteriors are granite and limestone; interior walls are painted plaster.



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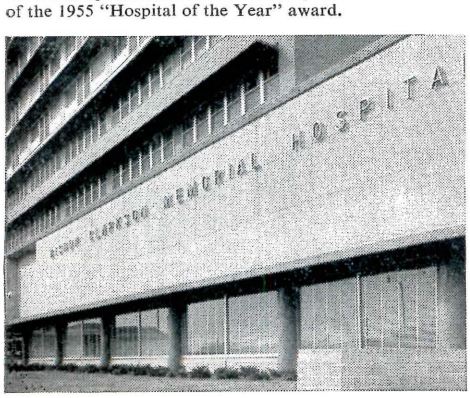
"How to Select and Specify Cold Storage Doors"—a helpful booklet you should have—answers your questions on the many factors involved in specifying cold storage doors. For your copy write to Jamison Cold Storage Door Co., Hagerstown, Md.

*The Bishop Clarkson Memorial Hospital was the winner of the 1955 "Hospital of the Year" award.



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depicts Greenwich Village activities in the arts and crafts for students. Huge polychrome terra cotta panel 11′ 2″ x 17′ 6″ was developed in Federal Seaboard's studio at the Perth Amboy, N. J. plant from quarter scale cartoon by artist John Murray Barton. Michael Radoslovich is the architect, Grayco Builders, the constructors of this Public School No. 41, West 11th Street, New York City. Federal Seaboard's colorful literature illustrating the versatility of Ceramic Veneer is available upon request. Also without charge, we will gladly furnish construction detail, data, color samples, and any other information involving Ceramic Veneer, the modern architectural terra cotta.

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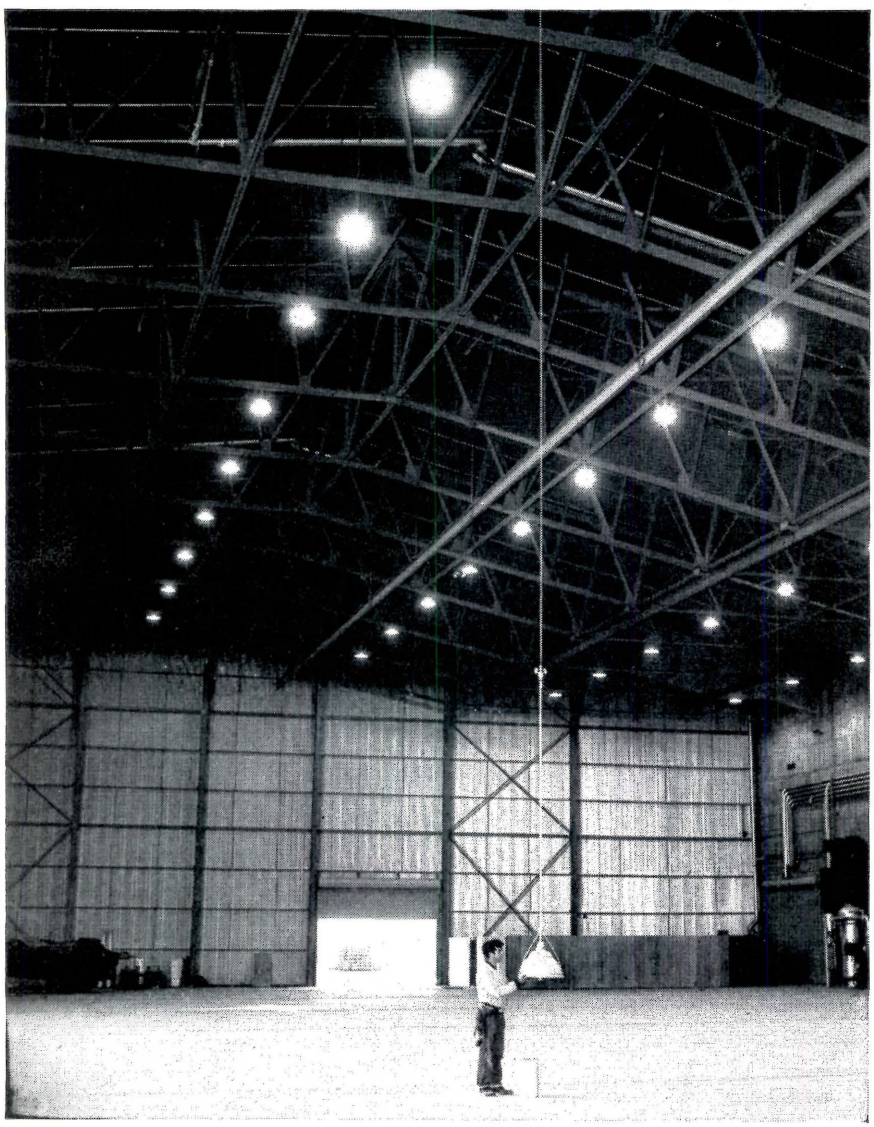

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T-E

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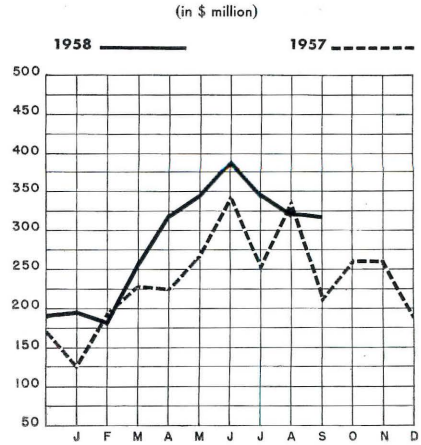
News from Canada

New Notes

GEORGE N. WILLIAMS, Ontario's chief architect and deputy minister of public works, was honored at a dinner party given by the Premier and other members of the Ontario Cabinet on the occasion of his retirement. Now 67, Mr. Williams has spent 44 years in the provincial service. . . . The P.Q.A.A. ARCHITECTURAL EXHIBITION at the Museum of Fine Arts, Montreal, was officially opened by Mayor Sarto Fournier on October 17. . . . Robert Cripps, of the architectural firm of Weir, Cripps and Associates, has been elected chairman of the newly formed TORONTO CHAPTER OF THE SPECIFICATION WRITERS ASSOCIATION OF CANADA. D. J. Harrison and Ivan Lavender, both specification writers, are vice chairman and secretary-treasurer, respectively. . . . About 100 students enrolled this fall in the School of Architecture of the UNIVERSITY OF BRITISH COLUMBIA, establishing a new record. . . . H. Arthur Henderson has been appointed chief architect of the ALBERTA DEPARTMENT OF PUBLIC WORKS. He succeeds Ronald Clarke, who resigned to enter private practice. . . . TORONTO CHAPTER, O.A.A., heard Matthew B. M. Lawson, commissioner of planning for Toronto, at its September 17 meeting. In dealing with his subject, "The Redevelopment of the Civic Square Area," Mr. Lawson made particular reference to the south side of Queen Street, which faces the new city hall but was not covered by the recent competition. . . . December 8 and 9 are the dates selected for the next CANADIAN SOIL MECHANICS CONFERENCE. It will be held at the University of Saskatchewan, Saskatoon.

Contracts Awarded: Comparative Figures

(in $ million)



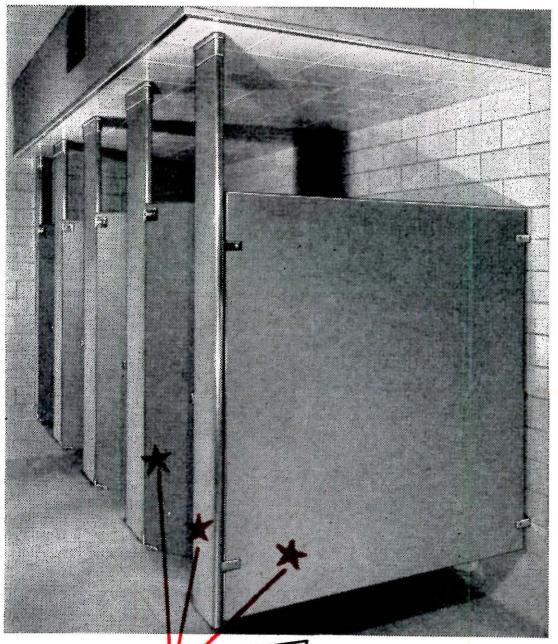
*Compiled by the Editor and staff of *The Building Reporter*, from information collected by Maclean Building Reports

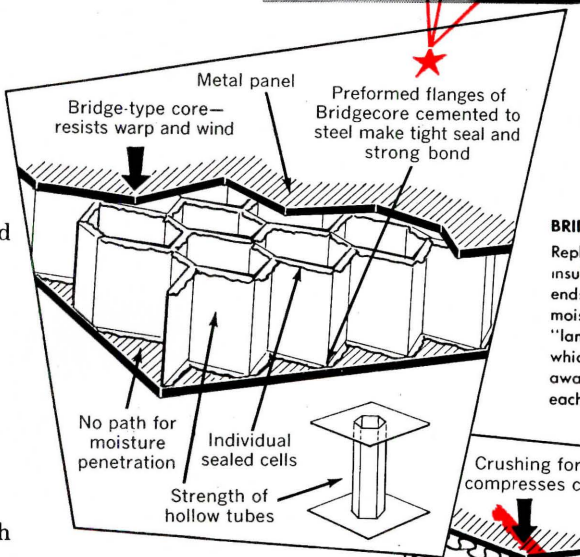
Sanymetal®

again leads engineering advance with *new*

BRIDGECORE

for maximum compression resistance, greater panel strength, longer life

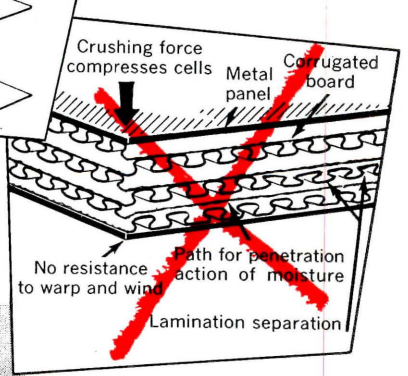




New BRIDGECORE fiber insulation is composed of hexagonal tubular cells at right angles to, and cemented to, face plates of panels, doors, pilasters.

BRIDGECORE WAY

Replacing corrugated board insulation, BRIDGECORE ends structural weakness, moisture penetration, and "lamination separation" in which corrugations pull away from metal or from each other.



OLD WAY *(Right:)*

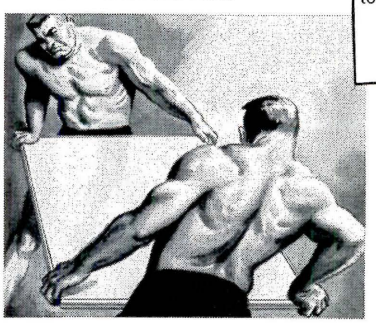
Advantages from BRIDGECORE include greater panel strength, less weight (always true of tubular design), and finished surfaces free from buckle and wave.

Using the structural principle employed in modern aircraft wing design, Sanymetal now builds toilet compartment doors, panels, and pilasters *stronger*, and *lighter*, with new Sanymetal BRIDGECORE.

BRIDGECORE provides thousands of hexagonal, tubular fiber cells bridging the space between the metal face plates. Preformed flanges on the edges of each BRIDGECORE cell cemented under pressure directly to the steel, producing an exclusive *compression bond.* Thus the cells rigidly brace the panel sheets like trusses. The cementing permanently seals each individual cell. There is no chance of moisture penetration. This design completely eliminates "lamination separation" which occurs with conventional corrugated board. With BRIDGECORE the panels are stiffer, stronger, and resistant to warp and wind.

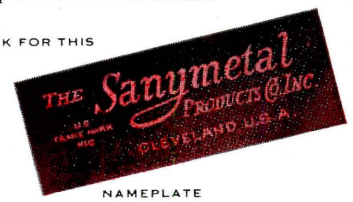
This new engineering improvement is one of the many features in Sanymetal construction which make compartments that have flat surfaces free of buckle and wave. To get these advantages specify *Sanymetal.*

Write for new bulletin on Sanymetal "Bridgecore", and for Sanymetal Catalog 95, which gives other important details of quality toilet compartment construction.



(Left:) BRIDGECORE adds even more strength to Sanymetal construction, already noted for rigidity unaffected by abuse which would cause ordinary panels to warp or wind.

LOOK FOR THIS



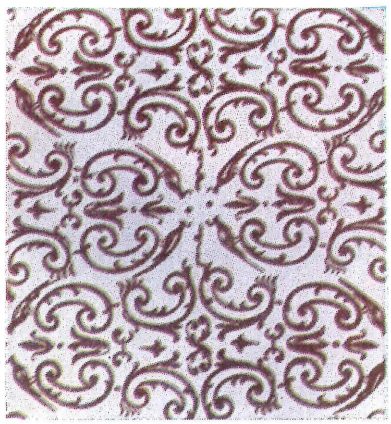
NAMEPLATE WHICH IDENTIFIES EVERY SANYMETAL INSTALLATION

Sanymetal®
PRODUCTS COMPANY, INC.
1689 Urbana Road, Cleveland 12, Ohio

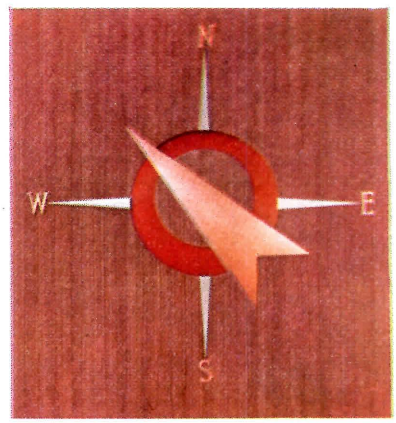
New dimensions

The 3 Techniques of Formica® Decorative Art

ORIGINAL PAINTINGS



ARTLAY



INLAY

in FORMICA® *laminated plastic*

Decorative Art

a custom architectural service of murals, designs and art treatments sealed in durable Formica.

Never before has one proven material offered so many and varied opportunities for you to introduce fresh new ways of interpreting the character and personality of a public, institutional or commercial building. Versatile, flexible, adaptable — Formica Decorative Art is a fusion of Beauty Bonded Formica and artistic imagination — your imagination. The Formica Corporation places at your disposal its vast resources of architectural engineering and production to execute your own designs and color combinations in the permanent and maintenance-free medium of decorative laminate.

Each Decorative Art project is a custom assignment, and requires close cooperation with the customer. The cost of each project is determined as the details are worked out, and is dependent upon the complexity and types of designs and the number of colors used. The three techniques employed are: Original Paintings, Artlay, Inlay. Used individually or in combination with each other, they make possible the creation of truly unique and beautiful designs.

ORIGINAL PAINTINGS

Original Paintings are used in murals or as smaller graphic "key stones" in combination with other techniques, in one-of-a-kind installations. Your artist can create the design and send the finished art work to Cincinnati where Formica specialists will duplicate it using special Formica inks and facilities. Or the artist can come to Cincinnati and work with our Decorative Art Department.

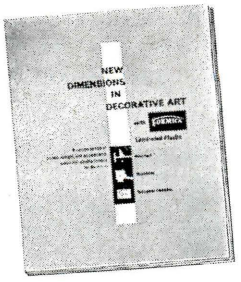
When executed, the finished art is sealed right in the Formica laminated plastic sheet, safe from dirt, fading, or destructive effect of atmospheric acids.

ARTLAY

Formica executed Artlay designs can be as simple or complicated as your imagination dictates. Very nearly any pattern, commercial trademark or new repetitive design can be treated and custom produced in Formica by a printing press.

INLAY

To accomplish special effects in this third "custom" process, decorative sheets of Formica treated paper — pattern or solid color — or plain or anodized aluminum parts are cut to desired shapes and laid into the laminate prior to the final pressing operation.



GET THE FACTS

Write today for the FREE booklet "New Dimensions in Decorative Art" (Form No. 863). Contains photographs of completed Formica Decorative Art treatments. Offers detailed information about the execution and cost of this new art form. There is a Formica district manager near you with a full color slide film on Formica Decorative Art. Showings can be arranged for groups of any size. Formica Corporation, 4603 Spring Grove Ave., Cincinnati 32, Ohio.

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Fiscal 1959 Construction Spending Tops Earlier U. S. Estimates

The Budget Bureau found at mid-year that it had to revise upward rather sharply its January expenditure estimates for fiscal 1959, the period beginning July 1. An analysis of the new figures, released in September, indicated that construction programs, both direct and indirect, had a lot to do with the bulge.

Altogether, housing, in all its various forms, caused the fiscal experts to add a round $1 billion to their earlier estimates. Military construction, added to direct military research and development, caused the anticipated 1959 outlays to jump by $365 million to $6.4 billion. Natural resources as a category accounted for an increase of $199 million over the January budget.

Receipts in the highway fund were found to be less than earlier expected and expenditures for road purposes were bound to increase during the current fiscal period due to accelerated construction authorized in the Highway Act of 1958. The highway trust fund still will show a balance at the end of fiscal 1959, but Budget has warned that higher gasoline or other taxes will be necessary to keep the fund on the plus side beyond that date.

Increases over the January estimates were noted also for Veterans Administration hospital construction and modernization, for research and construction expenditures for the National Institutes of Health, grants to states for hospital construction under the *Hill-Burton Act* and grants to Federally impacted school districts to help them with their school housing needs.

Preparations Begin for 1961 U. S. Conference on Aging

The special staff on aging of the Health, Education, and Welfare Department began preparations for assisting the states and their local communities in the conduct of local studies and conferences in advance of the White House Conference on the Aging to be held in Washington, D. C., in 1961.

Funds were voted by the 85th Congress to enable HEW to make an immediate start on the preliminary planning. HEW will cooperate with other Federal departments and agencies represented on the Federal Council on the Aging.

The 1961 conference is expected to follow the broad outline of the Conference on Education held in Washington a few years ago.

The architect's interest in the design of housing for the elderly, one of the subjects to be covered in the forthcoming meeting, was emphasized at the National Housing Center conference on "Housing our Senior Citizens" held last May. At that time leading home builders told the conference there was a wide open field for the construction of housing for the elderly. Rental housing for senior citizens has deteriorated severely while sales housing has remained fairly satisfactory, one of the spokesmen said. It was estimated then that there would be an annual market in the United States for 150,000 rental units for older persons.

Businessmen and City Planning: U. S. Chamber Plans Conference

A unique conference where architects, engineers and city planners have an opportunity to discuss with businessmen metropolitan growth problems has been planned by the U. S. Chamber of Commerce for November 24 and 25 in Washington, D. C.

continued on page 372

18,000 sq. ft. 33/32" Edge-Grain Ironbound Floor in Women's Gym, Michigan State U., East Lansing, Mich. Arch.: Ralph R. Calder, Detroit, Gen'l Contr.: Granger Bros., Lansing. Installer: Whitcomb-Bauer Flooring Inc., Detroit.

IRONBOUND* CONTINUOUS STRIP* HARD MAPLE FLOOR

For MSU coeds, physical education is an important part of college training. And the gymnasium floor used by hundreds of students every school day is an important part of the university's physical education facilities.

An edge-grain Ironbound Northern Hard Maple floor was a "must" for this important installation because of its smooth, natural beauty, uniform resiliency and long-run economy.

Ironbound's uniform resiliency, assured by layers of mastic and cork under the flooring, prevents sore ankles and leg muscles. And its exclusive sawtooth steel splines interlock the durable maple strips to keep the floor tight and resistant to wear, long lasting and economical.

For full information on Ironbound for schools, industrial plants and public buildings, write to Robbins Flooring Company, Reed City, Michigan, Attention: Dept. AR-1058

ROBBINS FLOORING COMPANY
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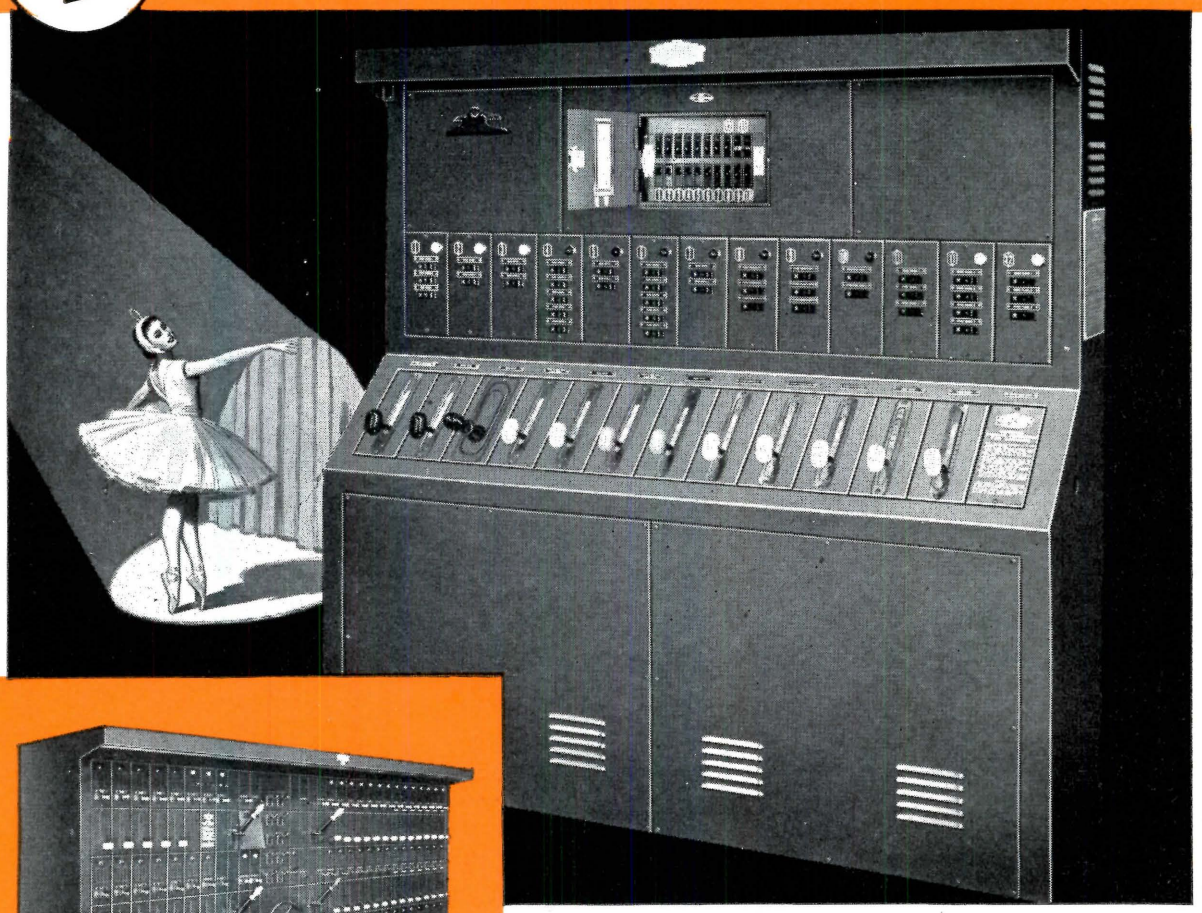
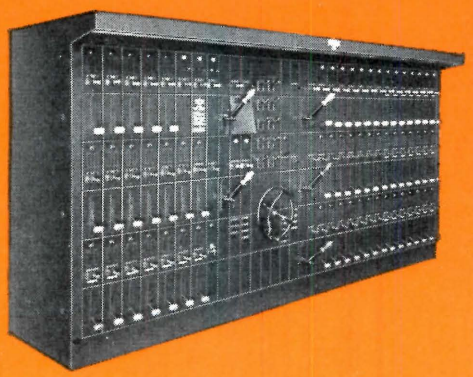
Manufacturers of Ironbound* Continuous Strip* Maple Flooring, PermaCushion* Resilient Floors and other hardwood flooring

Unlimited fluency of light and color....

FA STAGE LIGHTING CONTROLS





TYPES OF CONTROL SYSTEMS

- Manual switching and dimming
- Modified remote switching and manual dimming
- Full remote switching and manual dimming
- Multiple pre-set switching and manual dimming
- Remote switching and remote dimming

Dimmer Types Available

- Auto transformer
- Electronic tube
- Magnetic amplifier

Ask your well qualified FA Representative for his help on all technical problems involving stage lighting control

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No matter what the audience mood or emotional response must be, this completely versatile equipment meets every demand instantly, fully with the entire dramatic spectrum.

Whether for college or school, theatre or auditorium, Frank Adam Stage Lighting Control Systems are "tailor-made" to fulfill the simplest or most difficult requirement for any size installation. More than a half-century of experience, supplemented by the most skilled and ingenious engineering in the industry, is at your service. *Write for illustrated brochure.*

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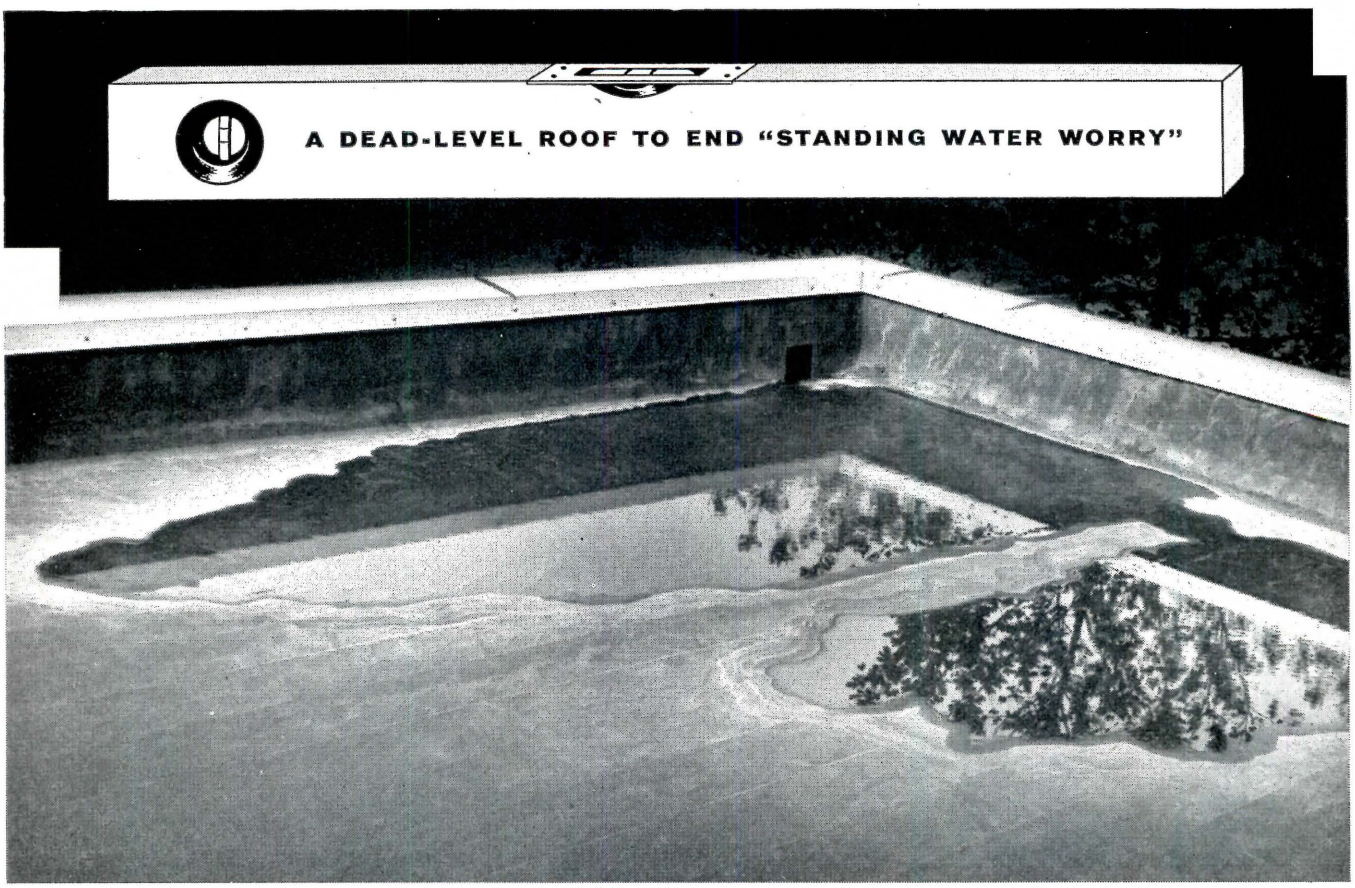


Johns-Manville *Aquadam* Built-Up Roofs

pay off in longer roof life and maximum protection

MANY ROOFS are built up with bitumens or cementing agents which deteriorate under standing water. Now, however, you can put an end to "standing water worry" by specifying Aquadam Roofs. Even if pools of water stand for weeks, these roofs retain their outstanding physical characteristics.

Aquadam Built-Up Roofs take their name from a superior cementing agent developed by Johns-Manville. This unique bitumen, Aquadam, possesses the best features of coal tar pitch and of asphalt without their weaknesses. It is especially produced for modern low incline roofs of dead-level to ½" per ft.

Under water immersion, Johns-Manville Aquadam does not swell, hummock, discolor nor does it turn cheesy. It continues adhesive and cohesive. Its outstanding physical features are not harmed by pools of standing water.

Besides ending "standing water worry," Aquadam offers these other advantages: excellent self-healing properties; exceptional ability to expand and contract with normal deck movement; proven weather resistance under wide-ranging climatic conditions and "superior bond" because Aquadam spreads, wets and saturates the roofing felts uniformly.

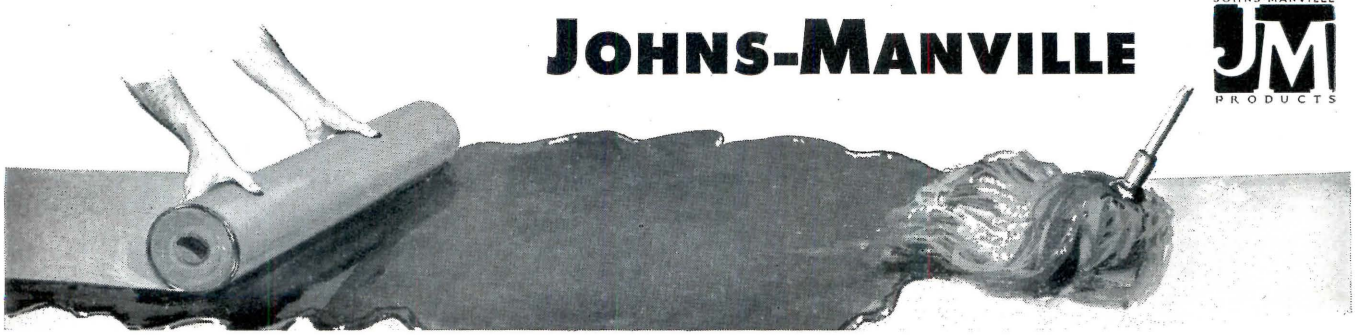
The roof pictured above is a smooth-surface Aquadam Asbestos Built-Up Roof, a dead-level roof that eliminates tons of dead weight, since no gravel is needed. The asbestos fibers in the roofing felts protect against the drying-out action of the sun thus preventing oxidation of the impregnated bitumen within the felts and the layers of Aquadam between the felts.

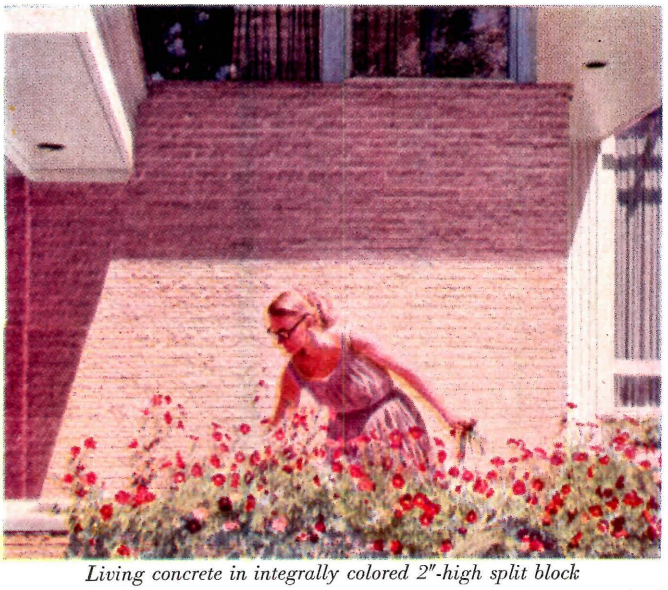
However, Aquadam Gravel or Slag Built-Up Roofs are available when the building design calls for a light or colored roof effect.

For a copy of booklet "J-M Aquadam Built-Up Roofs" write to: Johns-Manville, Box 158, New York 16, N. Y. In Canada, write Port Credit, Ontario.

JOHNS-MANVILLE

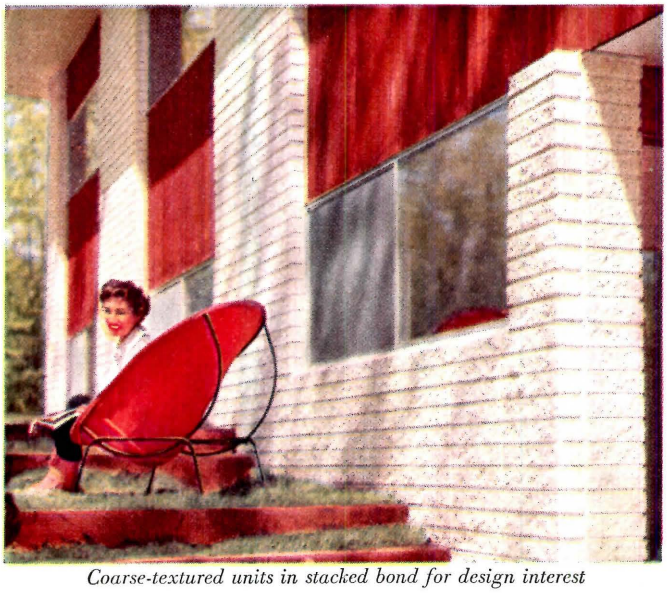
JOHNS-MANVILLE JM PRODUCTS



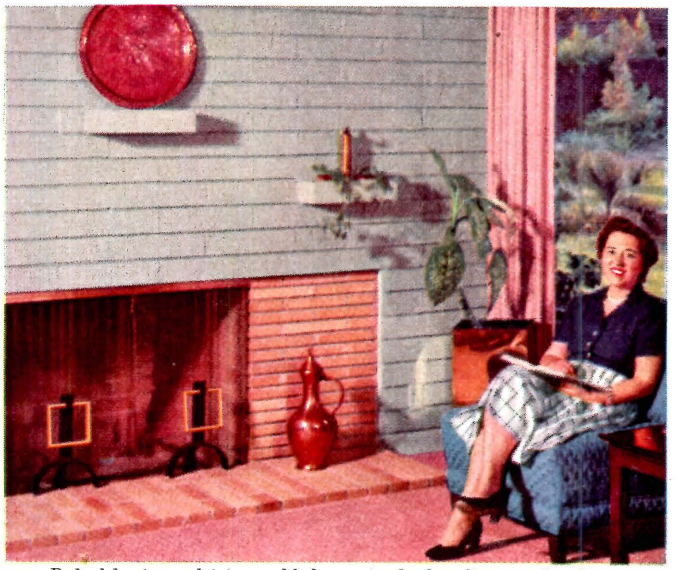


Living concrete in integrally colored 2"-high split block

Painted 4"-high units. Another of concrete masonry's many new forms



Coarse-textured units in stacked bond for design interest



Raked horizontal joints add dramatic shadow lines to fireplace

Masonry patterns that bring new charm for today's homes...

NEW-TYPE **living concrete**

A whole new design opportunity is opened by today's modern forms of concrete masonry.

Here are new shapes, textures and colors that give fresh interest and charm to home exteriors—interiors, too. Warm, friendly looking, created to the mood of modern living . . . this is new-type *living concrete!*

The growing popularity of *living concrete* can be seen from California to New York, in outstanding homes of every architectural style. It wins a warm and lasting welcome in any neighborhood.

Living concrete can give greater breadth to your home designing. Write for free booklet "*Concrete Masonry Homes for Better Living*," distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION Dept. 9-8, 33 West Grand Ave., Chicago 10, Illinois

A national organization to improve and extend the uses of concrete

Construction Cost Indexes

Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc. Inc.

Labor and Materials: U.S. average 1926-1929=100

NEW YORK

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.6	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	274.9	271.8
1952	278.2	274.8	271.9	265.2	262.2
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
1956	310.8	302.2	320.1	328.6	324.5
1957	318.5	308.3	333.1	345.2	339.8
June 1958	323.7	312.3	242.9	356.9	349.8
July 1958	333.1	318.9	356.8	375.5	365.8
August 1958	335.1	320.7	357.7	377.4	366.7
	% increase over 1939				
August 1958	171.3	162.0	173.7	182.9	181.9

ATLANTA

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.0	224.6	221.3	221.8	223.0
1954	219.6	219.1	233.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
1956	237.2	235.7	241.7	244.4	246.4
1957	241.2	239.0	248.7	252.1	254.7
June 1958	241.0	237.3	251.8	257.7	258.5
July 1958	245.1	240.6	257.5	264.5	263.7
August 1958	245.3	240.8	257.8	264.7	263.9
	% increase over 1939				
August 1958	184.2	189.8	171.1	171.8	178.7

ST. LOUIS

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.0	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
1956	288.7	280.3	287.9	299.2	293.3
1957	292.0	283.4	295.2	307.1	302.9
June 1958	297.6	288.3	306.2	320.0	315.0
July 1958	297.6	288.3	306.2	320.0	315.0
August 1958	298.3	289.2	306.3	320.1	315.2
	% increase over 1939				
August 1958	170.7	170.3	158.0	167.2	164.9

SAN FRANCISCO

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1930	90.8	86.8	100.6	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.0	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.0	275.0	284.4	279.6
1956	279.0	270.0	288.9	298.6	295.8
1957	286.3	274.4	302.9	315.2	310.7
June 1958	290.3	275.0	312.9	329.1	322.5
July 1958	290.7	275.6	313.2	329.1	322.6
August 1958	291.4	276.5	313.3	329.2	322.8
	% increase over 1939				
August 1958	175.9	178.4	166.9	170.0	177.1

Cost comparisons, as percentage differences, for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(*both indexes must be for the same* type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

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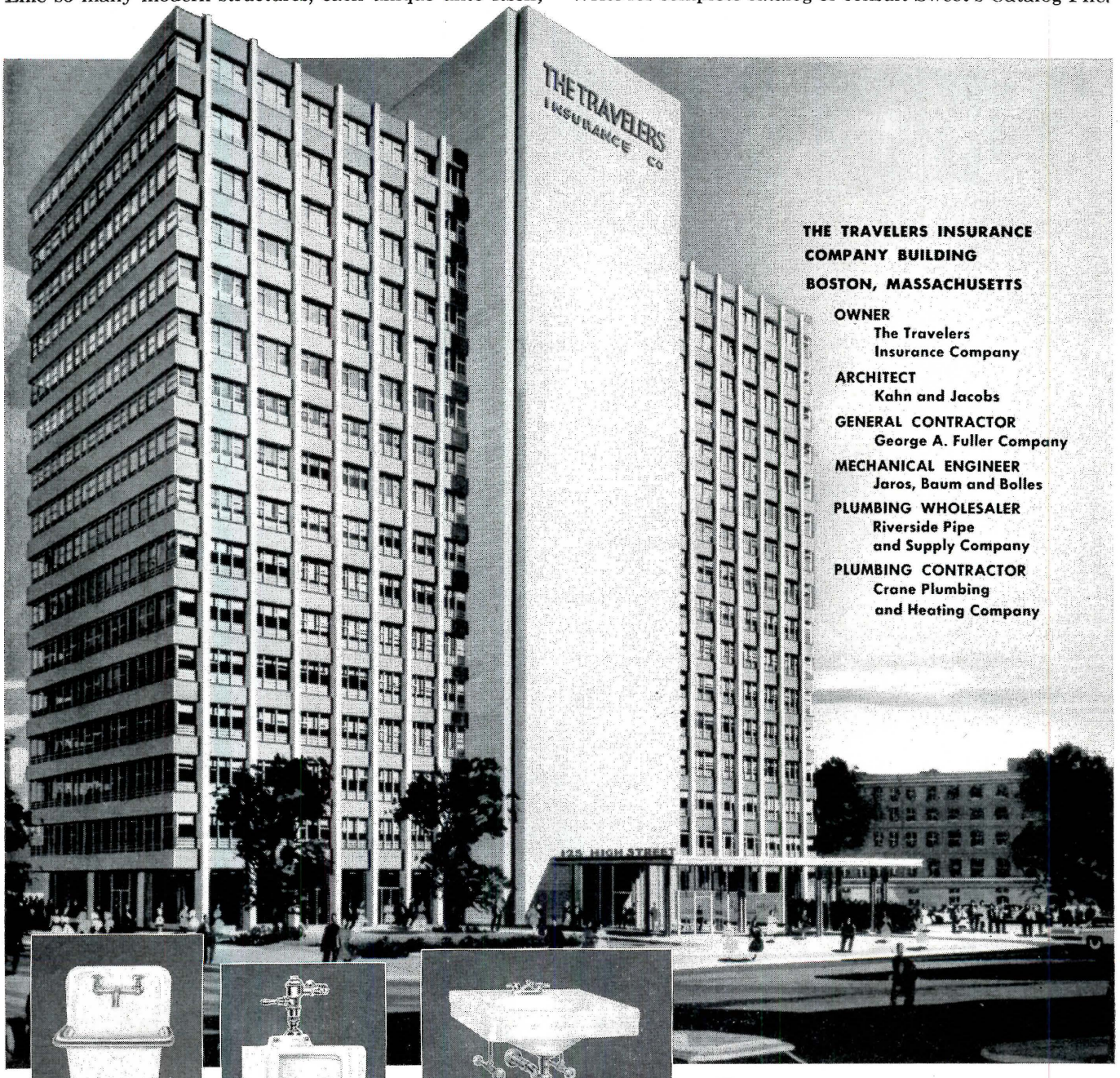

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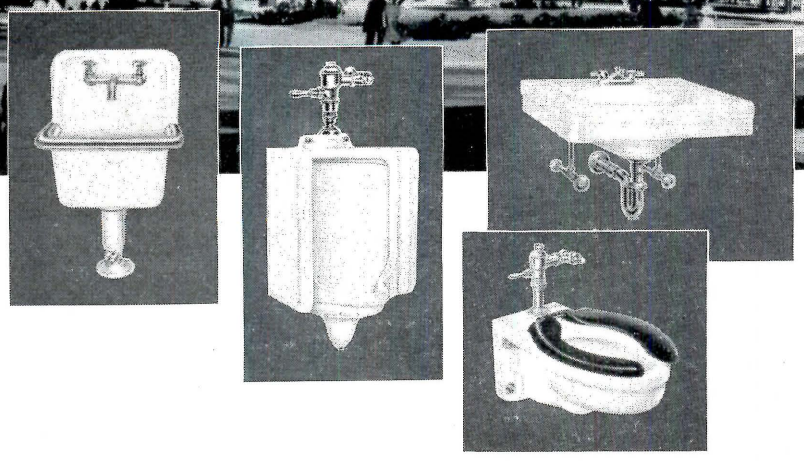

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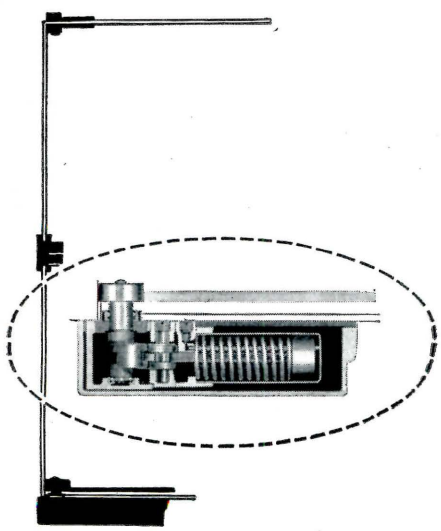

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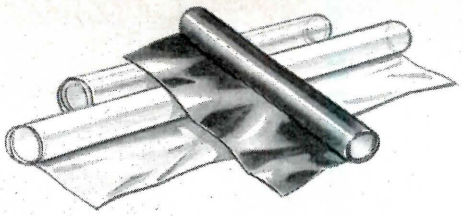

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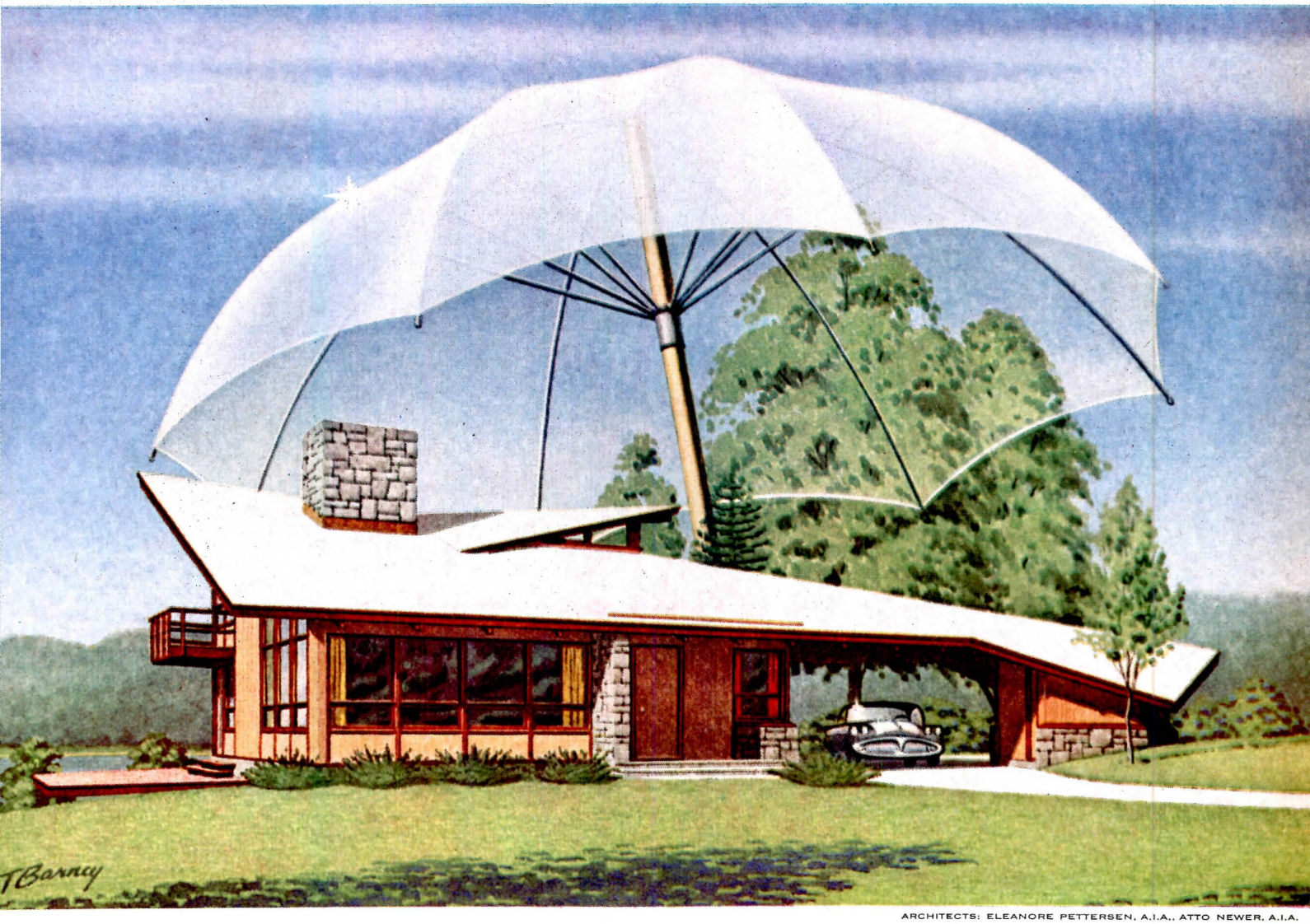

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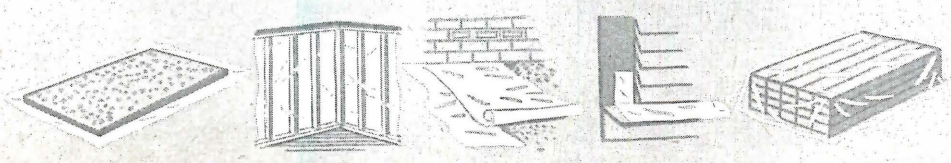

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Architect-Planner Cooperation Furthered By New Report

PLANNING AND COMMUNITY APPEARANCE. *Edited by Henry Fagin and Robert C. Weinberg. Regional Plan Association, Inc., 205 E. 42nd St., New York 17. 159 pp., illus. $3.50 ($2.50 each for 10 or more and for members of R.P.A. and N. Y. chapters of A.I.A. and A.I.P.).*

BY EDMUND N. BACON
Executive Director, Philadelphia City Planning Commission

Any architect or city planner who fails to read *Planning and Community Appearance* does himself a disservice. Society as a whole will benefit from the fact that its authors, Henry Fagin and Robert C. Weinberg, assisted by the Joint Committee on Design Control of the New York Chapter, American Institute of Architects, and the New York Regional Chapter, American Institute of Planners, faced up squarely to a problem that is central to American life. The greatest contribution of the book is the clear identification of the nature of the problem. The description of community appearance in terms of geometric patterns, linear features, landmarks, lookout places, and areas of distinctive character is a great advance over the kind of thinking on this subject up to now.

The identification, of itself, should be a real stimulus to practitioners of the architectural and planning professions. Tradition dictates, however, that the authors of books of this character not only identify the problem but also suggest solutions. It is here that one feels a sense of strain.

In the best of all possible worlds, a "Community Design Plan" has no more right to a separate existence than would a design plan have in a building distinct and separate from its circulation plan, functional plan,

continued on page 400

Hotels Around the World

HOTELBAUTEN. *By Alexander Koch. Verlagsanstalt Alexander Koch, Stuttgart. Available from Museum Books, Inc., 48 E. 43rd St., New York 17. 320 pp., illus. $15.*

BY WILLIAM B. TABLER, A.I.A.

In this great age of travel *Hotelbauten* (with text in English, French, and German) is the first real book on hotels, the product of travel. It graphically portrays the international construction picture, for each hotel is the showcase, each city and country the host, judged accordingly by travelers. It is timely, since we are faced with the greatest hotel expansion program this world will ever see—in this "jet age" of travel, new hotels will replace the luxury ocean liners, the floating hotels of the past.

It is a valuable handbook for hotelmen and architects, for it contains an outstanding collection of photographs—both interior and exterior—and includes many that have not previously been published. There is excellent coverage of interiors; emphasis is placed on bedroom design (furniture layouts and sketches are shown). Complete plans of many of the hotels are included to enable those interested to study the organization and solutions to the complex hotel planning problem. This is very helpful in the hotel field, where there has been little planning research and there is so much to be done. It was also a pleasure to see motels covered, but with their rapid development in the United States, many more examples could have been included.

As a textbook it could have been even more valuable if the text were less descriptive and more critical. Most of the plans illustrate how the hotels were planned, rather than how they were rebuilt when operated. Cost data would also have been very

continued on page 64

A highway interchange near Belton, Texas: "The new highways exemplify the linear features that will be prominent in the geometry of future urban patterns"

Reinforced Concrete Examined

REINFORCED CONCRETE IN ARCHITECTURE. *By Aly Ahmed Raafat. Foreword by Mario Salvadori. Reinhold Publishing Corp., 430 Park Ave., New York 22. 239 pp., illus. $15.*

BY SEYMOUR HOWARD

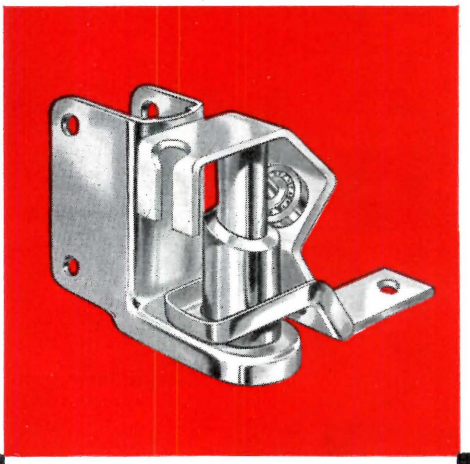
Collected here between the covers of this one ambitious book are photographs of many of the important architectural examples of reinforced concrete, particularly those which take advantage of the strength and stiffness inherent in curved surfaces. These are supplemented and explained by the author's numerous lively sketches.

Mr. Raafat (B.Arch., Cairo, 1949; M.A., Michigan, 1953; Ph.D., Columbia, 1957) came to the United States in 1952 on a Fulbright scholarship and spent five years here in study and in working for Ammann and Whitney and for Perkins and Will. He started this book as his doctoral dissertation at Columbia, with the encouragement of Dean Arnaud, Professors Salvadori and Fitch, and others. It is the kind of survey which will help many architects and laymen get an overall picture of the history of reinforced concrete and of the architectural forms which it makes possible. The author is particularly to be congratulated on his historical research, adding to the usual information on the history of concrete such interesting material on early developments as the patent for reinforced concrete granted in 1878 to the American engineer Thaddeus Hyatt.

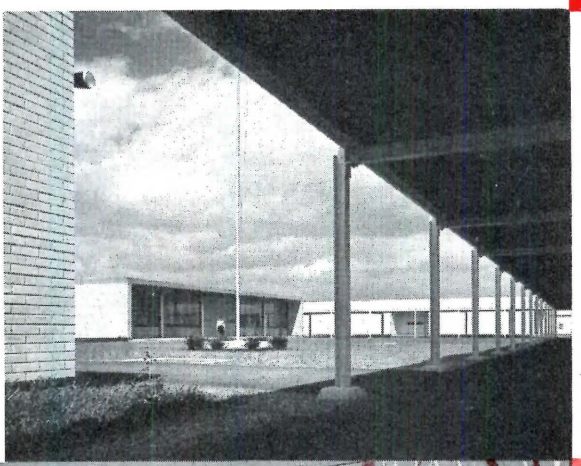
On the whole, however, Mr. Raafat has tried to include too much in his book. While it is desirable to show that reinforced concrete construction has many aspects, it is also necessary to present at least one of these aspects so thoroughly that the reader begins to develop a basis for critical judgment. All the examples shown are not of equal value, either as structural or esthetic achievements. One of the most distressing features of the current interest in structures is the indiscriminate praise given to buildings in which structure, any structure, suitable or not, is "expressed." It may excite at first, but, unless it is an appropriate solution to the problem, it soon palls.

Mr. Raafat shows a more critical approach in his chapter on "Architectural Expression," which has many perceptive glimpses into the esthetic problems of the new forms and their relation to structural problems. "Large end stiffeners" (as re-

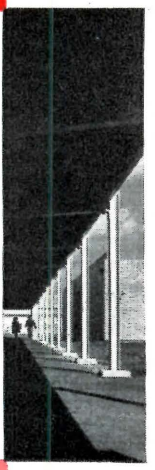
continued on page 64



How strong is the hinge?



Hurffville Elementary School, Hurffville, New Jersey: Architect: Vincent G. Kling, A.I.A., Philadelphia; General Contractor: Laessle Builders, Inc., Moorestown, New Jersey; 1958 Top Award: School Executive: Seventh Annual Competition For Better School Design.



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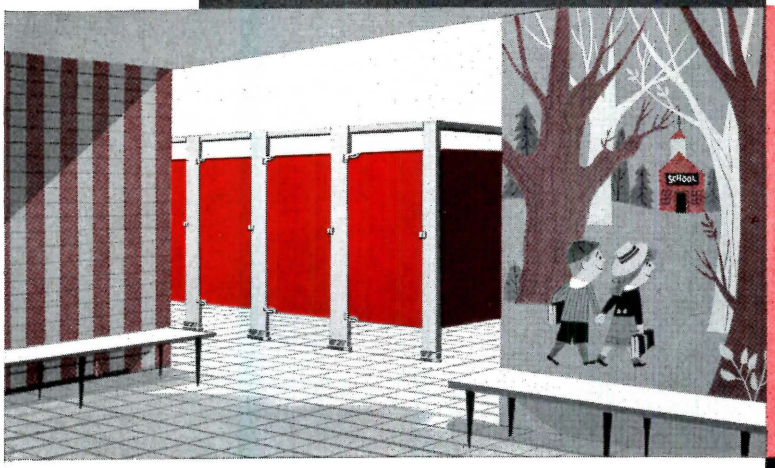

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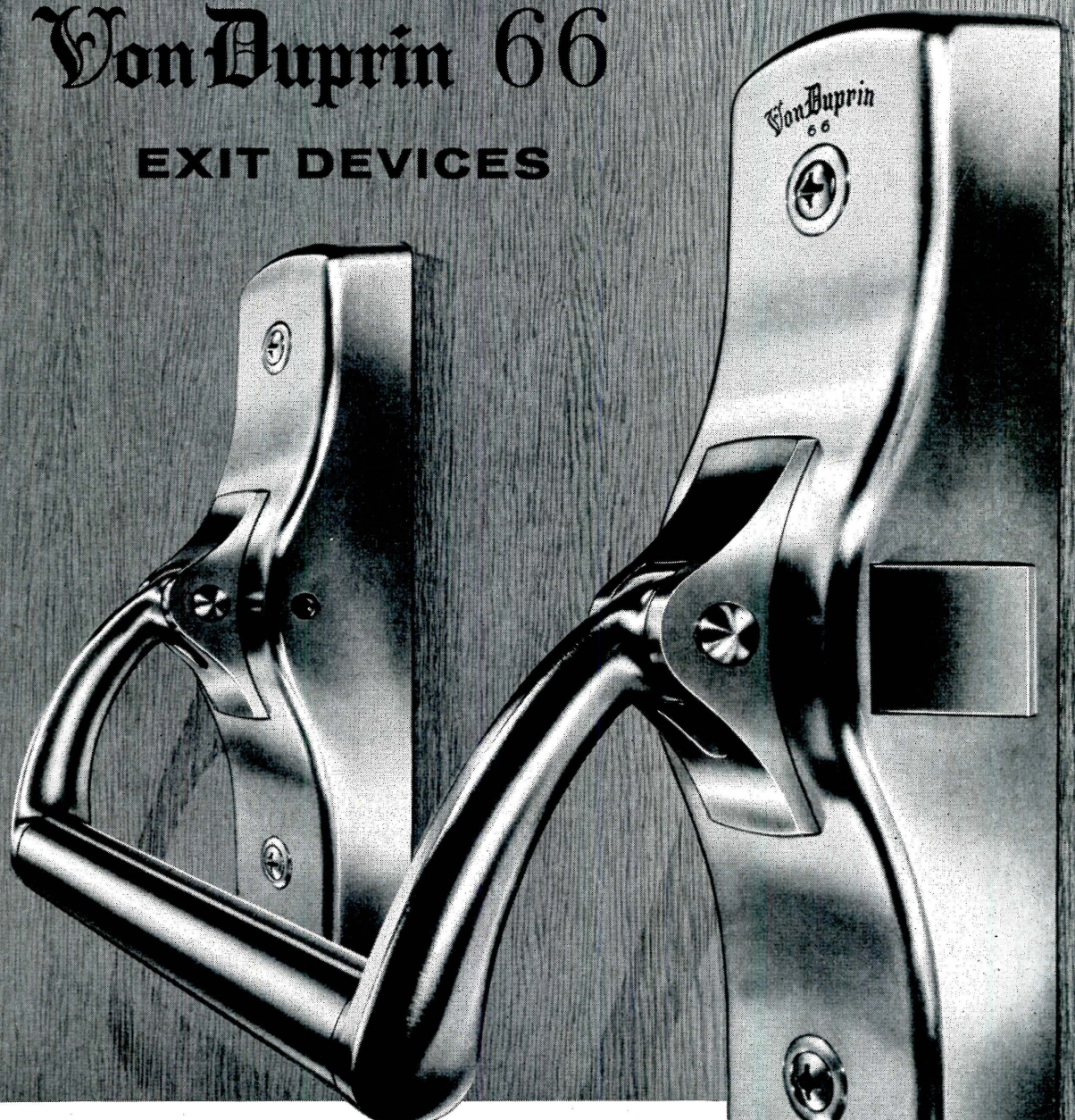

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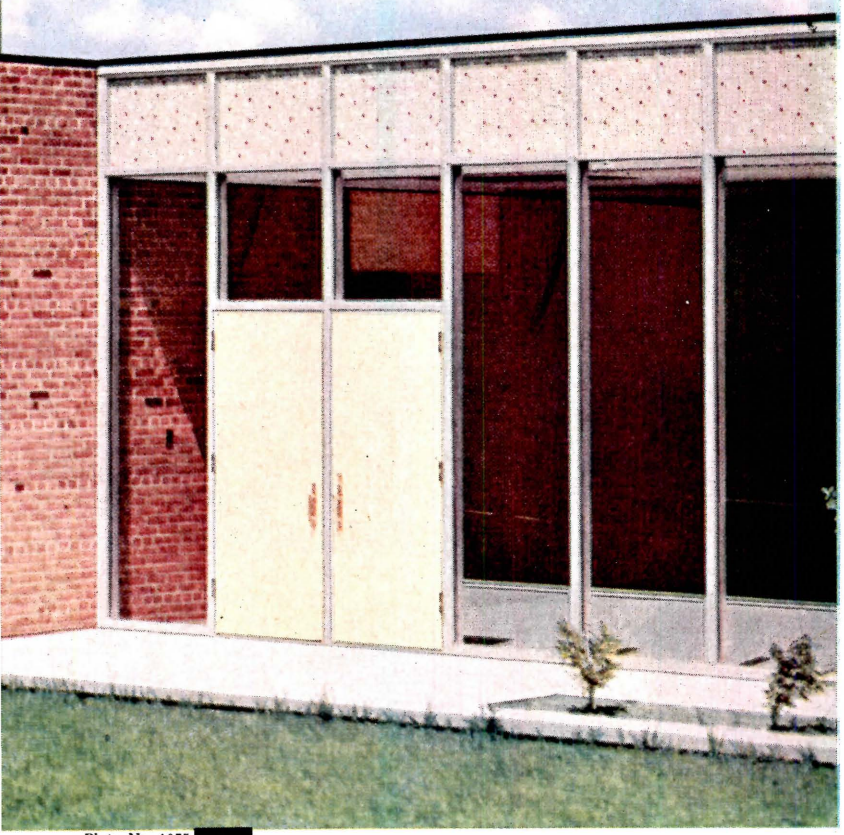

Plate No. 1075

UTICA HIGH SCHOOL, Utica, Mich.
Architects:
SMITH & SMITH, Royal Oak, Mich.
Panel installation:
MOYNAHAN BRONZE CO., Flatrock, Mich.
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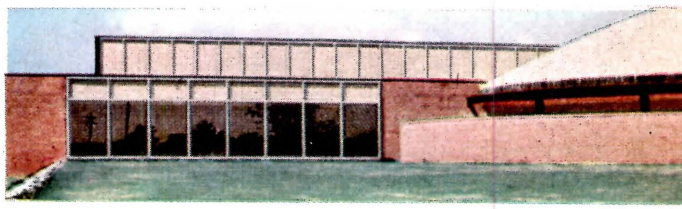

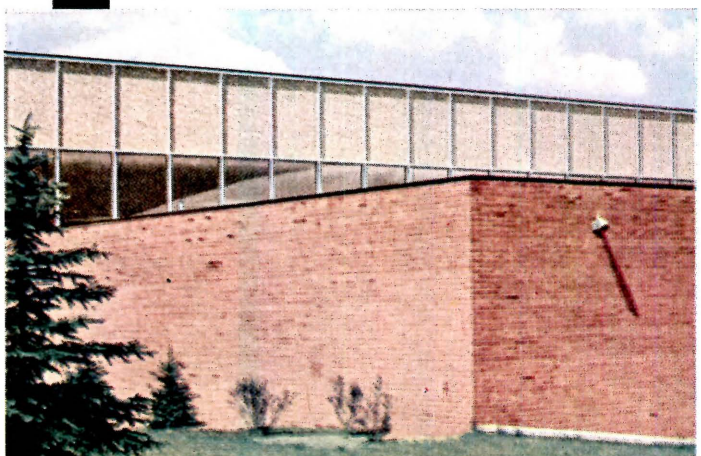

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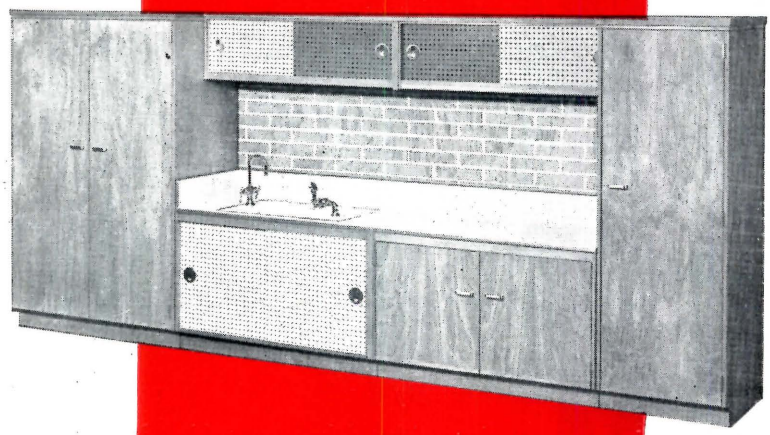

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Required Reading

Hotels . . .

helpful, since a hotel must make its money out of the building.

In spite of all this, I found the book very interesting and heartily recommend it as required reading to those concerned with planning and operating hotels. It is a "must" for any architectural library.

Concrete . . .

quired to maintain the shape of a long barrel shell) "if exposed on the perimeter of the shell, are always misleading to its nature. Architects conscious of expression tend to extend the shell beyond these stiffeners, thus bringing it to the foreground." This type of problem illustrates the point at which architect and engineer must work together. Insofar as he has promoted this understanding, Mr. Raafat has succeeded in his aim of contributing to the maturity of a new architectural style.

Architecture as Art

MASTERS OF MODERN ARCHITECTURE. *By John Peter. George Braziller, Inc., 215 Fourth Ave., New York 3. 230 pp., illus. $15.*

Mr. Peter has produced an impressive and useful book. Virtually all the work included is, of course, familiar to architects and engineers; nevertheless, the volume is valuable as a convenient and handsome collection of photographs. Facts and statistics are given in a separate section of descriptions of the buildings (these might more conveniently have been printed with each cut) and brief biographies of the architects. Also included are a bibliography and indexes to architects, structures, and building types.

Seven men—Sullivan, Wright, Le Corbusier, Gropius, Mies, Nervi, Neutra—are represented not only by photographed work but also by samples of their writing. Among the other architects and engineers whose work is here are Maillart, Aalto, Breuer, Mendelsohn, Johnson, Noyes, Pei—the complete list is a long and distinguished one (95 major works are illustrated). Mr. Peter's concise illustrated introduction is a valuable summary of the main trends in the evolution of contemporary architecture. He comments: "The real challenge to modern architecture comes, as ever, from the emotional, intellectual, and spiritual needs of man. It is in fulfilling these needs that the art of architecture chiefly consists."

—P. C. F.

continued on page 396

ARCHITECTURAL RECORD *Western Section*©

EDITOR: *Elisabeth Kendall Thompson, A.I.A.*
2877 Shasta Road, Berkeley 8, California

What is a Regional Conference For?

A great many architects in the Western states went to A.I.A. regional conferences this fall. But a great many more did not. Perhaps the reason so many did not go was that they could not see clearly the benefit to them personally of spending several days listening to and talking "theory."

Perhaps the sum of their decision is contained in the remark of one architect who did go to a conference (of unusual quality and dimension). He said, "That was fine and I enjoyed it. But I have to ask myself, What meaning is there in it for me?"

Sixty years ago psychologist William James answered this question, and although what he said then was addressed to teachers, it applies with equal force to architects—and others—today.

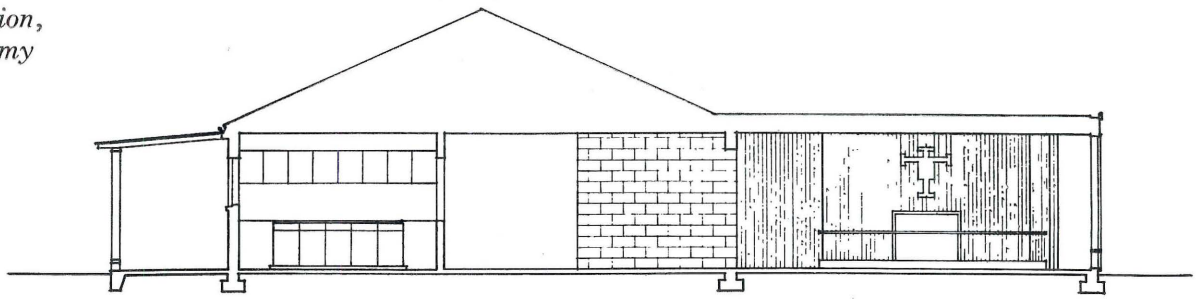
> "The inessential 'unpractical' activities are in themselves far more connected with our behaviour and our adaptation to environment than at first might appear. No truth, however abstract, is ever perceived that will not probably at some time influence our earthly action, action in the widest sense—speech, writing, yesses and noes, and tendencies *from* things as well as *toward* things, and emotional determinations, in the future as well as in the immediate present. As I talk here, and you listen, it might seem as if no action followed. You might call it a purely theoretic process with no practical result. But it *must* have a practical result. It cannot take place at all and leave your conduct unaffected. If not today, then on some far future day, you will answer a question differently by reason of what you are thinking now. Some of you will be led by my words into new veins of inquiry. These will develop your opinion, for or against. That opinion in turn will be expressed, will receive criticism from others in your environment, and will affect your standing in their eyes. We cannot escape our destiny, which is practical; and even our most theoretic faculties contribute to its working out."

Architecture is by its very nature both theoretical and practical—its beginnings have to be theoretical and its end result must be practical. To be both, it must be the expression of a wide range of experiences, active and passive, and of knowledge acquired and intuitive. But who can say which is the more important background, which the more productive source? Who would rule out the theoretic and leave the practical only? Does the application of a general formula produce a better end result than the thought process stimulated by a particular problem? The formula may do it faster, but the thought process is more likely to produce the better solution.

Turning the mind occasionally toward the theoretic is a necessity if the creative avenues are to be kept open. Charles Darwin lamented in his later life the loss of his earlier taste for poetry, music and the other arts as "a loss of happiness . . . possibly injurious to the intellect and more probably to the moral character by enfeebling the emotional part of our nature."

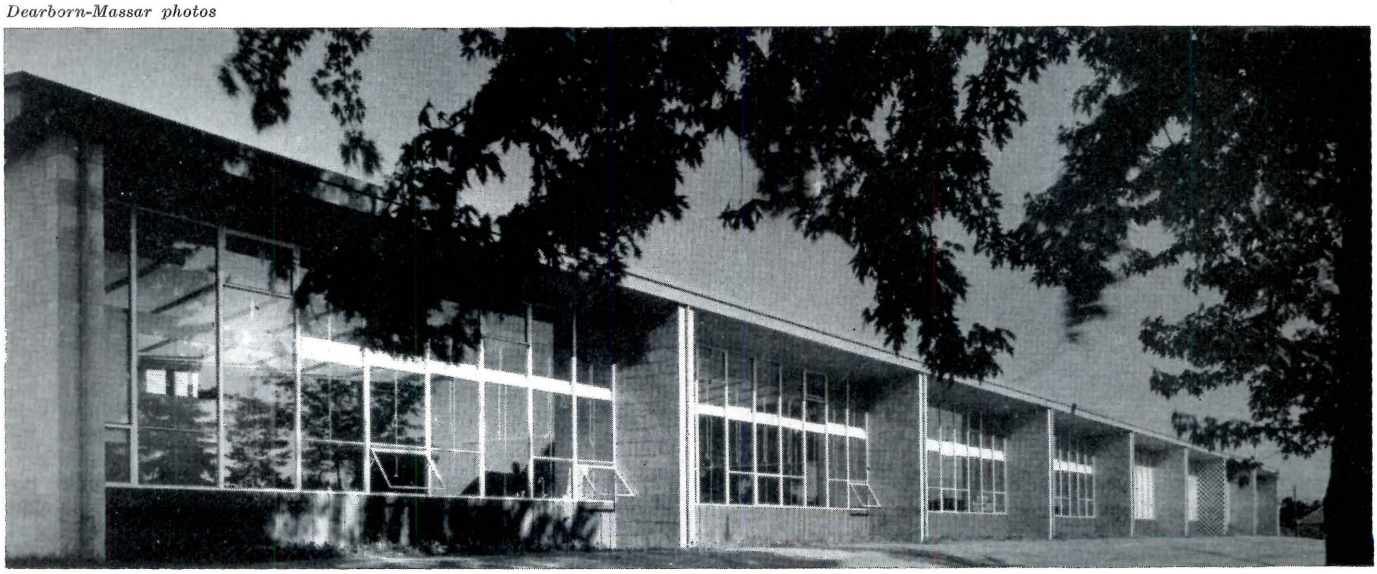
A revisiting of the wells of inspiration is a benefit in any well-rounded life; in the life of creative architecture it is essential. To provide these wells is the mission of a once-a-year meeting of like minds. And that is what a regional conference should be. E.K.T.

Renovation and Addition,
Charles Wright Academy
Tacoma



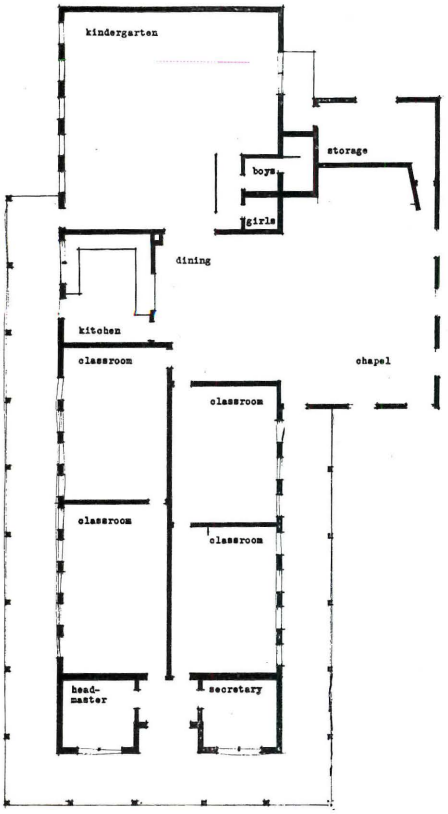
TWO LOW-BUDGET SCHOOL PROJECTS

Dearborn-Massar photos

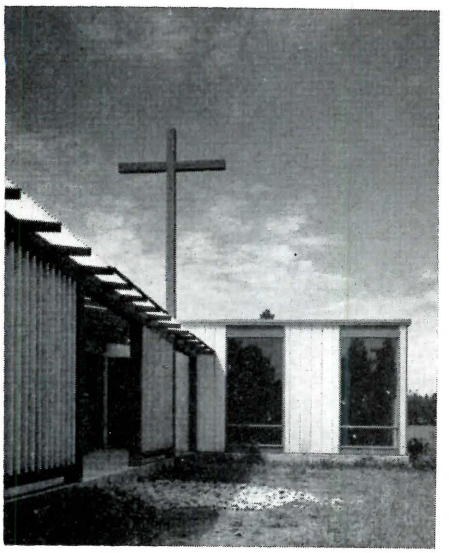


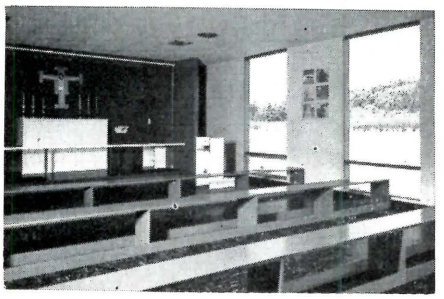
Addition, Jefferson Elementary School, Tacoma, Washington

This single-loaded corridor scheme for an eight-classroom wing added onto an existing elementary school proved an economical solution: including architects' fee, its cost came to $10.84 per sq ft. The simple structural system consists of concrete block piers, 28 ft apart, which carry the entire roof load. The diamond-shaped trusses of the roof structure are hung on steel beams which rest on the concrete piers. A continuous skylight with a luminous ceiling beneath provides uniform lighting in the rooms. Electric radiant heat in the concrete floor slab is used with supplementary units in the windows. David Hopkins was mechanical engineer; Walter Gordon, electrical engineer; Sitts and Hill, structural engineer.

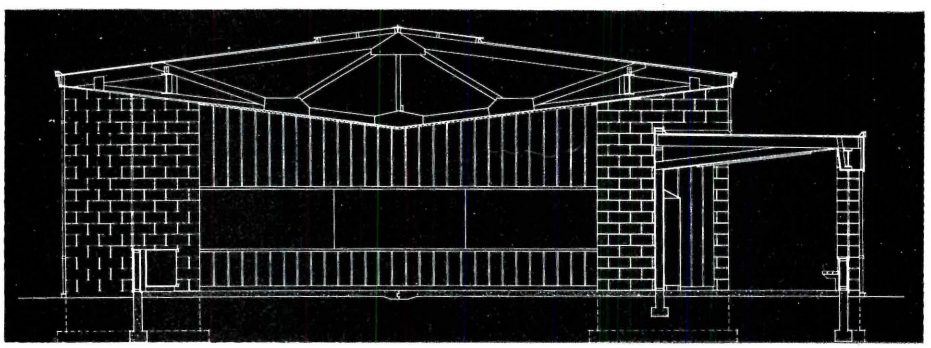


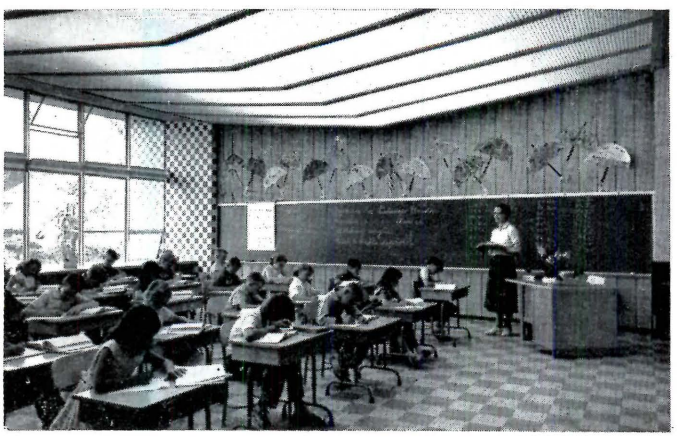
This building—once a concrete block roadhouse—makes temporary but pleasant provision for a newly organized Episcopal day school with classes from kindergarten through fourth grade. Wherever possible existing internal spaces were left unchanged. The kitchen remained where it was, but the bandstand and coatrooms became offices and the rest of the space was divided into classrooms. The chapel was added, a simple and small but effective space. Three sides of the original building are surrounded by an outdoor corridor roofed with translucent plastic and walled with a louver screen painted light blue. The old building was painted dark blue to de-emphasize it. Cost of renovation and addition, including new wiring and heating system, was $17,000. Colors here and at Jefferson School are by Thomas Jensen.

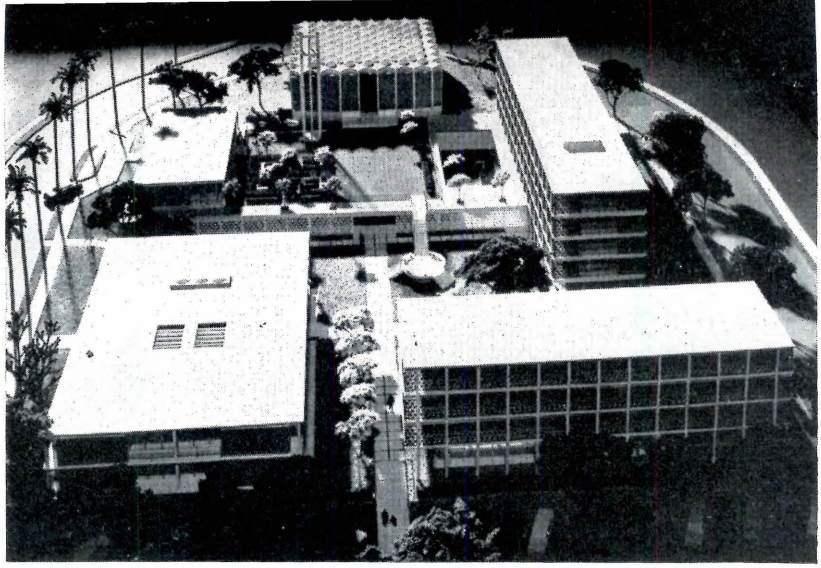


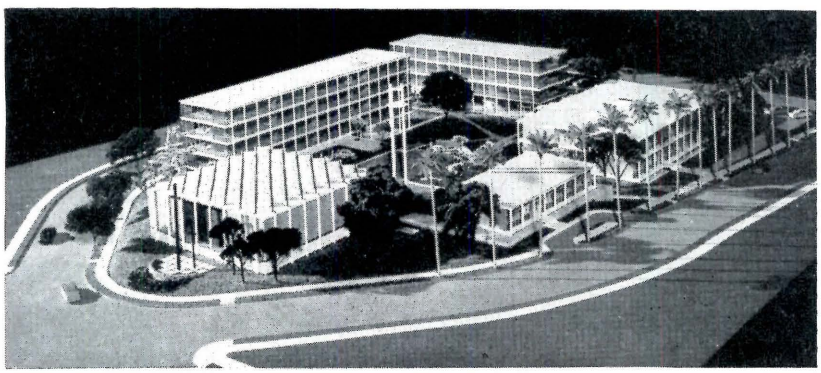


IN THE NORTHWEST *Liddle & Jones, Architects*





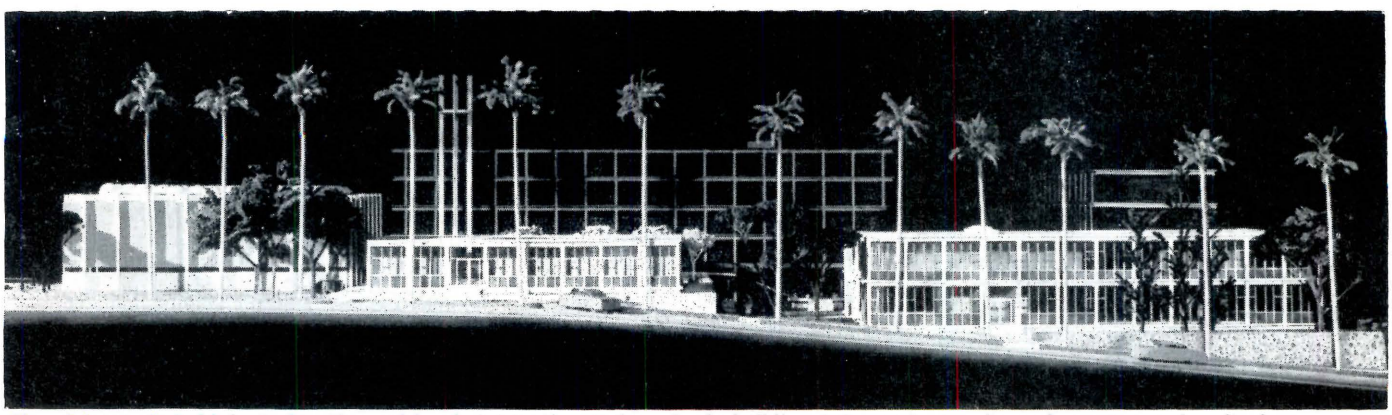




New campus for West's only Episcopal Theological Seminary

In masterplanning the new campus for the Church Divinity School of the Pacific in Berkeley, Calif., the architects, Skidmore, Owings and Merrill of San Francisco, faced two very practical problems: how to provide for off-street parking, and how to provide for continuous operation of the school during a four-phase construction program. The parking area, located for easy access from the most important of the three streets that bound the site, acts as a buffer between the street noise and campus. First units to be constructed will be the academic building (at bottom left in top photograph) and the parking area adjoining it. The chapel, located on the highest part of the site, the administration building and the upper terrace will be phase two of the program; refectory, dining court, kitchen, dormitories and leisure facilities are later phases.

Focal point of the group, physically as well as symbolically, will be the chapel. Designed as a cube whose only light will come from above, the chapel will have a gray masonry base, concrete columns, redwood walls and a one-foot-high glass band along the perimeter. Below the concrete diagrid roof structure with its skylight units will be a horizontal plane of glass, varying in tone from dark gray at the outer walls to light gray at the center aisle, with the greatest light over the altar. A wood louver ceiling in triangular shapes will be hung below the glass plane. The upper terrace is designed to function as part of the chapel, as point of origin for ecclesiastical processions and as a place for special services.



Chapel is at site's highest elevation, with administration and academic building below; at rear, beyond court, are dormitories

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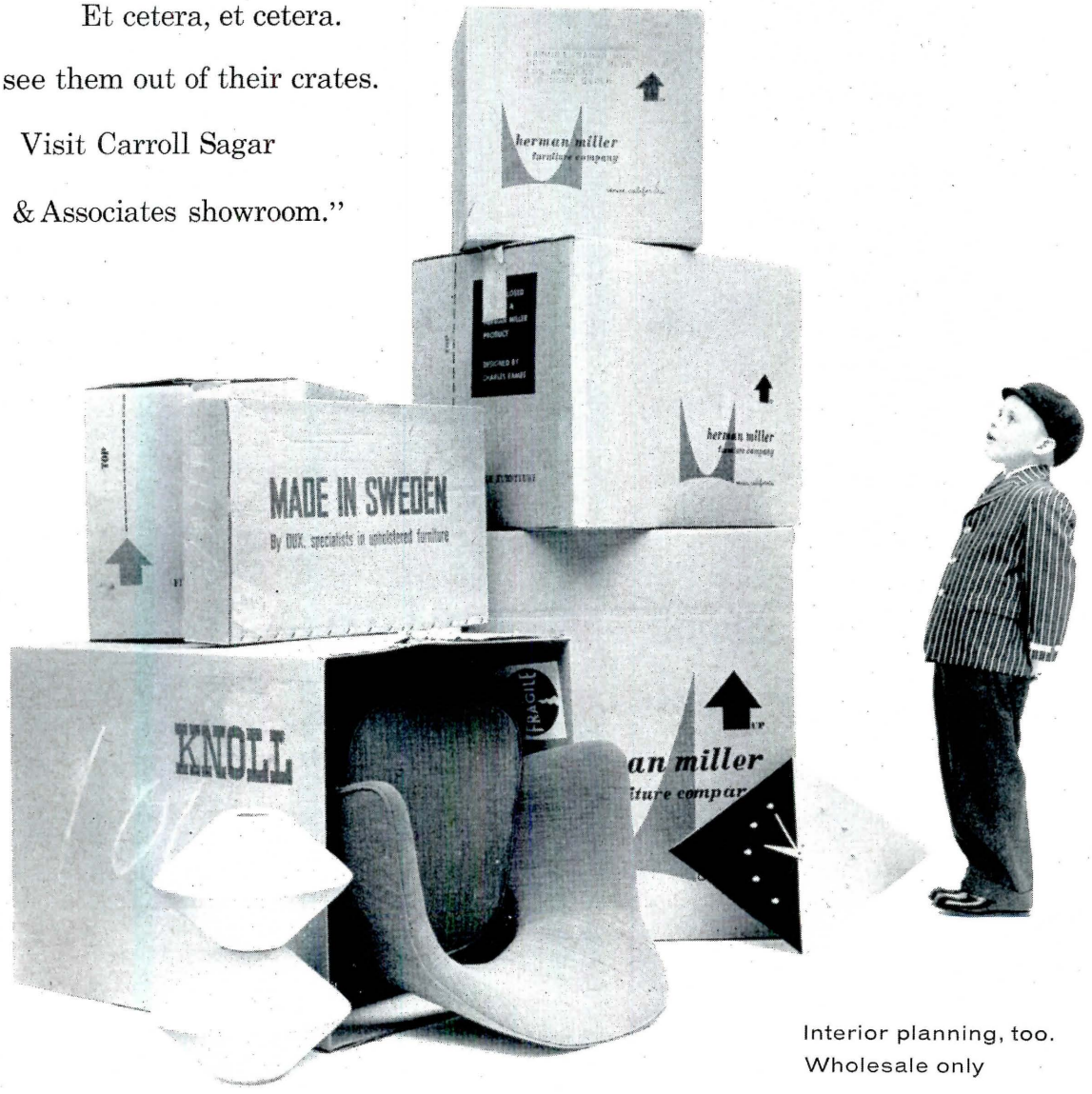
well, just look at these labels: Herman Miller, Knoll, Glenn, Brown Saltman, Dux, Lunning, Haskell Gateway, Kasparian, Vista, Costa Mesa, Pacific Upholstery, Eames Chairs and John Stuart. Howard Miller's clocks and bubbles. Architectural Pottery, fabrics and lighting.

Et cetera, et cetera.

But see them out of their crates.

Visit Carroll Sagar

& Associates showroom."



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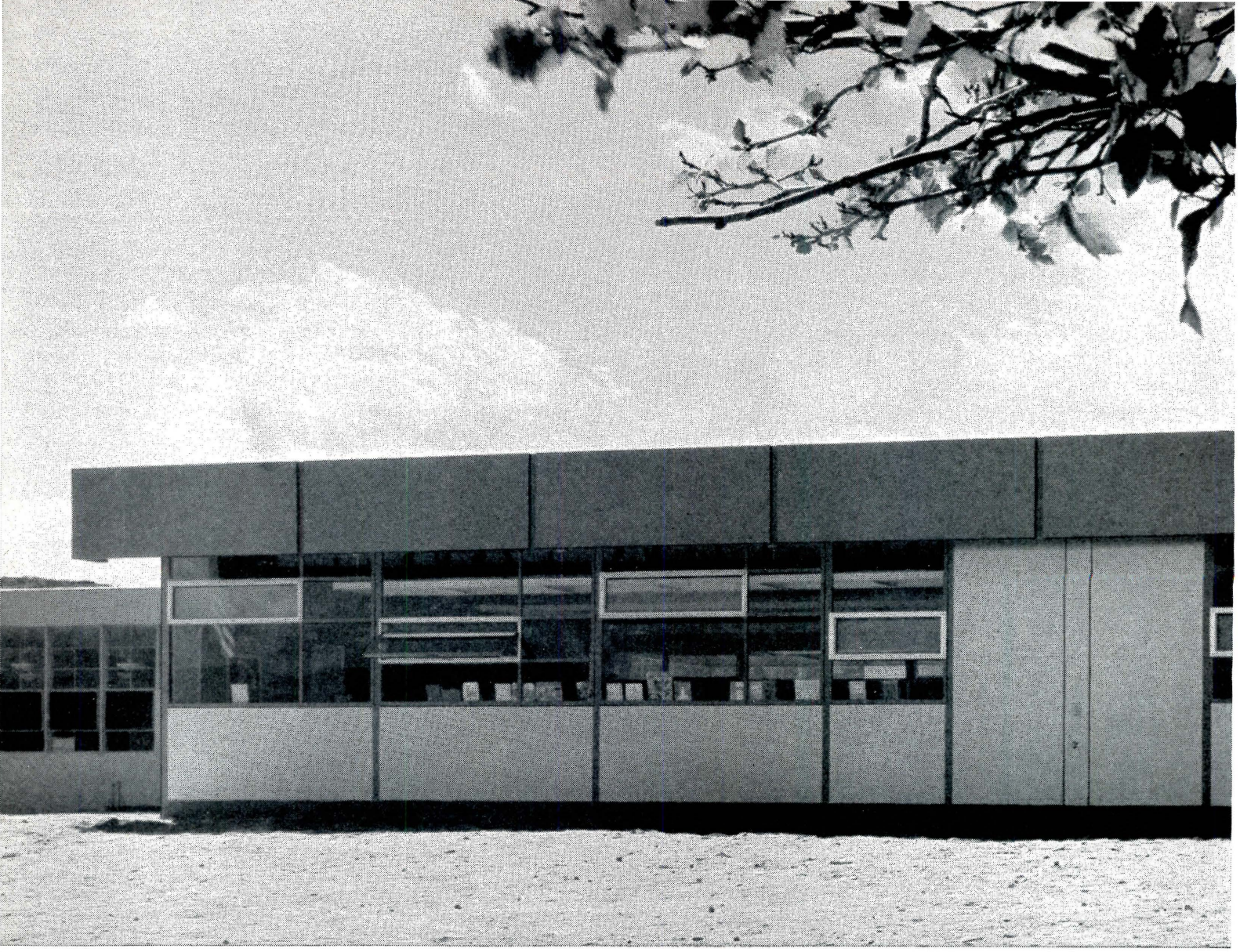


All-steel school blends beauty and versatility on the desert

IN THE SHADOWS of the San Jacinto mountains, southeast of Palm Springs, the simple, modular silhouette of this striking steel school stands in sharp contrast against the casual disorder of the desert terrain.

STEEL MADE POSSIBLE high-style design at low-level cost. Steel was fast . . . the frame (10″ WF 21 beams and 3″x3″ x 3/16″ columns of USS Steel) went up in a day! And the school bell summoned students into the finished building 89 days later! Steel met and mastered the varied building and maintenance problems of the desert. The walls, durable, double panels of USS Sheets, hide built-in sound-proofing and thermal insulation to minimize noise and heat. The roof, a corduroy pattern of steel decking, covers 35 feet, with a 10-ft. clear span between purlins. Standing seams richochet the sun's rays to help keep classrooms cool.

DESIGN VERSATILITY was all but limitless with steel. The 8-ft. module offers versatile arrangement of doors and windows. Classrooms may be expanded four or eight feet with minor framing changes. And all exposed steel is attuned to the desert site in warm tones of sienna, sand and umber.

THIS is building with steel . . . as timeless as the desert.

CONSIDER the many advantages of steel, then consult United States Steel . . . a single Western source for steel for every purpose. Offices in 11 Western cities.

Columbia-Geneva Steel Division of USS TRADEMARK **United States Steel**

New addition by Calcor Corp. to Cathedral City Elementary School (Palm Springs Unified School District), California

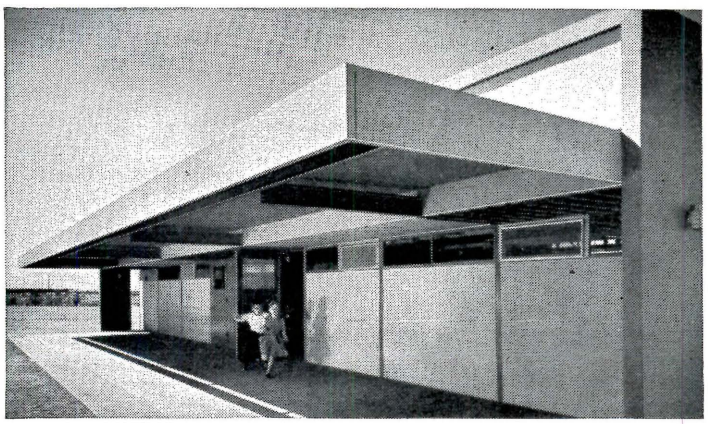
The United States Steel products in this school are used by leading fabricators and are also available through steel jobbers in your area.

Architects:
Wexler & Harrison, Palm Springs, California

Steel Fabrication and Erection:
Calcor Corporation, Huntington Park, California

Structural Engineers:
Parker Zehnder & Associates, Los Angeles, Calif.

ARCHITECTS & ENGINEERS: Write for your free copy of *"New Ideas in School Construction"*, now being prepared. This new booklet will provide steel application ideas, specifications data, and advice on the maintenance and painting of steel. Write: Architects & Engineers Service, Dept. AR11, United States Steel Corporation, Columbia-Geneva Steel Division, 120 Montgomery Street, San Francisco 6.



Twin steel wing walls frame the entrance and carry all utilities, hidden . . . but handy, while a floating steel marquee juts from the face to furnish welcome shade on the walkway below.

Build tomorrow's schools today with USS Steel

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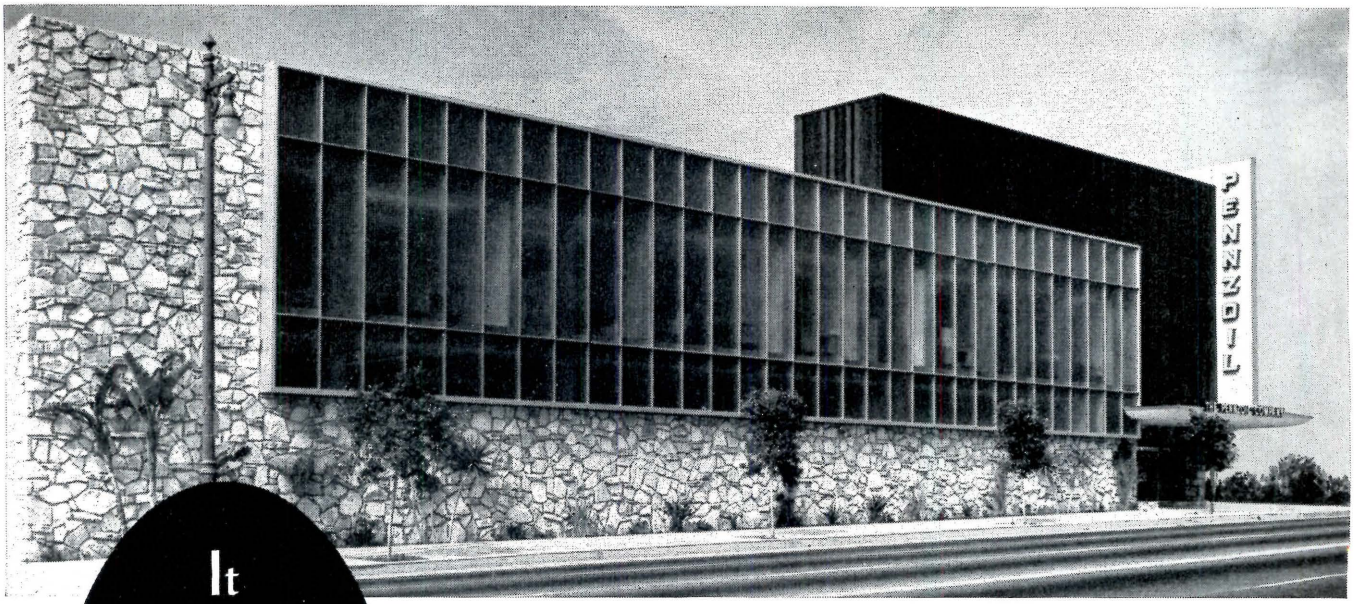
problem

A recessed troffer with half-inch aluminum louvers was needed for Welton Becket's striking modular lighting plan for the offices in the spectacular 28-story Kaiser Center in Oakland, California.

solution

STARGAZER with a distinctive half-inch aluminum louver was developed at Lighting Dynamics especially for Kaiser Center. Stargazer matches the fine detailing and integrates perfectly with the radiant acoustical ceiling. Now Stargazer is available for other advanced applications. It's easily installed—just pushes-up-and-clips. It has a shallow design; and is surprisingly inexpensive . . . comes in a variety of widths and lengths. Durable, Bonderized, and electrostatic, high reflectance finishes. FOR MORE COMPLETE INFORMATION, call your Lighting Dynamics representative, or write to Lighting Dynamics, 802 West Whittier Boulevard, Whittier, California, or Lighting Dynamics, 8700 Ambassador Row, Dallas, Texas.

STARGAZER as it will be used in Kaiser Center, designed by Welton Becket, F.A.I.A., and Associates.



It "marries" well, does authentic Palos Verdes STONE

One of the reasons why architects favor authentic Palos Verdes Stone is because it adapts so beautifully with other materials and design elements. Here, two distinguished buildings show how Palos Verdes "Mossback" Stone, handled with imagination and taste, adds vitality and distinction to completely different modern building treatments. And this beauty will not fade; being natural stone, it is permanent and maintenance-free. If you would like a catalog, color-illustrated, on California's most distinguished decorative stone, write to Service Dept., Palos Verdes Stone, 612 So. Flower St., Los Angeles, Calif.

PENNZOIL BUILDING
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Los Angeles

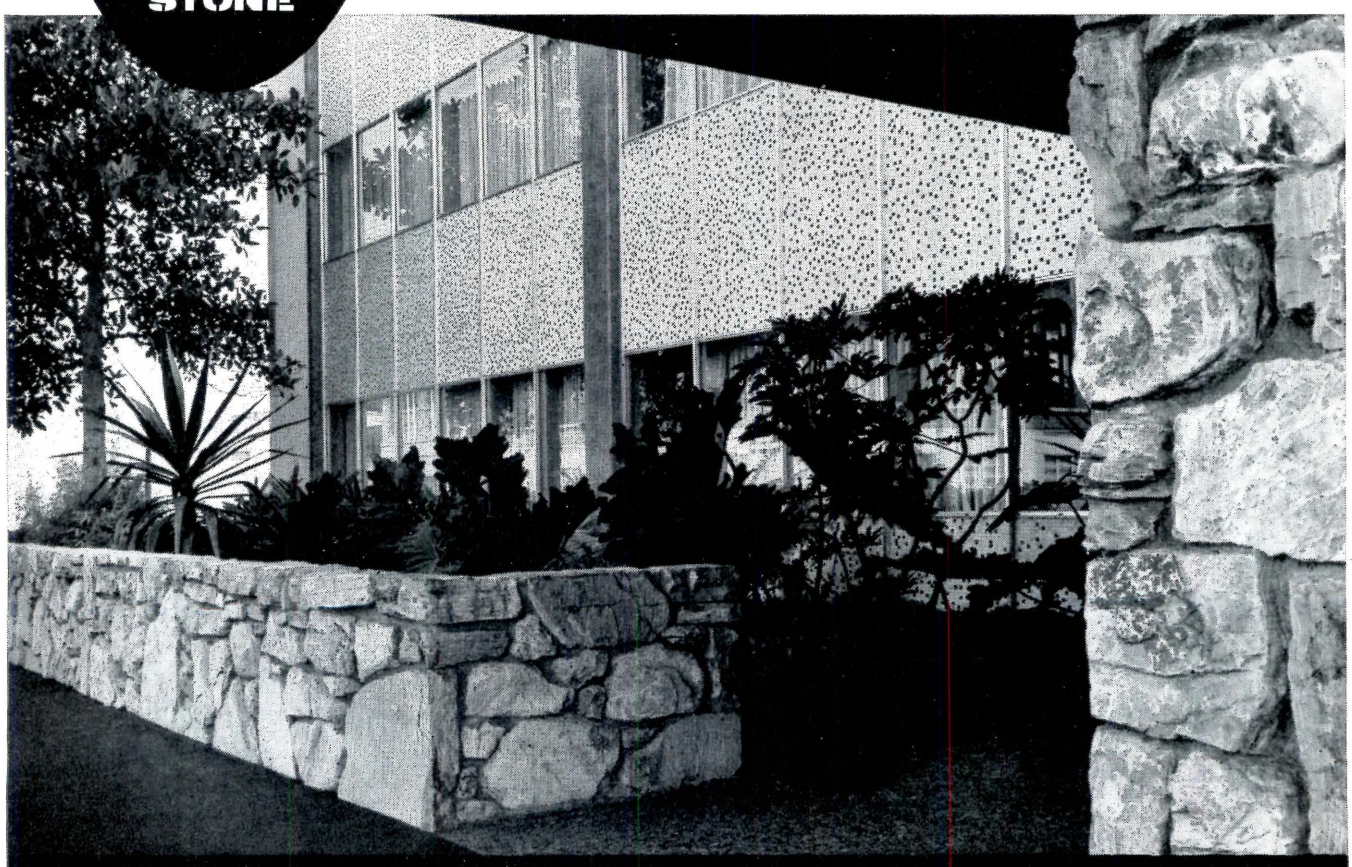
Architects:
Stiles and Robert Clements

Masonry Contractor:
N. B. Lesher & Son, Inc.

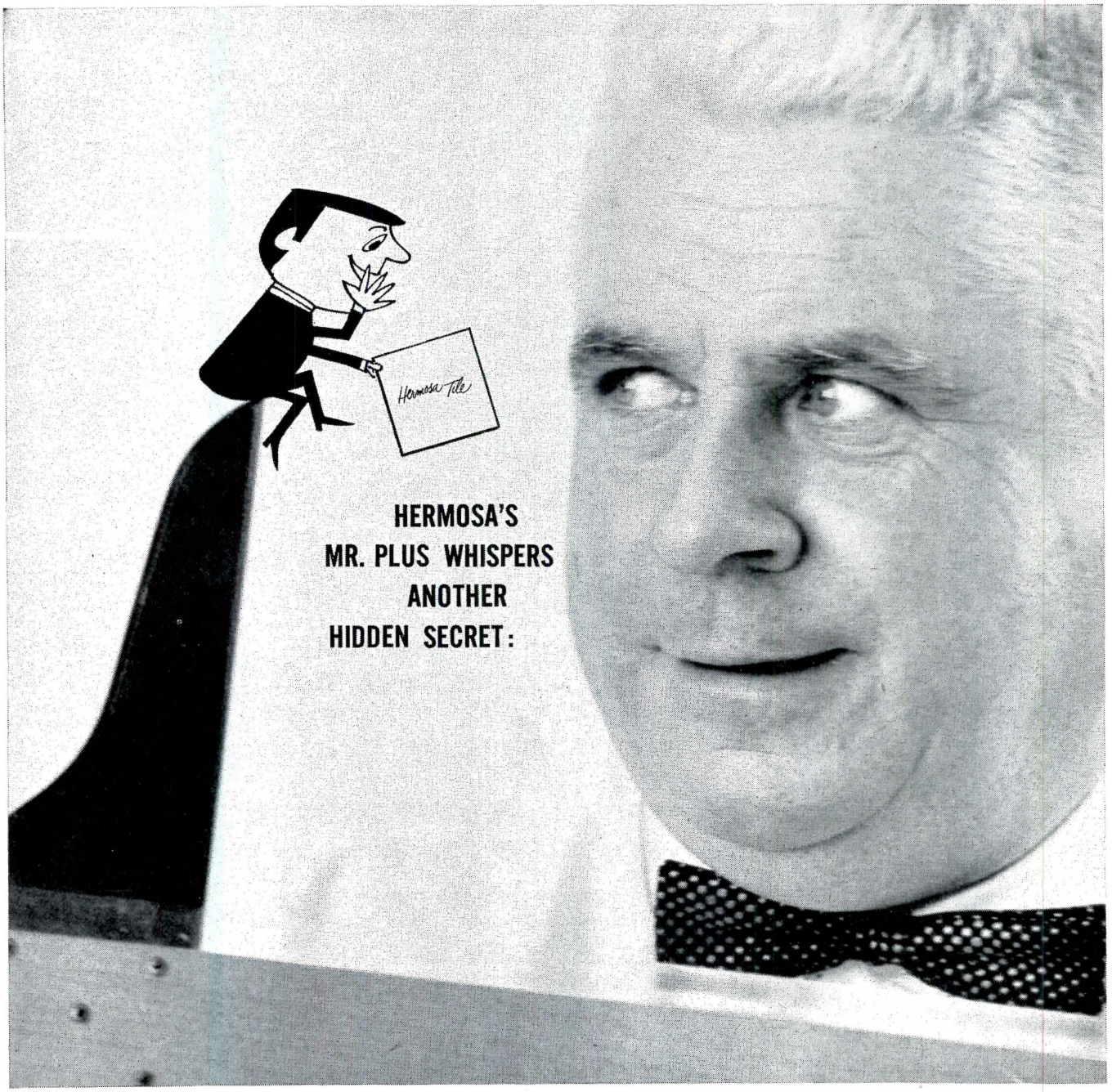
TEAMSTERS UNION BLDG.
1616 W. 9th St.
Los Angeles

Architects:
Walker, Kalionzes & Klingerman

Masonry Contractor:
N. B. Lesher & Son, Inc.



To be sure of Authentic Palos Verdes Stone, always specify "— as produced by Great Lakes Carbon Corporation".



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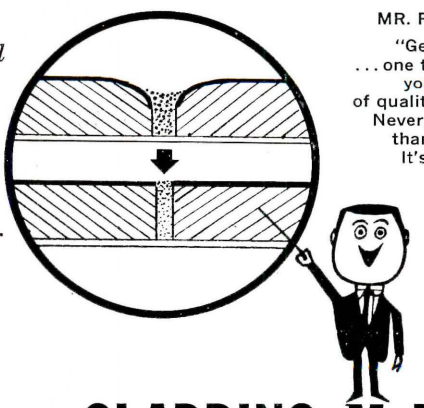
This is a plus important to YOU as an architect. When you specify HERMOSA *glazed ceramic* TILE, you *know* the job will be FLUSH tile-to-tile... assuring a smooth, elegant appearance without grout variations. Your client gets the kind of installation *you* planned... one *you* can depend on for client satisfaction... a showcase for the future. *Square-Edge Design* is a real PLUS... just one of the six major reasons you'll be happier with Hermosa. For commercial or residential, specify genuine—



MR. PLUS TIP:

"Get the tile job ... one that lives up to your own high standards of quality and job-satisfaction. Never, never go for less than HERMOSA TILE! It's worthy of your reputation."

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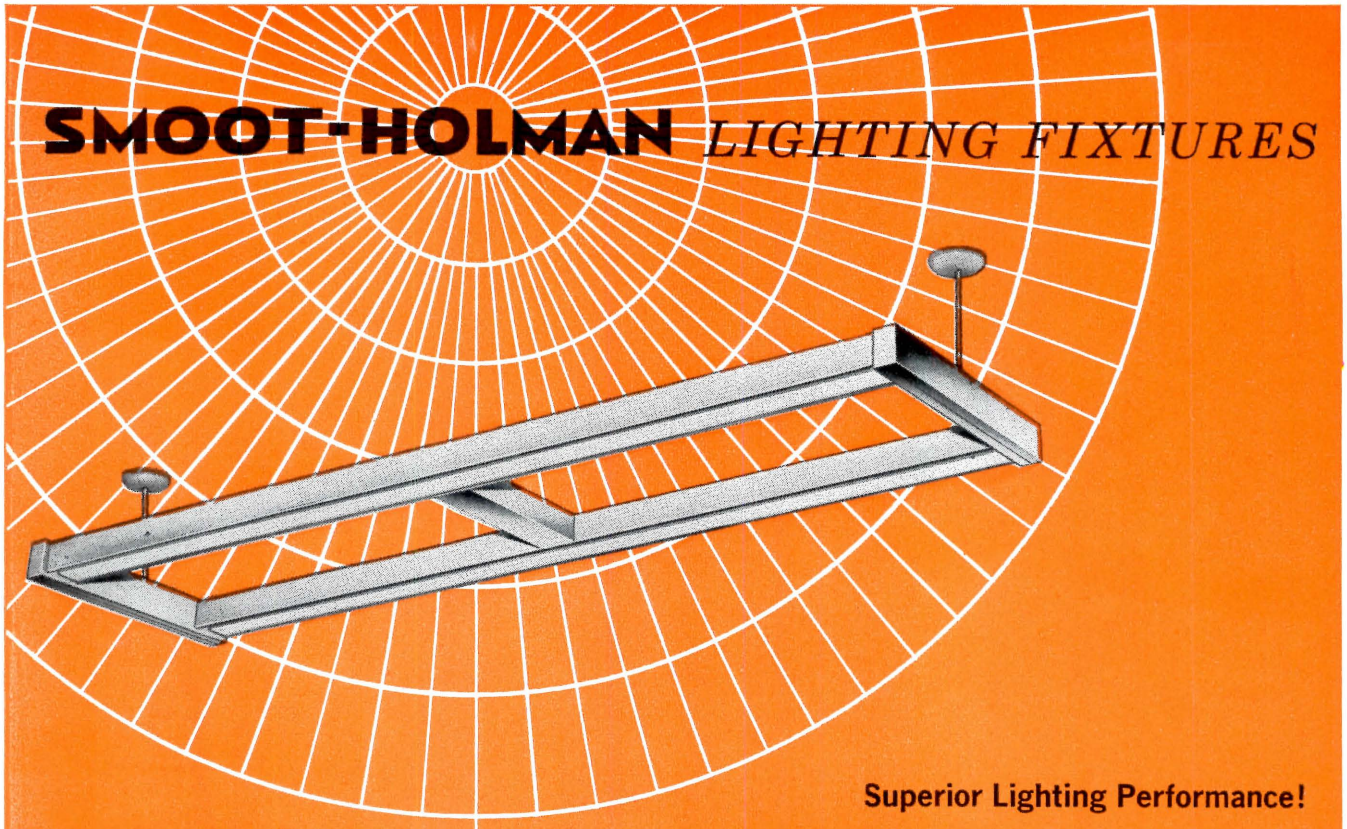
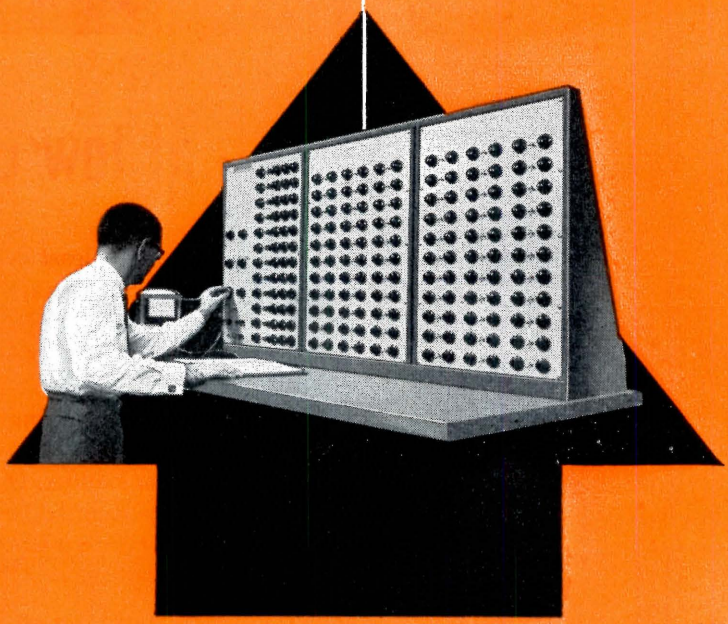
SMOOT-HOLMAN *LIGHTING FIXTURES*



Superior Lighting Performance!

Scientific Lighting Design!

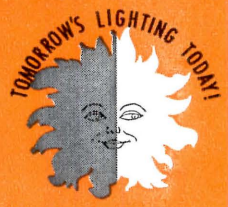
MADE POSSIBLE BY THE NEW SMOOT-HOLMAN ANALOGUE COMPUTER!



Through the use of an advance design, analogue computer, Smoot-Holman research engineers are now able to design fixtures that give superior performance and are the ultimate in construction and efficiency. This new computer, the first of its type ever built for commercial use, solves problems of fixture design, as well as many other problems in the field of lighting. It's operation is based on the formation of an electrical network analogue of the distribution of light flux. Here is another example of Smoot-Holman's research and development to bring you *"Tomorrow's Lighting Today."*

SMOOT-HOLMAN COMPANY

Inglewood • California



Steel building by Pascoe Steel Corp., Pomona, California

"Building with steel gave us good design at low cost"

JAMES B. HAWTHORNE
President, Hawthorne Machinery Co.
San Diego, California

"Using steel panels on our new maintenance building was a nice way to complement our adjoining white masonry office. This quality of harmony gave us a handsome building to meet rigid county construction codes. And behind it was sound economy! After foundation work, Pascoe Steel Corporation put up this 24,000 sq. ft. building using USS Galvanized Sheets, for under $2 a sq. ft. We know, from a look at the losing bids, it would have cost us at least double with other materials. Good looks and economy like this add up to a long-term investment in durable, low-cost construction!"

MORE INFORMATION about steel buildings can be obtained from your local steel building dealer, architect or builder. Or write us outlining your interests. Address: Room 1260, 120 Montgomery Street, San Francisco 6, Attn: Department AR-11.

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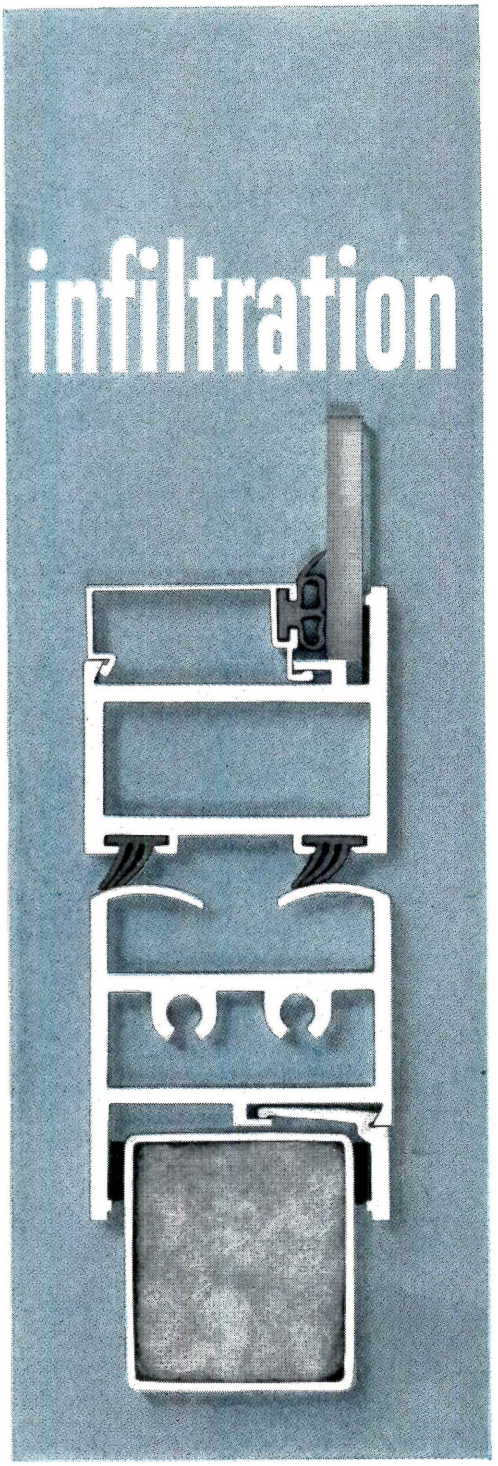
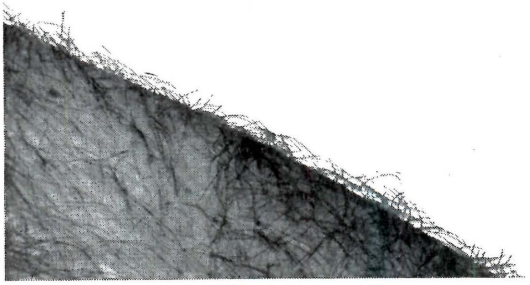
more infiltration resistance



Soulé Series 800 Vertically Pivoted Aluminum Windows

Severest hurricane tests prove Soulé series 800 vertically pivoted aluminum windows outperform accepted industry standards for air and water infiltration. 0.008 cu. ft. per minute air infiltration per lineal foot of crack with a static air pressure equal to a wind velocity of 25 mph was reported in approved infiltration chamber tests (standards call for a maximum of 0.025). As installed in Soulé series 3100 split mullion curtain wall, series 800 showed zero water infiltration in 100 mph hurricane tests! Add continuous vinyl weather stripping, stainless steel pivot pins, tubular ventilator sections, snap-in glazing beads and Soulé alumilite finish and you have the reasons why series 800 is the best performing vertically pivoted aluminum window. Call for a presentation.



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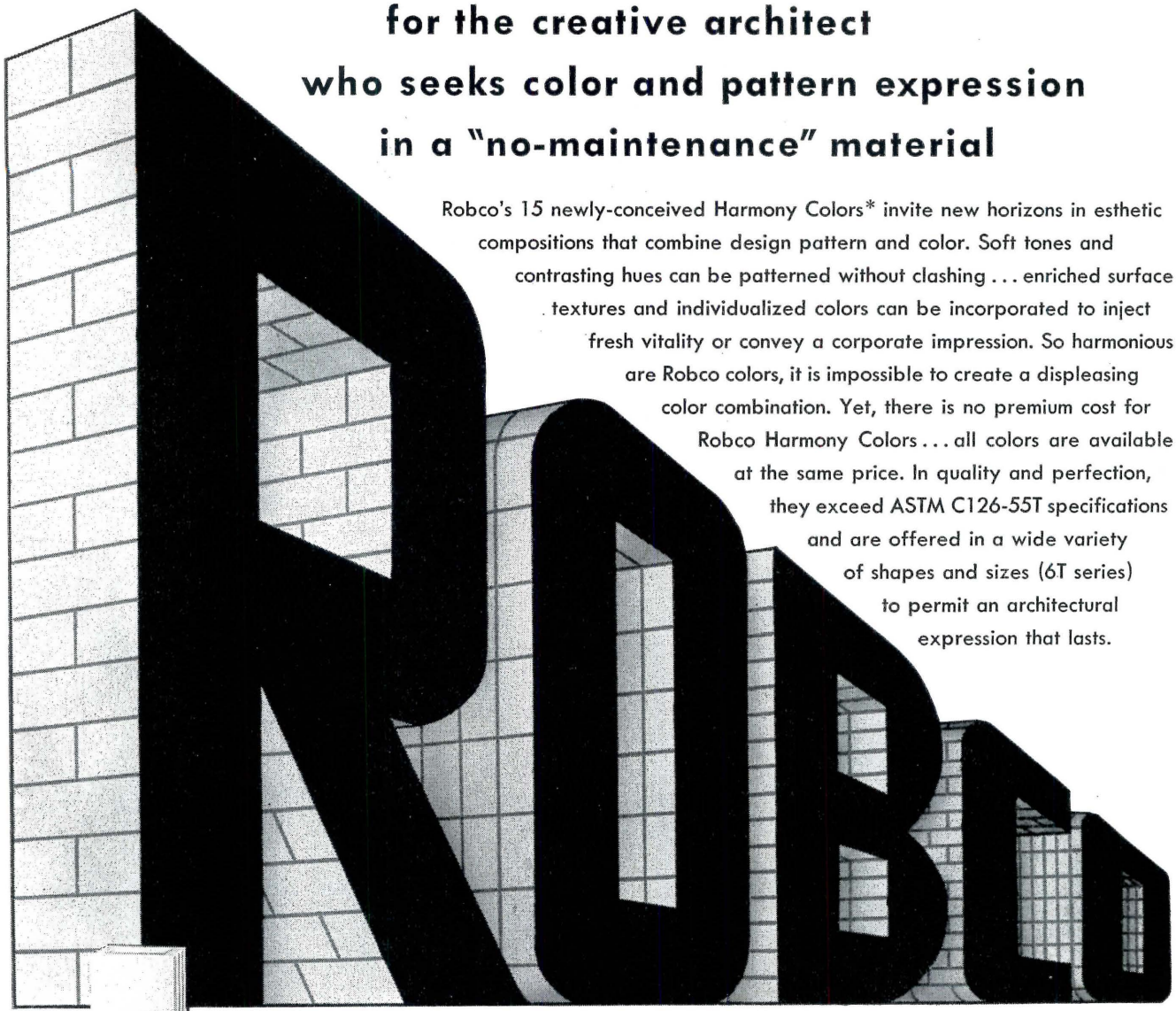
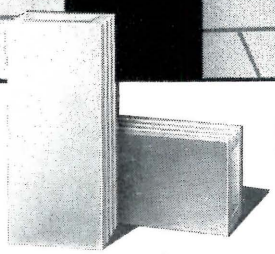
for the creative architect who seeks color and pattern expression in a "no-maintenance" material

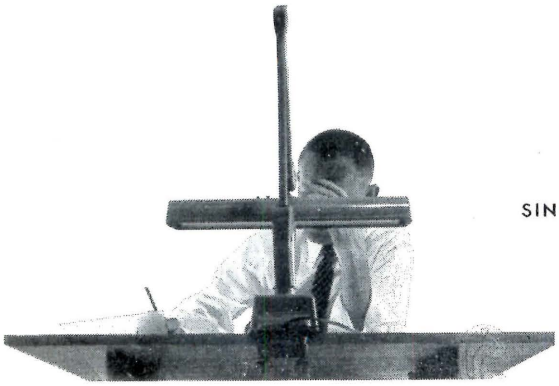


Robco's 15 newly-conceived Harmony Colors* invite new horizons in esthetic compositions that combine design pattern and color. Soft tones and contrasting hues can be patterned without clashing . . . enriched surface textures and individualized colors can be incorporated to inject fresh vitality or convey a corporate impression. So harmonious are Robco colors, it is impossible to create a displeasing color combination. Yet, there is no premium cost for Robco Harmony Colors . . . all colors are available at the same price. In quality and perfection, they exceed ASTM C126-55T specifications and are offered in a wide variety of shapes and sizes (6T series) to permit an architectural expression that lasts.



STRUCTURAL GLAZED FACING TILE

*Robco's new color concept that uses color and patterns as systematically as the chords on a piano keyboard.



SINCE 1880

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IN 15 NEW HARMONY COLORS

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Architects: Lind, Pleger, Bluerock and Hougan.
Applicating Contractor: Alta-Fraser-Edwards Co.

KAISER GYPSUM

KAISER GYPSUM COMPANY, INC. Kaiser Building–1924 Broadway, Oakland, Calif.

Oregon Exposition Set for 1959

Oregon's Centennial Exposition, due to open in June, 1959, will be a 100-day event and will include major participation of the arts and architecture, probably primarily in exhibitions, but also in structures for the Fair. Stewart and Richardson, Portland architects, are preparing the master plan.

John Storrs, also of Portland, is architect for a pavilion for the State's forest industry. The pavilion, a series of 50 sq ft hyperbolic paraboloids supported at six points, will be a permanent structure like its earlier counterpart, the huge log Forestry Building of the Lewis and Clark Exposition in 1905.

The inevitable Disneyland-type of attraction will also be included but will be in the Northwest historical tradition, with a frontier town, an Indian village, a "Lewis and Clark village," and a boom town.

The Exposition will include a two-week International Trade Fair. It will be situated on a 65-acre site on the Columbia River, eight miles from Portland, and will use the existing Pacific International Exposition building as its main building.

It's San Francisco in 1960

The national A.I.A. convention will be held in San Francisco in 1960, the board of directors of the Institute has decided. Although Denver was the original location for the 1960 convention, uncertainty about readiness of the new Denver Hilton caused a change in plans. (The Hilton will open in the fall of 1959, as a result of the recently negotiated lease between Zeckendorf and Hilton, but A.I.A. could not know that this would be effected in time to permit a Denver convention.)

A steering committee from the Northern California chapter, host to the convention, is already at work on the plans. John Lyon Reid is chairman; members include Henry Shubart, William Stephen Allen, and George Rockrise.

Roller Coaster Bridge Not Doing Well

The North Bay bridge from San Rafael to Richmond is not doing so well as its promoters—the State of California—thought it would. When it was being built some four years ago, architects deplored its design, but too late to remedy it in any way.

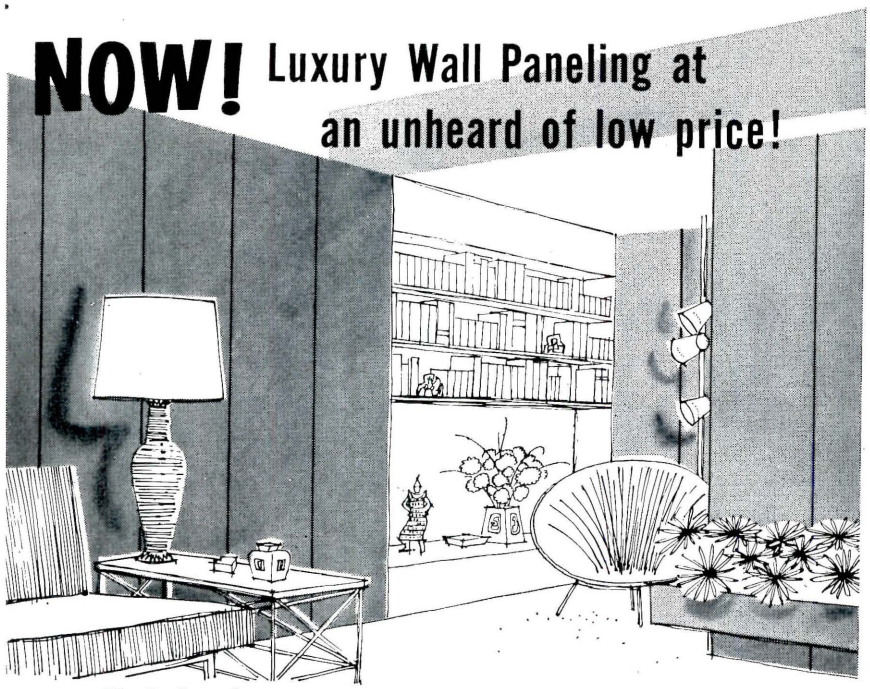
The bridge, opened to traffic two years ago, is a two-level structure with a hump in its back which gives it the effect of a roller coaster and caused Dr. Stephen Pepper of the University of California's Department of Philosophy to refer to it as an "esthetic disaster."

The disaster of its design caused not a ripple among the engineers of the State Toll Bridge Authority, though the sight of the bridge invariably makes every architect who sees it cringe. But now that dollars are involved, the State is getting worried. For the number of cars which use it is about one half the number expected and the revenue is about a third less than predicted.

Solar Still Desalts Water

A California engineer, Edward Marie of Castro Valley, is building a sea water conversion system which, he says, can be operated economically and can also be used to harness the sun's heat for industrial power.

The plant, located near San Diego, includes a 34-ft tower with a reflector which catches sunlight and reflects it down to a large mirror. This



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Painting or other finishing is not necessary. If another color is desired, one coat covers with true depth of color. The light colored baked-in surface of Forest Thrif-Tone won't rub or wear off.

Dirt and scuff marks wash off easily with a damp cloth; stubborn stains such as grease, lipstick, crayon marks and food stains wipe off without a trace using cleaners or common solvents.

QUALITY WALL PANELING...LOW COST

If you are interested in cutting costs in your homes and still give durable walls with an attractive appearance look into FOREST Thrif-Tone. For more information write:

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Beautiful, yes — but more than that, Architectural Porcelain Enamel provides the most *practical* means of enclosing and facing modern structures. The light weight of porcelain enamel panels minimizes dead load and promotes economical erection speed. Colors, as varied as the spectrum, are permanently unfading with finishes that retain the original freshness for years on end. Maintenance is minimum. Wide adaptability for unlimited building ideas makes porcelain enamel the ideal material for facing *new and existing* structures. Explore its possibilities. Write for details and color guide, today.

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ONLY PORCELAIN ENAMEL CAN DO SO MUCH FOR SO LITTLE

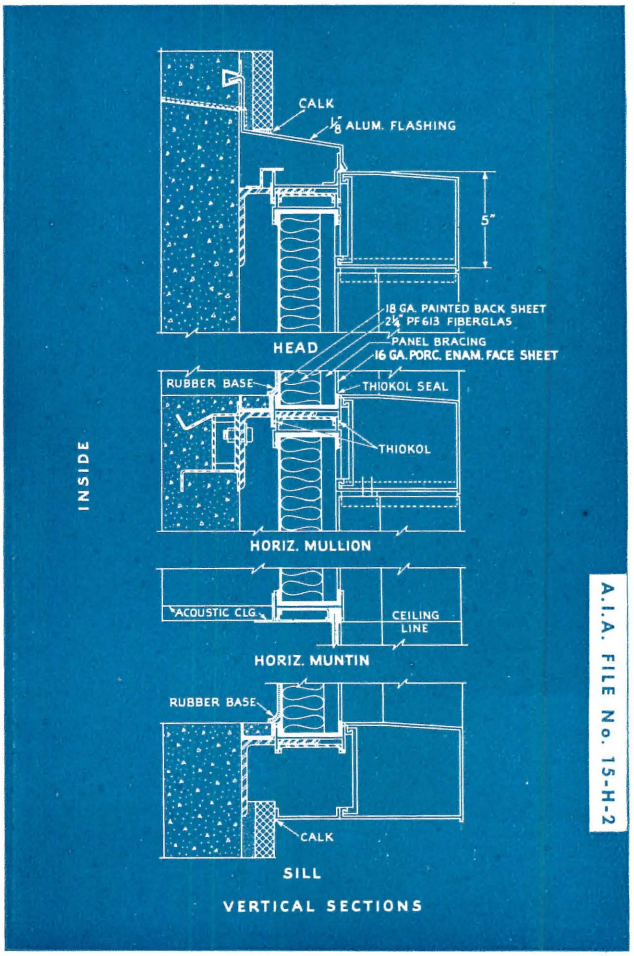
This new Los Angeles office building of The Texas Company features approximately 35,000 square feet of Architectural Porcelain Enamel — including curtain walls, penthouse, canopy and sign letters at top.

Architect
Welton Becket, F.A.I.A., and Associates, Los Angeles

General Contractor
Del E. Webb Construction Co., Los Angeles

Curtain Wall Assembly and Erection
Ador Corporation, Fullerton, California

Porcelain Enamel Panels Fabricated and Enameled by
California Metal Enameling Co., Los Angeles



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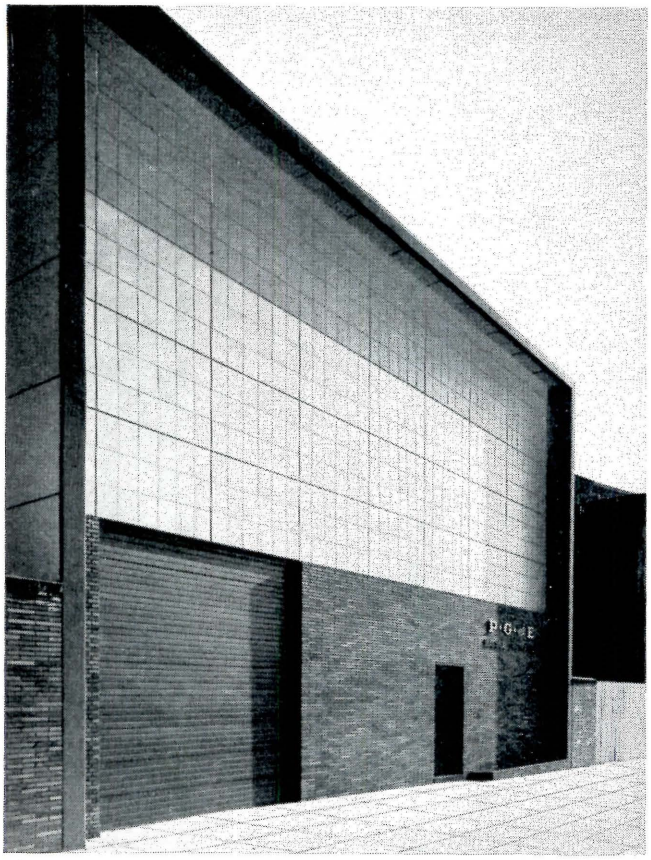

Pacific Gas & Electric Co. Marina Sub-Station, San Francisco
Kraftile Veneer gives acceptability to industrial buildings adjacent to residential sections.

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KRAFTILE COMPANY • NILES, CALIFORNIA

Waste Space

East to Denver, North to Canada, Home to Monterey

Fall being the time for regional conferences (of which more on page 64-1 of this issue), and the West having three A.I.A. regions for its 11 states, the fall is the time for much traveling. This year it was all concentrated in the brief space of three and a half weeks, but the distance it encompassed was anything but concentrated.

First to Denver, where Zeckendorf's Courthouse Square project is impressively reaching a point of evaluation—the May company-Daniels & Fisher store is complete and in use, the hotel is rising above ground. The shopping space in the hyperbolic paraboloid in front of the main store is delightful, as pleasant an experience in commercial interiors as possible. And the plaza beside it, though small, has inviting qualities. A few blocks away Mile High Center looks better than it did before, wearing its sober dignity with a sort of assurance. But its plaza and fountain area looked lonely. Even in the heat of a terrible September day, there was no one around refreshing himself in the sight and sound of the water.

It is hard to believe that this is the same Denver of before the war because its air of vitality is so great and the manifestation of this vitality is so much in the new buildings which are everywhere—some good, some indifferent, some bad. The curtain wall is, of course, ubiquitous. Like New Orleans' special kind of cream cheese which has disappeared, the individuality of the office building and the apartment house seems destined to be lost in the overwhelming anonymity of the curtain wall.

From Denver to Colorado Springs—with almost 200 other architects—to see the Air Force Academy, a complete city on its 17,000 acre site, not just a school. The Academic complex is a tremendous experience—but that's a story for another month.

Then to Yosemite where the Structural Engineers Association of California held its annual convention. The Ahwahnee, built in 1927, still looks well, still holds its own among the hotels of the National Parks, still fits its surroundings with an enviable appropriateness. The newer work in the Valley seems more imposed, less a straightforward acceptance of the conditions of the locality and of the potentials for architectural expression.

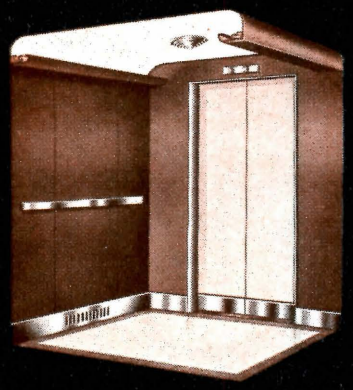
Although it rained for four days straight at the Northwest Conference, held in Harrison Hotel, Harrison Hot Springs, British Columbia, nothing could dampen the companionship of the architects from the four states that comprise that region. Hawaii, when it becomes a part of the Northwest (willy-nilly, that's what the A.I.A. says it will be!) next year, will find the warmth of fellowship it little could have expected on the mainland.

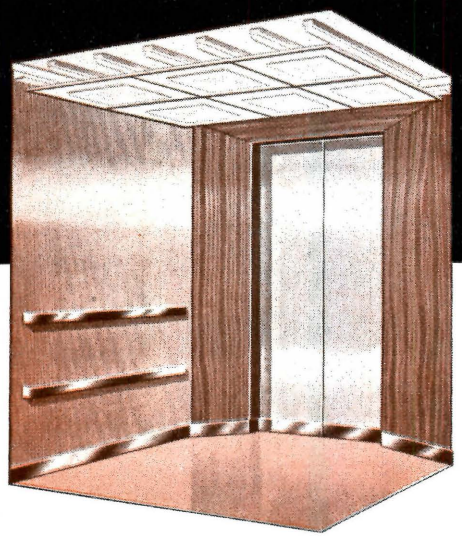
Seattle is as yet unmoved by its plans for the 1961 fair, but it has a theme (Century 21) and a primary architect (Paul Thiry) and a chairman of cultural arts (Robert L. Durham), and a site on First Street Hill. So it's off to a good start.

Southward to Monterey, the weather turned fair and warm, and the California Council convention proved a tremendous success, even more of a success that its planning committee had dared to hope it might be. With "Creativeness in Architecture" as theme and a list of speakers that read like Who's Who in Architecture, and a setting like Monterey—it seemed a cinch. But back of it was a lot of hard work. I know: along with Tom Elston, Bill Gillis, Worley Wong and Walter Stromquist, I worked on it under chairman Loy Chamberlain.

E.K.T.

the look of *Luxury*





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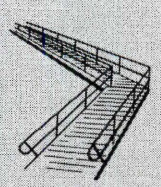

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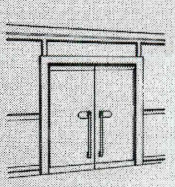
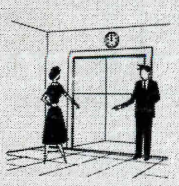


ENTRANCES & DOORS



ELEVATOR CABS & DOORS

B

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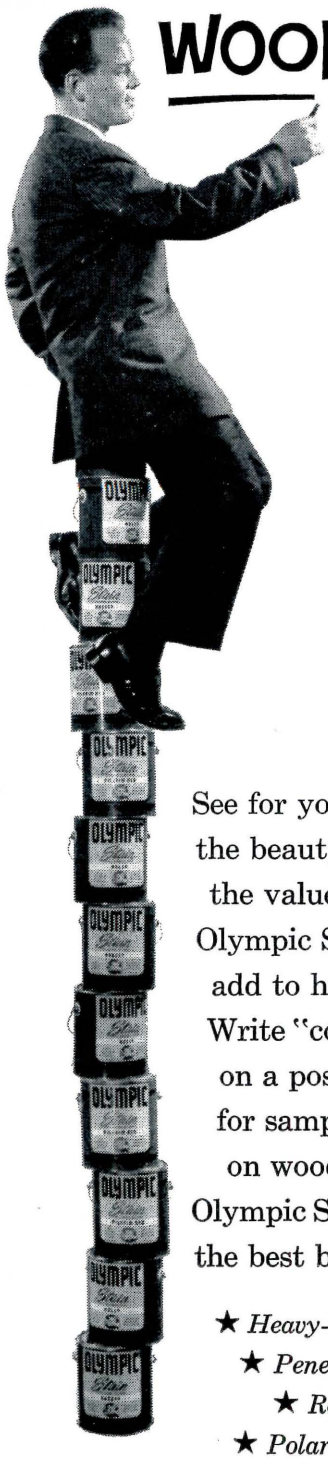

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in turn directs the rays upward to a panel of 110 reflectors, of varying size, which focus the rays on a system of salt water-conveying copper coils. The plant is being built for a bottled water company. When completed, its designer expects it to have a capacity of 60,000 gallons of fresh water per day—each day that has nine hours of sunshine.

Space Standards Reports Issued

A series of reports on recommended space standards for certain areas of the house is being prepared and issued by the Western States and the United States Department of Agriculture, Agricultural Research Service, Institute of Home Economics.

Latest reports in the series to be issued are for clothing storage, food preservation and storage for household textiles. Earlier, requirements for indoor dining, indoor play area and toy storage for pre-school children, inside drying lines for laundry and installation heights for separate ovens were issued.

Other areas to be studied include bathroom, bedroom, business, kitchen, living and special activity.

The reports are available from any of the Agricultural Experiment Stations in Tucson, Ariz.; Berkeley, Calif.; Fort Collins, Colo.; Honolulu; Moscow, Ida., Bozeman, Mont.; Reno, Nev.; State College, N. M.; Corvallis, Ore.; Logan, Utah; Pullman, Wash.; and Laramie, Wyo.

Gruen To Study Fresno Business Center

Complete studies of the central area of Fresno, Calif., will be made by Victor Gruen Associates, as a result of contracts which have been signed by the city's Redevelopment Agency executive director, the president of a group of downtown businessmen, and the chief administrative officer for the city of Fresno.

The studies will include land use plans for the central area; traffic plans to be integrated with the metropolitan area, with special differentiation of the traffic flow of automobiles, trucks and pedestrians; parking plans; civic building locations; and phased implementation of the plans.

Inter-County Area Planning Lacks Support

A three-and-a-half-year-old agency in Colorado known as the Inter-County Regional Planning Commission and made up of the city of Denver and four neighboring counties—Jefferson, Arapahoe, Adams and Douglas—is having hard sledding because Denver's 1958 budget failed to include funds for its share of support to the Commission. It was only a matter of $31,200, but it meant the difference between the Commission's continued existence and its demise.

That the Commission's work had been good and that it was needed was undeniable. But, said Denver's mayor after looking over the budget, "planning is the only thing we can get along without." Others disagreed, particularly in the light of Denver's constantly increasing population and the new suburban developments around the city.

Since the city's attitude seemed adamant, other means for keeping the Commission alive have been suggested. One of these is that the city of Denver may be able to provide much-needed staff work instead of actual dollars, thus participating in the Commission by work if not by money. The suggestion further indicated the possibility that funds might be available, to add to the counties' contributions, which the state would obtain through the federal interstate highway program.

The work of the Commission in its three-and-a-half year existence has been largely in providing basic studies for future park, recreation and transportation development as well as area-wide sewerage and water use, future land use, recreational zoning and model subdivision regulation.

Van Gogh Show Sets S.F. Record

A record crowd of 67,139 people visited the M. H. De Young Memorial Museum to see 84 paintings and 71 watercolors and drawings by Vincent Van Gogh during the show's second week. On one day—Sunday—19,700 people filed through the museum's gallery to see the paintings, most of them never before shown in San Francisco, and some never exhibited before in the United States.

The collection, a comprehensive group containing some of Van Gogh's most celebrated works, will be on exhibit until November 30.

Seattle Fair Bill Approved

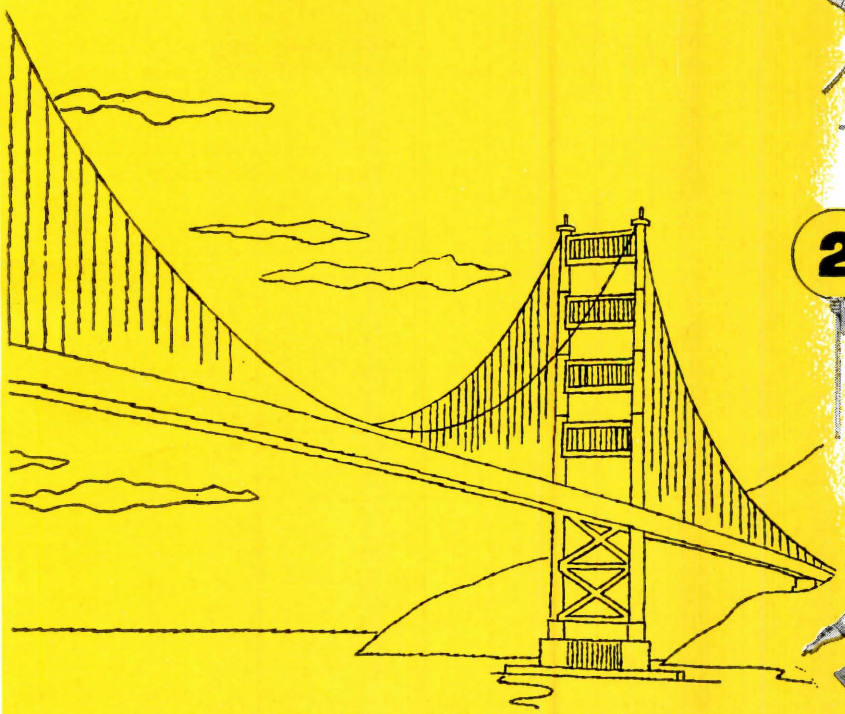
President Eisenhower has signed the Seattle "Century 21" exposition bill, authorizing appointment of a federal commissioner and assuring some federal participation in the fair.

The exposition, planned for 1961, will be held on the First Street Hill site which ultimately will become Seattle's new civic center. Paul Thiry was recently named primary architect for the exposition, and other architects for specific buildings will be named shortly.

Golden Gate DOOR...

PROVES BRIDGE-LIKE CONSTRUCTION KEEPS FIAT YEARS AHEAD IN TOILET COMPARTMENT DESIGN

The *inside* story proves it! FIAT'S Golden Gate Door is engineered far beyond accepted standards—steadily absorbs roughest punishment—readily withstands heaviest stress and shock.



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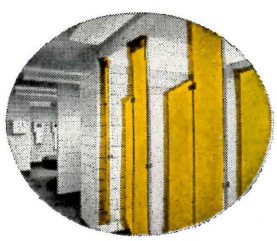

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E-R Center Bids Rejected

All bids for Portland's Exposition-Recreation Center were rejected last month on the basis that they "were not within the scope of available funds." The low bid was $6,233,746; high was $7,140,000. Redesign to bring the building within the required budget range is under way so that new bids can be called in December.

Although the redesign will "not affect seating capacity, parking, spectator comfort, function or beauty," according to Gale Livingston, chairman of the Exposition Recreation Commission, some changes are apparently to be made in the roof's unusual structural design. The original design used a wood truss to span the building's 360 ft width. The laminated wood truss solution was one of 19 proposed solutions studied in connection with the building's design. (Western Section, January 1958, pp. 48-2, 3.)

A statement by the commission chairman said that if the building were being built by a private corporation instead of a municipal body "it is entirely possible that we would have proceeded with the low bid, making the necessary change orders to bring the cost within available funds. As a municipal body guided by the advice of the City Attorney and dedicated to the public interest we have no alternative other than to change certain specifications and submit them for rebid."

Skidmore, Owings and Merrill, Portland, are architects for the center.

Three Los Angeles Firms Get Federal Job

Three firms, working in association, will be architects for the new $32,177,000 Los Angeles Customhouse and Federal Office building. They are Welton Becket & Associates, Albert Martin & Associates and Paul R. Williams & Associates. Working drawings are due to be completed by 1960, according to General Services Administration.

The building will be situated on a six and a half acre site near the Civic Center. Legislation to authorize its construction was first introduced eight years ago.

Lloyd Center Signs to "Whisper"

When Lloyd Center, Portland's huge new shopping center now under construction, opens in 1960 its signs will conform—at least for the most part—to a general limitation in size, type and design, says Alfred Fast of John Graham & Company, architects for the project. Signs that turn, flash or move are taboo, he says; they give too much of a county-fair aspect to the center.

Instead of shouting, the center's signs are due to "whisper": they will be strips around the buildings or across the shop fronts. Instead of competing for size, they will be kept within bounds to play their part in producing a pleasant environment.

The center is designed to provide shopping malls on two levels and will have the largest under-cover parking garage in the country with space for 3500 cars. An additional 7000 spaces will be provided outside. Besides a variety of small shops and a large department store, the center will have a skating rink with a restaurant; planting areas and a centrally located park with—to quote Mr. Fast—an "architectural" lake (a lake which is in the plan but which will depend for its realization on the willingness of the client to provide necessary funds for its development).

Lloyd Center is strategically located on Portland's East side to serve the majority of the city's population.

Calendar of Western Events

- NOVEMBER 6-8: Fall meeting, National Academy of Sciences, University of California, Berkeley
- NOVEMBER 7-9: Annual fall conference, Pacific Arts Association, Northern California Section, Asilomar, Calif.
- NOVEMBER 8-11: Annual convention, National Association of Real Estate Boards, Masonic Temple, San Francisco
- NOVEMBER 13: Regional technical conference, Society of Plastics Engineers, Ambassador Hotel, Los Angeles
- NOVEMBER 15: Pacific Section, Society of Architectural Historians, San Francisco meeting, Society of California Pioneers Building, 456 McAllister Street, San Francisco
- NOVEMBER 30: Closing, Vincent Van Gogh Exhibition, M.H. deYoung Memorial Museum, Golden State Park, San Francisco
- DECEMBER 5-6: Northern California chapter, Associated General Contractors, convention, Sheraton-Palace Hotel, San Francisco
- JANUARY 24-27: Sixth annual meeting, Consulting Engineers Association of California, Mark Thomas Inn, Monterey, Calif.
- FEBRUARY 17-19: Church architecture conference, sponsored by Church Architectural Guild of America and department of church building, National Council of Churches, Statler-Hilton Hotel, Los Angeles

WESTERN SECTION

Index To Advertising

Manufacturers' Pre-Filed Catalogs of the firms listed below are available in the 1958 Sweet's Catalog Files as follows:

a Architectural File (green)
ic Industrial Construction File (blue)
lc Light Construction File (yellow)

	Bayer, A. J. Company	64-21
	Columbia-Geneva Division	64-6-7-13
a	Fiat Metal Mfg. Company	64-23
	Forest Fibre Products Co.	64-18
	Gladding, McBean & Co.	64-11
	Hager, C. & Sons Hinge Mfg. Co.	64-8
	Kaiser Gypsum Co. Inc.	64-17
	Kraftile Company	64-20
	Lighting Dynamics	64-9
	Olympic Stained Products Co.	64-22
	Palos Verdes Stone	64-10
	Porcelain Enamel Publicity Bureau	64-19
a	Robinson Brick and Tile Company	64-16
	Sagar Carroll & Associates	64-5
	Smoot-Holman Company	64-12
a	Soule Steel Company	64-15-16
	United States Pumice Supply Co., Inc.	64-22
	United States Steel	64-6-7-13

Western advertising offices: LOS ANGELES, Bob Wettstein, 672 S. Lafayette Park Pl.; PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 355 Stockton St.

PLANNING INSTALLATIONS Nick Stivaletta (left) and his brother Mike (standing) plan locations for telephone outlets in a new home with Don Cotter of the telephone company.

"A popular feature that pays off– that's concealed telephone wiring"

—say Mike and Nick Stivaletta, Builders, of Randolph, Mass.

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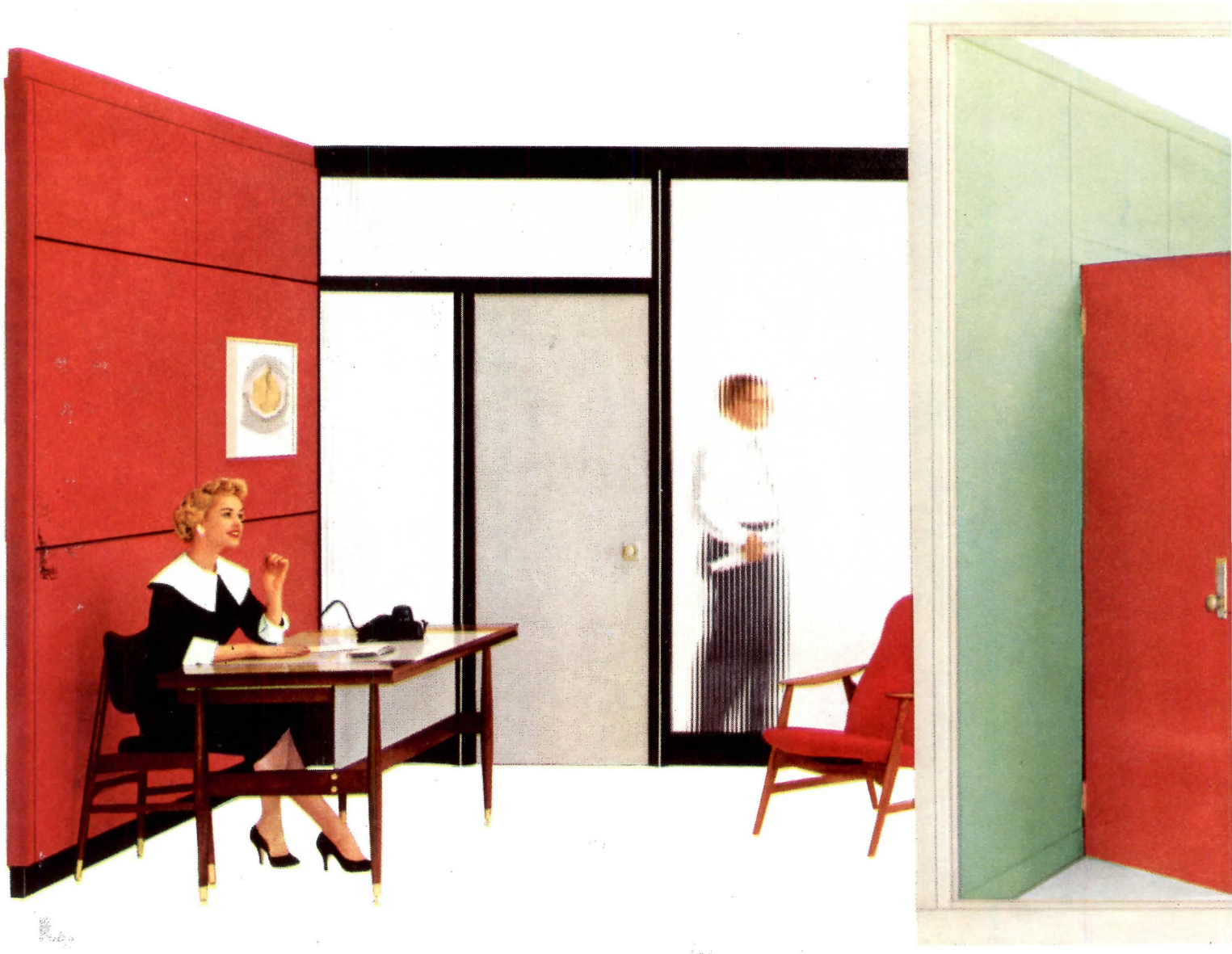

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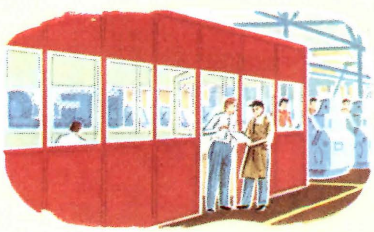

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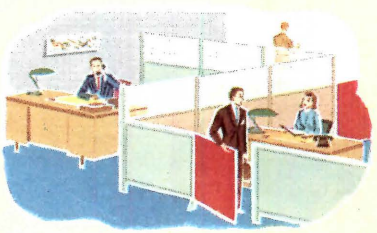

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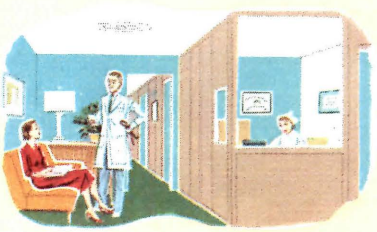

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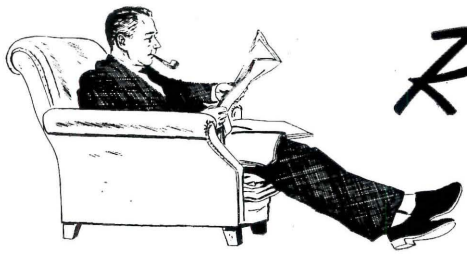

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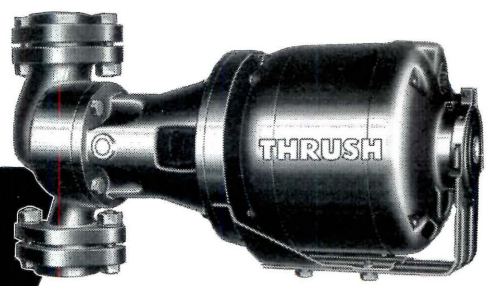

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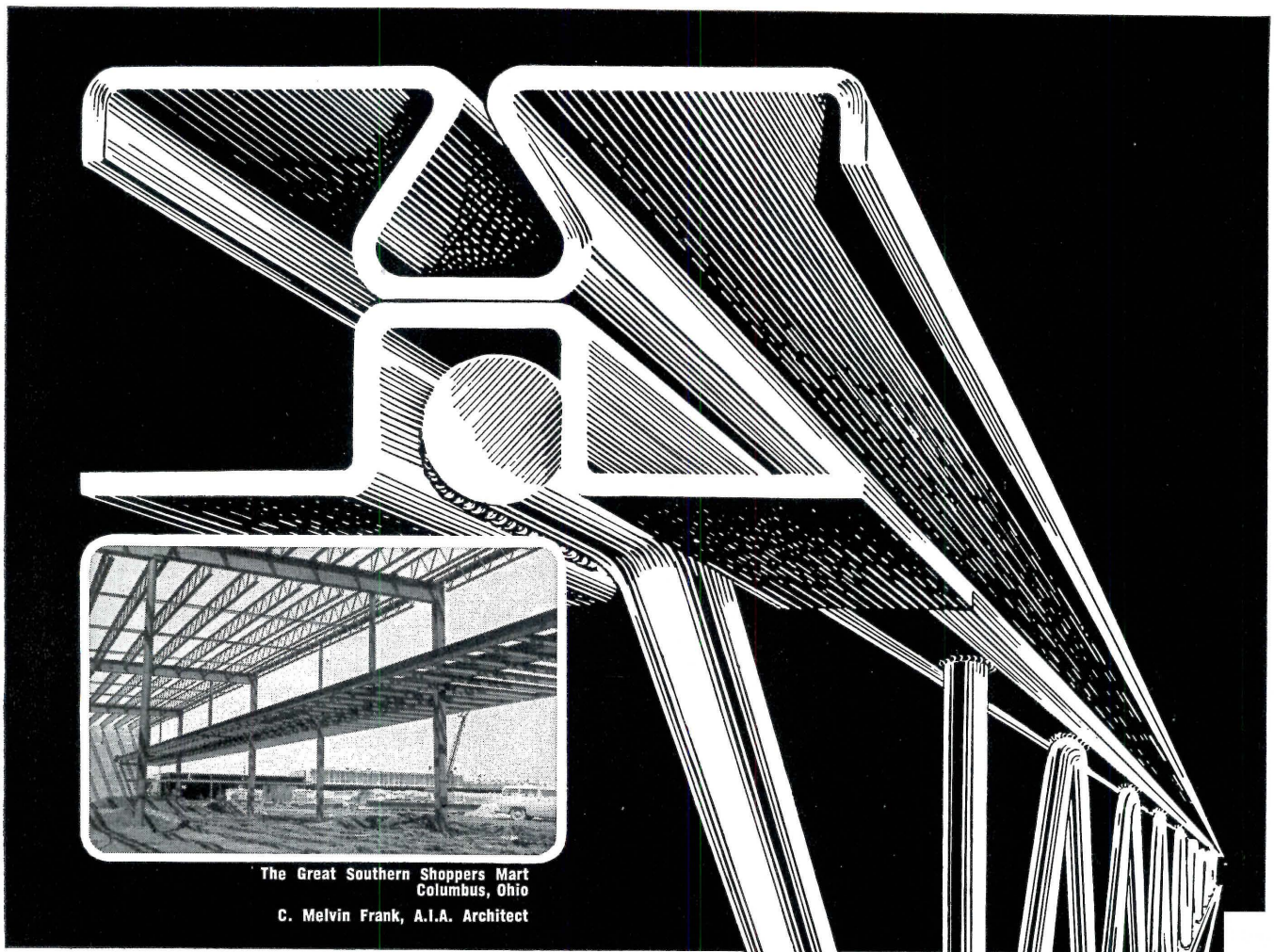

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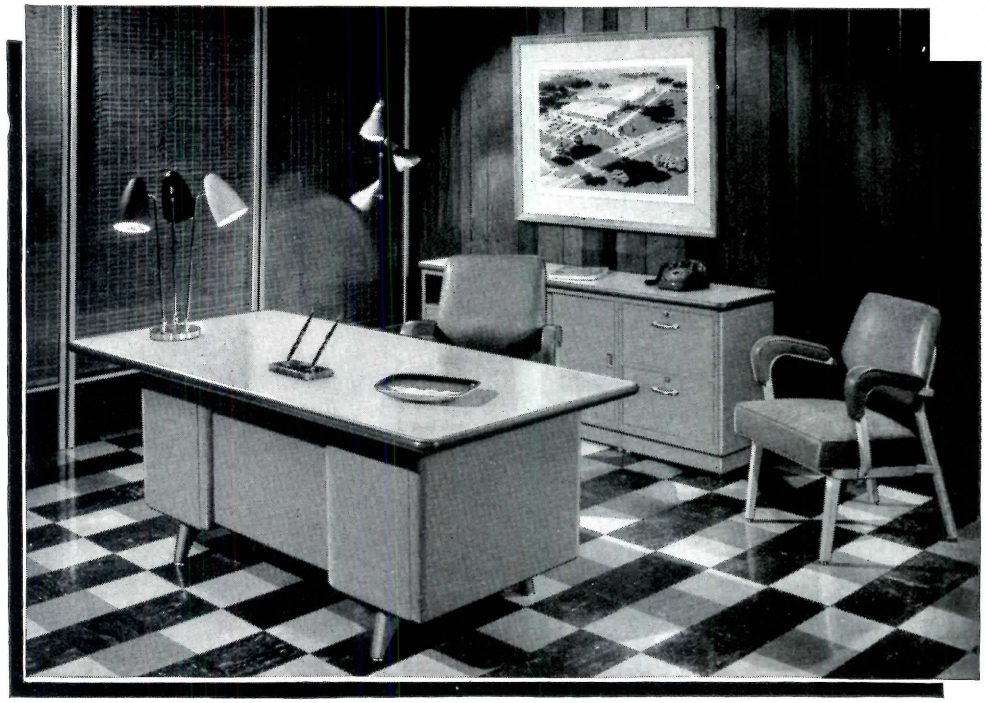

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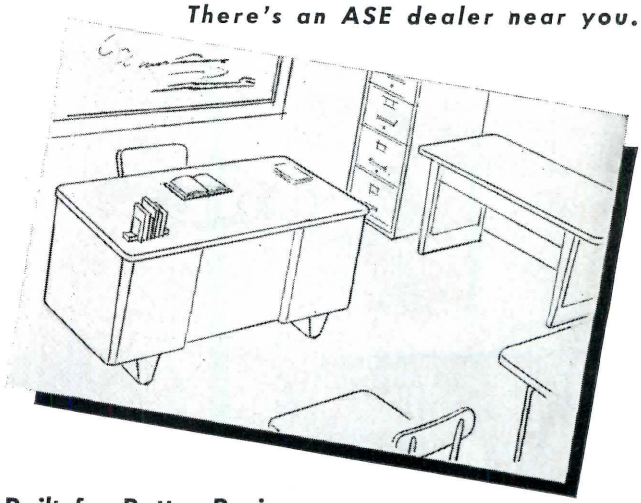
Today, more ASE Steel Furniture is specified in offices, schools, hospitals and institutions than ever before. Durable...flexible...beautiful...trend-setting ASE Steel Furniture has the qualities which find increasing favor with architect and client alike.

There's an ASE dealer near you.

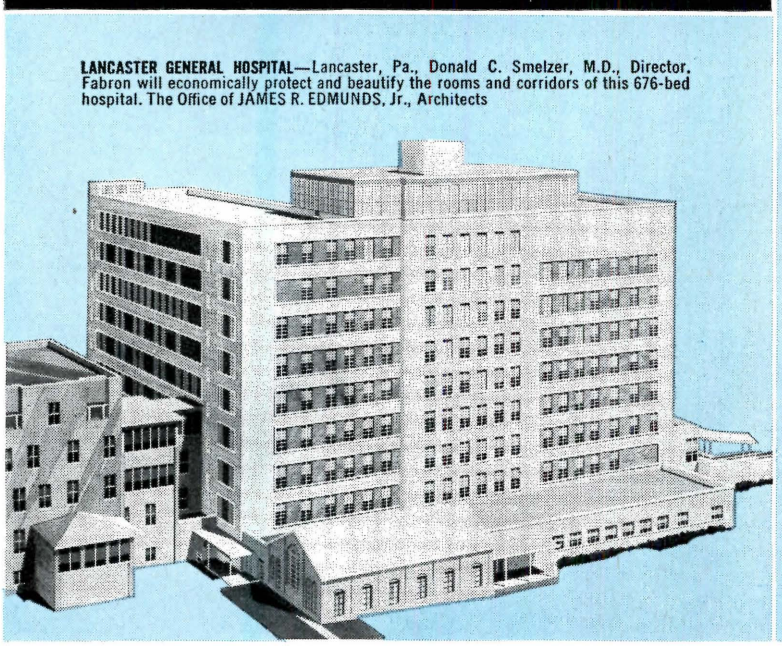


Better Built for Better Business

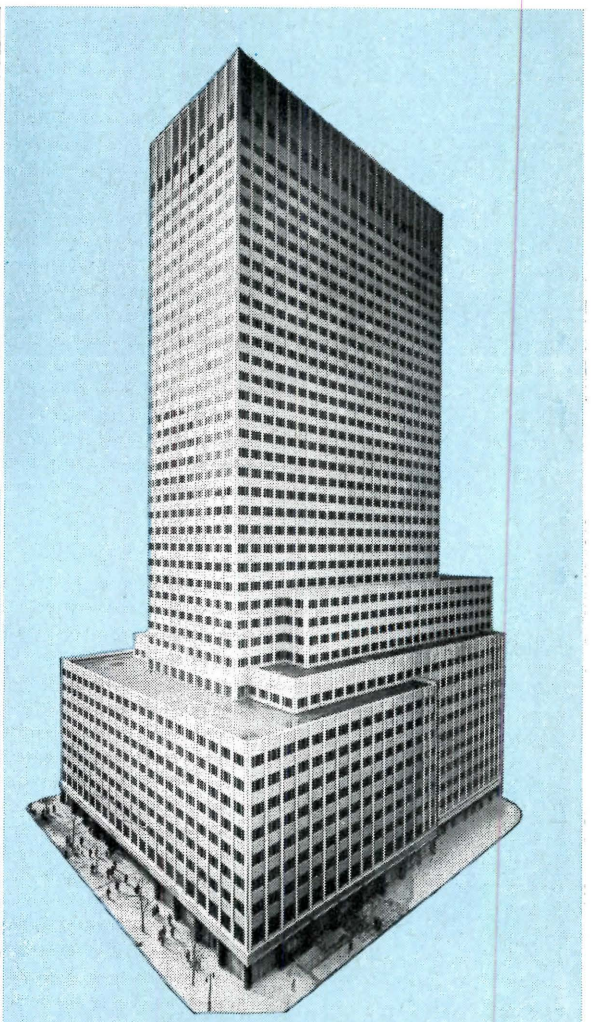
ALL-STEEL EQUIPMENT INC.

Aurora, Illinois

natural choice for wall treatments



LANCASTER GENERAL HOSPITAL—Lancaster, Pa., Donald C. Smelzer, M.D., Director. Fabron will economically protect and beautify the rooms and corridors of this 676-bed hospital. The Office of JAMES R. EDMUNDS, Jr., Architects



TISHMAN BUILDING—New York, N. Y. New Fabron is being installed in the corridors of this building to minimize overall upkeep costs and simplify future maintenance problems. CARSON & LUNDIN, Architects

pure vinyl, fabric-supported wall coverings

new FABRON®

new PERMON®

Today, more than ever before, where you find walls, you'll find new Fabron and Permon! For important buildings everywhere—whether new, old or in construction—more and more owners, administrators and architects are specifying new Fabron and Permon for dramatic styling, low maintenance, durability, and true long-term economy. Check their outstanding advantages against the obsolete and money-wasting properties of conventional wall treatments:

- Striking decorative beauty
- Glass-like washability
- Unsurpassed colorfastness
- Positive plaster-crack protection
- Safety from fire and toxicity
- Remarkable resistance to abrasion and impact damage
- Record-breaking durability
- Low initial cost and maximum long-term economy

All-New *Vinyl FABRON* with exclusive 3-ply construction*—resists everyday wear and tear.

All-New *Vinyl PERMON* heaviest vinyl made—protects lower wall areas exposed to excess abuse.

Send today for complete information on new Fabron and Permon vinyl wall coverings.

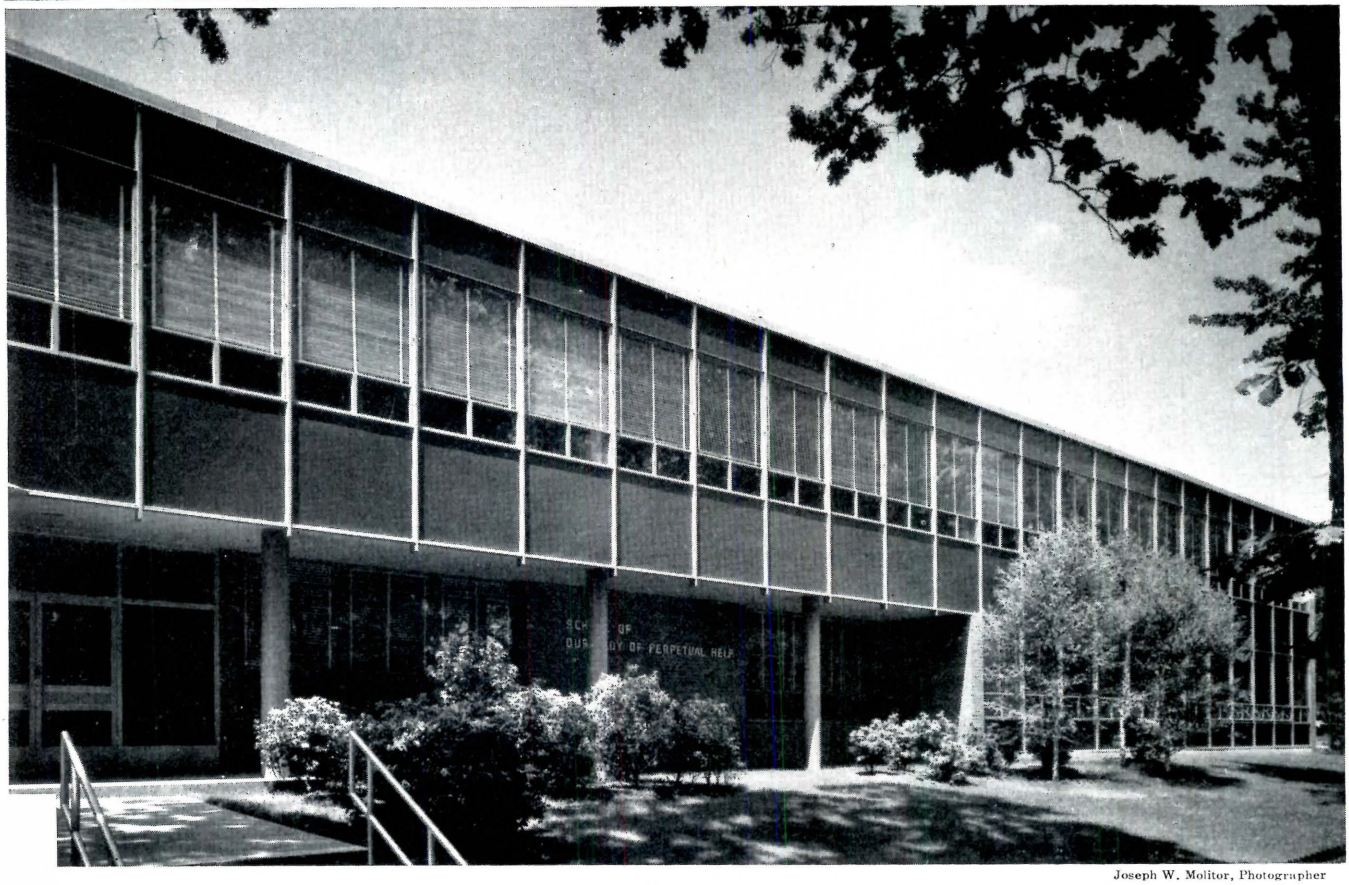
*A Toscony Process

FREDERIC BLANK & COMPANY, INC., 230 Park Ave., New York 17, N. Y., *Established 1913*

Since HOPE'S *1818*

WINDOW WALLS

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



Joseph W. Molitor, Photographer

SCHOOL OF OUR LADY OF PERPETUAL HELP, PELHAM MANOR, NEW YORK

Edward Fleagle, A. I. A., Architect — *Marcello Mezzullo, Inc., General Contractor*

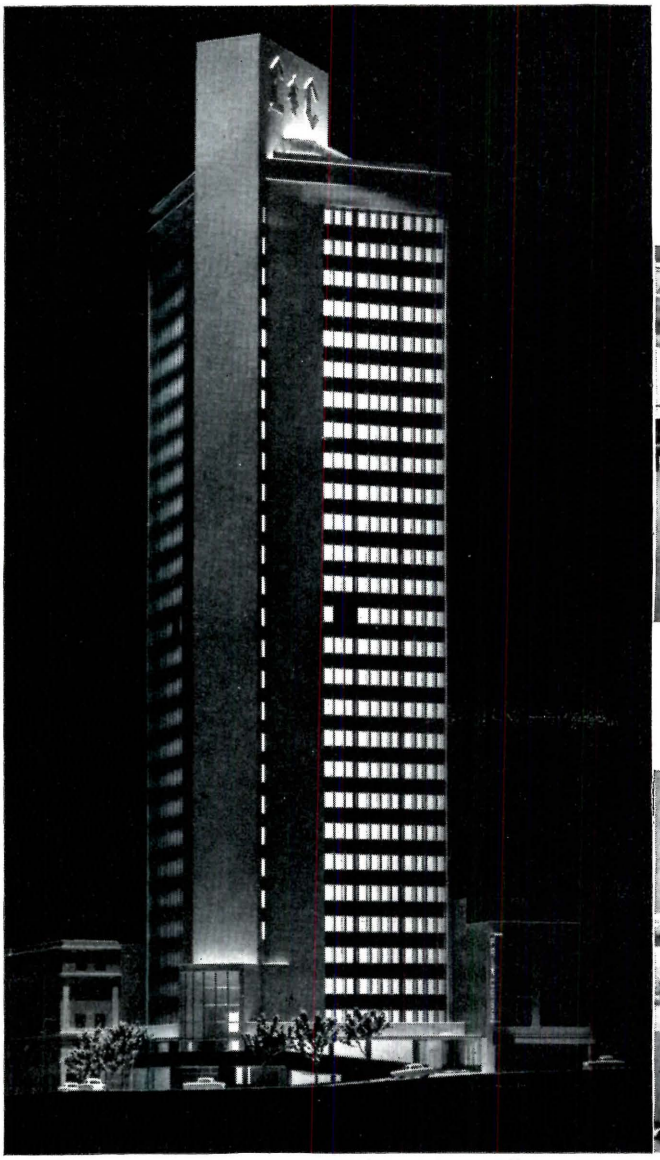
THE WALLS of this fine school building are made with Hope's custom steel Heavy Intermediate Classroom Windows installed in Hope's Pressed Steel Sub-frames with alternating rows of insulated panels and glass. The trim exterior shows good use of the complete freedom of layout offered by Hope's multi-story window-wall construction. Any desired relationship is obtainable between panels and glazed areas, whether fixed or movable. Ventilators, louvers and doors may be located wherever needed.

Hope's window-walls also provide structural advantages that are of great importance to the owner of the building. Your client gains the great benefit of low maintenance cost with permanent weather tightness and positive operation of the movable windows for the full life of the building. There are also construction economies. Components are light in weight in relation to their strength. They are convenient to handle and walls are assembled rapidly at lower labor costs.

Write for Bulletin No. 158

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS



Dominating the center of Nashville, the new limestone, black granite and aluminum Life and Casualty Tower is an architectural masterpiece. Notable design features are aluminum fins, north and east, which create a distinctive appearance and provide shade.

The decoration of the reception area reflects imagination and good taste. Floor tiles are rubber in black and white design. The screen is Eighteenth Century Chinese Coromandel.

Soft, efficient, interior lighting is produced throughout the building by 2,200 Day Bright "Sky Tex" one-piece glass fixtures.

EDWIN A. KEEBLE ASSOCIATES, INC. OF NASHVILLE, TENNESSEE TRIUMPH WITH LIFE AND CASUALTY TOWER

CRAFTSMANSHIP IN THE PACKAGE

From foundation to illuminated L & C initials, this beautiful Life and Casualty Tower stands as a tribute to the architectural skill of Edwin A. Keeble Associates, Inc.

Pratt & Lambert paints and varnishes were used throughout including *New* Lyt-all Flowing Flat, Lyt-all Stippling Eggshell, Vitralite Enamel and Vapex Flat Wall Finish.

PERSONAL SERVICE BY TRAINED REPRESENTATIVES in the choice of painting specifications and in the development of distinctive color plans is available, upon request and without obligation. Please write: Pratt & Lambert Architectural Service, 3301 38th Ave., Long Island City 1, N. Y.; 326 W. 26th St., Chicago 16, Ill.; 75 Tonawanda St., Buffalo 7, N. Y.; 254 Courtwright St., Fort Erie, Ontario.

PRATT & LAMBERT

P&L®

A continuing series of distinguished schools, office buildings, churches, hospitals and industrial structures using NORTON DOOR CLOSERS

NORTON'S PROVED DEPENDABILITY DICTATED CHOICE OF DOOR CLOSERS

ARCHITECT: HARRY T. MACDONALD, A.I.A.
CONTRACTOR: STIGLBAUER BROTHERS

New Senior High School in Downey, Calif., Has a Norton Door Closer on Every Door

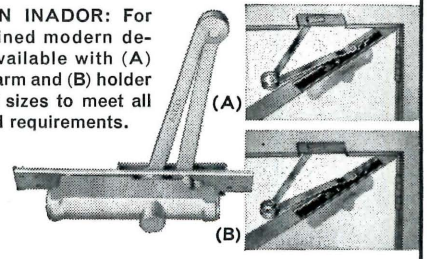
Ruggedness is a prime requisite for door closers in any school attended by over 2,000 students. This need has been satisfied in the distinctive new Senior High School at Downey, Calif. ...and also the new West Junior High School. All doors in both schools are equipped with Norton Door Closers. The choice was influenced by the fact that thousands of Norton Door Closers are still in daily use in some of America's best-known public buildings after serving continuously 30 years and longer. For fully illustrated data on these and other Norton Door Closers, including important new models, consult the current Norton catalog #57. Write for it today.

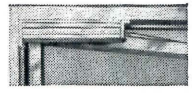
NORTON® DOOR CLOSERS

Dept. AR-118, Berrien Springs, Michigan

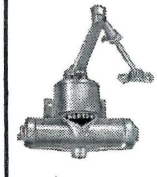
Complete Norton Line Meets Every Door Closer Need

NORTON INADOR: For streamlined modern design; available with (A) regular arm and (B) holder arm...4 sizes to meet all standard requirements.

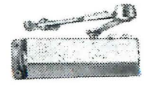




NORTON 750: New corner design with concealed arms, for all types of doors, particularly narrow-rail doors.



NORTON SURFACE-TYPE: For all installations where concealment is not essential.



NORTON 703E: Compact surface-mounted type...first closer with extruded aluminum alloy shell.

Hop, Skip and Jump on it!

and Feel the Cushioned Flex of KREOLITE Gym Floors

Here is a floor that welcomes any kind of action.

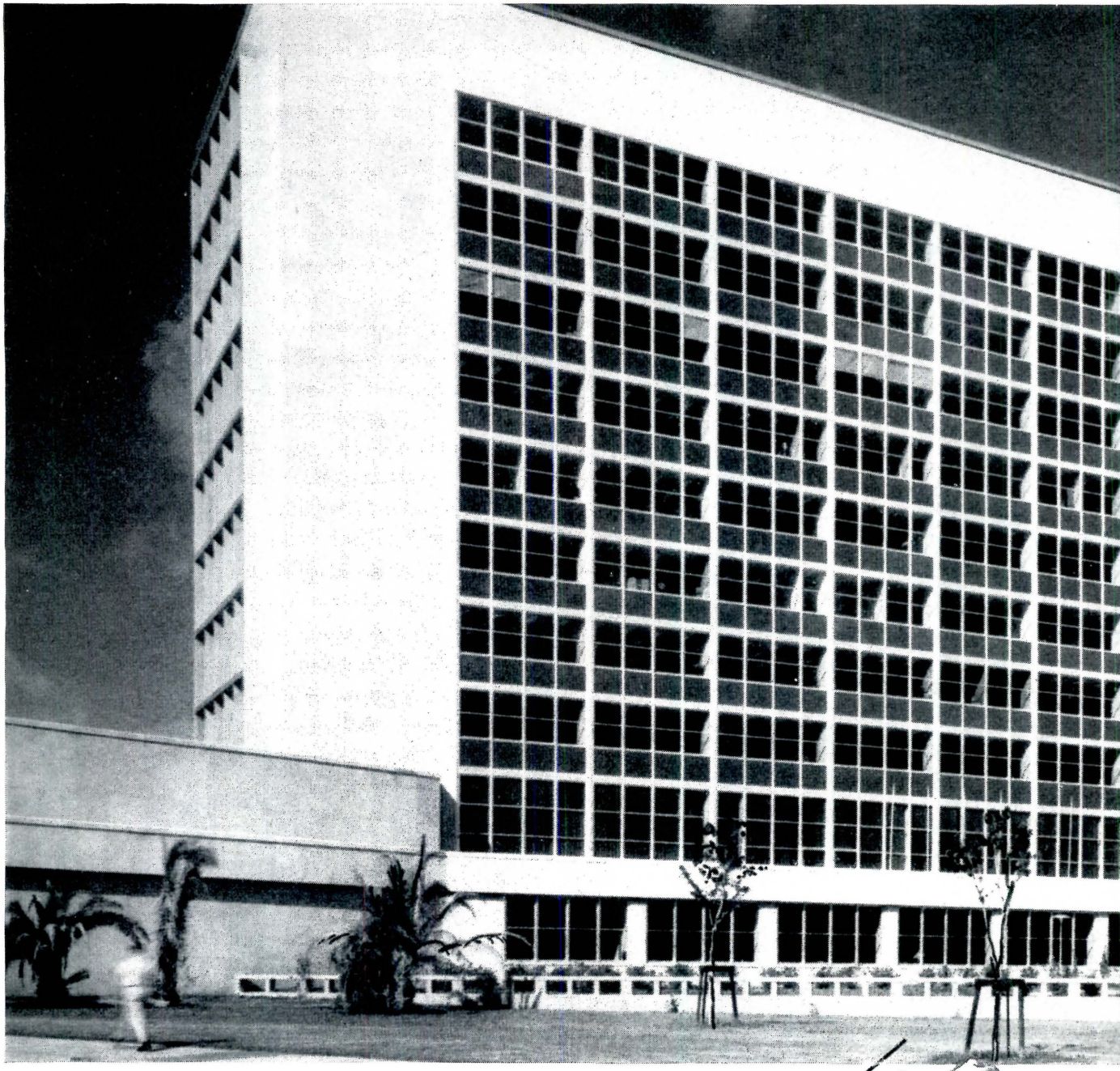
Because of its high *resiliency,* Kreolite Flexible Strip End Grain Wood Block Floors are actually kinder to the feet by lessening fatigue.

In addition to this highly desirable feature, Kreolite Floors resist wear, stay new longer and require only a minimum of maintenance.

For long lasting floor beauty and *resilience,* get all the facts on Kreolite . . . the better floor for gyms, multi-purpose rooms and school shops. Write today for installation data and specifications.

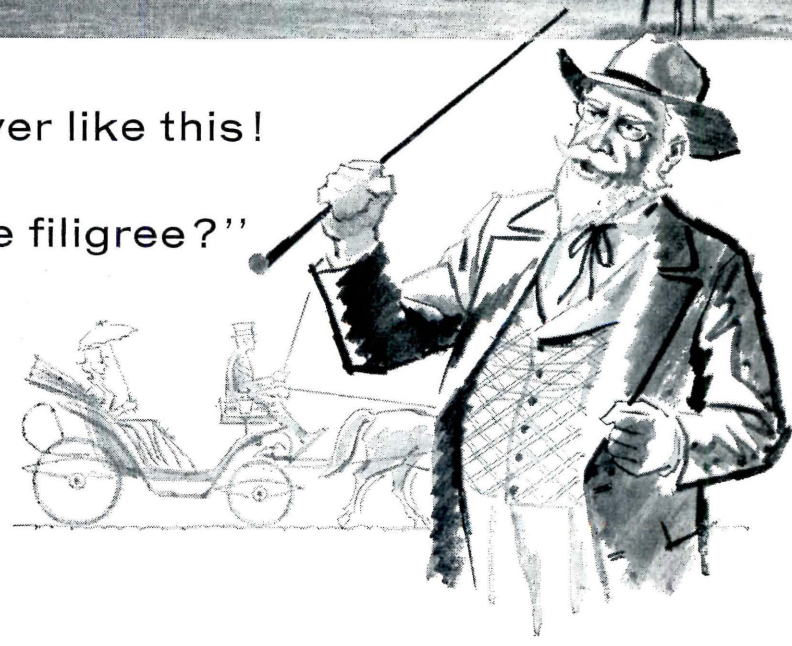
KREOLITE FLEXIBLE STRIP **END GRAIN FLOORING**

THE JENNISON-WRIGHT CORPORATION
TOLEDO 9, OHIO



"New Orleans was never like this!

What happened to the filigree?"



Architects: Goldstein, Parham & Labouisse, and Favrot, Reed, Mathes & Bergman, New Orleans, La.

It's still in the French Quarter, Colonel, but up here at City Hall we need a practical form of architecture—practical, but still beautiful. The new City Hall is the first of a proposed five-building civic center—an excellent example of functional modern architecture. It is especially functional in the extensive use of glass for the vision and spandrel areas.

SOLEX®—*Pittsburgh's* heat-absorbing glass—in the windows keeps the interior cooler and more comfortable. And SPANDRELITE®—*Pittsburgh's* glass in color—brings a new-found beauty to the exterior, provides a "glass skin" that is exceptionally strong, durable, and weather and corrosion-resistant.

Another *Pittsburgh* product used in this impressive building is the PITTCOMATIC® automatic door opener. With this hinge, doors open at a feather touch. What's more, the PITTCOMATIC is the easiest device to install and maintain . . . the safest to operate.

In *your* architectural plans, consider Pittsburgh Plate Glass Company products. You'll find them basic in drawing up any building scheme. Our Architectural Representative nearest you will be pleased to assist you in solving any problem confronting you. Call on him. There is no obligation on your part.

PITTSBURGH GLASS

. . . the basic architectural material

75th ANNIVERSARY 1883—1958

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Bolts join structural members of new bank building in Detroit

Here's the newest of the impressive structures in Detroit's financial district —the 14-story main office building of National Bank of Detroit. Upon completion, the up-to-the-minute structure will contain about 420,000 sq ft of usable floor space. The steel members of its structural framework, weighing approximately 6,000 tons, are connected by more than 102,000 Bethlehem High-Strength Bolts, Nuts, and Washers.

Facade of main office building of National Bank of Detroit will have pleasing shadow effect, resulting from unusual combination of glass, stone, and metal. Architects and Engineers: Albert Kahn Associated Architects and Engineers Inc.; General Builders: Bryant & Detwiler Co.; Steel Fabrication and Erection: Bethlehem Steel Co.

BOLTING IS FAST. Bethlehem High-Strength Bolts are ideal for erecting structural steel because of the speed with which they can be installed. A pneumatic impact wrench is all that's required when tightening the nuts.

BOLTING IS QUIET . . . AND SAFE. High-strength bolting is relatively quiet, making it a highly desirable construction technique in business, hospital, and school areas. Here's another advantage: with the bolts installed cold, there's no possibility of fire, or injury from tossed metal.

Bethlehem High-Strength Bolts, Nuts, and Washers come in a full size range, quenched and tempered to meet the requirements of ASTM Specification A-325. Our nearest sales office will give you full details.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

EVENGLO®

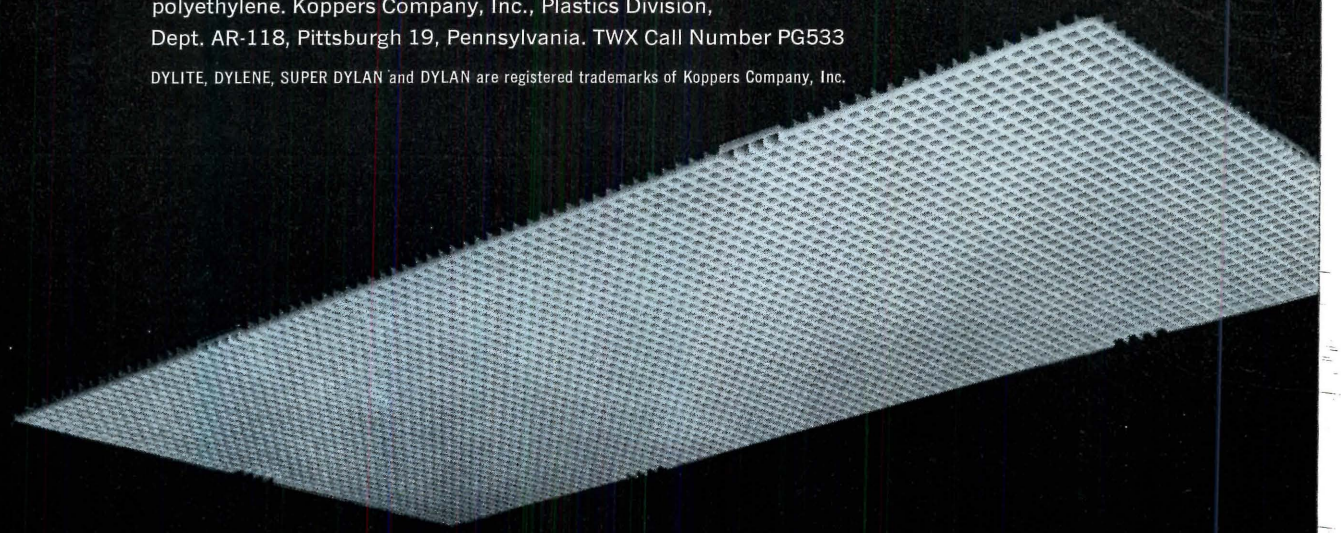
louvers in pastel colors are light-stabilized!

By using **Evenglo** polystyrene, Sinko Manufacturing and Tool Company, Chicago, Illinois, produces a colorful selection of louvers designed to match the decorative scheme of any room. **Evenglo** can be molded or extruded in varying degrees of transmission and hiding power through a complete range of whites and pastels.

Evenglo is gaining widespread acceptance in lighting systems for commercial buildings, schools and business establishments, because of its versatility in both molding and color.

So when you're specifying fixtures for new construction, or remodeling, be sure to specify fixtures made from **Evenglo** polystyrene. Write or wire for information on the properties and characteristics of **Evenglo** polystyrene, and these other fine plastics by Koppers: **Dylite** expandable polystyrene, **Dylene** polystyrene, **Super Dylan** polyethylene and **Dylan** polyethylene. Koppers Company, Inc., Plastics Division, Dept. AR-118, Pittsburgh 19, Pennsylvania. TWX Call Number PG533

DYLITE, DYLENE, SUPER DYLAN and DYLAN are registered trademarks of Koppers Company, Inc.



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KOPPERS PLASTICS

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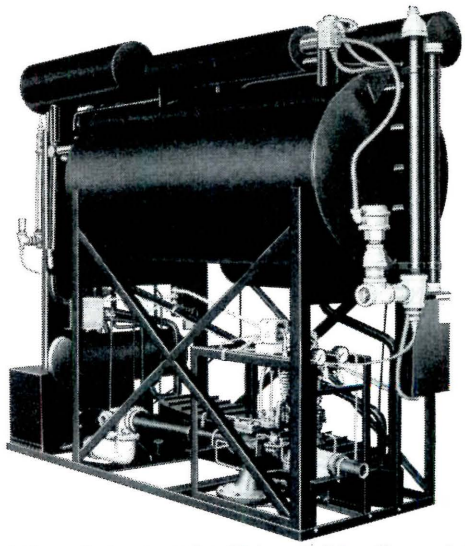
ARCHITECT: JOHN F. STANN; CONSULTING ENGINEER: J. B. WYBLE; BUILDER: SAM EIG



Check these facts about the 25-ton **Arkla-Servel** Cooler

- A compact unit, easy to install and light enough for rooftop installation.
- Costs are low for installation, operation and maintenance. No specially trained operating or maintenance personnel are required.
- Can be installed singly or in banks to fit any size installation.

"...now we're cooling with GAS!"

Arkla-Servel Gas Air Conditioning keeps customers cool and operating costs down at the Motel Washingtonian

"While we were planning the Motel Washingtonian, we made a complete study of all potential equipment," states Sam Eig, builder and corporation president of this modern motel near Washington, D.C. "We knew we wanted gas for cooking and heating, and after our investigation, we found gas best for *all* operations."

For air conditioning, the specifications called for Arkla-Servel gas absorptive coolers. "With our Arkla-Servel units, we have no maintenance problems," adds Mr. McKeever and Mr. Eig. "And we were able to tie them into our heating system without worrying about special housing, vibration, or noise. Our one central system cools in summer, heats in winter to provide us with a quiet, year-round economical operation."

With the new Arkla-Servel gas absorptive cooler, your clients get extra—even exclusive—advantages that only a gas cooling system gives.

- High efficiency at all times—even during the light loads.
- Constant temperature control.
- Instant automatic adjustment to match actual cooling requirements.
- Dependability of fuel service at all times.

Gas absorptive cooling can put your commercial and industrial clients' heating plant on a year-round paying basis, too. For specific information, take advantage of the consulting services provided by your gas company. They have trained specialists who have been working with architects and engineers for years. Check the facts about gas and you'll see—modern gas air conditioning out-performs all other fuels. *American Gas Association.*

Lobby of the Fontainebleau Hotel • Architect: Maurice Lapidus, AIA, Miami Beach, Fla.

Terrazzo *takes* traffic...stops it too

Neither footsteps nor furniture scrapes faze the beauty of timeless Terrazzo.
Create any design your imagination dictates. Versatile Terrazzo translates
it into a virtually indestructible traffic-stopper
—marble hard and concrete durable.
Terrazzo is easy to walk on and less slippery than waxed floors.
Its smooth jointless surface cleans readily, requires no refinishing,
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With Terrazzo, you can give your imagination free rein. It's available
for walls, stairs, and wainscots in an infinite number of colors,
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AIA Kit sent upon request. Catalogued in Sweet's.

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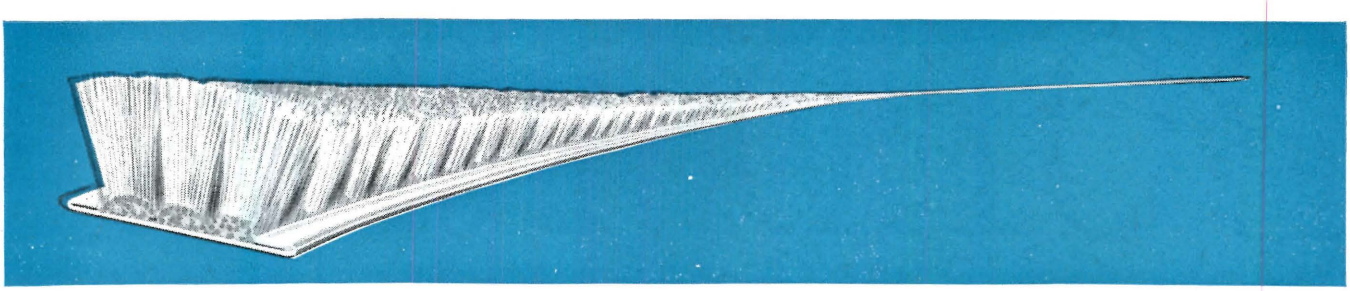
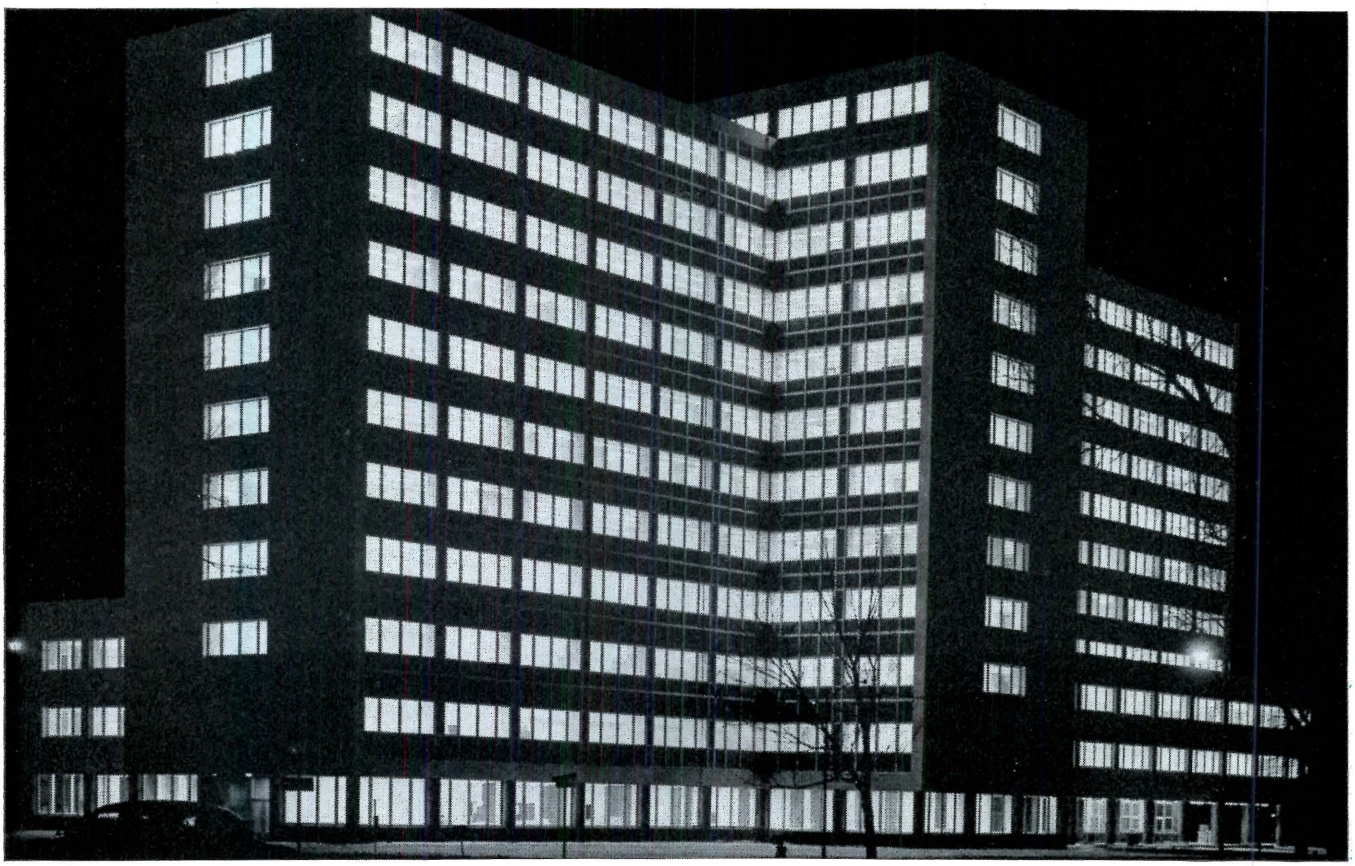


11 MILES OF DRAFTITE

weatherstrip this building like a cocoon



Kansas State Office Building, Topeka, Kansas. John A. Brown, State Architect (at time building was designed). Windows, 1300 series by Cupples Products Corporation.

1,998 WINDOWS face the weather in this dramatically modern Kansas State Office Building at Topeka . . . and every one of them keeps the weather out—absolutely!

How? These top-hung, inswinging aluminum windows by Cupples are glazed with insulating glass and double weatherstripped with wool-pile DrafTite* (Weatherstrip A-67 available in galvanized steel, aluminum and stainless steel cores). The result is better insulation combined with easier window operation.

"DrafTite has proved itself to us completely during the year we've been in this new building," says Paul F. Clark, Secretary-Manager, State Office Building Commission.

Let DrafTite prove itself to *you.* Call on our engineering facilities or send for our catalog illustrating DrafTite standard sizes and shapes for every type of window and door.

*Trademark

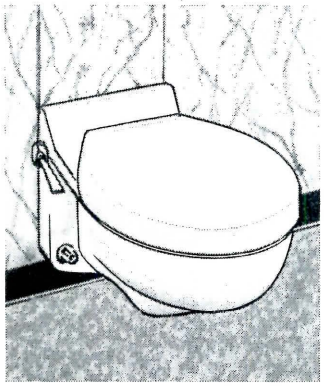
The Standard Products Company

BUILDING PRODUCTS DIV. 316 FISHER BLDG., DETROIT 3, MICH.

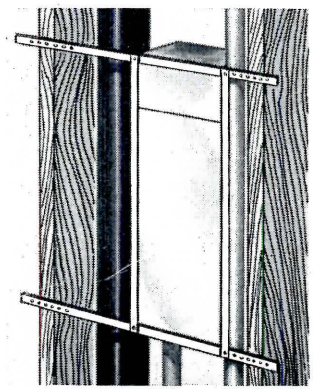
Plants at Lexington, Kentucky and Fullerton, California.
In Canada . . . Standard Products (Canada) Ltd. Box 427, Windsor, Ont.

BOLD NEW CRANE

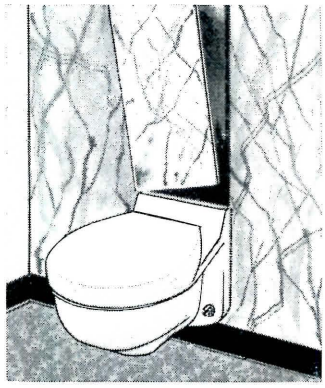
New WALSAN off-the-floor residential closet—with a concealed tank that fits into 2 x 6″ studding



Flushing handle right on the bowl. *No separate wall opening needed.*



Tank fits between 24″ studs. *Only 8½″ wide—plenty of room for stack pipe, too!*



Access panel snaps into place. *Can be decorated to match walls.*

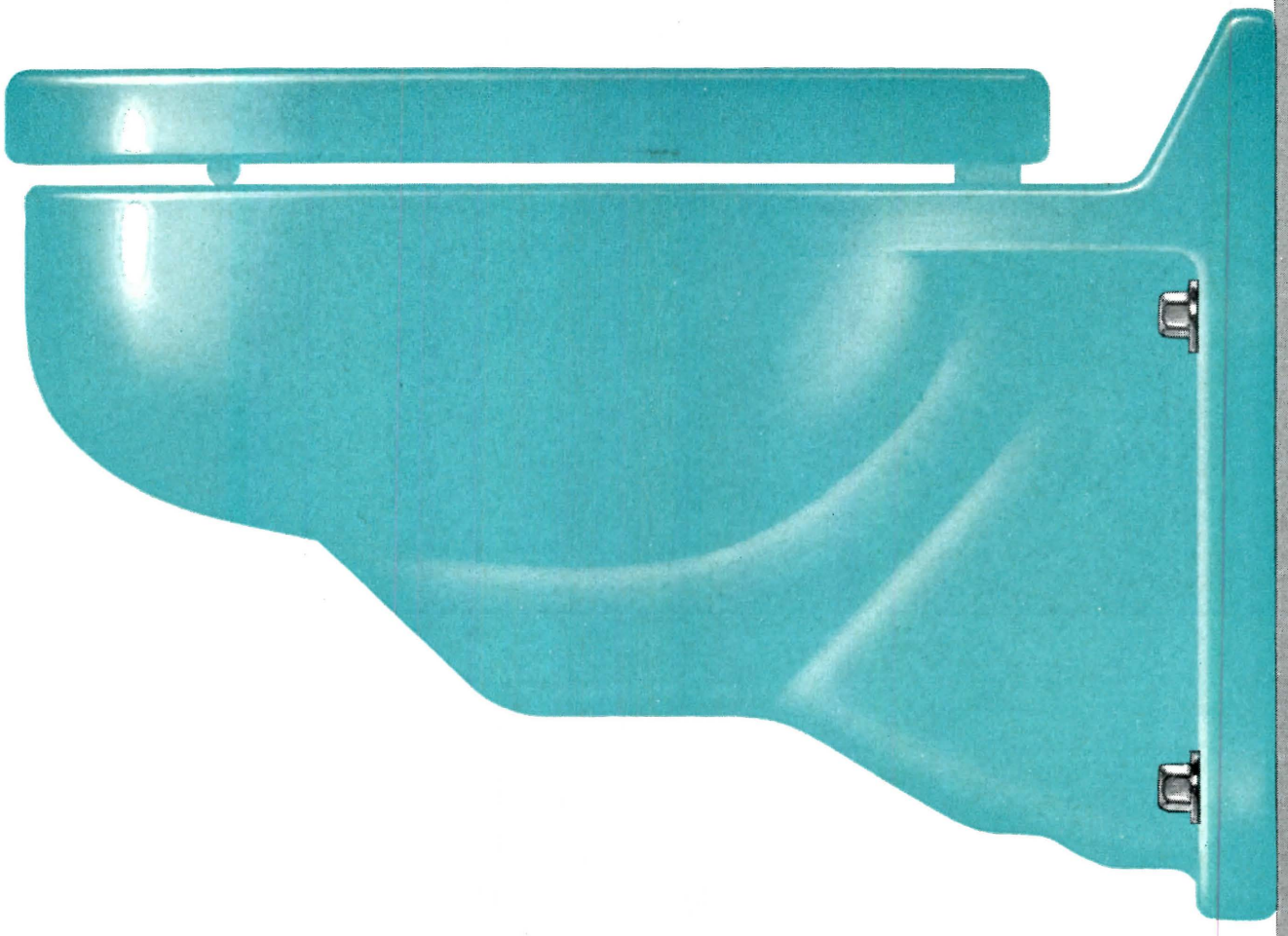
This smartly styled closet gives you new freedom in bathroom design—and offers many advantages to your client.

For example, this handsome Henry Dreyfuss design saves floor space. Takes up to 6″ less space than an exposed tank closet. Fits easily in 2 x 6″ studding. It's only 22″ from wall to front of bowl. The tank can be installed with access panel on either side of wall. And the Walsan also features Crane's new, positive action flapper valve.

Cleaning is a breeze! The closet bowl and the floor beneath it can be cleaned in a few seconds. And no special cutting or fitting is necessary if a wall-to-wall rug is desired by the homeowner.

Available in new Desert Turquoise. The new vitreous china Walsan (and all Crane fixtures) now comes in this bold color accent for bathrooms. There are six other Crane colors and white, too. Ask your Crane Architects' Representative for a showing now.

DESIGN



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THE PREFERRED PLUMBING

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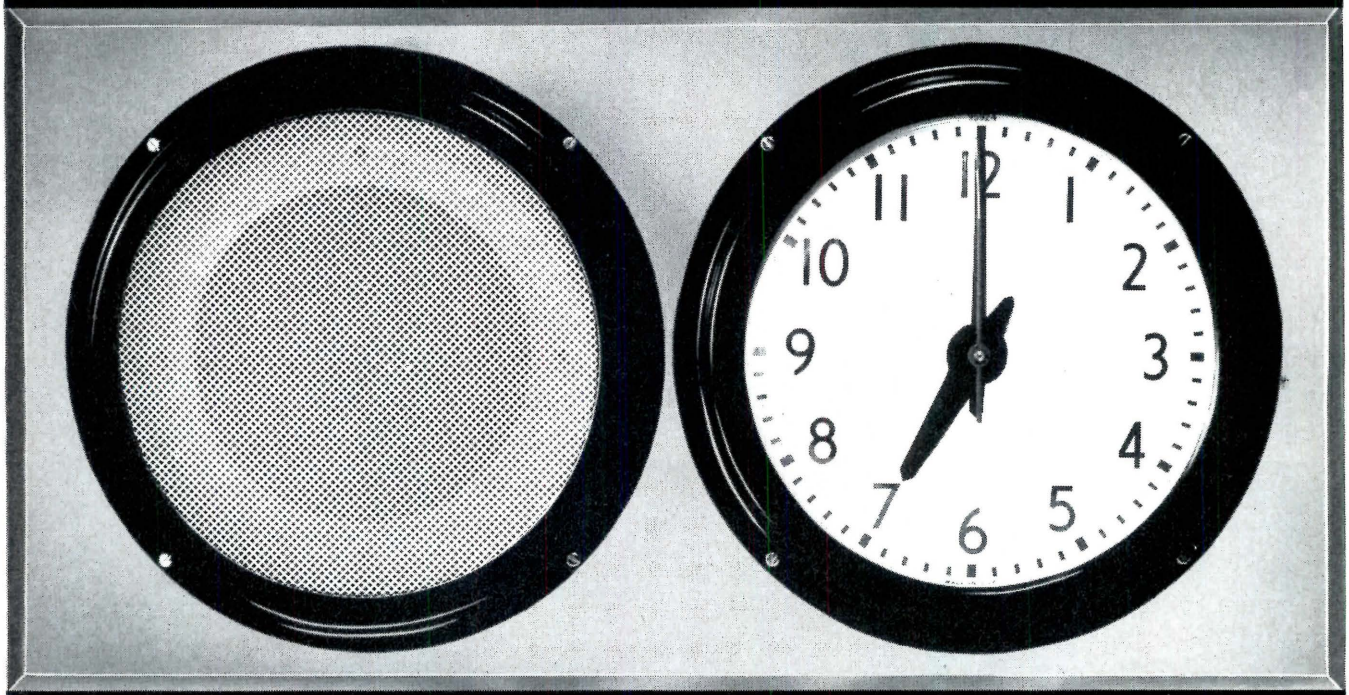
NEW AND PRACTICAL FROM HEARD EVERYWHERE Lowell®



MODEL JH-IBM (does not include clock)

Clock-Baffle for Modern Classrooms, Offices, Terminals

Now a single installation accommodates clock and intercom speaker — a package installation for clock-speaker systems designed by the sound engineers of Lowell. Practical . . . simple . . . functional . . . easy to install.

13″ x 26″ panel of 18 gauge steel accommodates 8″ speaker and all popular clock sizes. Matching clock and speaker baffle mounting rings, of 22 gauge steel, are 10½″ in diameter. Speaker grille is welded to ring. Mounts to Lowell JWC-4 and JWC-3 boxes*, each 12″ x 24″, of 18 gauge steel, undercoated to prevent resonance, coated with rust preventive paint. Boxes have sixteen ½″ x ¾″ conduit knockouts, flanges random-punched for nailing.

*Where depth is critical, use JWC-3 (3″ deep) box and shallow 8″ speaker.

See our catalog in S or write for copy

For specifications, details, prices, write:

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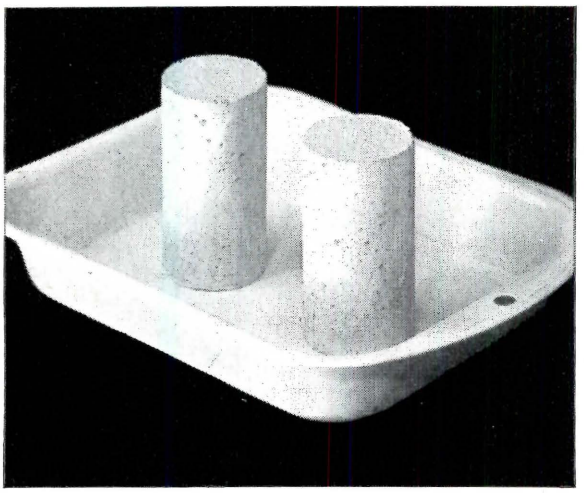
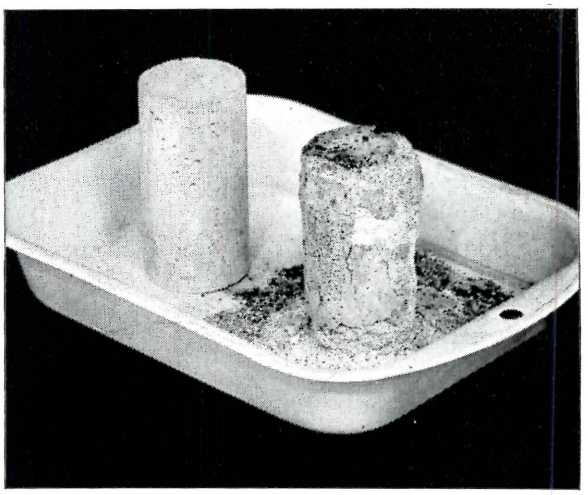
BRIXMENT MORTAR
Is More Durable



To compare the durability of Brixment mortar and ordinary cement-and-lime mortar, make a cylinder of each, let them "cure" for a month, then freeze and thaw them for forty or fifty times, with a little water in the pan (the freezing unit of your electric refrigerator will do). See the difference with Brixment mortar!



—AND DURABILITY MEANS PERMANENT STRENGTH AND BEAUTY

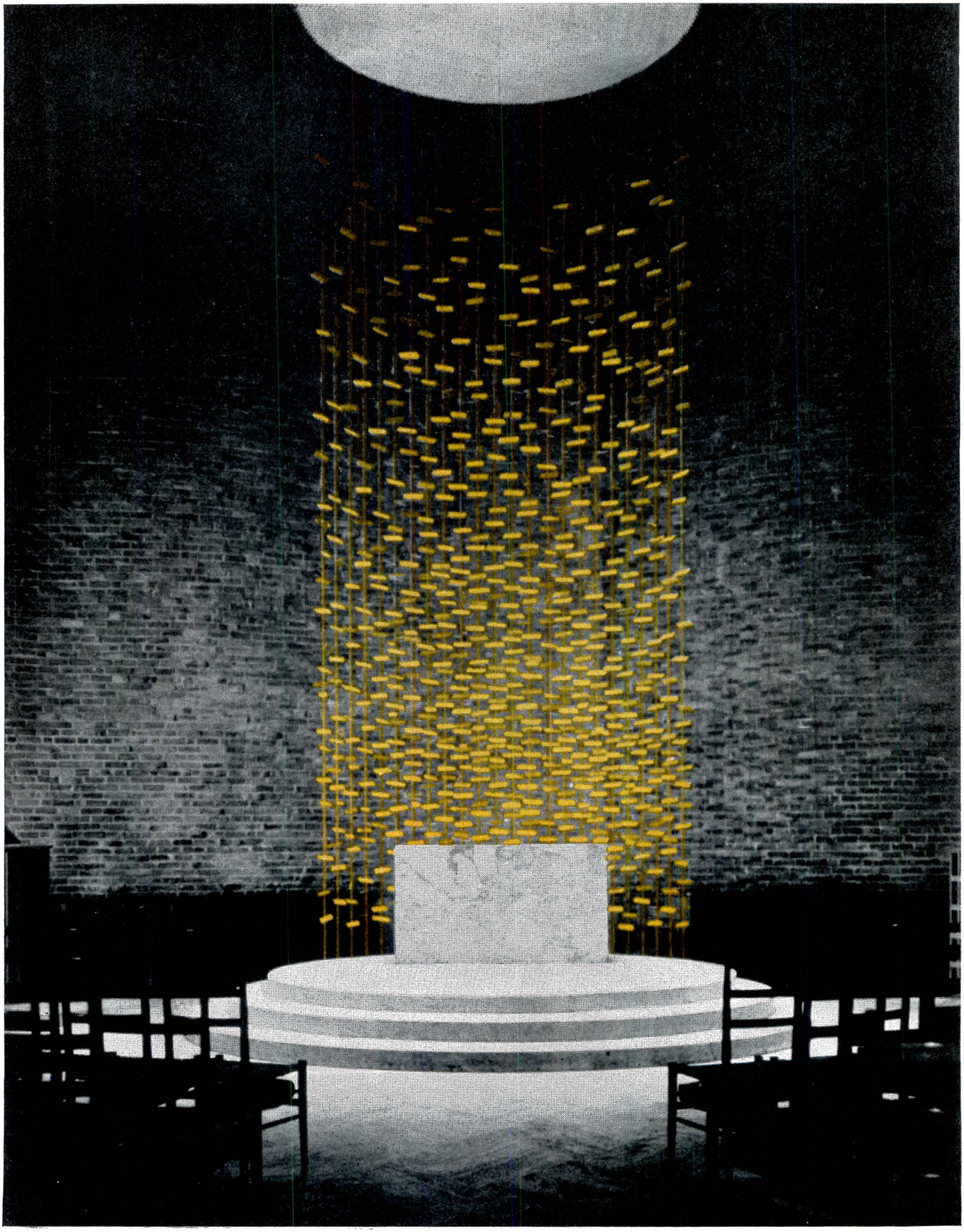
For permanent strength and beauty, mortar must be *durable*—must be able to withstand the alternate freezing and thawing to which it is subjected many times each winter.

Brixment mortar *is more durable.* This greater durability is due partly to the strength and soundness of Brixment mortar, and partly to the fact that an air-entraining water-repelling agent is incorporated into Brixment during manufacture. This helps prevent the mortar from becoming saturated — therefore protects it from the destructive action of freezing and thawing.

Walls built with Brixment mortar therefore *retain* their original strength and appearance — even parapet walls and chimneys, where exposure is particularly severe.

LOUISVILLE CEMENT COMPANY, LOUISVILLE 2, KENTUCKY

Cement Manufacturers Since 1830



This unique design of a delicate brass and bronze screen behind the altar of Kresge Chapel at Massachusetts Institute of Technology in Cambridge, Massachusetts, is an excellent example of welded sculpture. Harry Bertoia, Sculptor, Bally, Pennsylvania, Eero Saarinen, Architect, Bloomfield Hills, Michigan.

esign possibilities unlimited...

ITH ANACONDA ARCHITECTURAL METALS

The variety of texture, form, and warm, rich color available to translate architectural concepts into reality is almost infinite with Anaconda Architectural Metals. They are obedient in the hands of the artist and fine craftsman. There are few limitations on what can be accomplished through the use of these metals in rolled, drawn, and extruded forms.

As a leader and pioneer in producing extrusions and other forms of copper alloys for architectural applications, The American Brass Company has the experience to help you achieve outstanding designs in Copper, Red Brass, Architectural Bronze, Yellow Brass, and Nickel Silver. For further information, write: Architectural Service, The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Limited, New Toronto, Ont. 5814

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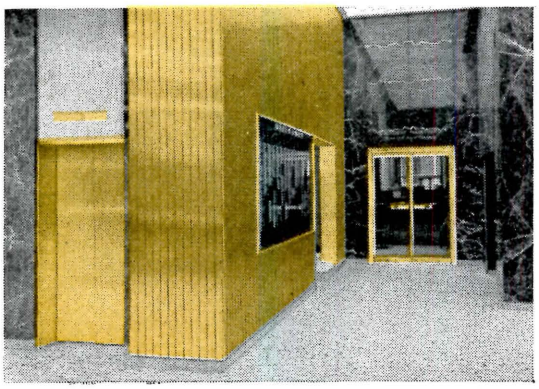
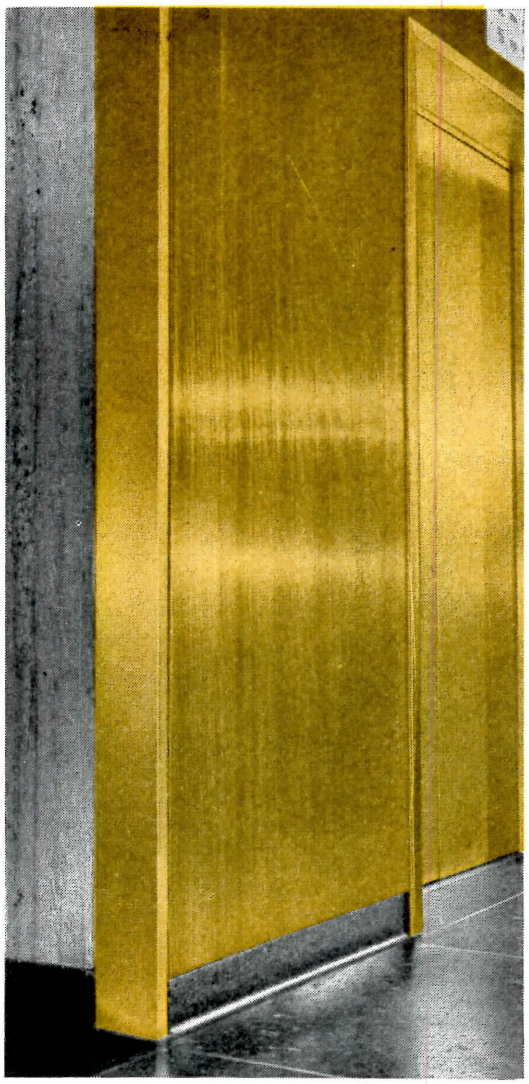
ARCHITECTURAL METALS

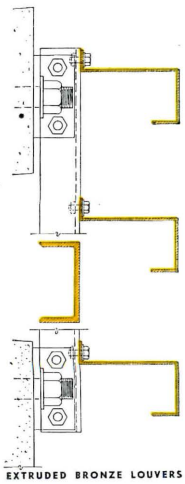
Made by The American Brass Company

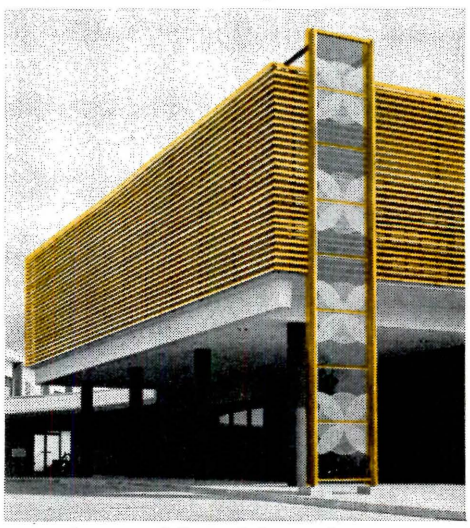


Bronze sheets and extrusions were used extensively in remodeling the entrances and lobby of an office building. Interlocking, channel-shaped extrusions, detailed at right, formed trim, modern floor-to-ceiling panels. Architects: Thalheimer & Weitz, Philadelphia. Fabricator: John G. Leise Metal Works, Philadelphia.

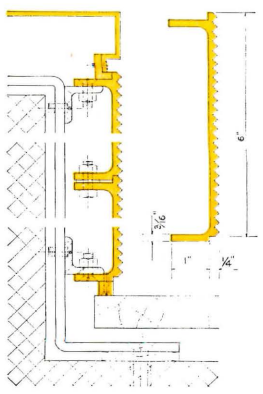


Architects Carson & Lundin, New York City, obtained an extremely interesting wall treatment in the lobby of an office building through the use of striated architectural bronze extrusions, detailed below. Fabricator: C. E. Halback & Co., Brooklyn, N. Y.

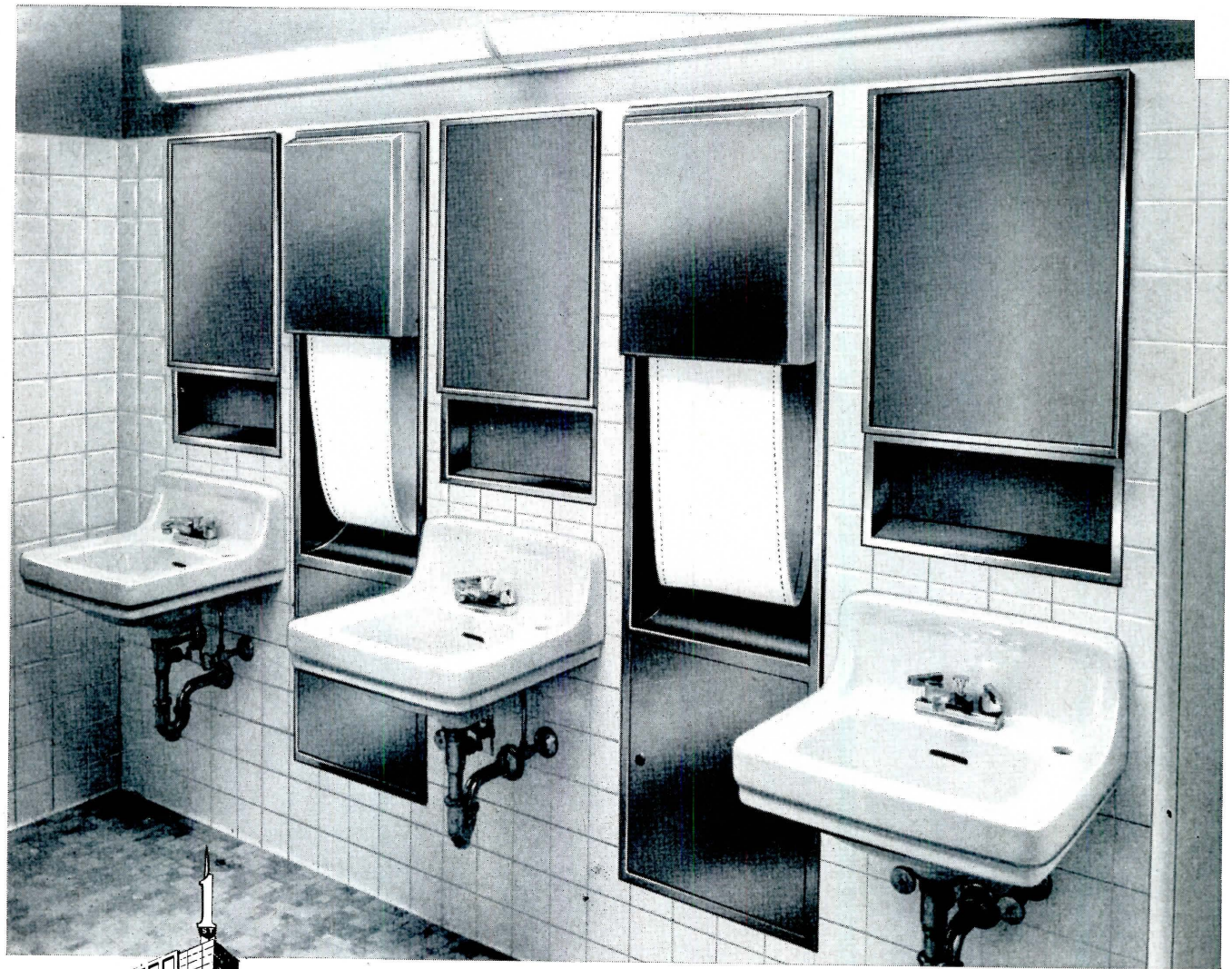


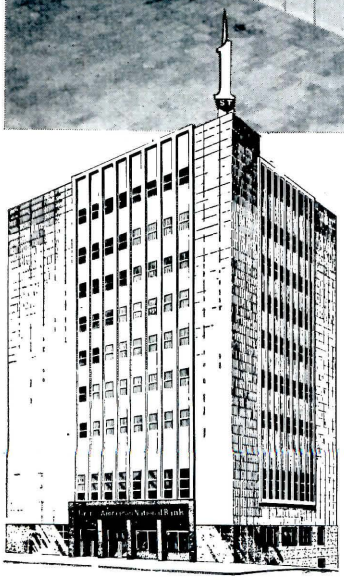


The decorative and functional louvers covering the second floor of this modern structure are extrusions of architectural bronze (see detail at left). The decorative tinted glass panel is framed with Anaconda Red Brass rectangular tube. Architects: Albert C. Martin & Associates, Los Angeles. Fabricator: A. J. Bayer Company, Los Angeles.



functional beauty and "linen" luxury with Continuous Cotton Towels





← New First American National Bank Building, Duluth, Minn. Architect Thomas J. Shefchik, A.I.A., Duluth. Contractor: Fowler-Veranth Construction Company and Klippen-Holm Company, Duluth.

↑ Recessed continuous towel cabinets with base storage units. End clutter of waste receptacles. Integrate with the modern design of the wash room. (This installation serviced by: American Linen Supply Company, Duluth.)

You provide the finest in hand drying facilities AND MORE when you specify continuous towel cabinets.

Low cost installation and service by a linen supplier . . . Reduced maintenance and janitorial costs . . . Elimination of litter, storage and disposal problems . . . Limits fire hazard and plumbing repairs.

Add to this, the fact that you do not obligate the owner to any particular service, *even* when you specify recessed cabinets like the ones pictured above. (Recesses are designed to accept any of a wide variety of cabinets.)

So, why not make sure your clients get the best? Specify the luxury and quality of cotton toweling . . . include continuous towel cabinets in your design.

✶ Send for this free Planning-for-Cloth kit

Illustrated, includes specifications for recessed unit and continuous cloth towel cabinets. ***Write****—to Linen Supply Association on your letterhead.*

Linen Supply Association of America
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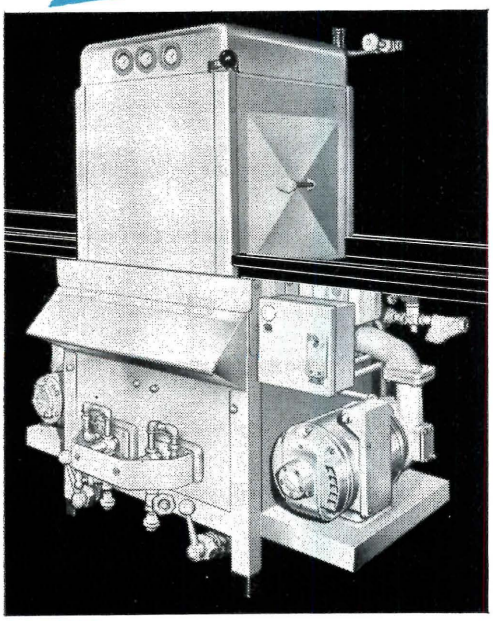
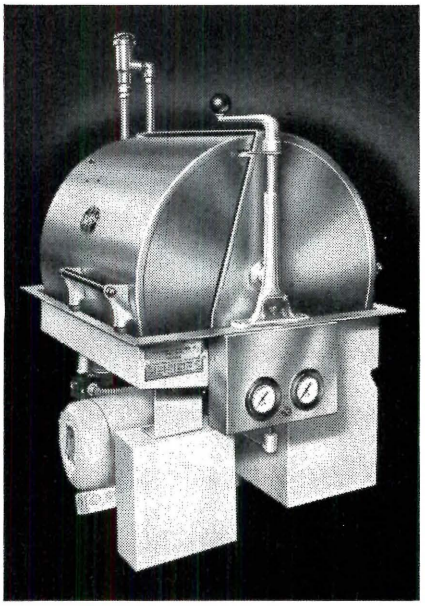
NEW DISHWASHE.. DEVELO. ...ENTS FROM HOBART

Space... speed... savings... sanitation. These are the areas where Hobart research is constantly improving the performance of the industry's most complete line of quality dishwashing machines. Here are the latest of these developments—each designed to make a specific dishwashing operation more efficient for your commercial kitchen layouts.



NEW two-tank machine in space of one-tank type

Another industry-*first* by Hobart. Now you can have all the improved sanitation and efficiency of power wash, separate power rinse in a machine with the same between-tables dimensions as a single-tank unit. In this minimum space, unique Hobart design of the new AM-77 effectively separates wash and rinse streams—each powered by a separate Hobart-built motor and pump. Final fresh-water rinse employs famous Hobart revolving-arm feature.

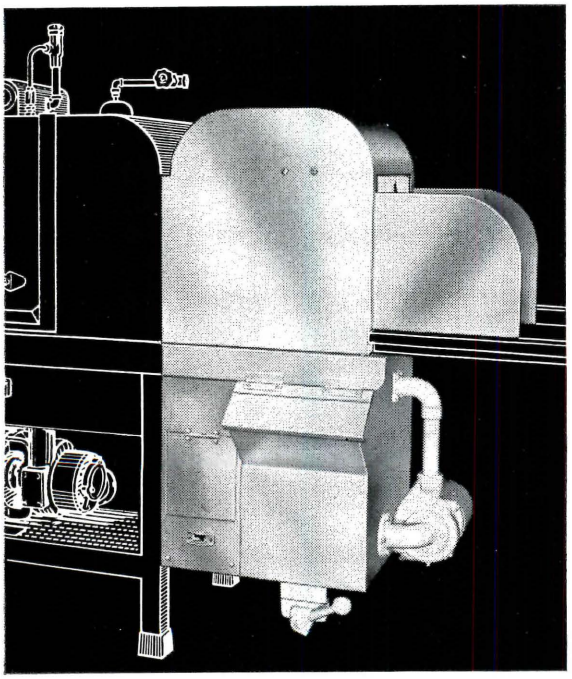


NEW timed countertop dishwasher

A favorite straight-line machine for smaller operations, the SM series of machines now offers improved automatic-timed control for power wash and rinse cycles...is more compact, simplified. Single selector switch for timed, automatic or off positions. "On-off" pilot light indicates machine operation. Another important feature: prolonged rinse for glasses is always available.

NEW popular machines now stainless steel... inside and out

The exclusive Hobart undercounter or free-standing dishwasher now features all interior and exterior surfaces of durable, easily cleaned stainless steel. Ideal for convenient yet out-of-the-way installation in bars, drugstores, snack bars, diet kitchens, rest homes and as a glasswasher unit in higher volume kitchens. Capacity, 600 glasses an hour.



NEW compact power scrapper... saves water

This newest addition gives Hobart the most complete scrapper line. The Model RS gives *power* scrapping advantages in the space of 22 inches. By using overflow rinse water from the dishwasher, the Model RS saves water and reduces costs. Other new features: splash shields and front-removable scrap trays.

It is good insurance for you to specify machines that can be depended upon to guarantee the efficiency of the kitchens you design. As an architect you'll readily appreciate the performance and dependability that are synonymous with kitchen machines bearing the Hobart name. You'll appreciate the flexibility of choice offered by the complete line of Hobart equipment.

Check Sweet's Architectural File for complete specifications on all Hobart kitchen and dishwashing machines. Or send in the coupon.

Hobart

Hobart machines

A complete line by the World's Oldest and Largest Manufacturer of Food Store, Kitchen, Bakery and Dishwashing Machines

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Troy, Ohio

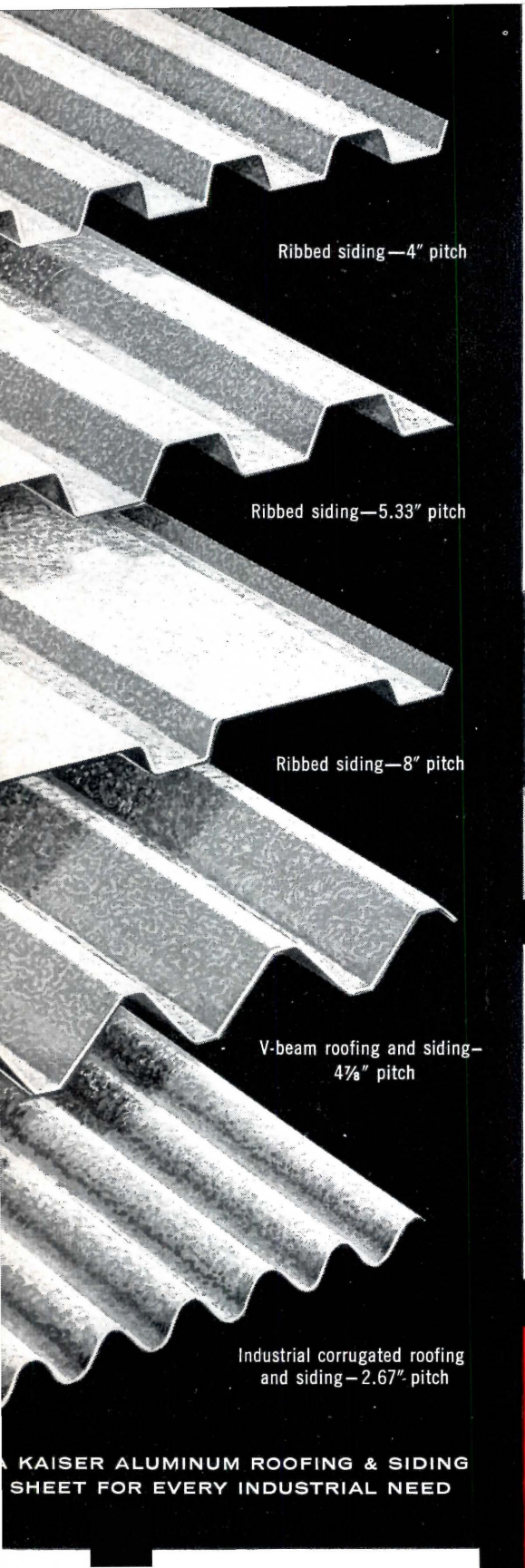
☐ Please send information on dishwashers.
☐ Please send information on other kitchen machines.

Name of Firm.....

My Name.....

Address.....

City.....*Zone*.....*State*.....



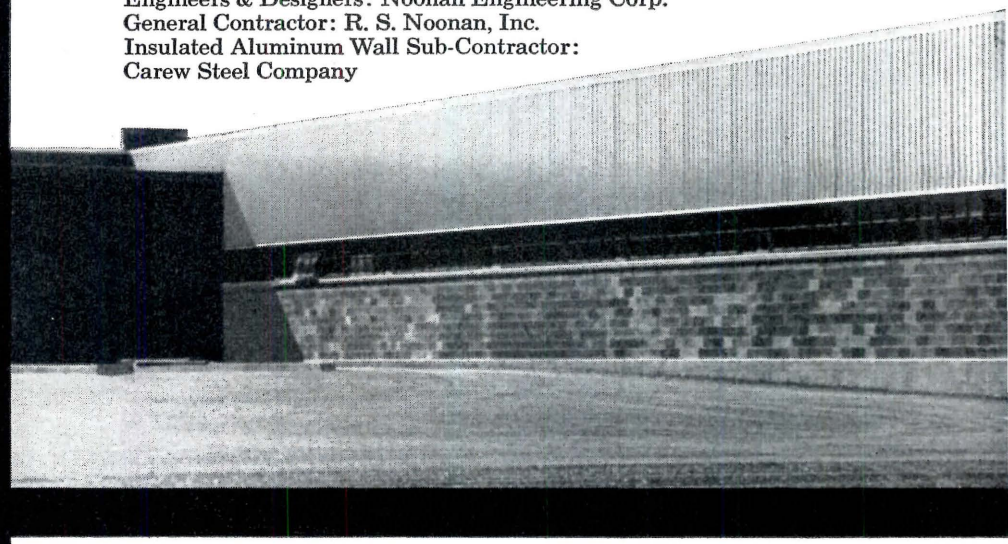
A KAISER ALUMINUM ROOFING & SIDING SHEET FOR EVERY INDUSTRIAL NEED

These roofing and siding sheets are available in a selection of thicknesses, finishes, widths, lengths. Flashing sheet, pre-formed flashing, closure strips and other accessories also available. For full information, see Sweet's 1958 Architectural File 8b/Ka or Industrial Construction File 4b/Ka. Complete specifications provided on request.

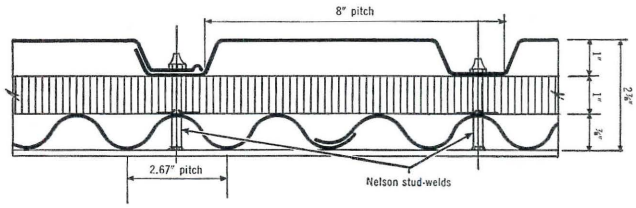
FORM, FUNCTION AN

EXAMPLE: LOW-COST INSULATED

The Standard Register Co., Manufacturing Plant, York, Pa.
Engineers & Designers: Noonan Engineering Corp.
General Contractor: R. S. Noonan, Inc.
Insulated Aluminum Wall Sub-Contractor:
Carew Steel Company



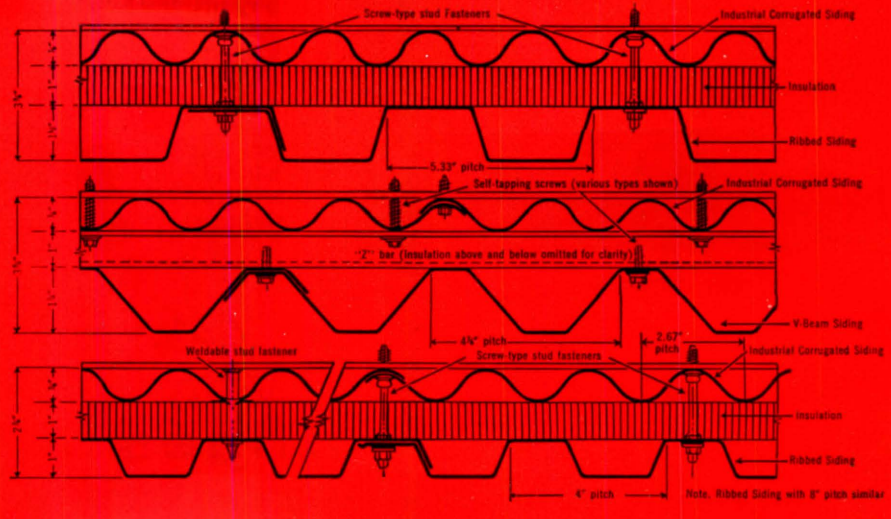
TYPICAL SECTION—STANDARD REGISTER WALL ASSEMBLY



Outer skin: 8″ pitch ribbed siding
Inner skin: 2.67″ pitch industrial corrugated siding
Fastening system: Nelson Set-Lock studs

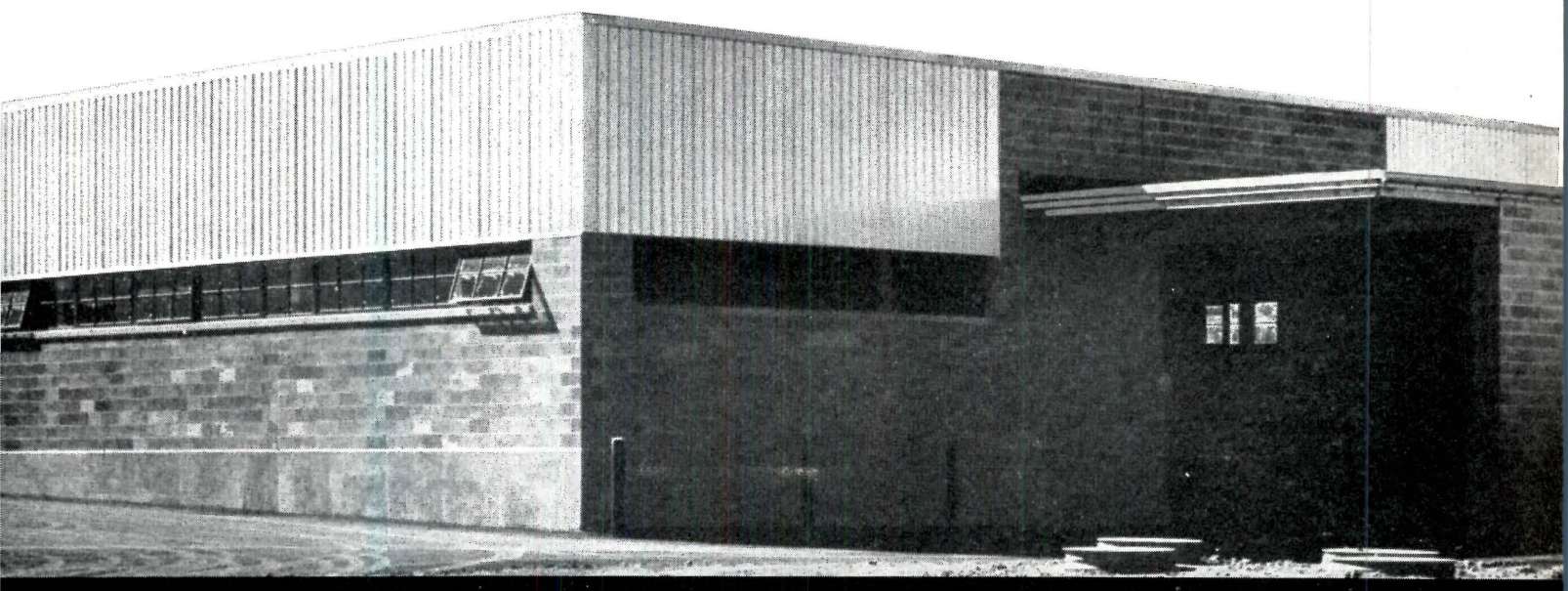
TYPICAL SECTIONS... OTHER INSULATED ALUMINUM WALL ASSEMBLIES

Flexibility of insulated aluminum wall design is made possible by Kaiser Aluminum's wide range of siding sheets in ribbed, corrugated and V-beam configurations — plus its selection of quick, dependable fastening systems.



FLEXIBILITY–CONCEIVED IN ALUMINU

ALUMINUM WALLS FOR NEW STANDARD REGISTER PLANT



Installed at a labor and materials cost of $1.50 per square foot, Standard Register's new insulated aluminum sandwich walls were quickly fabricated *at the site* from a layer of 1″-thick rigid glass fiber insulation —flanked by rugged sheets of lightweight Kaiser Aluminum ribbed and industrial corrugated siding.

Extra Economies

Their *extreme light weight,* from 1 to 1.5 pounds per square foot, reduces dead load—effecting many savings throughout the building.

Their *minimum thickness,* as little as 2¾″ overall, extends usable floor space. And their *high insulation value* (U Factor of 0.16 with 1″ thick glass fiber insulation) by lessening the load on heating and air conditioning equipment, promises reduced operating costs for the life of the structure.

Minimum Maintenance

In addition, because the siding sheets for these sandwich walls are formed of a special clad Kaiser Aluminum alloy, they provide *extra* resistance to corrosion — will keep their good looks for years with little maintenance, and without the need of paint.

Reliable counsel on insulated aluminum walls is available from a qualified Architect's Service representative through the Kaiser Aluminum sales office nearest you. Consult the yellow pages of your telephone directory; or, write for catalog: Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Avenue, Chicago 11, Illinois.

KAISER ALUMINUM

THE BRIGHT STAR OF METALS

See "MAVERICK" Sunday evenings, ABC-TV Network. Consult your local TV listing.

APPROVED APPLICATORS

Additional information on Kaiser Aluminum industrial building products may also be obtained from:

WALTER G. MITCHELL COMPANY
2303 Jefferson Street
Torrance, California

CAREW STEEL COMPANY
R. D. 9
York, Pennsylvania

DALE BENZ, INC.
1912 West Grant Street
Phoenix, Arizona

WM. C. KULZER COMPANY
3340 North 10th Street
Philadelphia, Pennsylvania

HUGHES STEEL ERECTION CO.
171 Harvey Street
Cambridge, Massachusetts

CALLERY INDUSTRIES, INC.
130 Hillvue Lane
Pittsburgh 37, Pennsylvania

METAL PRODUCTS, INC.
106 Birney Street
Greenville, South Carolina

FRASER EDWARDS COMPANY
2412 Harrison Street
San Francisco, California

THE YOUNG COMPANY
1101 West First Street
Charlotte, North Carolina

SOUTHERN FABRICATING, INC.
P. O. Box 97
Staley, North Carolina

LYDICK ROOFING COMPANY
1301 Foch Street
Fort Worth, Texas

ALLENTOWN ROOFING & SHEET METAL COMPANY, INC.
Highland & Fenwick Streets
Allentown, Pennsylvania

PATTERSON STEEL COMPANY
P. O. Box 2620
Tulsa, Oklahoma

R. G. VARNER STEEL PRODUCTS, INC.
P. O. Box 781
Pine Bluff, Arkansas

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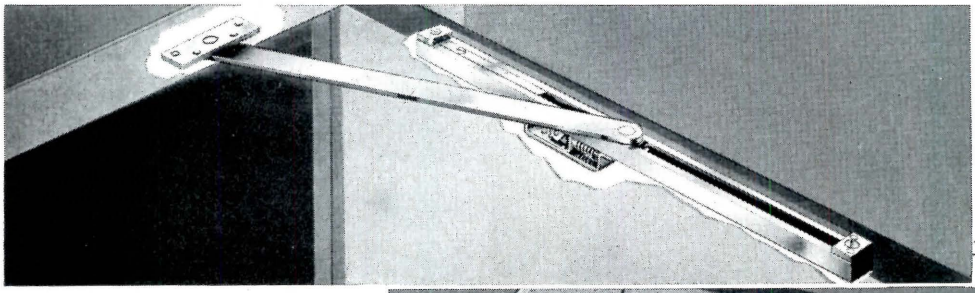
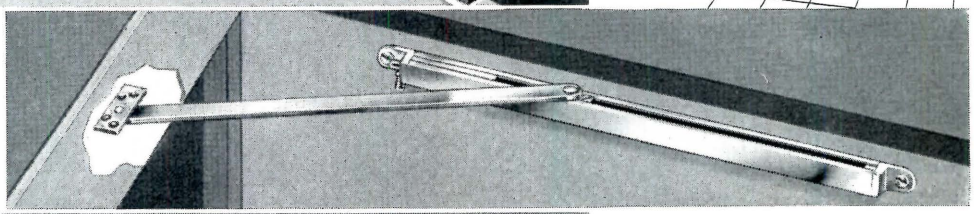
the complete line of OVERHEAD DOOR HOLDERS

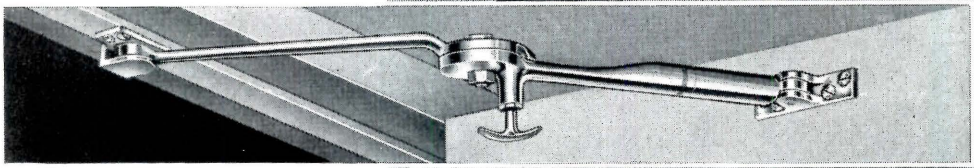
**overhead means out-of-the-way...*

no stumbling hazards—no interference with cleaning



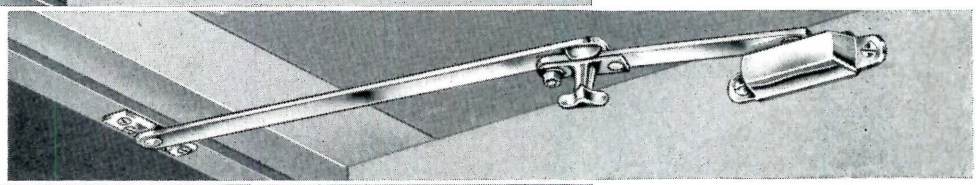
▲**GJ 100** **concealed** (**non-handed**) **GJ 90**▶ **surface type** (**handed**) **for single and double acting doors.** The finest in appearance and long, trouble-free wear.

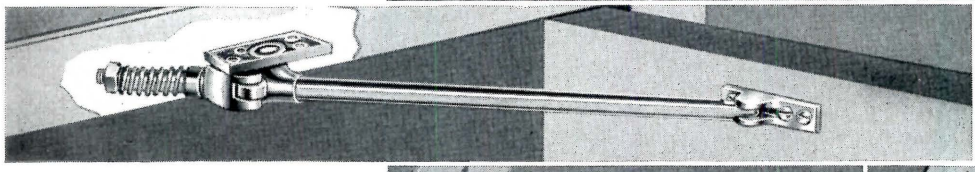




◀**GJ ARISTOCRAT** (**non-handed**) **for single acting doors.** Ruggedly built for hard, practical usage.

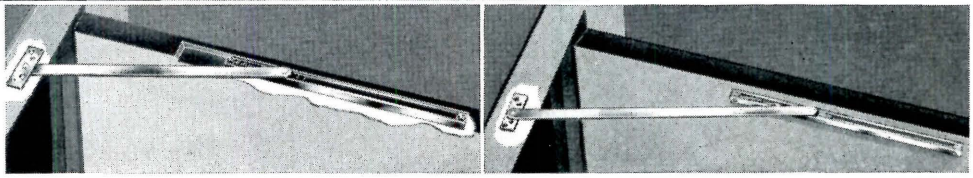
GJ 80▶ (**handed**) **for single acting doors.** For moderate cost installations.





◀ **GJ 70** (**non-handed**) **for single acting doors.** Inexpensive for low-cost installations.

GJ 300 and GJ 500 series▶ (**non-handed**) concealed for single and double acting interior doors. Surface type for single acting doors. Spring cushion types and friction holder type.



CUSHION THE STOP... silently absorbing the shock of violent openings.

HOLD THE DOOR... hold-open engages silently... holds firmly... releases *easily.*

"Life of the building" GJ Overhead Door Holders are made of highest tensile strength alloys requiring minimum maintenance or replacements. They have built-in shock absorbers to cushion the stop and are made in various sizes for any width door.

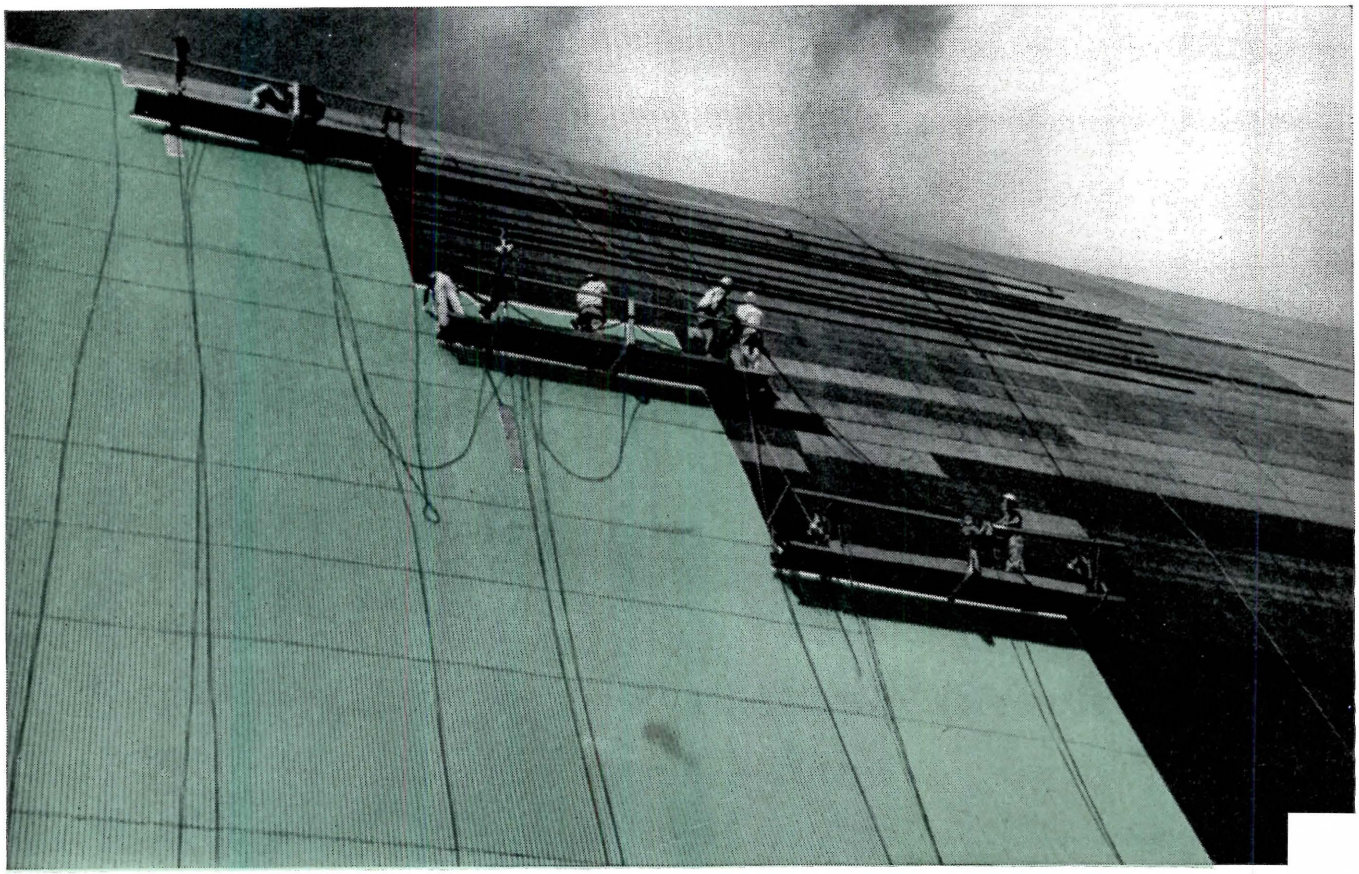
Write for complete details and templates.

GLYNN·JOHNSON CORP.

4422 no. ravenswood ave. • chicago 40, ill.

U.S. Navy Solves Costly Maintenance Problem with Alodized Aluminum Roofs

Installs more than 600,000 lb. of ACP ALODINE treated Kaiser Aluminum corrugated roofing and flashing sheet on roofs of two big humpbacked hangars at Moffett Field



Engineering study at Lakehurst recommended industrial corrugated aluminum roofing for three reasons: it is comparatively inexpensive and provides a durable and permanent-type roofing; it requires lowest expenditure for maintenance; it can usually be installed without changes in the existing structural framework.

At Moffett Field, the Alodized Kaiser Aluminum industrial corrugated aluminum sheeting was attached to the asphalt covered wood sheathing of the hangars. It was applied by Dale Benz, Inc., under the supervision of the Navy's Bureau of Yards and Docks and Leo W. Ruth, consulting engineer and general partner of Water, Ruth and Going, with the technical assistance of Kaiser Aluminum & Chemical Corporation engineers.

The ACP ALODINE chemical conversion coating on the aluminum sheeting was recommended for the Moffett Field installation because it increased the already high corrosion resistance of the metal and because its green color materially reduced the reflectivity of the stucco embossed corrugated Alclad alloy aluminum.

Complete information about ACP ALODINE is available upon request. Write us at Ambler.

★ALODINE is a registered trademark of Amchem Products, Inc.

MORE THAN 600,000 lb. of industrial corrugated aluminum sheet was used to roof two huge hangars at Moffett Field. All were treated with ACP ALODINE.

Amchem Products, Inc. Ambler 22, Pa.

Formerly AMERICAN CHEMICAL PAINT COMPANY

CHEMICALS ACP PROCESSES

DETROIT, MICH. • ST. JOSEPH, MO.
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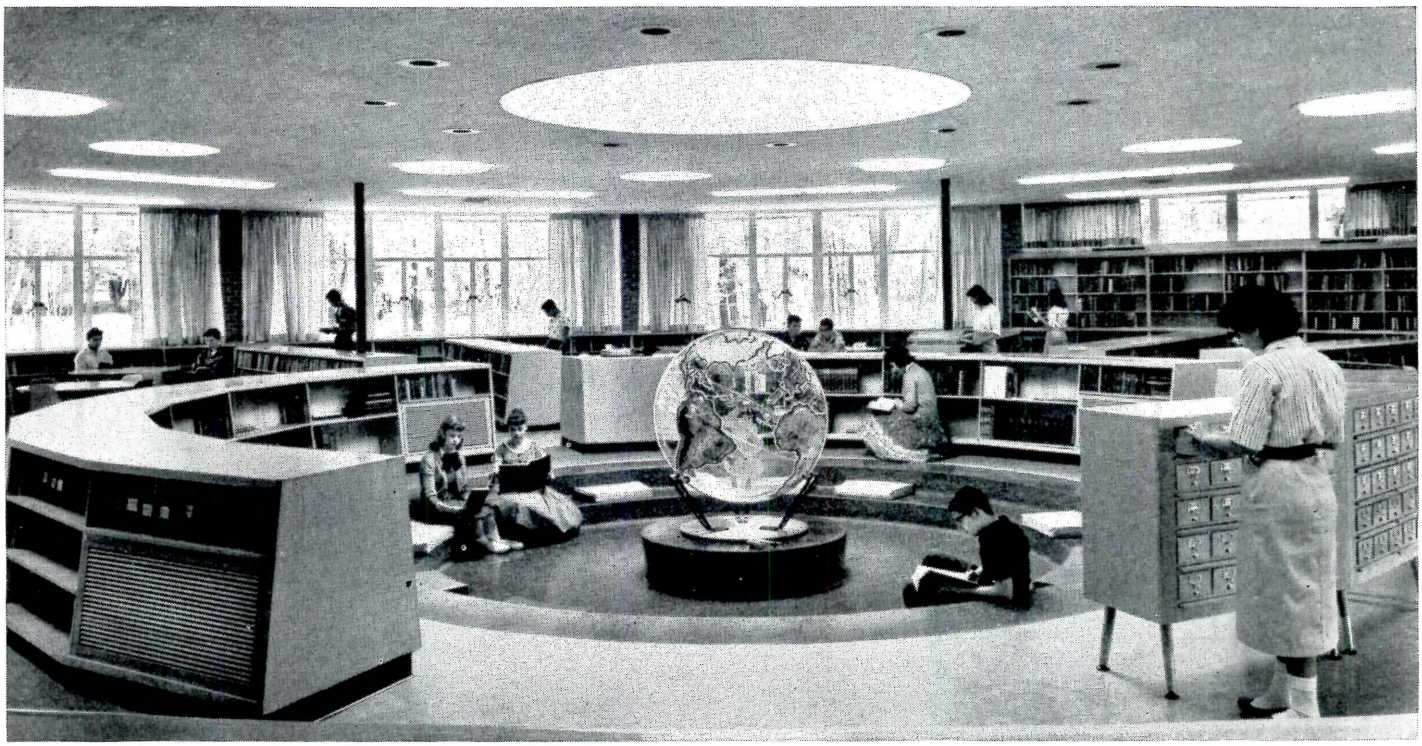
New Chemical Horizons for Industry and Agriculture

Heating and year-round air conditioning in



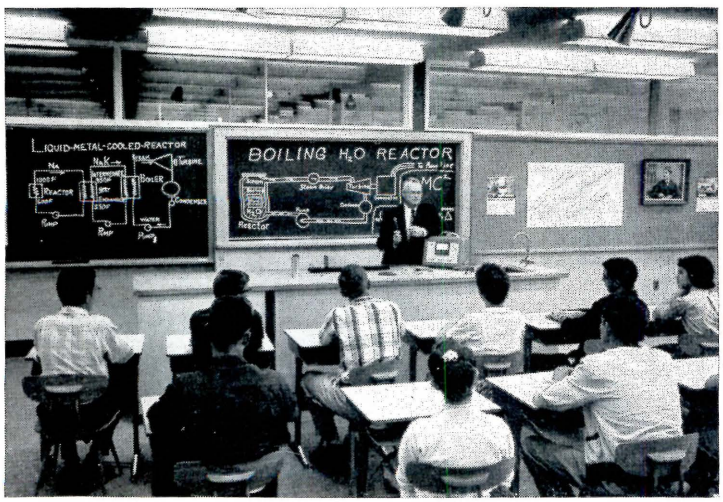
Air conditioned Library, round Building E, shown below.

Linton Comprehensive High School
SCHENECTADY, N. Y.

Building A, is air conditioned Auditorium with choral, band and orchestra rooms; B) Cafeteria and multipurpose area; C) Gymnasiums, 3 large, 2 small; D) Core-Tech building with shops, also air conditioned administrative offices, Science, Arts, Family Living and Commerce departments; E) Air Conditioned Library; F) Academic classrooms.

Planned enrollment: 1800. Grades housed: 10th, 11th and 12th. Area 258,157 sq. ft. Construction Cost: $4,328,130.

Schenectady (home of General Electric Co. a pioneer in nuclear power plants) is justly proud of LINTON'S excellent science department. (d-3)



new LINTON HIGH SCHOOL regulated by

POWERS

Pneumatic system of Temperature Control

"Plan a School that will still be functional in the year 2000"

. . . that was the challenge faced by the educational, architectural and engineering planners of Schenectady's much discussed Linton High School. One of the important innovations here is the year-round air conditioning in the Core-Tech building D, shown on opposite page, also the Auditiorium A, and the round Library building E.

Proper thermal environment is a valuable aid to effective teaching and learning. The flexibility of the Powers temperature control system installed at LINTON meets the demands of varied types of activity and occupancy in all seven buildings.

Air Conditioning, heating and ventilating systems are regulated from Powers Control Center located in the boiler room. See photo below at right.

Day control for the air conditioning systems during the cooling season consists of dew point control for the chilled water coils with individual reheat mixing damper control for each zone controlled from a zone thermostat.

Night control of the air conditioning systems provides reduced room temperatures during the summer "night" cycle when the buildings are unoccupied, with a minimum of refrigeration. This feature is designed to provide precooling and reduced start-up load.

A Powers MASTROL System controls the hot water heating system plus individual room control of convectors in critical areas.

In the Year 2000, the Powers temperature control system at Linton will likely still be functional. Twenty-five to 50 years of dependable operation with a minimum of maintenance is often reported by users of Powers control.

In Your New School make sure taxpayers get the biggest return on their investment in accurate temperature control. Ask your architect or engineer to include a time-proven Powers Quality System of Control.

THE POWERS REGULATOR COMPANY

SKOKIE, ILL. | *Offices in chief cities in U.S.A. and Canada*

65 YEARS OF AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL

POWERS CONTROL

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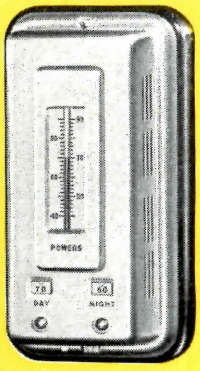
Associate Architects: **RYDER & LINK**
Schenectady, N. Y.

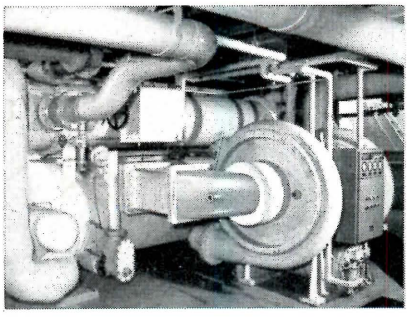
Mechanical Engineer:
E. R. GRITSCHKE & ASSOC., INC.
Chicago, Ill.

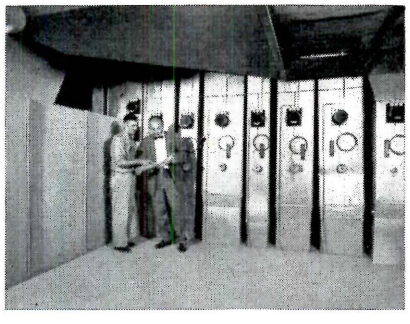
Heating and Air Cond. Contractor:
TOUGHER HEATING & PLBG. CO.
Albany, N. Y.

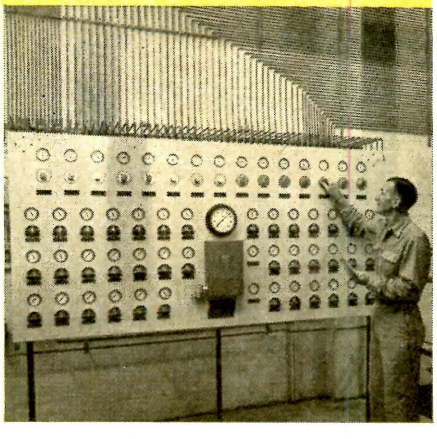


190 Powers DAY-NIGHT Thermostats here help prevent OVERheating in occupied rooms and are adjustable for lower economical temperatures during unoccupied periods.

216 Powers PACKLESS Control Valves are used on convectors and unit ventilators. They're labor savers, banish packing maintenance and will prevent damage from water leakage.







Left: 235 Ton Centrifugal refrigeration compressor has ample capacity for building D and library, or auditorium alone when other two buildings are not in use.

Right: Powers Control Center in boiler room. Center photo: one of 5 air conditioning systems and 9 of 68 Powers Sub-Master Thermostats controlling conditioned air to various spaces.

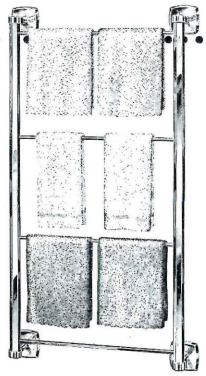
Add to the beauty and liveability of your bathroom

Inch for inch, the bathroom gets more hard wear than any room in the house. Making it into a showplace and keeping it that way requires more than good intentions. That's why so many architects, builders, and homemakers specify Hall-Mack Accessories. They know these quality fixtures retain deep, gleaming beauty under rugged usage. And they recognize at a glance the highly original ideas that make these accessories *extra* convenient for family and friends. Skillfully designed to blend with any decor, these famed accessories combine sparkling beauty and unusual utility to add real livability to this important room. Hall-Mack Accessories . . . first choice far and away.

HALL-MACK®

bathroom accessories in sparkling *chrome*

Concealed Toilet Paper Holder is recessed – has a gleaming chrome cover that lifts at the touch of a finger!



New chrome Towel Ladder gives extra towel space so often needed.

New chrome plated Shower Recess Unit – handy, safe spot for shampoo bottles, etc.

***Sold** by leading plumbing, tile, and hardware dealers everywhere.*

HALL-MACK COMPANY *Division of TEXTRON INC.*
1380 W. Washington Blvd., Los Angeles 7, California

☐ Please send your FREE color booklet of new bathroom ideas

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

AR-11

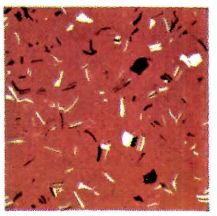
B.F.Goodrich

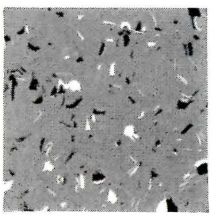
SPARKLING NEW VINYL FLOOR TILE ENHANCES ANY INTERIOR YOU DESIGN

Now you can have new freedom in designing interiors with this stunning new vinyl tile that's equally at home in modern or traditional interiors.

New "Suprex" Koroseal is a stunning flecked tile that's solid vinyl clear through—there are no laminates to crack or peel. What's more, detergents, greases, oils, household chemicals and other common spillages can't harm it. And its rich luster wipes clean with a damp mop.

Use on or above grade. 9" x 9" tiles, 80 gage and ⅛" thicknesses in 13 glowing colors. For further information, write The B. F. Goodrich Company, Flooring Products, Watertown 72, Mass., Dept. AR-11.





"SUPREX"
Koroseal®
VINYL
FLOOR TILE

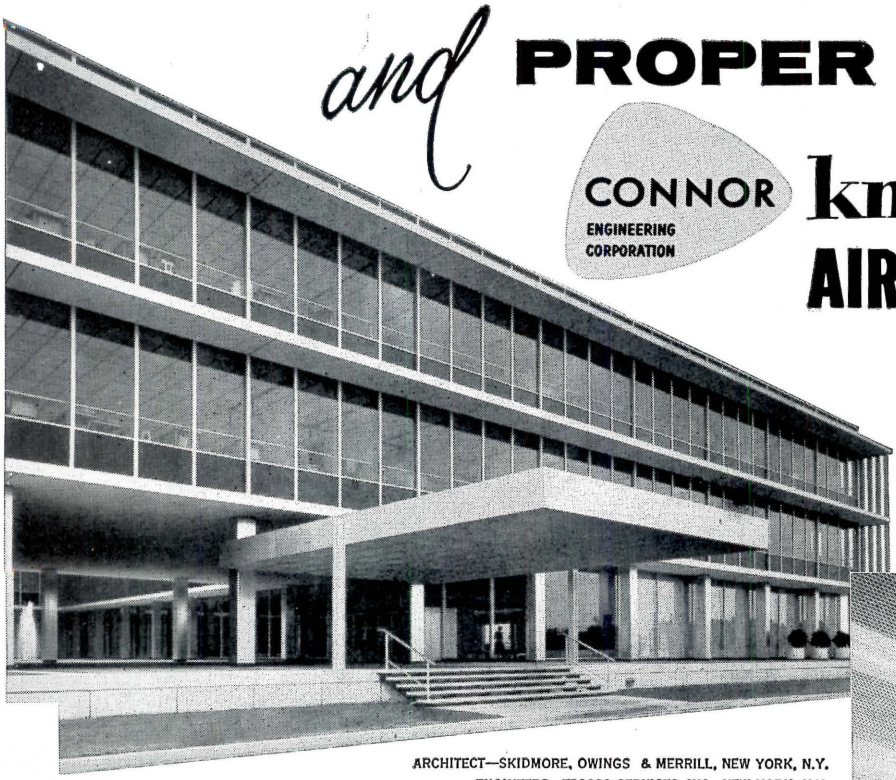
B.F.G d i-h *flooring products*

'ERFECT FIT *and* PROPER FUNCTION

CONNOR ENGINEERING CORPORATION

kno·draft® AIR DIFFUSERS

FOR THE NEW REYNOLDS METALS BUILDING

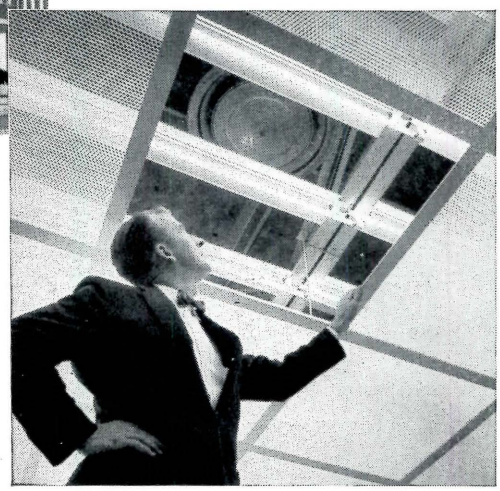


ARCHITECT—SKIDMORE, OWINGS & MERRILL, NEW YORK, N.Y.
ENGINEERS—EBASCO SERVICES, INC., NEW YORK, N.Y.
CONTRACTOR—HUFFMAN-WOLFE SOUTHERN CORP., CHARLOTTE, N.C.

Connor engineers and equipment solved a unique two way air conditioning problem at the new Reynolds Metals office building, Richmond, Virginia.

A. Functionally, Connor equipment permitted *complete* concealment of *both* the air diffusers and return registers above a grid ceiling, with proper air distribution assured.

B. Architecturally, Connor equipment, where necessarily exposed, hardly reveals its purpose by stylistically conforming with the striking simplicity of the building's interior.



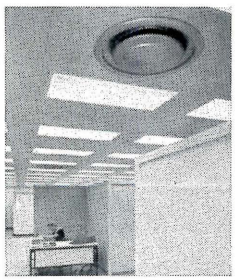
Diffuser installation above ceiling is an engineering accomplishment previously believed unworkable.

Pre-installation tests conducted at Connor's laboratory proved conclusively that the high degree of air entrainment produced by the Kno-Draft single stream diffuser satisfactorily would move air upward through the grid ceiling, where it would mix thoroughly with the supply air, and provide the areas below with constant, highly efficient air conditioning. And since installation, the equipment has been serving the Reynolds building to complete satisfaction.

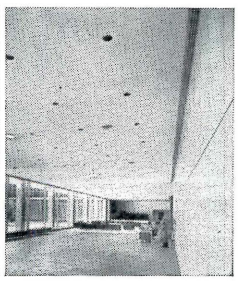
Contact Connor for recommendations on your air distribution problems . . . common or uncommon. Our research and long practical experience guarantees you constant comfort conditions.

In grid ceiling areas, diffusers and return registers are entirely hidden.

In the plastered ceiling cafeteria, black, rounded contour units conform with the decor.



A standard Kno-Draft diffuser in an office area.



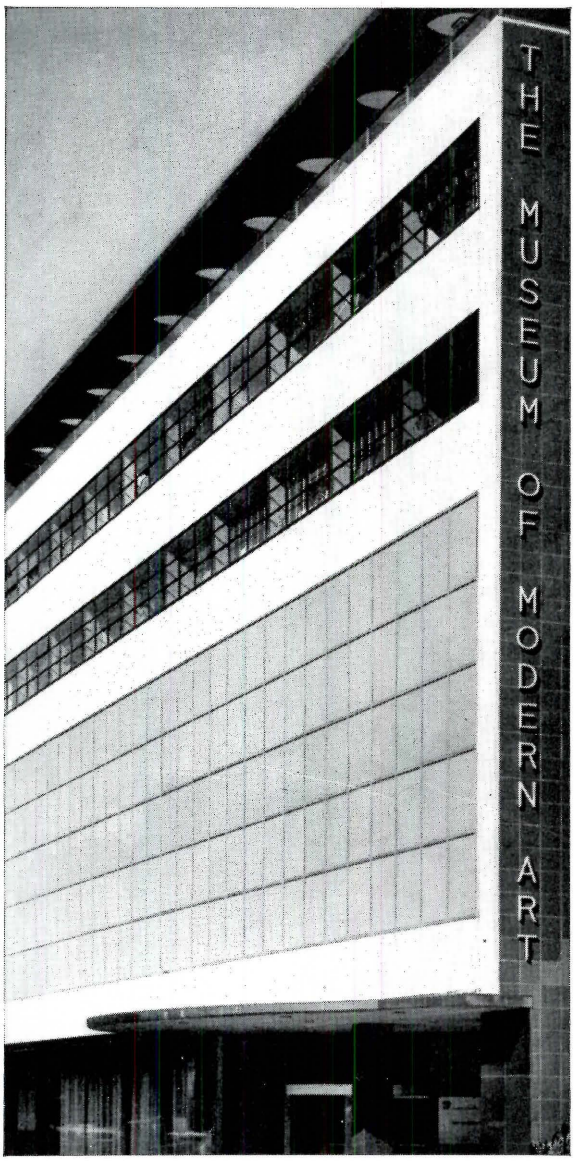
In other areas, linear diffusers, virtually unnoticeable from below, are mounted along the wall.

The above ceiling diffusers and the specially designed round and slotted units perfectly fulfilled stylistic requirements.
And not unexpectedly, Connor equipment is of all-aluminum construction.

CONNOR ENGINEERING CORPORATION

DANBURY • CONNECTICUT

CONNOR ENGINEERING CORPORATION kno·draft®
high velocity air diffusers

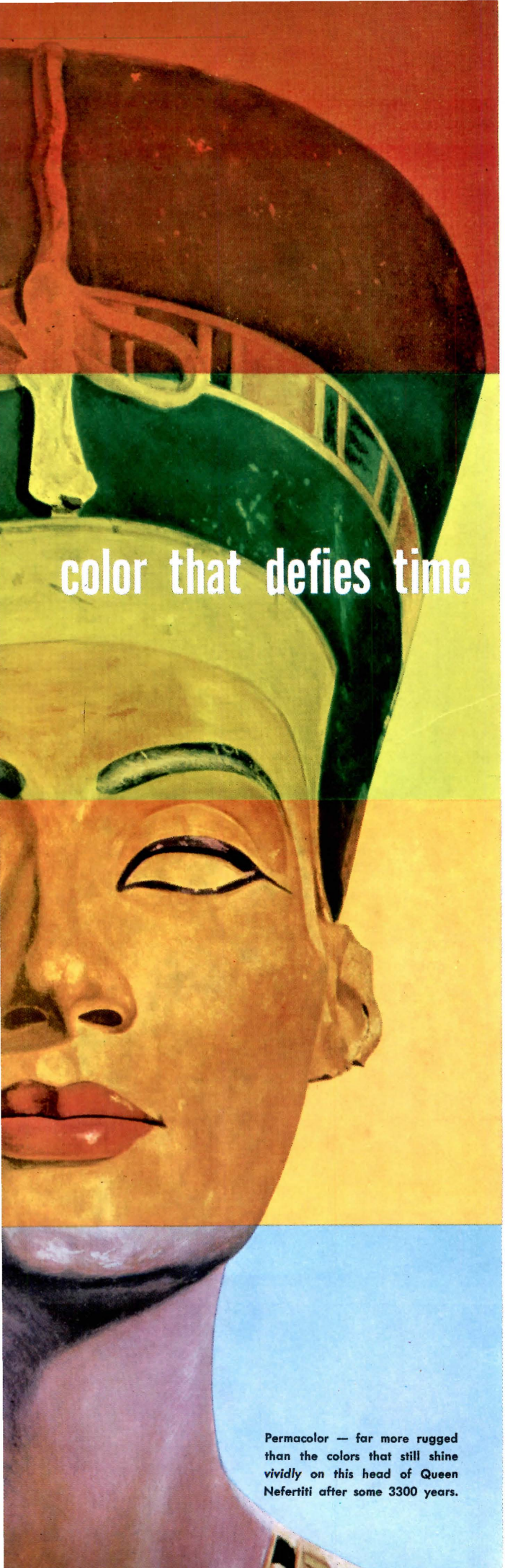


The Museum of Modern Art chose AETNA & AETNAPAK hollow metal doors and frames

Four short months were allotted to repair damage done by fire to New York's Museum of Modern Art and to carry out extensive renovations. To avoid unnecessary hollow metal custom engineering delay, Aetna worked out a plan with the architect and contractor according to which openings requiring almost immediate delivery were supplied from stock AETNAPAK inventoried components; special frames and doors for later erection were AETNA custom engineered.

Architect: Philip Johnson.
Contractor: George A. Fuller Company.

AETNA STEEL PRODUCTS CORPORATION
730 Fifth Avenue, New York 19, N.Y.



Permacolor — far more rugged than the colors that still shine vividly on this head of Queen Nefertiti after some 3300 years.

Design offices in any color . . .
so long as it's VMP Permacolor!

New VMP Permacolor Mobilwalls give you a complete spectrum of color that defies time. Mix exactly the shade you want . . . and let VMP match it precisely . . . and *permanently*. Or choose from a wide range of ready-mixed Permacolor tones. Either way, the office colors you specify are there for keeps!

Before offering Mobilwalls in this remarkable new finish, VMP proved it against extremes of abrasion . . . corrosion . . . light . . . heat . . . cold . . . dampness . . . and dirt.

The VMP representative nearest you will gladly show you the actual data from these tests. Call him soon. Satisfy yourself that the beauty of VMP Permacolor defies all the enemies of walls!

NEW VMP PERMACOLOR

VMP PERMACOLOR vs BLEACHING LIGHT Exposed hour after hour to powerful electric arcs, far more bleaching than any office sunshine, VMP PERMACOLOR kept its true, original tone.

VMP PERMACOLOR vs ABRASION Pounded by rough, heavy rollers, VMP PERMACOLOR proved its ability to keep its rich beauty under conditions far more rigorous than real-life wear.

In the last two years, 19 of America's 20 largest corporations installed VMP Mobilwalls . . . such leaders as Ford Motor Company, U. S. Steel, General Electric, Chrysler, and Western Electric. These VMP Mobilwalls went into smart offices, busy corridors, divided work areas, reception centers, laboratories. They're providing the rigidity and good looks of permanent partitions. Yet they can be reshuffled to meet future needs as easily as a company can redraw its organization chart!

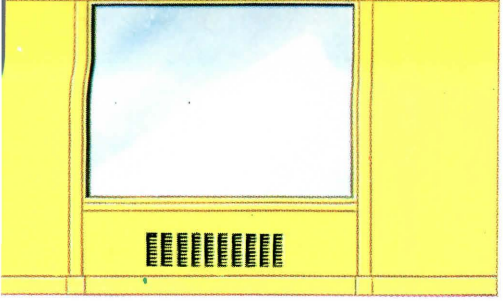
SEE SWEET'S 1958 ARCHITECTURAL FILE, Section 22, Number 22a/Vi for complete specifications and engineering advantages of VMP Mobilwalls. A full range of the most rugged, rigid, interchangeable and easily wired movable metal partitions in the entire modular construction field. *Now finished in time-defying Permacolor.*

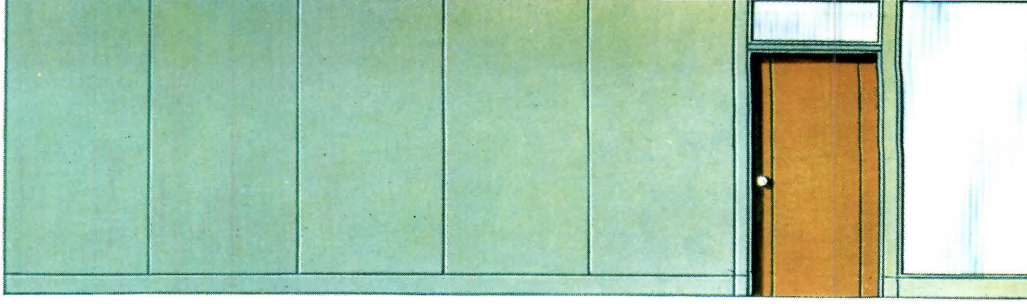
VMP

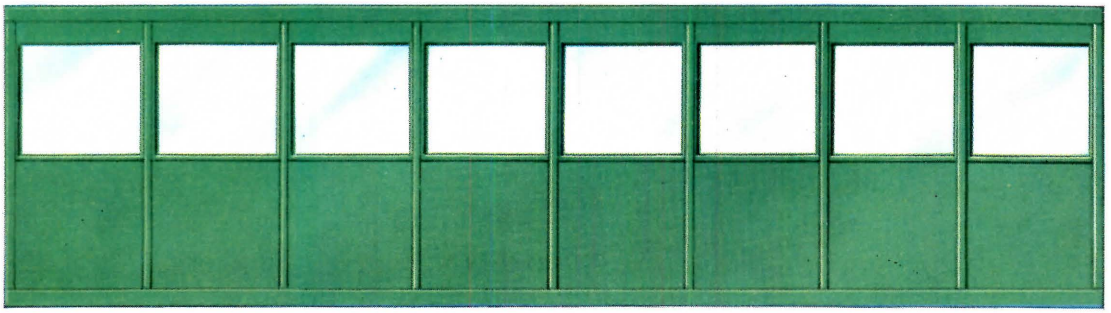
PERMACOLOR MOBILWALLS

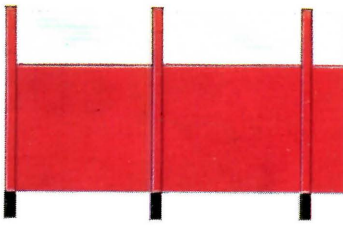
Virginia Metal Products, Inc. **Orange, Virginia**

A Subsidiary of Chesapeake Industries, Inc.

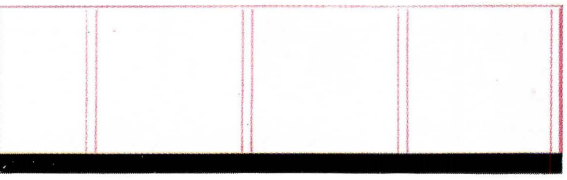


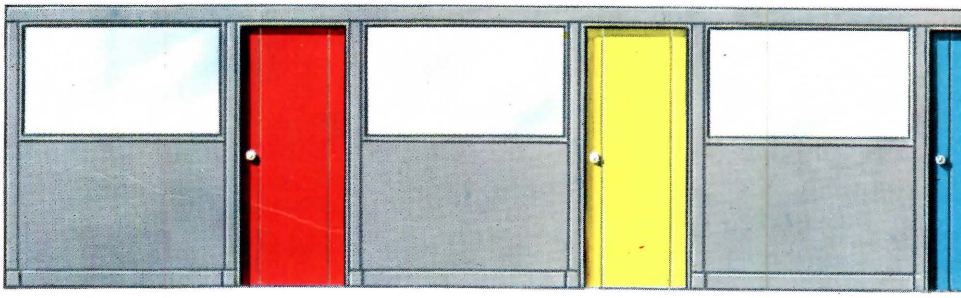


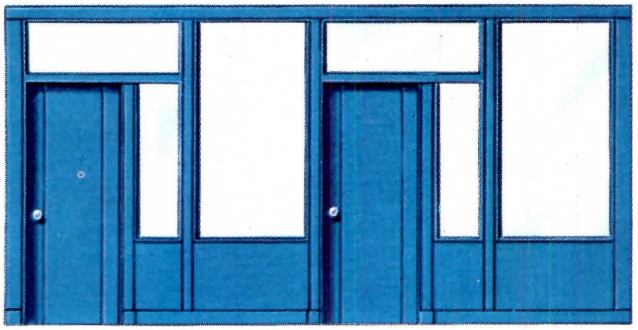


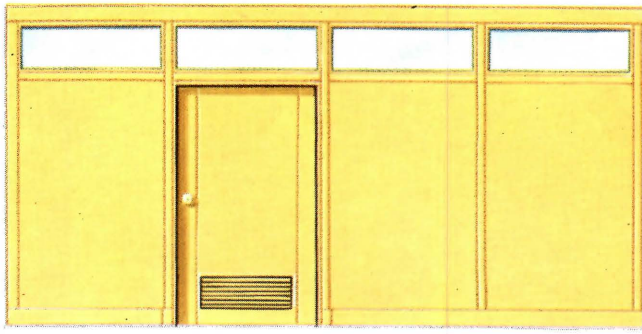


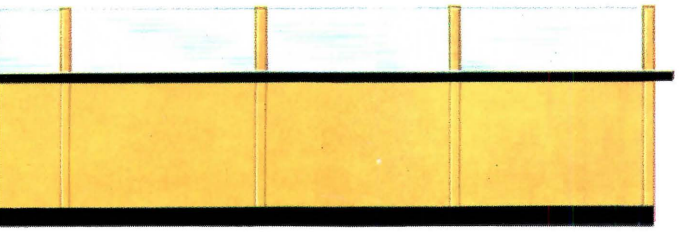
MOBILWALLS

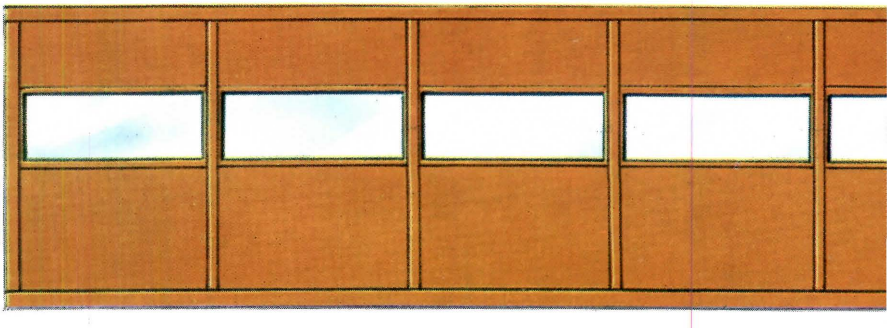








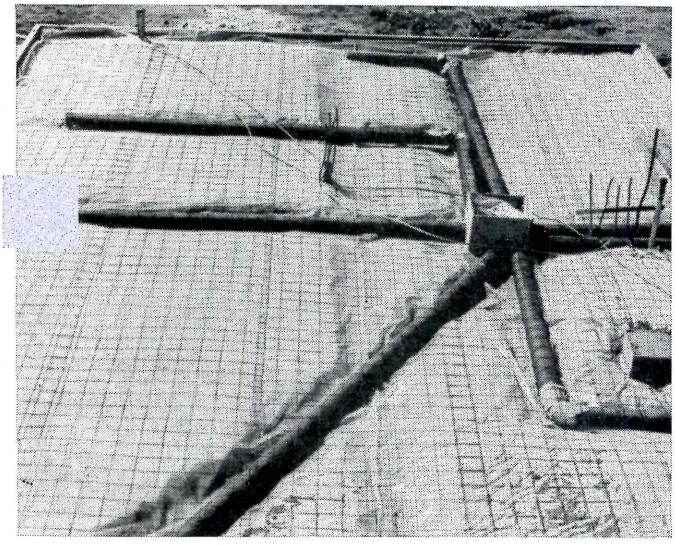




BEWARE OF IMITATIONS!

Be Sure: Look for the VISQUEEN mark on every foot of VISQUEEN film. This trademark is your assurance that you have the first and foremost polyethylene film.

Be Safe: VISQUEEN film meets Federal Housing Administration Minimum Property and Test Requirements and Federal Spec. UU-P-147B as it pertains to moisture vapor control.



Be Ahead: ONLY VISQUEEN film comes in *seamless* widths up to 32′ for faster, lower cost coverage. No piecing together of narrow widths . . . greater durability and strength.

Visqueen film will not flash, sustain combustion. Tough: Won't break or pinhole when folded, flexed. Won't run or shatter if punctured. Unaffected by heat or cold, acids, alkalis, caustics. Write now and save.

information request tag

VisQueen Trade Mark

clip this tag—# AR 11
attach to letterhead, mail.

VISQUEEN *film—first and foremost polyethylene film.*
A product of the long experience and outstanding research of
PLASTICS DIVISION
VISKING COMPANY *Division of* UNION CARBIDE *Corporation.*
6733 West 65th Street, Chicago 38, Ill.
In Canada: VISKING COMPANY DIVISION OF UNION CARBIDE CANADA LIMITED, Lindsay, Ontario.
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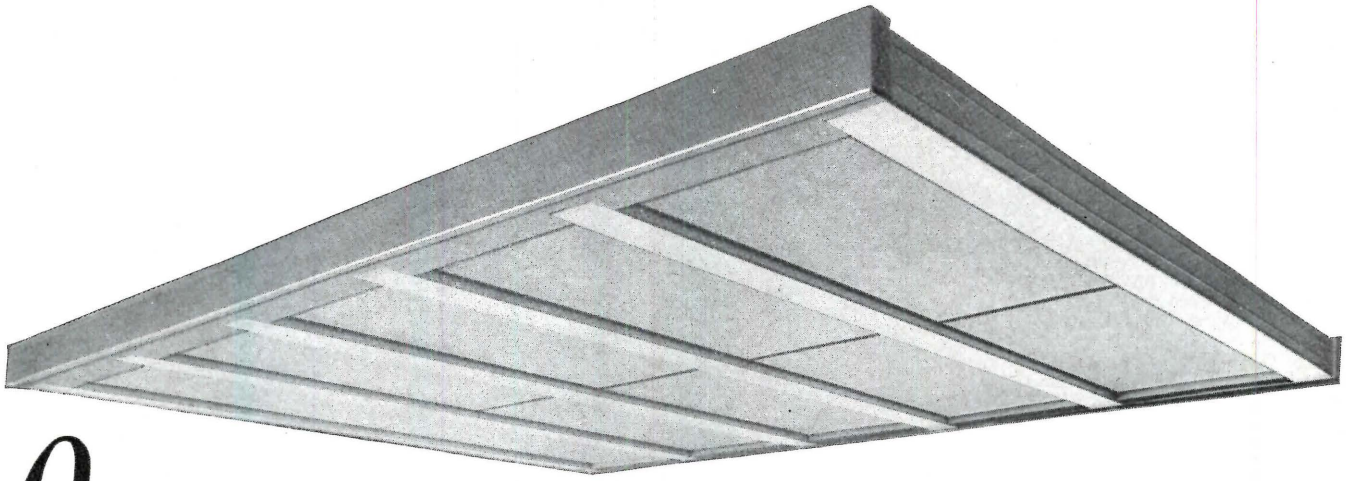


Color-ceil®

.....THE "FLOATING PANEL" OF COLOR AND LIGHT

that provides

HIGH LEVEL LIGHTING WITH COMPLETE SEEING COMFORT

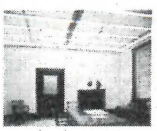
EXCLUSIVE FEATURES

1. A practical method of obtaining illumination in commercial interior with complete flexibility of . . .

   50 footcandles with Slimline lamps
   100 footcandles with High Output lamps.
   200 footcandles with Power Groove lamps

2. Introduces color without sacrifice in efficiency and without distortion of color value of light.
3. Easy to install—easy to maintain.
4. Lowest in cost for any large area lighting system on a cost per footcandle per square foot basis.
5. Provides complete flexibility in dimension.
6. Offers concealment for unsightly ceiling beams, ducts and pipes.
7. Provides comfortable environment with complete shielding of light source and low brightness of luminous parts of fixture.

Send for Complete Details



THE COLOR-CEIL DESCRIPTIVE FOLDER

•

A four-color folder containing important facts on Color-Ceil—performance data, mechanical details, applications, etc. Requests on company letterhead promptly answered.

Color-Ceil is a "Floating Panel" luminaire specifically developed for use with Power Groove fluorescent lamps. It embodies an entire new concept of design to provide lighting levels of 200 footcandles or more—efficiently and with complete freedom from glare and unpleasant brightness contrast.

Color-Ceil also adds a new dimension in lighting—COLOR—in the form of tinted plastic louvers, softly illuminated by an indirected system of lighting.

The unique combination of design features of Color-Ceil has been judged by experts to be one of the most significant lighting developments of recent years. Despite its advanced design which eliminates an inherent disadvantage of prevailing system—the monotony of row after row of lights, Color-Ceil costs less per footcandle per square foot than many other lighting systems and provides more light for seeing, selling or working.

SILVRAY LIGHTING, INC.

BOUND BROOK • NEW JERSEY

Mahon ROLLING DOORS are

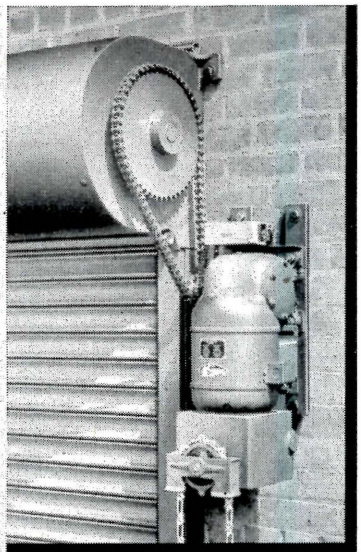
THE STEEL CURTAINS OF ALL MAHON ROLLING DOORS ARE BONDERIZED

Above are Two Mahon Power Operated Rolling Steel Doors, divided by Mullion, installed in a combination Truck and Railroad Opening 36′-9½″ x 23′-0″. The Railroad enters the plant at an acute angle. Large door at right is opened only for movement of railroad cars. Mullion moves to right jamb on overhead track.

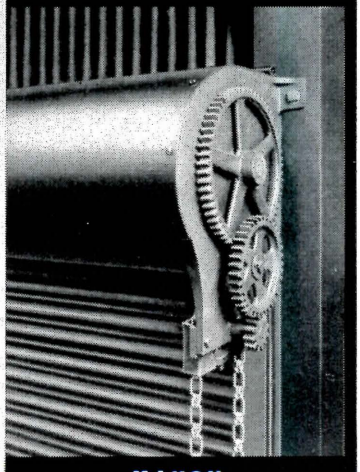
Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

Versatile in Application . . . Will Serve You Better in Any Type of Opening!

In Operation, the Fast, Vertical Roll-up Action Saves Valuable Time and Space — No Overhead Tracks to Restrict Headroom



MAHON STANDARD
POWER OPERATOR 920-P



MAHON
CHAIN-GEAR OPERATOR

MANUALLY, MECHANICALLY, or POWER OPERATED DOORS
STANDARD or UNDERWRITERS' LABELED

☆ OTHER MAHON BUILDING PRODUCTS and SERVICES:

- Insulated Metal Curtain Walls
- Underwriters' Rated Metalclad Fire Walls
- M-Floors (Electrified Cellular Steel Sub-Floors)
- Long Span M-Decks (Cellular or Open Beam)
- Steel Roof Deck
- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel—Fabrication and Erection
- Steel Plate Components—Riveted or Welded

☆ *For INFORMATION See SWEET'S FILES or Write for Catalogues*

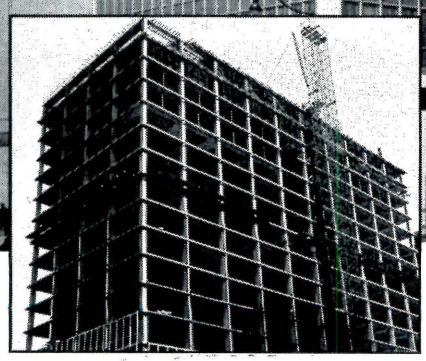
THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York and Chicago
Representatives in all Principal Cities

of Steel and Aluminum

MAHON

Design changed to Reinforced CONCRET to speed construction

Photography by Bill Engdahl, Hedrich-Blessing



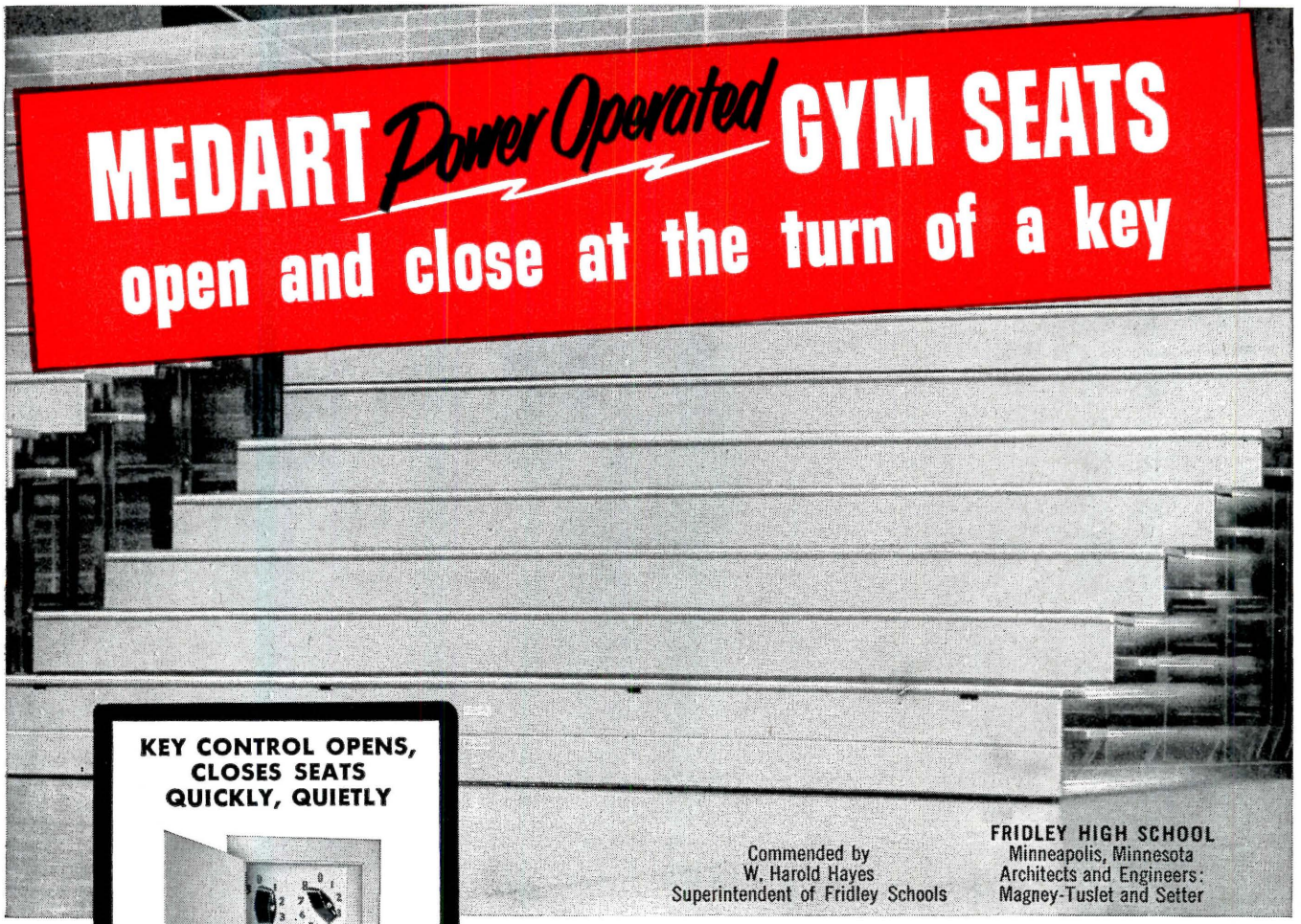
CLEVELAND ELECTRIC ILLUMINATING BUILDING
Architects: Carson & Lundin, New York City
Engineers:
McGeorge, Hargett & Associates, Cleveland
Contractor:
George A. Fuller Company, New York City

Another impressive example of reinforced concrete construction is Cleveland's newest downtown office building—headquarters of the Cleveland Electric Illuminating Company. The original design for the frame was changed to reinforced concrete due to a fourteen months' delivery date for structural members. As the foundation soil was water-soaked clayish sand, with bedrock 206 feet down, the building was "floated" on a reinforced concrete mat placed 18 feet below the street. Before you build, investigate this economical, flexible, and timesaving medium of construction.

CONCRETE REINFORCING STEEL INSTITUTE
FOUNDED 1924
CRSI

CONCRETE REINFORCING STEEL INSTITUTE
38 South Dearborn Street, Chicago 3, Illinois

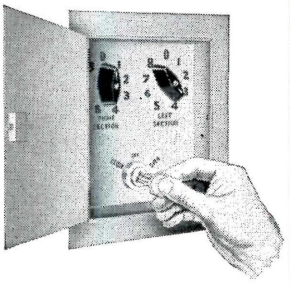
MEDART *Power Operated* GYM SEATS
open and close at the turn of a key



Commended by
W. Harold Hayes
Superintendent of Fridley Schools

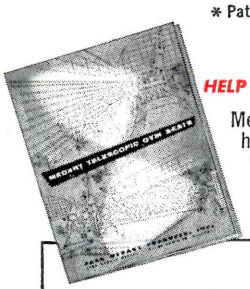
FRIDLEY HIGH SCHOOL
Minneapolis, Minnesota
Architects and Engineers:
Magney-Tuslet and Setter

KEY CONTROL OPENS, CLOSES SEATS QUICKLY, QUIETLY



Moves the biggest seat sections into position in a few seconds. If all seats in any section are not needed, release of key stops movement instantly when wanted number of rows are in position. Automatic safety controls insure hazard-free operation. Key-operated control can be remotely installed anywhere. Removable key prevents unauthorized operation.

* Patents Pending



HELP ON GYM SEAT PLANNING

Medart's Gym Seat Catalog tells how to get better, safer seating with minimum investment. Write for your copy.

MEDART MAKES THE BEST:

Telescopic Gym Seats • Basketball Backstops
Basketball Scoreboards • Gymnastics Apparatus • Physical Therapy Equipment

Automation eliminates all manual effort—Power operators self-contained in seat sections—Key control switch may be installed anywhere

MEDART'S FULL AUTOMATIC POWER OPERATION* opens and closes the largest gym seat sections quickly, quietly, safely, without physical effort. Crashing, banging is eliminated—life of seats is prolonged—maintenance is reduced to a minimum.

No special construction provisions, no floor tracks, necessary. Building conditions remain same as for manually operated seats. Any 110-v. or 220-v. power source will do. Power operation plus Medart's exclusive "Floating Motion" and "Dual Align" guarantees smooth, non-binding trackage.

Write for illustrated brochure.

ONLY MEDART SEATS HAVE THESE PREFERRED FEATURES

1. Safer self-supporting free-standing understructure.
2. Eight vertical steel-angle uprights per seatboard.
3. Retracting rubber rollers put load on floor, not on casters or wall.
4. Interlocked telescoping supports and roller housings make operation easier, prevent binding.
5. Toughest, smoothest, most abrasion-resistant wood finish on market.
6. More leg and foot room—better visibility.

MEDART
TELESCOPIC GYM SEATS

***SPECIFY** the best, then **INSIST** on it!*

Medart — SEE OUR CATALOG IN SWEET'S

FRED MEDART PRODUCTS INC. • 3540 DE KALB ST. • ST. LOUIS 18, MISSOURI

Superior Standardline

pre-engineered

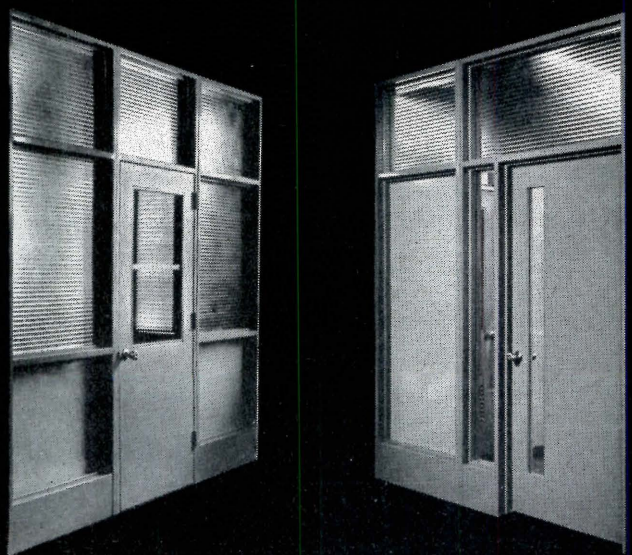
doors, frames, unit entrances, borrowed light and sidelight partitions

Delivery problems inherent in made-to-order, custom hollow metal have long hampered construction projects where materials are needed almost immediately after date of order.

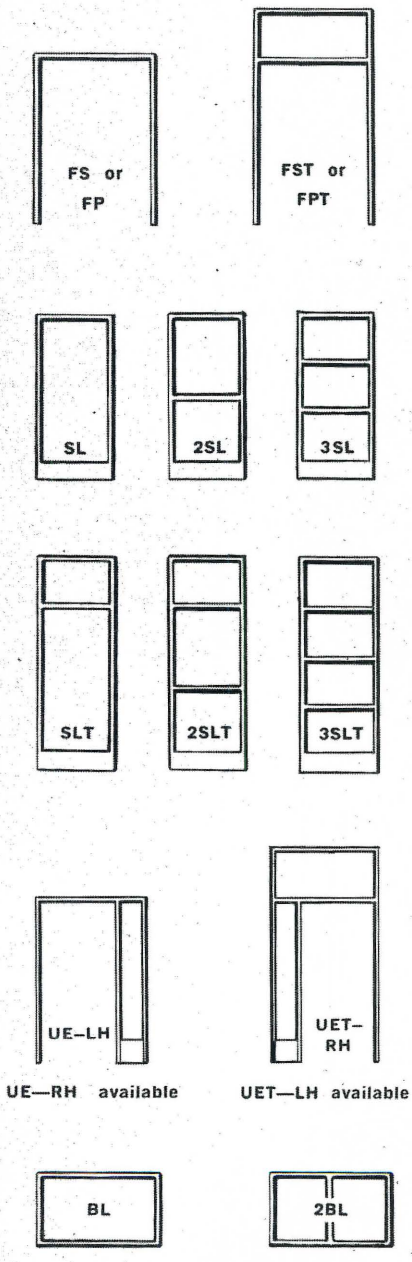
The problem has been increased by the expanded use of slab on grade construction making it virtually impossible to meet short delivery schedules since too much time is needed for estimates, drawings, correction and revision of these drawings, preparation of hardware schedules and waiting for hardware templates. Special tooling and factory set-ups are also required, contributing to the delay and adding to the cost.

Superior Standardline answers these problems with a complete line of pre-engineered hollow metal doors, frames, unit entrances, side lights, and borrowed lights. These components may be installed or assembled in any combination without exposed screws or faceplates. Superior Standardline emphasizes service and provides all the quality construction features of architecturally designed custom hollow metal.

The wide range of standardized components allows the architect to exercise his imagination to the utmost while keeping cost at a reasonable level. Hardware cutouts have been carefully standardized to eliminate the need for template co-ordination while still retaining the versatility necessary to suit individual needs.



. . . the quality of custom construction
. . . the freedom of custom design
combined with "stock" economy and fast delivery



Superior Standardline CORP.

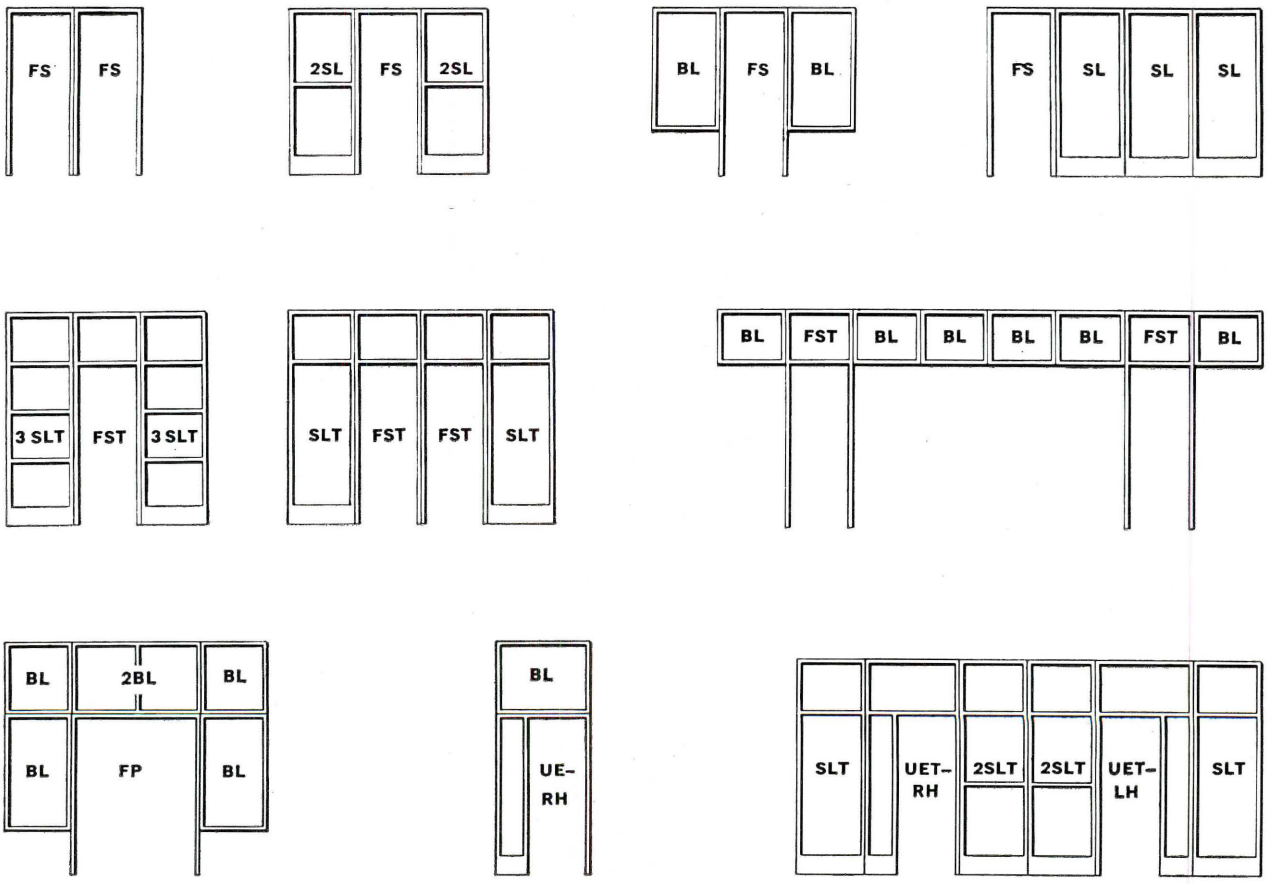
time-saver combinations . . .

Combinations of SUPERIOR STANDARDLINE frames, sidelights, and borrowed lights quickly and easily solve space division and light distribution problems.

A simple, positive, patent-protected interframe fastening allows SUPERIOR STANDARDLINE components to be used in combinations with unrestricted freedom of design.

Glass or solid panels can be used to meet interior design goals. Vitreous or vinyl clad steel panel inserts, in unlimited color combinations, may be ordered with the frames.

The elevations shown are offered only as a guide.



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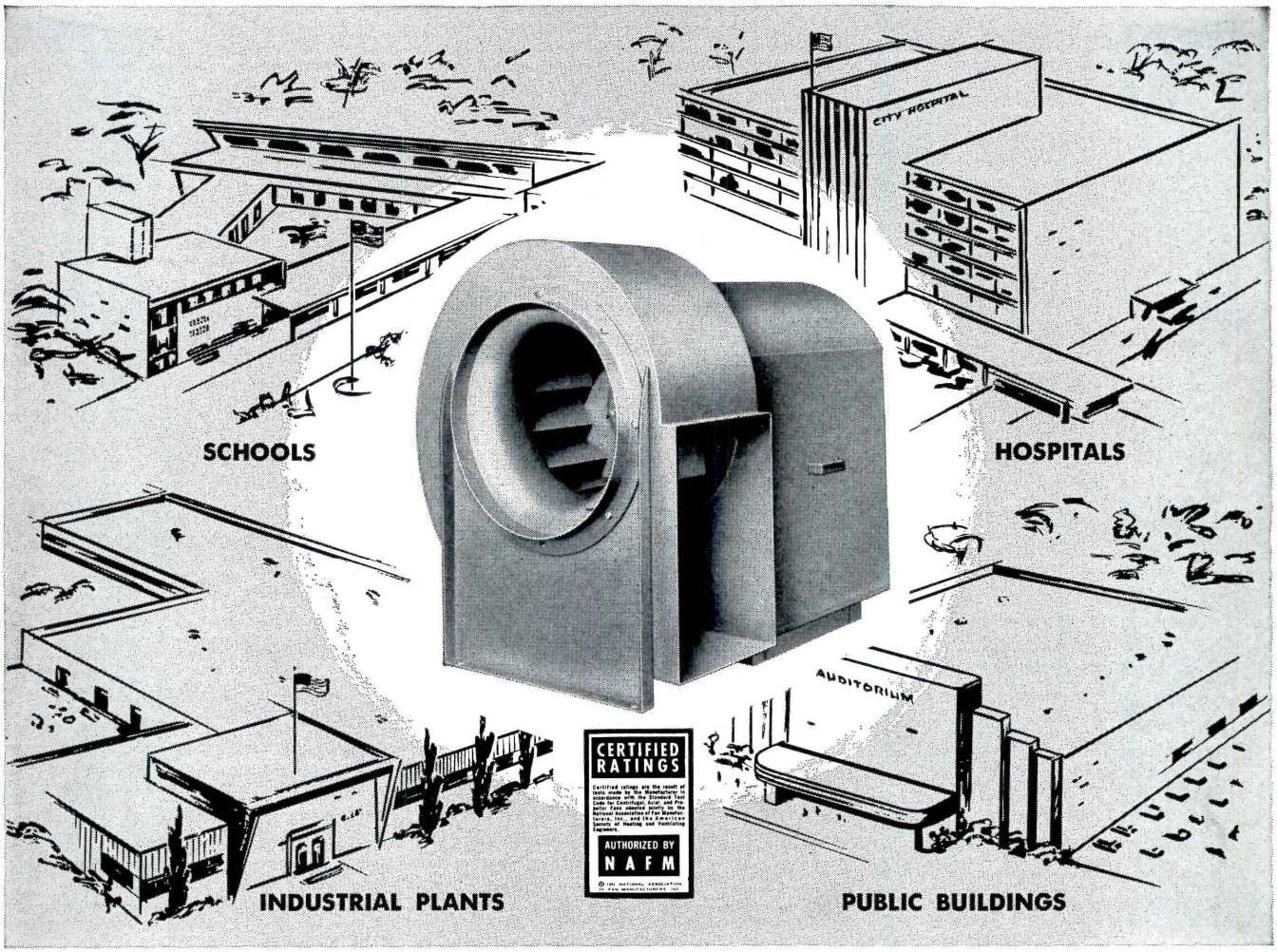


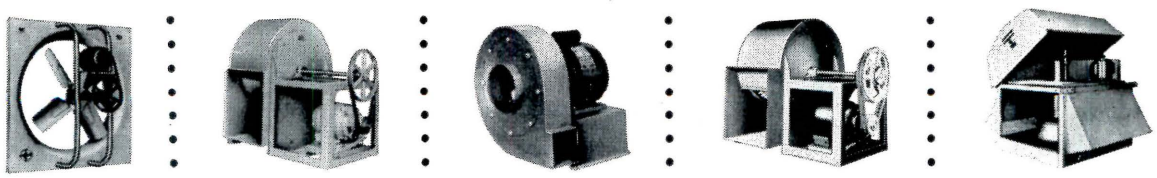
Peerless Blower for Every Application

Quiet, dependable, trouble-free Peerless blowers require a minimum of installation space and reduce mounting costs. They offer countless discharge arrangements. The entire unit is built by Peerless, including the motor.

Peerless blowers meet and excel industry standards. They have been thoroughly tested according to test codes. Thousands of them are providing economical, continuous ventilation in installations all over the country.

Write today for Bulletins SDA-160, SDA-200 and SDA-220!

A COMPLETE LINE OF AIR MOVING EQUIPMENT



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Peerless® Electric

FAN AND BLOWER DIVISION

THE *Peerless Electric*® COMPANY

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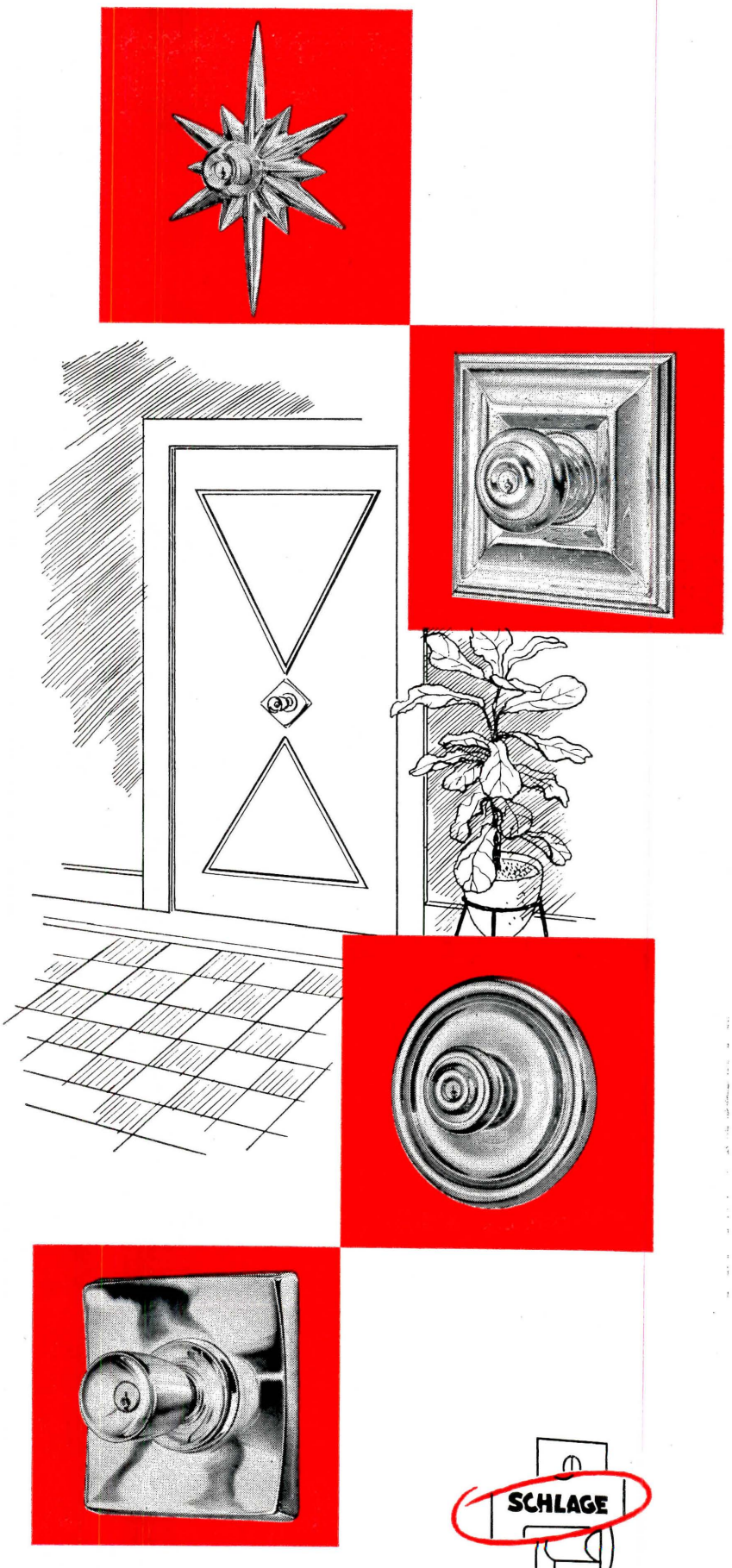
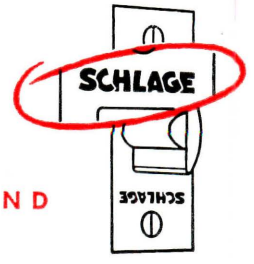
SCHLAGE CYLINDRICAL LOCKS HELP YOU EXPRESS YOUR ORIGINALITY

Long backsets, versatile escutcheons, compact units give you flexibility

Whatever motif you create for a new building, there are Schlage-designed locks that will complement it. Schlage's range of styles and finishes gives you unfettered freedom to create eye-catching doorways.

In addition to beauty, Schlage gives you these advantages of cylindrical lock design: easy installation with two drilled holes, pushbutton security, minimal maintenance, one-hand unlocking with the Schlage key-in-knob feature. Schlage Lock Company . . . San Francisco . . . New York . . . Vancouver, B. C.





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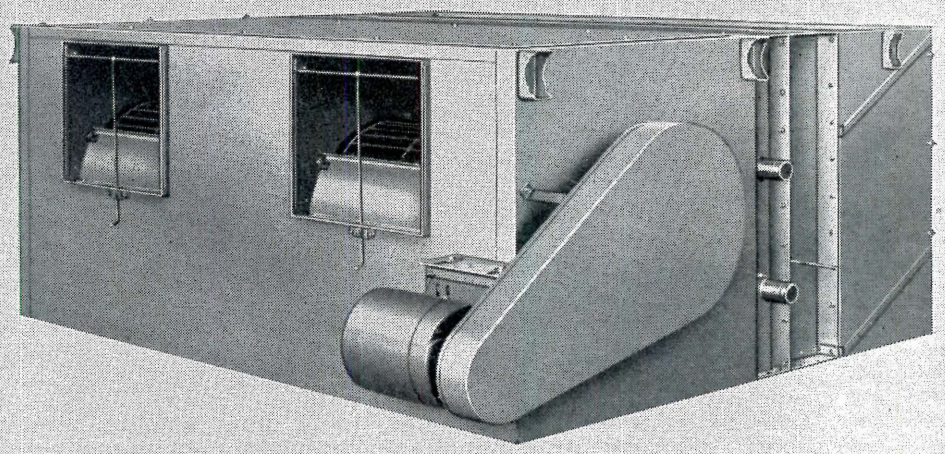
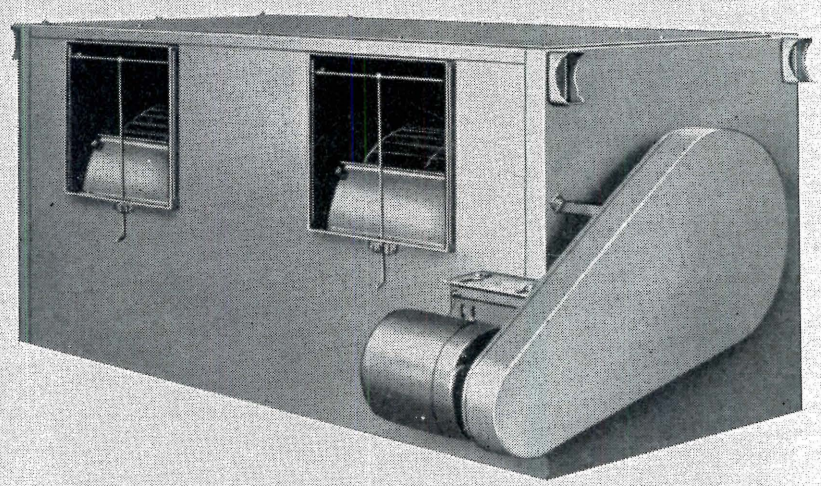
NOW! AMERICAN BLOWEI

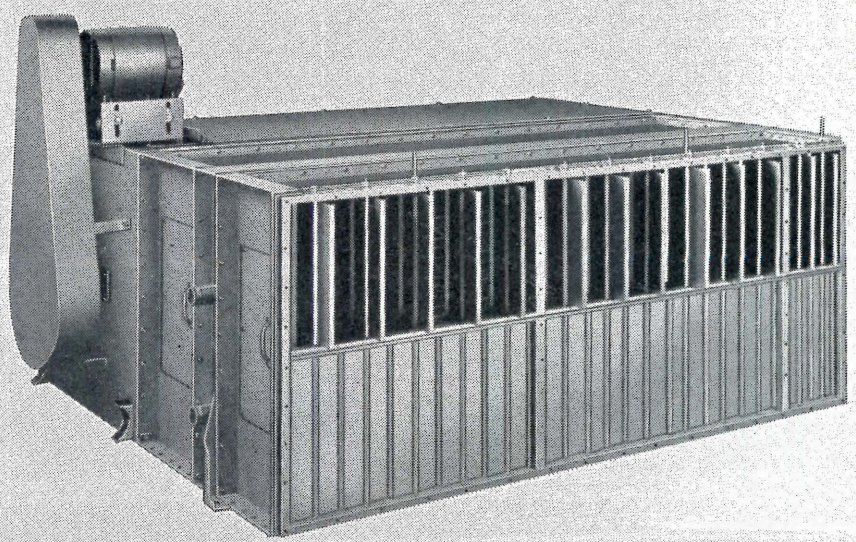
Heating and Ventilating Unit — Type V gives complete coverage of central-station heating and ventilating requirements. Steam or hot-water heating; large-volume, extra-quiet Sirocco Fans, for adequate heating and for ventilation. Ideal for offices, auditoriums, factory areas, gymnasiums, laboratories, schools and stores. Bulletin 8927.



Lineflow Ventilating Unit — Type L is a quiet, compact air handling unit for commercial and industrial uses. Designed for filtered air supply; fume and foul-air exhaust; air-conditioning zone distribution; and non-fouling kitchen and laboratory hood exhaust. Bulletin 8927.



Multi-Zone H & V Unit — Type VB provides individual zone control of temperature from a single central unit. Utilizes a "blow-thru" arrangement with individual zone dampers at the discharge end. Typical applications: schools, laboratories, offices and stores. Bulletin 8927.



DESIGNS NEW FLEXIBILITY INTO...

Heating and ventilating systems tailor-made with standard units

Sectional construction of basic components provides the required capacity, at savings in time, money and space!

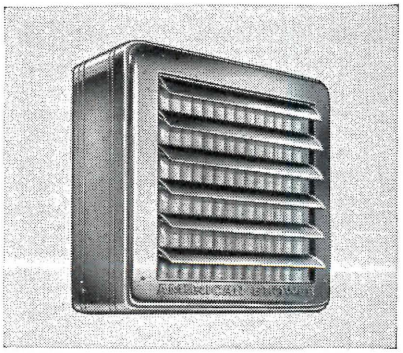
Want the efficiency and operating economy of a "tailor-made" heating or ventilating system? Need the lower initial installed cost of pre-engineered, "ready-made" components? Build around one of these three new H & V Units by American Blower!

American Blower Heating and Ventilating Units offer broad capacity coverage, with eleven sizes to handle from 600 to 66,000 cfm. New flexible design and sectional construction give a bigger selection of efficient combinations and space-saving arrangements to fit your requirements.

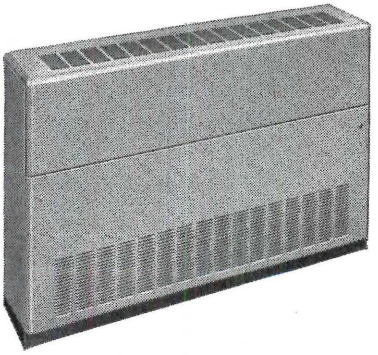
Units, coils and accessories assemble into a custom system at a packaged price. For example, there are eight unit arrangements based on fan rotation and discharge; four types of heating coils in a variety of arrangements with either top or bottom by-pass; and accessories such as filter boxes, face and by-pass dampers, damper-mixing boxes, and floor-base combinations.

Every American Blower H & V component is precision-made for fast mounting and low-cost installation. Units are easy and economical to maintain and service because motors, drives and bearings are externally mounted, easily accessible. For full details, send for Bulletin 8927.

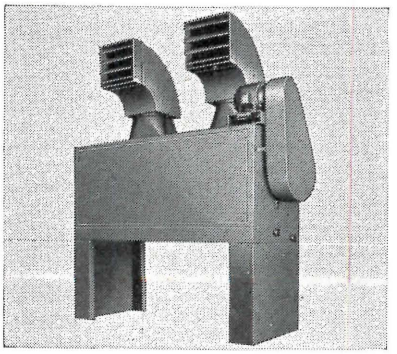
Remember: When you specify American Blower, you get equipment that's designed, engineered and manufactured to work together . . . *plus* one-source responsibility for its performance. Branch offices in 73 cities offer local product help or nationwide sales-service coordination. American-Standard,* American Blower Division, Detroit 32, Michigan. In Canada: Canadian Sirocco products, Windsor, Ontario.



Venturafin® Unit Heaters — for steam or hot water. Quiet; adjustable louvers. Horizontal or vertical. Bulletin 9017.



Cabinet Heaters — attractive, quiet. Models for all applications. Steam, hot water; to 1860 cfm. Bulletin 9617.



Industrial Unit Heaters—high-capacity, quiet. Universal cowls. Steam, hot water; 7 sizes, 4 arrangements. Bulletin 7727.

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American-Standard Products

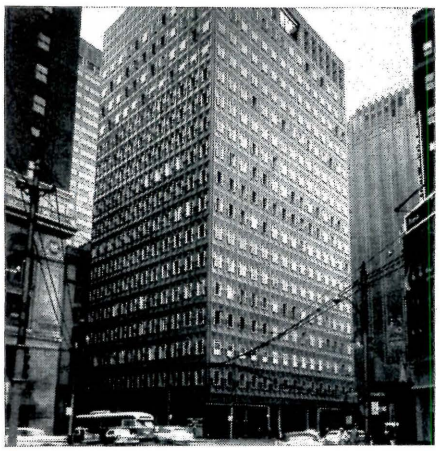
AMERICAN-Standard

AMERICAN BLOWER DIVISION

Square access boxes are easily leveled by adjusting the corner screws on this Spang Headerduct installation.

SPANG Headerduct Protects Wiring in Pittsburgh's New Porter Building

speeds installation, allows wiring flexibility, provides for low-cost future wiring changes



Two 110-foot runs of Spang Headerduct carry the wiring for electric and telephone lines on each floor of the Porter Building.

Architect: Harrison & Abromovitz, New York
Electrical Engineer:
Edward E. Ashley & Associates, New York
General Contractor:
George A. Fuller Company, New York
Electrical Contractor:
Hale Electric Company, Pittsburgh
SPANG Distributor:
Pittsburgh Electric Supply Co., Pittsburgh

SPANG-CHALFANT
DIVISION OF THE NATIONAL SUPPLY COMPANY
Two Gateway Center, Pittsburgh 30, Pa.

Cellular-type floor construction was used on the 2nd through 16th floors of the Porter Building, Pittsburgh's newest skyscraper. SPANG Headerduct was installed over the flooring to feed electric power and telephone wires to the floor cells.

EASY INSTALLATION

SPANG Headerduct saved installation time. The exclusive square access units and junction boxes provided maximum working area to make wiring connections. Corner leveling screws meant accurate adjustments could be made quickly to bring the Headerduct up to screed level. This square-unit design also saved time on floor tile laying, since no curved cutting was required.

SERVICE WHERE IT'S NEEDED

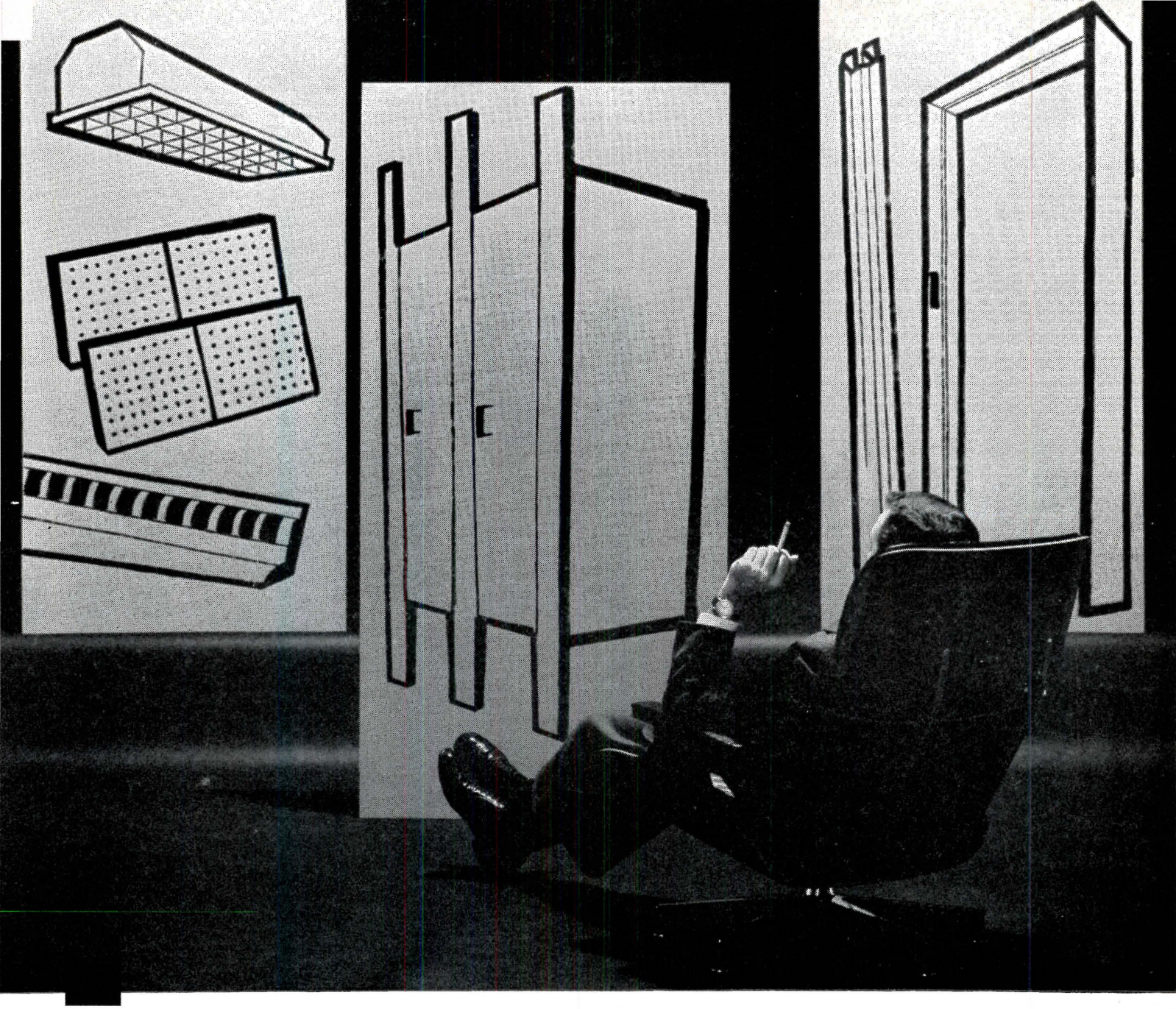
Access boxes every 36 inches along both the electrical and telephone headerduct runs feed wiring into the floor cells, providing as many electrical and phone outlets as the building tenants will require—both for today and in the future. SPANG Service Fittings, containing the latest engineering designs, were easily installed . . . will stay firmly in place.

FUTURE CHANGES NO PROBLEM

SPANG Headerduct permits future office changes to be made without expensive rewiring. Old outlets are easily sealed up. Access boxes are readily located, and additional wiring is added as needed.

NEED INFORMATION?

New booklets on SPANG Underfloor Duct and "How to Install SPANG Headerduct" are available. We'll be glad to send you copies. Write today.



THE EASY WAY TO PREVENT CORROSION IN YOUR BUILDING?
SPECIFY ZINC-COATED STEEL SHEETS, OF COURSE!

There's just nothing like *zinc-coated* steel sheets for enduring, economical corrosion prevention in the things you want fabricated—such as wall partitions. Or in the manufactured products you specify such as light troffers, metal ceiling tiles, baseboard heating units and scores of other products.

Take the formability of such sheets, for instance. With either electrolytic or continuous process zinc-coated steel, the tight coating can take the severest fabrication operations and never flake or peel. Result: permanent corrosion resistance for longer life and lasting beauty. First cost: low. Maintenance costs: nil.

How about paintability? Electrolytically zinc-coated steel sheets, chemically treated, are unexcelled for painted products. Paint digs in and holds its unbroken smoothness and beauty for keeps.

In electrolytic zinc-coated steel, the name that stands out is Weirzin. In continuous process zinc-coated steel sheets, it's Weirkote. Let us show you how Weirzin or Weirkote—or both—can help you meet your building requirements better.

Write for free informative brochure on each today. Weirton Steel Company, Dept. Q-2, Weirton, W.Va.

WEIRTON STEEL COMPANY

WEIRTON STEEL COMPANY

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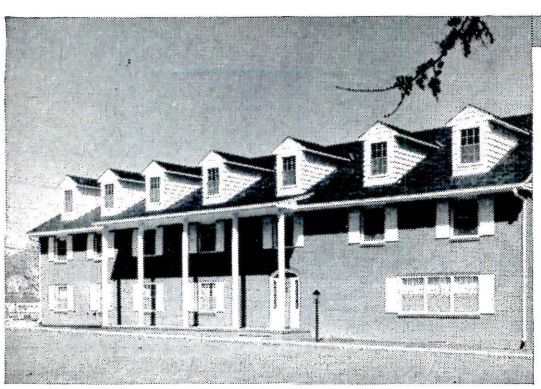
a division of

NATIONAL STEEL CORPORATION

Curtis Silentite double-hung wood windows help create a homelike atmosphere in the Zeta Tau Alpha sorority house, Lincoln, Nebraska. Harold C. Potter, Lincoln, Nebraska, architect.



CURTIS

1866 CURTIS WOODWORK SILENTITE PRE-FIT "the Insulated window

On the honor roll in school service

Curtis wood windows and flush doors

The trend is definite—a fact borne out by hundreds of installations. Architects all over the country are specifying Curtis Silentite wood windows and Curtis New Londoner hollow-core flush doors for schools and other public-use buildings.

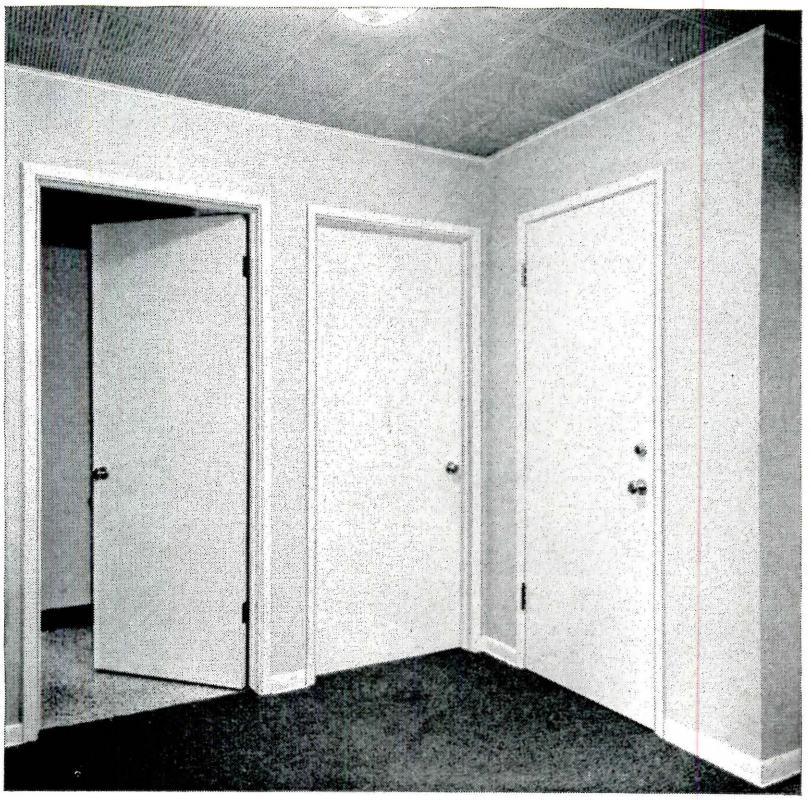
Why Silentite windows? Because they are beautiful—with slender muntins, narrow trim. Because they are topnotch for weather protection and easy operation. Because they have the warmth and utility of wood...are preservative-treated, made for lifetime service.

Why New Londoner doors? Because of their carefully matched face panels and the patented locked-in wood core which makes them immune to warping, swelling or shrinking.

GUARANTEED QUALITY

CURTIS COMPANIES INCORPORATED
GUARANTEE

More than 92 years of experience stand behind the Curtis guarantees for Curtis Silentite windows, Curtis New Londoner and Curtis American flush doors—positive assurance of quality.



Curtis New Londoner flush doors in Zeta Tau Alpha house.

1865 CURTIS NEW LONDONER HOLLOW-CORE FLUSH DOORS

CURTIS

WOODWORK *heart of the home*

Curtis Companies Service Bureau
200 Curtis Building
Clinton, Iowa AR-11-58

Please send me information on Curtis New Londoner and Curtis American flush doors.

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Address .....

City ..... *State* .....

Look to **Rō-Way Garage Doors**

for Top Quality in Every Model

Compare Ro-Way overhead type garage doors with *any* other make and you'll see why Ro-Way offers top value.

Greater dimensions in millwork and hardware . . . efficient design . . . skilled craftsmanship all combine to make the Ro-Way door an outstanding buy . . . a beautiful addition to any home . . . a rugged, smoothly-operating unit built to deliver long years of trouble-free service.

And best of all, this beauty and rugged construction are yours in *every* Ro-Way door—from deluxe models to the budget priced *Westchester*.

So compare. Then you, like thousands of builders, will choose Ro-Way, the garage door that sets the pace for quality.

Check These Rō-Way Features

Selected, kiln-dried west coast woods and hardboard panels. Mortise and tenon joints both glued and steel-pinned. Taper-Tite track and Seal-A-Matic hinges for easy opening, weather-tight closing. Quiet, smooth-gliding ball bearing rollers. Power-Metered Springs individually balanced to the weight of each door. All hardware doubly protected against rust and corrosion—both Parkerized and painted after fabrication.

New Model 80 electric operator and remote radio control now available. Write for details.

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE OR WRITE FOR COPY

there's a Ro-Way for every Doorway!

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Rō-Way OVERHEAD TYPE DOORS

ROWE MANUFACTURING COMPANY

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PRECISE STACK BOND WALLS

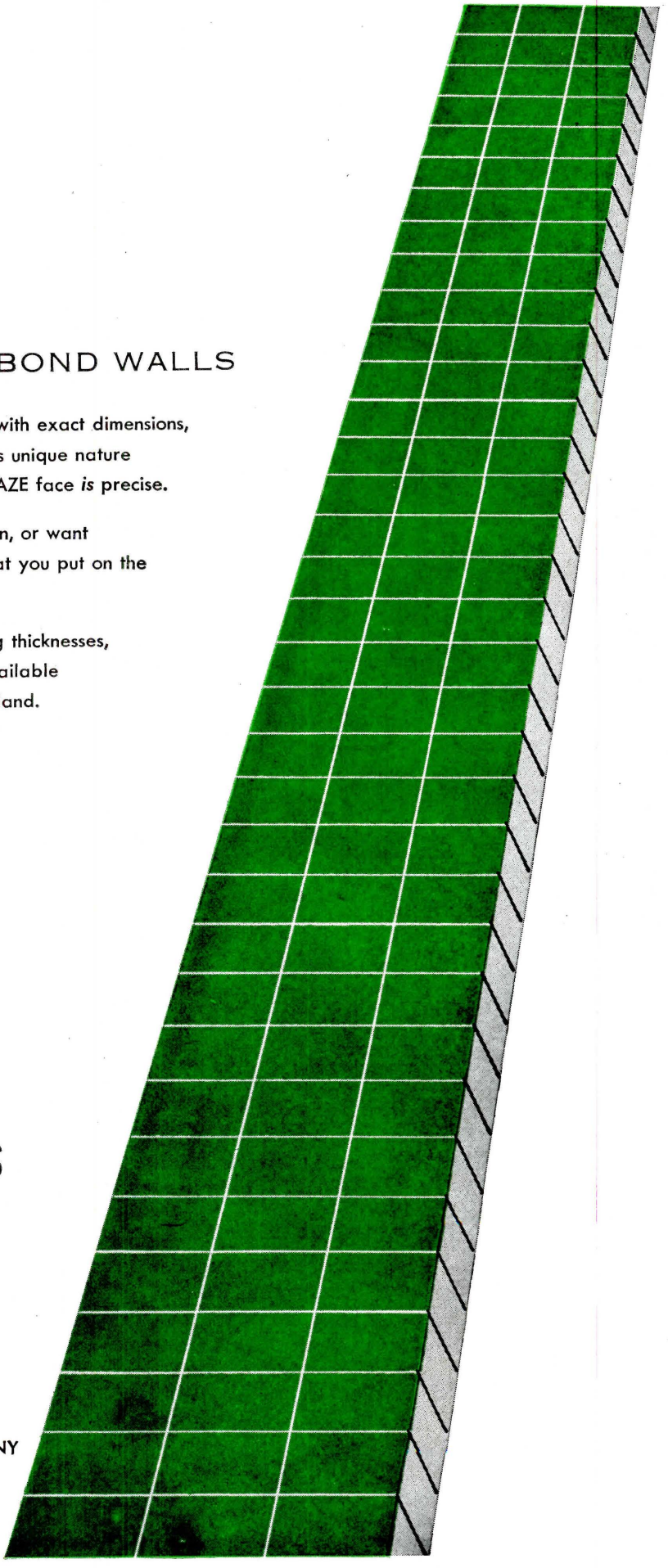
. . . must be built of masonry units with exact dimensions, flat faces and straight edges. By its unique nature of manufacture, each SPECTRA-GLAZE face *is* precise.

If you're leery of stack bond design, or want assurance of seeing in the wall what you put on the board, check SPECTRA-GLAZE.

Wide range of colors, loadbearing thicknesses, exposed block on reverse side. Available coast-to-coast, in Canada and England.

Spectra-Glaze®

glazed structural concrete masonry units



SEE SWEET'S CATALOG, 4g/Bu for details and names of licensed manufacturers, or write direct:

Spectra-Glaze is a registered trademark and product of

THE BURNS & RUSSELL COMPANY
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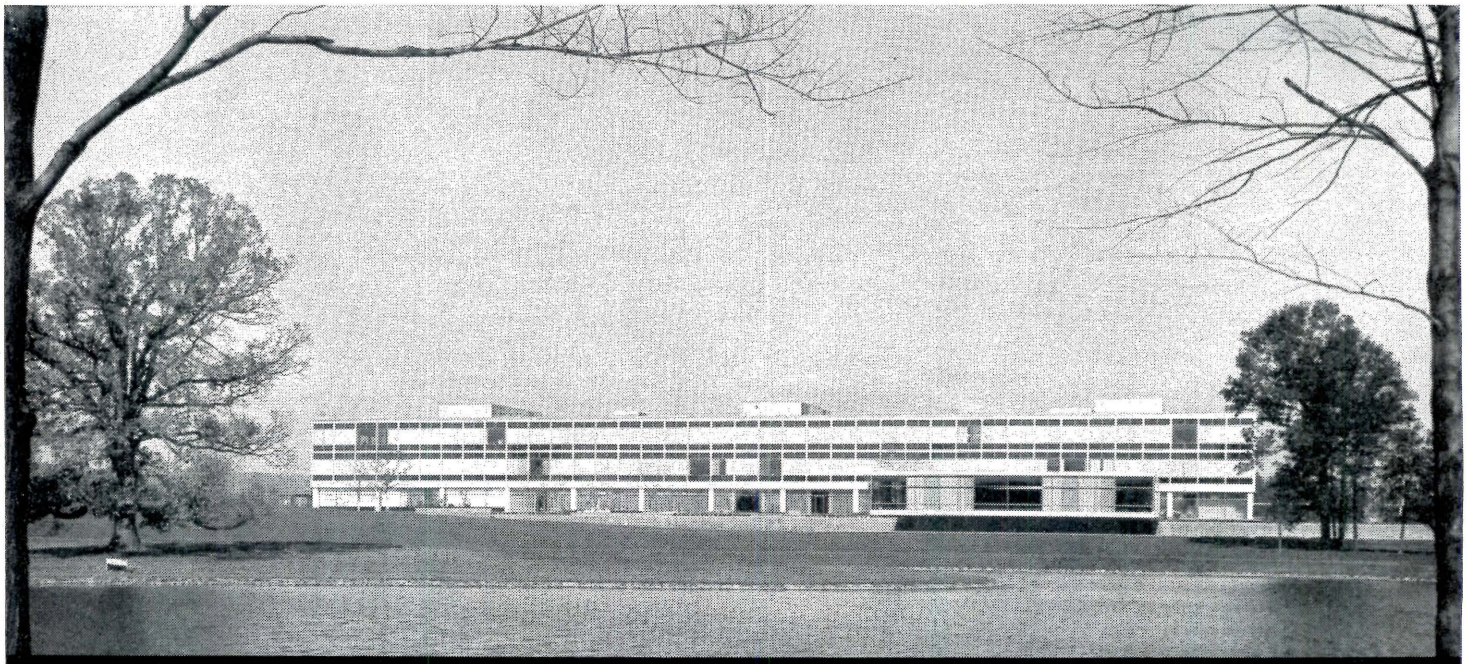
WHY CONNECTICUT GENERAL CHOSE ST[illegible]NLESS STEEL TO INSURE LIFE LONG BEAUTY AND DURABILITY



Home Office Building: Connecticut General Life Insurance Co., Bloomfield, Conn.
Architects: Skidmore, Owings & Merrill Architectural Metal Fabricator: General Bronze Corporation General Contractor: Turner Construction Co.
Engineers: Weiskopf & Pickworth (Structural); Syska & Hennessy, Inc. (Mechanical & Electrical) Consultant: Building Methods & Materials: Walter C. Voss

When the Connecticut General Life Insurance Company planned their ultra-modern office building in suburban Hartford, they carefully projected their needs into the future.

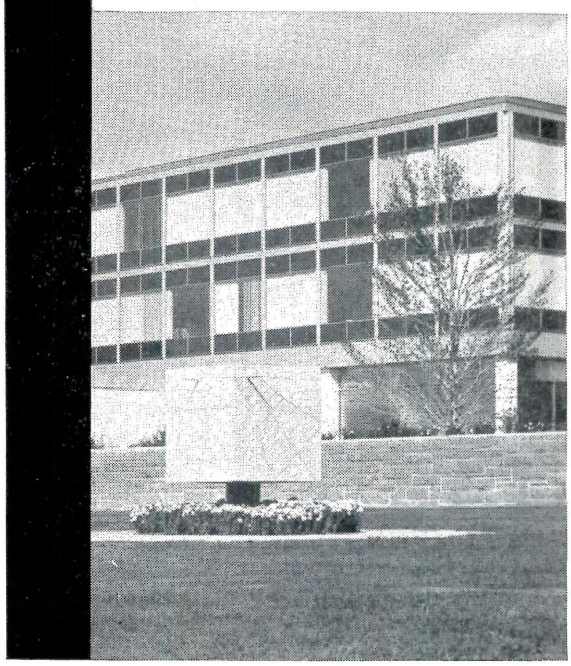
They wanted the nearest thing to "no maintenance" costs for 50 and preferably 75 years. Where initial investment in materials could cut down the yearly costs of cleaning, painting, and repairs they would make the investment.

That's why, throughout the building—both on the exterior and the interior—Republic's ENDURO Stainless Steel is used generously to protect, beautify, and reduce maintenance costs.

The main building—which contains some 400,000 square feet of floor space unbroken by a structural column—is penetrated by four garden courts, 72 feet square, making it possible for nearly all employees to be within 35 feet of a window. The cafeteria juts out from one end of the main building, cantilevered 15 feet over a pool. At the other end of the building, across a glass bridge, is a special department wing.

Once inside the metal and glass walls the stylish gleam of gracious architecture comes alive.

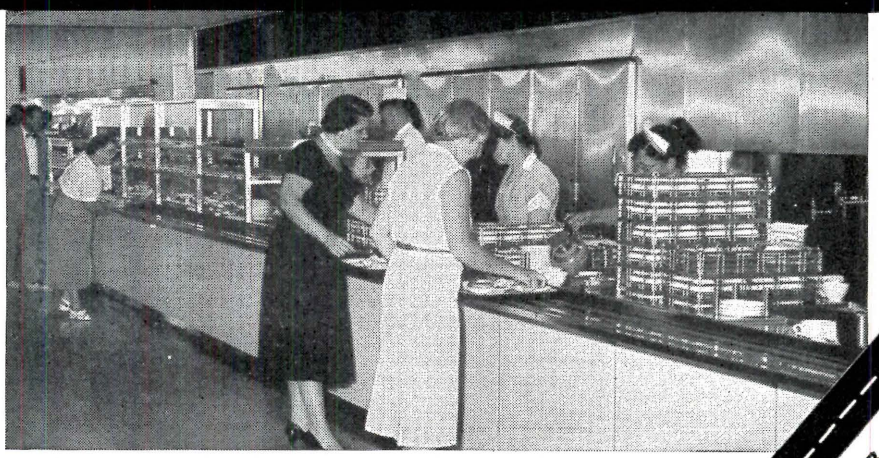
STAINLESS STEEL WINDOW FRAMES on all levels provide permanent beauty and low maintenance. ENDURO Stainless Steel was selected for the frames because of its high resistance to corrosion. It will not discolor with age. Will never need painting. The building's large window walls admit the outdoors and command scenic views of wide lawns, pools, and trees. Complete details and specifications on Republic ENDURO Stainless Steel for architectural applications are contained in Sweet's File, or can be obtained by sending the coupon below.



STAINLESS STEEL ADDS STYLE AND CHEER to the 800-seat dining room. Table and chair supports, column covers, and food-handling equipment of stainless steel assure attractive clean surroundings. All food-preparation and food-service equipment in the kitchen and counter pick-up areas are fabricated of stainless steel for peak sanitation and attractiveness. Dishwashing facilities are stainless steel, too, to resist corrosion and abrasion.

DOORS FRAMED IN STAINLESS STEEL open onto one of the four garden courts that penetrate the main building. Although receiving heavy use, the doors resist scuff, scratches, and dents—thanks to the metal's strength and toughness. Like all the entrance doors, the first level and upper level fixed glass windows are framed in stainless steel to resist corrosion and weathering.

STAINLESS STEEL FOOD-SERVING COUNTER accommodates some 2,000 employees each day. The cafeteria is completely equipped with stainless steel—from refrigerator doors and back walls to steam tables, display cases, and working areas up forward. In the working areas, cleanliness is easy to maintain since everything with which food and dishes come in contact is made of easy-to-clean and keep-clean stainless steel. Republic offers architects competent metallurgical and engineering help in obtaining the best possible results with ENDURO Stainless Steel.



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World's Widest Range of Standard Steels and Steel Products

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REPUBLIC STEEL CORPORATION • DEPT. AR-5570
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Please send more information on ☐ ENDURO® Stainless Steel for architectural applications

Name_____ Title_____

Company_____

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City_____ Zone_____ State_____

Specify Hillyard CEM-SEAL
for Curing Concrete

ONE APPLICATION Benefits Your Client 5 WAYS*

550 South Flower Bldg.
Los Angeles, Calif.
Claud Beelman, Architect
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(Concrete Sealing)

***Yet Costs LESS than Building Paper!**

Check these Benefits

with the Hillyard "Maintaineer®" in your area:

1 **Complete Cure —**
CEM-SEAL holds the moisture in new concrete for slow, complete cure, from the bottom up. Safe to apply in any weather when you pour concrete.

2 **Long Wear —**
CEM-SEAL-cured concrete is very hard, dense, and water-tight, especially in the surface layer. It resists spalling, dusting, and disintegrating. Wears extra years without patching or replacement.

3 **Appearance —**
CEM-SEAL seals stains, grease, dirt and moisture out of the floor. Brings floor unblemished through the critical curing period, without need for any other curing or protective agent.

4 **Ends Efflorescence —**
alkaline salts cannot rise above the CEM-SEAL barrier. No dull gray "bloom". No need for acid etching, even before finish treatment.

5 **Easy Maintenance —**
CEM-SEAL fills the pits and voids which form natural dirt traps. Forms a smooth, hard surface which cleans easily, without "drag" on mop or broom.

Ask the Maintaineer to advise on any floor treatment problem, and to act as your "Job Captain". He's your own technical consultant.

"On Your Staff, Not Your Payroll".

CEM-SEAL goes on fast—with spray or applicator—and that's it! No further labor needed, to rewet, to keep straight, to remove. This initial economy carries on indefinitely, in the form of lowered maintenance time, longer floor wear.

CEM-SEAL has proved itself for creating greater floor density, watertightness and protection on warehouse, factory, commercial and industrial floors. It is especially valuable for ramps, docks, aprons, other areas that must withstand weather as well as heavy-duty traffic.

FLOOR HILLYARD TREATMENTS

A-2 SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE

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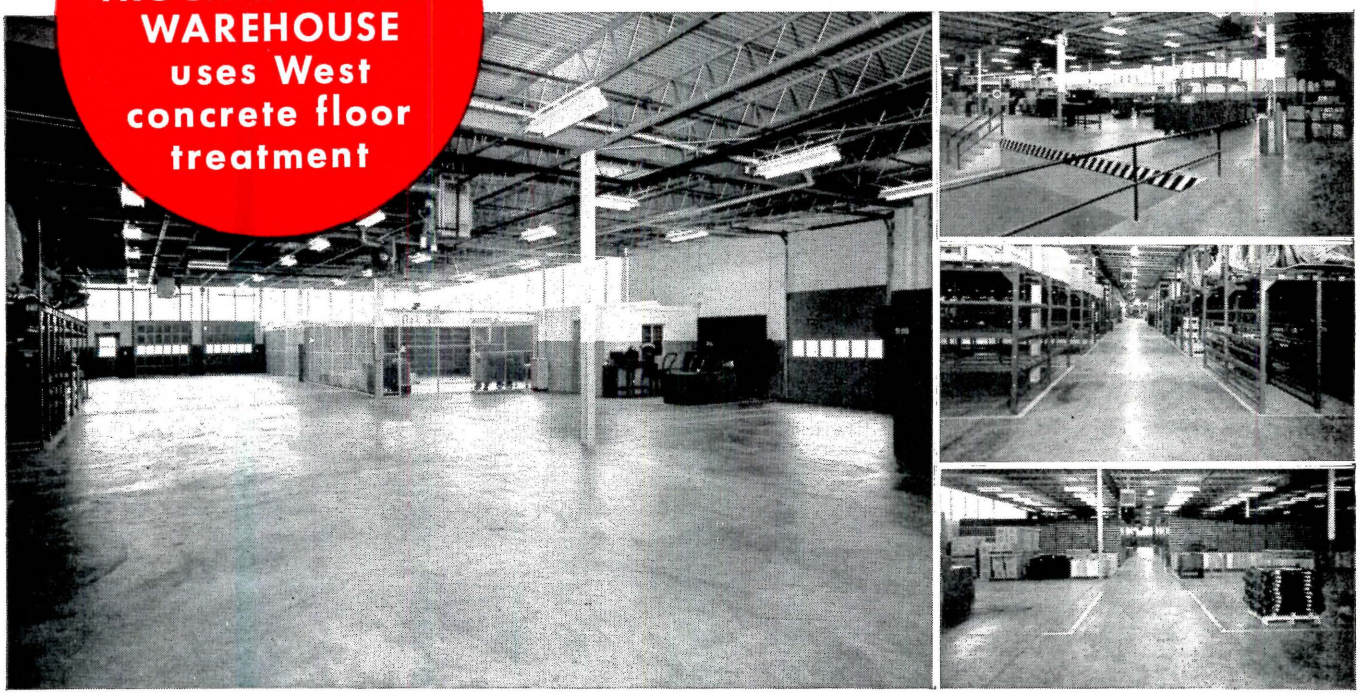
Still another GMC TRUCK & COACH WAREHOUSE uses West concrete floor treatment

As in several previous GMC warehouses this **"one application treatment"** is exhibiting exceptionally fine durability to heavy duty service. Plans are to specify WEST Concrete Floor Treatment for all new warehouses — and apply it under the supervision of the WEST Representative.

At GMC Truck and Coach Division parts warehouses construction is under the direction of Mr. John J. Wygzoski, National Field Warehouse Manager, General Motors Truck and Coach Division, General Motors Corporation, Pontiac, Mich.



ONE APPLICATION OF ONE CONCRETE FLOOR TREATMENT

CURES · HARDENS · SEALS CONCRETE SURFAC

WEST Concrete Floor Treatment is a proven time-saving, labor-saving product that 1) Cures 2) Hardens 3) Seals newly-laid concrete surfaces with *one* application. It is a rubber based formulation with a quick drying solvent. Formerly as many as three separate products and applications were needed to obtain the same results.

WEST Concrete Floor Treatment can be applied immediately after horizontal surfaces have been troweled or as soon as the concrete can be walked on. *Usually in one to eight* hours. It is applied quickly and easily with a lamb's wool applicator. All the labor formerly required for cleaning the concrete surface after delayed concrete drying, and between the use of as many as three separate products and applications is eliminated.

WEST Concrete Floor Treatment is applied immediately after troweling. Its fast drying permits subsequent building operations to be speeded. It also dustproofs as it seals. This speeds the final cleaning. All foreign matter is easily flushed off the surface.

WEST Concrete Floor Treatment enables newly-laid, wet concrete to retain 95% of its moisture. This permits it to cure and harden while sealing the surface against acids, oils, greases and other foreign matter. This incongruous aspect of holding back most of the moisture while permitting some moisture to escape slowly is the key to this product's amazing success.

WEST Concrete Floor Treatment is colorless and will not alter the color of the poured mix. It goes on evenly and spreads quickly without streaks. One gallon covers from 300-350 sq. ft.

WEST Concrete Floor Treatment is fully attested, fully proven across the United States and Canada. Full details and samples are available immediately from any of WEST's 400 specially trained representatives from coast to coast. Write, phone or wire your nearest WEST office.

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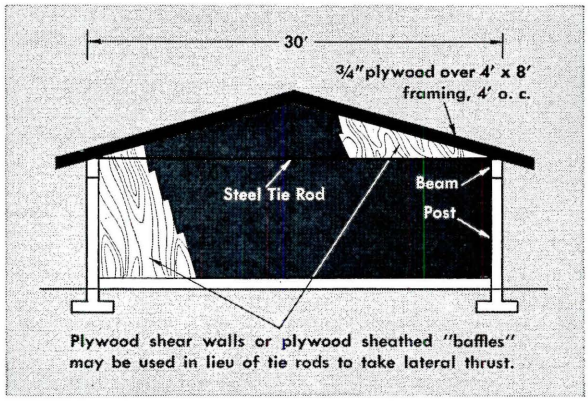
new approaches to structural design with fir plywood



Tilted roof planes (each a rigid plywood diaphragm) provide mutual support at ridge, permit long, clear spans. Diaphragm action transfers horizontal thrust to steel ties or fir plywood end walls.

FIR PLYWOOD

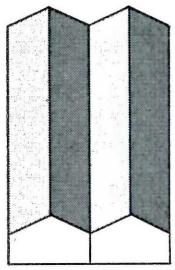
TENT-SHAPED ROOF UNITS

ARCHITECTS AND ENGINEERS:
John Lyon Reid & Partners, San Francisco, Calif.
Partners in Charge: William A. Gillis, A. I. A., and Dr. Alexander Tarics, Structural Engineer

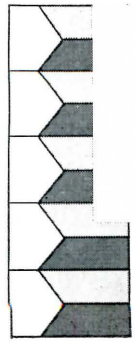
THIS folded plate plywood roof system developed for an expandable community school offers a straightforward solution to the problem of obtaining a high degree of design flexibility at low cost.

The basic tent-shaped canopy units may be placed separately or combined in series or rows to cover any given area. With supports needed only at wide intervals, walls and partitions may be arranged or re-arranged as needed.

Structurally, the system relies on the outstanding diaphragm strength of the plywood sheathing. The roof planes—each a rigid plywood diaphragm—are inclined to form a giant inverted "V" beam, eliminating posts or trusses normally required for support under the ridge. Because the roof is self-supporting at the center, rafter spans can be nearly doubled, e.g., up to 50 feet with 4 x 14's on four foot centers. Diaphragm action also permits ties and supporting columns to be placed at wide intervals.



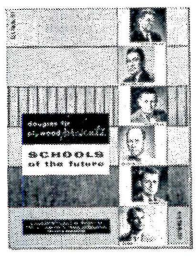
Basic units can be arranged in series or rows as needed

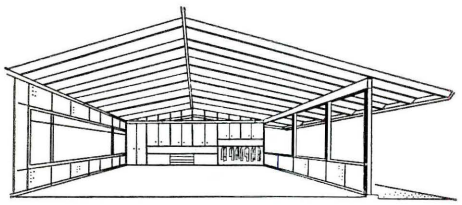


ONE OF A SERIES FROM "SCHOOLS OF THE FUTURE"

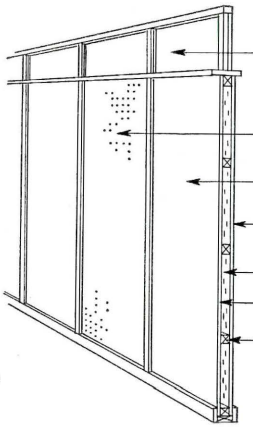
. . . a portfolio collection of outstanding designs by six leading architectural firms. Material includes details on folded plate roof system shown above. For free copy, write (USA only) Douglas Fir Plywood Association, Tacoma, Wash.

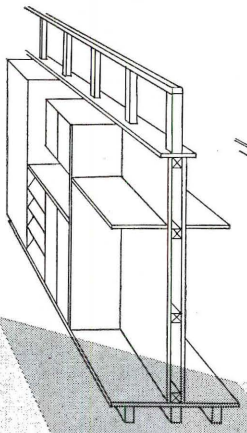
Also write for information about design and engineering consultation services.





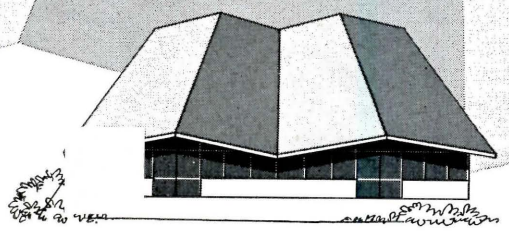
The interior may be left open for classroom uses
. . . or divided into smaller areas by movable partitions



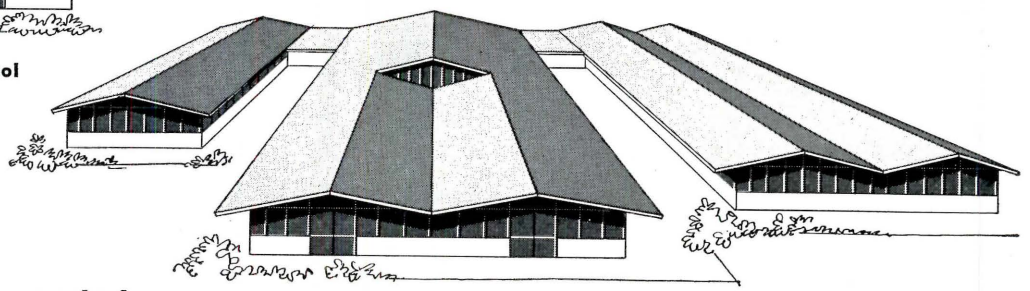


ɔLDED PLATE ROOF

PROVIDE MAXIMUM FLEXIBILITY FOR AN EXPANDABLE SCHOOL

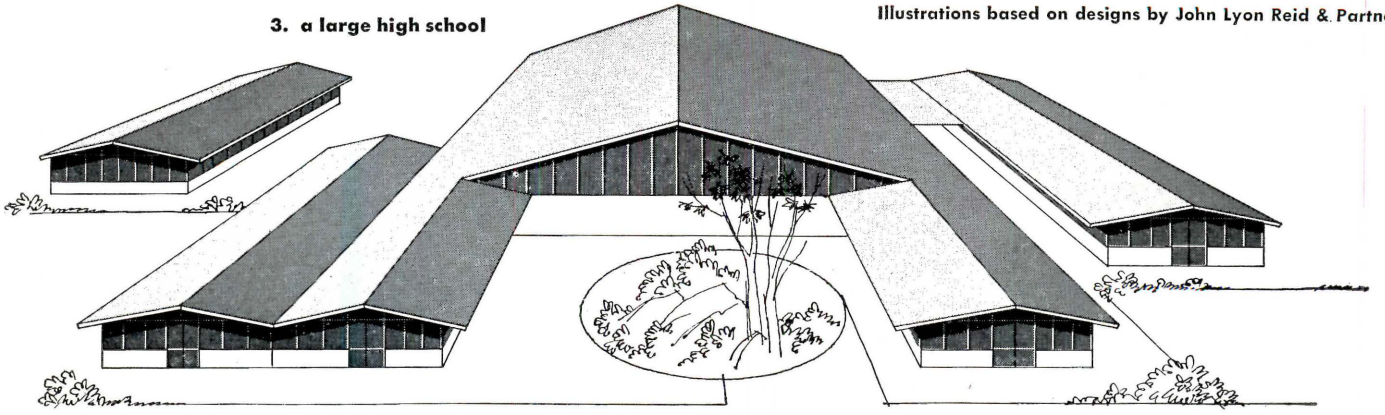


1. a small elementary school

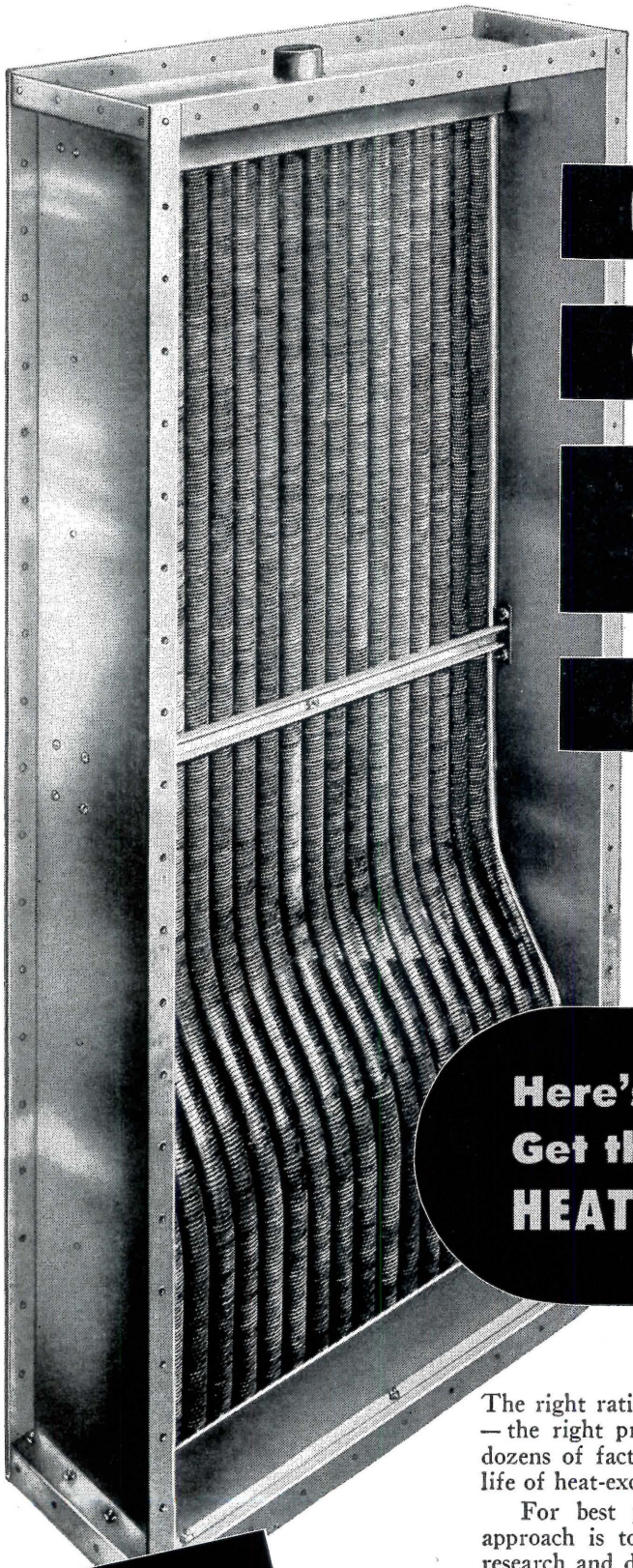


Units can be added as needed

3. a large high school



Illustrations based on designs by John Lyon Reid & Partners



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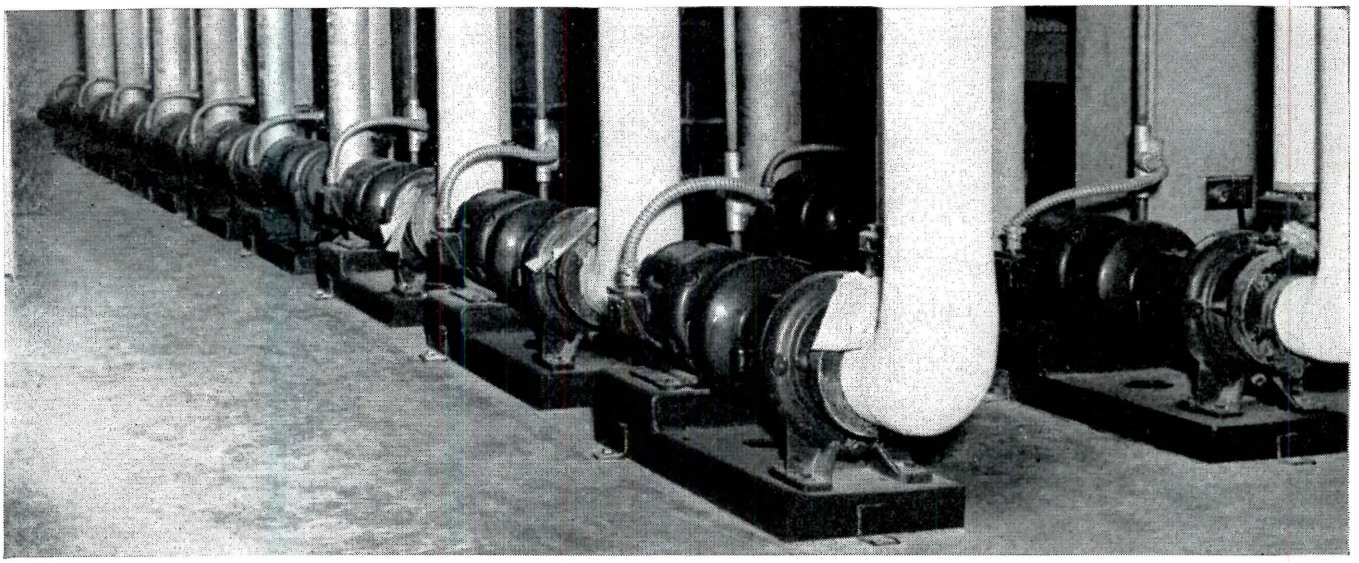
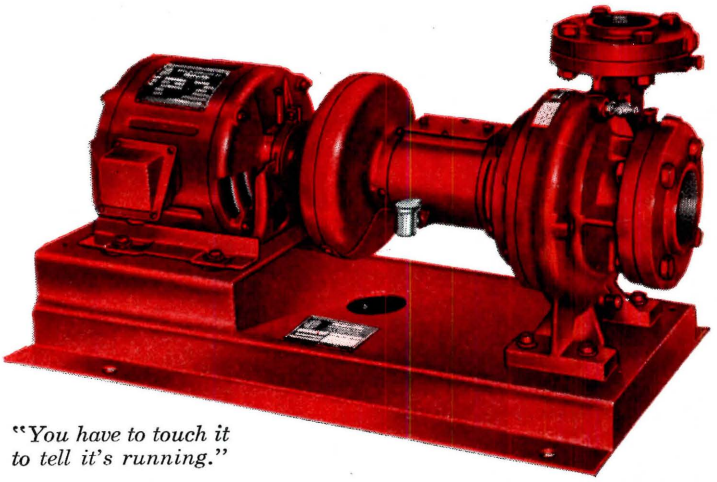
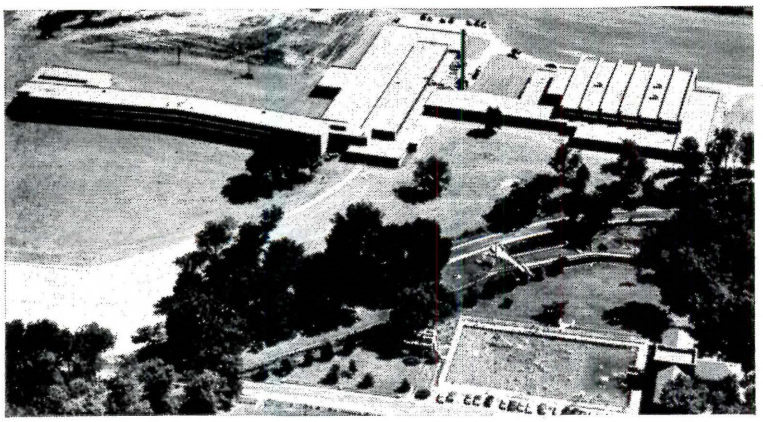


EIGHTEEN B&G UNIVERSAL PUMPS DELIVER Quiet HEAT



"You have to touch it to tell it's running."



Parkview High School, Springfield, Mo.

Architect: Richard P. Stahl, Springfield, Mo.
Engineer: R. W. Bare, Springfield, Mo.
Contractor: McCarty Co., Springfield, Mo.

Selecting a pump for a circulated water heating or cooling system is not merely a matter of proper head and capacity. *Quiet, vibrationless operation is of major importance!*

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Note, too, that *vertical* split case construction with removable bearing frame permits easy servicing without breaking pipe connections or motor leads.

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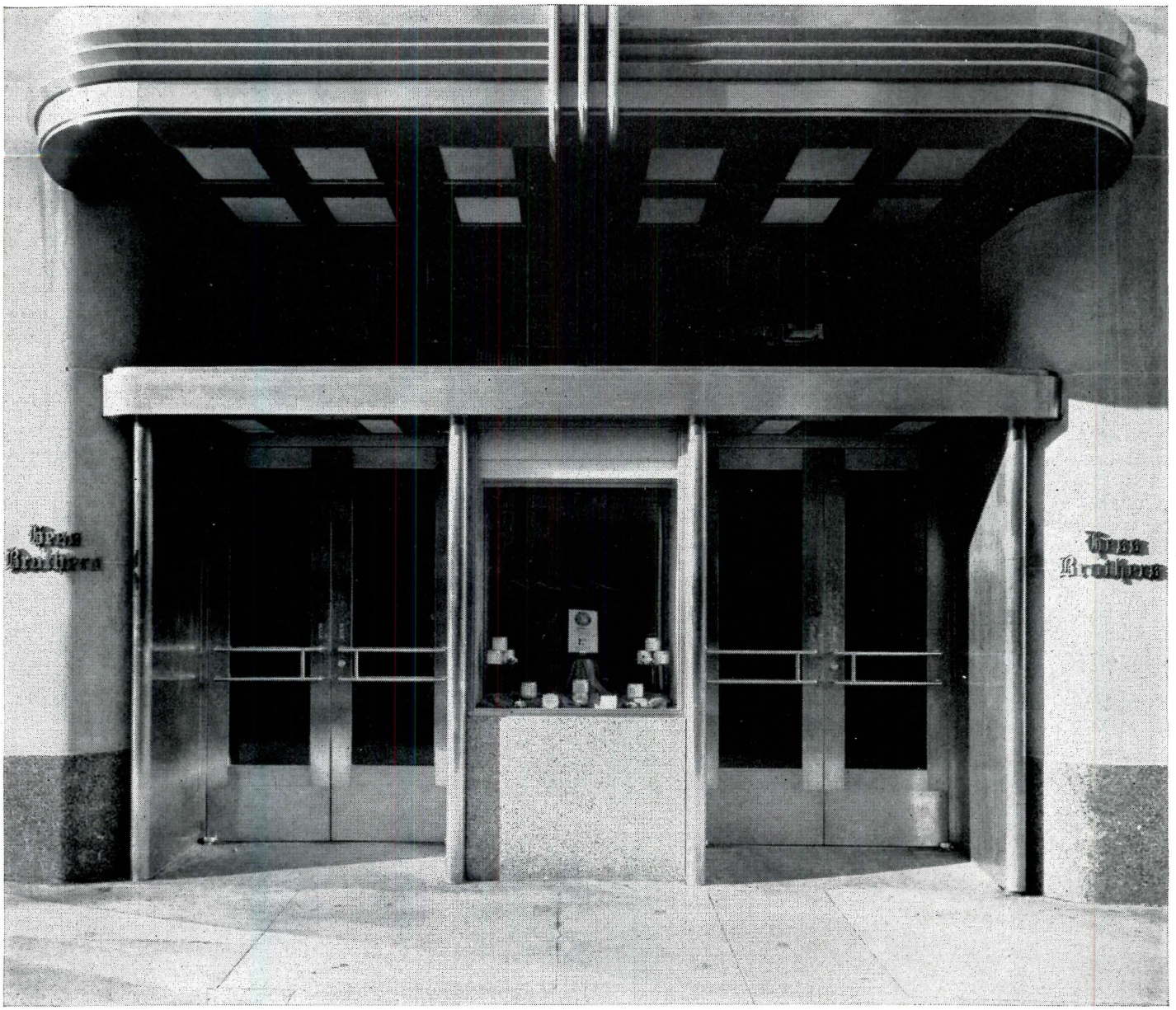
How are you at judging ages?

Lit Brothers Department Store, Camden, N.J.; Architect: Thalheimer & Weitz, Philadelphia, Pa.; Doors fabricated by: George R. Habgood Company, Philadelphia, Pa.

Stainless Steel doors will often outlast the building itself. A thousand shoes a day can kick a Stainless Steel frame but it will stay tight and rigid because (1) the steel itself is so strong and (2) Stainless Steel can be *welded* into solid joints that can't work loose. It's almost impossible to dent or scratch it unless you use a steel tool. Even then you couldn't chip or peel away the shine on a Stainless Steel door because

Look at the unretouched pictures of these Stainless Steel doors. One set is 21 years old, the other is 3 years old. They've received no maintenance except for an occasional washing. Truly, they all look brand new, but the doors on the right were installed back in 1937!



Hess Brothers Department Store, Allentown, Pa.; Architect: Thalheimer & Weitz, Philadelphia, Pa.; Doors fabricated by: John G. Leise Metal Works, Philadelphia, Pa.

it's solid—the shine is as thick as the door itself. Floor cleansers or sidewalk dirt won't hurt it because Stainless Steel resists corrosion. That's why you never have to polish Stainless . . . just wash it off with water and it gleams.

A Stainless Steel door costs a little bit more, but how else could you have such an attractive doorway for so long—*and only pay for it once.*

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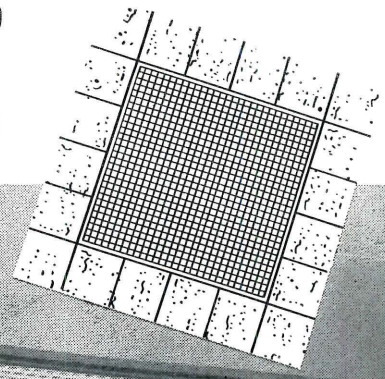
Restaurant chooses NEO-RAY LOUVRED CEILING ...within a ceiling*



Restaurant, Edward Malley Dept. Store, New Haven,Conn.
Designer: Edward T. Wassell, Wilkes Barre, Penn.

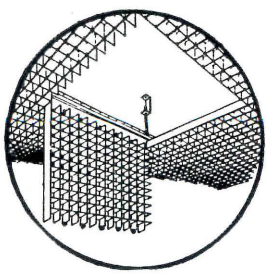
...adds superior appearance...highly functional

* Gentlemen:

.....we chose the Neo-Ray ceiling to conceal all piping, duct work, wiring, etc.

.....we used a standard acoustical tile on the dropped portions, and the Neo-Ray on the larger higher central areas. We are very pleased with the effect.

Very truly yours,



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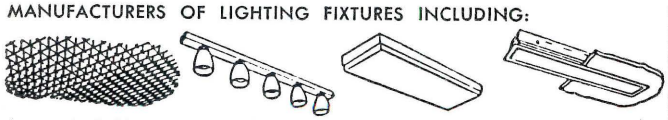

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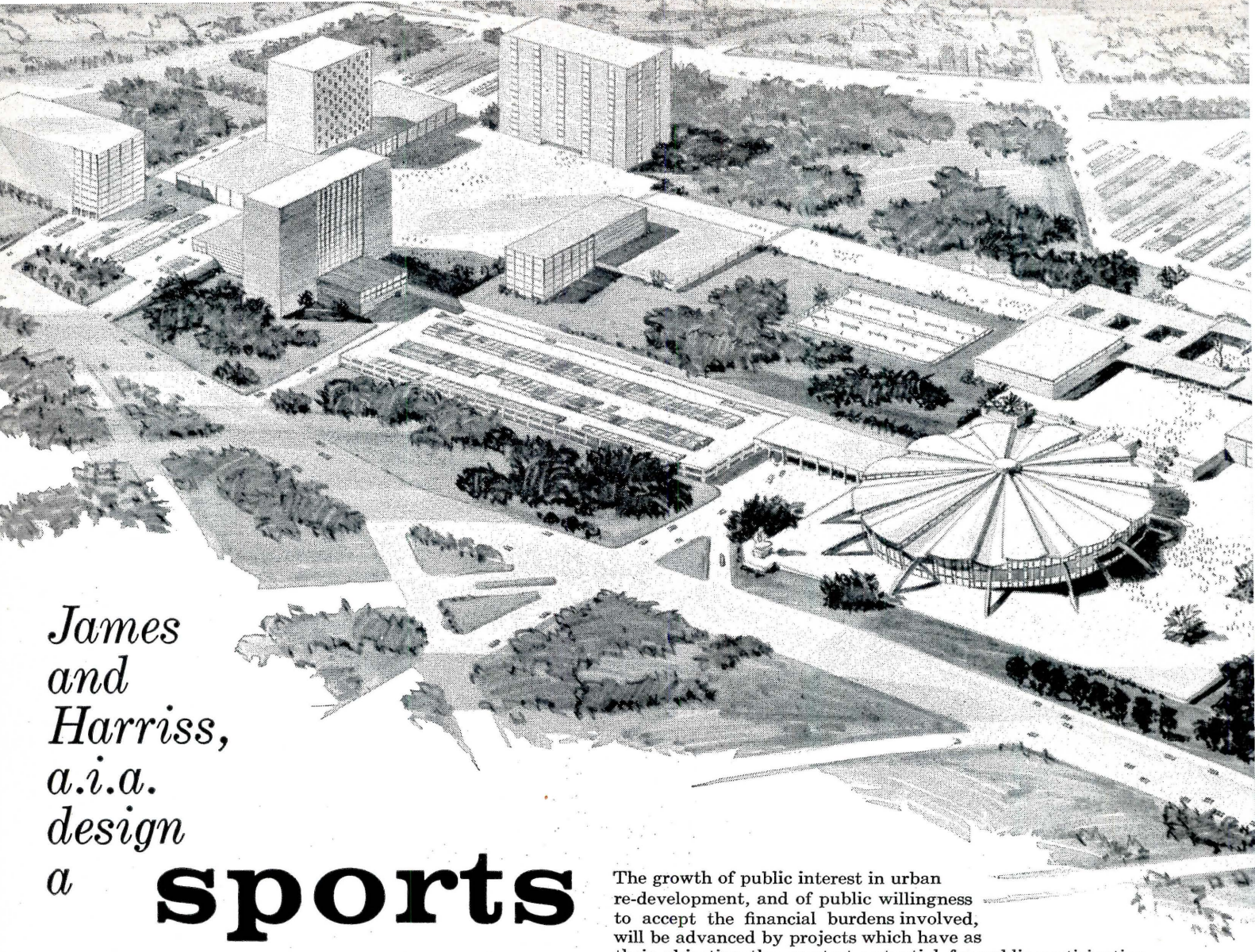


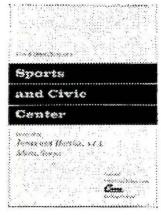
James and Harriss, a.i.a. design a

sports and civic center

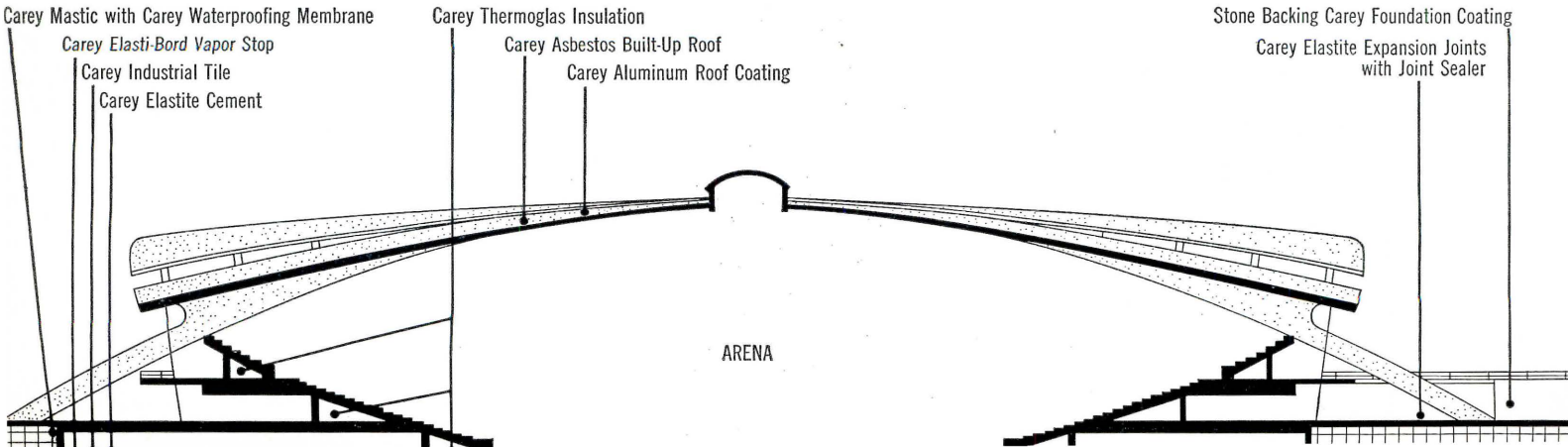
The growth of public interest in urban re-development, and of public willingness to accept the financial burdens involved, will be advanced by projects which have as their objective the greatest potential for public participation.

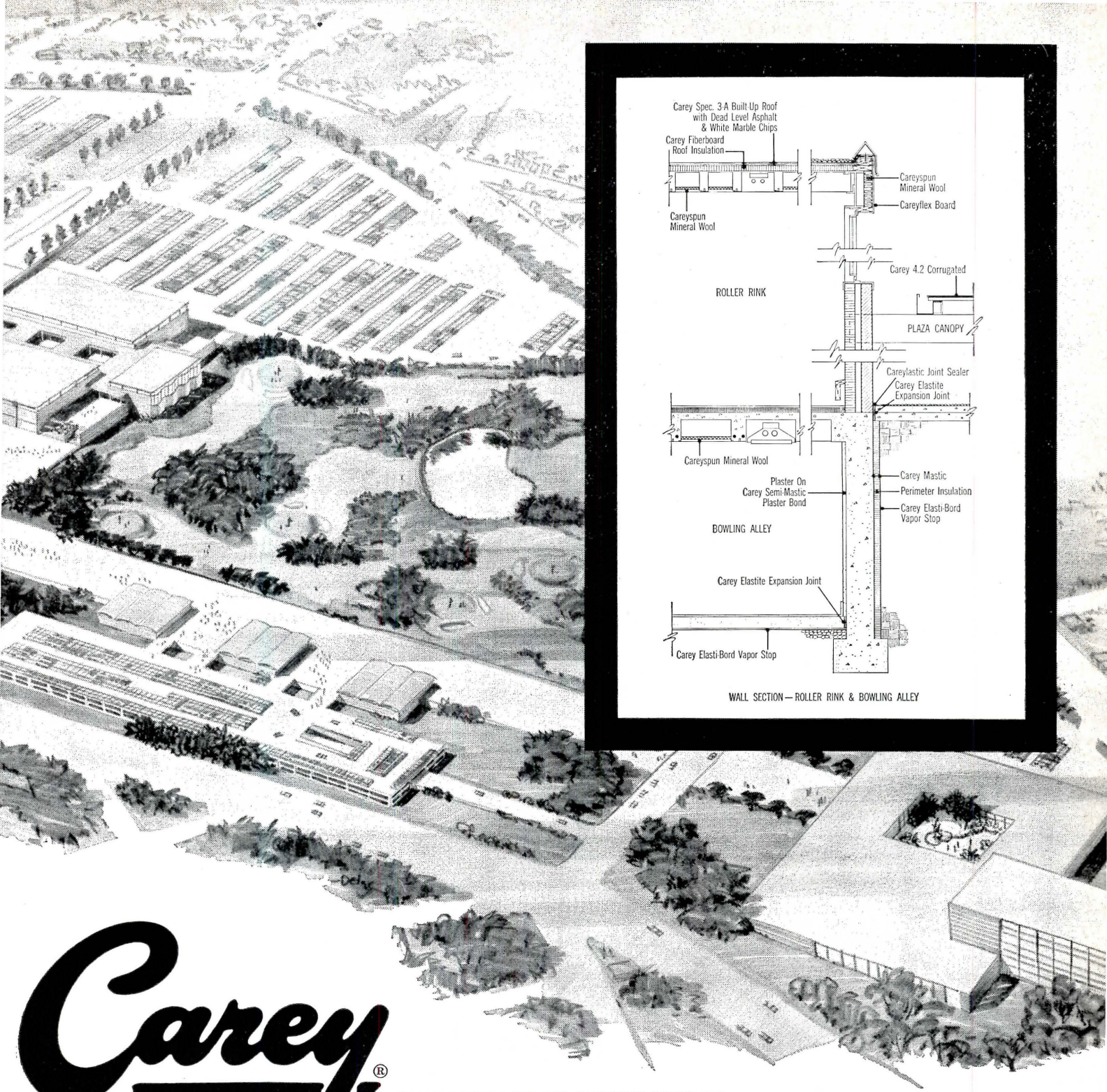
This SPORTS AND CIVIC CENTER is the kind of project which fulfills that objective by providing recreational and cultural opportunities for the entire community. Architects James & Harriss conceived this center as the focal project in a major urban re-development program.

The master renewal plan for the city of Atlanta, Georgia, provided the architects with a choice of sites. The center was planned on one of these as a design project, commissioned by The Philip Carey Mfg. Company.



In the execution of their commission Messrs. James & Harriss utilized a number of Carey Building Products. Plan and detail sheets are available to architects and builders who may be interested in their design and application technique. Ask your Carey representative or write The Philip Carey Mfg. Company, Lockland, Cincinnati 15, Ohio. Dept. 1153





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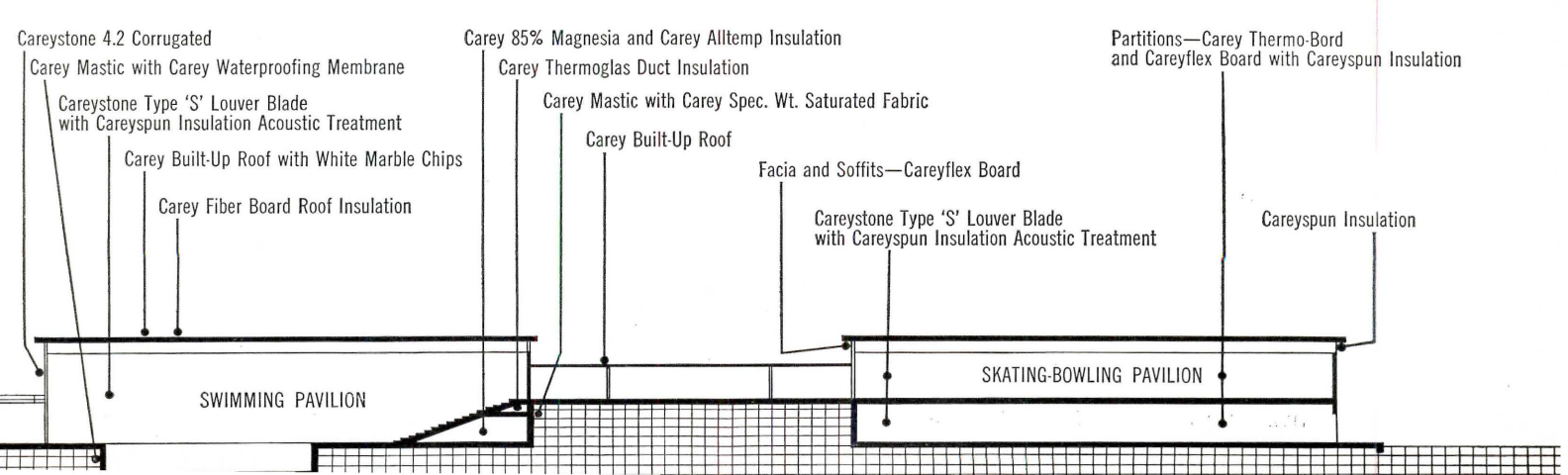

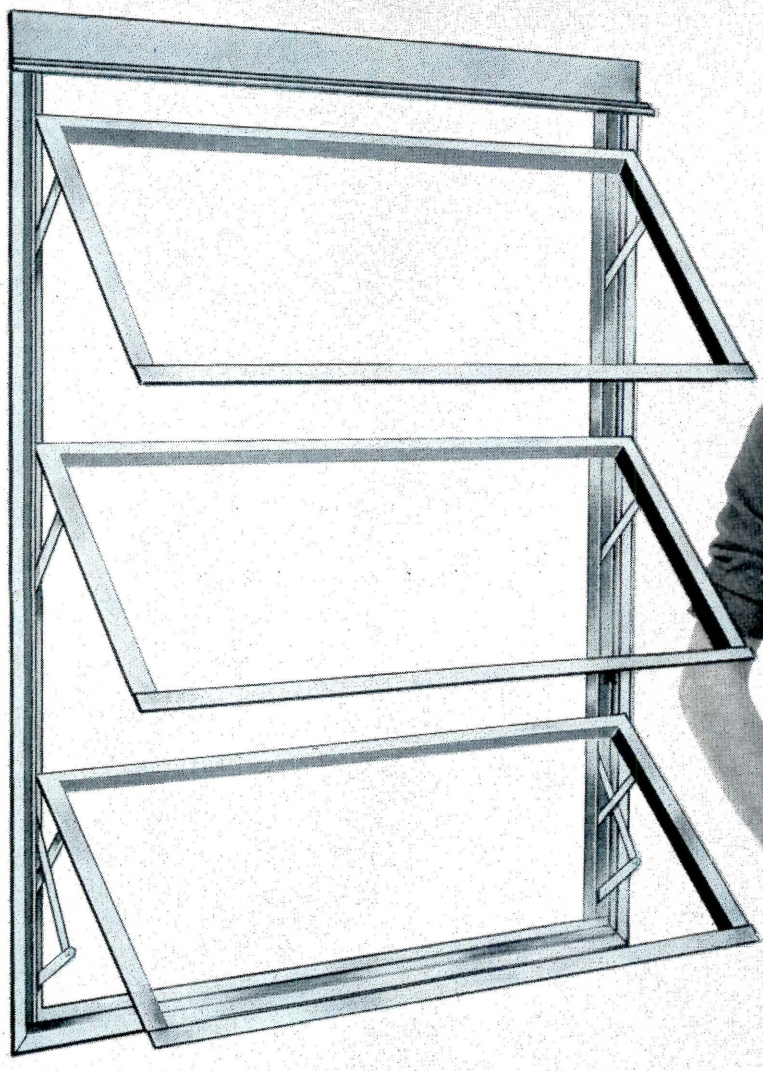

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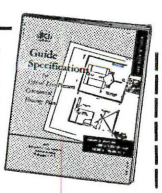

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The White Castle Office Building before it was remodeled with Stainless and porcelain-enameled steel.

This building is 38 years o

Time creeps up on some buildings. This one was erected in 1920, and it showed every bit of its age. But last year, they remodeled it by covering the entire front with a Stainless Steel grid and porcelain-enameled steel panels. Look at the difference!

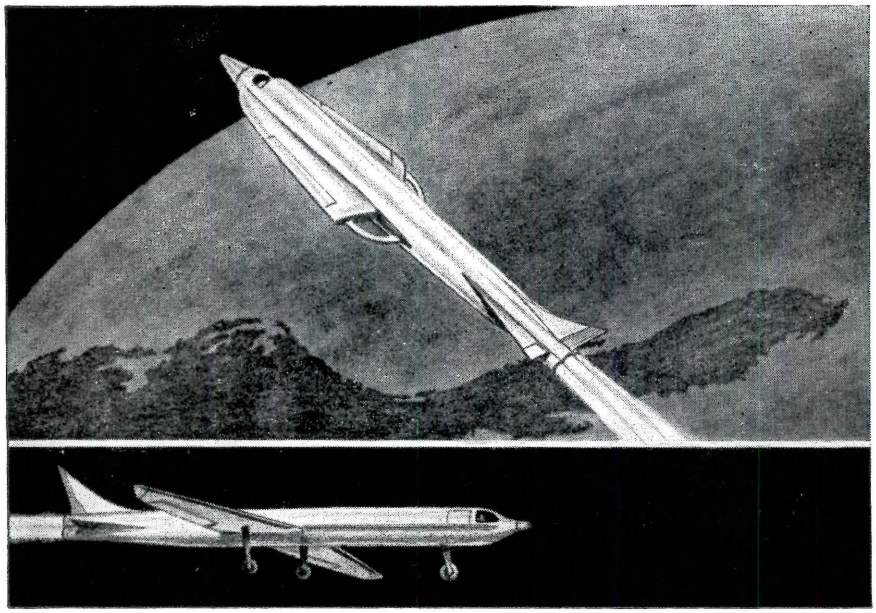
Now the owner can forget about the years because the Stainless and porcelain-enameled steel will always look bright and new. The mullions are Stainless Steel. They won't peel, chip, or crack. They resist corrosion. The panels will never fade or discolor because the porcelain enamel is fused onto the steel at high temperature. It makes a glass-like surface. There are no pores. Dirt and moisture can't seep in. In fact, rainfall helps preserve the brand-new look of the panels because it washes away dirt. This is one wall that will never have to be painted, scraped, pointed, or resurfaced. Think of the savings in maintenance.

For more information about walls of steel, write to United States Steel, 525 William Penn Place, Pittsburgh 30, Pa. *USS is a registered trademark*

White Castle System, Inc.; General Offices, Columbus, Ohio
Architect: Van Buren, Ayers & Blackburn, Columbus, Ohio
Panel Fabricator: Davidson Enamel Products, Inc., Lima, Ohio
Curtain Wall Fabricator: Michaels Art Bronze Co., Covington, Kentucky

USS **United States Steel**

MARS outstanding design **SERIES**

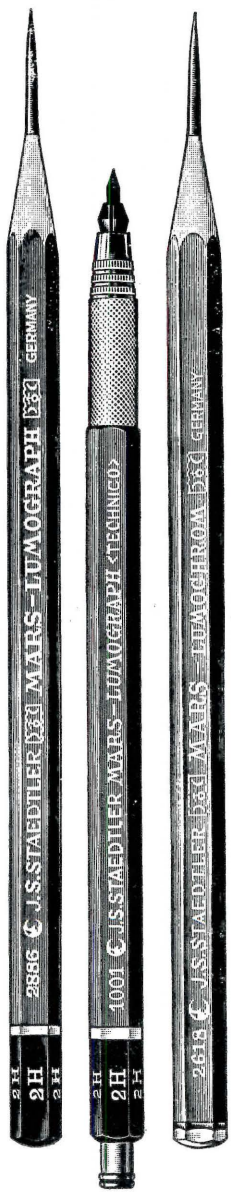


brings 'em back alive

Today's burning problem in space flight is how to ease a rocket safely back to earth, without being consumed by the metal-melting friction of our dense atmosphere. Design Engineer Carl J. Rauschenberger's ingenious suggestion is a pair of wings, locked forward at blast-off, later folded back into flying position (insert) by hydraulic cylinder controls for a slow, safe descent. Mr. Rauschenberger also envisions a retractable glass nose cone, heatproof to withstand the take-off, drawn back to admit air to a jet engine on the return flight.

This outstanding solution to a timely design problem may already exist in working drawings on somebody's drafting board, or even in mock-up form. But whether a project is developed today, tomorrow or the year after next, it will always be important to shape ideas into realities with the best of drafting tools.

In pencils, of course, that means Mars, long the standard of professionals. Some outstanding new products have recently been added to the famous line of Mars-Technico push-button holders and leads, Lumograph pencils, and Tradition-Aquarell painting pencils. These include the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman" pencil sharpener with the adjustable point-length feature; Mars Lumochrom, the color-drafting pencils and leads that make color-coding possible; the new Mars Non-Print pencils and leads that "drop out" your notes and sketches when drawings are reproduced.



The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom color-drafting pencil, 24 colors.

J.S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY

at all good engineering and drawing material suppliers

3rd MARS Design Contest

HACKENSACK, N. J. – The MARS Outstanding Design Contests have uncovered numerous interesting designs which might otherwise never have been brought before technical audiences. They have attracted such wide interest that MARS Pencils is sponsoring another contest in 1959.

Carl J. Rauschenberger, Anaheim, Calif., one of the winners in the 1958 MARS Contest. Mr. Rauschenberger's project, "Brings 'em Back Alive," is featured in the MARS presentaiton on this page.

If you are an engineer, architect or student, the MARS contest offers you a "showcase." It provides you with a valuable opportunity to have projects you designed shown in leading magazines where they will be seen by the men in your profession.

$100 Awards

Send in your designs. Every winner will receive $100; winning entries will be reproduced in the wide list of technical publications in which the MARS Outstanding Design Series appears. There are no strings attached. You will be given full credit. All future rights to the design remain with you. You can reproduce it later wherever you like and sell or dispose of it as you wish.

The subject can be almost anything – aviation, space travel, autos, trains, buildings, engineering structures, household items, tools, machines, business equipment, etc. Projects will be selected on the basis of appeal to design-minded readers, broad interest, attractive presentation. Do not submit a design that is in production. The project, in fact, does not need to have been planned for actual execution. It should, however, be either feasible at present or a logical extension of current trends. It cannot be unrealistic or involve purely hypothetical alterations of natural laws.

The sooner you send in your entry, the greater the chance of its selection.

It is Simple To Submit a Design For Mars Outstanding Design Series

Just mail in an inexpensive photostat or photocopy of the subject – one you can spare, since it cannot be returned – and a brief description.

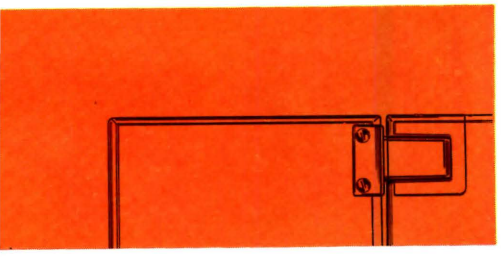
If your entry is accepted, we will ask for a clear illustration of your design in order to prepare a sharp rendering, or photograph suitable for reproduction. Your material will then be returned to you.

Send your entry to:

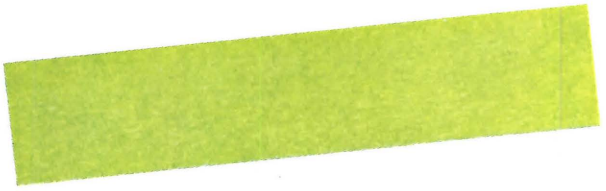
J.S. STAEDTLER, INC.
Hackensack, New Jersey

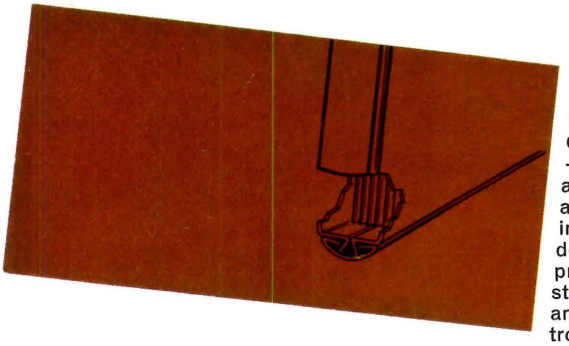
"WEIS WAS WISER!"

Architects, building owners and tenants become fully aware of WEIS toilet compartment advantages the second or third year after installation. That's when their original choice is confirmed, when they can say with firm conviction, "Our choice of WEIS was wiser!"



FLUSH UPPER HINGE—Newly designed so cover is flush with both faces of door. Door is supported both above and below hinge recess. Bearing is nylon, needs no lubrication.





DOUBLE-LOCKED CONSTRUCTION—Doors, stiles and partitions are now ingeniously double-joined to provide extra sturdiness and long trouble-free life.

CONCEALED LOWER HINGE—A gravity-type with nylon cams, this new Weistyle hinge never needs lubrication. Pintle is stainless steel.

WEIS *Vitre-Steel* toilet compartments have the features and construction advantages that make them the standard of comparison where extreme durability and long-lasting good appearance are important. Finished inside and out in vitreous porcelain enamel (fired, not baked), Weis compartments are not subject to breakage and staining. Nor do they present costly installation problems. Available in wide choice of colors . . . both floor-braced and ceiling-hung designs. See Sweet's Architectural File, No. 22b/We—or write for complete information.

Henry Weis Manufacturing Company, Dept. H-1911, Elkhart, Indiana

Weis Vitre-Steel compartments have been selected for prominent buildings designed by the following architects: McGuire & Shook, Indianapolis, Indiana; Wedemeyer & Hecker, St. Louis, Missouri; Raymond H. Weeks, Inc., Durham, North Carolina; Clyde Hufbauer, San Diego, California; Preston M. Geren, Fort Worth, Texas; Broad, Nelson & Corgan, Dallas, Texas; Mies Van de Rohe-Phillip Johnson-Kahn & Jacobs, New York.

WEIS
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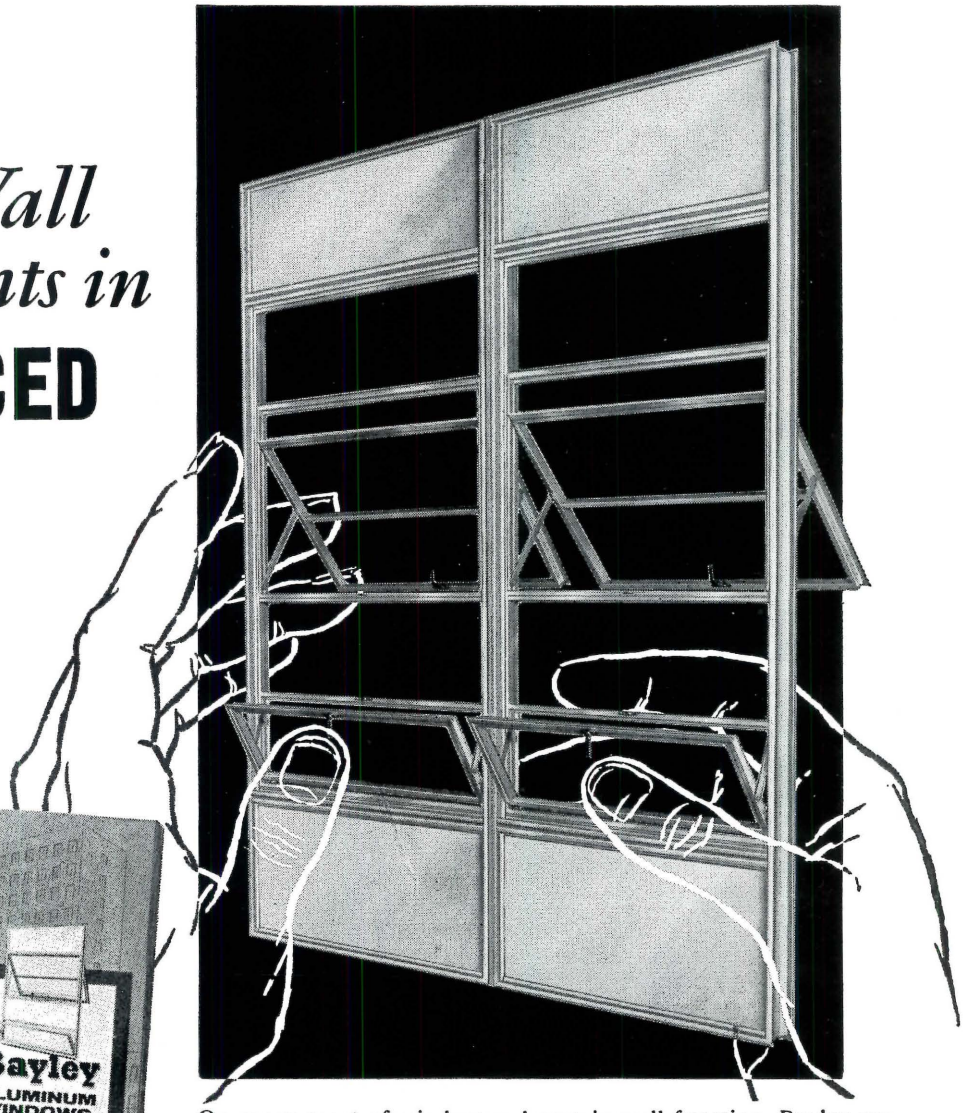
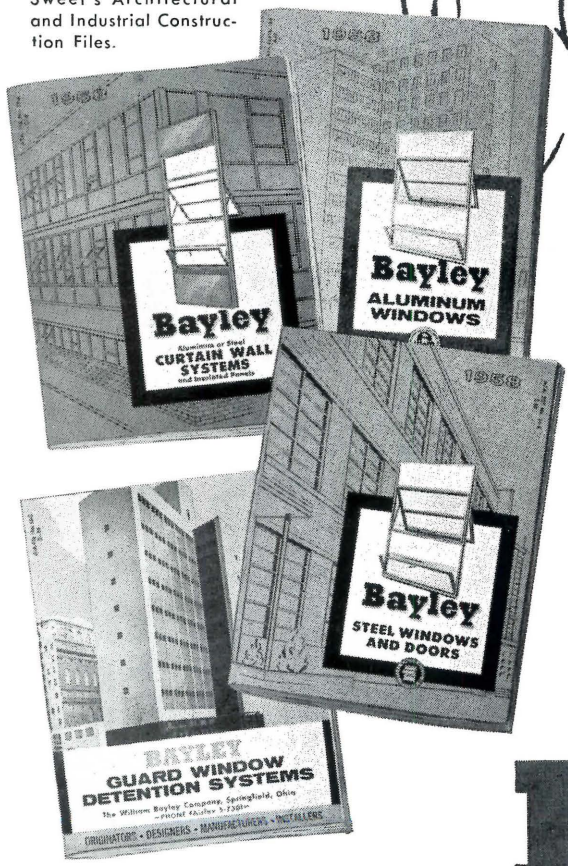
TOILET COMPARTMENTS

Put Your Curtain-Wall Requirements in

XPERIENCED HANDS . . .



THESE FOUR CATALOGS show how Bayley can work with you on both steel or aluminum windows and curtain wall systems for buildings of all types. Copies will be gladly sent on request—or see Sweet's Architectural and Industrial Construction Files.



On every point of window and curtain-wall function, Bayley systems give you maximum effectiveness . . . cost-saving, trouble-free erection . . . unusual design latitude without the extra cost and delay of fully "customized" fabrication.

And there's an *exclusive* Bayley feature of even greater importance: the *extra services* you can count on when you place your window-wall problems in Bayley's skilled and capable hands.

You are invited to counsel with Bayley engineers from the first moment windows or curtain walls enter into your planning picture. The earlier you do so, the sooner you get helpful information on what today's foremost curtain-wall specialists have learned to provide for—and to avoid.

These extra services encompass the *follow-through* responsibility Bayley assures for every job on which Bayley products are used—right through to building occupancy.

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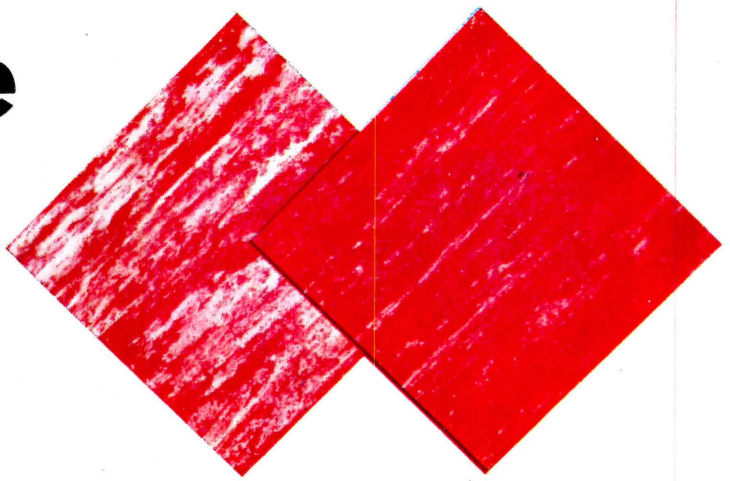
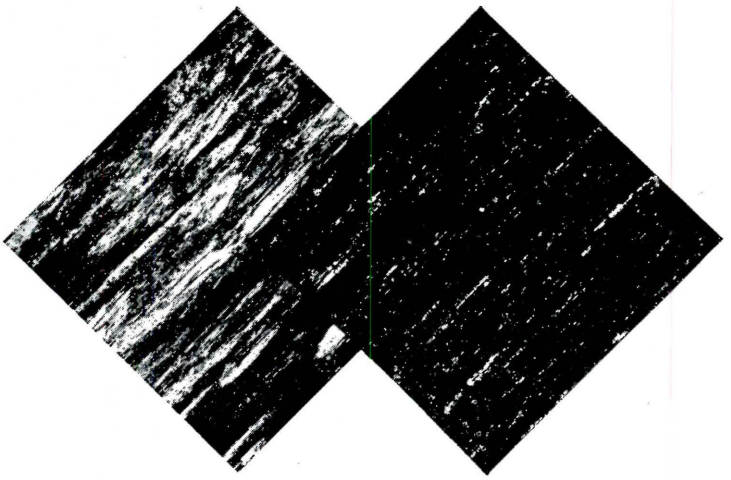
Micromatic Veining

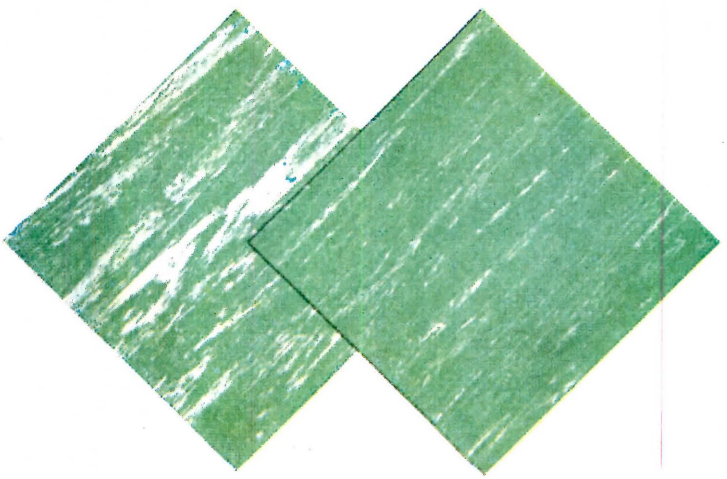
in *Vina-Lux*®

with

CONVENTIONAL MOTTLING







▲ Conventional Mottling

▲ Micromatic Veining

Here is visual evidence why Vina-Lux with *Micromatic veining* is preferred! Note the delicate, artistic striation of color in Vina-Lux – compare it with the irregular blotchiness of conventional mottling! Vina-Lux not only looks better – but it helps you achieve important floor design objectives.

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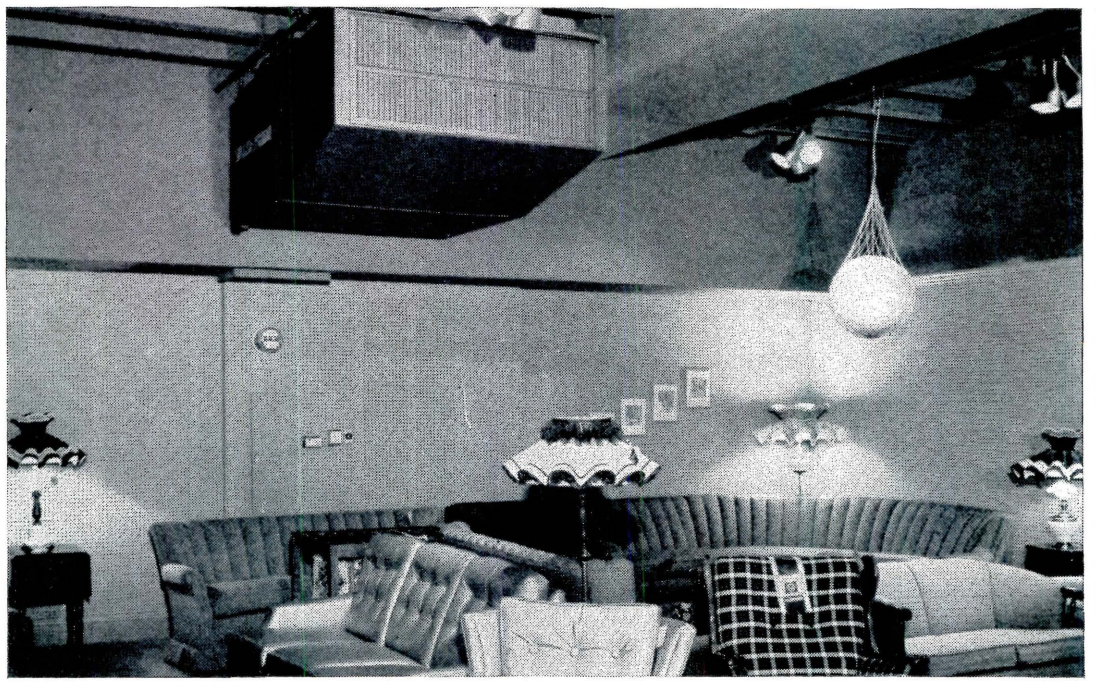
CASE #100—Another case where General Electric Factory-Assembled Air Conditioning Units proved more economical than field-assembled systems.



Architect: Harold A. Berry, A.I.A., Donald H. Speck, Associate—General Contractor: James C. Stewart Co.

General Electric Ceiling-Mounted Units at the Dallas Home Furnishings Mart take no floor space—provide individual temperature control (heat and cool)—are metered for zone control of operating cost.

General Electric Zone-by-Zone Air Conditioning in Dallas Home Furnishings Mart permits

INDIVIDUAL CONTROL OF TEMPERATURE—ZONE CONTROL OF OPERATING COST

Air conditioning the vast new Dallas Home Furnishings Mart presented a 3-way challenge. (1) Over 400,000 sq. ft. to be air conditioned. (2) Provision had to be made for each exhibitor to control his own temperature and operating cost. (3) Floor space was at a premium. The ideal solution was found—in the Zone-by-Zone installation of General Electric Ceiling-Mounted Units.

The entire area gets heating and cooling from the same units. Each exhibit area has its own units *individually controlled and metered. No floor space is used.* No ductwork is required. Noise is held to whisper level. And when the Mart proved so successful that Mr. Trammell Crow, owner, decided to double its size, all that was necessary was to add individual units as individual showrooms were added. No fuss—no alterations—no interference with performance of existing units. This is a typical example of how General Electric *factory-assembled* units meet the most exacting air conditioning requirements.

General Electric's complete line is flexible enough to meet every air conditioning requirement for all buildings—large or small—old or new. Ceiling-mounted units water-cooled up to 7½ tons—air-cooled up to 10 tons. Floor-mounted units – water-cooled up to 30 tons—air-cooled up to 20 tons. Steam and hot water coils available for all models. It will pay you to discover how General Electric Factory-Assembled Units can simplify your planning. For full details write: General Electric Company, Air Conditioning Department, Troup Highway, Tyler, Texas.

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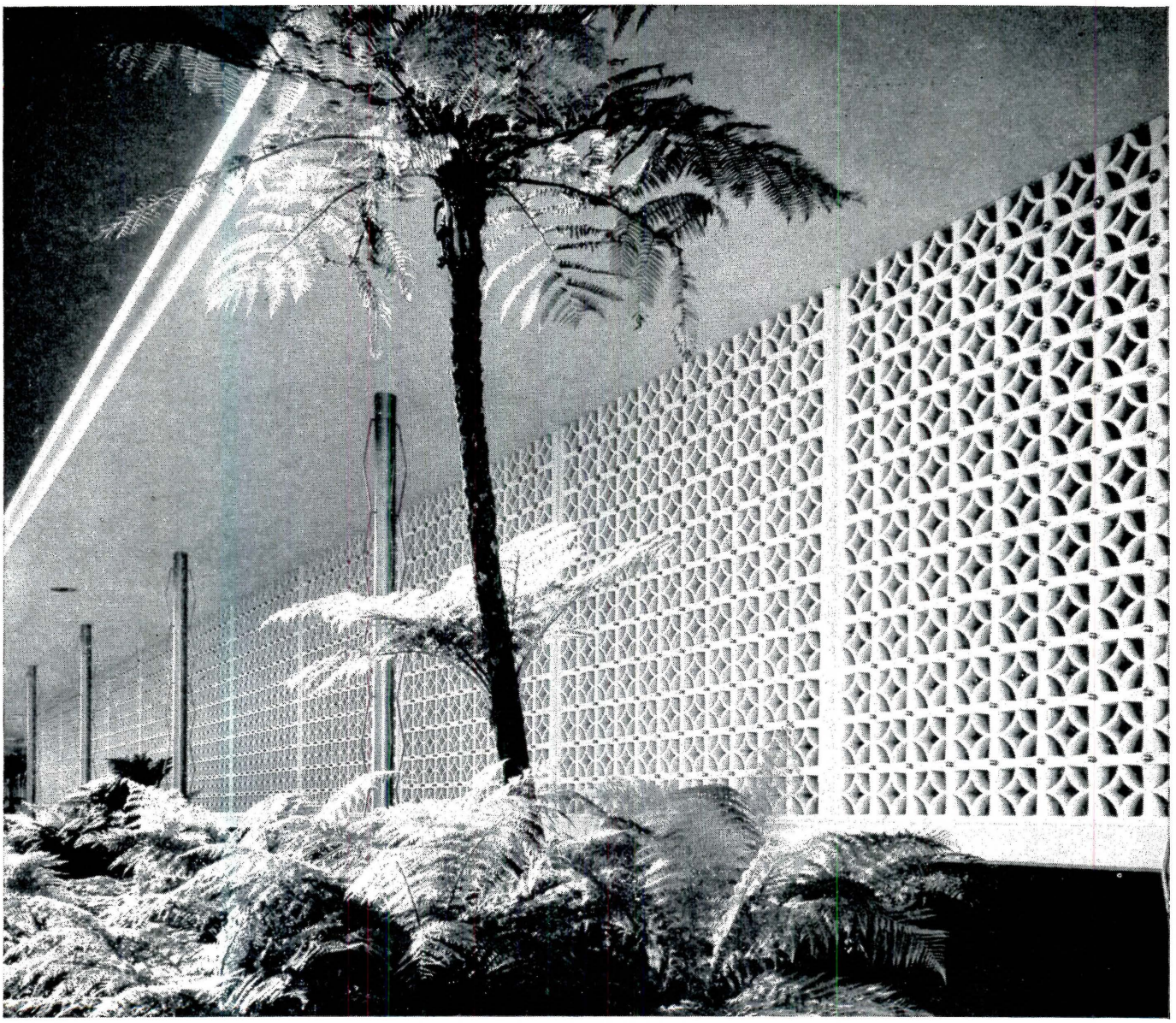
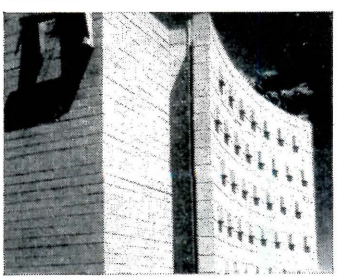
The beauty of concrete block...

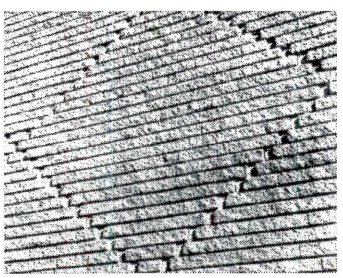
The eye-catching beauty of commercial buildings like the famous screened pharmaceutical plant (below) by Edward Stone can now be easily, economically achieved. Concrete block, available in quantity and in a variety of designs, shapes and sizes, readily enhance the design of commercial structures so that they harmonize with any surroundings, satisfy exacting zoning regulations. Installations as diverse in function and plan as homes, hotels, schools, banks, post offices gain in warmth and distinction with concrete block—as demonstrated below. The utility and economy as well as the beauty of concrete block construction are bringing it to the attention of planners and the public, for a wide range of application.

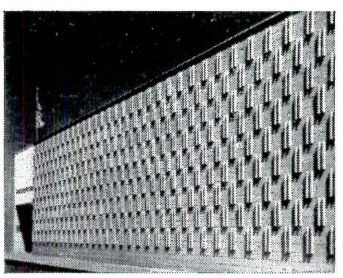
Universal Atlas is a major supplier of cement, the modern, versatile building material that meets America's concrete construction needs. Universal Atlas Cement, Division of United States Steel Corporation, 100 Park Ave., New York 17, N. Y.

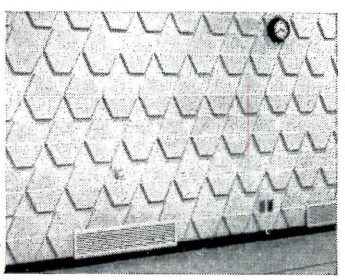
UNIVERSAL ATLAS CEMENTS











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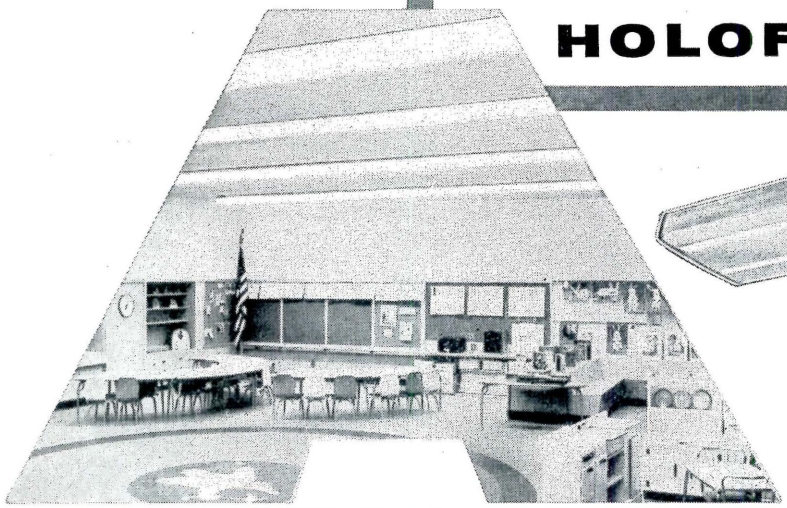

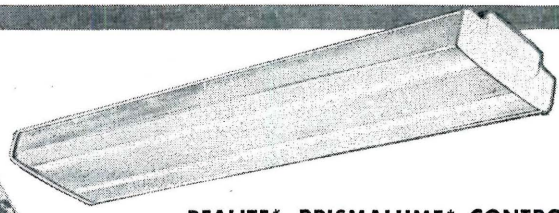

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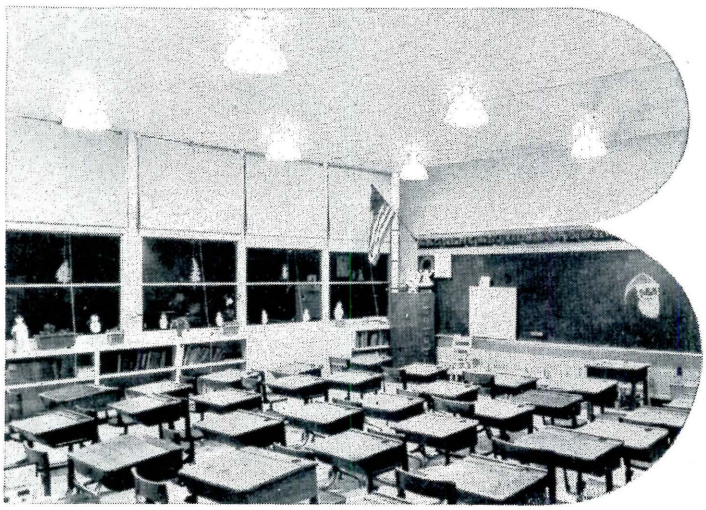

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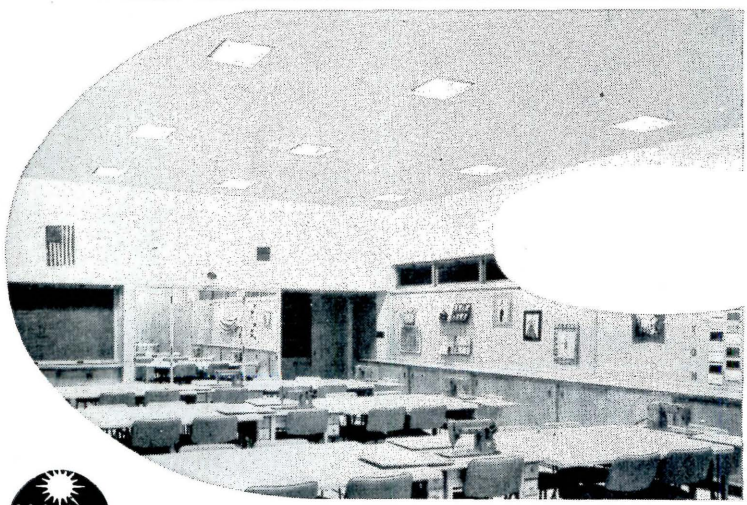

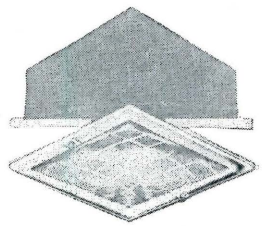

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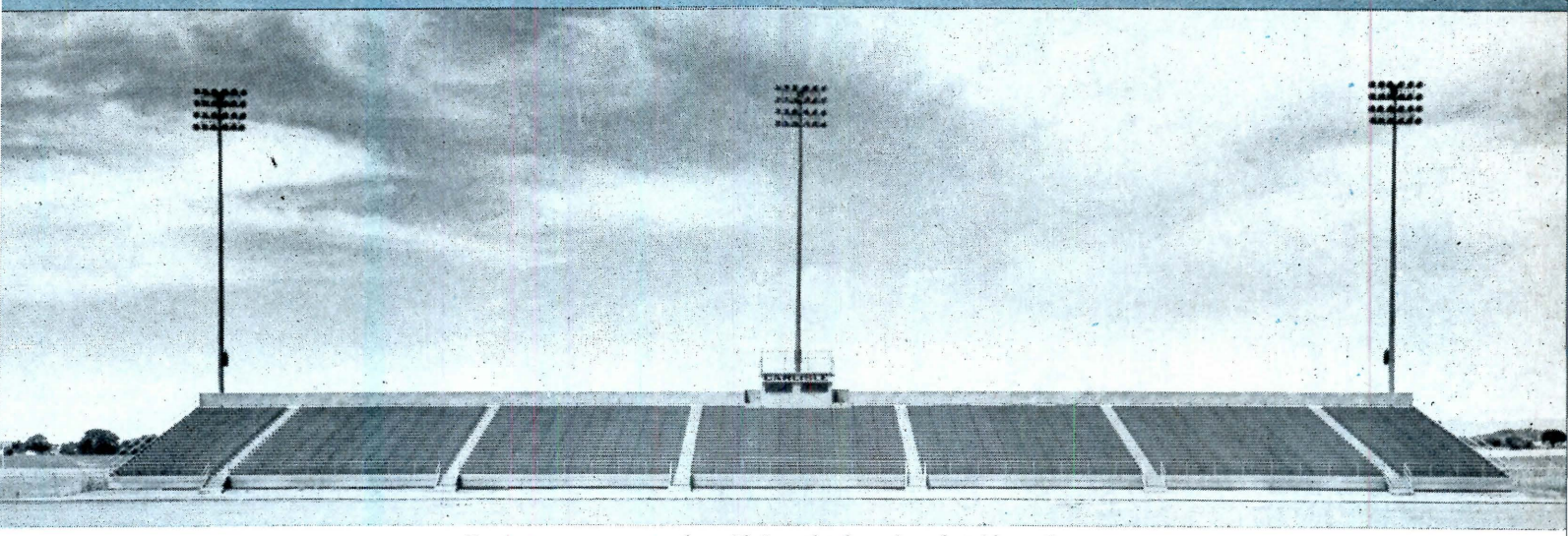

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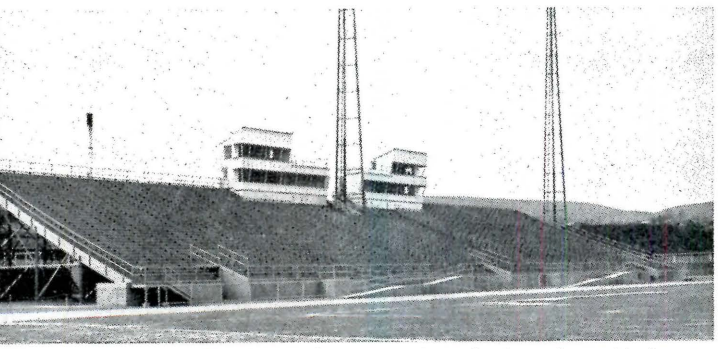

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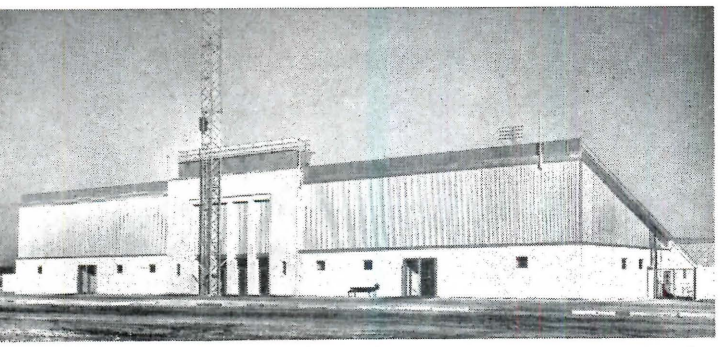

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SEATTLE (1).....Suite 307, 500 Wall St.
SANTA CLARA, CAL.....606 Alviso Road
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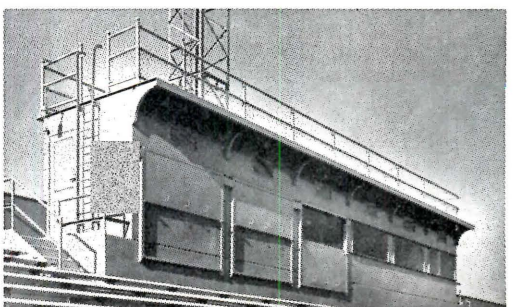

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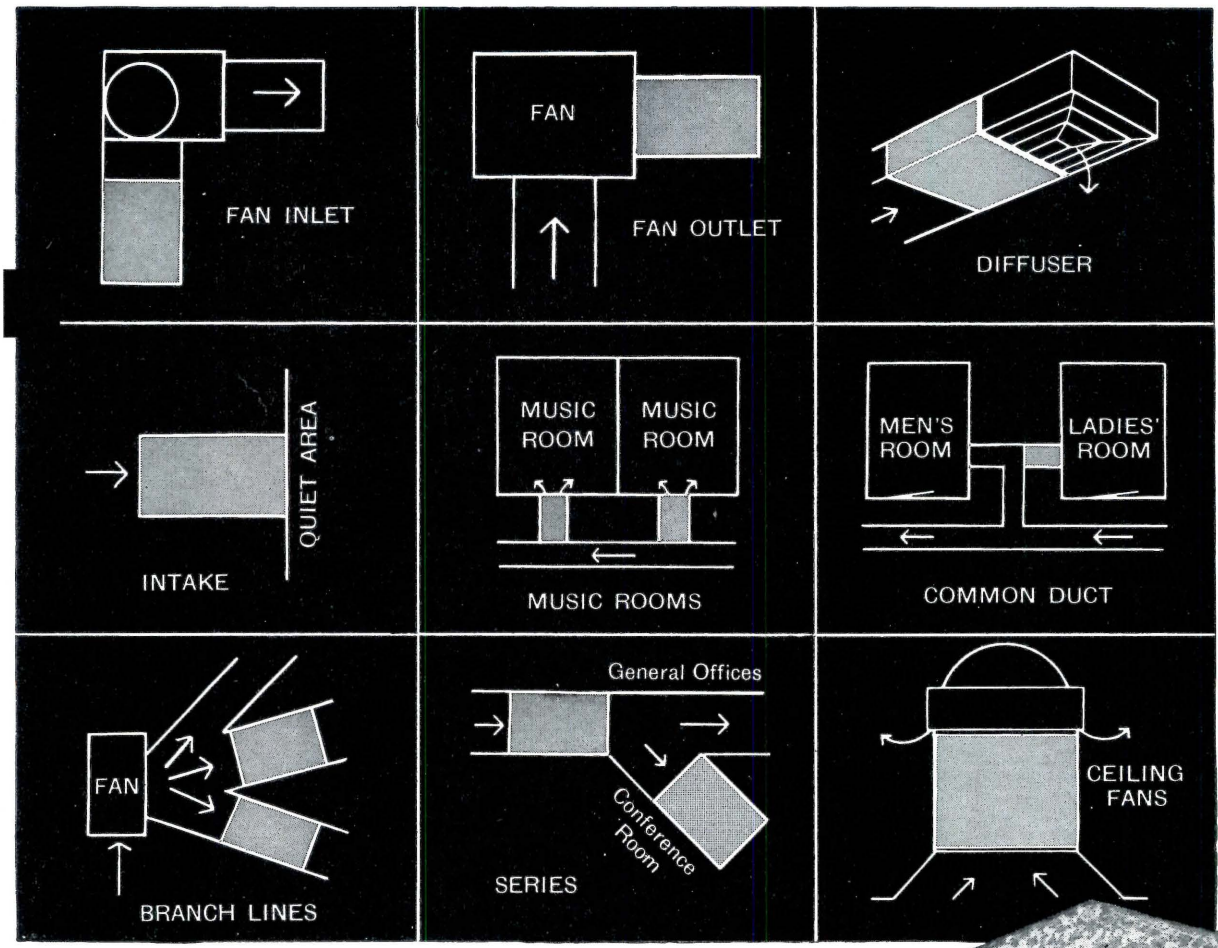

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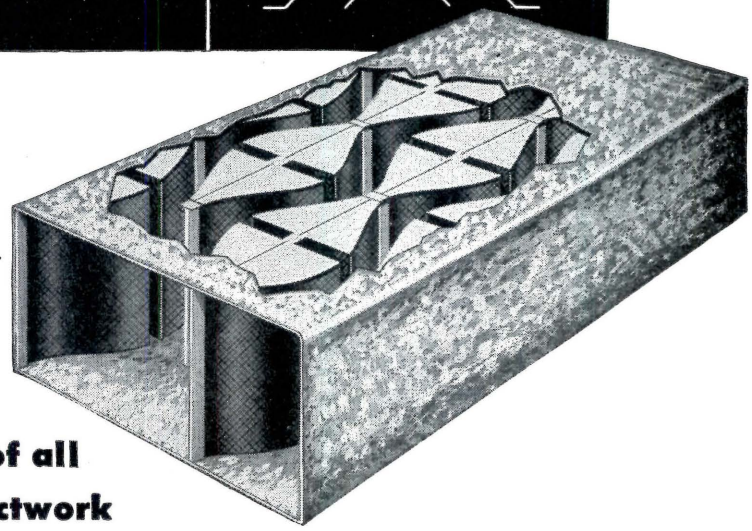

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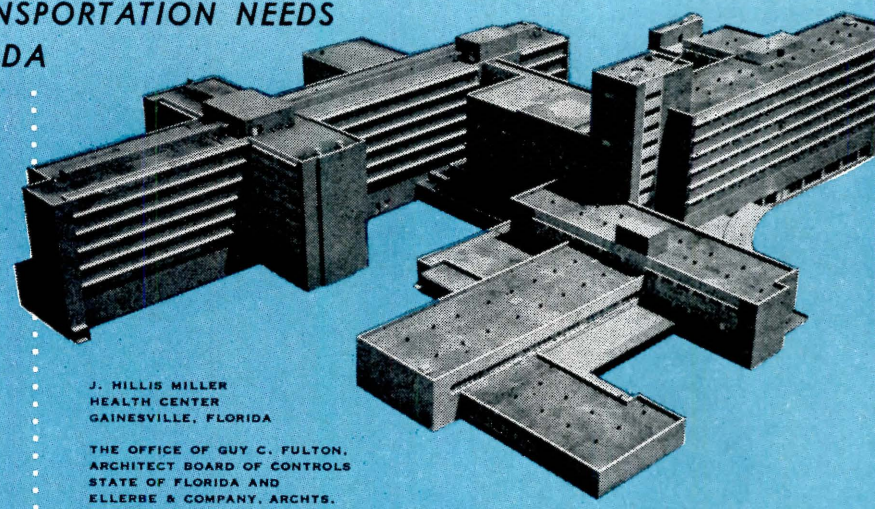

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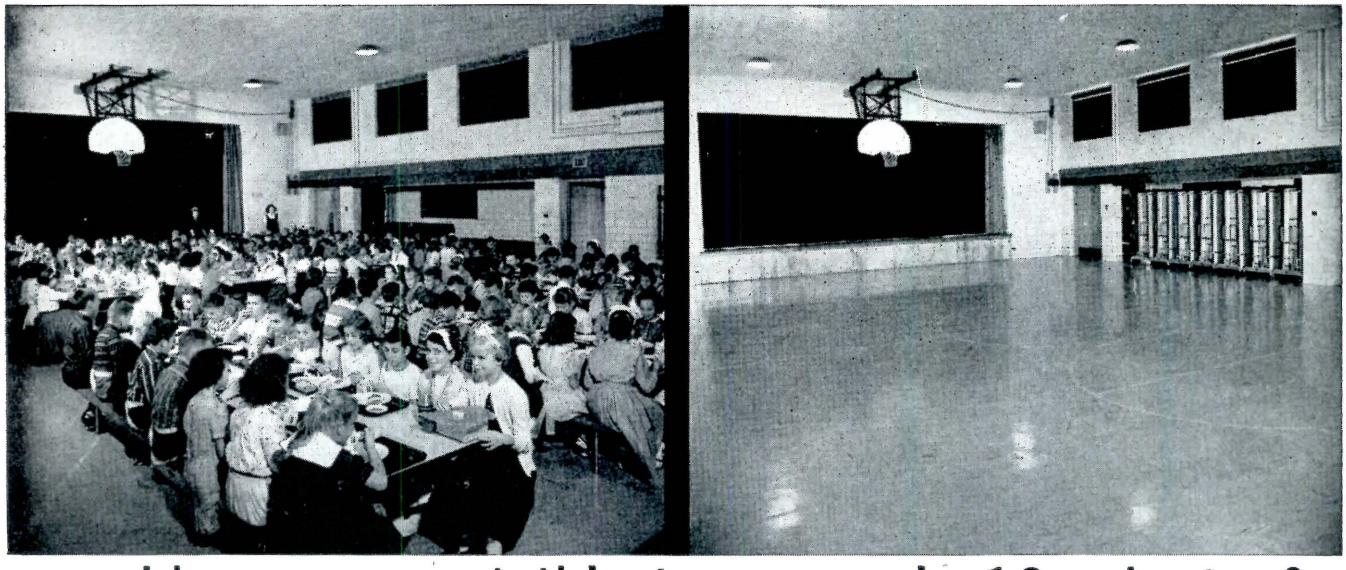

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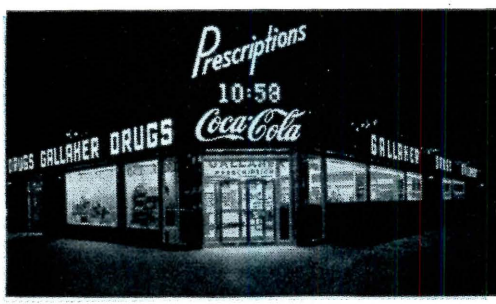
You can with Sico System Rolling-Folding Tables. Sico's exclusive "Floating-Fold" substitutes precision balance for dangerous locks and latches—even small children can fold a Sico table safely and easily in seconds, then roll it away to a storage area. A whole room can be converted from one use to another in minutes. The architect can choose from four scientifically designed rolling-folding bench-table units and one stationary table with folding benches. Whatever Sico System unit you choose, you have complete architectural freedom in your multi-purpose room planning—there are no construction limitations with the Sico System.

For complete architectural information on the Sico System write to . . .

Sico Manufacturing Company, Inc., Dept. 960 5215 Eden Ave. So., Minneapolis 24, Minn.



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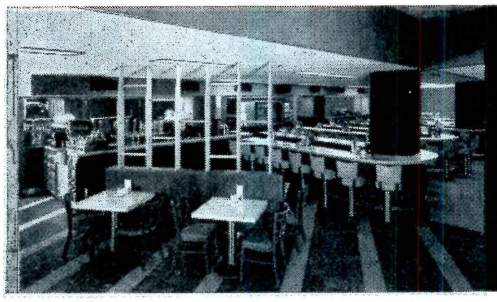

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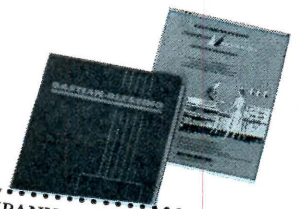

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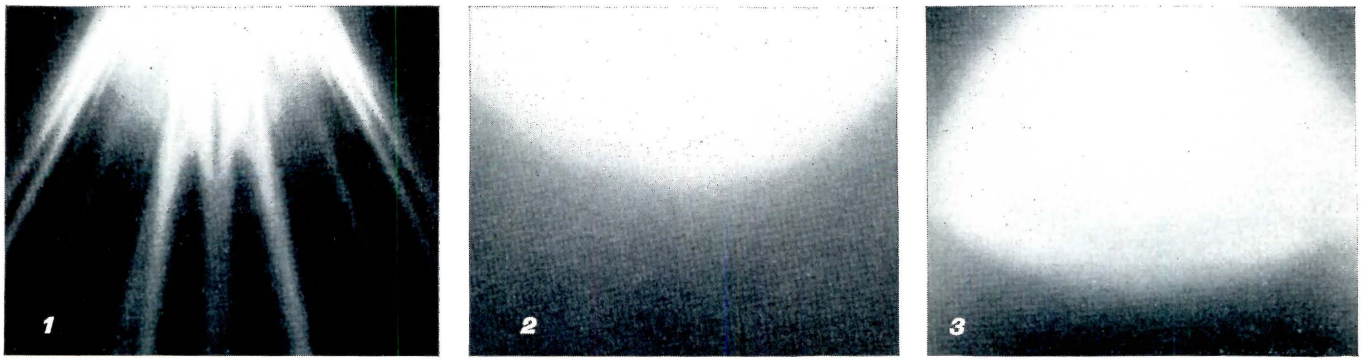
NEW FIBERGLAS* POLARIZI G

NEW KIND OF LIGHTING made possible with the Fiberglas Polarizing Light Panel is ideal for offices like this. Note how panel creates a handsome ceiling effect as well.



LIGHT DISTRIBUTION TEST: (1) *Lens Panel:* note how light is refracted away from the direct glare zone (dark areas) to heavy beams of light in the reflected glare zone. (2) *Diffuser Panel:* note how it evenly distributes light in the reflected glare zone but leaves a concentration of light at the high angle or direct glare zone. (3) *Fiberglas Panel.* note how light is reflected away from the direct glare zone by polarizing action and is evenly distributed into a soft diffused lighting pattern.

LIGHT PANEL!

REVOLUTIONARY PRODUCT BRINGS SOFT EVEN LIGHT WITHOUT GLARE!

Now a single panel controls the discomfort of direct and reflected glare. Fiberglas has combined the advantages of both the lens type closure and the diffuser to produce an ideal lighting panel.

WHAT IT DOES

The Fiberglas Polarizing Light Panel controls brightness by *polarization* and at the same time diffuses the light to reduce glare. It offers the two most sought after properties in lighting—the reduction of direct-from-fixture glare, which up to now has been accomplished by a lens or louver, and the reduction of reflected-from-room glare that is made possible by a diffuser. Both of these highly desirable features are now combined in the Fiberglas Polarizing Light Panel.

HOW IT WORKS

As light passes through the panel to the area directly under the fixture, thousands of tiny Fiberglas Flakes diffuse the light, making it soft and even. But as the light passes through the Flakes to the area *around* the fixture, some of the light is reflected back into the fixture by the polarizing action. This reduces light in the critical or direct glare zone 45° up to the ceiling. Result is even, glare-free light that's easy on the eyes.

HOW IT CAN BE USED

The panel is designed for use as a closure for fluorescent lighting fixtures. It's made of polyester and Fiberglas Flake and molded into flat sheet laminates. Panels are trimmed to size on order in any flat sheet size up to 24" x 48". They are lightweight, easy to ship, store, handle and fabricate. The panel's attractive textured appearance presents an interesting yet architecturally neutral effect. Panels can span a 2' x 4' area without prisms, ribs, corrugations, louvers, or supports which tend to mar ceiling continuity. Clean, flat, quiet looking ceilings are easy to design.

WHERE TO GET IT

Call your nearest Fiberglas Branch listed in the yellow pages of your phone book for complete information and data.

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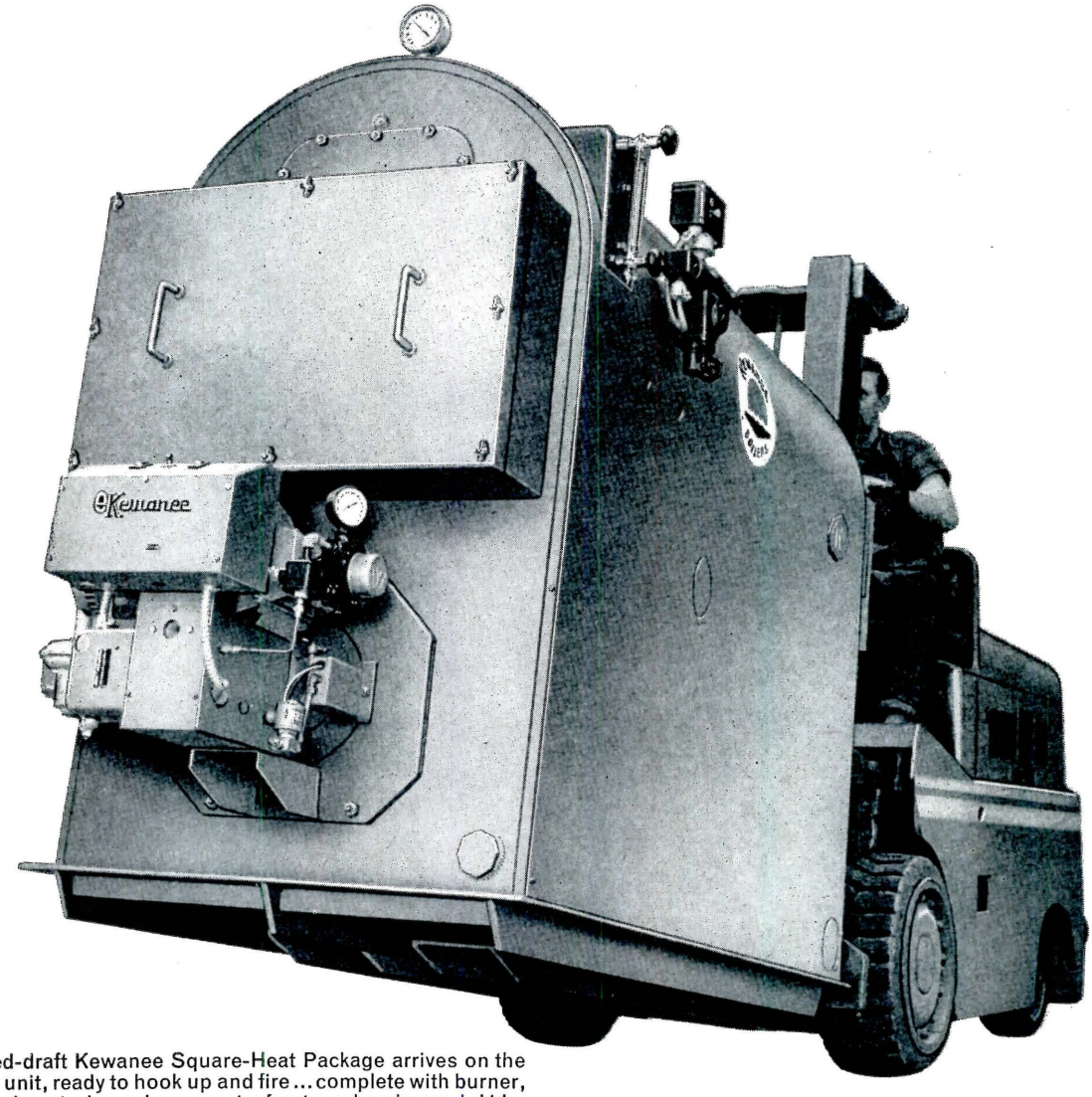

Forced-draft Kewanee Square-Heat Package arrives on the job as a unit, ready to hook up and fire...complete with burner, pre-wired control panel, pre-cast refractory chamber and skids. It requires no crating...no job-site insulating.

KEWANEE® SQUARE-HEAT GAS-OIL UNITS

for 15 lb. steam or 30 lb. water, 216,000 to 1,800,000 Btuh

For the first time, Kewanee offers a fire-box package boiler! The new Square-Heat Packages are forced-draft, requiring only a stub vent—no high stack. Kewanee's new combination gas-oil burner fires natural, mixed or L.P. gas . . . No. 1 or 2 fuel oil. One switch changes fuels . . . automatic changeover is available. An exclusive air distribution system pre-mixes gas and air before it enters the combustion chamber, for smoother and more efficient firing.

Along with the new burner is a new pressure-tight front flue cover dogged down by easily removed wing nuts . . . and a new, standard-equipment, wrap-around insulated jacket of heavy-gauge steel. Retained in the new units are Square-Heat's compact design, large firebox, widely spaced 3″ fire tubes, large disengaging area and ample steam space.

For complete facts see your Kewanee Man or write: AMERICAN-STANDARD*, KEWANEE BOILER DIVISION, 105 Franklin Street, Kewanee, Illinois.

See this new Square-Heat unit among the display of Kewanee forced-draft packages at Booth 134, Power Show, New York Coliseum, December 1-5, 1958.

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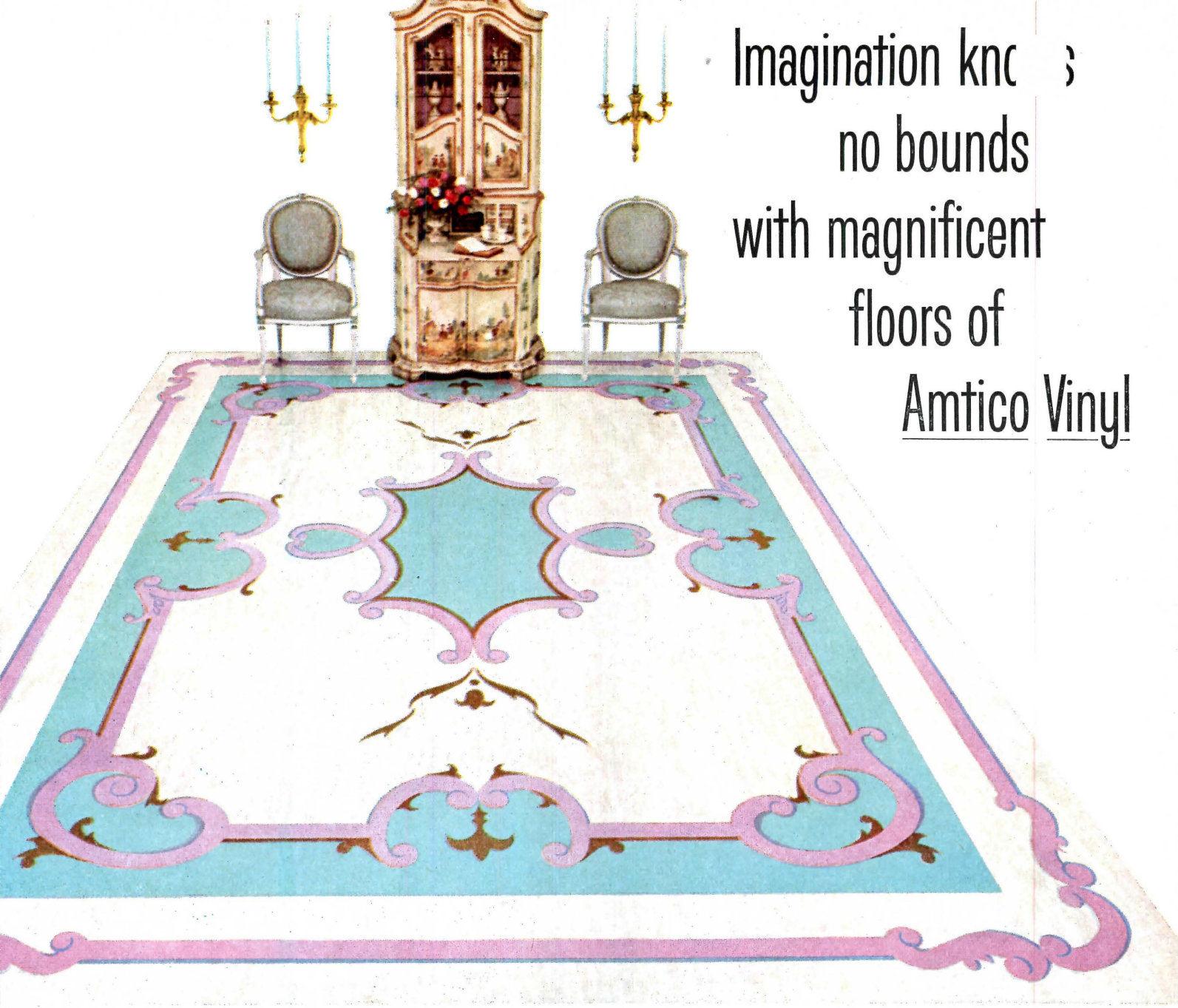
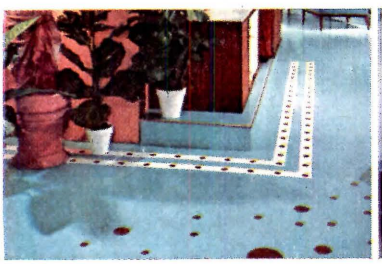


Field of Renaissance Vinyl with plain vinyl custom inserts. Achieves Aubusson rug effect. Designers—Virginia Chappell, Robert Henry of VR Interiors

Express the most original of flooring ideas in fabulous Amtico Vinyl Flooring. Bring any decor to radiant life with exciting Amtico Vinyl . . . dimensional Renaissance, translucent Stardust, metallic Eldorado and Coronado, striking Terrazzo Design, vibrant Marbleized and smartest plain colors. Amtico's lovely colors go thru-and-thru each all-vinyl tile. Beauty withstands hardest wear. Flexible, resilient Amtico Vinyl needs so little care, can't crack or tear, defies grease, resists acid. The most colorful and complete line ever, Amtico Vinyl Flooring rates first with leading consumer research organizations. Outstanding designers choose Amtico Vinyl or Amtico Rubber Flooring for their most imaginative designs.

Robert Owen Johnson evolves a classic contemporary look with Amtico Renaissance Vinyl in this garden TV room.



Gold vinyl inserts in Amtico Terrazzo Design Vinyl create an unusual effect in this foyer by Hoffman-Heidrich.

Harlequin insets of Amtico Stardust Vinyl repeat the gay wall pattern in a smart guest room by Albert Thomay.

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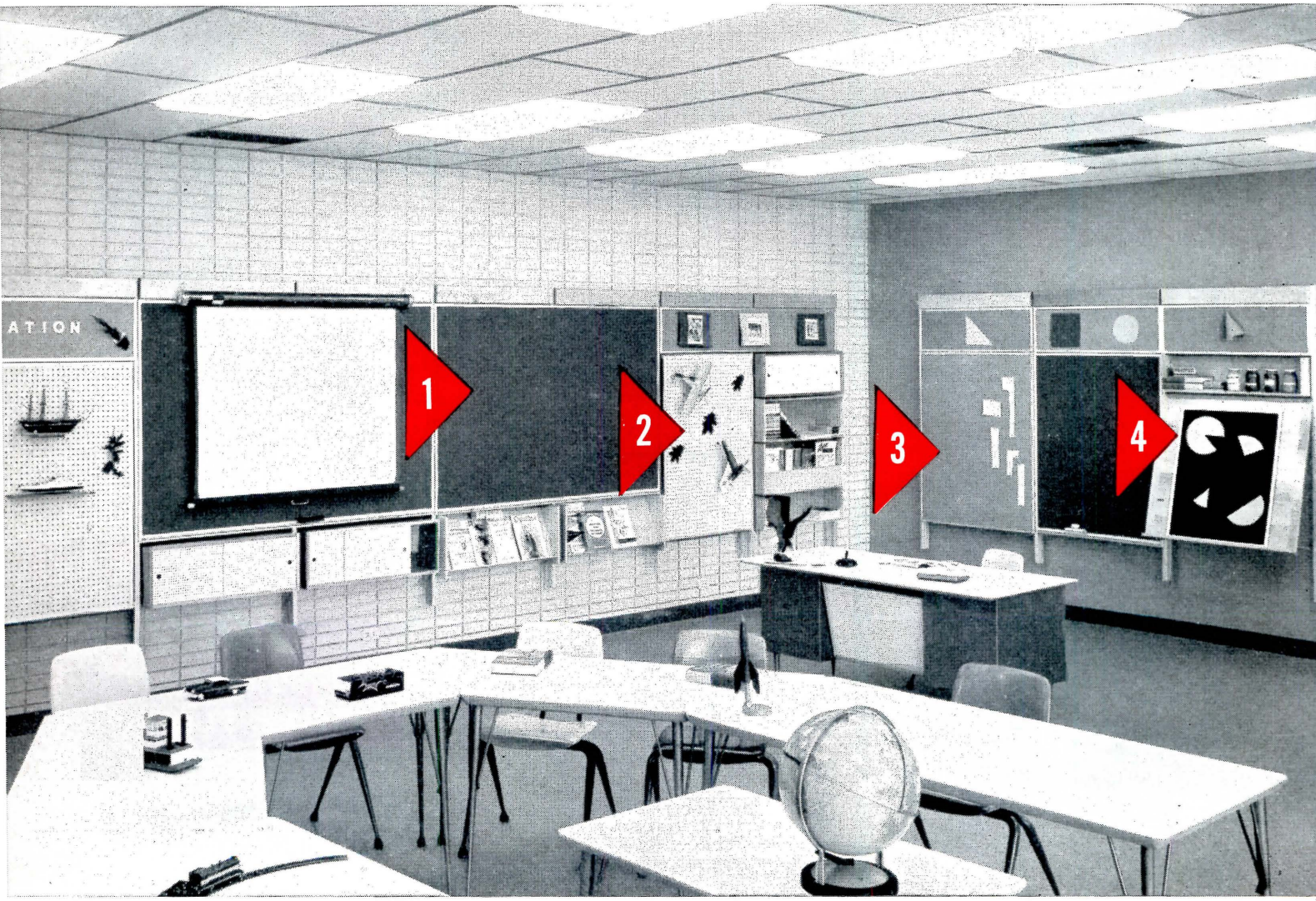
A new concept in classroom wall utilization that completely outmodes conventional fixed-to-the wall chalkboard and display equipment.

Brunswick **MODUWALL** has already been field proven in scores of installations . . . it is now available for your new or remodelled schoolrooms



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for better learning . . . for lasting value

FLEXIBILITY INSURANCE—Brunswick Moduwall gives you complete classroom flexibility over the years . . . as school population shifts . . . as classroom purposes change. By simply changing the *kinds and heights* of panel units, you can transform a kindergarten into a fifth grade, a fifth grade into a social studies room, a math class into a kindergarten! Today's elementary schoolrooms become tomorrow's educationally perfect junior and senior high rooms—without costly reconstruction. With Moduwall your classrooms are never obsolete . . . always ready for change in grade or function!

EVERY WRITING, DISPLAY REQUIREMENT SERVED—Moduwall accessories can be mounted in minutes. 4 Chalkboard sizes, 6 Tackboards, 1 Pegboard, 3 Open and Closed Cabinets, 2 Magazine Racks, 1 Easel, 2 Flannelboard sizes and Utility Boards to choose from! All are interchangeable!

TEACHER'S DREAM—Only Moduwall gives your teacher full freedom to use the teaching aids that best suit *her* individual purposes . . . and teaching techniques. She can change panels as instruction projects and assignments change...from day to day, semester to semester, as she desires. (We'll be happy to help you plan an efficient Moduwall Panel Inventory to meet your immediate and long-term needs.)

AND MODUWALL IS ECONOMICAL, TOO!—Moduwall not only gives you scores of educational advantages . . . but actually costs less to install and use now . . . and over the years than conventional wall fixtures. It will pay you, your teachers and your community well to investigate . . . and have your architect specify . . . and use Moduwall!

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2. *Only* **MODUWALL** *gives you the amount of* PEGBOARD *you want . . . where you want it . . . when you want it.*

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4. *Only* **MODUWALL** *gives you the amount of* EASEL, OPEN AND CLOSED STORAGE, MAGAZINE RACK *you need . . . where you want it . . . when you want it . . .*

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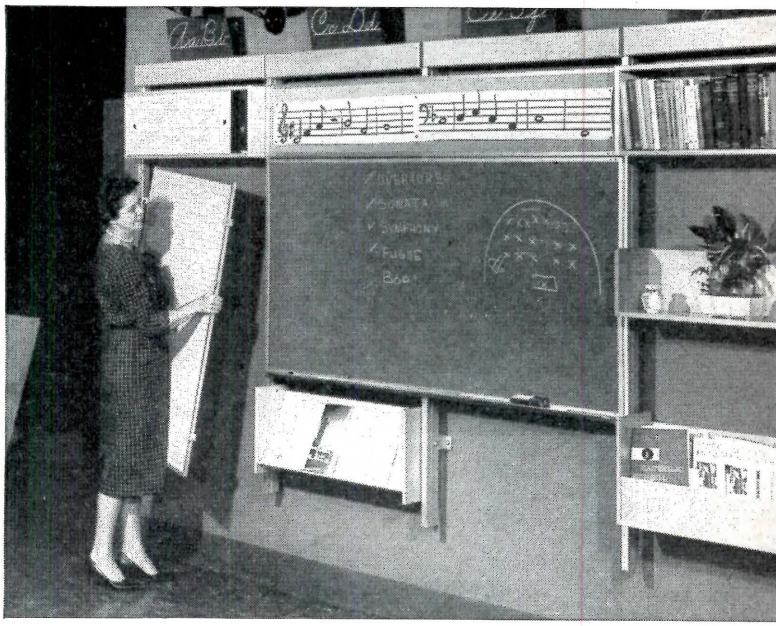

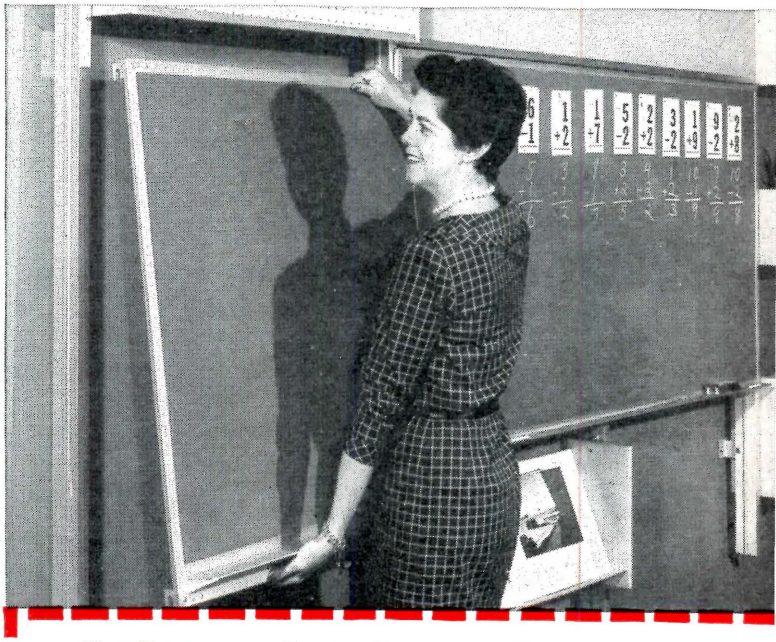

THE BRUNSWICK-BALKE-COLLENDER COMPANY
School Equipment Division, Dept. 1510
623 South Wabash Avenue
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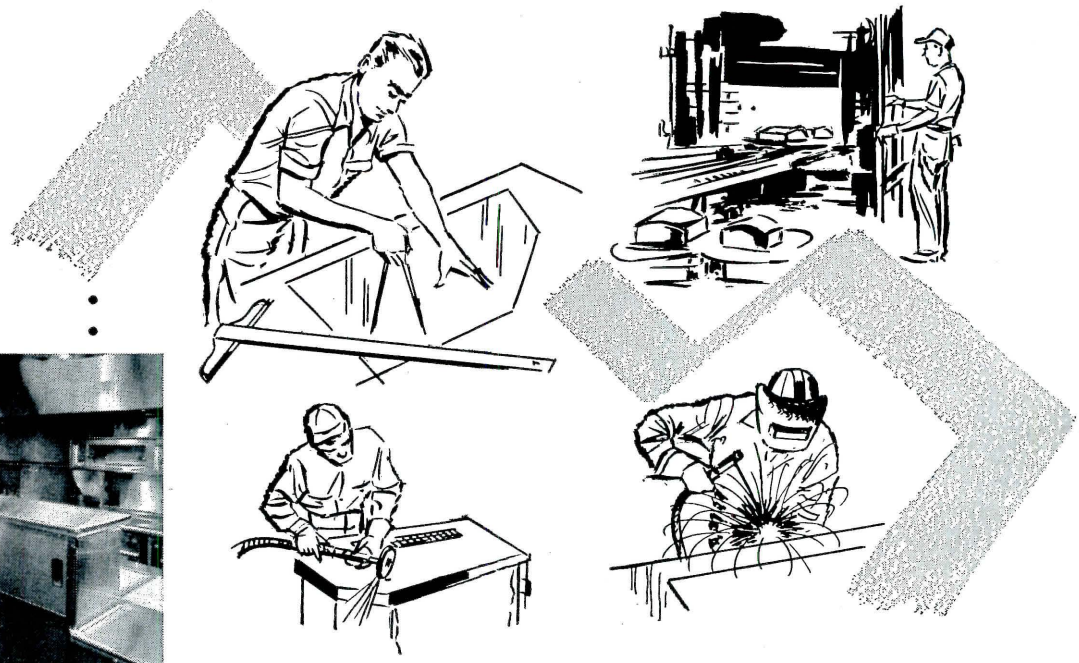

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Into every piece of "Custom-Bilt by Southern" food service equipment goes the work of master craftsmen. Each part is precision-built and fitted by skilled workmen. Every operation is carefully supervised, resulting in a finished product that guarantees lasting quality.

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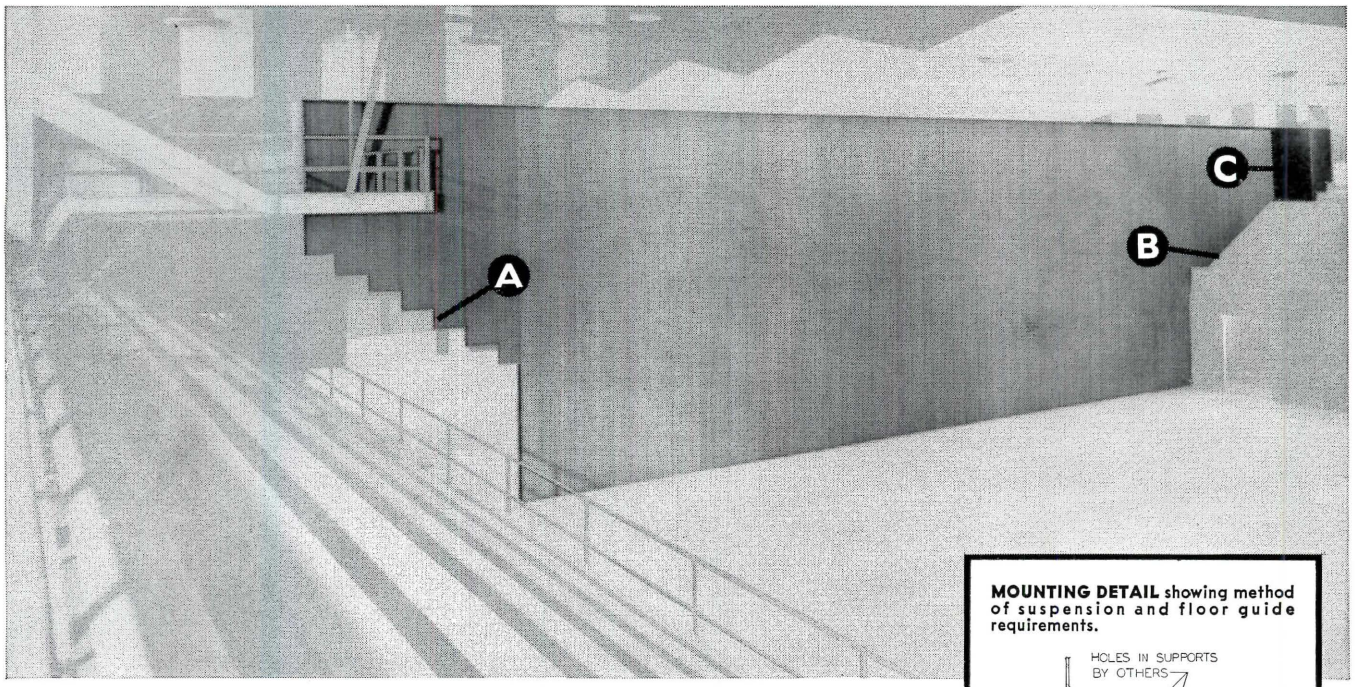
ARGEST COIL-AWAY PARTITION in the WORLD!



The New Mishawaka High School Gymnasium (Mishawaka, Ind.) . . . Perkins and Will, Architects.

ONLY Coil-Wal® COULD SOLVE THIS PROBLEM IN LONG DIVISION!

THE PROBLEM:

Divide one gymnasium 200′ x 120′ into two separate areas. Partition must accommodate and divide permanent balcony bleachers on either side without sacrificing seating space. Weight of partition must not exceed load which can be safely borne by normal trusses and spans. Partition must have automatic-electric operation and minimum storage requirements.

THE SOLUTION:

One 120′ x 26′ COIL-WAL Automatic-Electric Partition.

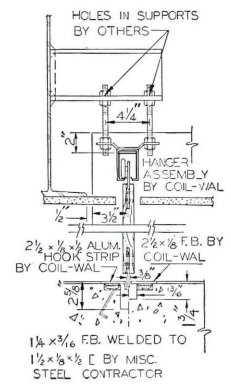
Point (A) in above photo shows how COIL-WAL was "stepped" to accommodate balcony bleachers to the left. On the right, at point (B), balcony was "slotted" to a width of two inches to permit passage of partition.

No extra heavy overhead trusses or beams were required because this COIL-WAL partition weighs only three pounds per square foot, including hardware and accessories and the storage load bears directly to the coil box foundation with no build-up on track or columns.

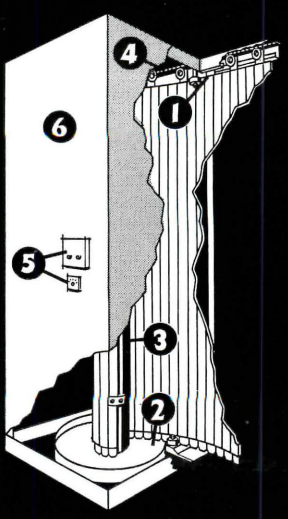
The entire partition is accommodated in (C) a storage box less than four and a half feet square.

Other factors which prompted the selection of COIL-WAL in this application were its beauty and neat appearance; its ability to withstand incredible impact without damage to player or partition; and its comparatively low cost and maintenance requirements.

MOUNTING DETAIL showing method of suspension and floor guide requirements.



THE COIL-WAL STORAGE BOX As curtain leaves track at point (1), storage load is guided and shifted to spindle base (2) while gear-driven spindle (3) exerts coiling action . . . To draw curtain, power is transferred to cable (4) which runs the length of track . . . Key-switch and selector control (5) may be located at option of architect.



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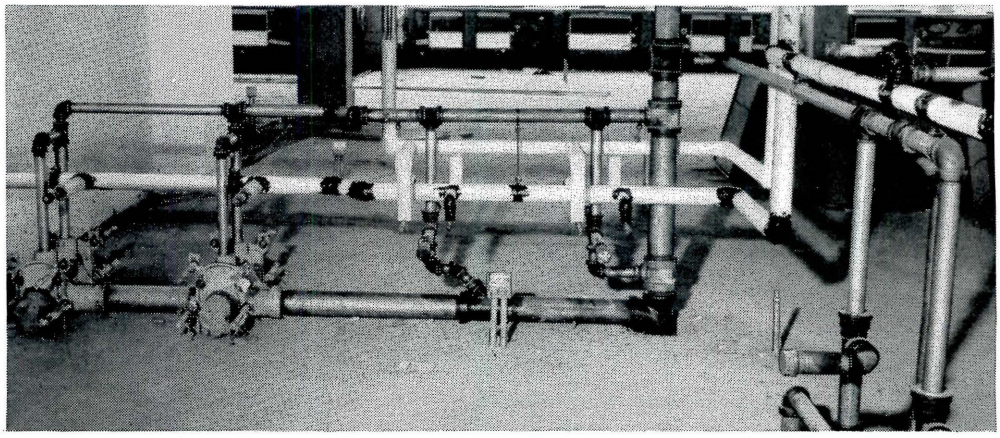
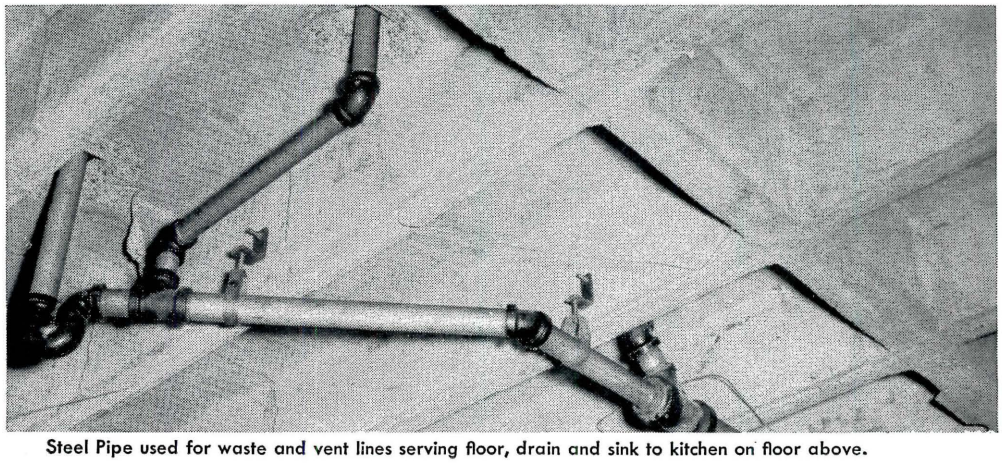
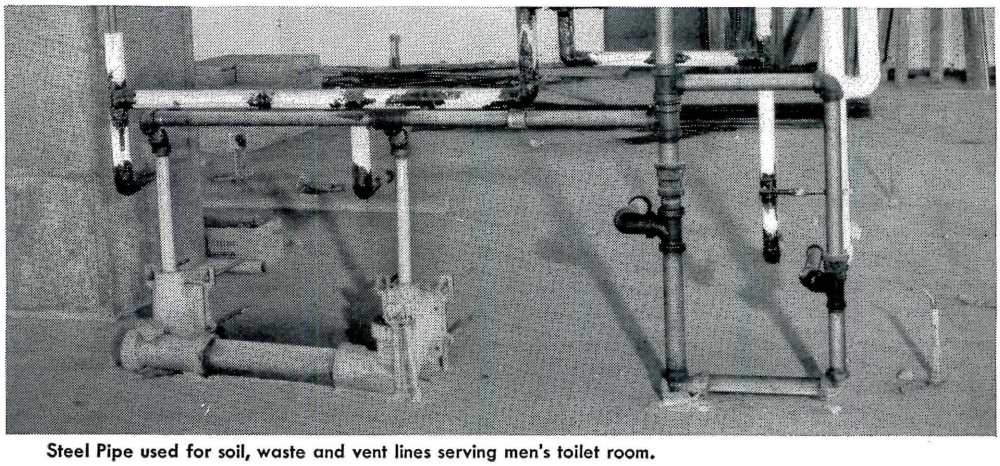
Most great buildings such as



Steel Pipe used for soil, waste and vent lines for back-to-back men's and women's toilet room.



Steel Pipe used for waste and vent lines serving floor, drain and sink to kitchen on floor above.



Steel Pipe used for soil, waste and vent lines serving men's toilet room.

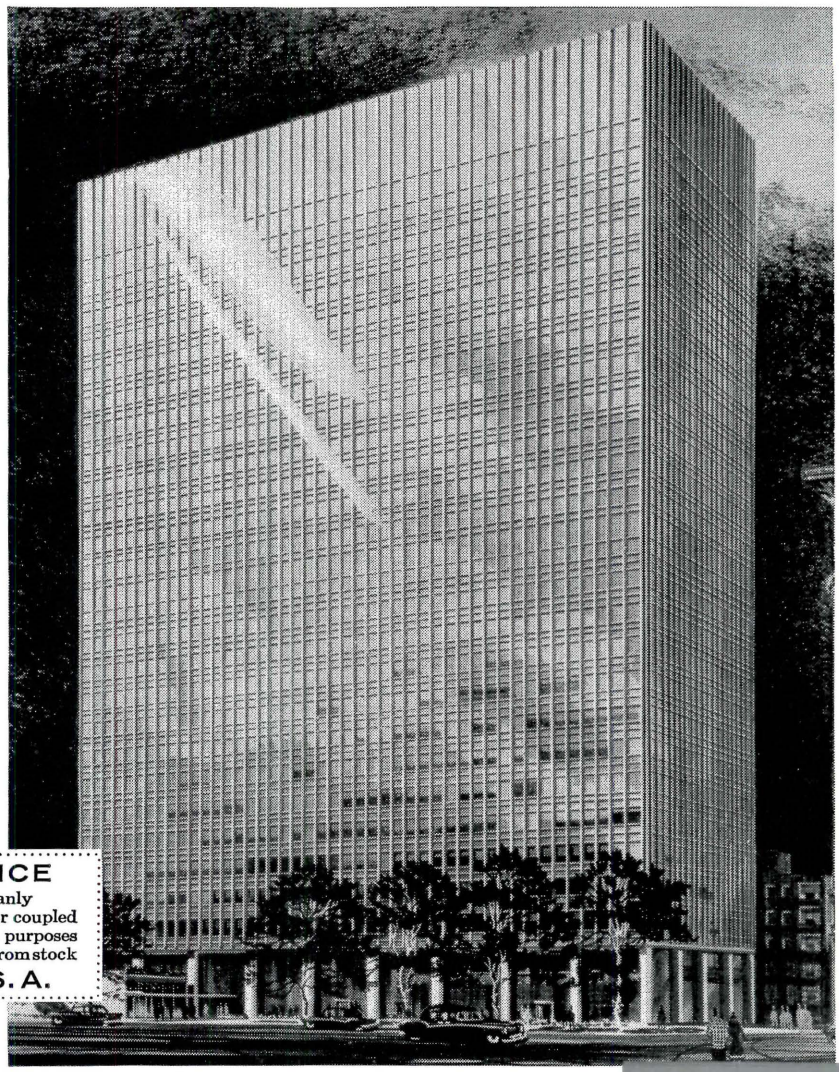
Cleveland's ILLUMINATING BUILDING *use*

GA VANIZED STEEL PIPE AINAGE AND VENT LINES

Unseen behind the inspiring facades of so many of today's beautiful new buildings is a more prosaic product . . . dependable, economical, time-tested *galvanized steel pipe* . . . serving in the vital health lines. Unsurpassed strength, longevity and lowest cost combine to make *galvanized steel pipe* the logical choice for these drainage and vent lines.

As so many customarily do, the builders of the impressive new Illuminating Building, pride of Cleveland, selected *galvanized steel pipe* for this important utilitarian service. Another "great name" building in a list which includes New York's Coliseum, the bronze Seagram skyscraper, Socony-Mobil, Mutual Benefit Life and so many more.

In addition to *galvanized steel* drainage and vent lines, other grades of *steel pipe* play important roles in every modern building . . . in fire sprinkler systems, sidewalk snow melting installations, gas, air and water lines, structural applications, heating and air conditioning. For *steel pipe* is the most versatile and least expensive of metal tubular products . . . the most widely used pipe in the world.



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- Sound joints, welded or coupled
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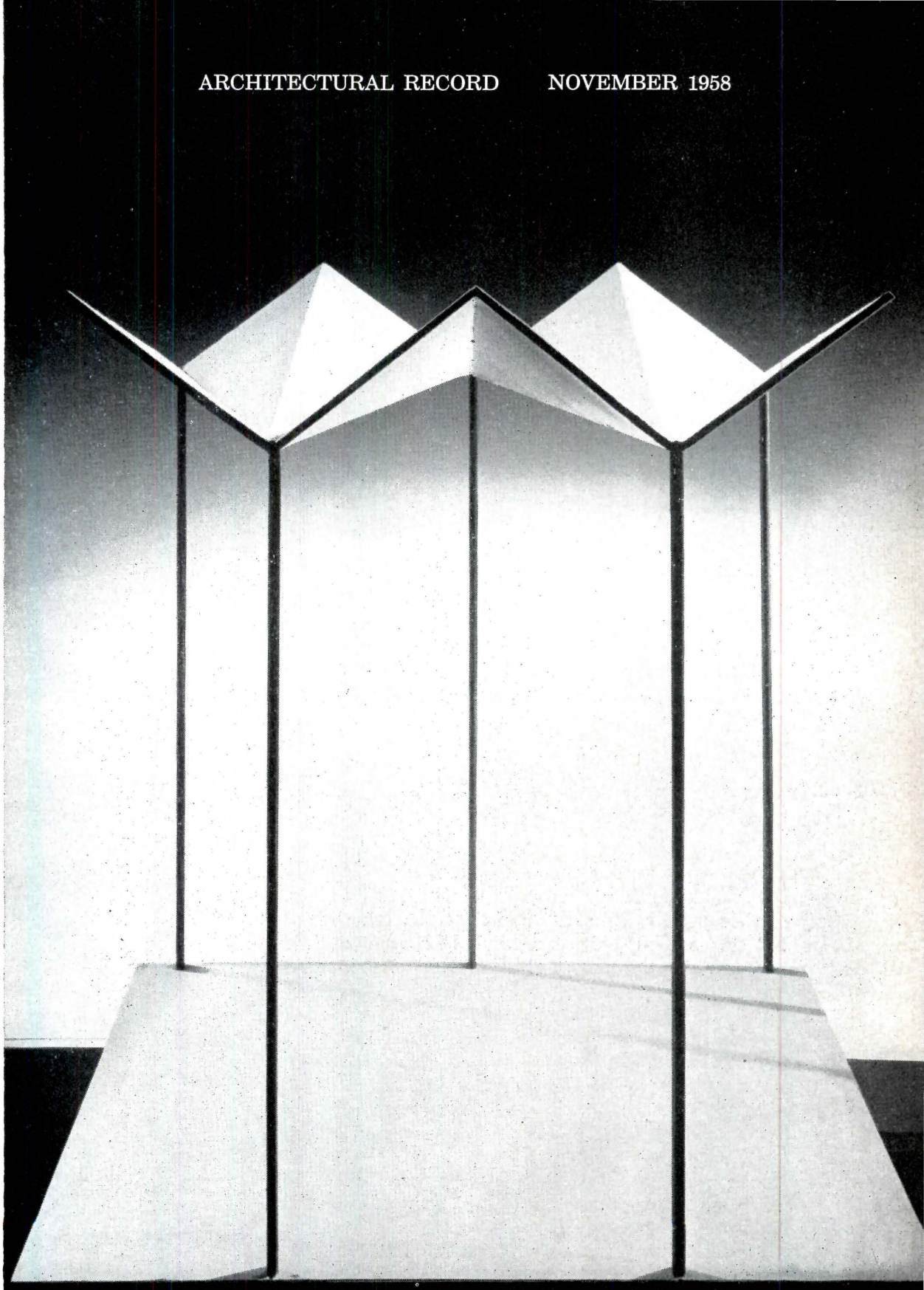
ARCHITECTURAL RECORD NOVEMBER 1958

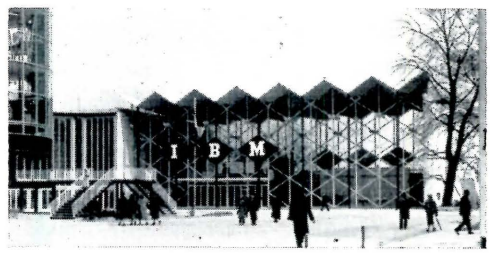


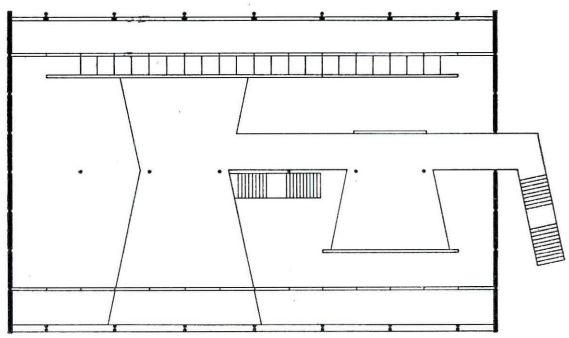
Recent Work of

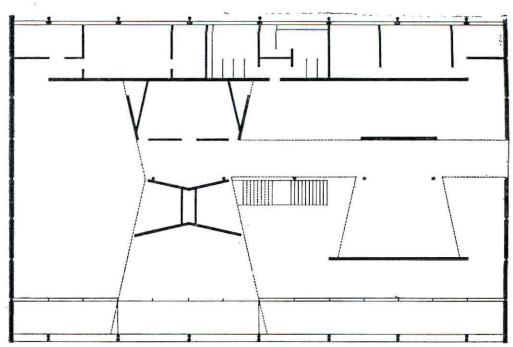
Eliot Noyes

Ben Schnall

IBM Pavilion, 1958 Brussels World's Fair





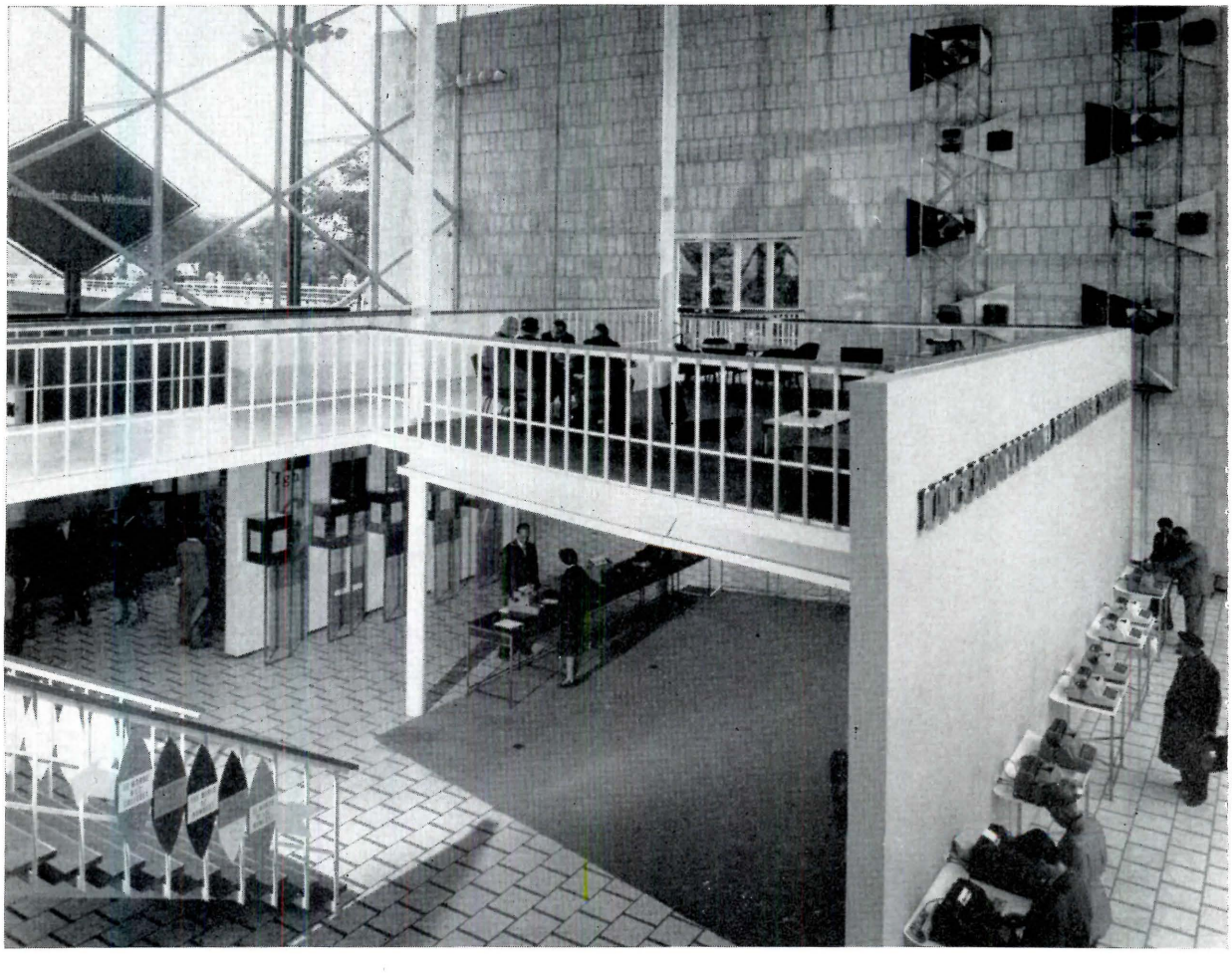


A leading characteristc of Noyes' work is a deceptive sort of simplicity—expressed graphically in plan but equally evident three-dimensionally when one visits his building. Deceptive because its realization is not as simple as it appears, but comes about only as a result of a great deal of concentrated study devoted to the problem of arranging functional elements, so they compose in plan into a rectangle or square or some other simple shape. One fails to find "ears" or "cut-ins" or "bustles" in these buildings.

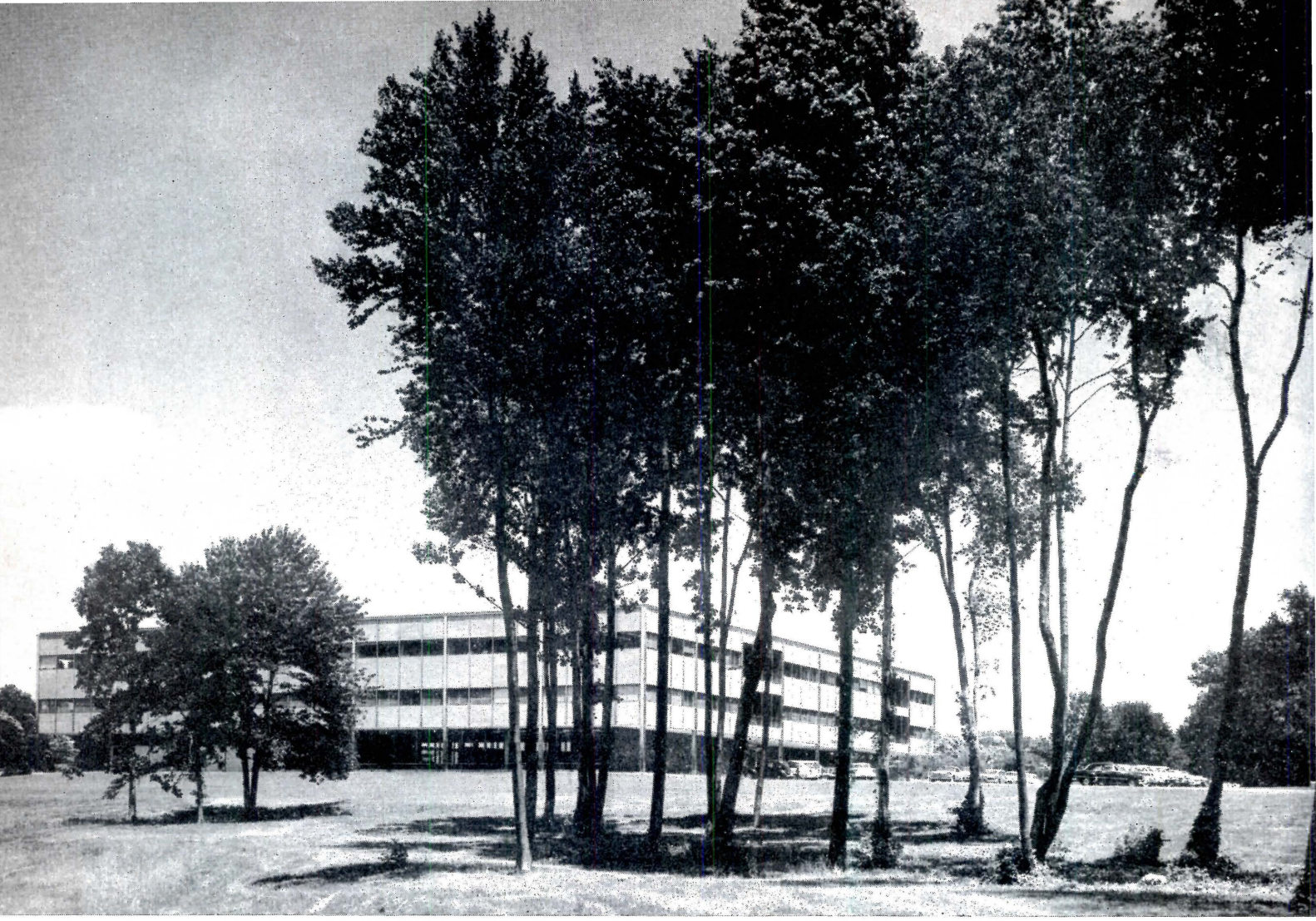
It is of interest also that, in walking through Noyes' building, one seems to have—no matter in what area or space he may be—a strong sense of identification with his surroundings. This kind of planned orientation is a design plus of significance.

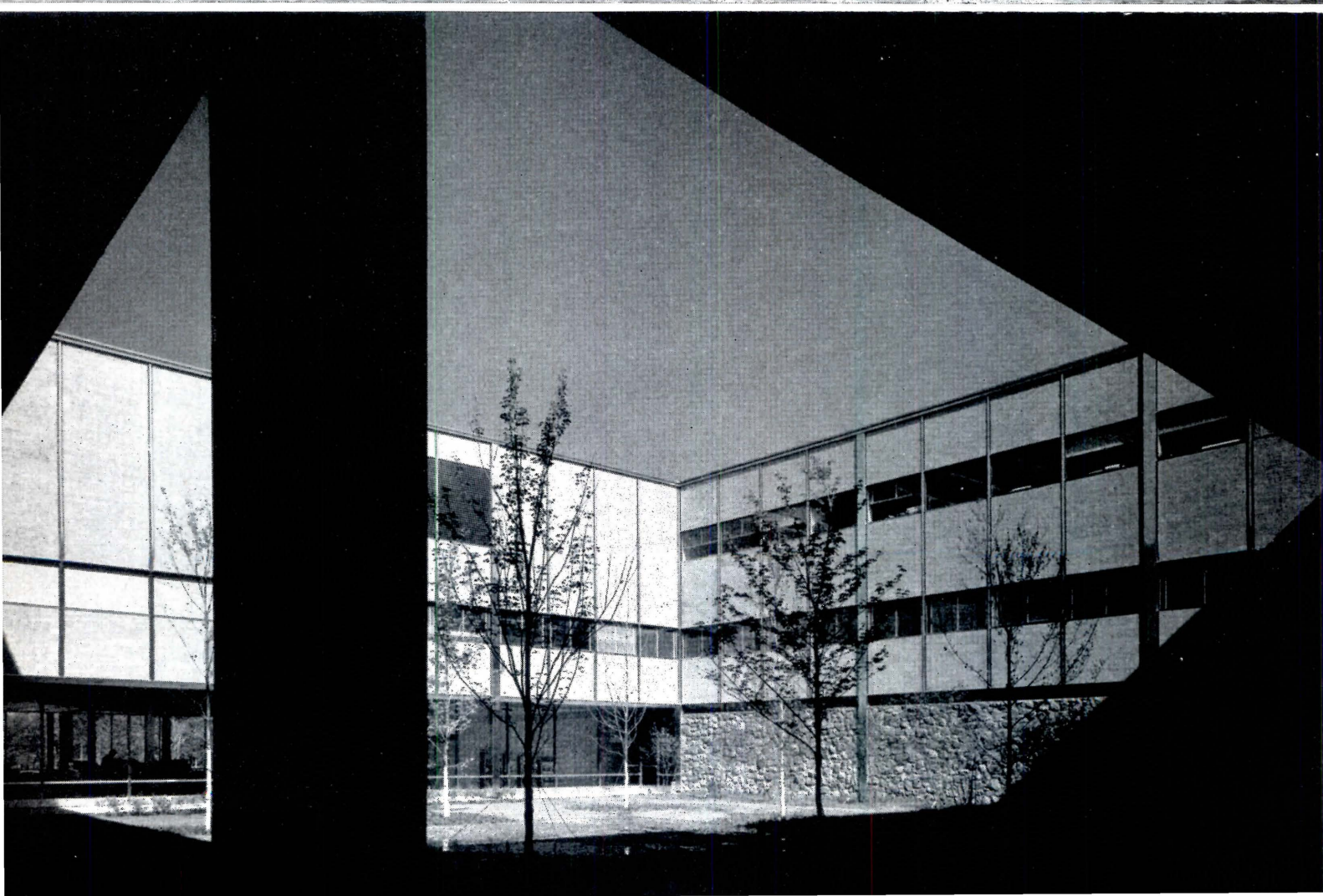
An orderly structural pattern is evident visually in the buildings shown; as well as a restrained, yet sprightly use of bold color here and there against a predominantly white, or off-white, or natural-material foil. There is, of course, nothing new in these ideas; but the measure of Noyes' architectural achievement rests in the considerable style with which they are carried out.

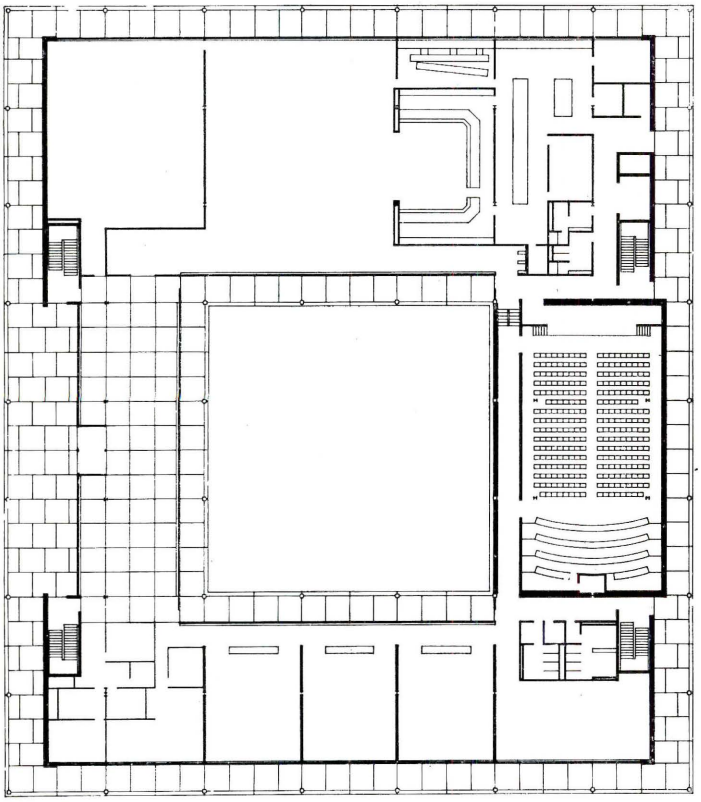
The following individuals in the Noyes' organization are to be credited—at his request—for their heavy contributions in carrying out the work shown: In architecture—Arthur DeSalvo, Associate; Richard Brunjes; Charles Baffo; Robert Anderson; Warren Kaffka. In industrial design—Ernest Bevilacqua, Associate; Allan McCroskery. In interior design—Hugh and Kathryn Smallen, Associates.

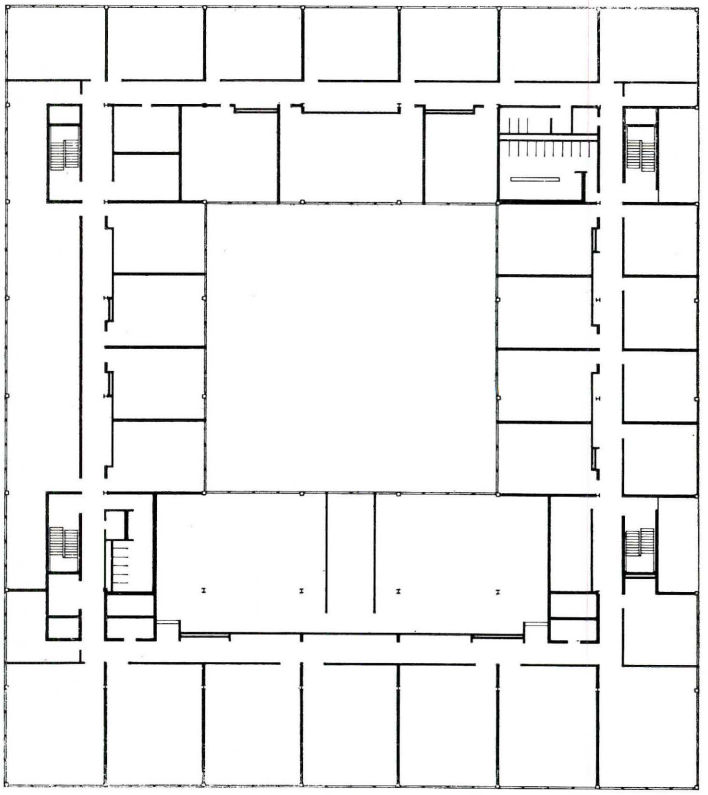


Photos courtesy of IBM



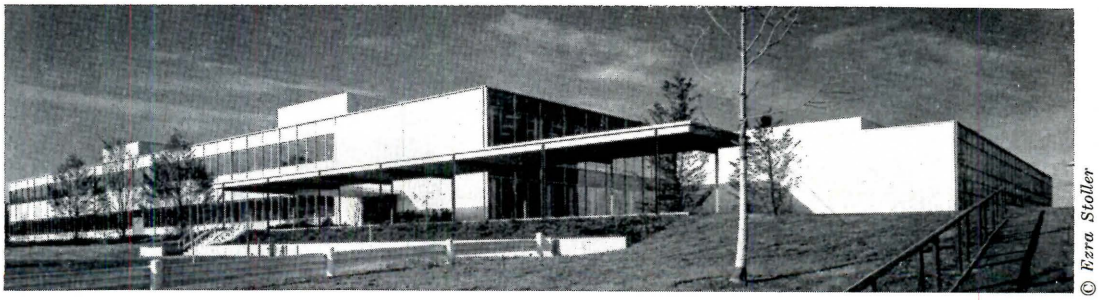






IBM Education Center, Poughkeepsie, N. Y. (above and left)

Completed Larger Buildings



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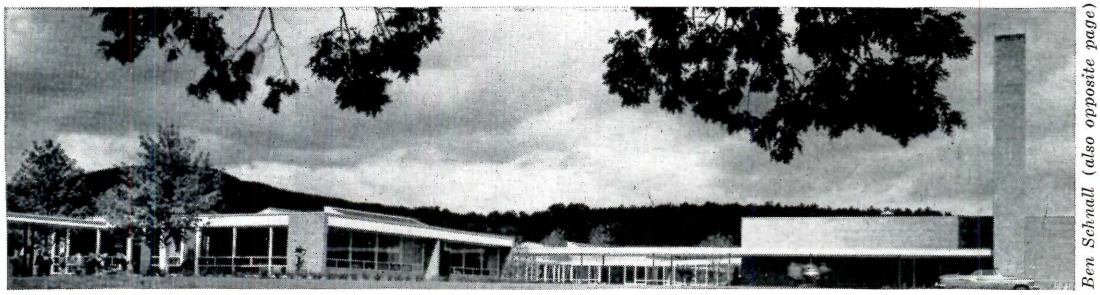
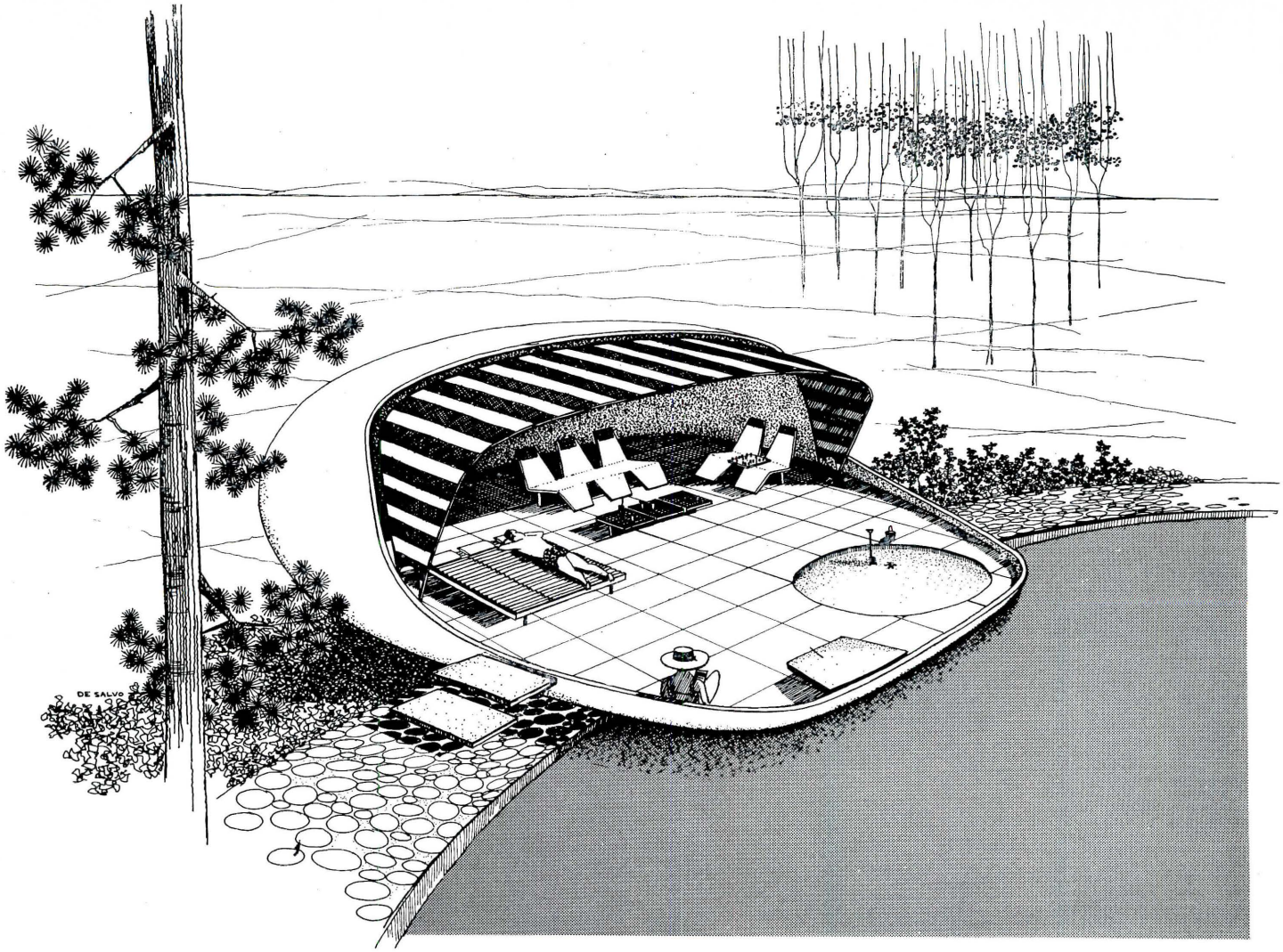
IBM Engineering Laboratory, Poughkeepsie, N. Y.



Ben Schnall (also opposite page)

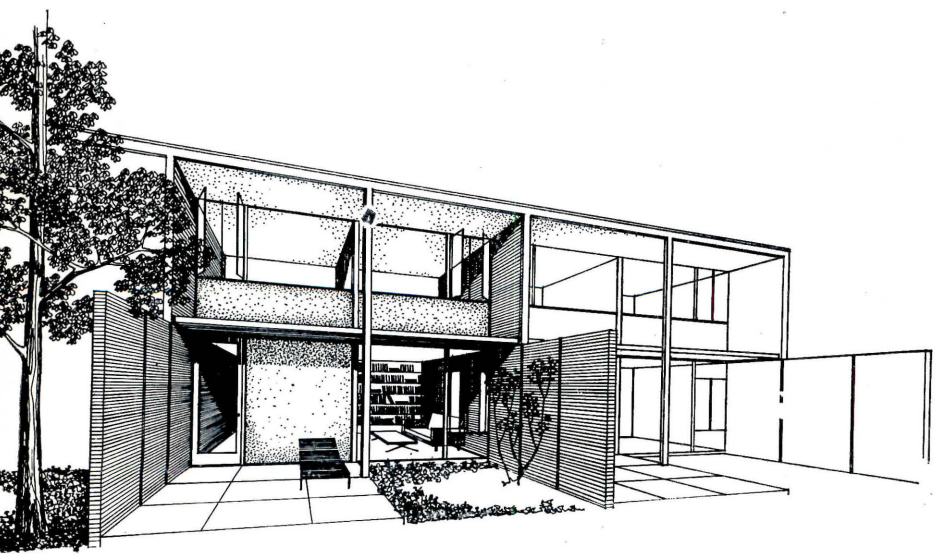
Elementary School, Salisbury, Conn., with Perkins & Will

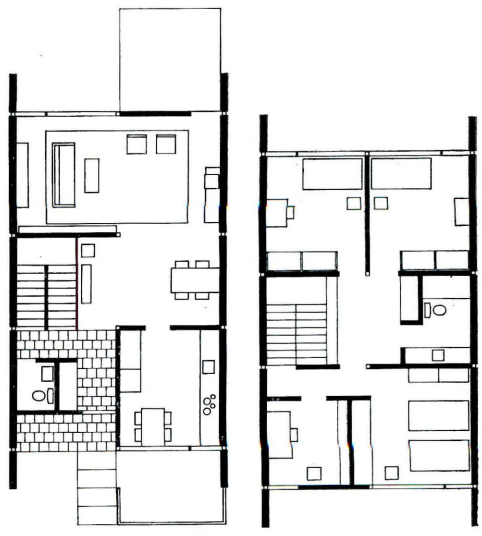


Study for Poolside Sun-shell, for the Tile Council of America, Inc.
Designed to be built of the same materials at the same time as a sprayed-concrete pool

Projects

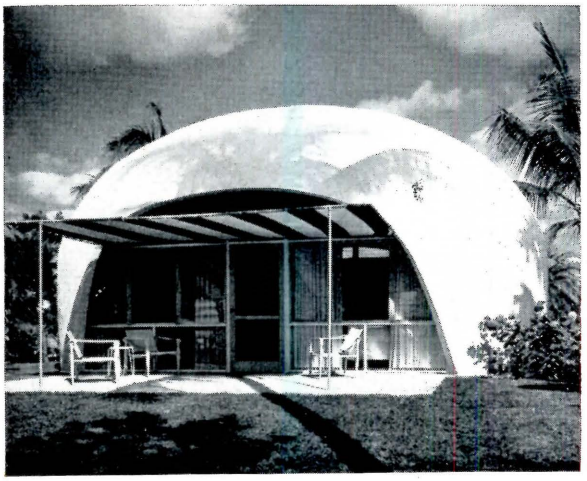
Current work in the Noyes office



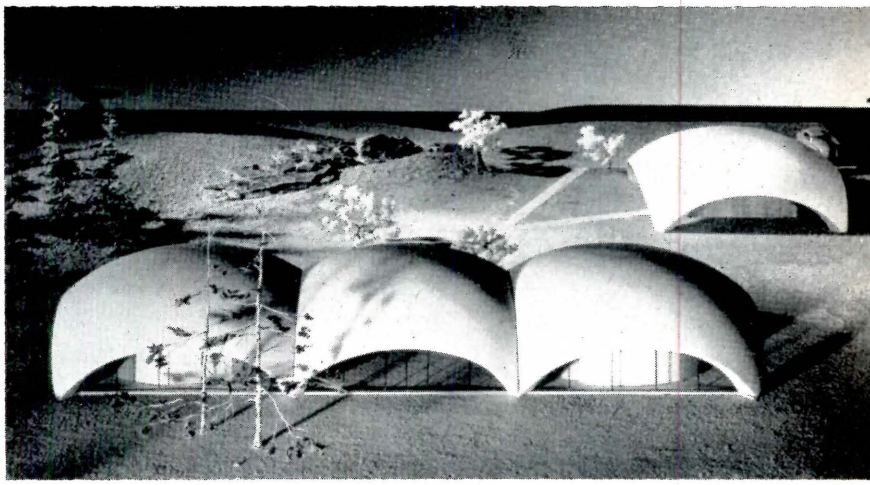


Study for Faculty Housing, Vassar College, Poughkeepsie, N. Y.

Ben Schnall



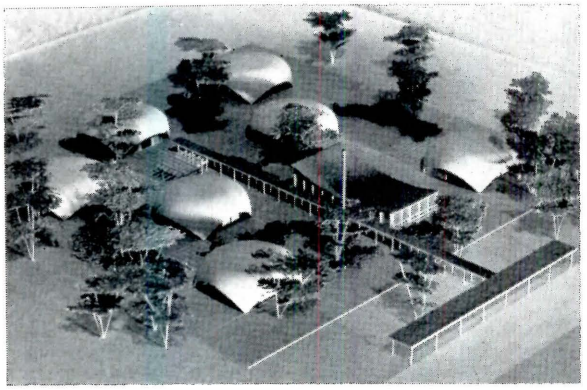
Original concrete bubble house, Hobe Sound, Fla.

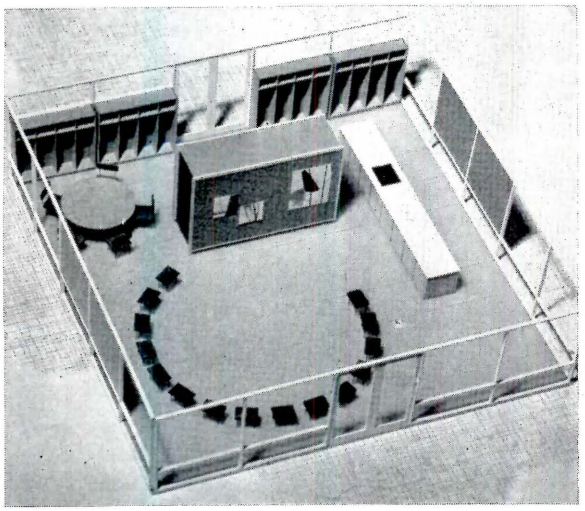


Developed as a larger house plus garage

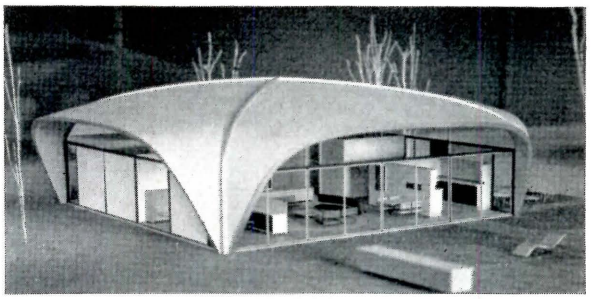
Thin Shell Development

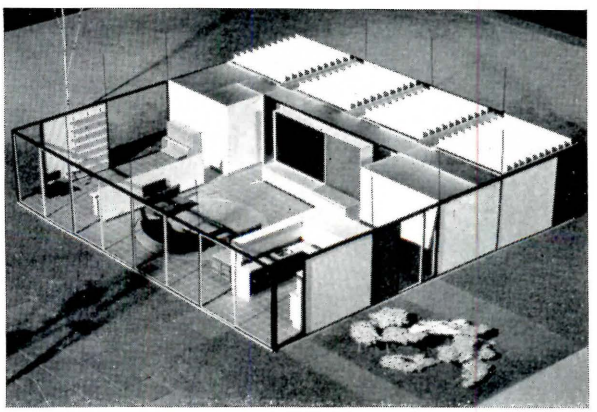
From concrete bubble-house to aluminum and plastic dream home





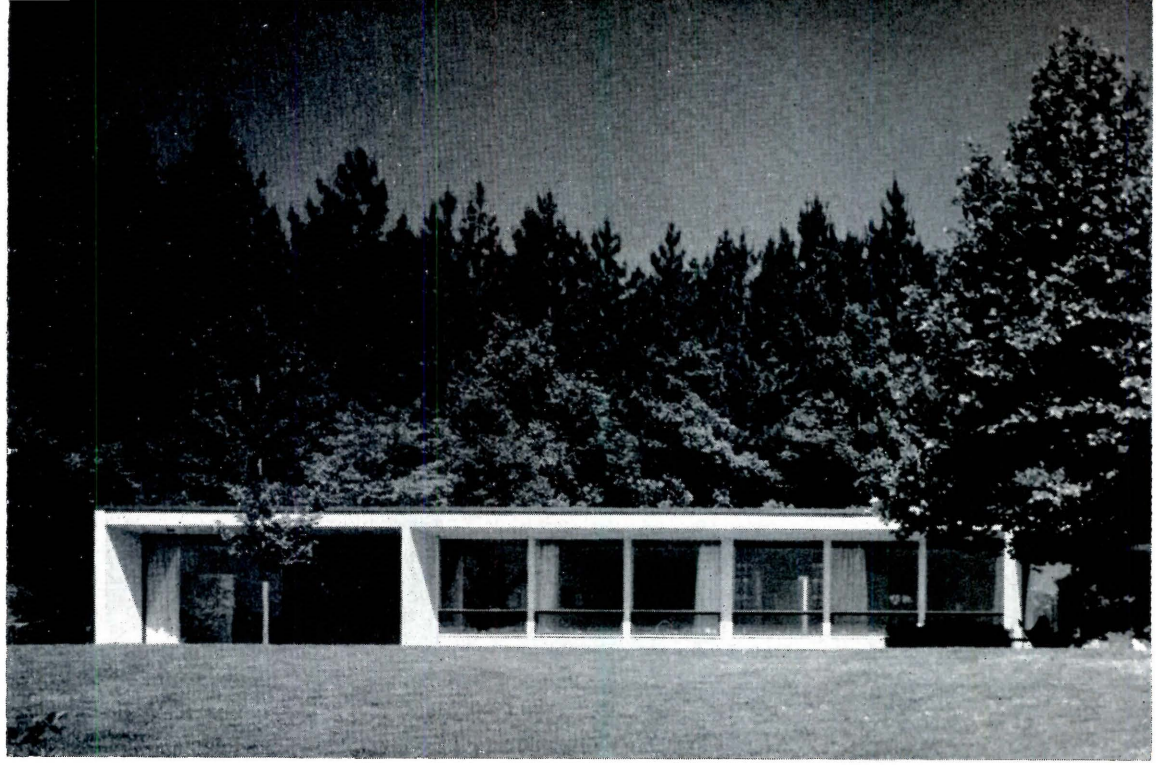
Adapted as a campus-plan school

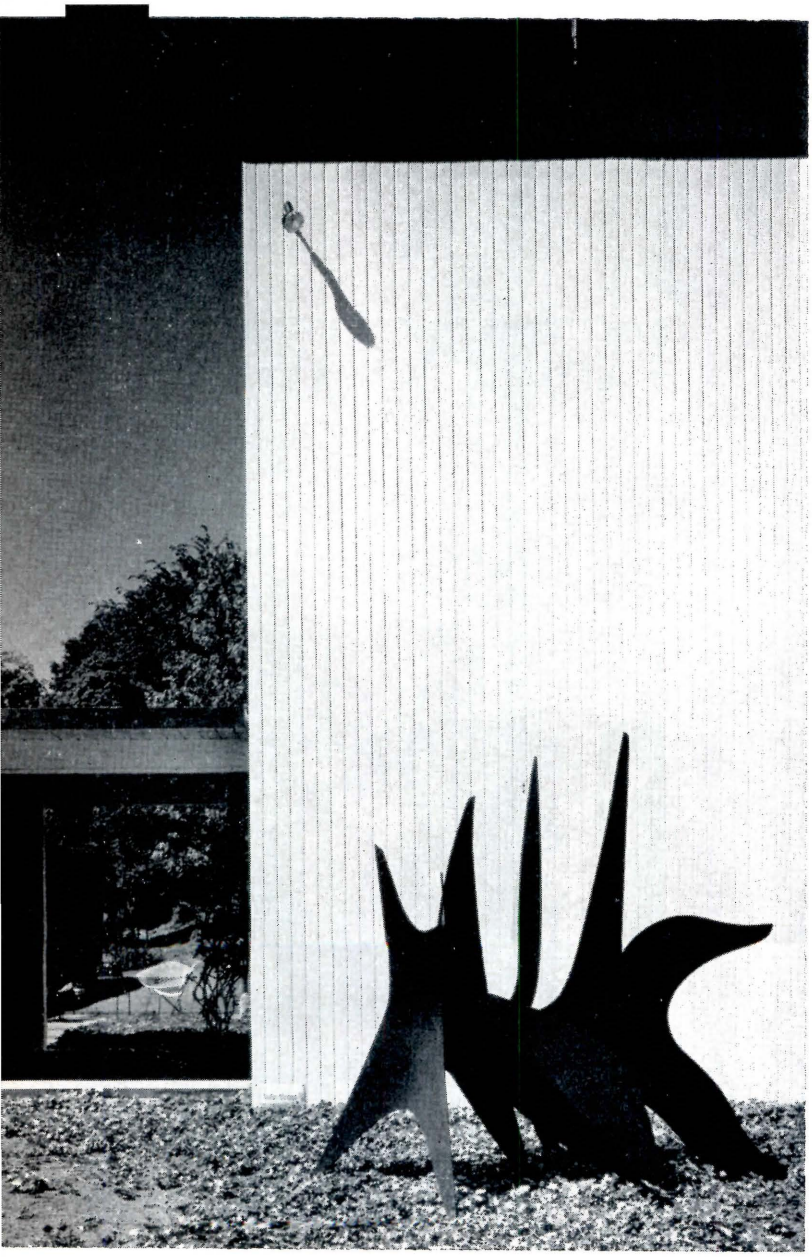




Evolved into the GE "Wonder Home of 1964"—aluminum ribs and plastic shells

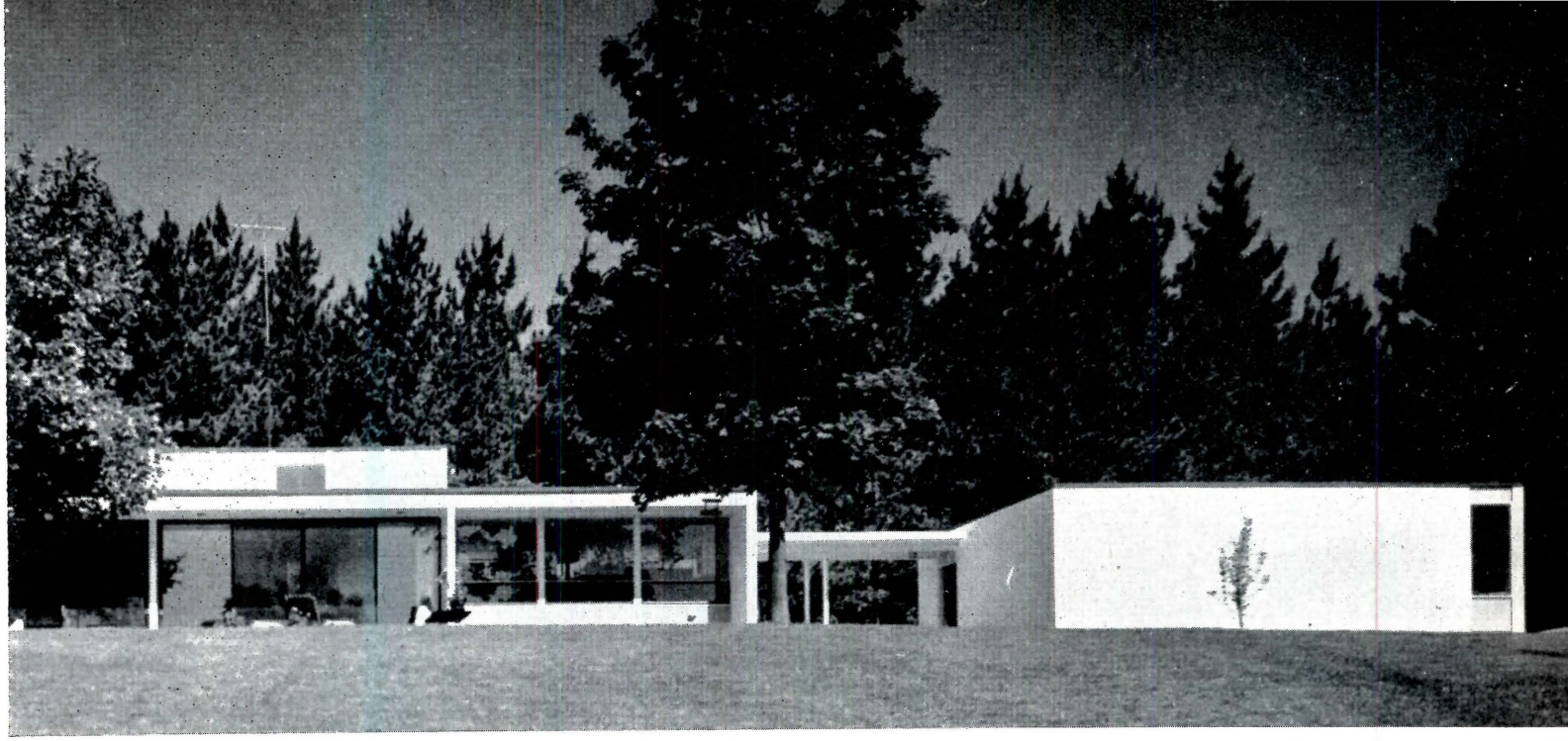
Eliot Noyes

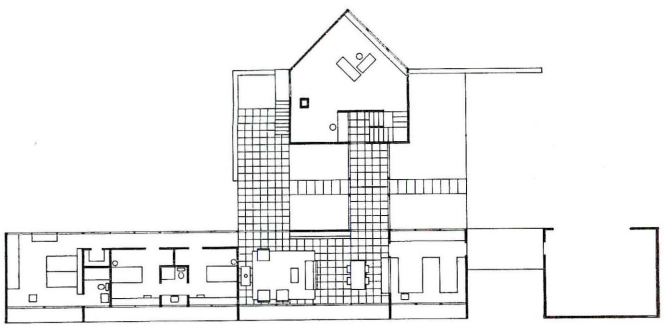




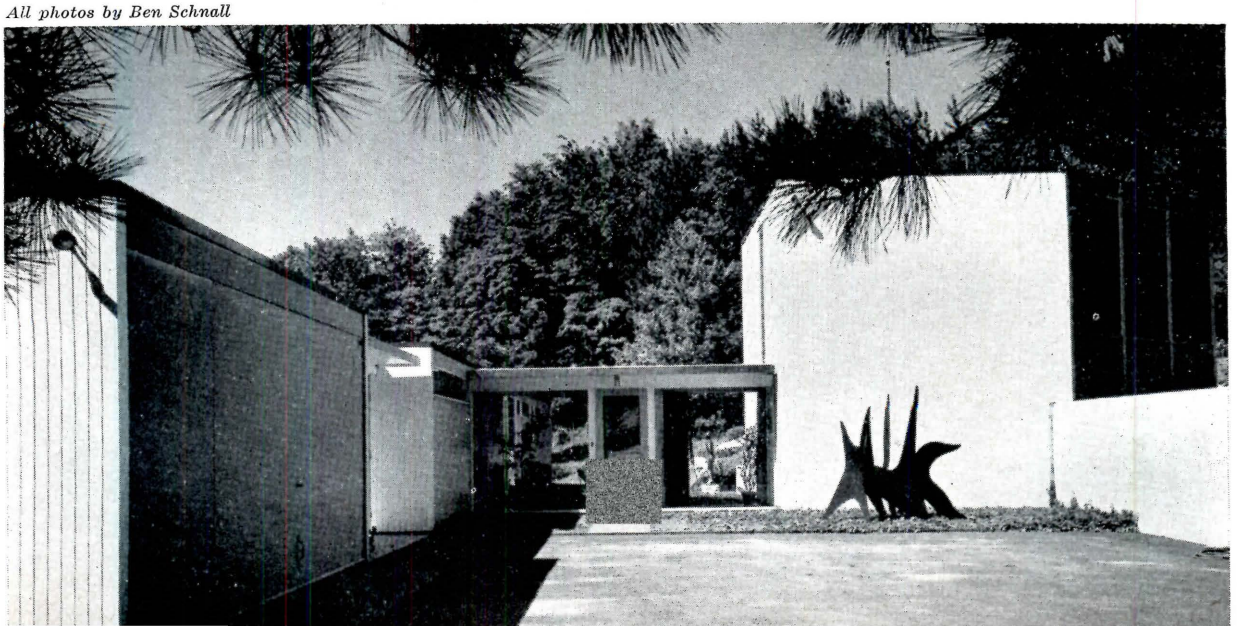
House

The Austin Briggs House, Redding, Conn. The problem of designing — for an artist — both living and working space in the country



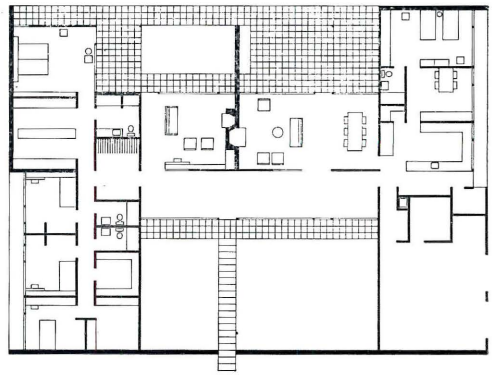


All photos by Ben Schnall



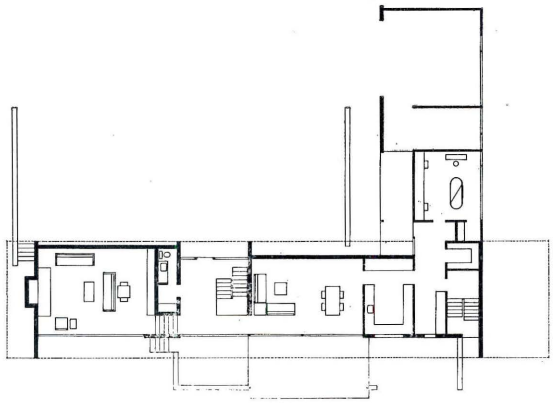
The Lee Ault House, New Canaan, Conn.

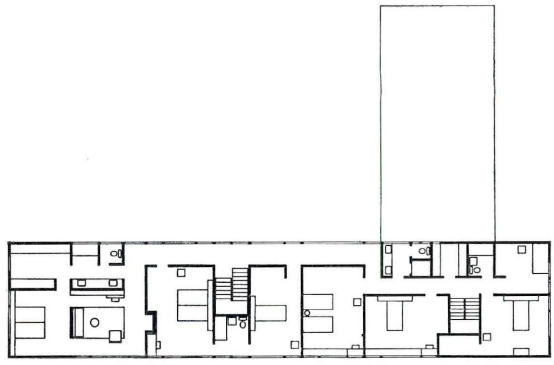
André Kertész—courtesy House and Garden



Four Houses

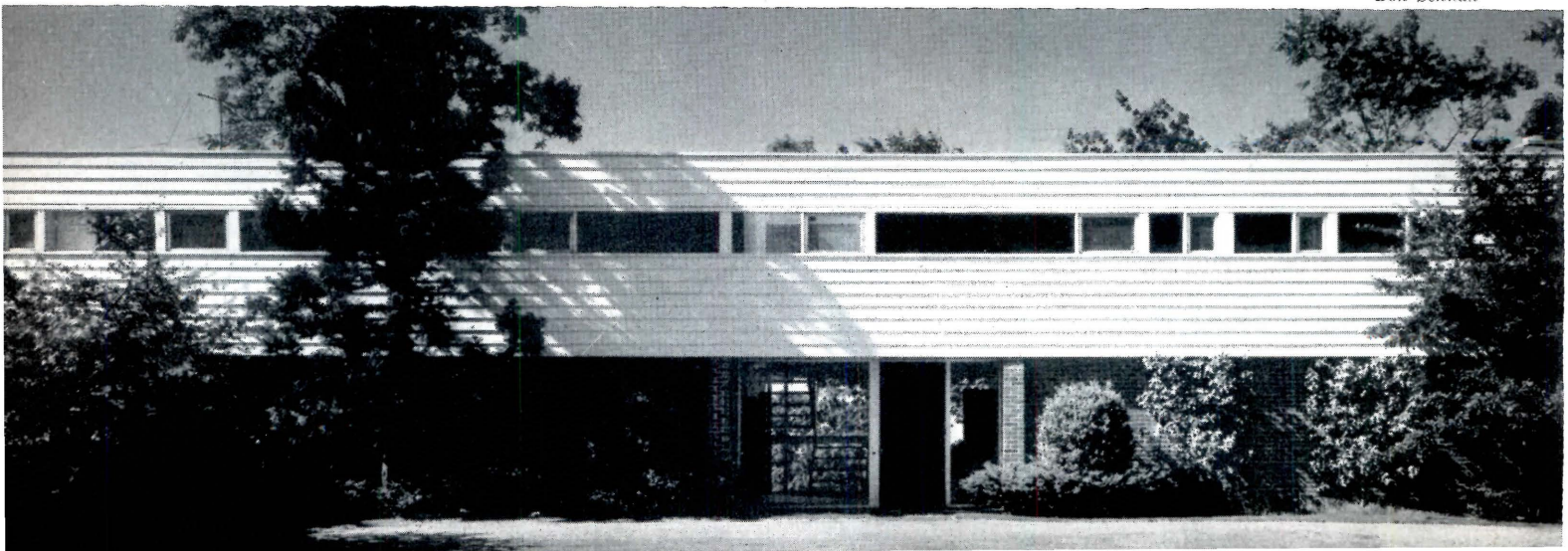
Of varied size, shape, and degree of formality—but having in common carefully articulated plan organization within clean, simple forms

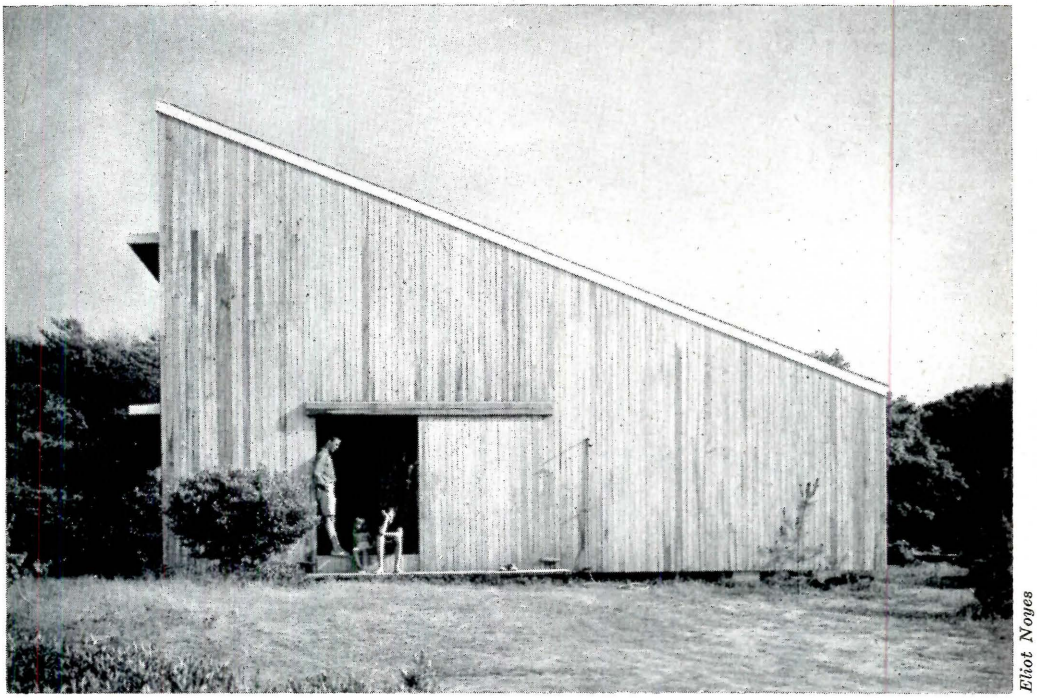




The John Hersey House, Fairfield, Conn.

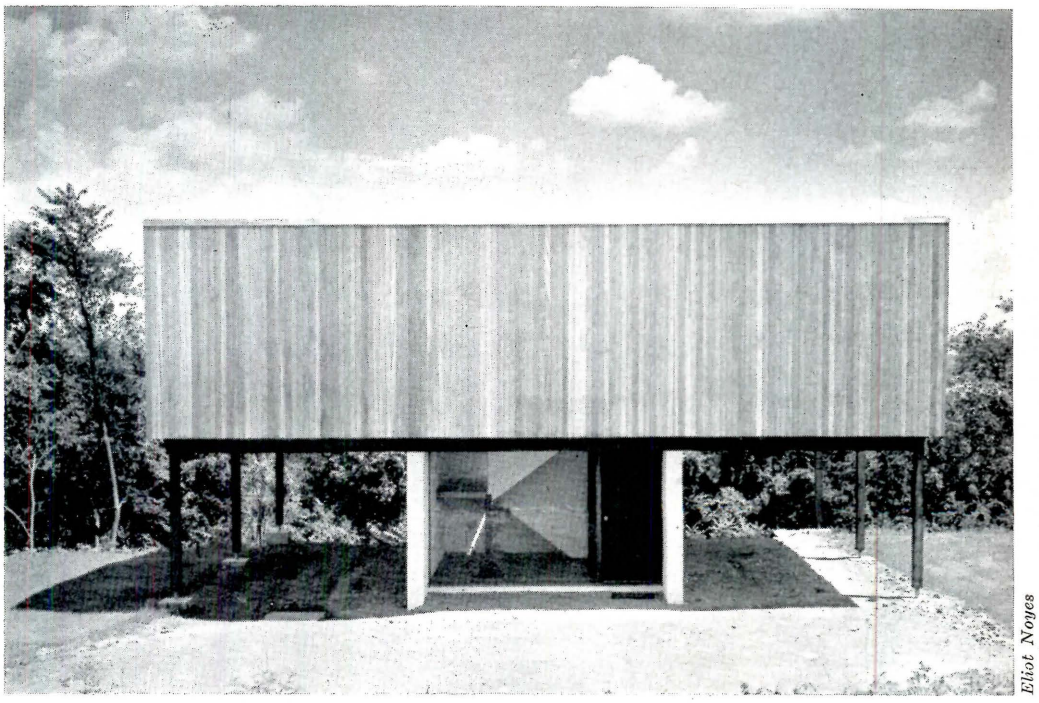
Ben Schnall





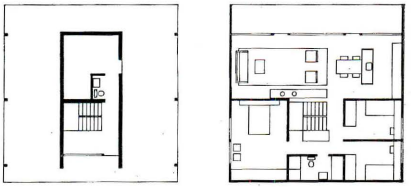
Eliot Noyes

Eliot Noyes Summer Home, Martha's Vineyard



Eliot Noyes

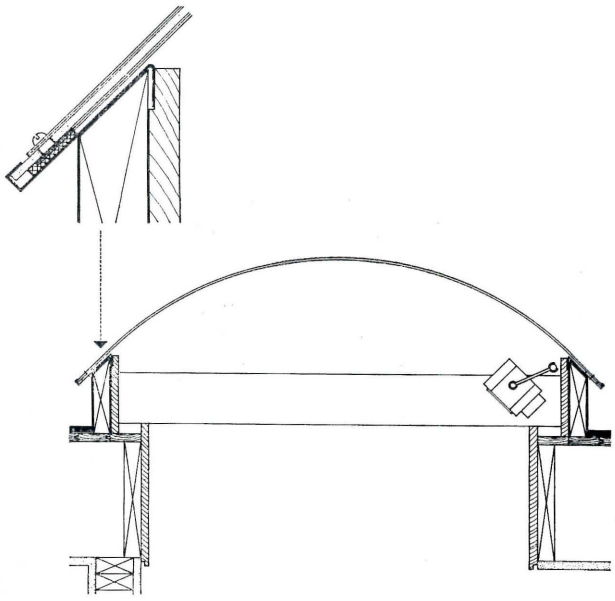
The Werner Buckholz House, Poughkeepsie, N. Y.

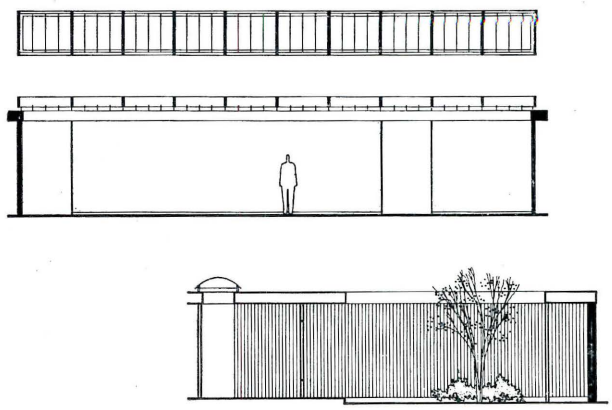


Eliot Noyes

Typical Details

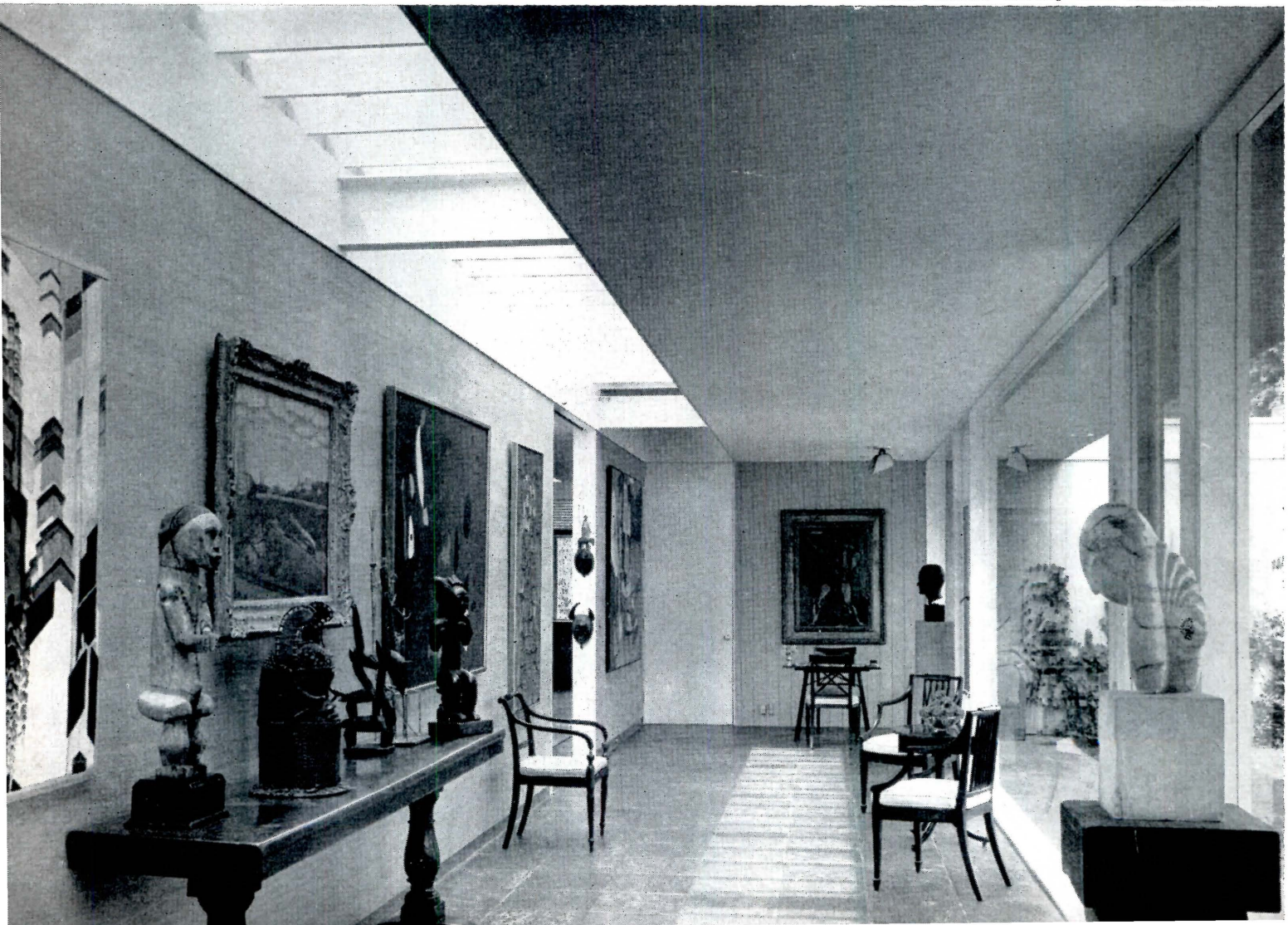
That hold both esthetic and constructional interest



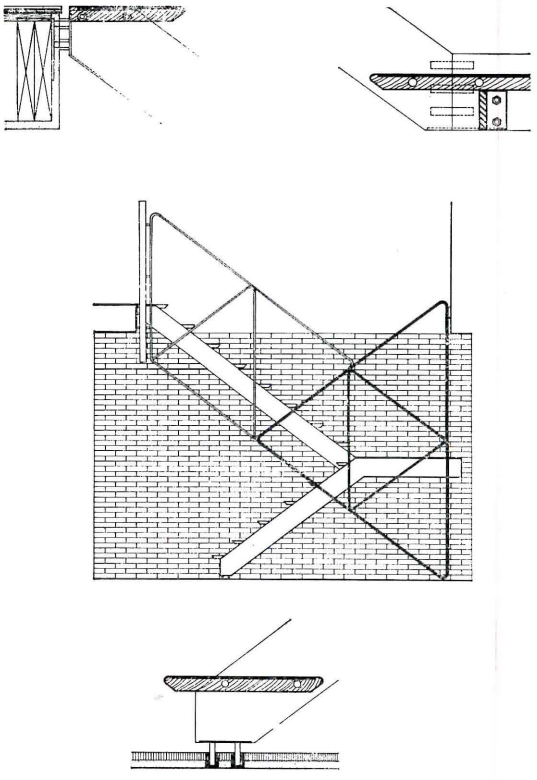


Skylight—Ault House; see page 174

André Kertész—courtesy House and Garden

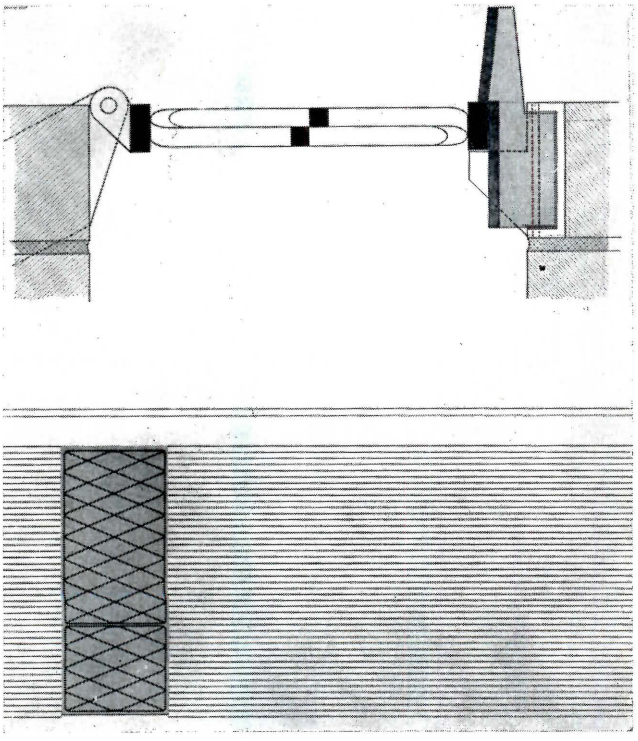


Ben Schnall



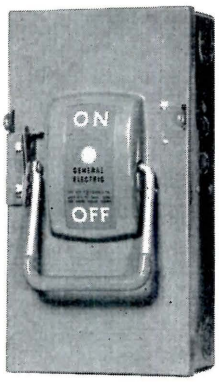
Stair—Hersey House; see page 174

André Kertész*—*courtesy House and Garden



Courtyard Gate—Ault House; see page 174

GE Photos



New circuit breakers and switches for General Electric soon to appear

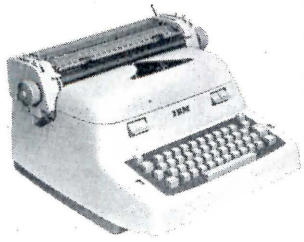
Eliot Noyes

Adjustabie earphones and five-language selector box for Eames cartoon film, IBM Building, Brussels Fair, 1958

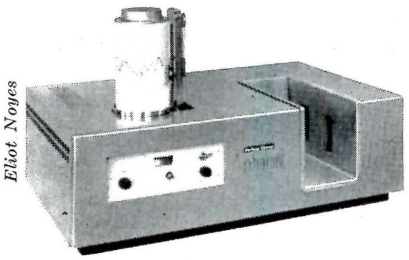
Industrial Design

Designing for industry offers to all architects a further field in which their talents can be employed. There are potential rewards to be gained in this area—both esthetic and in breadth of practice.

Noyes approaches industrial design from an architectural rather than an economic base. Styled obsolescence—and all it implies—is frowned upon. The emphasis is rather upon the consideration of the product in basic terms; much as though such an object had never existed before, and must be an expression of function, manufacturing processes, and materials in a form most suitable to such needs, operations, and stuffs. There is no idea that here is "this year's" or "next year's" model. The IBM electric typewriter—designed by Noyes some odd 10 years ago—is a case in point. This product has survived to become almost a classic of its kind, and is still going strong.



Noyes holds the further belief that industrial products cannot exist for themselves alone, but must be conceived as elements or objects within a building or planned milieu.

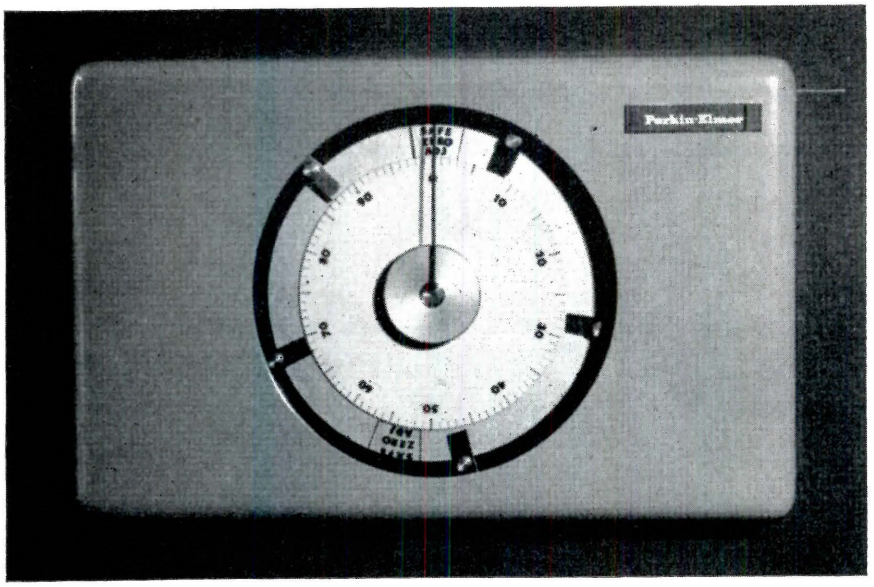


Eliot Noyes

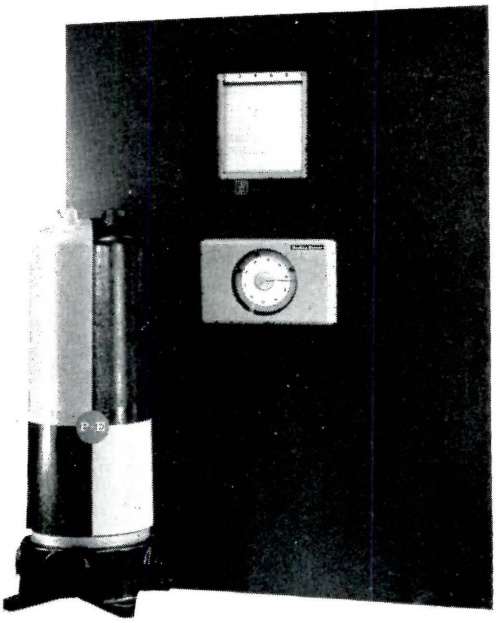
Infracord for Perkin-Elmer

Eliot Noyes

Auto-zoom TV camera lens for Perkin-Elmer

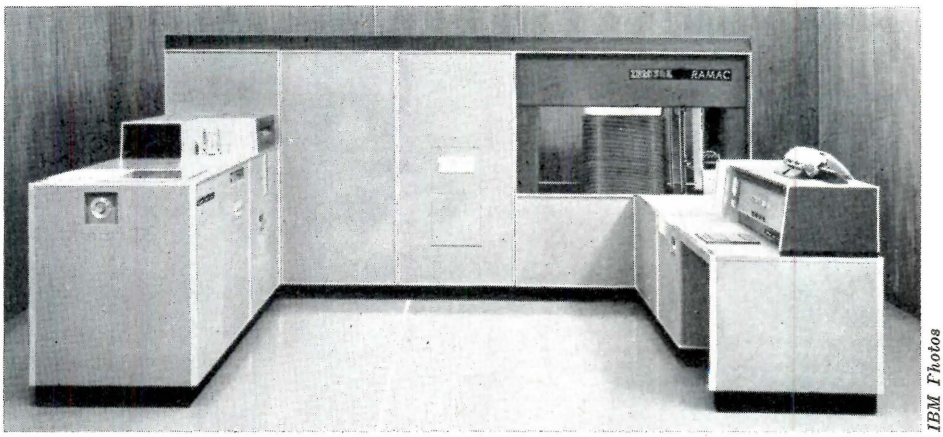


Eliot Noyes



Above, The Programmer for the (right)
Perkin-Elmer Process Vapor Fractometer

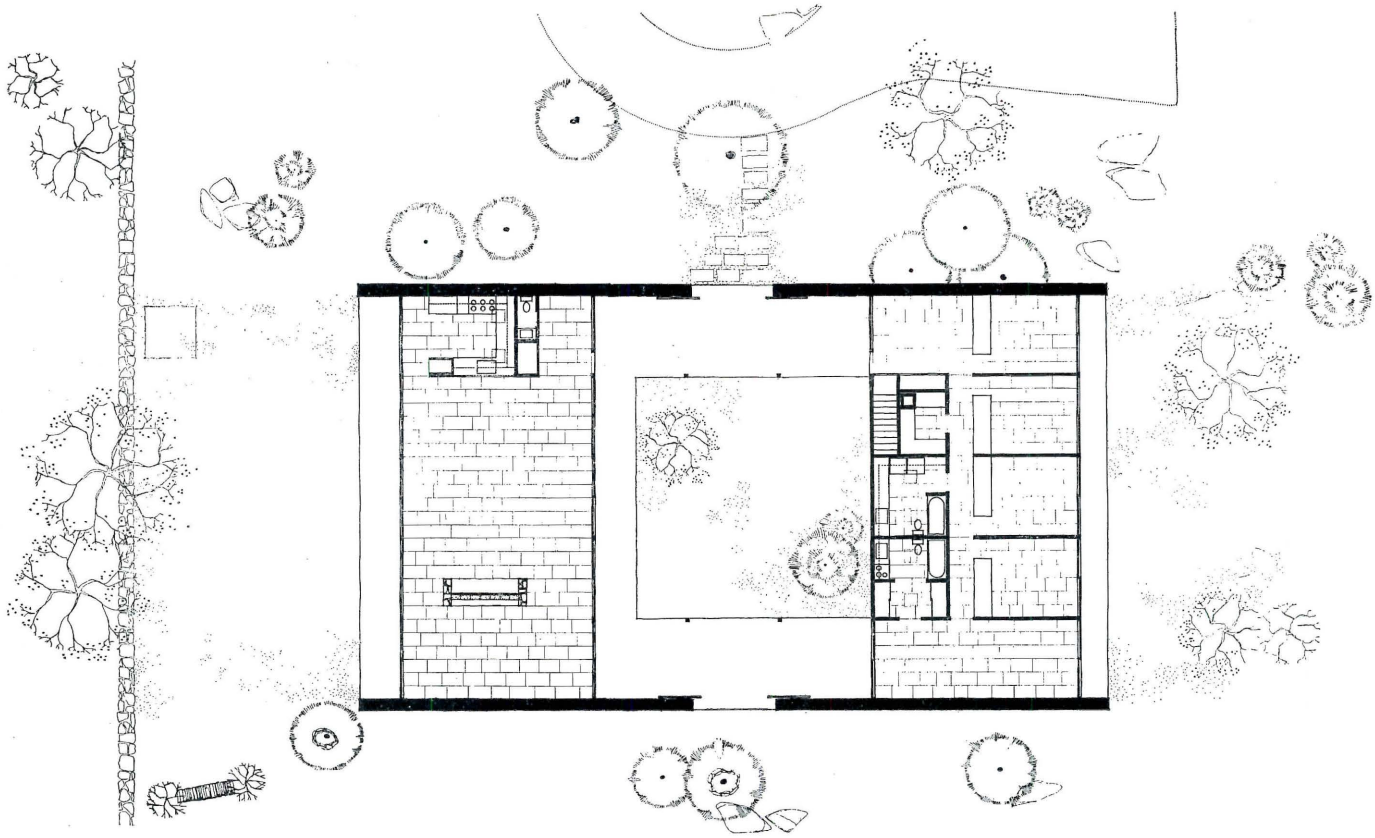
IBM No. 088 Collator



IBM Photos

Standard IBM Ramac. Joint project by Eliot Noyes, consultant director of design, IBM; Sundberg-Ferar, industrial designers; and the IBM design staff

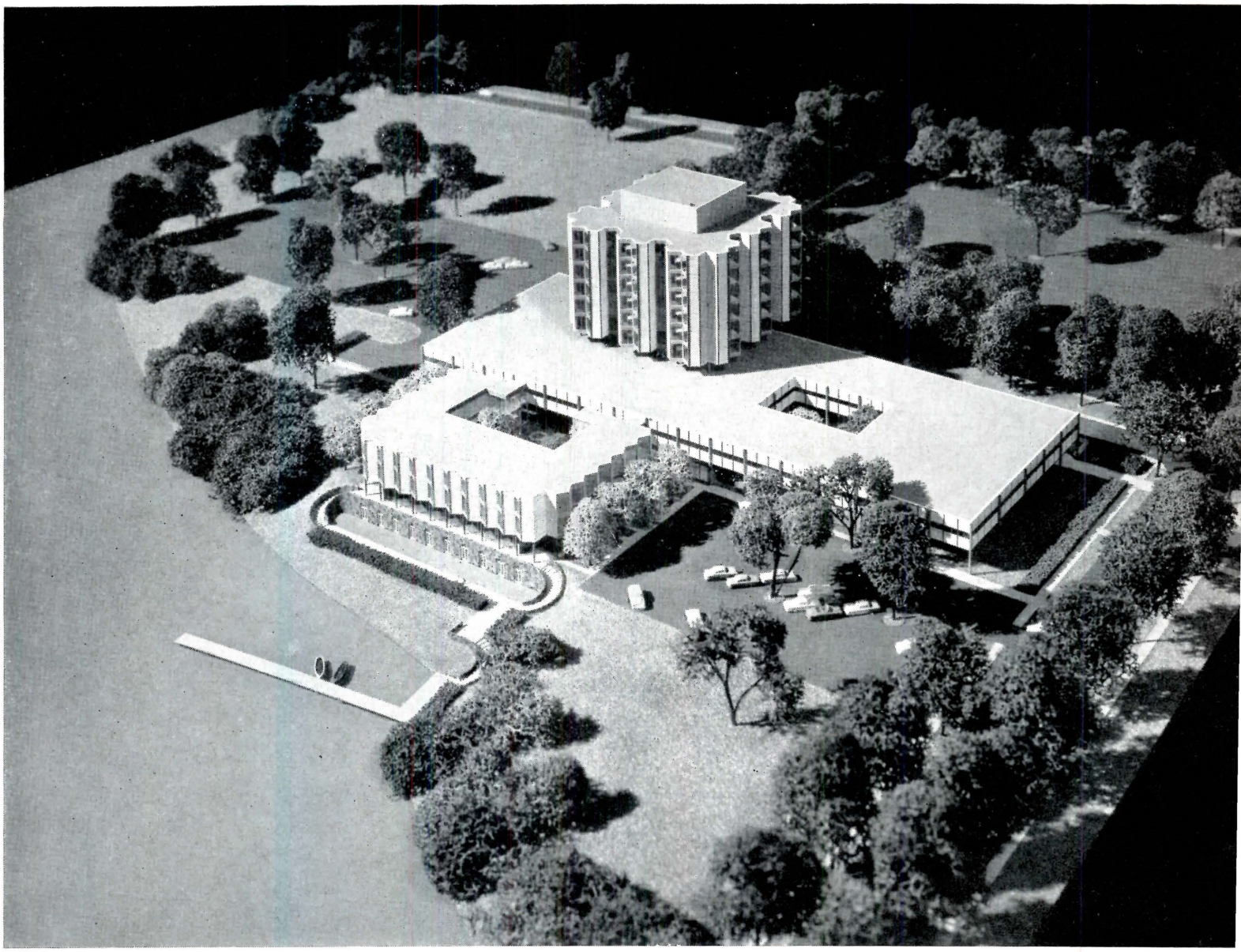
Eliot Noyes



The architect's own house in New Canaan, Conn., recipient of several awards (Record Houses of 1957, pp. 124-128)

© *Ezra Stoller*

HOSPITAL BASED ON RESEARCH



DAVIS MEDICAL FOUNDATION, MARION, INDIANA

ARCHITECTS: Harry Weese, Bruce Adams, John van der Meulen

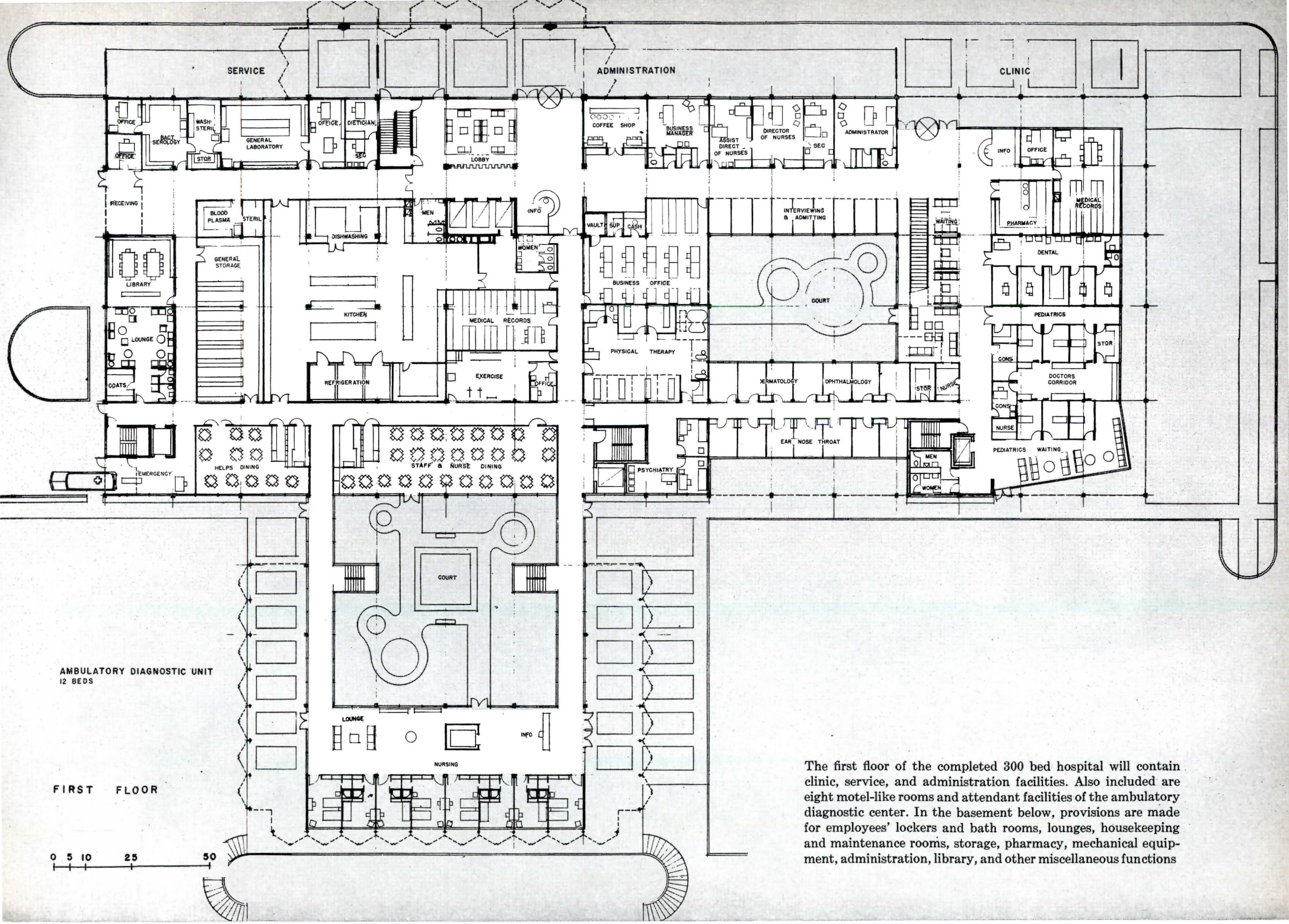
ASSOCIATE: John Dinkeloo

PLANNING CONSULTANT: Carl W. Walter, M.D.

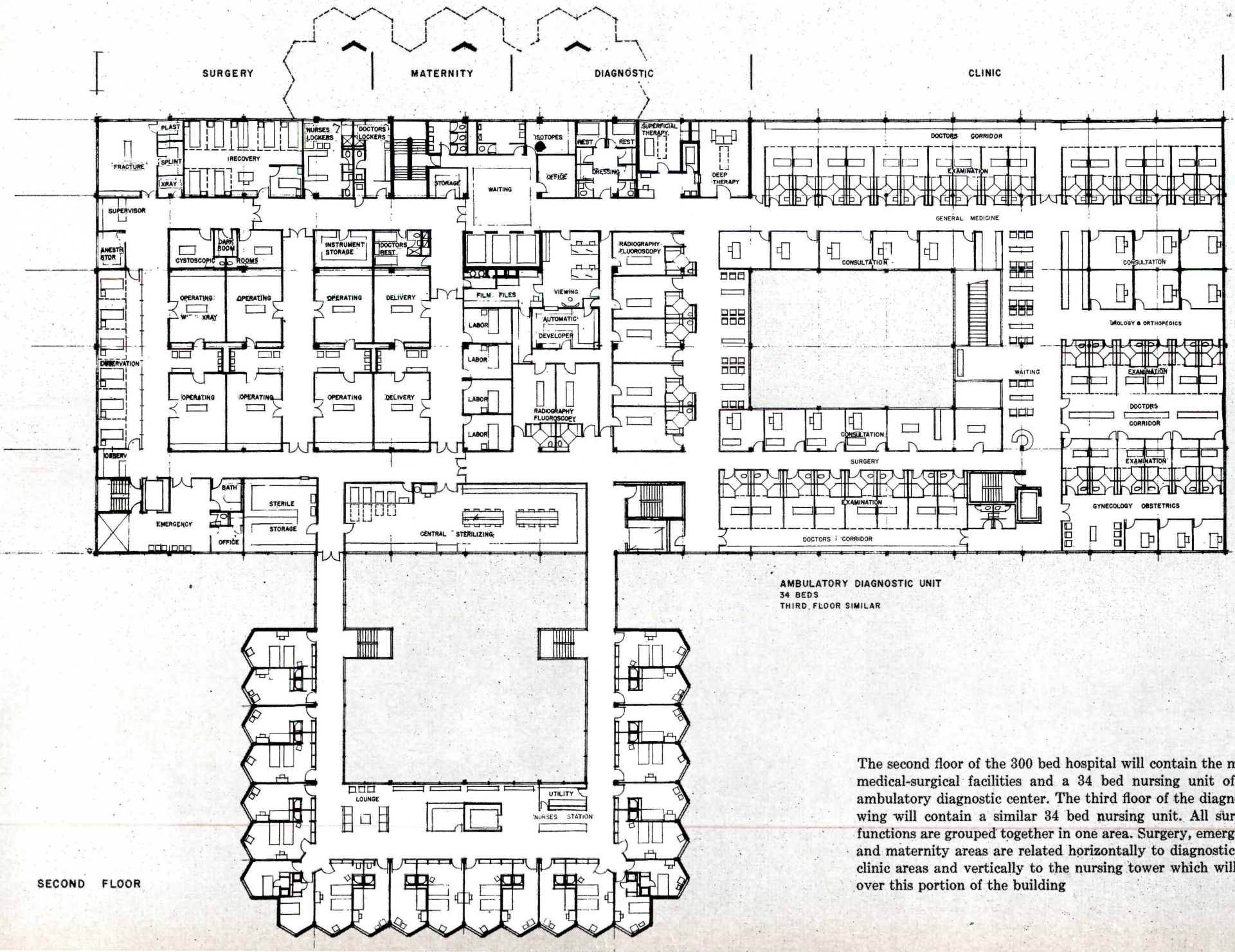
ADMINISTRATION CONSULTANT: A. C. O'Connor

STRUCTURAL ENGINEER: Frank J. Kornacker

MECHANICAL ENGINEER: Samuel R. Lewis



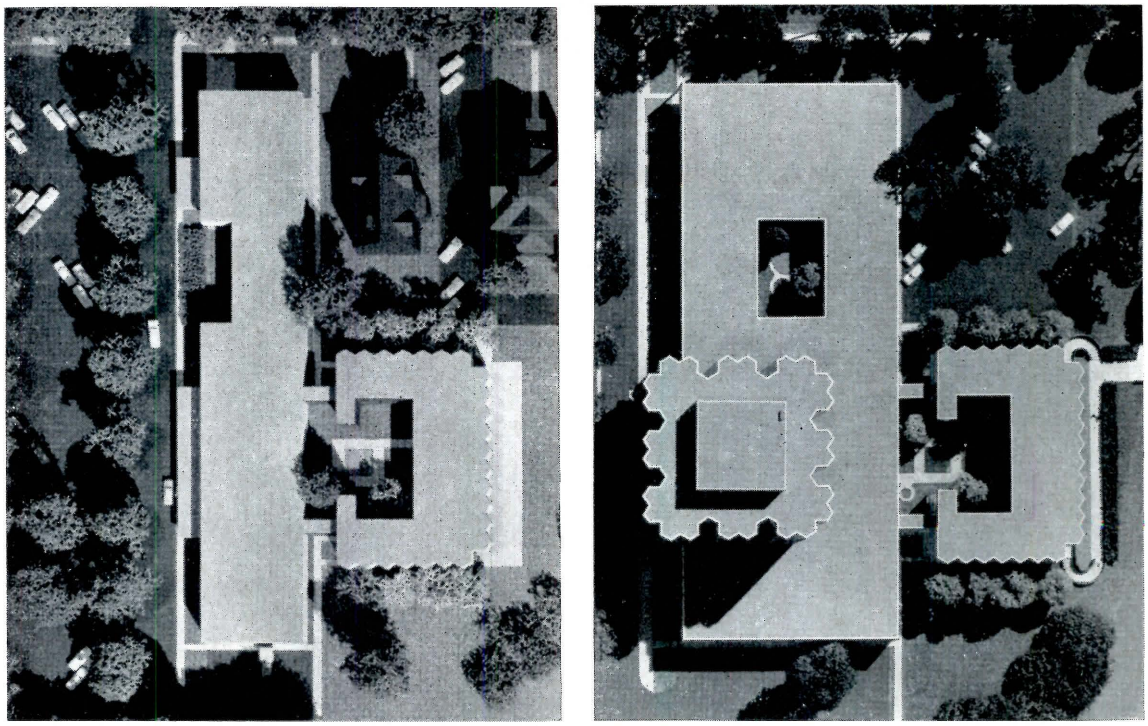
The first floor of the completed 300 bed hospital will contain clinic, service, and administration facilities. Also included are eight motel-like rooms and attendant facilities of the ambulatory diagnostic center. In the basement below, provisions are made for employees' lockers and bath rooms, lounges, housekeeping and maintenance rooms, storage, pharmacy, mechanical equipment, administration, library, and other miscellaneous functions



SECOND FLOOR

AMBULATORY DIAGNOSTIC UNIT
34 BEDS
THIRD FLOOR SIMILAR

The second floor of the 300 bed hospital will contain the major medical-surgical facilities and a 34 bed nursing unit of the ambulatory diagnostic center. The third floor of the diagnostic wing will contain a similar 34 bed nursing unit. All surgical functions are grouped together in one area. Surgery, emergency and maternity areas are related horizontally to diagnostic and clinic areas and vertically to the nursing tower which will rise over this portion of the building



Orderly growth of the hospital is made possible by the scheme for 80 beds, shown at the left, with provisions for eventual expansion to 300 beds with additional medical and surgical facilities at a later time. The final layout is shown at the right. Separation of the 80 bed wing and the future nursing tower will permit the additions to be made with minimum disturbance to the patients and staff using the 80 bed complex

THE PROBLEM:

The research and design for the hospital were sponsored by Davis Medical Foundation, Marion, Ind. Its president, Merrill S. Davis, M.D., says: "Remarkable advances have been made in medicine and its related sciences in the past fifteen years. As a result of the great strides, virtually every community in this country can have the very best medical care.

"The most apparent defect in this picture of medical progress is the failure to provide physical facilities which are economically feasible. The efficiency with which physicians and their assistants can function has been greatly handicapped by obsolete design. Patient comfort and provisions for expansion have often been overlooked. The need for an entirely new concept for the design, construction, maintenance, and operation of hospitals is apparent.

"The Davis Medical Foundation has sponsored a study of these problems. The work has been going on for five years. To confirm the opinions developed through the research, consultants were employed. This hospital design is the result of the translation of their studies into a concrete proposal."

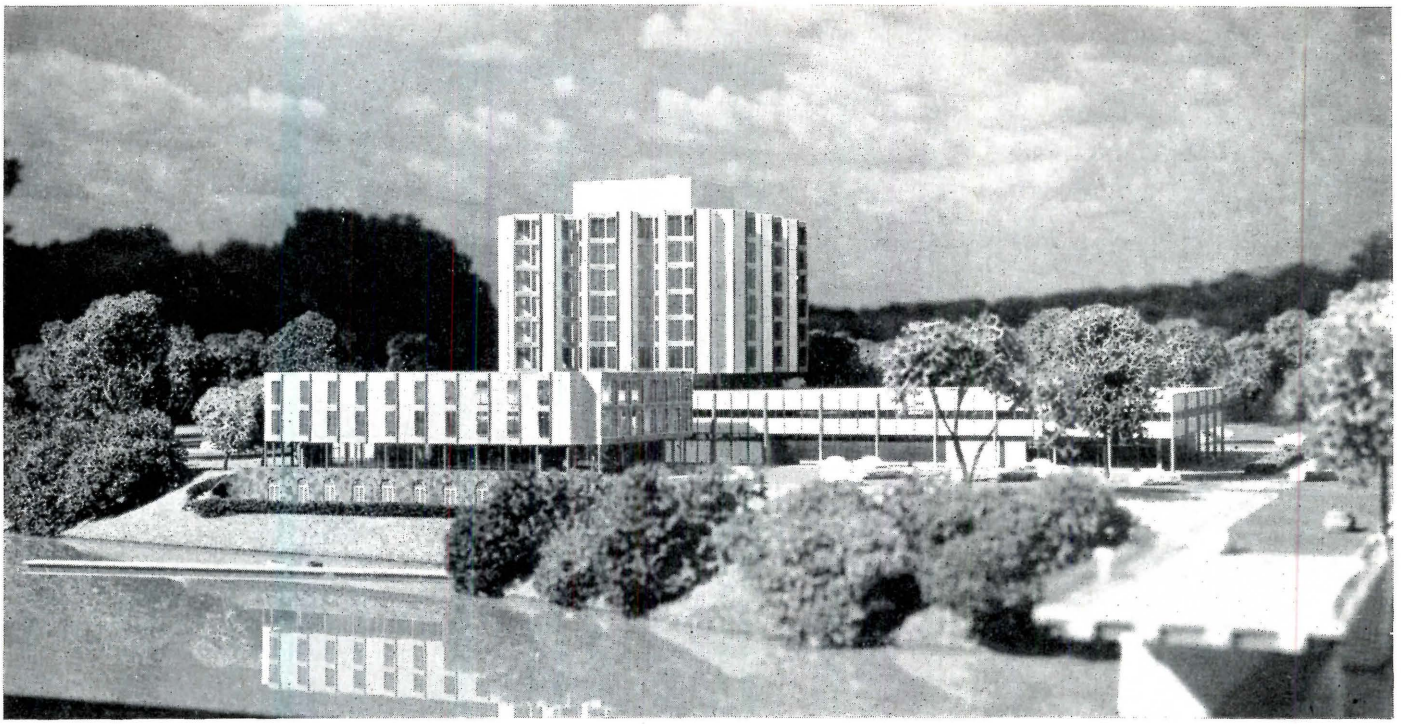
THE CRITERIA:

The Planning Consultant, Carl W. Walter, M.D., says: "Planning a general hospital for wage earners in a community has increased in complexity as medical care has improved due to the increase in medical knowledge and to appreciation of the role that personality plays in disease. Care of the patients as a whole can only be accomplished in an integrated unit where a patient's physician, his consultant specialists and laboratory technicians have the opportunity to study the patient under optimum circumstances and where all the diagnostic facilities are readily at hand. With fatigued, anxious patients who are not properly prepared for medical examinations, the medical staff is handicapped.

"The hospital care of the patient has undergone an enormous change in emphasis. Early ambulation, control of infection, the role of the psychiatric factors in well-being, and the maintenance of homeostasis introduce new concepts in hospital design. The elaboration of medical technology and the development of team nursing all bring changes to the design of a nursing unit.

"The ill patient is apprehensive and anxious. The stress stimulates defense mechanisms. Personalities change. Patients become irritable, suspicious, and defensive. They long for security; in most people's minds this means the seclusion of a private room. Here the patient can find protection from annoyances. The sick patient in our culture appreciates privacy because he is as loath to inflict unpleasantness on his fellow as he is unwilling to share others' miseries. Patients like to have their own needs determine the degree of privacy they wish. It is their need for their rest or sleep which is most important to them. In modern society, the physician-patient relationship can only blossom in privacy. The days of sharing confidences in a noisy ward with a blustering doctor have disappeared.

"Habits among patients are deeply ingrained. They like fresh, running water to drink; they want to wash their hands. Many have a deep revulsion against the use of the public toilet; they have learned to wash their hands after attending to their sanitary needs. A hospital that does not provide water at the bedside and individual toilets offends most patients.



Hospital Based on Research

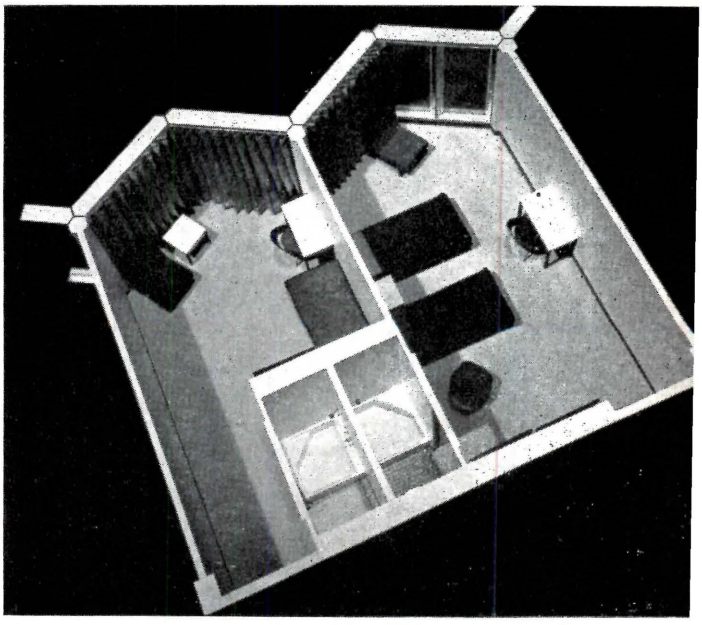
"As patients get better they like to roam. Exercise aids in bodily functions. Most convalescent patients are gregarious. They like to exchange experiences with their fellows; they like to eat together. Ultimately, they develop the urge to help others. This means that hospitals must provide Commons Rooms where these activities can occur under supervision."

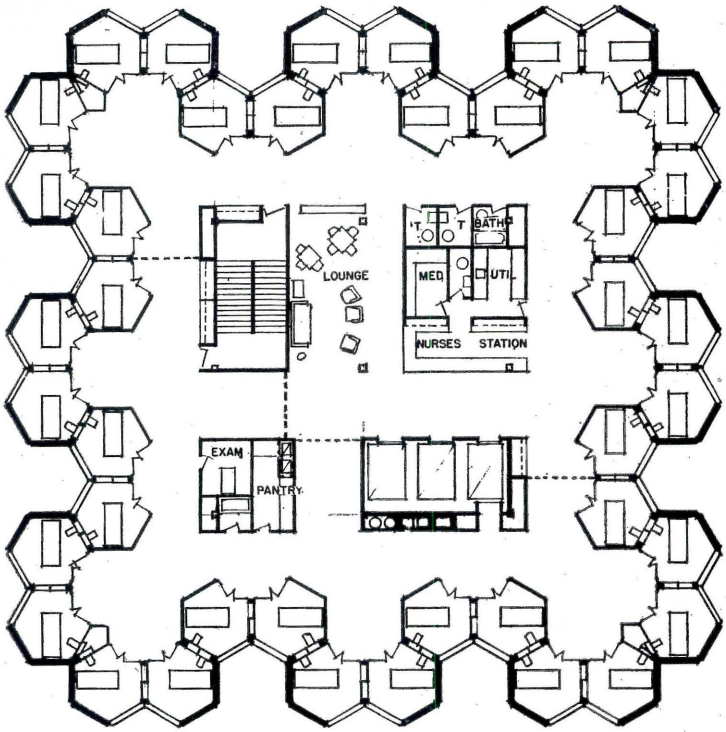
The architects, Harry Weese, Bruce Adams, and John van der Meulen and associate, John Dinkeloo, say: "The Davis Medical Foundation wanted to achieve a hospital design based on their long research, one which would solve the Marion, Ind., community medical problems in a manner consistent with advances in medicine, hospital organization and design, and long-range community planning. The Foundation's research indicated that there would soon be a need in the community for a general hospital of 300 beds to supplement the already overcrowded city hospital.

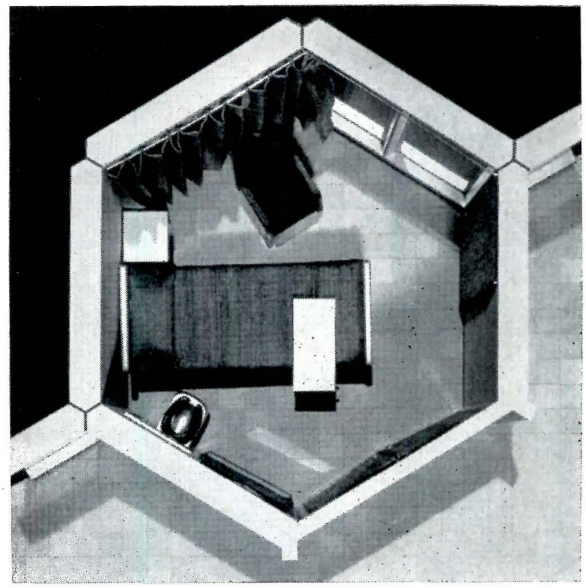
"The new hospital, planned to be located at the site of the existing Foundation clinic, is the answer to the needs set forth in the program developed by the planning team. The advanced ideas in hospital organization and planning of Dr. Carl Walter of the Harvard Medical School staff are responsible for many of the differences in this scheme.

"The hospital scheme assumes that the Foundation acquire more land at their present attractive site (as they have already begun to do) and that they maintain their practice in the existing facilities while the new hospital is under construction. The site is located on the north bank of a river a few blocks away from the center of the town. The only unusual site planning problem is the danger of flood which limits the lower level of the building to non-critical uses."

The eighty rooms of the original construction, shown below, will be converted to the use of ambulatory or convalescent patients after construction of the nursing tower. These rooms are like motel or hotel rooms, each with a private bath, parking nearby and a view of the river. Patients here will ordinarily walk to the dining rooms, recreation areas and medical facility spaces. Many patients will be able to come and go at will when not being treated or examined.







Each floor of the tower contains 40 beds in private rooms. The planning team felt that this was the optimum size for a nursing unit. Each room is equipped with a built-in toilet-lavatory at the bedside. These fold into the wall when not actually in use

THE SOLUTION:

The planning consultant, Dr. Walter, says: "The design joins a group practice clinic with diagnostic and consultation facilities, a motel-like ambulatory diagnostic unit, and a hospital to provide the facilities for the physician to care for his patients under ideal circumstances. Ample parking space assures an unharrassed arrival, the ambulatory diagnostic unit gives opportunity for overnight preparation and collection of laboratory samples in the resting state, and private consultation rooms are an enormous aid in arriving at a proper diagnosis. Well-equipped examining rooms, where consultation with specialists is easy and where diagnostic procedures can be carried out quickly by the interested physician, save the patient time and inconvenience and add to the ease of caring for patients by supplying the necessary information while the physician's interest in that particular patient is at its height.

"The ambulatory diagnostic unit accommodations also provide minimal care facilities for patients who are recovering from a procedure, those who are being rehabilitated in the physiotherapy department, or chronic care patients who return periodically for observation.

"The design gives expression to patient needs by providing well-equipped, small, private rooms. The hexagonal-shaped rooms have working spaces at the sides of the beds, provide running water within easy reach of every patient, and enable him to use the toilet, adequately screened by a sturdy partition. Odor and noise are eliminated by proper ventilation and acoustic treatment. The maximum of privacy is afforded by the location of the bed. The properly placed window permits the patient to see the landscape without being exposed mercilessly to the sun or light.

"Nursing care is facilitated by shortening the path between patients and the source of supply by grouping the hexagonal-shaped rooms about a short working corridor. The doors to each room are located so that the nurse can readily inspect each patient without disturbing him. In this way many patients can be checked by nurses while en route to another destination. Isolation of the nursing floors from the remainder of the hospital insures quiet and permits exploitation of mechanical services in providing food and care for dishes.

"Functional grouping of the high traffic areas, such as X-ray, physiotherapy, kitchen-dining areas, laboratories, operating and delivery rooms, and clinics on two floors, permit concentration of hospital activities in a manageable unit where expansion or change, wrought by progress, can be accomplished without disturbing the nursing areas."

The architects say: "Noteworthy qualities of this hospital include integration of the various functions of a complete medical center, separation of seriously ill patients from convalescent or ambulatory patients, consolidation of surgical functions in one area, nursing units of 40 beds each grouped around nursing service cores, the motel-like ambulatory patients' rooms, and provision for orderly expansion.

"The clinic areas relate to diagnostic facilities which in turn relate to surgical and nursing areas in a close and direct way. Administration areas are grouped at the entrance between the clinic and nursing elements. Service areas are related directly to their uses.

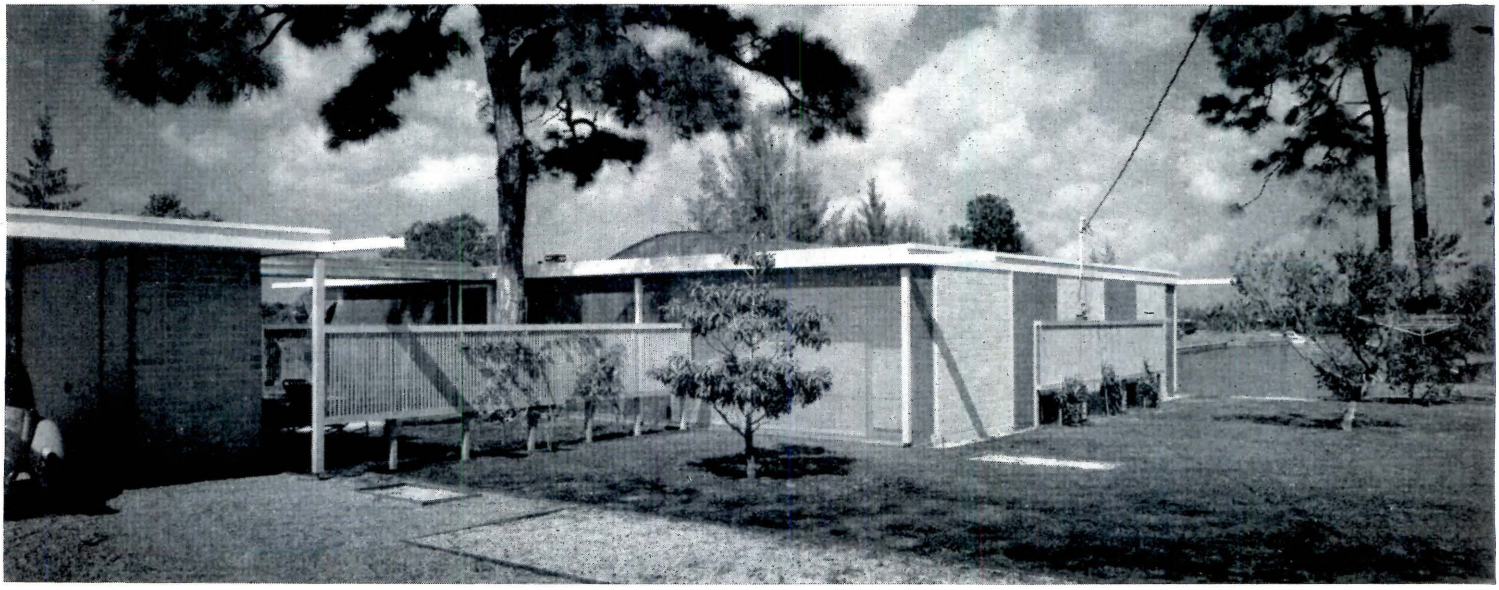
"The nursing floors contain the most apparent changes from existing standards. All seriously ill patients will be provided with single rooms grouped together to allow maximum supervision with minimum travel by the nurses."

Alexandre Georges

8 HOUSES

Designed and Built With Budget in Mind

Alexandre Georges



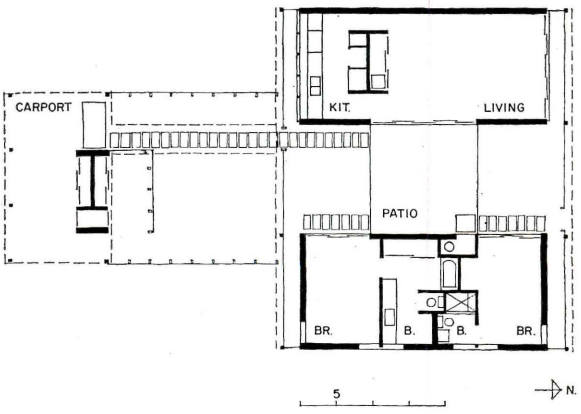
1. Paul Rudolph, Architect

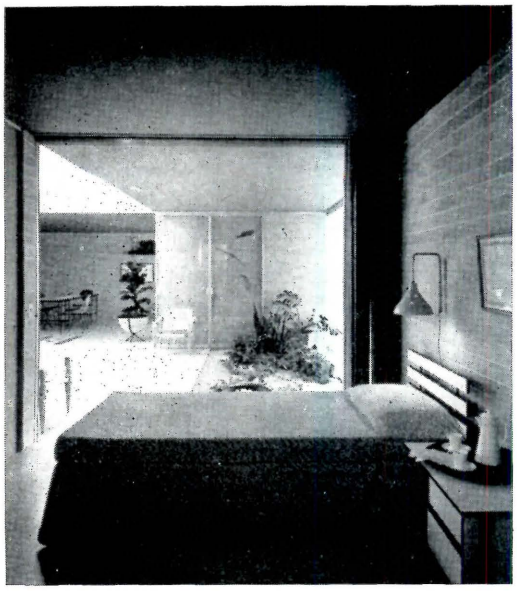
Venice, Florida. Mr. and Mrs. J. V. Taylor, Owners

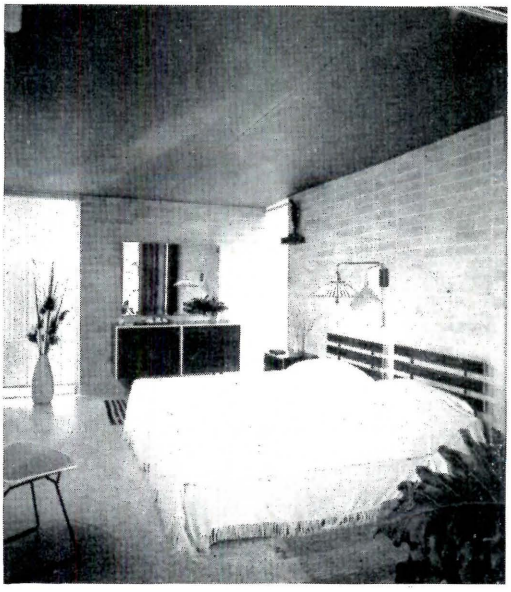
A rectilinear plan, the use of relatively inexpensive materials, and especially the fact that the owner, in the words of the architect, "knew enough about human nature and building to serve as his own contractor," kept the cost of this house down to approximately $17,000 or $18,000.

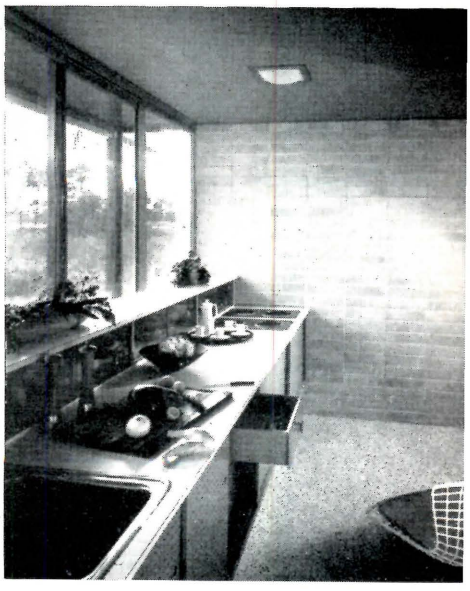
The house is not large, but has a seeming spaciousness and a very real openness due largely to the patio at its center. This patio is open except for screening and has a domed roof of laminated ribs, and ¼-in. plate glass. Gravel walkways inside the screening along two sides of the house extend the space visually and make it possible to keep windows and doors open in inclement weather.

Unusual privacy is achieved by the unbroken long wall of the living room and the tomato-stick screens outside the bedroom doors and along both sides of the covered walk to the carport. Construction is wood frame on concrete slab with built-up roof; walls are masonry block.



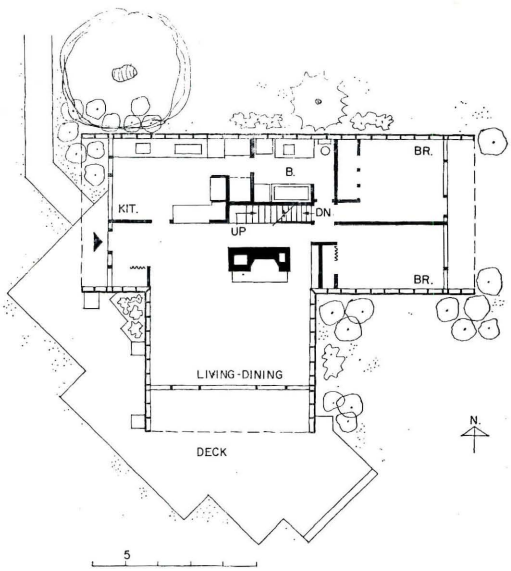






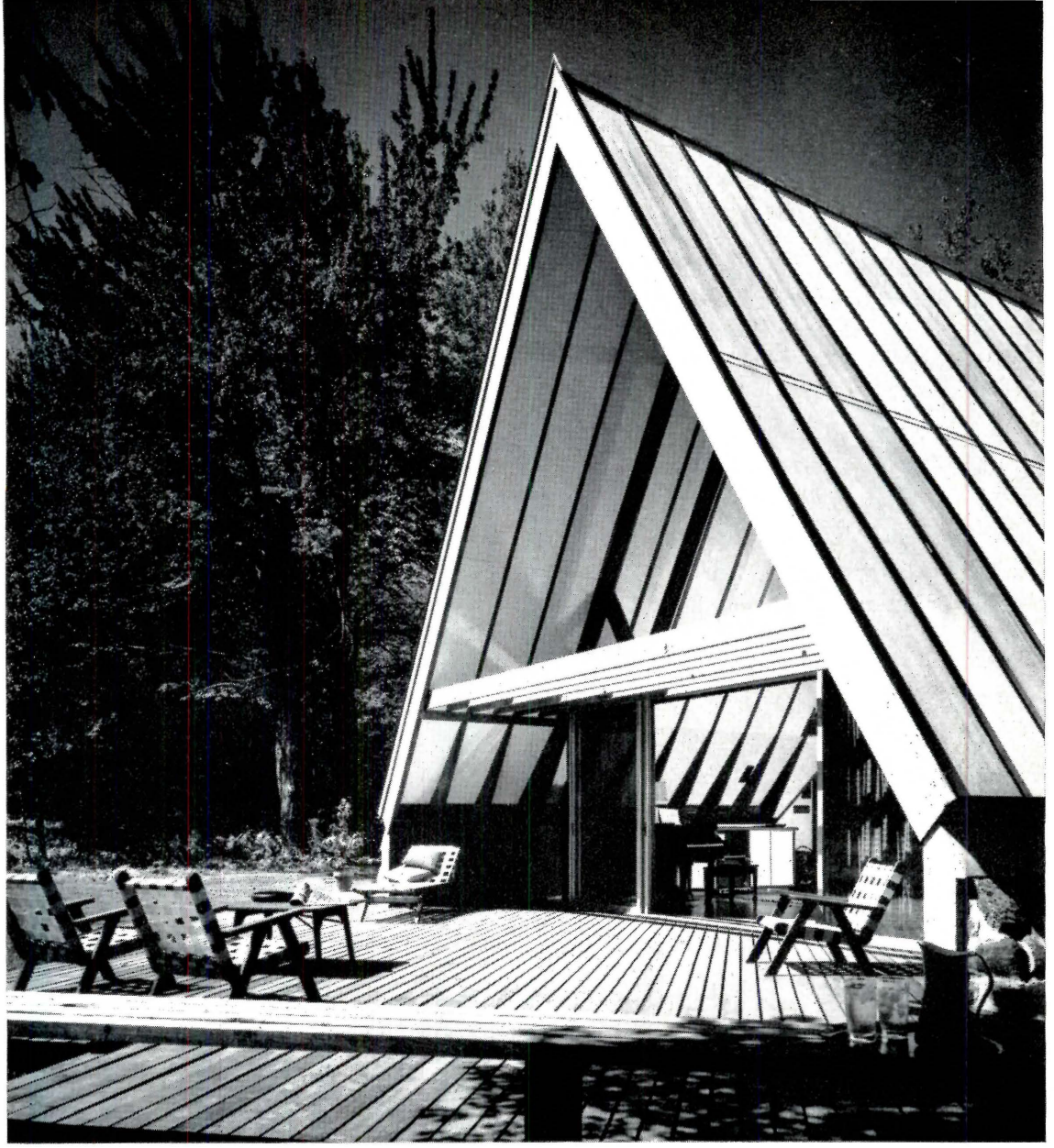
2. Thomas C. Babbitt, Architect

Litchfield, Conn. Thomas C. Babbitt, Owner;
Albert R. Treva, Contractor;
Nelva M. Weber, Landscape Architect

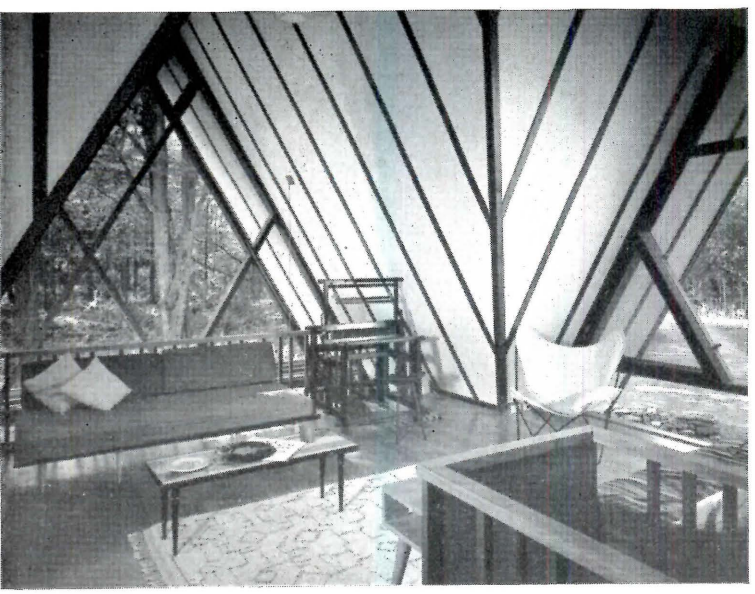


"This house," the architect explains, "is an attempt to find a form that is economical, and that feels warm and closed-in at night and in cold weather and open and spacious in the warm daylight; in short, a house for the New England climate. The roof that reaches almost to the ground encloses the space strongly, relieved and lightened in the daytime by the small glass lights at the eaves, yet giving a sense of warmth and shelter, especially at night, with the natural redwood trim and battens inside. The glass gable ends, on the other hand, 24 ft high, bring light from three sides into the main living space and make of it a light pavilion during the daytime. Added advantages of the height of the space are summer coolness and the feeling of space for large parties, although the room is comfortable in size for two as well.

"The heating system is a forced warm air system with outlets in the floor beneath the glass. There is a small cellar, for mechanical equipment only, and the rest of the house is built over an insulated crawl space which is used as a warm air plenum. This lets some of the heat into the living space through radiation from the floor, which is therefore warm in spite of the high ceilings. The air return is near the ceiling in all cases." Cost was $27,962 excluding site work and services, or $13.41 per sq ft.



Joseph W. Molitor

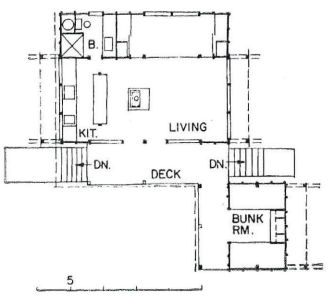


3. George Matsumoto, Architect

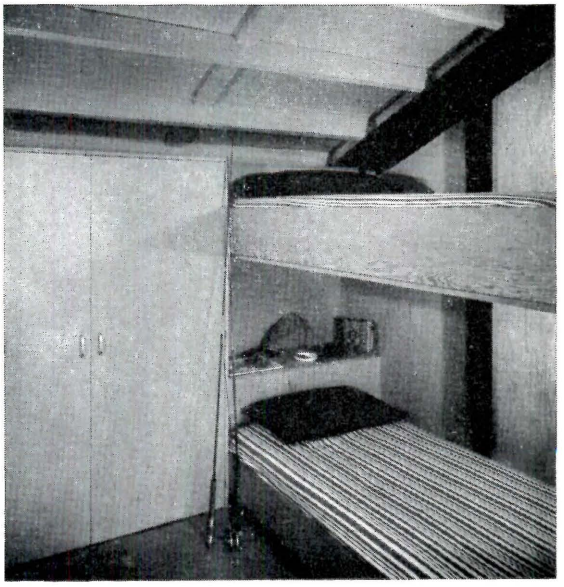
Raleigh, North Carolina.
George Matsumoto and Frank Walser, Owners;
Frank Walser, Contractor; Interiors by Woman's Day.
Designed and built for Woman's Day
and the Douglas Fir Plywood Association

This compact and versatile vacation cottage was designed for *Woman's Day* magazine and the Douglas Fir Plywood Association as a "build-it-yourself" project to cost about $1500. The actual cost of the pioneer model shown here, however, was $7040.73—far above the original estimate because of the rush nature of the job (the magazine deadline) and various unexpected set-backs. Readily available materials had to be used because of the time factor: a better grade of plywood than planned, for example, ¾ in. thick instead of ⅝ in., and lumber which had to be trimmed down to the required lengths. The experimentation in painting and finishing which is almost inevitable in a pilot model boosted the cost of these items way above normal. To bring water to the site it was necessary to dig an unusual 144 feet, and plumbing costs were further increased by the need of a septic tank which ordinarily would not be in the budget.

"The cabin is dictated in design," the architect says, "by the plywood module; it has a steep roof to shed water easily, and the bunkhouse unit is the flexible unit which can be varied in design to meet varied needs. The bunkhouse is purposely detached so that children can go to sleep ahead of the adults and be reasonably separated from noise and light in the living unit." The cabin is braced in both directions for structural strength, and raised off the ground for protection against insects and moisture.



Joseph W. Molitor



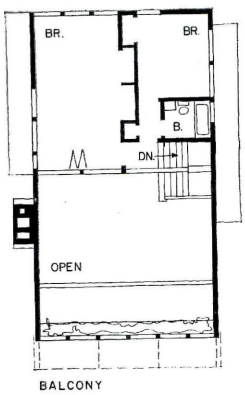
4. Olindo Grossi, Architect

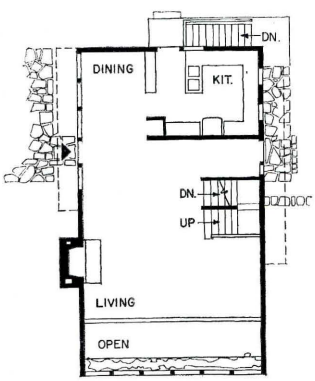
Weston, Conn. Mr. and Mrs. Eugene G. Reid, Owners; William McGuiness, Engineer; John Bross, Contractor

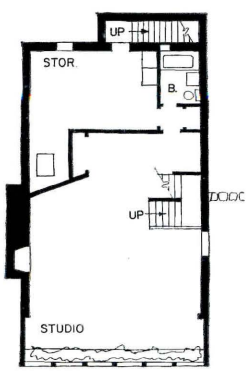
"Economically this house worked out quite well," says the architect, Dean of the School of Architecture at Pratt Institute. "It is a simple rectangle in plan, 24 ft by 42 ft 4 in. There are 876 sq ft on the main floor, 504 sq ft on the bedroom floor and 920 sq ft on the lowest floor, counting the studio and bath at full value and the storage at half value. This adds up to a total square footage of 2300 which averaged out to a neat $10.50 per square foot, excluding well, long driveway, etc., by owner."

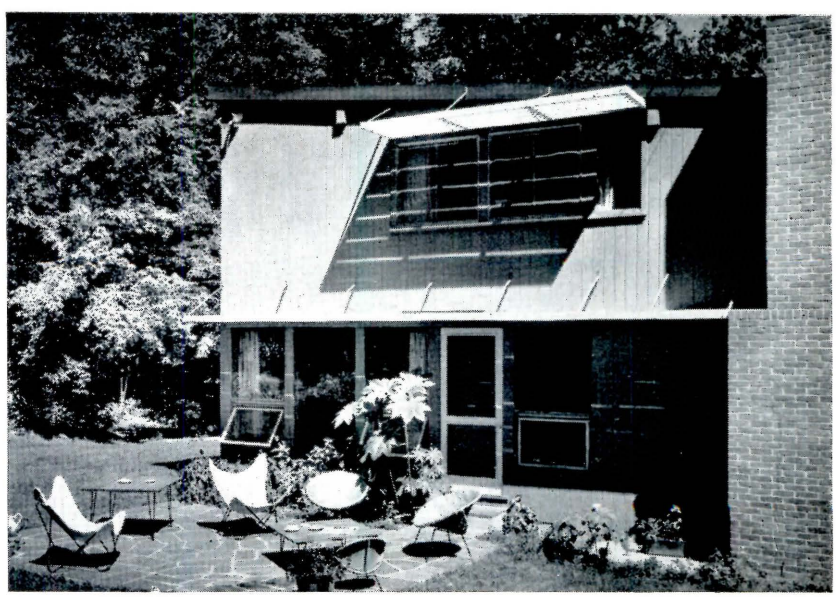
The double-balconied plan derives from the clients' basic requirements: a large sense of space with which they associated a bedroom balcony; and a studio for the owner's wife, who is a painter. Only two bedrooms were needed since there is just one child, but plans call for the addition of two more bedrooms and a bath in a separate structure linked with the main entrance.

Construction is wood frame on a concrete block foundation with exterior walls of vertical pine siding. Interior wall surfaces are vertical cypress in the living areas, gypsum wallboard and/or ceramic tile in kitchen and bathrooms. A flat L-shaped steel fish plate was concealed at each head corner of the all-glass south wall to prevent vibration from strong winds.

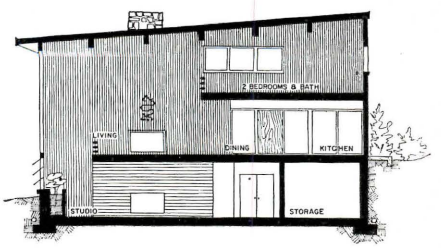








Joseph W. Molitor



Alexandre Georges

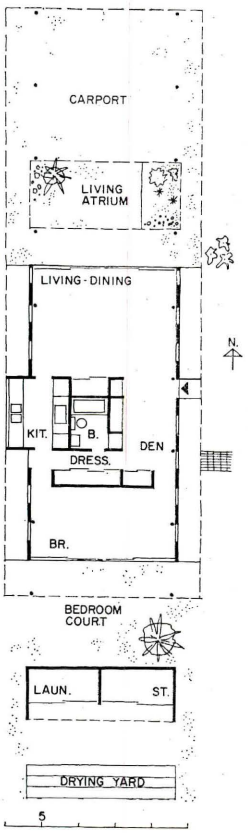
5. Mark Hampton, Architect

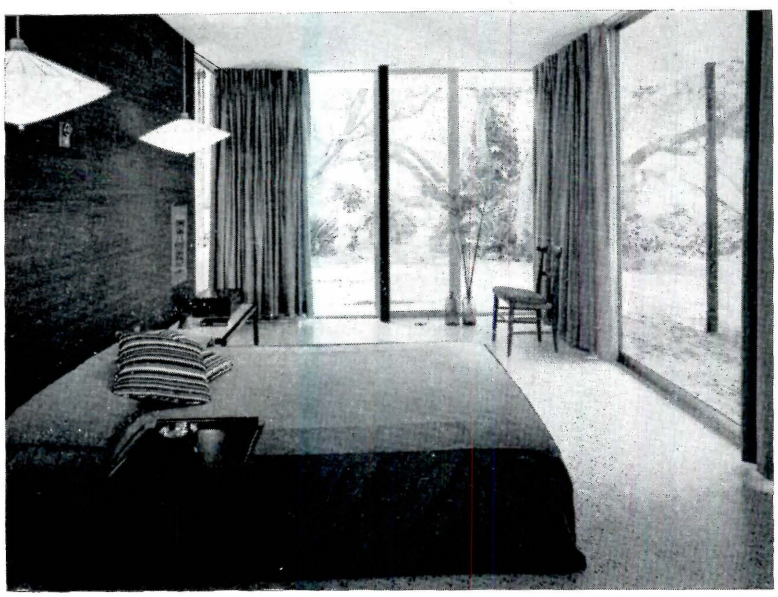
St. Petersburg, Fla. Joseph McBath, Owner; Phill Hall, Interiors

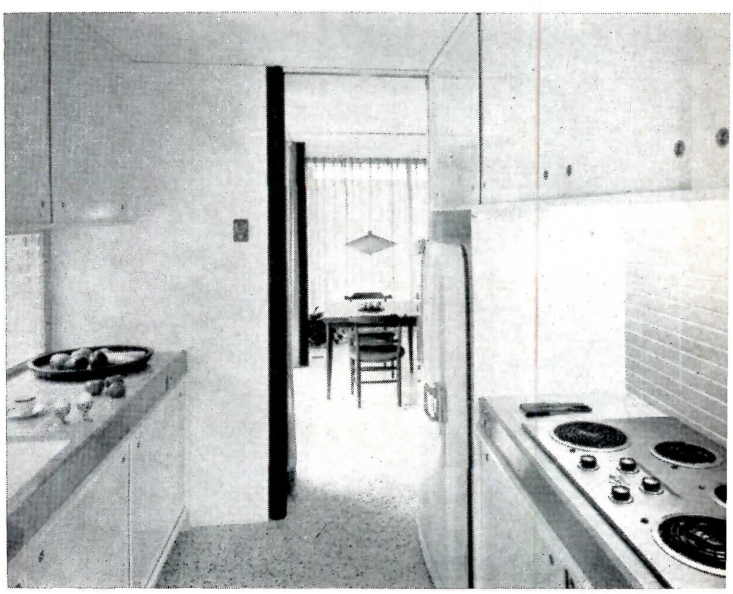
The fact that the owner had both the time and the ability to do his own subcontracting was one of the most important factors in keeping the cost of this house down to $9.63 per square foot. Other cost-saving measures reported by the architect were: the use of monolithic terrazzo floors throughout (low-cost locally); radiant electric heat throughout; one size standard jalousie unit and fixed glass unit which enabled one subcontractor to erect almost all of the long east and west elevations; and an inexpensive repetitive structural system.

The site, a suburban lot measuring 50 by 40 ft with several very large trees along its eastern edge, was not a natural one for the glass-walled house required by the clients. A further complication was the absolutely essential separation of master bedroom from the rest of the house since the owner works at night every other month. The solution was a long narrow house placed as closely as possible to the western border of the property, with living room and bedroom opening to small courts formed by carport and storage room walls respectively.

Construction is steel beams supported by 3-in. pipe columns on 10-ft centers; 10-ft wood joists frame into the wide flange sections of the beams. Copper-colored grasscloth was used on solid walls in living room and bedroom to tie in with the redwood screens on the exterior. Cost of the house excluding land and architect's fee: $14,735.42.

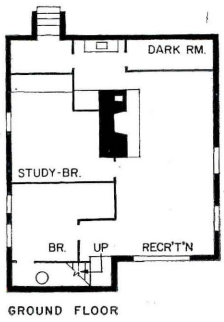




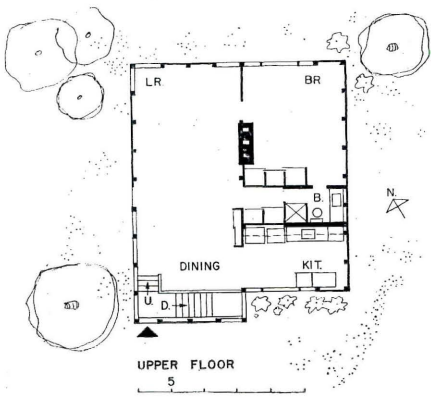


6. Designers & Builders, Architects

Weston, Conn.; Mr. and Mrs. Grant Taylor, Owners; Designers & Builders, Contractors



GROUND FLOOR



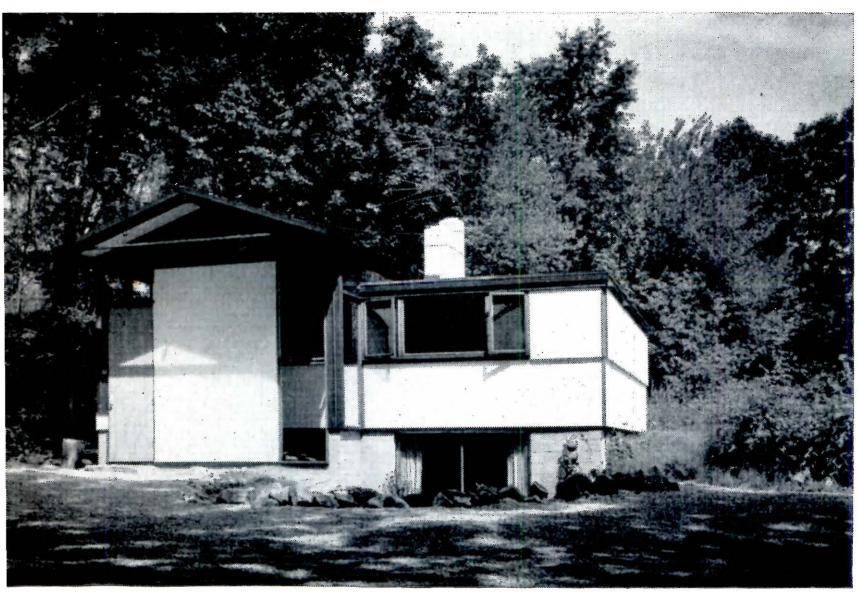
UPPER FLOOR

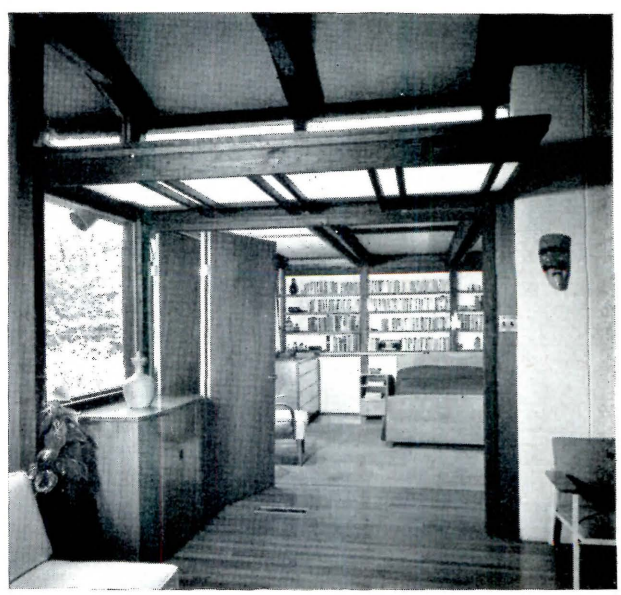
5

The foundation, stone fireplace and chimney place intended for a "builder's Cape Cod" were already in position when the owners of this house bought the property. Since the budget dictated strict economy, the house was designed around these existing elements, and exposed structural fir was used throughout. "We could not afford to hide *anything*," the architects say. Plasterboard sandwich panels were used on the outside face of 4 by 4 posts on 4-ft centers, shingled horizontally around the kitchen, bath and bedroom; set vertically in the big space; run in 9-ft panels up to the ridge of the living room roof; and cradled between flat beams on the rest of the roof.

"The owners wished all upper rooms to look west into the woods, and wanted the big space to seem to partake of the woods. Only small timbers were used to give the space lightness and delicacy. Trusses 4 ft o.c. made up only of double 2 by 6's separated by a flat 2 by 4 tie joined with four hardwood dowels at each end span the 16-ft-wide living room. The rafters were left separated at the peak to receive a continuous 2 by 6 ridge for continuity."

Cost of the house, excluding lot, landscaping and furnishings, was approximately $15,800. The owner since has completed redevelopment of the lower floor so that he now has almost 2000 sq ft of space at a construction cost of less than $18,000.





Joseph W. Molitor

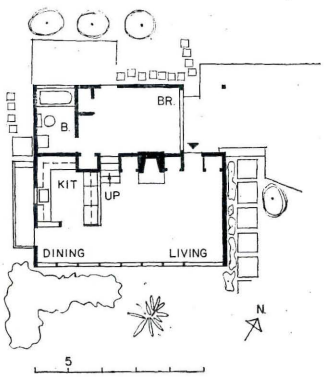
7. Henry Hill, Architect

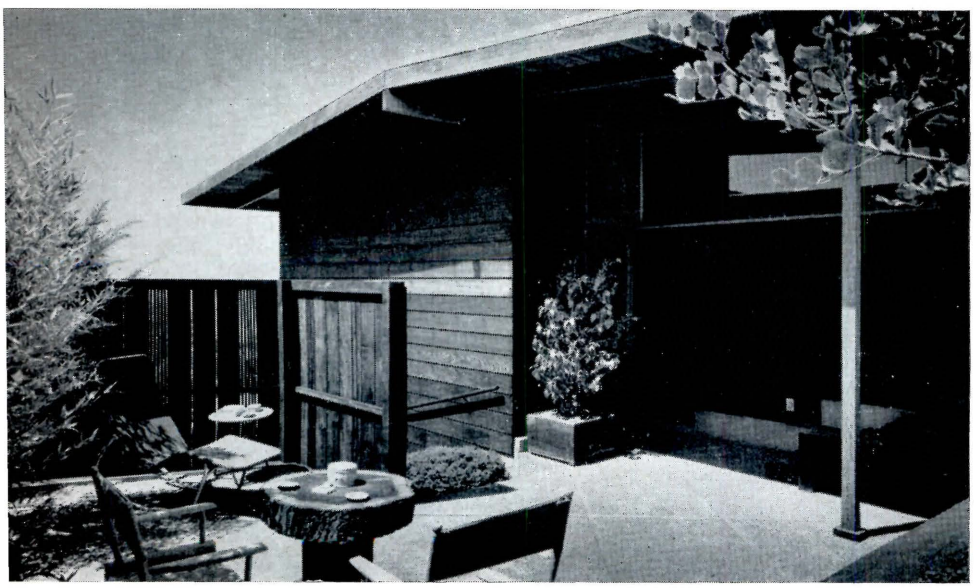
Berkeley, Calif; Miss Shirley Todd, Owner;
Eckbo, Royston and Williams, Landscape Architects;
B. J. Teigland, Contractor

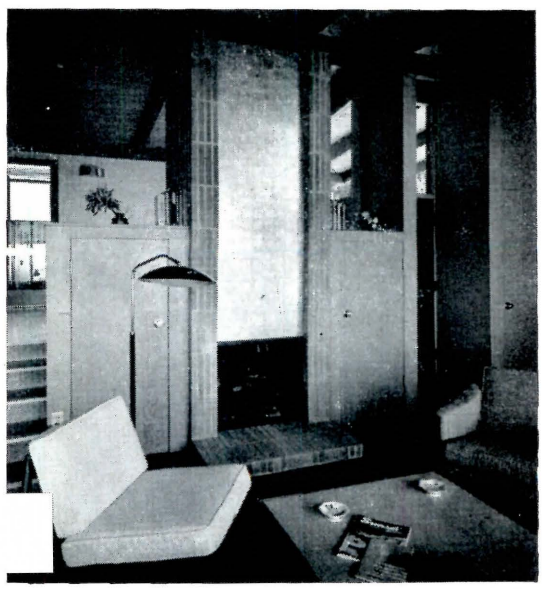
"Are architects for people like me?" That was the question the owner of this house hesitantly asked her architect on her first meeting with him when she listed her requirements and put her budget at an all-inclusive $10,000 maximum. The architect gave her an immediate and emphatic answer in the affirmative, and subsequently proved his point with the house shown on these two pages: exactly what she wanted, for $200 under her budget, or $9800 including lot and architect's fee.

The house is very small—one reason for its low cost—but seems surprisingly large because of its open plan. The bedroom is several steps above the living room area, following the contour of the land, and is separated from the living room only by the fireplace wall; even so, it has a strong feeling of privacy, enhanced by the small screened patio outside it and the adjoining bathroom.

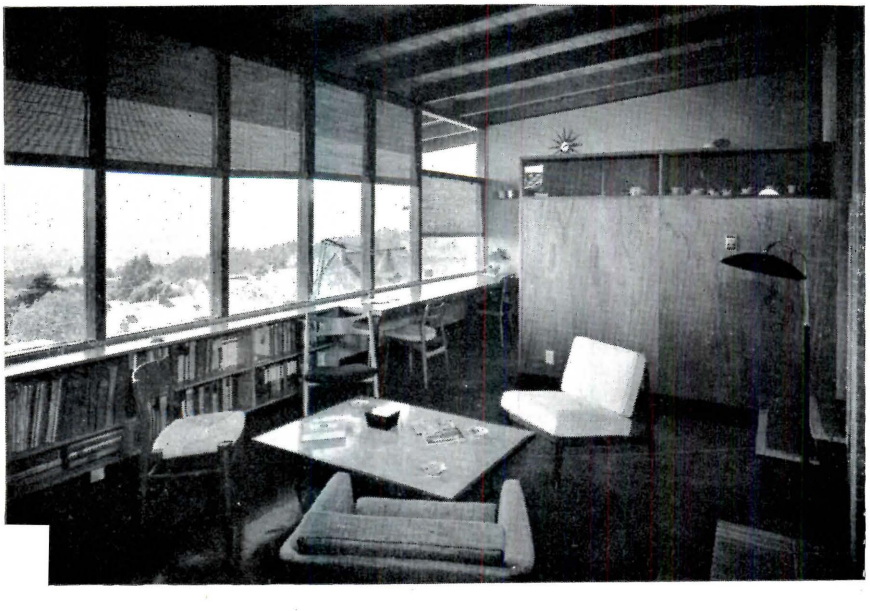
Since the owner is a business woman living alone, ease of maintenance was a major factor in the design and planning of the house. Materials were chosen for easy upkeep, and landscaping was limited to low shrubs in front of the house which would not interfere with the view, a simple ground cover which would need minimum attention, and a small planting area at the rear of the lot.

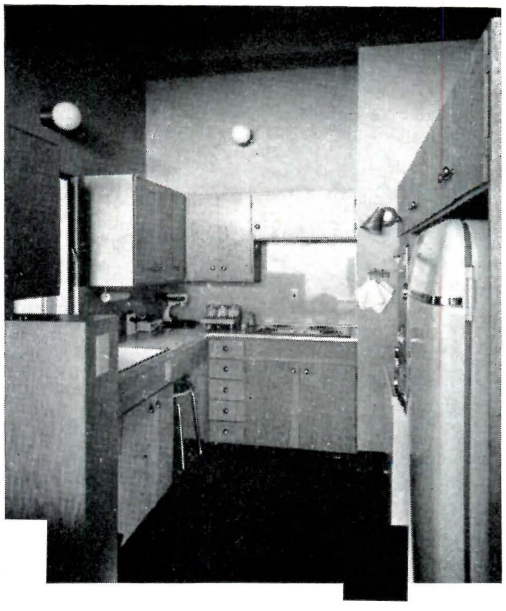


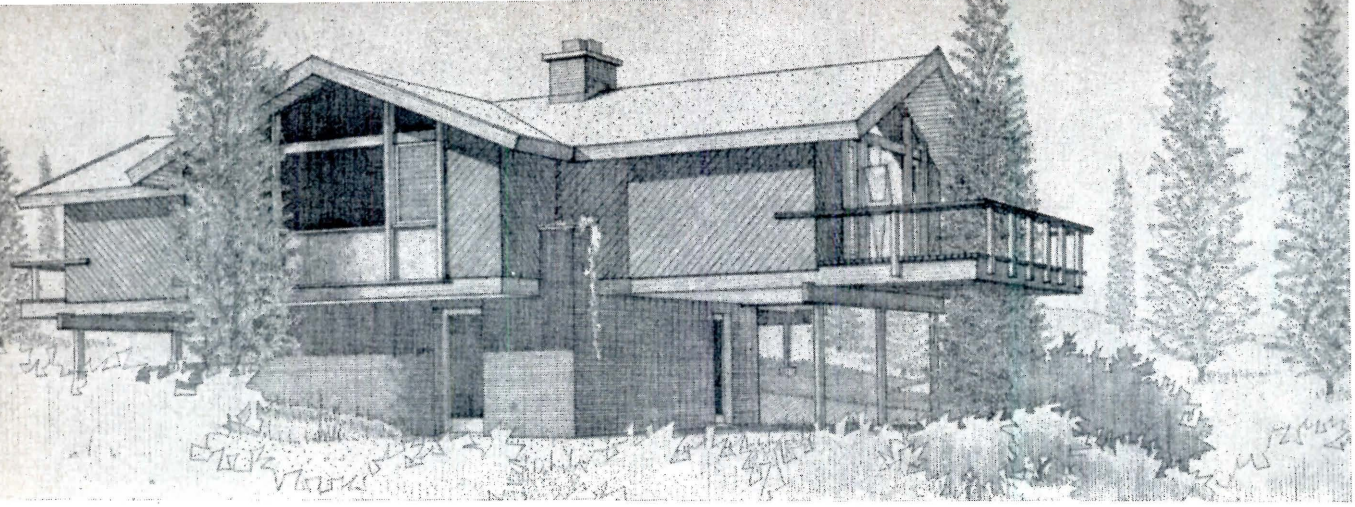




Roger Sturtevant

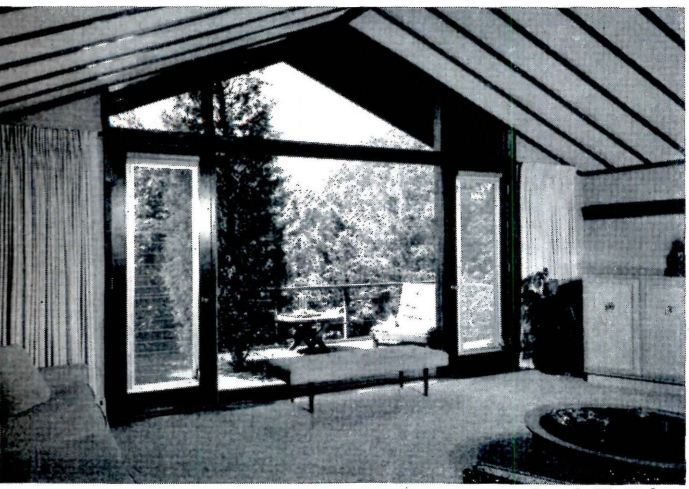






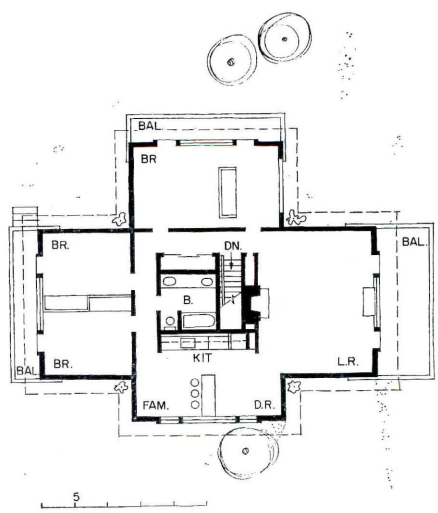
8. Richard B. McCurdy, Architect

Orange, Conn. Mr. and Mrs. Fred C. Emmons, Owners.
Richard B. McCurdy, Contractor

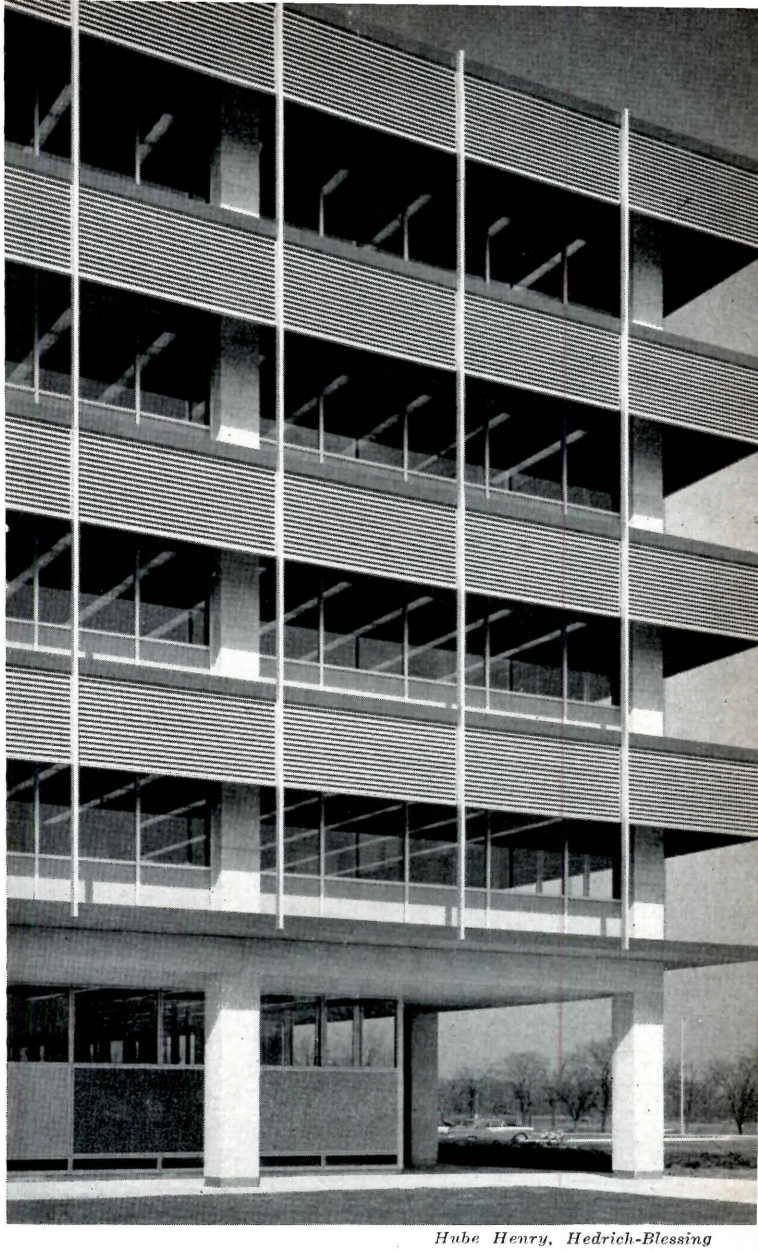


Joseph W. Molitor

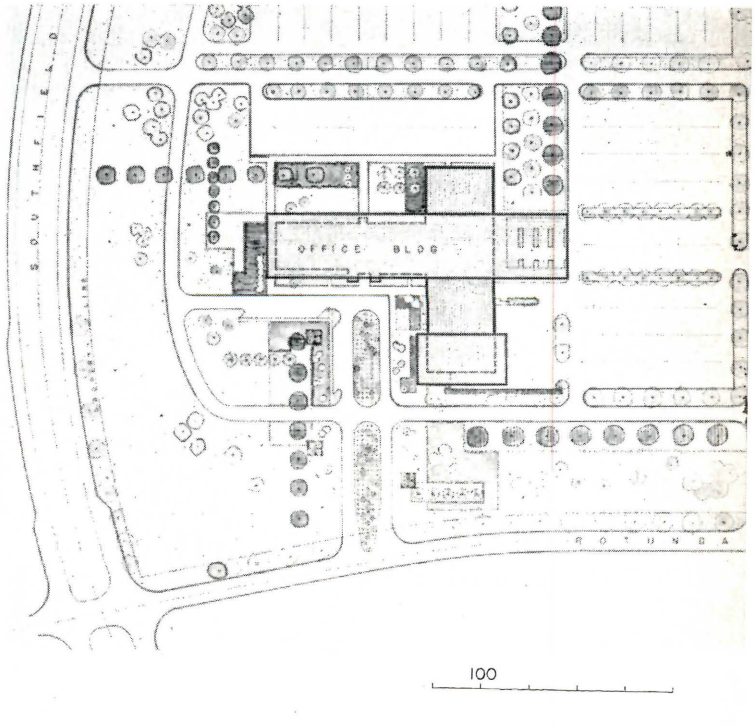
The main features of economy in the design of this house, writes the architect, were "the flat plate roof construction, the use of the alcove kitchen, the very small bedrooms, and the fact that standard dimension framing was used throughout instead of post and beam. Other design factors resulting in lower costs included: placing of all access and ventilation openings at gable ends, permitting unbroken solid walls at all eaves; use of tilt-up wall erection, walls being fabricated on the floor, completely framed and sheathed and painted while in a horizontal position; diagonal cedar sheathing left exposed as siding; all ventilation and access by means of jalousies set in doors, eliminating the necessity for screens, screen doors, and much finished carpentry; and concentration of all services and plumbing in the central area." Cost of the house, excluding lot, architect's fee, painting and landscaping, but including the complete built-in kitchen unit, was about $15,500.



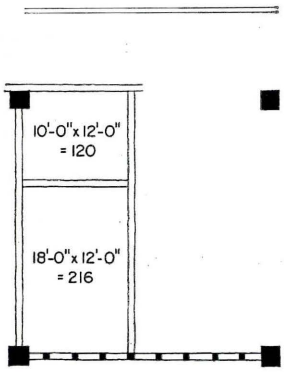
A Large Module for Motor Company General Offices



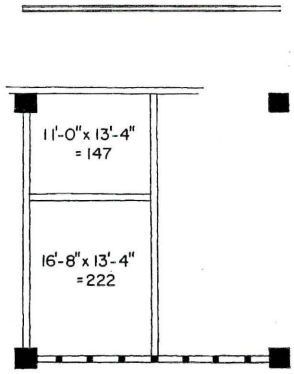
Hube Henry, Hedrich-Blessing



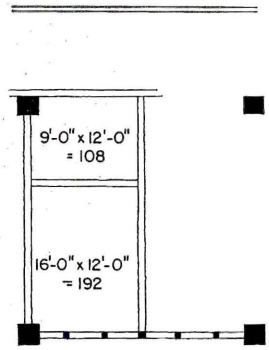
Ford Division, Ford Motor Company
General Office Building, Dearborn, Mich.
ARCHITECTS AND ENGINEERS:
Welton Becket and Associates
Albert Kahn Associated Architects and Engineers, Inc.
LANDSCAPE ARCHITECTS: *Cornell, Bridgers and Troller*
CONTRACTORS: *Bryant and Detwiler Company*



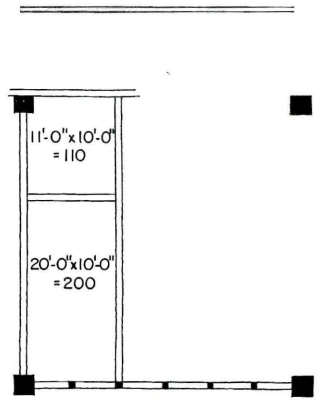
A. 27'-0"x 27'-0" BAY
3'-0" MODULE



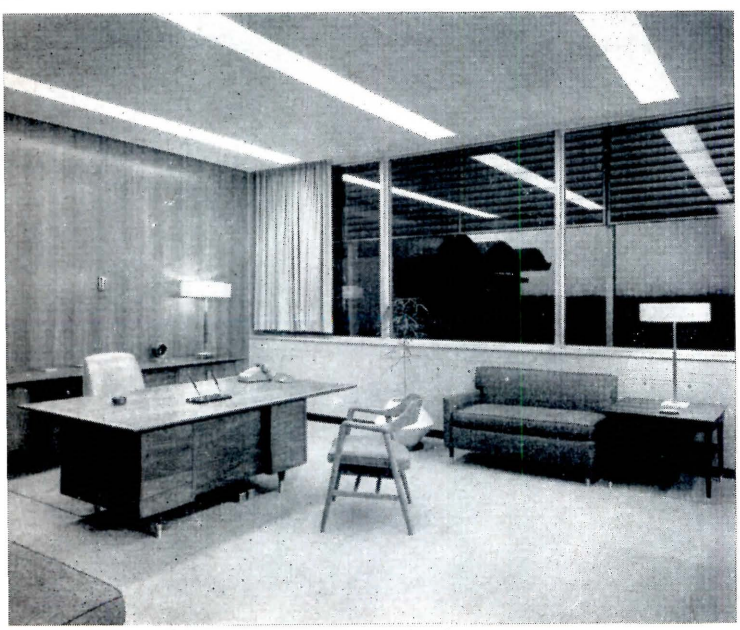
B. 26'-8"x 26'-8" BAY
3'-4" MODULE



C. 24'-0"x 24'-0" BAY
4'-0" MODULE



D. 30'-0"x 30'-0" BAY
5'-0" MODULE

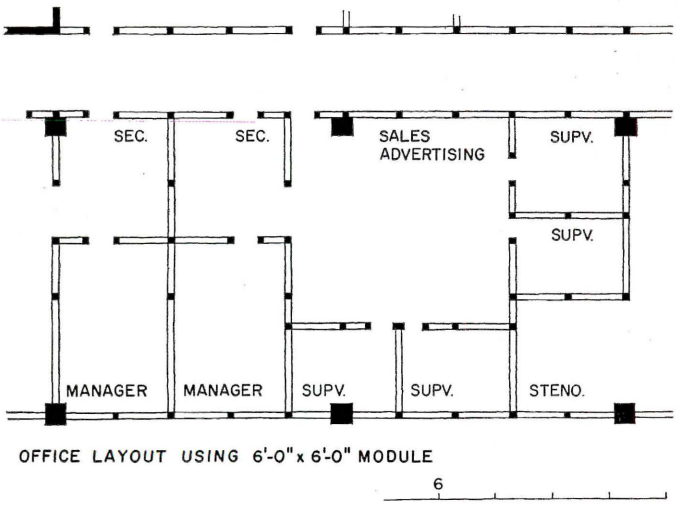


Planned for use by more than 2000 employes, the office is located on a 67 acre site. The building includes a five-story main section with basement and penthouse. A one-story wing on the south and a two-story wing at the front house permanent functions such as shipping departments, auditorium, and dining areas. Provisions are made for parking 2000 automobiles in close proximity to the building.

The building structure is reinforced concrete with 30- by 30-ft bays. The floors and roofs are waffle-type flat concrete slabs, with the exception of the cafeteria roof which is constructed of a series of thin-shell concrete barrel vaults. Exterior walls are aluminum curtain wall frames with inserts of porcelain-enameled metal and plate glass. Some portions of the ground-floor curtain wall are faced with ceramic tile, in colorful patterns. Masonry walls are used in the interior for enclosing stair wells, toilet facilities, mechanical rooms and the like. For flexibility, office partitions are movable and are constructed of wood and glass.

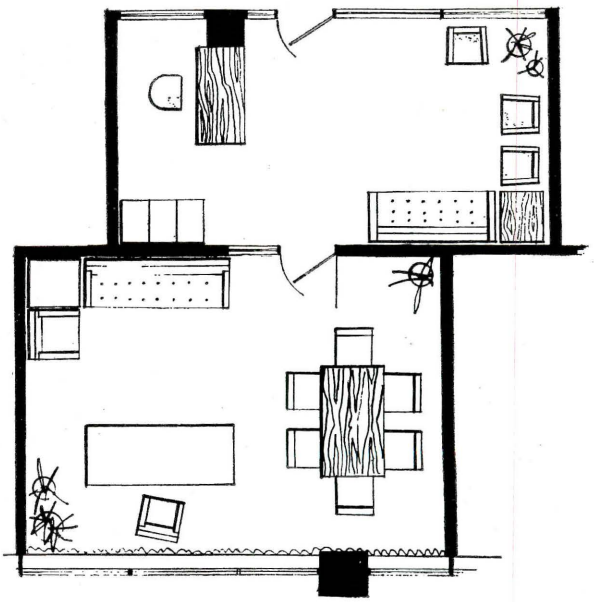
The architects prepared sun control studies for the building in order to determine if solar devices should be used for controlling heat on the walls and glare, and if so, what types of controls would best function for this climate. As the finished building shows, it was decided that horizontal floor projections would be employed together with groups of gold-anodized aluminum louvers. Careful study resulted in a system which the architects believe will almost completely exclude direct sunlight from the building. By holding the sun controls above eye-level, the view of the occupants is unimpeded.

Vertical transportation is provided by escalators. The architects felt that efficient use of escalators limited the maximum height to five stories. Heating and air conditioning are supplied through unlined ceiling acoustical tiles and unobtrusive metal enclosures under the windows.



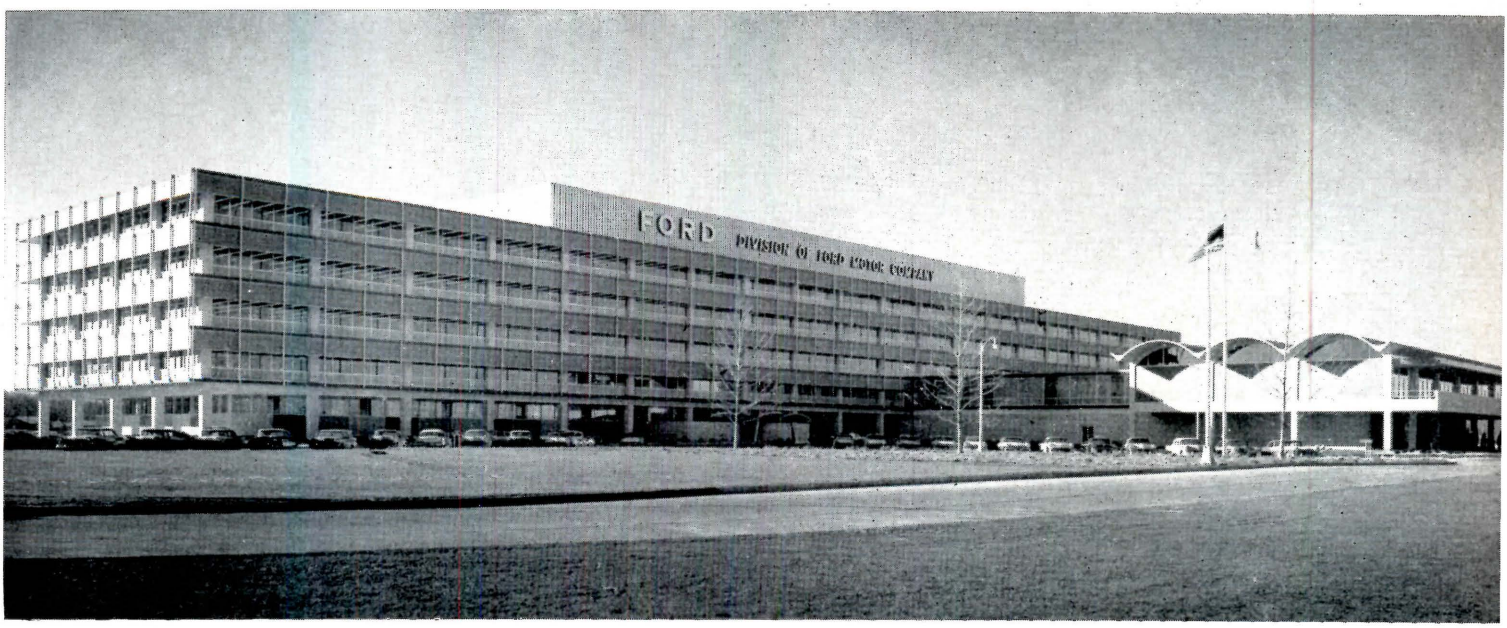
OFFICE LAYOUT USING 6'-0" x 6'-0" MODULE

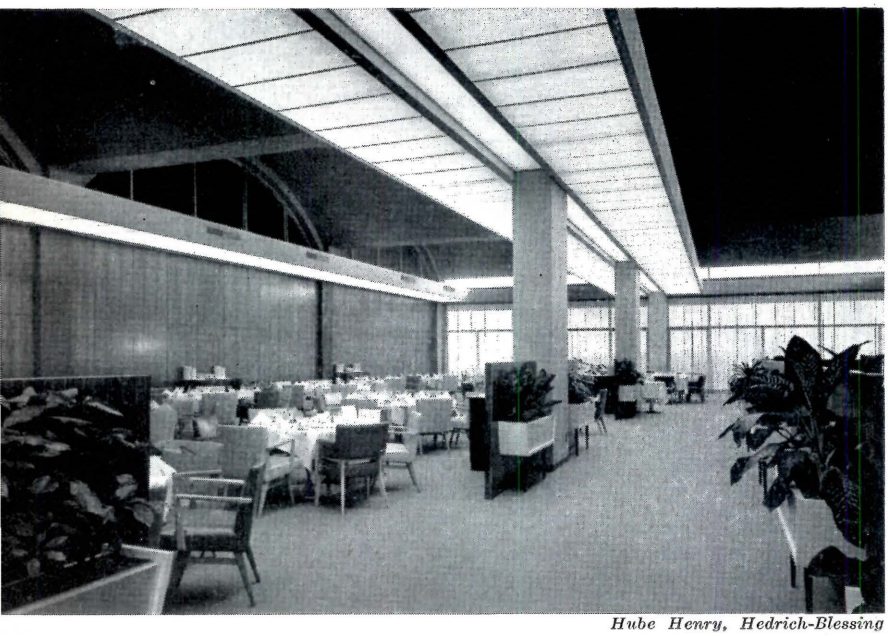
6



Hube Henry, Hedrich-Blessing

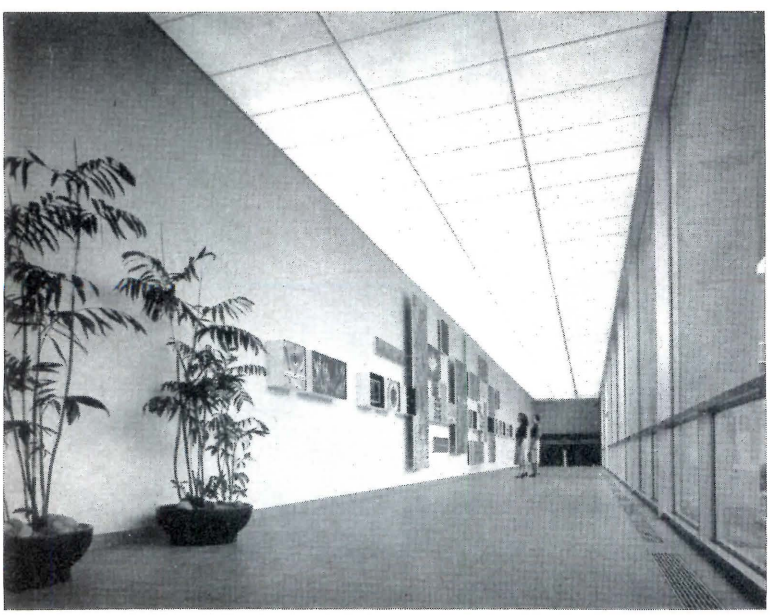
Before engaging architects the clients prepared a number of studies on the use of interior space. From these, a schedule of space allocations for executives and other employes was compiled. In order to make the spaces fit the clients' requirements, yet retain future flexibility, the architects studied many modules and bay sizes (figures A through D above), finally deciding upon the scheme used (6-ft module and with 3-ft submodule in a 30- by 30-ft bay). Also closely studied were the effects of different modules on the costs of lighting and heating installations. A saving of approximately 60 per cent of cost of wall heating units resulted from choice of 6 ft as compared to a 4-ft module. By placing lighting troffers on 6-ft centers (allowed by 6-ft module), rather than on closer centers, further savings were made. The module used allows movable partitions to be placed in almost any useful location, allowing for future rearrangement





Hube Henry, Hedrich-Blessing

The use of escalators for vertical transportation dictated the use of the lowest practical ceiling heights. Story heights of main building (including corridors) are 9 ft 4 in. from finished floor to ceilings to facilitate the future relocation of interior partitions. Greater heights are used in mechanical spaces, auditorium, dining rooms, and other specialized areas. Concerning the office interiors, the architects say, "our basic aim was to provide an atmosphere of quiet calm conducive to the type of concentrated intellectual activity for which the building was designed." In the public spaces, bright cheerful colors, natural wood, and textures are used in contrast to the more subdued treatment of the private areas. Typical treatment of a conference room, dining area, and a passageway are shown in the figures at left



East Grand Rapids Junior High School, Michigan Perkins & Will, Architects

SCHOOLS

CAFETERIA AND KITCHEN FACILITIES

Of the many facilities common to most types of schools, none is subject to as many current variations as those devoted to serving meals. They are being divided, subdivided, and combined with other functions in dual- to myriad-purpose arrangements. Kitchens range from complete restaurant set-ups to mere serving stations, with cooking done elsewhere. These pages present the basics of cafeteria and kitchen planning, and show some of the more interesting and pleasant new schemes.

BUILDING TYPES STUDY 264

®

Planning for Student Dining

By Charles William Brubaker,
Partner, Perkins & Will,
Architects-Engineers
Chicago and White Plains

Good planning can spell the difference between mid-day melee and a gracious meal. A successful kitchen-cafeteria relies upon the administrators' and architect's cooperative study and understanding. Never underestimate the invaluable help and suggestions of a qualified dietician who is familiar with the day to day problems. Many factors besides number and age of students to be fed determine the physical layout and the equipment to be provided. A check-list includes:

- what is the school board's philosophy on student feeding?
- will service be a one-meal luncheon? Multi-choice?
- will the cafeteria serve only a single function?
- is the cafeteria to double as study hall? Auditorium?
- will the kitchen provide after-school snacks? refreshments for student and public gatherings?
- what problems does the geographical location of the school present? any delivery problems? codes?
- how may advantages from the school's location be exploited?

When the aims of the school foods program have been fully determined, it is up to the architect to design and implement a kitchen and cafeteria which operate as a unit, smoothly and efficiently; which provide relaxed, pleasant dining. It is essential that the plan provide an easy flow of food processing.

Delivery and Storage Areas . . .

Routing begins outside. A loading platform is the point of delivery, and the point of pickup. Size of garbage and waste area depends upon frequency of pick-up. An incinerator is useful here. Full trailer delivery area is needed if school participates in government surplus food program. One outside entrance to kitchen can eliminate confusion. If direct-line layout is used, delivery men need never enter preparation area.

Refrigerated storage should be maintained at two temperatures: 40° to 50° F for daily-consumed foods, and —5° to 0° F in deep-freeze section. Walk-in refrigerators and freezers have new versatility. Carts containing food for overnight storage are pushed directly into walk-ins. Much of this is the result of preparing for more than one meal at a time. The curb at the walk-in has been eliminated: a 7-inch depression in the floor under the refrigerator and a 9-inch-deep cavity under the freezer allow for insulation and achieve a constant finish floor. Refrigerator shelving can be portable and adjustable. Strong, light, chromium-plated shelving is available.

Dry storage space is figured at ½ sq ft per meal daily, based on two weeks staple supply. Portable and adjustable metal enamel shelving or heavy duty mesh give flexibility. Four air changes per hour insure good ventilation; clearance between walls and shelving allows for cleaning. (Fig. 1.)

Non-food supplies should have a separate storage space.

Gordon Coster

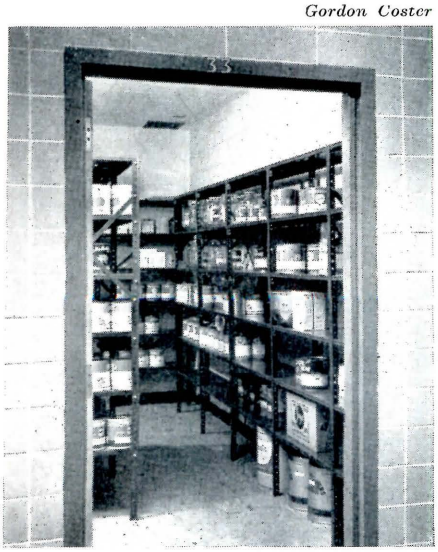


Fig. 1. Dry storage, Lyons Township High School

Planned Preparation . . .

Controlled traffic and controlled sharing of equipment are layout aims. Four primary types of preparation are: cooking, baking, salad, vegetable. The cooks are usually centrally located. Their basic equipment includes kettle, steamer, ranges, roast ovens, ample table space with sink and undershelf, pan rack. Separate ovens, alongside hot top cooking ranges are now preferred for roasting. Consider wall-hung kettles and steamers. (Figs. 2 and 3.)

Vegetable preparation personnel share the cooks' mechani-

cal equipment. Their area is fitted with preparation table, shallow sinks and peeler (unless vegetables are packaged).

Salad preparation, often near vegetable preparation area, also requires separate table with overshelf, a shallow sink, access to a mixer, refrigerator and disposer. (Fig. 4.)

The baker's area is receiving more emphasis. "Home-baking" is a drawing power for students. Government surpluses make home-baking economical. One successful dietician remarked, "we can produce rolls for 1½ cents while a slice of commercial bread costs 2 cents." Baking equipment includes ovens (rotary ovens are fine if volume warrants) with spice bins above, flour and sugar bins below, bakers' table, mixer, cooling racks, sink, bakers' stove or kettle, and portable pastry trucks. (Fig. 5.)

Space and equipment for food preparation is calculated in terms of the number of children to be served and the type of service. Space for small kitchens may be from 2 to 2½ sq ft per meal served; less is needed for use of pre-prepared or frozen foods. When 2000 to 3000 persons are to be served, 1½ to 2 sq ft per meal is ample. This includes storage.

The law stresses cleanliness but why not more enamelled metals and rich red quarry tile or gay ceramic tile? Consider heavy flexible sheet vinyls applied to walls with mastic or vinyl-covered metal doors. Must wood and brick be totally excluded? If properly designed and executed, a kitchen can be both clean and gay. Admit that a lot of time will be spent cleaning the preparation area every day, so think of how things can be cleaned: hosed down, wiped off, scraped, polished, scrubbed, etc. Airborne grease is trapped in the filters, waterborne in grease traps. Make them easy to get at, or locate as manholes outside. Free-standing equipment can be cleaned on all sides. Remember floor drains. (Fig. 6.)

Lunch is Served . . .

Orientation of kitchen to cafeteria is effected by placement of serving line(s), and establishes the atmosphere of the dining area. A partition between the serving counter and dining area will screen noise and motion of serving. The serving counter is a display case as well as a cafeteria line. Good serving facilities give students a lunch which has retained its original appearance, flavor and temperature and provides it for them quickly and efficiently. The average lunch period is 30 minutes long. Students are cheated if they must spend the majority of that time waiting for their lunch. Six persons pass through an average multi-luncheon serving line per minute; eight through a one-meal luncheon serving line. Consider an item-adding cash register for every serving counter providing multi-meal lunches involving money changing. The maximum serving capacity of one counter in one lunch period should be recognized as 150 to 180 persons. Cross traffic is eliminated if lines are routed from hall entrances—considered desirable if lines may form in corridors, away from cafeteria. The average serving line includes: tray carts, silver carts; hot food units with glass protector; cold pan with glass display shelves; milk lowerator; ice-cream cabinet; cashier.

A six-ft serving counter may be adequate for a one-meal lunch when all students receive an identical tray of food. A twenty-four ft serving counter is required for a multi-meal lunch. Many kitchen experts feel that refrigerated cold trays

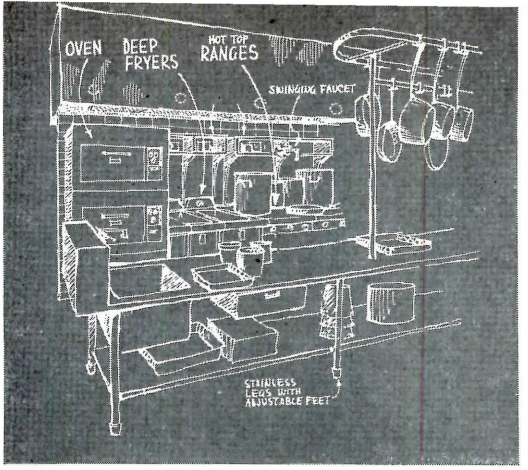


Fig. 2. Cooking center

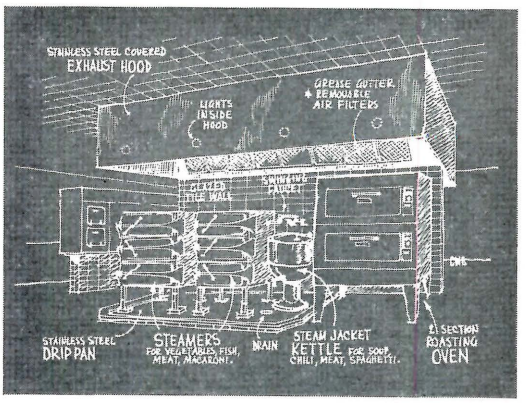


Fig. 3. Cooking center

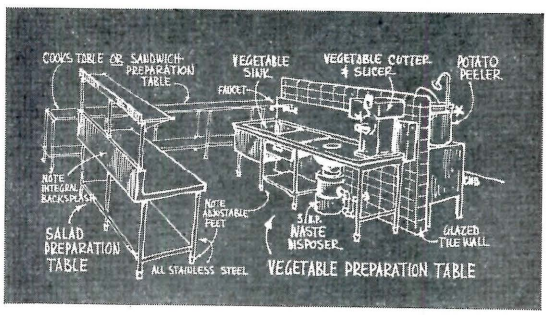


Fig. 4. Salad and vegetable center

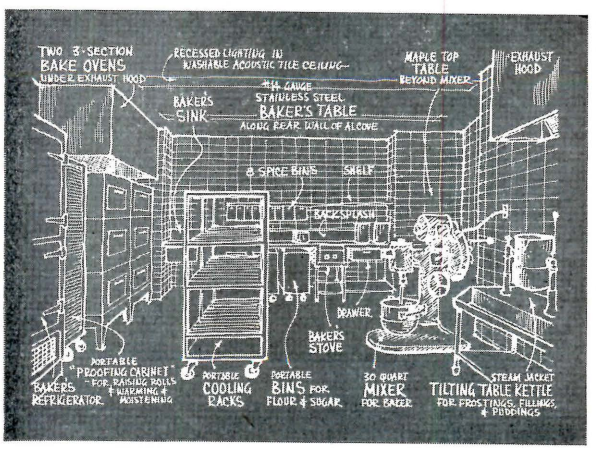


Fig. 5. Bakery center

Suter, Hedrich-Blessing

Fig. 6. Serving line, Milburn J. High School

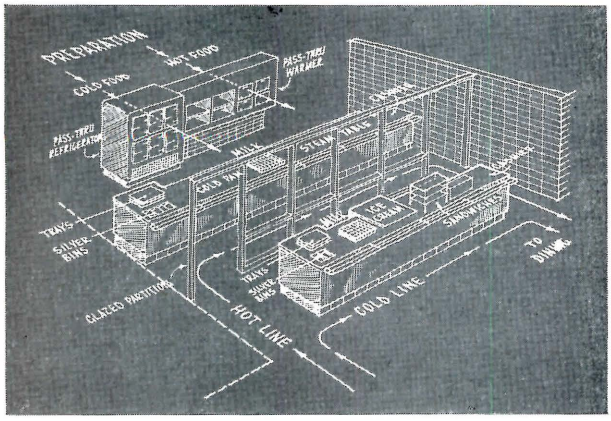


Fig. 7. Divided serving line

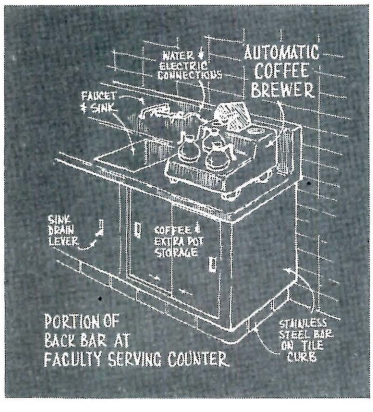


Fig. 8. Snack counter

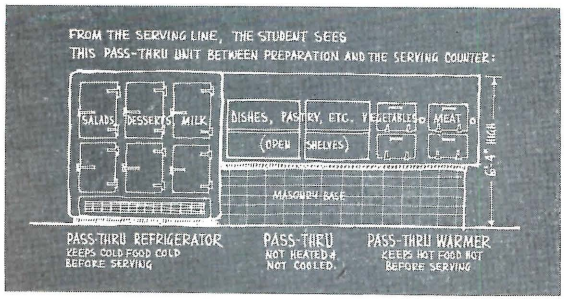


Fig. 9. Pass-through counters

are not necessary if kitchen and serving-line function smoothly. If lettuce, etc. is kept in refrigerators until serving time it will not wilt in the short time it is displayed. Vending machines may take the load off counters. Vending companies service their machines which may contain sandwiches, ice-cream, and even fruit. State codes govern use of these machines. (Figs. 7 and 8.)

At Proviso West High School, Hillside, Illinois and Linton High School, Schenectady, New York, cold and hot counters were separated, preventing bottlenecks. At Homewood-Flossmoor High School, Flossmoor, Illinois, one-meal luncheons will be served from a double setup. Trays at one side will contain dessert. Students preferring simple fare will pick up a tray without dessert at the opposite side.

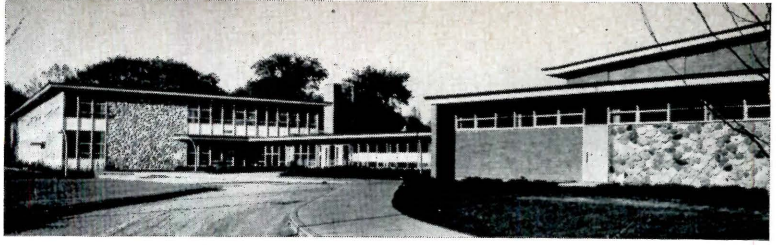
Pass-thrus are an efficient way of quickly and easily replenishing a large cafeteria serving line. They also hide the preparation area and give ventilation. (Figs. 9 and 10.)

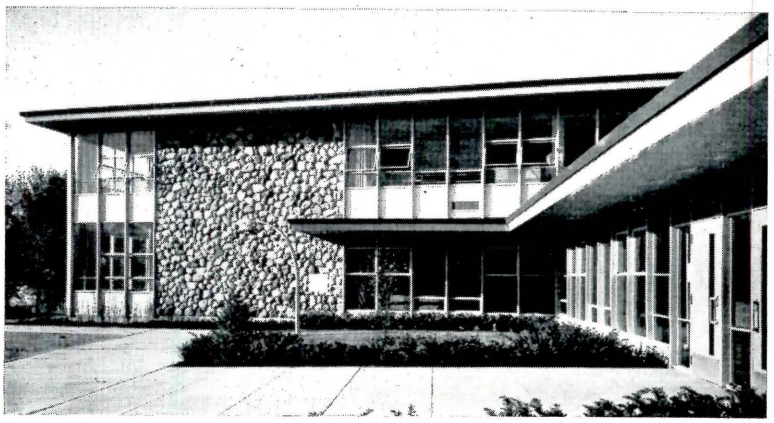
Relaxed Dining . . .

Cafeterias now double as study-halls, lecture rooms, gymnasiums, auditoriums, little theaters, public meeting rooms, television classrooms, etc. This is usually less satisfactory for dining, unless care is taken to insure the atmosphere.

Proper lighting has been determined at 20 foot candles if space is used as cafeteria only. If it is to be used as a study-hall, it should receive the same lighting as classrooms. To keep cafeteria odor-free, air is brought into cafeteria and exhausted through kitchen. Whether tables are permanent or wheel-away, keep them small to encourage quiet conversation; approximately 29 inches high for older children—24 inches high for younger children. Ample cafeteria space is necessary to prevent confusion: 12 to 15 sq ft per person. Folding partitions are useful for permitting cafeteria space to cater to more than one activity, and break up large cafeterias into smaller rooms. Huge cafeterias do not encourage relaxed dining. Any purpose the cafeteria is to serve, other than dining, will help determine the type of furniture required. (Fig. 11.) The so called "conventional" arrangement in which a kitchen and cafeteria are adjacent, separated by serving counters, is giving way to "remote-service." Central kitchens have been designed to handle numerous cafeterias.

Portable equipment is the answer to challenges in remote service planning. Hot and cold food trucks, plus suitable vans to transport trucks from kitchen to other buildings are required. Serving counters under the separate roofs of campus style schools can be made up entirely of small portable items —hot food trucks, mild lowerator, ice-cream cabinet (or lowerator), etc.—all on wheels. These are filled in the kitchen and pushed to destinations; avoid steps intercepting routes. The whole concept of cafeterias has become one of a service agency for the educational process. The ratio of effectiveness in accomplishing this is inversely proportionate to the number served. The award-winning White Plains Senior High School, White Plains, New York, had to face this problem of "bigness." 2250 students will attend the school in its initial stage. To avoid mass confusion and anonymity of individuals, "divisional units" for 500 pupils each were designed. To retain "small school" atmosphere in eating facilities, the architects designed two cafeterias stacked two high



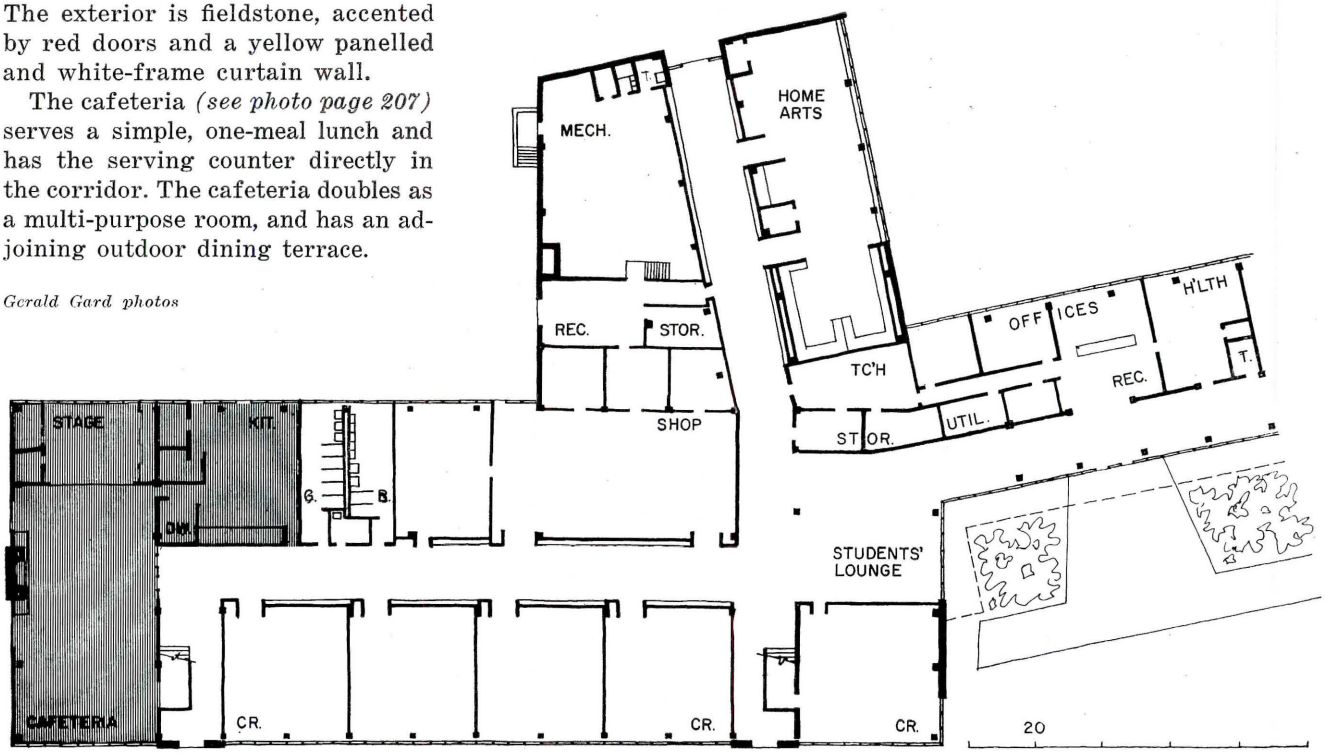


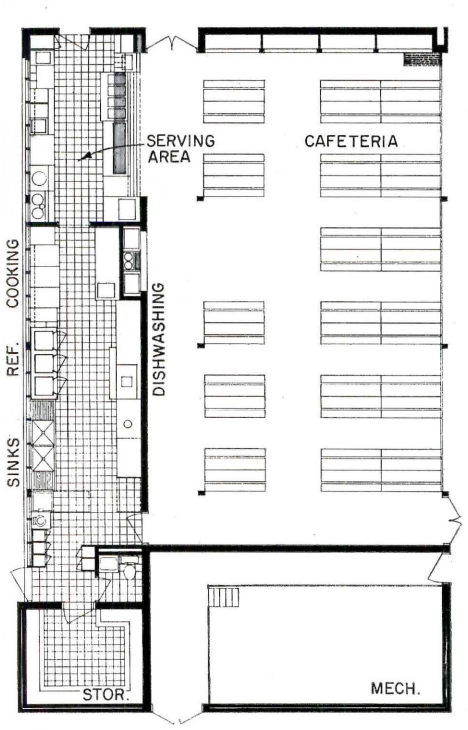
EAST GRAND RAPIDS JUNIOR HIGH SCHOOL, *East Grand Rapids, Michigan. Perkins & Will, Architects. J. & G. Daverman Co., Associate Architects. Barnes Construction Co., Contractor.*

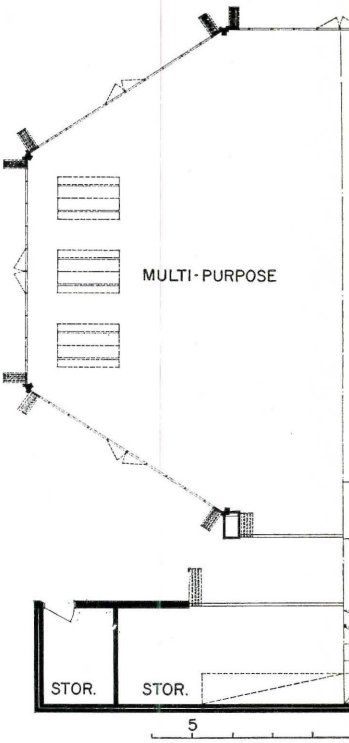
This very pleasant school consists of four building units: two-story academic unit, connected by a lobby and administration wing to a gymnasium, and a boiler and home arts unit. The exterior is fieldstone, accented by red doors and a yellow panelled and white-frame curtain wall.

The cafeteria *(see photo page 207)* serves a simple, one-meal lunch and has the serving counter directly in the corridor. The cafeteria doubles as a multi-purpose room, and has an adjoining outdoor dining terrace.

Gerald Gard photos

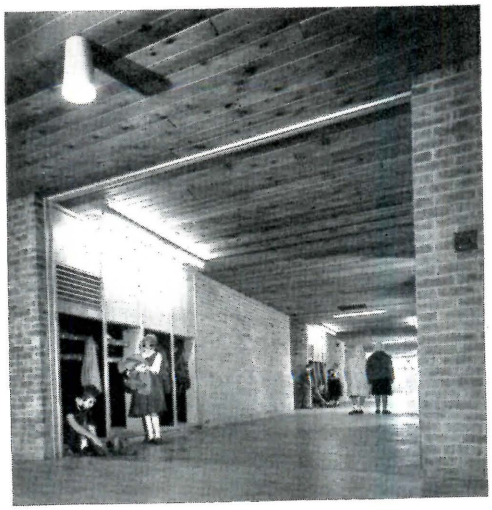


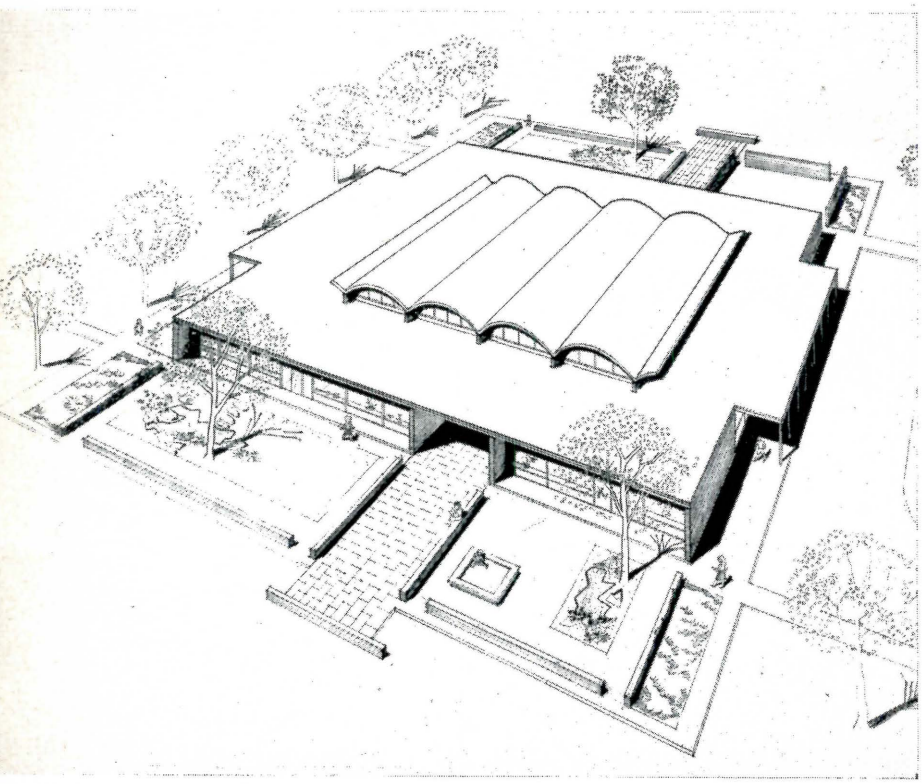


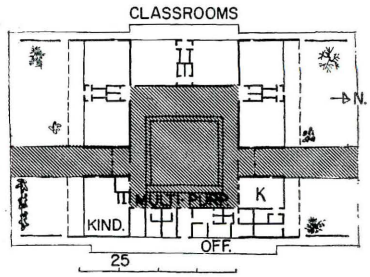


Lillian C. Schmitt Elementary School

Bill Engdahl, Hedrich-Blessing





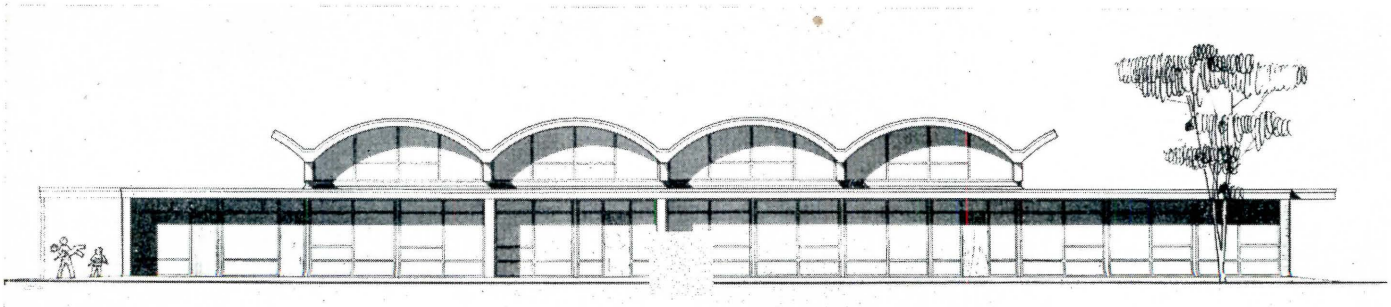


Warson Woods Elementary School, Warson Woods, Missouri

Hellmuth, Obata & Kassabaum, Architects. Caudill, Rowlett & Scott, Associate Architects. Smith, Hanlon, Zurheide & Levy, Mechanical and Structural Engineers. Frank T. Hilliker & Associates, Kitchen Consultants.

An amazingly comprehensive multi-purpose room forms the core of this kindergarten-through-sixth grade school. Its functions include: theater, indoor play area, gymnasium, group project area, dining space, auditorium. It also serves as virtually the only circulation space in the plan: what might otherwise be corridors are converted into peripheral areas of the room. The center is dropped four steps below these areas. The steps help define activity areas, provide extra seating.

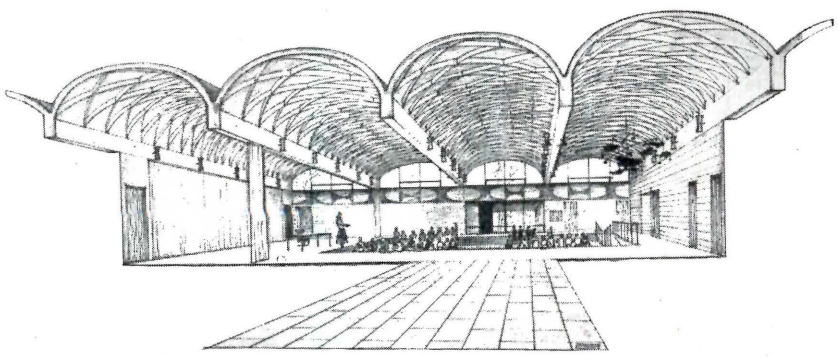
The importance of the room is clearly expressed both inside and out. The vaulted "space-frame" roof

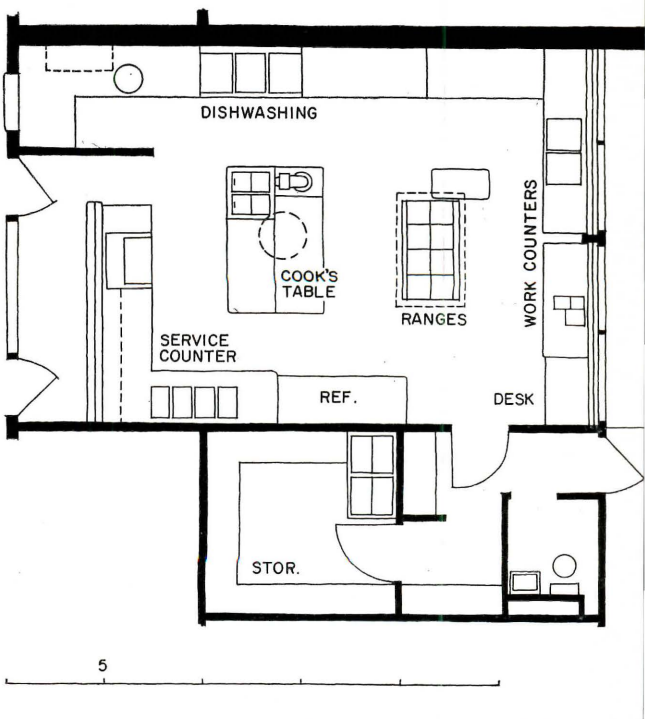


Piaget Studio

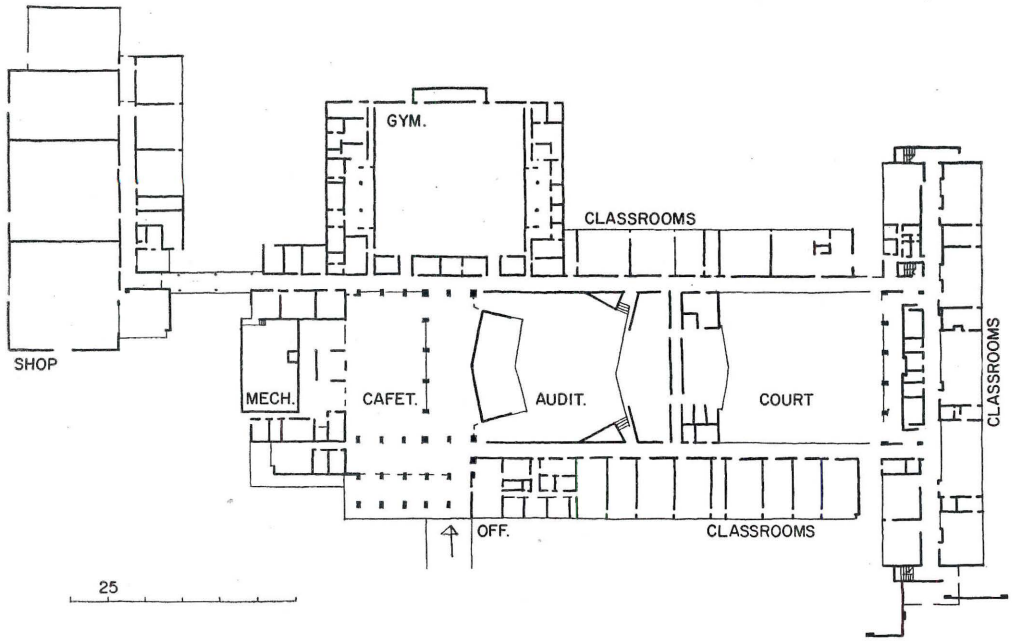
rises above the surrounding building, and provides a clerestory with vertical louvers. Continuous plug-in strips will be placed along the bottoms of the beams to give maximum flexibility for lighting.

Dining arrangements can be set up anywhere desired in the room. The kitchen is compact, and has a serving counter opening directly on the multi-purpose area. The structure is part masonry bearing walls, part steel frame. The lower roofs are precast concrete planks, partitions are masonry block. Floors are asphalt tile, ceilings are acoustical tile. Warm air runs through cellular floor to vents.





Joseph W. Molitor photos

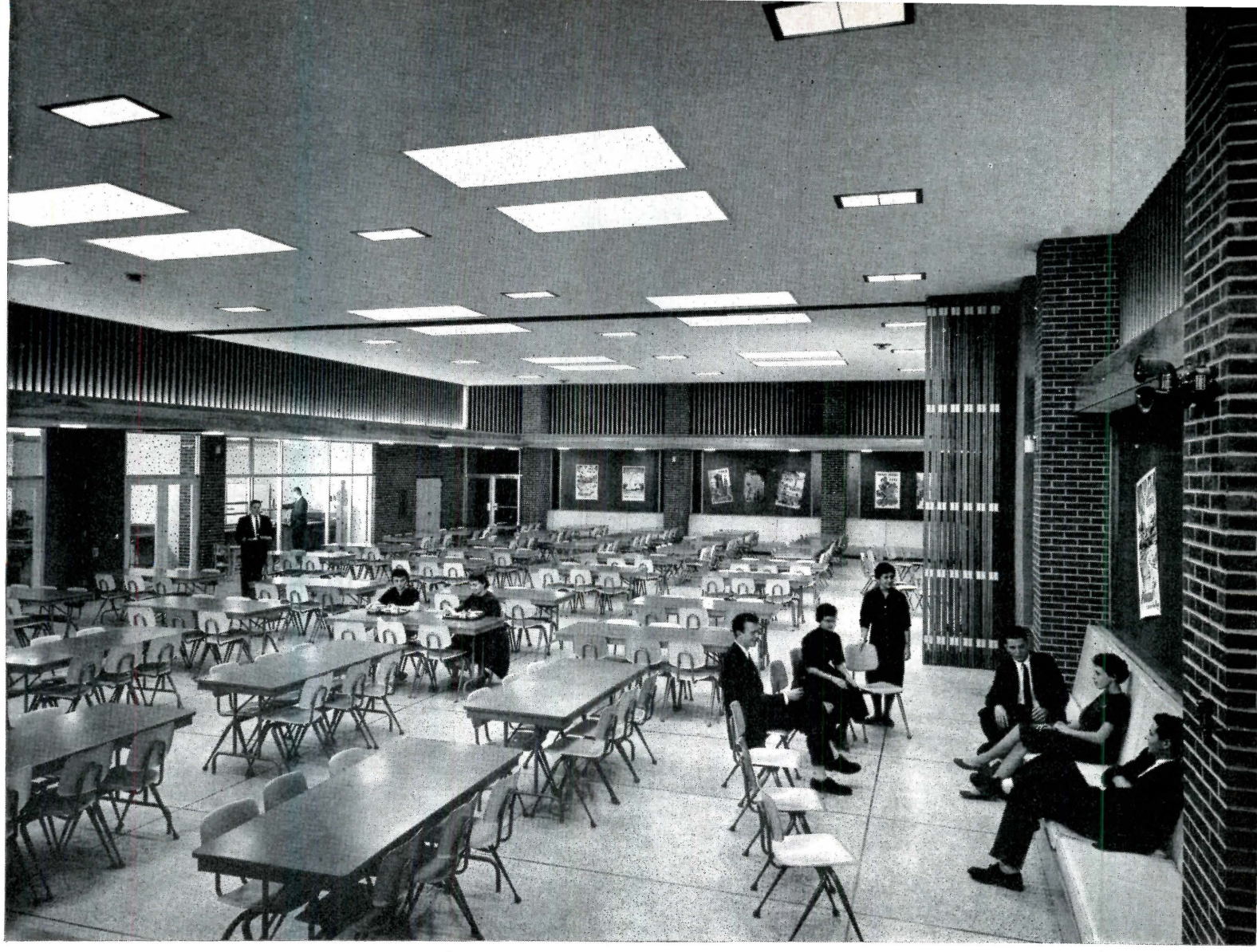


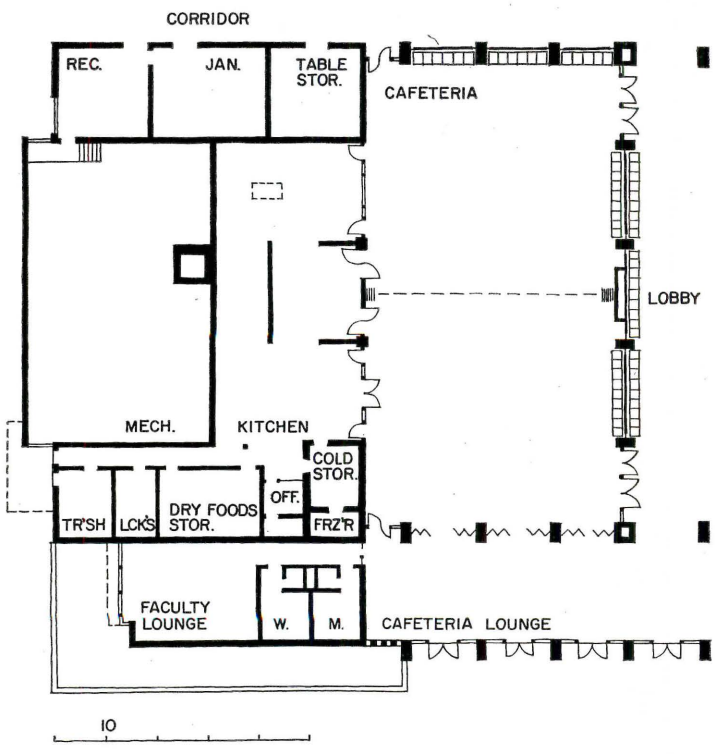
Greenfield High School, Greenfield, Mass.

James A. Britten, Architect. Ralph A. Lawrence, Educational Consultant. Lift Slab, Structural Engineers. Buerkel & Co., Inc., Piping, Heating and Ventilating Engineers. Wendell K. Simpson, Electrical Engineer. Bolt, Beranek & Newman, Acoustical Engineers. Jo Ray, Site Design and Landscaping.

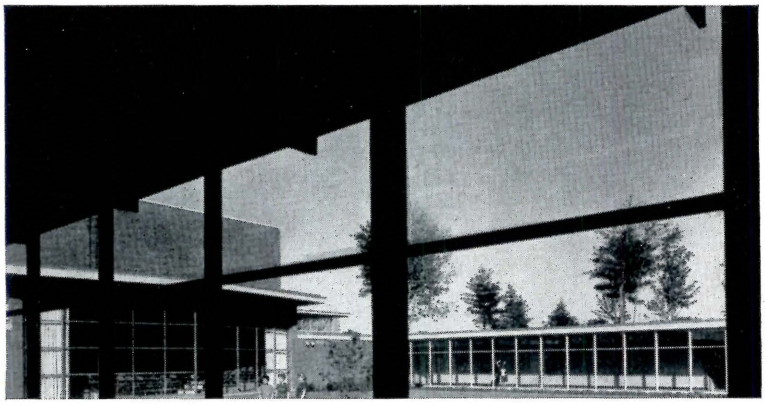
This very complete high school has all its many facilities organized in a very forthright and pleasant manner. This is especially true of the relationship of the entrance lobby, cafeteria, auditorium and gymnasium. They form a block suitable for public as well as school use. The cafeteria itself may not only be used for dining, but for public meetings, student dances and parties. The room is approximately 50 by 116 ft, and divided by folding partitions into two areas. Each has access to the kitchen serving area. The seating capacity is 550 per setting. There is also a faculty dining room for 40 people. One area is developed where all deliveries, including fuel, school, cafeteria and shop supplies and equipment may be made.

The school is designed for a present enrollment of 850 students, with all common facilities adequate for 1100. The plan includes: 38 classrooms of all types, 4 shops, library seating 100. The Music section opens on the court to form an amphitheater.



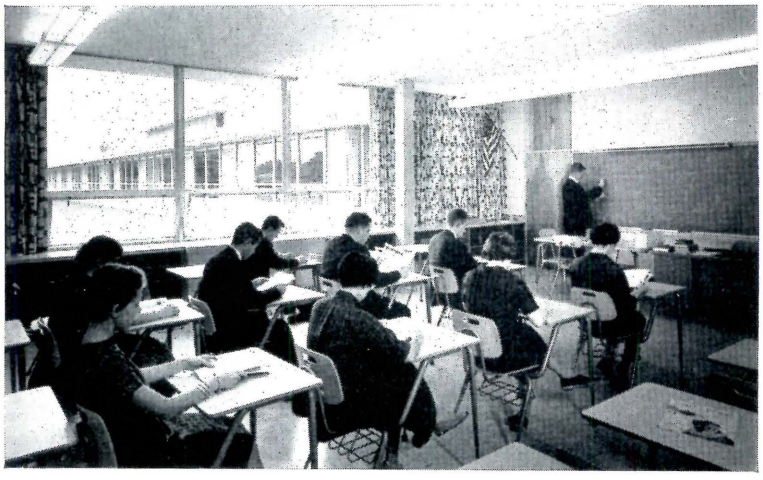

CORRIDOR
REC.
JAN.
TABLE STOR.
CAFETERIA
LOBBY
MECH.
KITCHEN
COLD STOR.
OFF.
TR'SH
LCK'S
DRY FOODS STOR.
FRZ'R
FACULTY LOUNGE
W.
M.
CAFETERIA LOUNGE
10

Greenfield High School



The central court doubles as play area and amphitheater. The glass wall of the music room (left rear in photo) folds back

The main lobby gives immediate access to offices, cafeteria, auditorium and gymnasium, facilitating use by public



The two-story classroom wing is steel and concrete, entirely fireproof. Exterior of school is red brick. Floors are plastic tile

Joseph W. Molitor photos

The library is on second floor by student's entrance, has adjacent conference rooms, work area and visual aids room

Architectural Engineering

NEW(S) UNDER THE SUN. "Don't rely on the climatology of today for a building you design with the intention it shall last 300 years or so," said Dr. Walter Orr Roberts at the Western Mountain region conference of A.I.A. in September. [Apparently Dr. Roberts has discounted forced obsolescence.] The reason for climate change: "Subtle changes in the sun's emanations of electrified particles may be the cause of changes in climate which could directly affect the suitability of the building's design." Concerned more with the status of things at the moment, John I. Yellott, solar consultant, reported that, while we know how to convert the sun's energy to electricity and into refrigeration, these methods are not economical; also are still primitive.

AN ELECTRIC "SUN". Engineers of the Illuminating Engineering Society report the lighting of a space to 10,000 foot-candles (equivalent to the intensity of sunlight received by the earth) for the first time in history at a recent I.E.S. meeting in Toronto. Experiment, performed on a stage, used 150 floodlights.

NOTHING NEW UNDER THE (ELECTRIC) SUN. Half-a-century seems to have made little difference in the typical attitude of architects toward the contemporary forms of electric light. This RECORD editors discovered when they turned back to a series of 10 articles, "What Do We Know About Lighting" published in 1913-1914 issues of ARCHITECTURAL RECORD. Some of the thorns: *Yellow vs. White Light.* Author, a lighting consultant, cited case of 50 draftsmen in one office exchanging the newly developed tungsten filament lamps (white light) for the more preferable (in their view) carbon filament lamps (yellow). And the author left no doubt that he preferred yellow light for the home. [Anybody ever hear of fluorescent and incandescent?] *Glare.* "These mirror-images of glaring reflectors are factors of great distraction in large offices devoted to clerical work." *Uniformity.* "The visual function is depressed by too great a lack of contrast in surface brightness between the working page and the wall . . . an extremely dark wall affords too abrupt a contrast. *Jargon.* ". . . prospective victim is regaled by high sounding technical terms until goaded to desperation by 'lumens,' 'fluxes' and other such utterances . . ." *Academic Approach.* "We have passed the stage where the greatly overrated questions of "intensity" and "uniformity" of light need occupy our minds. We are not concerned about the engineer's efficiency of one watt per square foot." . . . "From the architectural viewpoint there is no preconceived method of lighting an interior, and the dogma of always expressing lighting in terms of energy, or intensity, tends only to produce ugly and commonplace monotony."

WHAT STRUCTURAL ENGINEERS WANT TO KNOW. Those topics of greatest interest to structural engineers, internationally, are indicated by the program for the joint meeting of the American Society of Civil Engineers and the International Association for Bridge and Structural Engineering, last month in New York. Major items were: Plasticity in Steel; Ultimate Strength in Reinforced Concrete and Folded Plate Structures; Model and Analytical Research—Dams and Shells; Research in Dynamics [for earthquake and blast]; Stability in Metal Structures; Prestressed Concrete and Concrete Bridges; Steel Bridges and Building Frames; Shell Structures.

SHARPENING COST FIGURES. As competition for the building dollar gets keener, so does the eyesight of clients watching their purse strings. On the professional side, latest to speak out on costs was Charles Luckman, (Pereira & Luckman) keynoter of the Prestressed Concrete Institute meeting in September. His warning on estimates: "For decades, architects have leaned too heavily on the fact that they did not have a legal responsibility to produce a building within the original budget. Architects do have, and must accept, the full moral responsibility for working closely with the client to properly correlate what the client wants with what the client can afford within the budget. Better cost estimates are a necessity. If the architect is to effectively combat the 'package' deal competition, he must make his services as complete as those of his competitor in the package field."

On the producers' side is a new report, *"Ultimate Wall Costs,"* published by Structural Clay Products Institute, that will be much read, discussed and used. By "ultimate cost" of exterior walls, the authors, C. T. Grimm and James C. Gross, mean what it will cost an owner to buy and maintain a wall and to pay for heating and air conditioning. Some significant factors included are: the cost of money, depreciation, taxes, foundation costs, floor space taken by walls, salvage value, and speed of erection. While the reader may not agree with all the details, or necessarily all the discussions, the basic method has a thoroughness that makes it hard to beat for meaningful cost analysis of walls or, for that matter, with interpolations, for other building components.

FIRE RESEARCH AT LIFE-SIZE SCALE. Canadian fire researchers must now be acknowledged authorities on why people can't escape from fires in homes and small buildings. In a unique opportunity, scientists at the Division of Building Research, National Research Council were able to burn down six houses (both brick and frame), a school and a town hall, all instrumented with test equipment (recovered during fire). These buildings were in Aultsville, Ontario, an area now flooded by the St. Lawrence Seaway, thus the project's tag—"The St. Lawrence Burns." Fires were started by putting a torch to wood cribbing, the equivalent of a typical amount of furniture. Checks were made on smoke intensity, carbon monoxide, temperatures, and noise (awakening influence). Sobering observation: In two minutes after start of a fire, an open, second-floor bedroom was cut off by smoke; after nine minutes carbon monoxide would have been lethal.

THIS MONTH'S AE SECTION

"LIGHTING: A Key to Spatial Character," pp. 232-242. Light is examined in terms of its relationship to forms, materials and spaces. Design techniques are examined in relation to the effects they produce.

TECHNICAL ROUNDUP starting on page 243
Short technical news items of interest

PRODUCT REPORTS starting on page 244

OFFICE LITERATURE starting on page 292

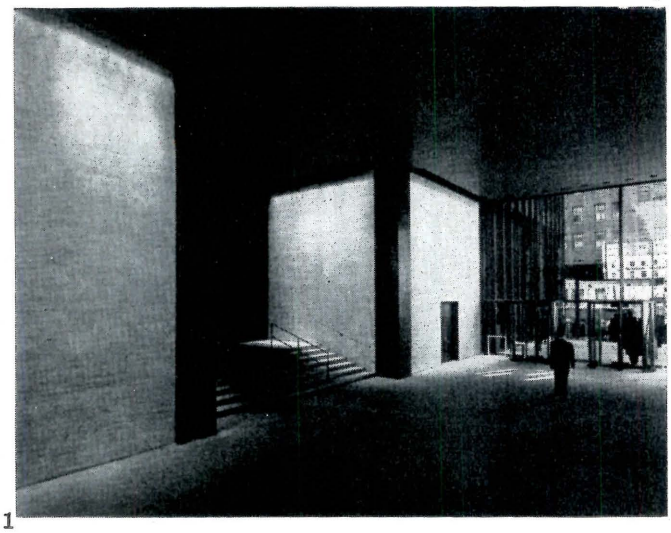
TIME-SAVER STANDARDS, pp. 247, 249, 251, 253. Public Swimming Pools (concluded).

LIGHTING: *A key to spatial character*

by John Flynn *Advanced Application Development Group General Electric Lamp Division*

and Wilbur Riddle, A.I.A. *Resident Architect General Electric Lighting Institute*

George Moffett-Lens Group



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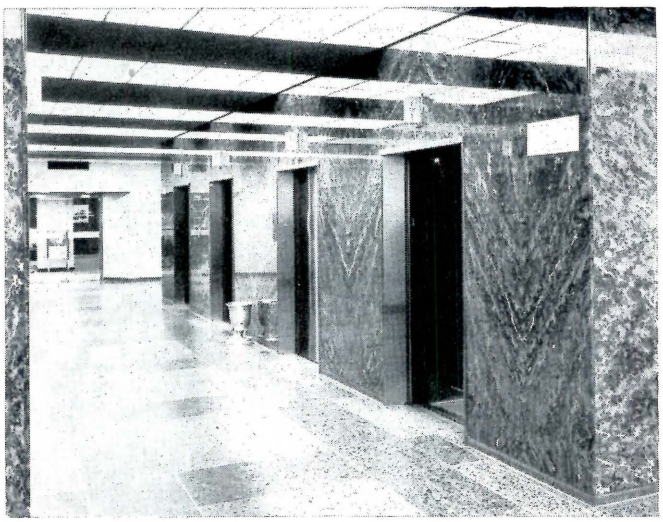


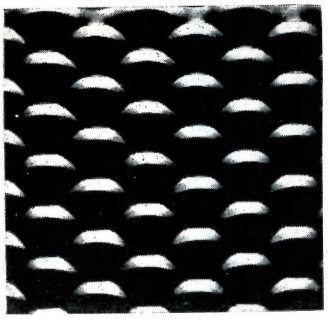
In both of these lobbies, light marks the location of elevators and corridors and permits the occupant to move about freely. In one, it also creates an atmosphere of dignity and repose—with a little drama thrown in for good measure. In the other, though certainly more than adequate for circulation, it causes the polished walls to dissolve in specular reflection.

Not quite half a century ago, ARCHITECTURAL RECORD published a series of articles titled, somewhat stiffly: "What Do We Know About Lighting? A Study Theoretical, Scientific & Practical," in which the author lamented the architect's inability to assimilate such technological advances as the tungsten lamp into the art of building, and deplored the architect's dependence on those concerned with the mechanics and theoretical aspects of lighting design. Were the articles not nestled among such period pieces as " 'The Towers of Manhattan' and Notes on the Woolworth Building" and "Notes on Gargoyles, Grotesques and Chimeras," the casual reader might surmise that their author was commenting on the contemporary scene—a jolting conclusion when we compare the Tower Seagram with the Tower Woolworth, Gabo with gargoyles. We obviously know a great deal more about lighting in 1958 than we did in 1913, and our sources and techniques have been much improved, but it would seem that they are being used no more imaginatively.

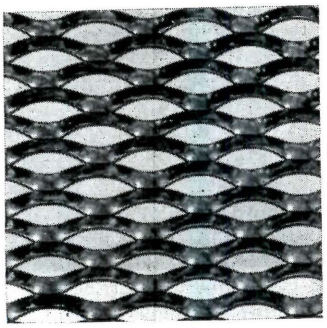
Now, as then, light is commonly treated as a necessary appendage that must be added to perform a specific function, rather than as a building material whose unique characteristics demand that it be included in the design from the beginning. One wonders how it is that a profession which embraces so eagerly the esthetic possibilities offered by new developments in structure and materials can overlook the ability of light to create a made-to-order visual atmosphere.

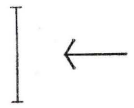
To begin with, of course, there is a basic difficulty in visualizing light. Even if lighting is considered in the initial stages of design, the architect may lack the verbal and graphic vocabulary with which to communicate the pattern of light and shade he sees in his mind's eye to the consultant who will finally translate it into equipment. Unless the designer is familiar with the qualities, functions and characteristics of light, and the techniques involved in its use, the final installation may fail to achieve the desired effect.

On the following pages, these fundamentals are reviewed, with sources and techniques discussed in the context of their role in molding the visual character of the spaces they illuminate.

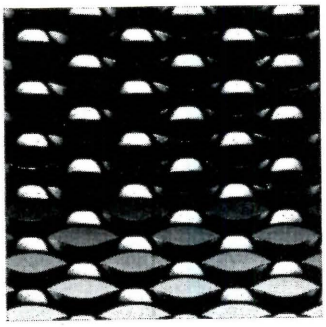


Directional light from above, front

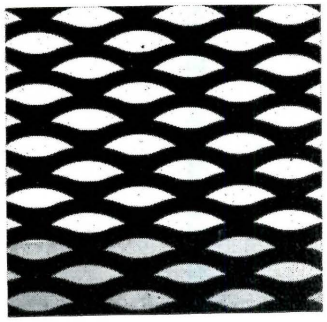


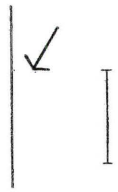


Directional light, frontal

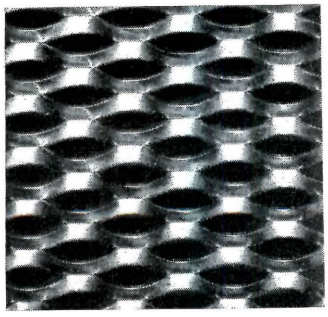


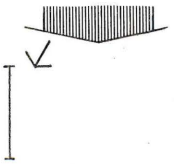
Directional light from above, rear



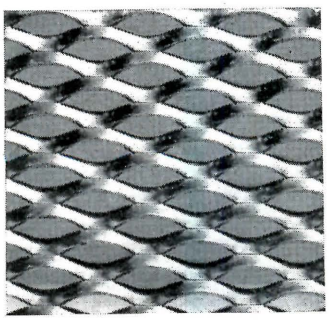


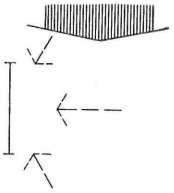
Silhouette





Diffuse light plus directional light





Diffuse light

In the illustrations opposite, the form and texture and color of the lighted object remains in every case the same: only the lighting changes. Yet that single variable profoundly alters the apparent character, stimulating a wide range of reactions in the observer.

Dealing as they do with isolated objects and settings, photographers and stage designers have long been aware of—and taken advantage of—this dynamic effect of light on static forms and surfaces. Architects are perhaps equally aware of the dynamic quality of light; but, dealing as they must with integrated functional spaces, they often lose sight of the fact that the "illusions" created by changing patterns of highlight and shadow may be as real as the space itself.

The technique of varying the intensity and direction of light in order to emphasize (or de-emphasize) form and texture is almost axiomatic. However, unless the characteristics of both the light sources and the elements to be lighted are carefully studied, even such obvious manipulations may fall short of the mark. Worse, they may produce an effect quite different from that intended.

Plaster and similar finishing materials, for example, are intended to appear perfectly flat and uniform, and a source which "emphasizes their texture and form" by washing them with a grazing light will also accent any small defects in workmanship or finish. For such surfaces, a frontal component or very diffuse general lighting may be more appropriate.

Other surface characteristics similarly affect the development of an effective lighting scheme. Matte surfaces, which reflect their light in all directions, may be lighted and viewed as a relatively uniform plane; on the other hand, such materials as glossy paint, marble and glass begin to approach the conditions found in lighting mirrors or specular metals. Depending on the relative positions of the light source and the observer, they may not visually indicate their own characteristics at all, but may appear dark or even act as "mirrors," reflecting a direct image of other lighted objects and surfaces.

Thus the most expensive materials can fail to make their potential impact if "savings" are achieved by skimping on the lighting; the most carefully planned space can quickly lose its character if light is thoughtlessly super-imposed.

LIGHTING: *Focal attention and dramatic emphasis*

Hand in hand with a careful study of the elements to be lighted must go an equally careful analysis of the space which they comprise and the spatial effect which the lighting is to reinforce—or create.

At one extreme is the flat uniformity of diffuse lighting. Texture and form virtually disappear as highlights and shadows are reduced or eliminated entirely; in an enclosed space, no element seems more important than any other. It is in this direction that the distraction-free environment necessary for sustained visual tasks is found.

At the other end of the scale are the sharply contrasting highlights and shadows produced by directional light. When brightness patterns are carefully controlled, such light can be highly dramatic, but the drama is achieved at the expense of the observer's ability to see and appraise objects within the space.

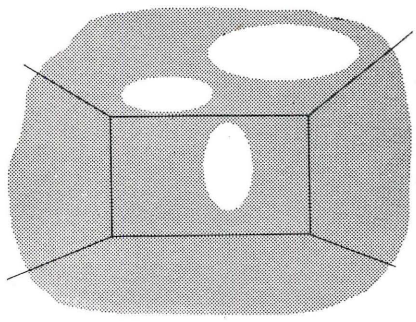
For most spaces, of course, appropriate lighting lies between these two extremes, with diffuse and direct light proportioned to strike a proper balance between ease of seeing and emotional excitement.

In some cases, it may be desirable to manipulate light to provide a suitable atmosphere for a variety of activities. Illustrations 4, 5 and 6 show how a constant minimum level of illumination can be maintained (note the floor brightness), while changing brightness patterns on the vertical surfaces and ceiling alter the mood and focal emphasis within a room.

The first (4) shows a diffuse space in which the focal interest is also diffused and the occupant is encouraged to move about at will. Well-suited to the activity of "finding a seat or a friend" or for the congregation of a large group, such an atmosphere could also be used for offices where flexibility and a minimum of distractions are desirable.

Reducing the overall brightness and introducing more contrast (5) reduces the diffusion and increases the feeling of directed activity until (6) the occupant's attention is completely controlled: he sees only what he is supposed to see. However, the horizontal illumination from the downlights still permits circulation and even note-taking or program-reading.

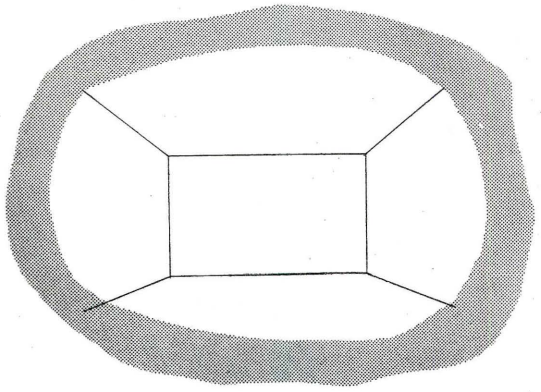
This use of high brightness contrast for getting and holding attention is well-established in the theater, but as a display technique and as a means of guiding circulation, the use of controlled brightness patterns is often overlooked.



The high contrast, dramatic space . . .

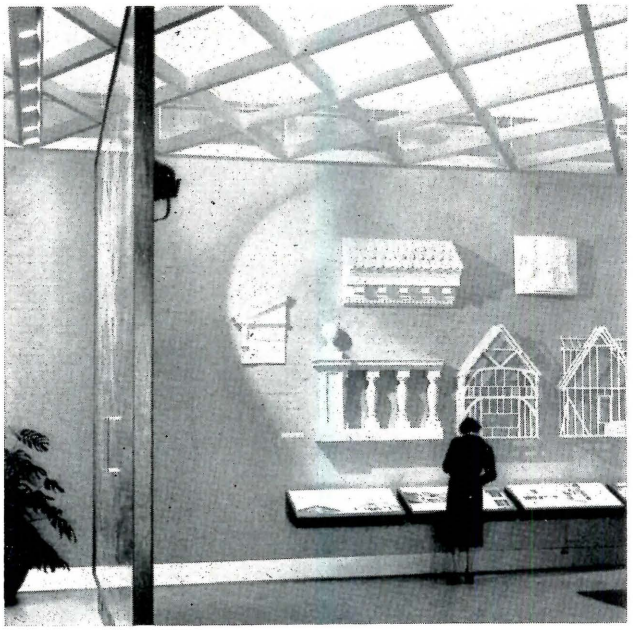
2

Spaces in which brightly lighted objects and surfaces are displayed against a dimly-lit background may in themselves be highly dramatic: the taut interplay of light and shadow produces an atmosphere charged with emotional excitement. But the same sharp contrast that contributes to the dramatic effect may greatly reduce the observer's ability to accurately appraise forms and surfaces

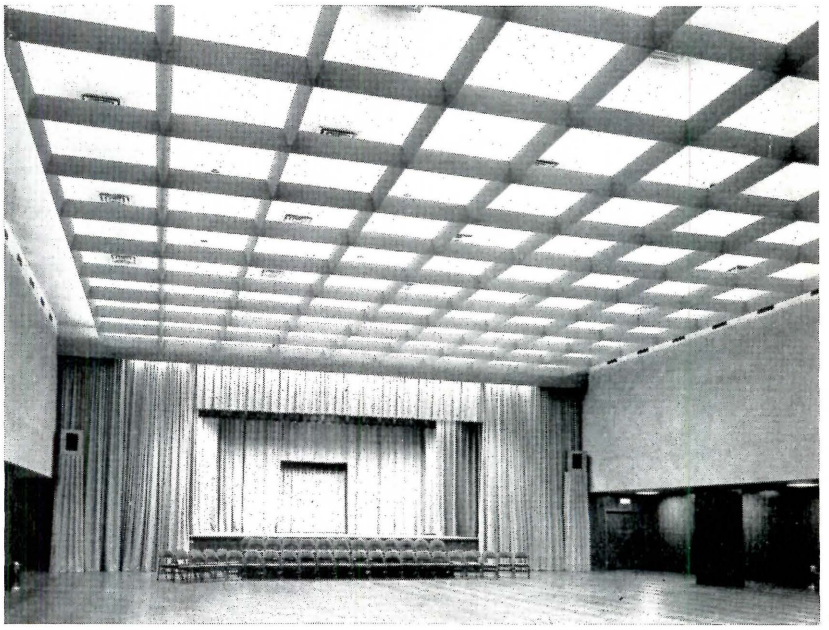


. . . The diffuse space

3



Diffuse lighting gives the low contrast illumination necessary for prolonged visual tasks, but it well nigh obliterates the highlights, shades and shadows by which we perceive form and texture. By introducing some variation in brightness, the monotony of such a space can be relieved, and the form and texture of included objects re-emphasized at no expense to the observer's ability to study them



4

5

6

LIGHTING: *Design techniques (downlighting and washes)*

Once the spatial concept has been defined, the designer's problem is to select from the many techniques available to him the one that will most effectively establish it. Many complex factors—not the least of which is cost—enter into the planning of any specific lighting installation, but the basic principles involved can be simply demonstrated by three applications of controlled lighting to a single activity (in this case, worship).

In the first example shown opposite (7), high contrast produces a highly dramatic mood. The lighting units are designed and positioned to keep stray light from striking the walls and ceiling, while focal points are highlighted and become completely dominant. The choice of dark and receding colors intensifies this effect so that the physical enclosure itself is de-emphasized in favor of the chosen focal points.

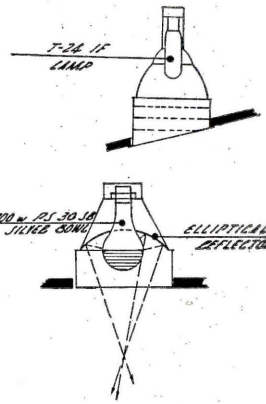
The second space (8) involves the reverse of this effect in that wall surfaces here are intentionally emphasized through a combination of perimeter wall-lighting and light colors. The result is much more diffusely lighted space—less dramatic perhaps, but better suited for study and appraisal.

A first reaction might be that the level of illumination is much higher here than in the first example. Actually, well-controlled recessed downlights provide virtually the same horizontal illumination at the pews in both spaces. The difference lies in the handling of the vertical surfaces which appear as major elements in the field of vision.

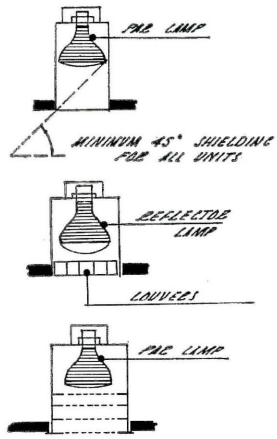
The third illustration in this series (9) again shows a diffusely lighted space. In this case, however, the indirect light source (the ceiling) also becomes a very dominant brightness factor. To relieve the extreme uniformity that might result from such a diffuse system used alone, variation is introduced through dark accents and irregular brightness patterns on the vertical surfaces around the perimeter.

Although these examples are all church applications, the principles and techniques of spatial manipulation which they illustrate apply to *any* space or activity. Consideration of surface reflectance and distribution of light will produce similar emotional effects for the lobby, the corridor, the store, the auditorium and the office, each solution evolving from the unique requirements of the space involved.

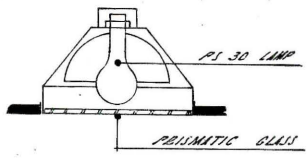
Downlighting units (general lighting)



Control of light and direction are due to very accurate (external) *reflector* control built into the fixture itself

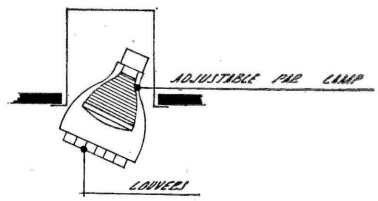


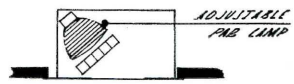
Control of light is due to accurate reflectors and/or lens control built into the *lamp* rather than the fixture or unit



Control of light and direction are due to accurate *lens pattern* control built into the glass facing of the fixture

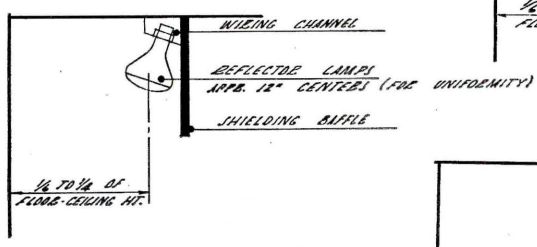
Directional units (accents and spots)

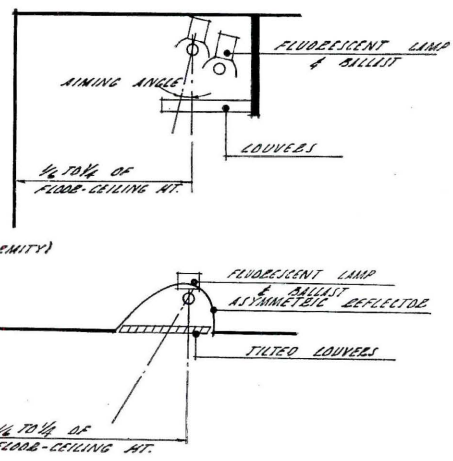




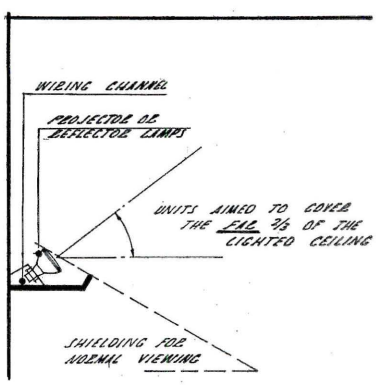
Adjustment or aiming due to *reflector* design or adjustment, *lens* design (as asymmetric, or adjustment of the *lamp* itself

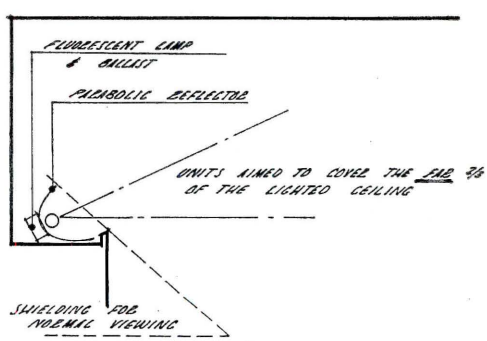
Wall lighting techniques



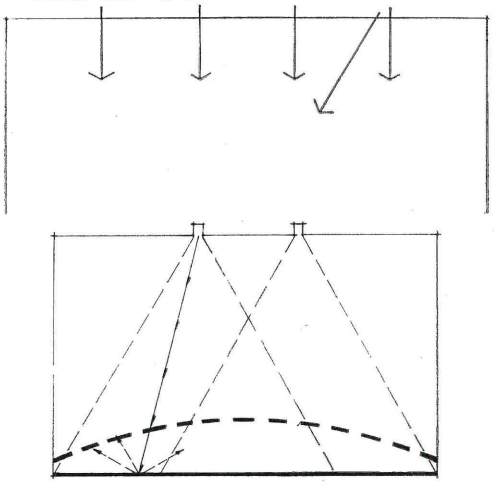


Ceiling lighting techniques

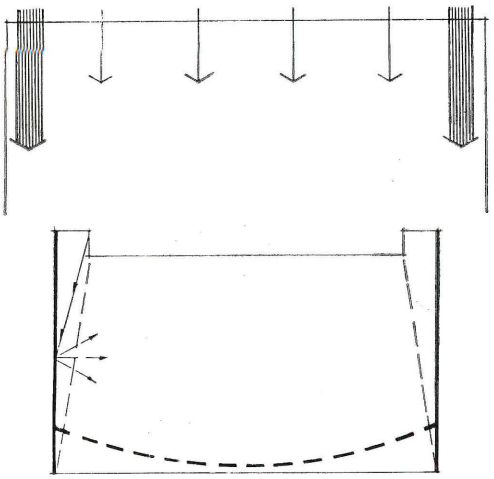




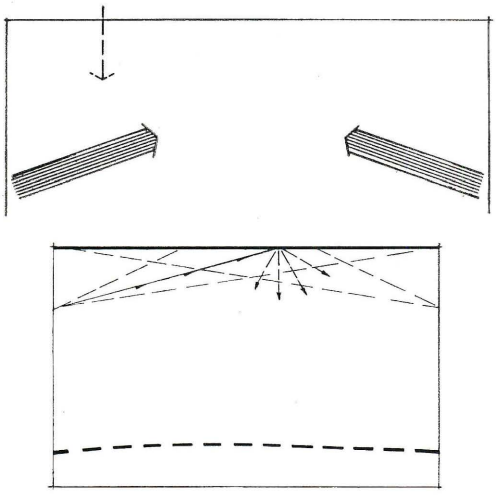
Note. heavy solid line directly lighted surfaces; broken line: light distribution



DOWNLIGHTING SYSTEM. Essentially a high contrast situation with relatively high brightness at floor. Walls and ceiling have low brightness level; objects are sharply defined highlights



WALL WASH. Walls are high brightness elements; floor and ceiling, lighted indirectly, have low brightness. Lighting is diffuse, but downlights add contrast, modify light distribution curve shown



CEILING WASH. Directly lighted, high brightness ceiling reflects light to floors and walls, which have relatively low brightness. Lighting is diffuse in quality, almost linear in distribution

7

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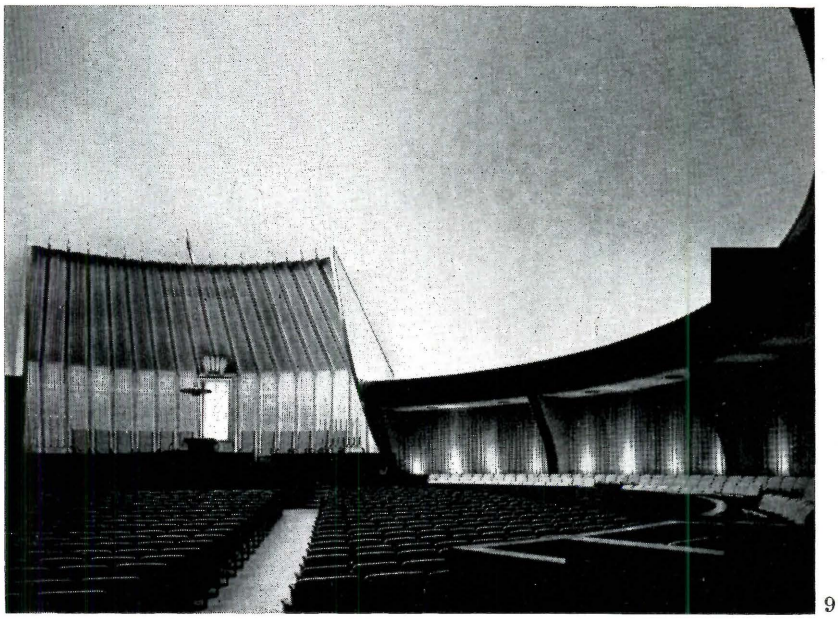
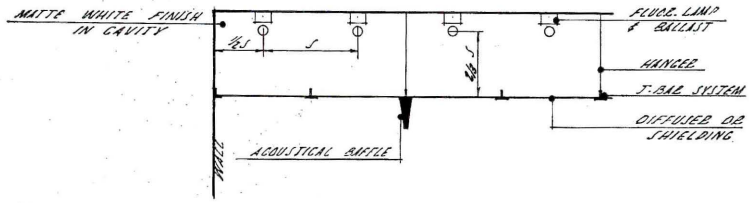


9

Luminous ceiling (and luminous elements)



Detail shows construction typical of luminous ceilings and elements in which diffusers or shielding are suspended in a modular grid below ceiling-mounted fixtures

Of course the designer need not be limited to the indirect lighting techniques already noted. The design possibilities of large-area self-luminous elements for diffuse lighting, for example, have already captured the imagination of many designers and the public as well.

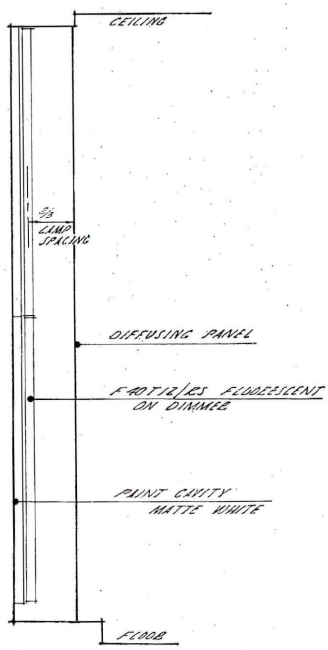
The illustrations opposite show self-luminous elements which have become major factors in the concept of space. The first (10) involves spatial emphasis or de-emphasis through variation in surface brightness, which is controlled primarily by the reflectance characteristics of those surfaces. The area specified for congregation and free public movement is characterized by diffuse lighting and light finishes which reinforce the generally unfocused atmosphere. As the observer leaves this public area to enter the more private parts of the building, however, he passes through a high-contrast change of pace at the stairs. The more dramatic atmosphere of this area, then, provides a *transition* between the free-movement public spaces and the more private, controlled areas beyond. The emotional characteristics of the lighting, together with a careful consideration of the effects of light on the surfaces involved, play an important part in establishing the emotional function of this space, so that people may "feel" what they are expected to do here.

In larger spaces involving mass circulation, large-area luminous elements may take on some of the functions performed by spotlighting in smaller spaces. Illustration 11 presents an unusually large scale application of this principle, which is actually used quite often where the tellers' area of a bank, the information desk, the special display in a department store and similar areas of particular interest are set under a luminous element. This technique may step up the level of illumination for the more difficult seeing tasks and appraisal problems involved with these activities as compared to the general circulation areas, and like the spotlight, it attracts attention and interest. Used skillfully, it can also become an aid to circulation control.

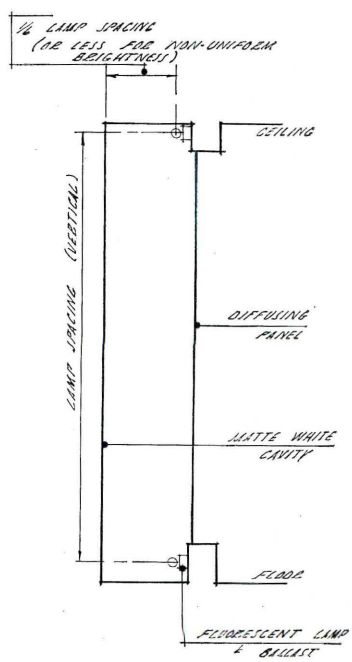
The self-luminous wall (12) is another large-area element which can become a major, dominating factor in the design. This element may be uniform or non-uniform in bright-

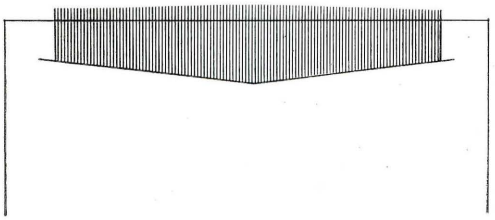
text continued on page 240

Luminous walls and panels

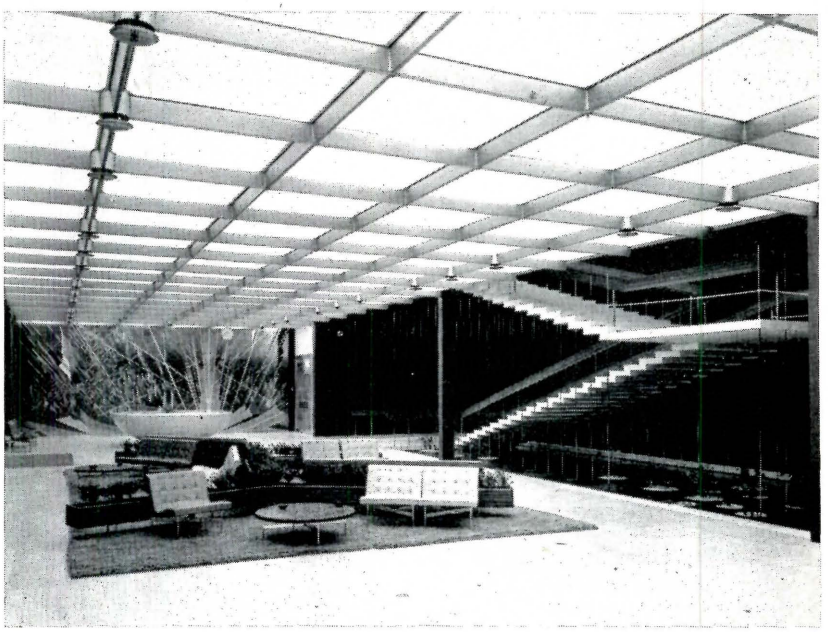


Details of representative vertical luminous elements resemble those for luminous ceilings. Lamps are shown mounted both vertically and horizontally within the cavity.





LUMINOUS CEILING produces diffuse light and generally unfocussed atmosphere for congregation and free public movement.



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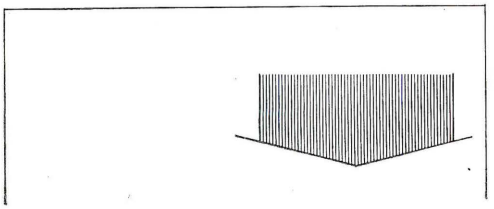
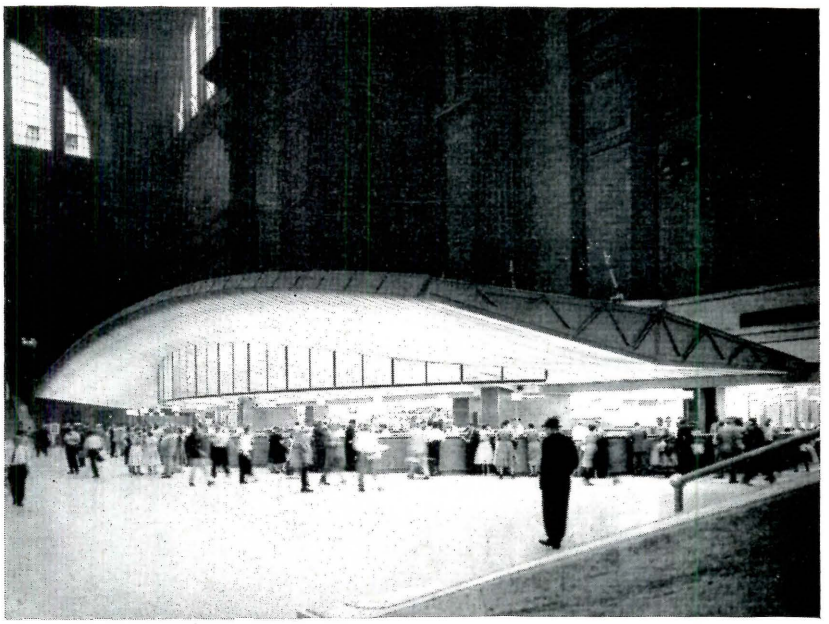
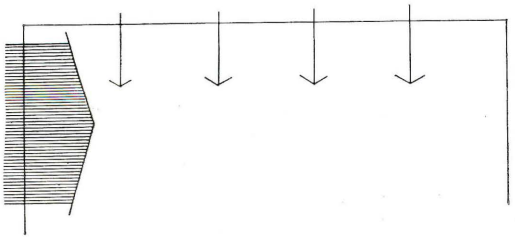


LUMINOUS ELEMENT steps up illumination level for specific activities, assumes attention-getting function of spotlight



11



LUMINOUS WALL may become dominant element of design, must be carefully controlled to avoid excessive brightness and glare.

12

ness, and introduces design and color possibilities totally unlike those of any other design technique. A major consideration, however, is the need for careful control to prevent the plane's becoming a source of glare and visual discomfort. This consideration is also important in the use of windows—which are, in a sense, self-luminous wall elements —to introduce natural light.

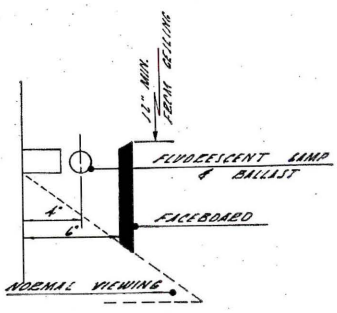
A window in a space serves two principal functions. Architecturally, it is a transparent screen: it is also essentially a vertical luminous panel for lighting the room. A successful solution for one function cannot automatically insure a good solution for the other, and in too many cases, window walls introduced and considered only as architectural elements produce acute problems of discomfort for the occupants. Excessive glare and variable light distribution are representative of the visual problems.

It should not be inferred from this that natural light is not a valuable tool, but rather that this source needs to be considered as *one* of the many lighting tools available to the modern architect. In this sense, it has several advantages as well as some disadvantages. As a light source it should be considered and analyzed just as any other lighting system; architecturally it should be analyzed as a design element with brightness characteristics similar to those of the luminous wall panel.

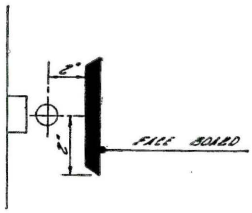
In many cases, such an element—properly controlled—is perfectly compatible with the concept of space and environment. But the luminous (window) wall is not automatically the ideal solution for all spaces and activities—either as a source of light or as an element of brightness. The advantages, spatial effects and emotional appeal of the well-planned "transparent screen" may be overshadowed by the environmental problems created unless these problems are recognized and controlled.

Where the designer plans the lighting as a ceiling pattern of luminous elements, this system too can introduce a generally diffuse lighting quality to the space. The illustrations here indicate two examples of this very widely-used and variable technique. The first (13) involves direct-indirect units, while the second (14) shows a pattern of indirect coffers. In both cases, other supplementary systems (downlights, spotlights and wall washes) counterbalance the uniformity of the luminous base, reintroducing points of focal attention, form, sparkle and brightness contrast.

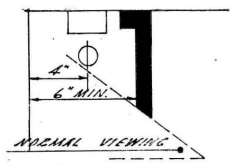
Representative wall "accent" techniques (fluorescent)



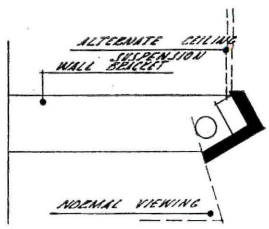
Valance: above eye level



Bracket: at or near eye level

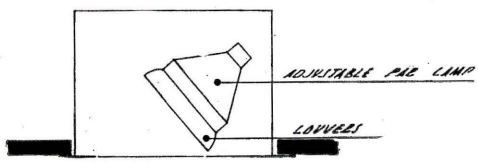


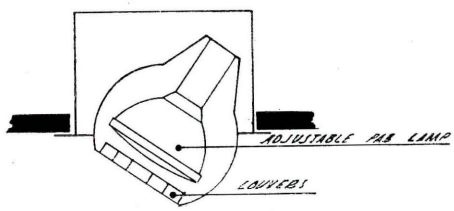
Cornice: no upward component

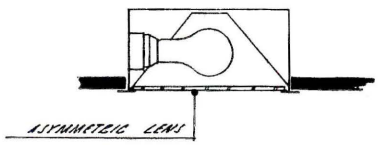


Extended (or suspended) unit

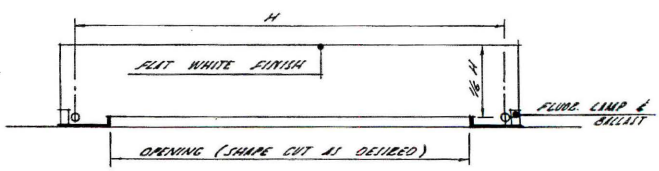
Representative wall "accent" techniques (incandescent)

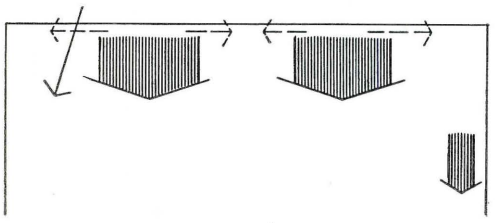






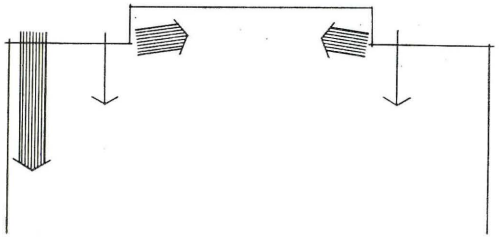
Coffer design techniques



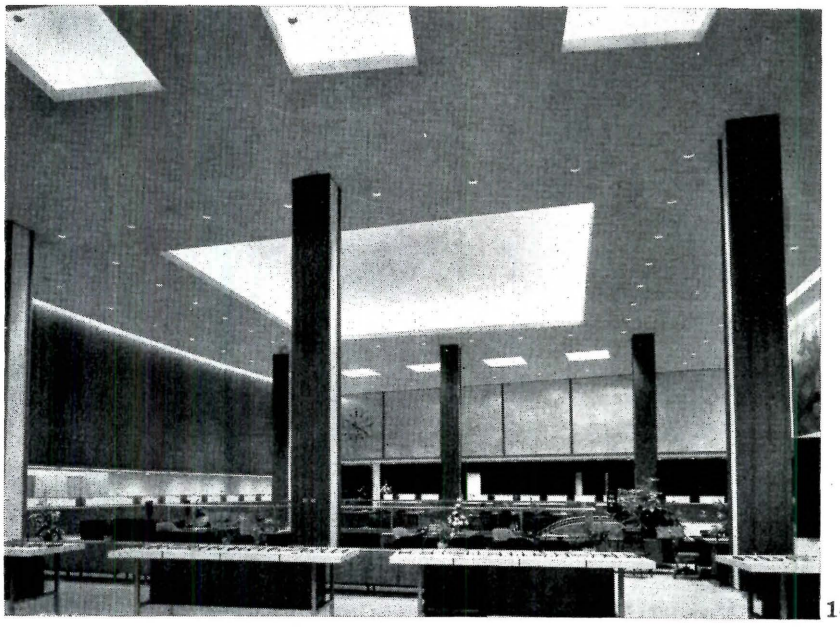


Direct-indirect units give ceiling pattern of large luminous elements. Generally diffuse light is accented by spots and washes

13



Downlights and washes again counterbalance uniformity of light from large luminous elements—in this case, indirect coffers



14

LIST OF ILLUSTRATIONS, PAGES 232 TO 242

1—Seagrams Building, New York. *Mies van de Rohe & Philip Johnson, Associated Architects, Richard Kelly, Lighting Designer*
2—Virginia Museum of Fine Arts, Richmond, Va. *Eggers & Higgins, Architects*
3—Information Center, Williamsburg, Va. *Williamsburg Staff Architects; Gerald B. Ewing, Lighting Designer*
4, 5, 6—Prudential Building, Chicago, Ill. *Naess & Murphy, Architects*
7—Church of St. Clement, Alexandria, Va. *Joseph H. Saunders, Jr., Architect*
8—Temple Emanu-El (Chapel), Dallas, Tex. *Howard Meyer, Architect; Richard Kelly, Lighting Designer*
9—Park Synagogue, Cleveland, Ohio. *Eric Mendelsohn, Architect*
10—General Motors Technical Center, Detroit, Mich. *Saarinen & Associates, Architects*
11—Merchants & Manufacturers Club, Chicago, Ill. *Victor Gruen & Associates, Architects*
12—Pennsylvania Station, New York City. *Lester C. Tichy, Architect; Lewis Smith, Lighting Designer*
13—Dayton's Dept. Store, Southdale Shopping Center, Minneapolis, Minn. *Victor Gruen & Associates, Architects*
14—Bank of the Southwest, Houston, Texas. *Kenneth Franzheim, Architect*
15—Manufacturer's Trust Co., New York City. *Skidmore Owings & Merrill, Architects; Eleanor LeMaire, Interior Designer*
16—Rich's Dept. Store, Atlanta, Ga. *Stevens & Wilkinson, Architects; Abe Feder, Lighting Designer*
17—St. Louis Air Terminal, St. Louis, Mo. *Hellmuth, Yamasaki and Leinweber, Architects, Henry J. Poehling, Lighting Designer*

LIGHTING: *Exterior spaces*

Just as the lighting of interior space can express the planned environment and the emotional quality desired by the architect, so exterior space can express its organization through planned patterns of brightness compatible with the activities and circulation needs.

Exterior lighting involves many of the same principles and lighting conditions that have been discussed for interiors. When the building itself is treated as an object of sculptural form displayed within the larger space of its natural or man-made surroundings, light molds this form just as it does any piece of displayed sculpture or merchandise.

Natural light renders the building with a "wash" of diffuse light periodically spot-lighted by a direct source, the sun. This condition is similar to that of the diffuse interior and has similar characteristics. The principal difference is that interior space can be controlled in respect to *both* form and light, while in exterior design (in daylight), we have no control over the light condition and must manipulate the building form and its detail to comply—as architects have done down through the ages.

At night, however, the situation becomes almost identical in many ways with the high contrast dramatic interior. The designer is now free to manipulate both light and form. Architecture takes on a "second aspect" —a second expression of the building's use, of its form and color, and of the ingenuity of its designer.

The interior lighting of the ceiling and wall surfaces, beside affecting the previously discussed conception of interior space, can also become a major factor in determining the exterior appearance (and appreciation) of the building viewed at night. Sometimes this effect has value as a public relations or advertising technique—but for the architect, it suggest that the building's character can and should be expressed inside and out, day and night. At all times a building is, in a sense, a composition of design elements—and the clarity or unity of this composition depends on the character and organization of the light that renders it.

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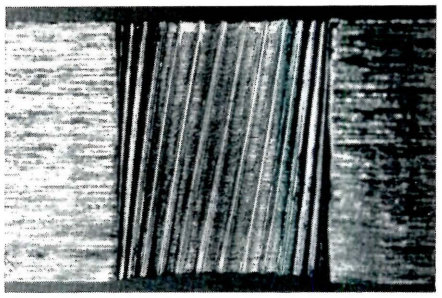
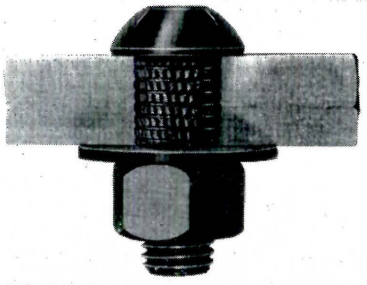
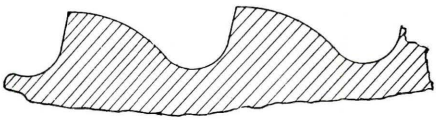
HOOK KNURLS ADD BODY-BOUND FIT TO HIGH TENSILE BOLTS



When driven, knurled bolts cold-work joint material, producing spiral-grooved holes



Bearing bolt is shorter than standard h-s bolt, requires no washer under bolt head

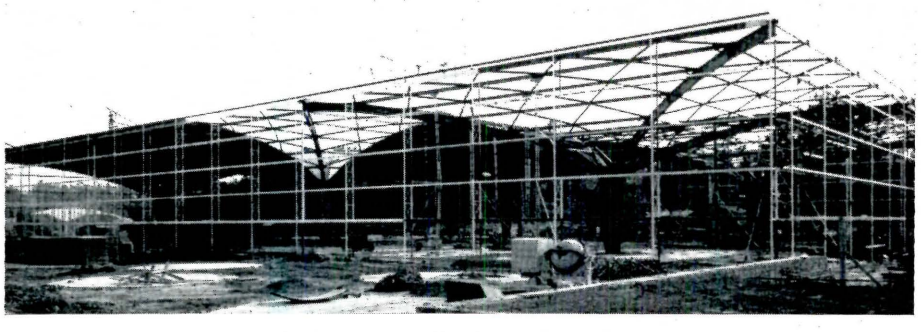


Entry face is ball-shaped for easier driving; angled back develops "hooking" action

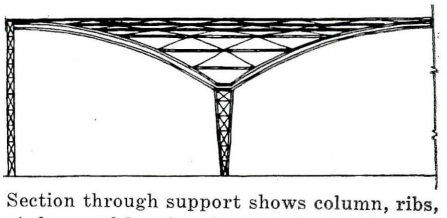
A new fastener for building steel that is bearing through most of its length and uses one less washer than the standard high-strength bolt has been announced by Lamson & Sessions Co., the designers, and has been used in construction with good results. The fastener is a high strength bolt with a special knurling on the shank. This knurling is done in a shallow spiral and each knurl has a ball-shaped entry surface with the back relieved at an angle to form a buttress which, while strengthening the knurl, makes the bolt easier to drive by eliminating pile-up of sheared material and consequent galling of the hole. The bolt itself is slightly tapered for half the grip length and the head is shaped to conform to the standard rivet set. All these features are said to make the bolt easy to drive through a misaligned hole far enough so that it can be pulled in the rest of the way with the nut. The bearing bolts are 1/8 in. shorter than standard high-strength bolts and use one washer under a standard nut.

Results of tests conducted on the new fastener by Professor W. H. Munse of the University of Illinois have been published in a report entitled "An Evaluation of the Behavior of Structural Connections Assembled With Hook-Knurl Bolts," which is available from the Lamson & Sessions Co., Cleveland 2, Ohio.

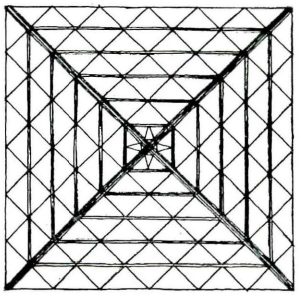
BRITISH-MADE "MUSHROOMS" AT THE BRUSSELS FAIR



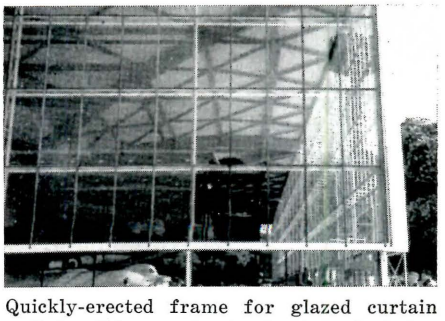
British Industries Pavilion during construction is an airy web of mushroom-shaped supports enclosed in a curtain wall frame of prefabricated timber stiffened by light steel braces



Section through support shows column, ribs, girders and bracing for exterior wall



Latticed steel girders form folded slab, act as ring ties between diagonal ribs



Quickly-erected frame for glazed curtain wall is of low cost, glue-laminated timber

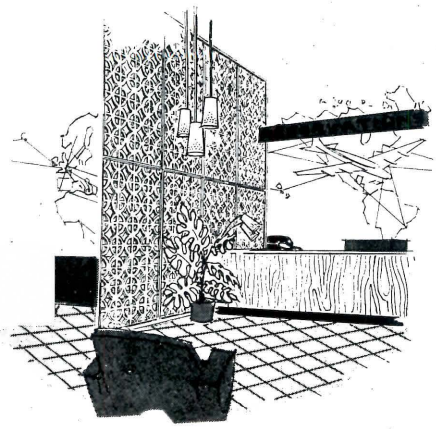
Of the many steel-framed buildings that sprang up on the grounds of the Universal and International Exhibition in Brussels this summer, one of the more interesting was the mushroom-columned pavilion that housed the exhibits of the Federation of British Industries. Its announced purpose was to show British-made wares, and the building indeed resembled a giant showcase, with its glass-clad walls revealing even the workings of the electrical substations within.

The inner workings of the structure itself, however, are perhaps more intriguing, if for no other reason than that its 60,000 sq ft of roof rest on only six columns. Each column is located at the center of a square bay made up of latticed girders spanning as a folded plate between curved diagonal ribs. The ribs and columns act as three hinged frames with the horizontal members of the girders acting as ring ties; the whole assembly forms a distinctly mushroom-like support.

The exterior walls are completely glazed with fixed glass set in a low cost prefabricated curtain wall framing system of glue-laminated timber stiffened with light steel lattic wind braces. At the south end, a mural in opaque colored glass is used to reduce solar heat gain and glare.

Architects for the pavilion were Edward D. Mills and Partners, with Felix J. Samuely and Partners as consulting engineers.

more roundup on page 256

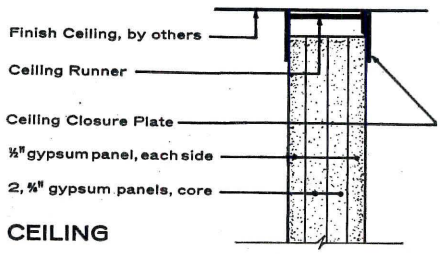


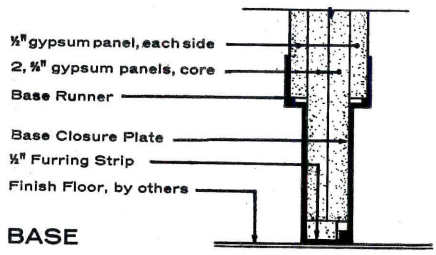
"WROUGHT" ALUMINUM SCREENS FOR INDOORS AND OUT

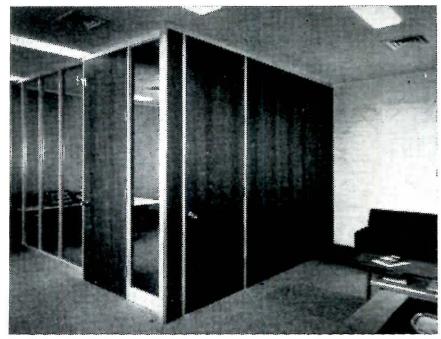
While decorative metal work is certainly not new to architecture, its current revival has produced some new twists, the latest being the use of "carved" anodized aluminum in screens and grilles that are reminiscent of wrought iron in feeling; lighter in design, in color and in actuality. Fabricated of solid metal in thicknesses ranging from ¼ to ¾ in. and sizes ranging from 2 by 2 to 4 by 12 ft, they are strong and durable but less bulky than screens of most conventional materials, and can be installed in standard window mullions or curtain wall units. Maintenance costs, as might be expected, are negligible. Any flat design or pattern with a minimum radius of 5/32 in. can be accurately reproduced, or the architect may select a stock pattern. The colors, necessarily limited to those obtainable through the anodizing process, are red, blue, green, gold, brass, bronze, copper or natural, with others available on special request. *Morris Kurtzon, Inc., 1430 S. Talman St., Chicago 8, Ill.*

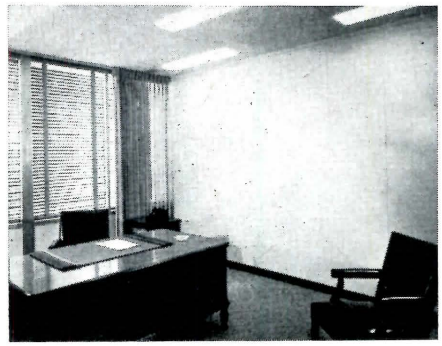
MOVABLE WALLS WITH AN AIR OF PERMANENCE

Movable wall systems have become well nigh standard for office interiors, but in many instances their chief asset is also a liability: impermanent walls often *look* that way. One type that doesn't is the *Vaughan Wall* which combines several kinds of floor and ceiling runners and door frames with laminated gypsum panels in various thicknesses and finishes, including wood veneer, paint and vinyl. Fabricated on the job in 2 ft modules and heights up to 12 ft, the panels are installed in the usual way and have the usual advantages of flexibility, mobility, salvagability, integral wiring, etc. They also have tongue-and-groove joints which eliminate intermediate posts and create the illusion of a continuous permanent wall. Less illusive are such attributes as a .42 sound rating, a one hour fire rating and a cost reportedly less than that of similar movable wall systems. *Vaughan movable interior Walls, Inc., 11681 San Vincente Blvd., Los Angeles 49, California.*









NAKASHIMA-DESIGNED FURNITURE: TOMORROW'S TRADITIONAL?

A New York newspaper recently described the emerging "architectural" style in furnishings as being "square and boxy as if designed by an architect." By this definition, nothing could be less architectural than the furniture grouping shown at right —which *was* designed by an architect. A sampling from Widdicomb-Mueller's new *Origins* collection by George Nakashima, the pieces reflect the love of fine craftsmanship and fine materials that characterizes Nakashima's approach to design, architectural and otherwise: a walnut cocktail table is inlaid with Carpathian elm, dowels are left exposed, the natural sap line of the wood becomes a primary decorative feature. Seating pieces include a cane-backed sofa and a tall "butterfly wing" chair of walnut upholstered with foam rubber, as well as occasional chairs whose seats and backs are formed of hand-shaved spindles. Tables, storage units, room dividers and other occasional pieces round out the collection. *Widdicomb-Mueller Corp., 514 Fifth St., Grand Rapids, Mich.*

more productions on page 272

Curtain Wall by Adlake

Fabricated to the most exacting specifications, in satin or anodized finished aluminum, complete with spandrel panels of porcelain enamel, glass or patterned aluminum. Engineering and design assistance available on request.

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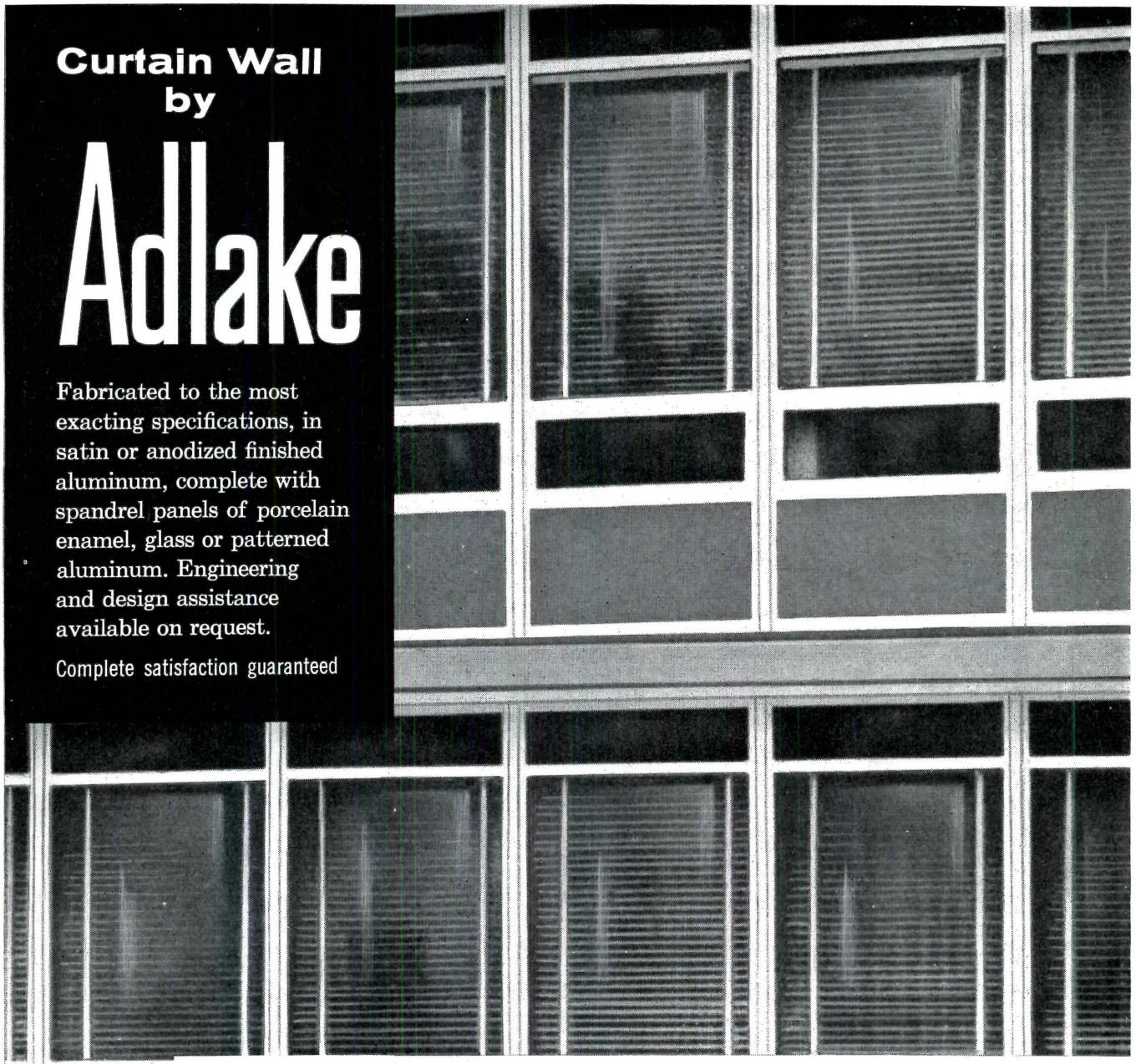

Building: Shell Oil Co., Indianapolis, Ind.

Architect: Everett Brown Co.

Contractor: Berling & Sons

Type: Adlake Curtain Wall

The Adams & Westlake Company

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Established in 1857

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Architect: Samuel Hannaford & Sons, Cincinnati, Ohio
Associate Architect: Baskervill & Son, Richmond, Va.
Engineer: Watson & Hart, Greensboro, N.C.
General Contractor: John Tester & Son, Washington, D.C.

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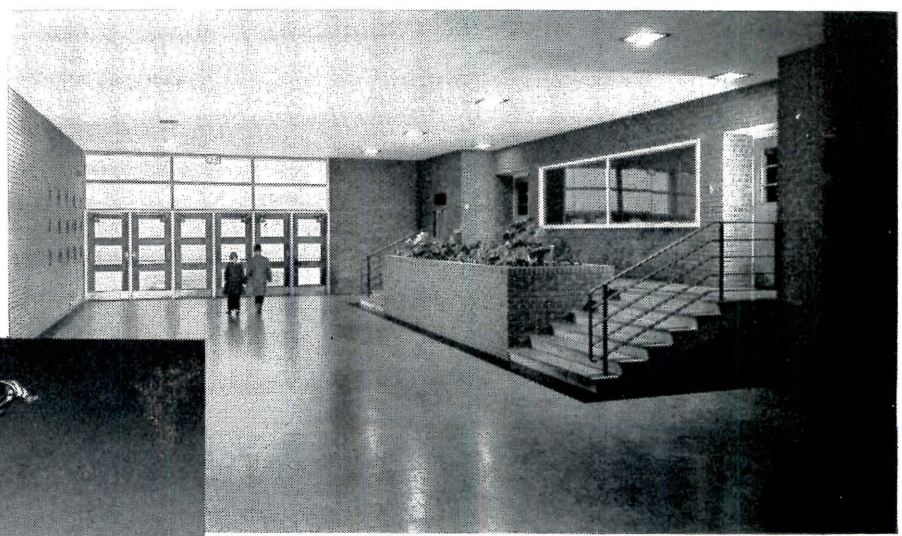

(Above, and at left) The Cora Kelly School in Alexandria, Va.

Architects: Robert A. Willgoos, Dwight G. Chase, Alexandria, Va.
General Contractor: John Tester & Son, Washington, D.C.

PUBLIC SWIMMING POOLS: 4

*Minimum Standards prepared by the National Swimming Pool Institute**

Items are numbered consecutively for convenience in identification

20. Filters, Diatomite: Where diatomite filters are used, they may be of either pressure or vacuum type. The filter rate shall not exceed 2.5 gpm per square foot of filter surface area.

The cycle of operation between cleaning of the diatomite filters shall be not less than a 24 hr period of continuous operation and this shall not be deemed to apply to initial operation of a pool, but only after operation for a period of 3 days or such period as is necessary to initially clear the pool.

Provisions shall be made to introduce a pre-coat to completely cover the filter elements, upon placing the equipment in initial operation and/or after each cleaning. The equipment shall be so arranged that during pre-coating, the effluent will be refiltered or disposed to waste without passing into the pool until the effluent is clear of suspended matter.

Equipment shall be provided for the continuous feed of filter aid to the filter influent and the equipment shall have a capacity to feed not less than 0.1 lb of this material per square foot of filter area over a 24 hour period.

Exceptions to the above may be made in Types B, C, D, E & F pools, in cases where this equipment need not be provided.

The tank containing the diatomite filter elements shall be constructed of intermediate carbon steel, plastic or other suitable material which will satisfactorily provide resistance to corrosion, with or without coating, and shall be of adequate strength to resist all stresses resulting from loading with a factor of safety of 4, in relation to the ultimate strength.

The septum or elements which support the filter aid shall be of corrosion-resistant material and shall be provided with openings, the minimum dimension of which shall be not greater than .005 in.

The septa shall be constructed to be adequately resistant against crushing or deformation, with the maximum differential pressure between influent and effluent of not less than the maximum pressure which can be developed by the circulating pump and of adequate strength to resist the stresses developed by the cleaning operation, with the impact developed from an accelerated washing operation.

In the complete filter installation, where dissimilar metals are used which may set up galvanic electric currents, the metals shall be insulated with a suitable dielectric which will satisfactorily prevent corrosion from electrolysis.

The filters shall be designed and installed in such a manner that they can be readily disassembled and elements removed and they shall not be installed where inadequate working space above or around is available for such disassembling.

The filter plant shall be provided with pressure differential gauges and air-relief outlets where necessary.

21. Filters, Other: In the absence of complete information on operating characteristics, durability, etc., of cartridge and other type filters, no minimum standards can be established at this time and their installation on public pools may only be made on a trial basis.

22. Compound Gauge: The pump suction header shall be provided with a compound gauge between the pump strainer and the pump, which will indicate both positive and negative head.

23. Strainers: At all pressure type filter plants or where the circulating pump is used for vacuum cleaning the pool, a suitable strainer or screen shall be provided to remove solids, debris, hair, lint, etc. Where a wet well is provided, the strainer shall consist of a removable screen through which all water entering the pump shall pass. Where no wet well is provided or where the suction cleaner or any other suction line is piped directly from the pool to the pumps, a pot-type strainer with removable strainer basket shall be provided. The strainer basket shall be of rigid construction sufficiently strong to prevent collapsing when clogged. One extra strainer basket shall be provided.

Any type of screen or strainer basket shall be fabricated of a corrosion-resistant material or shall have a protective coating of such material.

Screen or strainer basket shall have maximum openings no greater than ¾ the size of the solids which will pass through the pump impeller without clogging and the total clear area of all openings shall be not less than 4 times the area of the largest sized pipe from the pool to the strainer influent.

24. Rate-of-Flow Indicator: Every swimming pool provided with recirculation and refiltration system shall be provided with a rate-of-flow indicator on the pump discharge line leading to the filters and shall be calibrated for measuring both water for filtration and backwash and the activating element creating the pressure differential for indication of flow shall be installed with adequate clear distance upstream and downstream to obtain a reasonable degree of accuracy.

The rate indicator shall be calibrated for and provided with a scale reading in gallons per minute and shall have a range of 10% below the established filtration rate and 10% above the backwash rate established.

Where diatomite filters are used, the activating element of the flow indicator shall be installed in the filter effluent line.

POOL POPULATION, SANITARY FACILITIES

25. Capacity of Pool in Bathers: The maximum number of persons in bathing attire within the pool enclosure or the bathing area shall be limited to one person per 20 sq ft of pool and deck area combined.

26. Bathhouse: Adequate dressing and sanitary plumbing facilities shall be provided for every public swimming pool. An exception to this may be made in Types B, C, D, E & F pools where available facili-

* The technical data presented here gives basic requirements for public and semi-public design, systems and equipment. It is intended by the NSPI to serve as recommended minimum standards, and not as a model code.

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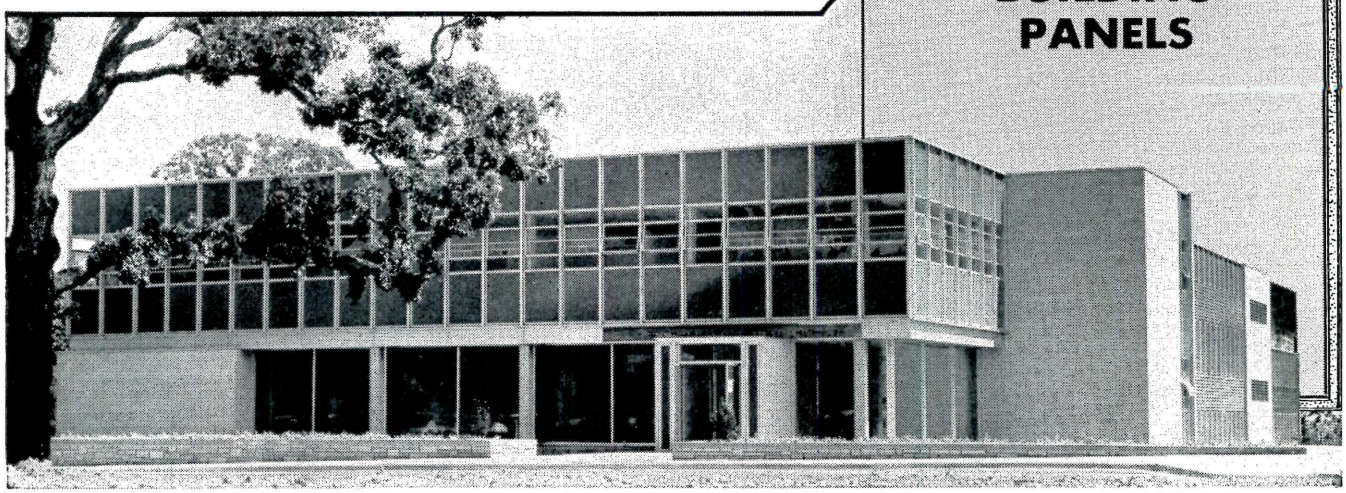
HASKELITE BUILDING PANELS



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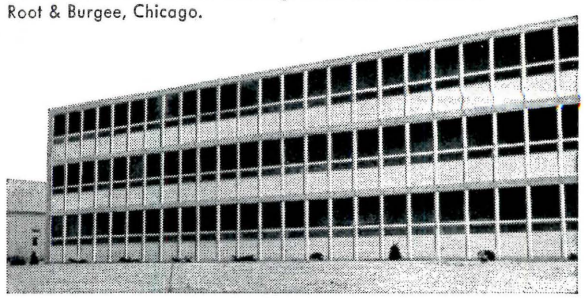
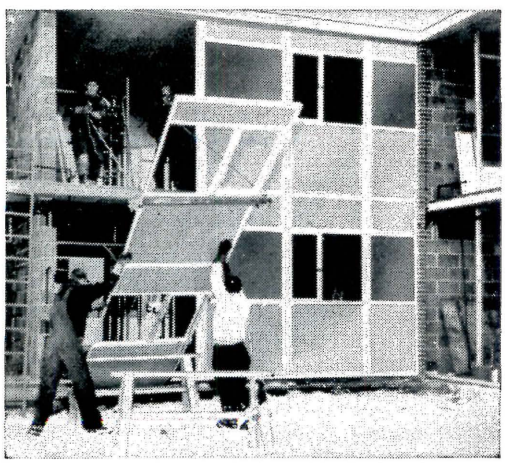
Haskelite panels are available in a wide range of stock sizes and thicknesses, or in special sizes when specified. For the complete story on the advantages of Haskelite panels, write: Haskelite Manufacturing Corporation, Department BQ-11, Grand Rapids 2, Michigan.

Monsanto Chemical Company's new laboratory in St. Louis represents the most thorough use of plastics in a commercial building in the world. Haskelite panels played a basic structural role in this new building. Architect—Holabird & Root & Burgee, Chicago.

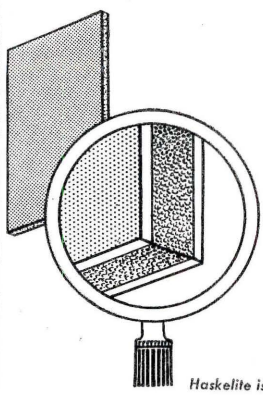


The modern, attractive appearance that can be gained with Haskelite panels is shown here in the students' dormitory at Marion College, Marion, Ind. Architect—Orus O. Eash, Fort Wayne, Ind.

New student housing project at Michigan State University goes up rapidly with Haskelite panels. Entire wall can be installed without using expensive erection equipment. Architect—Manson Carver Associates, Lansing, Mich.



These lightweight panels incorporate Haskelite's own Polyester Resin impregnated fiberglass cloth faces, bonded to cement asbestos interbands, and a foamed polystyrene core.



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PUBLIC SWIMMING POOLS: 5

Minimum Standards prepared by the National Swimming Pool Institute

ties are provided in connection with the general development for other purposes, etc., of adequate capacity and number, in close proximity to the pool.

Every bathhouse shall be provided with separate facilities for each sex with no inter-connection between the provisions for male and female. The rooms shall be well-lighted, drained, ventilated and of good construction, with impervious materials employed in general, finished in light colors and so developed and planned that good sanitation can be maintained throughout the building at all times.

(a) Minimum sanitary plumbing facilities shall be provided as follows:

Males: One water closet combination, one lavatory and one urinal shall be presumed to be adequate for the first 100 bathers.

One water closet and one urinal shall be provided for each additional 150 bathers or major fraction thereof. One lavatory shall be provided for each 200 additional bathers.

A minimum of three shower heads shall be provided which shall be presumed to be adequate for the first 150 males and one shower outlet shall be provided for each additional 50 male bathers.

Females: A minimum of two water closet combinations shall be provided in each bathhouse building and this shall be presumed to be adequate for the first 100 females.

One additional water closet combination shall be provided for each additional 75 females or fraction thereof.

A minimum of two shower heads shall be provided, which shall be presumed to be adequate for the first 100 females and one shower shall be added for each 50 additional females.

One lavatory shall be provided as a minimum, which shall be considered adequate for the first 75 females. One additional lavatory shall be provided for each additional 75 females in attendance, or major fraction thereof.

These minimum criteria for bathhouse plumbing facilities shall be based upon the anticipated maximum attendance in bathers. Facilities for either sex shall be based upon a ratio of 60% of the total number of bathers being male and 40% being female.

Shower and dressing booths shall be provided in female dressing space and dressing booths shall be provided with curtains or other means of seclusion. This condition may be subject to variation for schools and other institutional use where a pool may be open only to one sex at a time.

(b) *Drinking Fountain:* Not less than one drinking fountain shall be provided available to bathers both at the pool and in the bathhouse.

(c) *Hose Bibbs:* Hose bibbs shall be provided for flushing down the dressing rooms and bathhouse interior.

The floors of the bathhouse shall be concrete, free of joints or openings and shall be continuous throughout the area with a very slight texture to minimize slipping but which shall be relatively smooth to ensure complete cleaning. Floor drains shall be provided to ensure positive drainage of all parts of the building with a slope in the floor of not less than ¼ in. per foot, toward drains.

(d) *Hot Water:* Heated water will be provided at all shower heads. Water heater and thermostatic mixing valve shall be inaccessible to bathers and will be capable of providing 2 gpm of 90 F. water to each shower head, and no other water shall be supplied.

No differences in elevation, requiring steps, shall be provided in the interior of male and female dressing areas. No steps shall be permitted between the bathhouse and the pool deck areas adjoining and should it be necessary that the bathhouse floor be at a different elevation from the pool decks, ramps shall be provided at the access doors. Where ramps are used between the bathhouse and pool decks, the slope shall not exceed 3 in. per ft and shall be positively non-slip.

All partitions between portions of the dressing room areas, screen partitions, shower, toilet and dressing room booths shall be of durable material not subject to damage by water and shall be so designed that a water way is provided between the partitions and floor to permit thorough cleaning of the floor area with hoses and brooms.

(e) *Soap dispensers:* Soap dispensers for providing either liquid or powdered soap shall be provided at each lavatory and between each pair of shower heads and dispensers must be of all-metal or plastic type and no glass permitted in these units.

(f) *Mirrors:* Mirrors shall be provided over each lavatory and toilet paper holders shall be provided at each water closet combination.

(g) *Water:* All water provided for drinking fountains, lavatories and showers shall be potable and meet the requirements and conform with the standards of the U. S. Public Health Service.

27. Food Service: Where provision is made for serving food and/or beverages at the pool, no containers of glass or other material which might be a hazard to bathers' feet, when broken, shall be used. The area shall be so arranged and posted to prohibit the consumption of food and beverages on the pool decks proper.

ELECTRICAL REQUIREMENTS

28. Lighting and Wiring

(a) *Submarine Lighting:* Where submarine lighting is used, not less than 0.5 watts shall be employed per square foot of pool area.

(b) *Area Lighting:* Where submarine lighting is employed, area lighting shall be provided for the deck areas and directed toward the deck areas and away from the pool surface insofar as practical in a total capacity of not less than 0.6 watts per square foot of deck area. Where submarine lighting is not employed and night swimming is permitted, area and pool lighting combined shall be provided in an amount of not less than 2 watts per square foot of total area.

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Specialists in: FIRE ALARM SYSTEMS • ELECTRICAL CLOCK SYSTEMS • HOSPITAL PATIENT OBSERVATION • CLOSED CIRCUIT TV • AUDIBLE SIGNALS • ANNUNCIATORS • CODED PAGING SYSTEM • SYNCHRONOUS CLOCKS • TRANSFORMERS • CONTACT DEVICES

PUBLIC SWIMMING POOLS: 6

Minimum Standards prepared by the National Swimming Pool Institute

(c) All wiring in connection with requirements for a swimming pool for lighting or power shall conform with the codes of the National Underwriters' Laboratories (National Electric Code).

(d) In addition to any other grounding, each submarine light unit shall be individually grounded by means of a screwed or bolted connection to the metal junction box from which the branch circuit to the individual light proceeds.

(e) *Overhead Wiring:* No electrical wiring for lighting or power shall be permitted to pass overhead within 20 ft of the pool enclosure.

DRAINAGE PIPING

29. Mechanical Pool Fittings: Where overflow gutters are installed, outlet spacing shall not be greater than 15 ft on centers.

Overflow gutter branch lines from each drain fitting shall be not less than 2 in. I.P.S.

Pool inlets and outlets shall be provided and arranged to produce a uniform circulation of water and the maintenance of uniform chlorine residual throughout the pool; there shall be at least four inlets for the smallest pool.

Provisions shall be made to adjust the flow through all inlets.

Maximum flow rates (in gpm) through various sized inlet branches shall be not more than as follows: Size & gpm; 1 in. = 10; 1¼ in. = 20; 1½ in. = 30; 2 in. = 50.

In pools with surface area greater than 1500 sq ft or length in excess of 60 ft, inlets shall be placed around the entire perimeter. In any case, an adequate number of inlets shall be provided, properly spaced and located to accomplish complete recirculation and the maintenance of a uniform and adequate sterilizing medium at all times.

30. Main Drain Spacing: When the outlets to pool pump suction are installed near the end of a pool, the spacing shall be not greater than 20 ft on centers. An outlet shall be provided not more than 15 ft from side wall.

The outlet grate clear area shall be such that when the maximum flow of water is being pumped through the floor outlet, the velocity through the clear area of the grate shall not be greater than 1½ ft per second. Outlet grates shall be anchored and openings in grates shall be slotted and the minimum dimension of slots shall be not more than ½ in.

Where outlet fittings consist of parallel plates, of so-called anti-vortex type where the water enters the fittings from the sides rather than through a grating facing upward, entrance velocities may be increased to 6 ft per second.

All pool fittings shall be of non-corrosive material.

31. Piping: The determination of sizes of pipe, fittings and valves on the complete main pump suction line from the swimming pool shall be based upon a rate of friction losses for piping of not more than 6 ft per 100 ft of pipe, based upon Hazen-Williams formulas for 15-year old piping.

All piping on the discharge side of the pump for filtration and to the point for discharge of backwash water from the filter plant shall have pipe sizes determined on a basis of friction losses which shall be not more than 12 ft per 100 ft and the velocity in any pipe shall not exceed 10 ft per second and pipe selection shall be made based upon Hazen-Williams formulas for 15-year old pipe. In the determination of pipe sizes required, the criterion which would call for the largest pipe size shall govern.

All pool piping shall be supported by piers or otherwise to preclude against possible settlement which will either provide dirt traps or air pockets and a condition which would result in rupture of the lines.

All pressure and suction lines shall have a uniform slope in one direction of not less than 3 in. per 100 ft. Gravity waste lines around the pool 6 in. or smaller shall have a minimum slope of ⅛ in. per ft. Lines larger than 6 in. and all outfall waste mains shall be designed with a size of pipe and slope to freely carry the maximum flows required with no surcharge or back pressure in the lines. All piping and equipment shall be provided with positive means of completely draining all water to prevent damage from freezing.

32. Direct Connections to Utilities: No direct mechanical connection between a source of domestic water supply shall be made to a swimming pool or to its piping, thereby eliminating a cross connection to what may become a source of contamination.

The water supply for filling the pool, when derived from a potable supply, shall be by means of an over-fall fillspout to the pool, or an over-fall supply to a surge tank, wherein the water will freely overflow at deck level or the top of the surge tank, before coming into contact with the water supply outlet.

The disposition of sanitary sewage from the bathhouse shall be into a sanitary sewer, a septic tank or other waste line which meets with the approval of local health authorities.

Whenever any waste from the swimming pool is connected to a sanitary sewer or a storm sewer, an air-gap or a relief manhole shall be provided which will positively preclude against surge or backflow introducing contaminated water into the swimming pool or the water treatment plant as covered elsewhere.

33. Pump and Motor: Pump and motor unit shall be provided for recirculation of the pool water which has been selected for performance and will meet the conditions of quantity required for filtering and cleaning the filters with the total dynamic head developed by the complete system. The requirements for filtration shall be based upon the maximum head loss developed immediately prior to washing the filters. The motor shall be non-overloading in continuous operation for filtration under all conditions but may be overloaded within the service factor for conditions of backwash and for emptying the pool.

Pump performance curve for the unit to be installed shall be provided and submitted to proper authorities.

Curtained with an acre of glass...this Chicago building is 100% reinforced concrete!

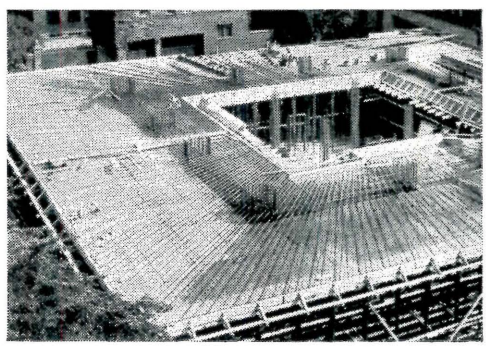
WHEN AMERICA BUILDS FOR DURABILITY . . . IT BUILDS WITH CONCRETE

It's one of Chicago's finest luxury apartment buildings, 21 stories overlooking Lake Michigan at 320 Oakdale. Beneath its attractive exterior, 12,000 cu. yds. of concrete form a frame and floor skeleton of outstanding strength.

Architect Milton M. Schwartz of Chicago and structural engineers from Miller Engineering Co. chose reinforced concrete for its rigidity and durability—and passed along big bonuses in economy to their client, too.

Concrete saved an estimated $200,000 through reduced materials cost, easier construction scheduling. It made a simple job of the cantilevered overhangs. And because floors are flat slabs, it saved a full story in total height.

Concrete needs no special fireproofing. It can't rust or rot. No other material offers such low maintenance cost. More and more architects and engineers are specifying concrete frame and floor construction today. They're finding the same kind of economies for all structures, of both conventional and modern design.



Reinforcement being placed for large, cantilevered 2nd-floor slab, a construction so easily achieved in reinforced concrete.

FOR STRUCTURES... MODERN concrete

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

PUBLIC SWIMMING POOLS: 7

Minimum Standards prepared by the National Swimming Pool Institute

34. Vacuum Cleaner: Where facilities are installed integrally in the pool piping system for the operation of a vacuum cleaner, the piping shall be required to produce not more than 15 ft total head loss at the pump, while moving four gallons per minute per lineal inch of cleaner head.

35. Sterilizing Agent: Some means of sterilizing the pool water shall be used which provides a residual of sterilizing agent in the pool water. Either chlorine or bromine may be used for this purpose. In either case, adequate feeding equipment and equipment for testing residuals must be employed. Inasmuch as chlorine is almost universally used, minimum standards for the use of chlorine are given below.

In all public pools, chlorine shall be supplied by means of a gas chlorinator which controls and introduces the chlorine gas into water solution and introduces it into the pool water. Exceptions to this may be made in Types B, C, D, E & F swimming pools, where chlorine may be applied in the form of hypochlorites fed by a positive feed pump suitable for use with hypochlorite in solution.

Equipment for supplying chlorine or compounds of chlorine shall be of capacity to feed 1 lb of available chlorine per 3000 gallons of pool volume per 24-hour period. This may be reduced by 50% for Type E pools.

36. Instructions: All valves shall be permanently tagged and valve operating schedule shall be provided for every operation. Instructions shall be supplied in not less than two copies.

POOL WATER AND TREATMENT

37. Chlorine Compartment: Where gaseous chlorine equipment is provided below grade in a filter room or in any part of a building which provides housing, the mechanical proportioning device and cylinders of chlorine shall be housed in a reasonably gas-tight corrosion-resistant and mechanically vented enclosure. Air-tight duct from the bottom of the enclosure to atmosphere in an unrestricted area and a motor-driven exhaust fan capable of producing at least one air change per minute shall be provided. Automatic louvers of good design near the top of the enclosure for admitting fresh air are required. An opening at least 18 in. square, glazed with clear glass, and artificial illumination shall be provided in an amount such that the essential performance of the equipment may be observed, at all times, without opening the enclosure. Electrical switches for the control of artificial lighting and ventilation shall be on the outside of the enclosure adjacent to the door. The floor area of the enclosure shall be of adequate size to house the chlorinator, fan, scales and one extra chlorine cylinder. Gas mask approved by the Bureau of Mines for protection against chlorine gas shall be provided, mounted outside the chlorine compartment.

33. Coagulant Feeder: Coagulant feeder of cast-iron pot type with piping arranged to provide a restriction in the flow or other means of creating a pressure differential which will circulate a portion of the filter influent on a ratio proportionate to the rate of flow shall be provided. Pot shall be of good grade gray cast iron with quick-removable, tight-gasketed cover and will be piped with IPS brass pipe to circulate through the feeder with a tapping at the bottom of the feeder for entering water and a tapping at the top for supplying coagulant solution to the filter influent. Control valves, one of which shall be needlepoint type, and a drain cock for draining the equipment when the plant is out of operation shall be provided. The capacity of the pot shall be not less than 2 oz of lump or nut potassium alum per square foot of filter bed area.

39. Testing Equipment: A test set shall be provided for the determination of free chlorine residual and the pH hydrogen-ion content in the pool water of colorimetric type with test tubes and supply of phenol red solution and orthotoluidine agents. Color standards shall be as follows and the carrying case and test tubes shall be provided of plastic or other material which is permanent and unbreakable:

Chlorine color standards—0.1, 0.3, 0.6, 0.8 ppm; pH color standards—6.8, 7.2, 7.6, 8.0

40. Quality of Water: The equipment when operated in accordance with the manufacturer's instructions, shall provide water meeting the following standards:

(1) Shall meet United States Public Health Service requirements for bacteriologically potable water.

(2) Shall have a degree of clarity such that a disc 2 in. in diameter which is divided into quadrants in alternate colors of red and black shall be clearly discernible through 15 ft of water and the different colors readily distinguishable.

(3) Shall have a minimum free available chlorine residual at any point in the pool of not less than 0.25 ppm and not more than 1.0 ppm at any time.

(4) The pH or measure of hydrogen-ion content at no time shall be below 7.0 and shall be maintained between this limit and 8.0 on the hydroger-ion scale.

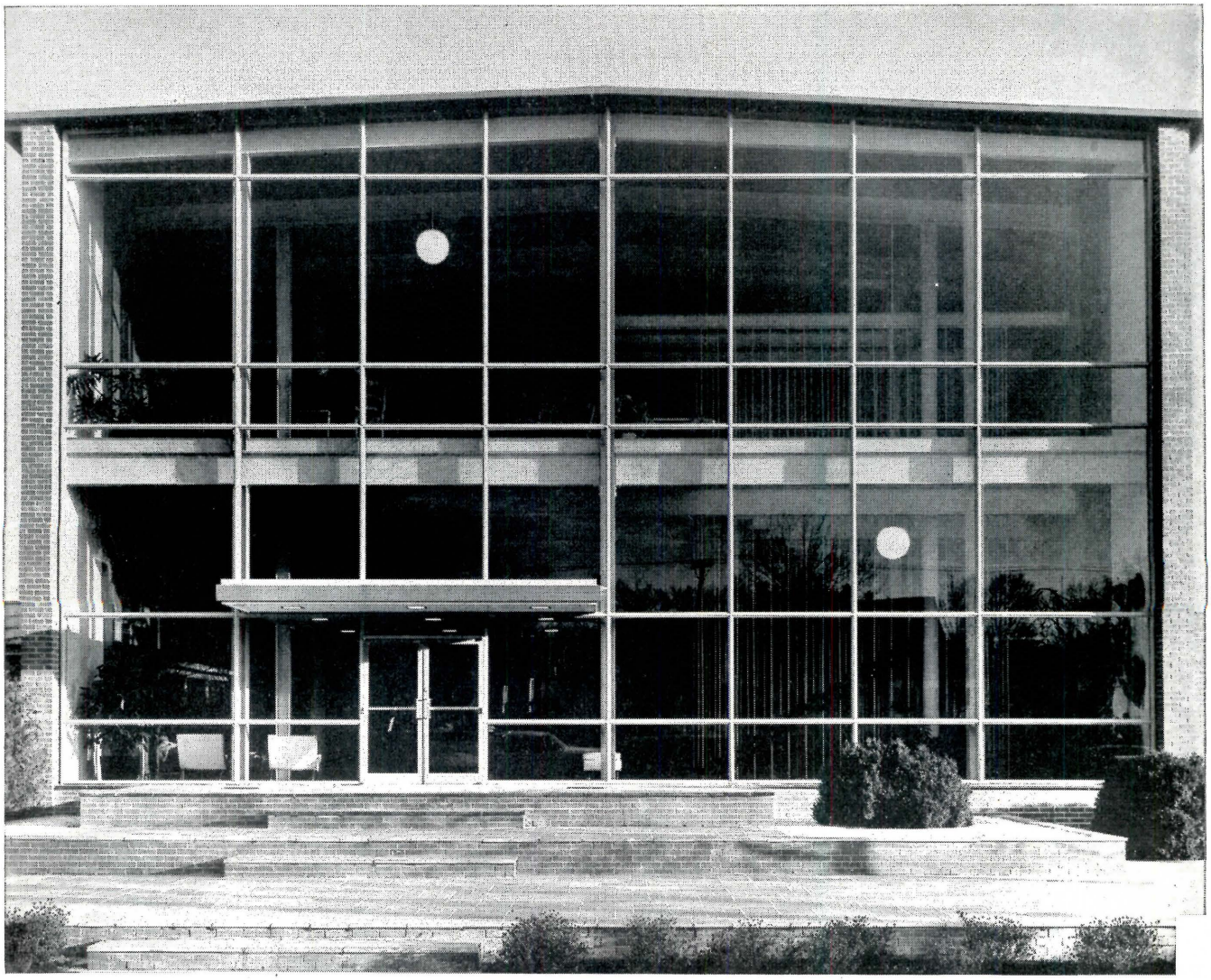
41. Pool Temperature: Temperature of indoor pools shall be maintained between 75 and 85 F., with exceptions made in Type E pools.

WADING POOLS

By definition, a wading pool shall normally be a small pool for non-swimming children, only, used only for wading and shall have a maximum depth at the deepest point not greater than 24 in.

Owing to the high degree of pollution likely to be present, a wading pool shall have a maximum turn-over cycle of 4 hours. The supply to the wading pool shall consist of filtered and chlorinated water from the large pool filtration and recirculation system. The circulating outlets from the wading pool may be wasted or may be returned to the circulation system of the large pool at the suction side of the pump for re-filtration. Also a waste outlet shall be provided at the deepest point of the wading pool, by means of which it shall be completely emptied to waste.

In general, standards of sanitation in circulation, surface skimming and all other details shall be equal or superior to those for swimming pools. It is considered to be very desirable to install a spray pool in lieu of a wading pool, wherein no water stands at any time but is drained away freely as it sprays over the area.



Showroom-Office, Dixie Furniture Co., Lexington, North Carolina. Architects: Louis F. Voorhees and Eccles D. Everhart, High Point, North Carolina.

New Overline Tilt-A-Front eliminates trial-and-error field work . . . cuts erection time by 60% over conventional wall framing methods

This unique concept of window wall framing is a combination of curtain wall techniques and hollow metal production methods. The result is a pre-engineered, economical wall framing system which presents an exceptionally rigid, structurally sound construction.

For example, units for the building shown here — which enclose an opening 50′ wide x 30′ high — were shipped in full height lengths. Intermediate horizontal members in four of the sections were shipped knocked down. The erector simply tilted and hoisted the welded units in place, secured them, then finished up by bolting in the horizontal members. Total installed cost—including Overline Colorclad entrances, hardware, freight, erection and glazing—slightly over $3.00 per sq. ft.

The Tilt-A-Front system is available in baked enamel steel (Colorclad), stainless steel or aluminum. For complete data, write today for our catalog 16a-Ovt.

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New "Floating Keyboard" helps stop typing strain!

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You choose your own type style with the new Golden-Touch DOCUMENTOR.* Keys are cup-shaped for easier *electric* touch. Impression control insures print-perfect copy—sharp carbons. Symbols (+=!°) add versatility. Try it soon!

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CHOOSE ONE OF 8 PANEL COLORS!

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FOR A DEMONSTRATION: To call underwood consult the Yellow Pages

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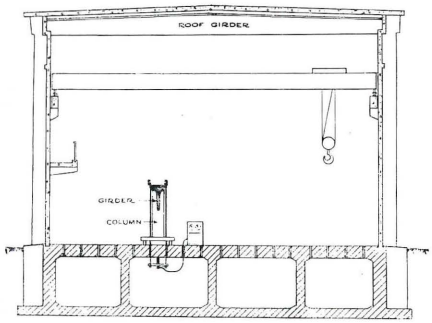
MASTERS YOUR PAPERWORK

continued from page 243

Portland Cement Association Opens "World's Largest Testing Machine"

The Portland Cement Associations' new Structural Development Laboratory at Skokie, Illinois, is unique in that the building itself is a giant testing machine which will provide facilities for testing large scale structural elements up to 120 ft in length.

The testing floor is a 12 ft deep hollow box girder pierced by holes at 3 ft centers. In making a test,



steel rods are attached to the object under test, extended through holes in the floor, and attached to jacks underneath it. Test loads are applied by the jacks, which can exert a total force of as much as 2 million pounds on a 50 ft beam.

Two early projects being undertaken in the laboratory are aimed at improving methods of connecting precast concrete members and achieving continuity between prestressed members.

PHA Approves Use of Structural Steel for High-Rise Buildings

The Public Housing Authority has issued a circular to Regional Directors urging them to consider the use of structural steel framing for public housing projects. Because of the need for heavy fireproofing, reinforced concrete has heretofore been considered the most economical structural system.

The modification of the Authority's position followed a study of comparative cost estimates which showed that steel frames fireproofed with lath and plaster may be competitive with reinforced concrete frames for high-rise buildings.

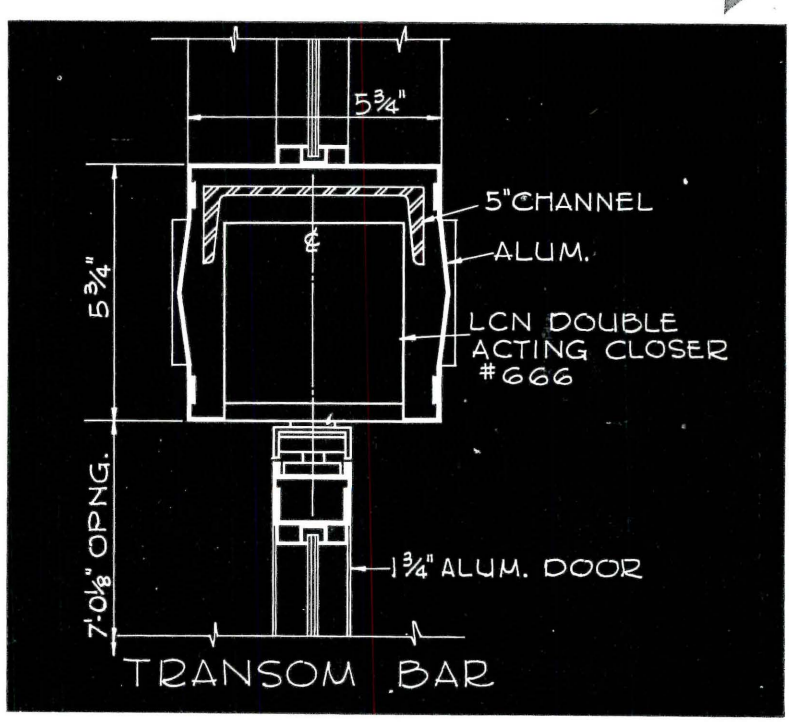
Skyscraper to Straddle Tracks Without Disrupting Rail Operation

A survey conducted by the planners of New York's mammoth Grand Central City project in consultation with engineer James Ruderman shows that the 50 story, 3 million sq ft structure can be erected over 123 railroad tracks without seriously affecting or being affected by train traffic in and out of Grand Central Terminal, which is on the site adjacent. According to Ruderman, the major problem will be scheduling the early demolition, excavation and steel work so as to minimize interference with rail operations.

He is currently formulating a plan to place the huge supporting columns for the estimated 50,000 ton steel skeleton between the tracks and platforms so that they do not impede the flow of train and passenger traffic. The foundations will go through both levels of track with steel grillages placed under the track.

The site study further revealed that the north wall of Grand Central Terminal cannot be incorporated into the new structure because at the time it was erected no provision was made for insulating its steel frame against train vibration. To produce a soundproof, vibration-free frame for Grand Central City, special insulation mats will be installed between the north wall of the Terminal and the adjacent south wall of the new building. Similar mats will also be used under the columns.

more roundup on page 260



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Shown on Opposite Page

The LCN Series 644-666 Closer's Main Points:

1. Flap-free control for double-acting doors
2. Handles exterior doors of normal height up to 3'6" wide; interior doors to 4'0"
3. Power applied by a lever arm; in-swing and out-swing are adjustable separately
4. Used for wood, metal or tempered glass doors having top members 1¾" thick or more
5. Pivots included. Hydraulic back-check. No special threshold needed.

Complete Catalog on Request—No Obligation
or See Sweet's 1958, Sec. 18e/La

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

MODERN DOOR CONTROL BY *LCN* · CLOSERS CONCEALED IN HEAD FRAME

UNION PASSENGER TERMINAL, NEW ORLEANS, LOUISIANA

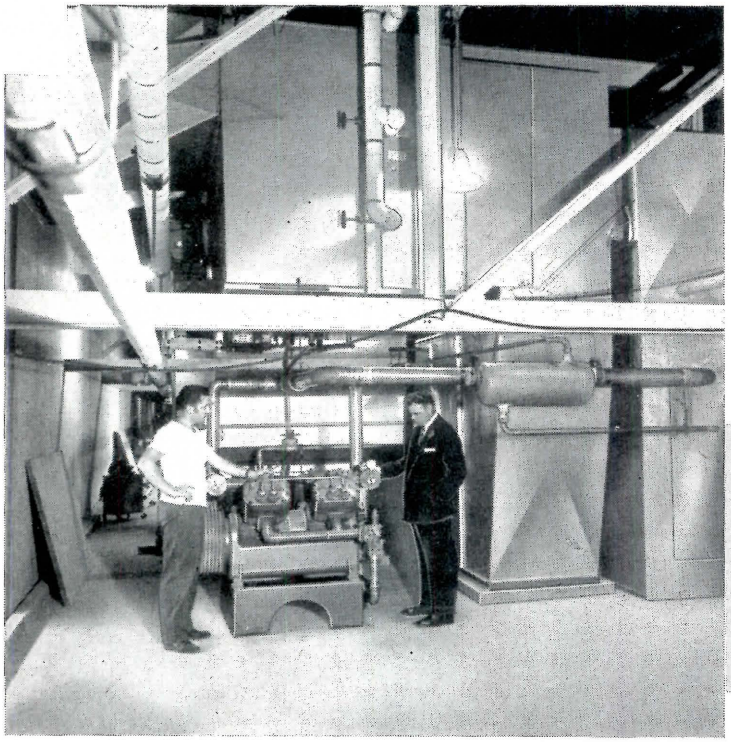
LCN CLOSERS, INC., PRINCETON, ILLINOIS

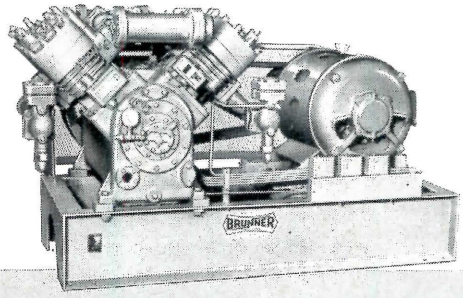
Construction Details on Opposite Page

Wogan & Bernard
Jules K. de la Vergne
August Perez & Associates
Associated Architects

FOR THOSE BIG AIR CONDITIONING JOBS...

Compressors from the BIG BRUNNER SINCE 1906 LINE





LONG LIFE, RELIABLE OPERATION FEATURES OF BRUNNER COMPRESSORS INCLUDE:

- MOUNTING BASES CONSTRUCTED OF STRUCTURAL STEEL.
- LOW AND HIGH PRESSURE TYPE CONTROL.
- FORCE FEED LUBRICATION.
- PRESSURE RELIEF SAFETY VALVE.
- MODULATION AND UNLOADED START (optional).

Typical of the BIG air conditioning jobs where architects, consulting engineers and contractors have learned to rely on BRUNNER compressors is the new Bostitch plant in East Greenwich, Rhode Island.

75 HP compressors, 100 HP compressors—whatever the size requirement—there was a Brunner unit to satisfy the design conditions.

Rugged workhorses of the various air conditioning systems at Bostitch, these units are tied-in to Dunham-Bush evaporative condensers and serve ceiling mounted air handling units for the Stapling, Engineering and Drafting departments. They also serve Dunham-Bush multizone units for conditioning executive offices and cafeteria areas.

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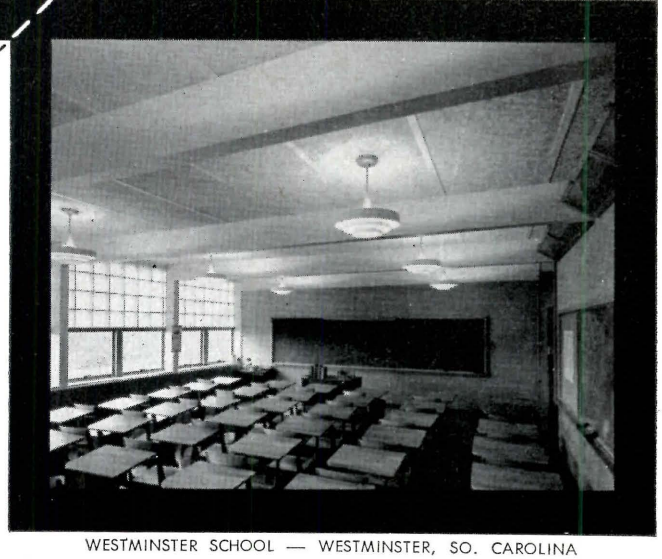
...in beautiful-functional

School Construction

$7.69 per square foot complete



WESTMINSTER SCHOOL — WESTMINSTER, SO. CAROLINA
ARCHITECT — HAROLD WOODWARD, SPARTANBURG, SO. CAROLINA

...made possible by use of...

UNIT Laminated Members

For the past quarter century, Unit Structures, Inc. has pioneered in the continuing development of functional, fire resistive schools through the use of soundly engineered, permanent glued laminated wood members.

The use of clear spanning laminated arches and beams was a major factor in the low, low cost of $7.69 per sq. ft. achieved in the construction of the Westminster High School. The 5″ x 13″ classroom roof beams span 57′ - 3″ over two classrooms and the middle corridor and bear on 5″ x 8⅛″ glued laminated exterior wall columns. The simple beam-to-column connection and the single element construction effected considerable erection savings, according to the Triangle Construction Co., General Contractors, Greenville, S. C.

The 7″ thick Southern Pine arches, shown in the gymnasium, are spaced 17′ - 2″ on center. The arch depth was tapered from 15″ at the crown to 24″ at the base, thereby economically utilizing the lumber in accordance with the structural requirements.

A continuous skylight was readily achieved by simple framing between the laminated wood purlins.

UNIT STRUCTURES, INC. PESHTIGO, WISCONSIN

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frostproof...for interiors, exteriors, floors, walls...in sizes up to 12″ x 16″

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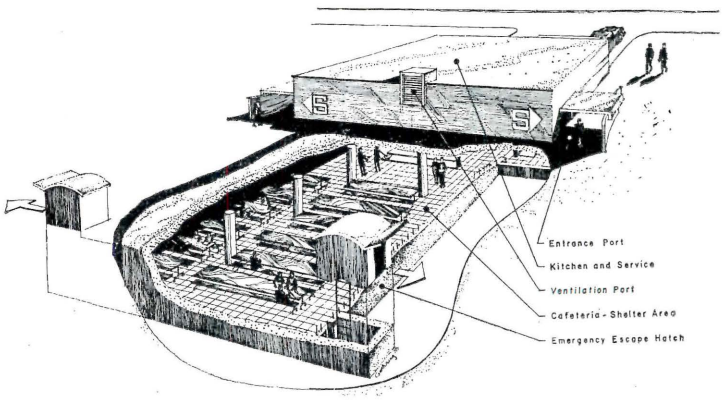
See our catalog in (S) Sweet's.

Stylon CERAMIC TILE

Plants in Milford, Mass. and Florence, Ala.

Member: Tile Council of America, Inc., and The Producers' Council, Inc.

Technical Roundup



Dual Purpose Structure Combines Nuclear Protection, Everyday Use

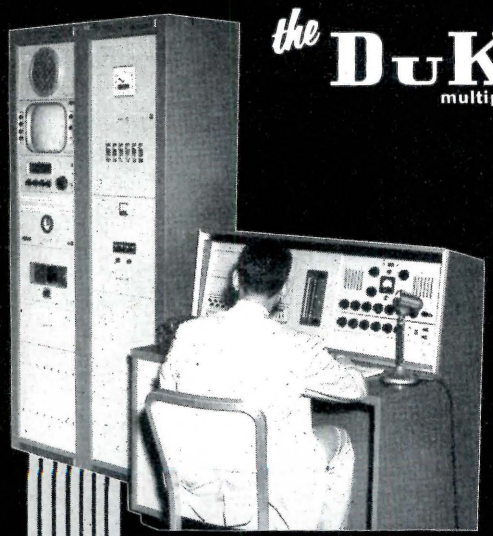
The need for specially designed personnel shelters for industrial plants has been widely accepted in the thirteen years since Hiroshima, but little has been done to move the idea off of drawing boards and into practice. However, designers at Walter Kidde Engineers-Southwest, Inc., were recently called upon to design a cafeteria and meeting space that would also protect plant personnel against a nuclear blast.

At the lower level, completely surrounded by a thick reinforced con-

6 in 1 all SIX basic electronic services in ONE conduit or raceway . . .

the DuKANE MCS SYSTEM

multipurpose communications and signaling



for schools installing all 6:

The DUKANE MCS system offers obvious advantages—one installation, one raceway, one supplier, a single responsibility for installation and maintenance.

for schools installing one or two:

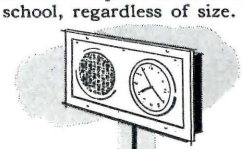
The DUKANE MCS concept is especially important. DuKane engineers can, simply and inexpensively, set up your initial installation of, say, a central sound system and a clock and program system, so that later expansion to include other component services will be easy, accurate, and at minimum cost.

private dial telephone

The modern answer to internal communications is a private telephone system. Fully automatic dial operation allows any room to call any other without going through the office or using an operator, and conversations are quiet and private.

central sound system

For program distribution and announcements to all rooms or any selection of rooms. DuKane has installed more school sound systems than any other manufacturer! DuKane systems are custom-installed from mass-produced components, engineered to suit the requirements of any school, regardless of size.



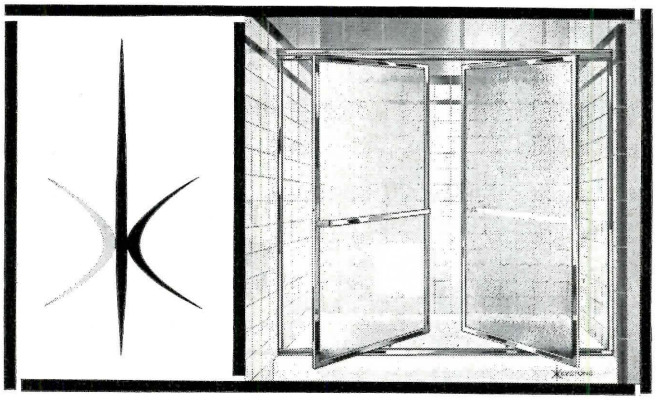
crete shell, is the shelter area, which includes mechanical and emergency power equipment, emergency water well and conventional and chemical toilets, as well as the dining and serving areas. The shelter area is entered by either of two concrete-enclosed stair towers. The entrance ports are protected from debris by concrete canopies and wing walls. Actual closure of the bomb shelter area occurs at the lower level, where a heavy blast-and-radiation-proof door can be rolled into position and secured by means of an inflatable gasket. Emergency escape hatches at the opposite end of the dining room provide an alternate means of exit.

The above-grade section of the structure contains the food preparation facilities, which require an extensive ventilation system and direct accessibility to delivery service, and are not suitable for accommodating large groups.

Special design features include a ventilating system which will provide for normal requirements as well as for cleansing or completely shutting off contaminated outside air; and provision for continuous instrument monitoring of the contamination level outside the shelter.

more roundup on page 266

KEYSTONE PIVOT-DOR TUB ENCLOSURE



A new concept in bathtub enclosure design —sliding panels swing open providing complete accessibility to the tub.

The picture tells the story: All the advantages of a tub enclosure—plus the freedom of movement permitted by an open tub. Result: safer and more convenient bathing for all—particularly the very young and very old. And simplified tub and enclosure cleaning: innerside of panels can easily be cleaned from outside the tub.

Outstanding construction features: Smooth, silent leakproof conventional sliding action. Easy opening of either or both doors in any position desired. Sizes for all standard tubs—custom sizes to specifications. Available in exclusively pressure-glazed highest quality extruded chrome-plated brass or aluminum frames. For further information, write.

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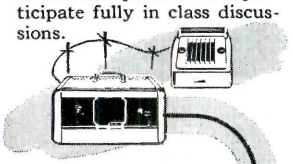
emergency voice warning

Bright red telephone handsets at critical points throughout the school automatically cut into the central sound system, overriding any other transmission, and activate every loudspeaker for emergency announcements, evacuation instructions, and panic control.

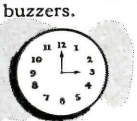
school-to-home intercom

Using a simple leased wire from the telephone company, the DuKane school-to-home unit keeps the confined student in the complete audio environment of his classroom. He can ask questions and participate fully in class discussions.



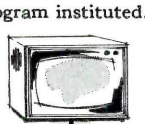
clock and program system

The DuKane clock system automatically keeps all classroom and corridor clocks in perfect synchronization with the master clock. Class-break signals are infinitely variable and simply changed or adjusted on one or several channels. Signals come through classroom and corridor loudspeakers, eliminating separate bells or buzzers.



educational television

Both off-the-air commercial, news, and educational programs, and internally-originated material is distributed to classroom TV receivers. As a first step, a simple off-the-air pickup and coaxial distribution cable is relatively inexpensive; later, studio facilities can be provided and a complete audio-visual teaching program instituted.



only from

DuKane

• all 6 basic systems

• any selection of systems

So flexible it literally defies obsolescence, the DuKane MCS concept heralds a new era in school communications and signalling. Your new school can provide for all 6 services for less investment than it might otherwise take for only three or four independent separately-installed systems.

By making proper provision now, the school which plans to install only one, two, or three of the basic systems, can make possible later addition of educational TV and other services without tearing up floors, breaking into walls, or installing new conduits.

DuKane's nationwide network of factory-trained engineering distributors stands ready to advise and help you. Your nearest DuKane distributor is listed in the Yellow Pages. Give him a call, or write for further information.

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Department AR-118, St. Charles, Illinois

Please send me more information on the DuKane MCS system.

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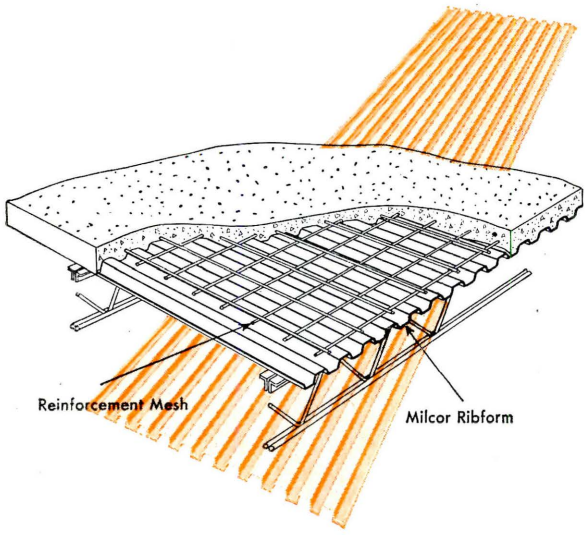
PLACE ON JOISTS
PLUG-WELD TO JOISTS
ROLL OUT MESH
POUR CONCRETE



Short-span concrete slabs cost less with Milcor Ribform

Ribbed, high-tensile steel form is stronger than ordinary corrugated patterns

Ribform is a permanent, rigid base for concrete floor and roof slabs over spans up to 5′-0″.

It goes down fast—is easy to install over pipe trenches or in other inaccessible locations where it is impractical and expensive to strip wood forms. Temporary bracing of joists is unnecessary. Scaffolding is eliminated.

Ribform uses as much as 20% less concrete than flexible types of centering. The slab is poured and finished in one operation. The rigidity of Ribform permits monolithic finishing — eliminates costly topping.

See Sweet's, section 2h/In — or write for catalog 245.

MILCOR® Ribform

It pays . . . in many ways . . . to specify Milcor Steel Building Products

MILCOR CELLUFLOR	MILCOR WALL PANELS	MILCOR ROOF DECK	MILCOR METAL TRIM	MILCOR CONVECTOR ENCLOSURE WALL UNITS
Sweet's, section 2a/In	Sweet's, section 3b/In	Sweet's, section 2f/InL	Sweet's, section 12b/In	Sweet's, section 30h/In

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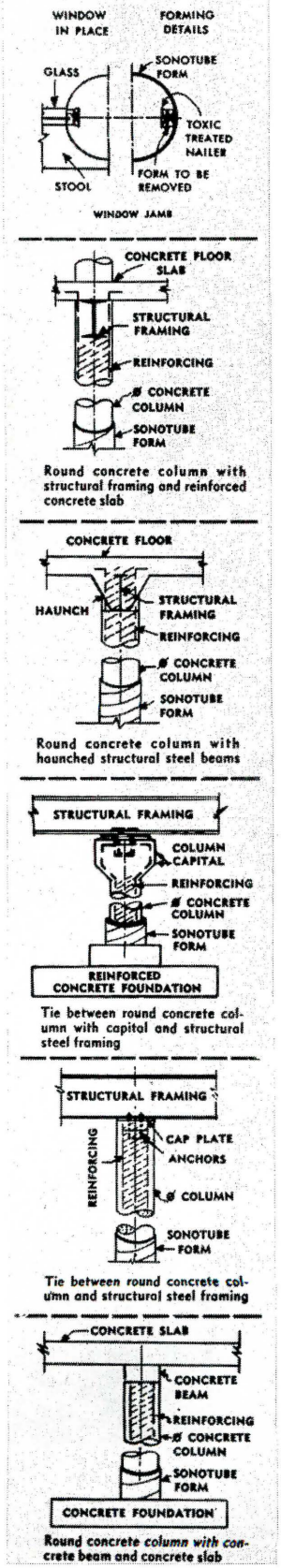
RD-15

for SCHOOLS... round concrete columns permit

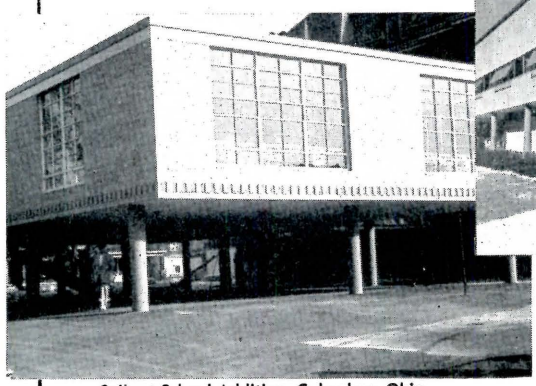
VERSATILITY in Design

ECONOMY in Construction

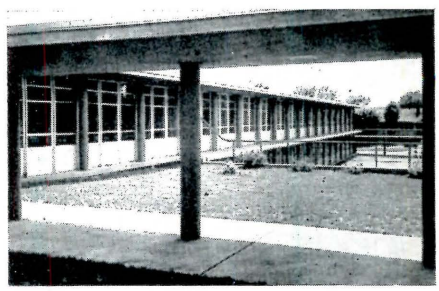
TYPICAL FORMING DETAILS
(not to scale)



Notre Dame School, Biloxi, Miss.
William R. Allen, Architect.
Photo by Joseph Molitor.



Seibert School Addition, Columbus, Ohio.
David Schackne, Jr., Architect. Mason, Reib & Sheit, Contractors.



Fort Sanders Elementary School, Knoxville, Tenn. Painter, Weeks & McCarty, Architects. Emory & Richards, Contractors.

Specify low-cost **SONOCO**

Sonotube®

FIBRE FORMS

for round columns of concrete

Nothing is more important in school construction today than economy . . . at the same time, architectural individuality is demanded. The way to satisfy both requirements is to incorporate round columns of concrete in your work, then specify forming with Sonoco Sonotube Fibre Forms.

Sonotube Fibre Forms provide the fastest and most economical method of forming round columns of concrete.

Contractors save time, labor, and money because these forms are low in cost, lightweight, easily handled and placed and require minimum bracing. Can be sawed on the job to specific lengths.

Sonotube Fibre Forms are available in sizes from 2″ to 48″ I.D. Standard shipping length is 18′ unless otherwise specified. Specify "Seamless" (a premium form for finished columns) or "A" coated, the standard form for exposed columns.

For complete information and prices, write

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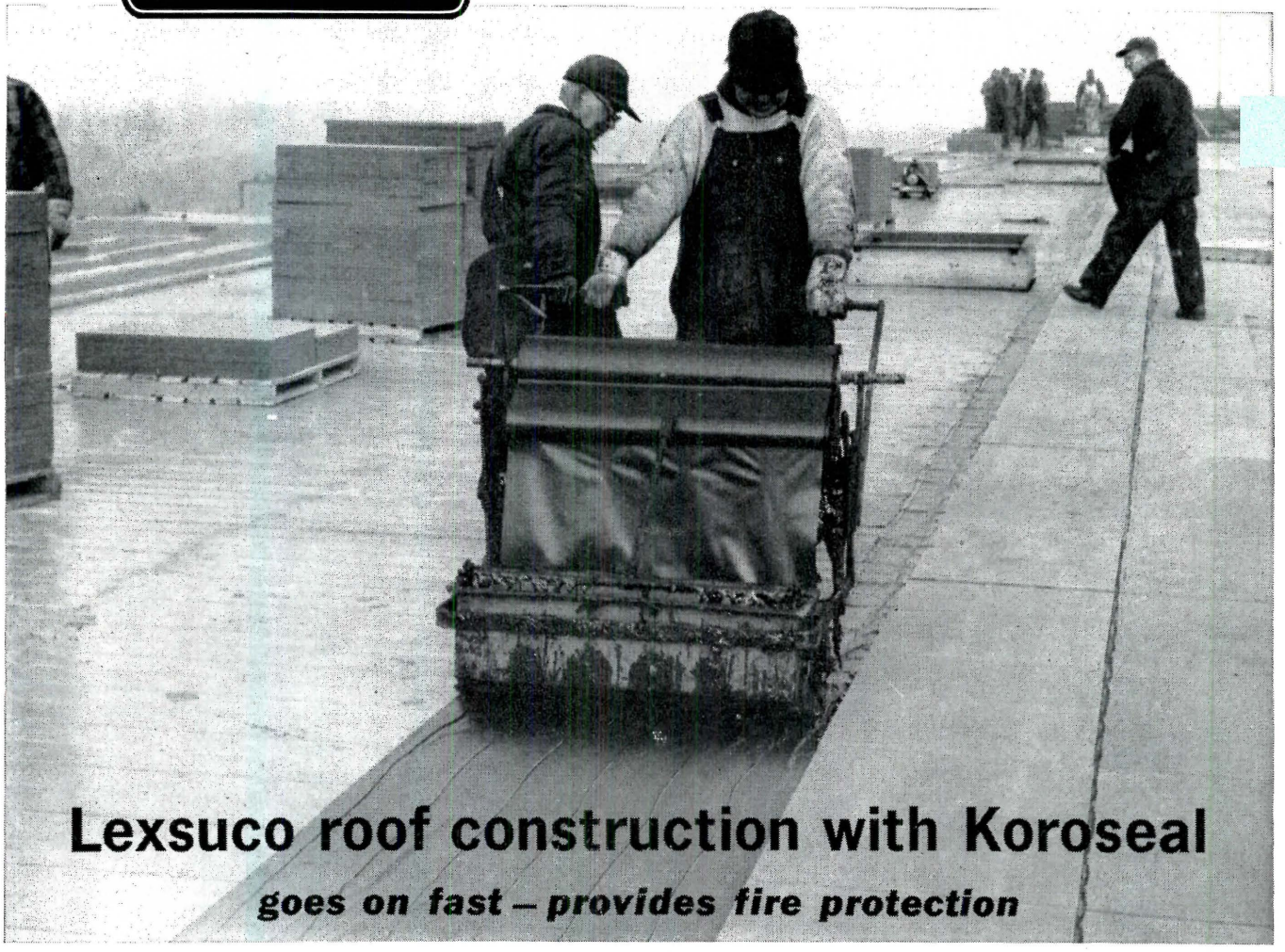
B.F.Goodrich

Fast, economical installation!

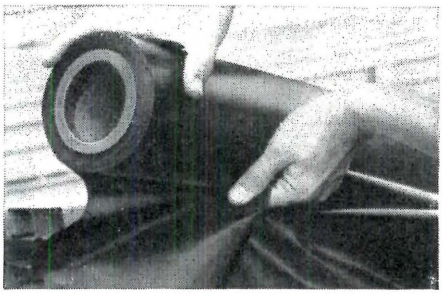


Lexsuco roof construction with Koroseal

goes on fast – provides fire protection

Get a fire-retardant roof fast! Here a Lexsuco mechanical applicator performs three operations on one pass—applies nonflammable Lexsuco Adhesive R907T to underside of Koroseal Vapor Barrier, lays and secures the Koroseal to the deck, and puts ribbons of adhesive on top of the Koroseal to secure insulation. Result: a fire-retardant, vapor resistant roof construction with a Factory Mutual Class 1 rating (highest).

Semi-mechanical method is fast for medium or small jobs. Apply ribbons of adhesive with the Lexsuco Spreader, spread ribbons with roller coater and unroll Koroseal into adhesive. Then, imbed insulation into ribbons of adhesive on top of Koroseal. Whether your roofing job is large or small, Lexsuco's engineered application methods cut installation costs.



B.F.Goodrich Koroseal Vapor Barrier is specially compounded fire-retardant vinyl material, provides maximum vapor protection. Will not feed a fire—there is no asphalt to give off flammable gases. Asphalt materials are replaced by Koroseal Vapor Barrier, made by *B.F.Goodrich Industrial Products Company, Marietta, Ohio.*

Mail this coupon for detailed information:

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Dept. AR-11
Box 326, Solon, Ohio

Please send me informative folder on Lexsuco Fire-Retardant Roof Constructions.

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Company_____

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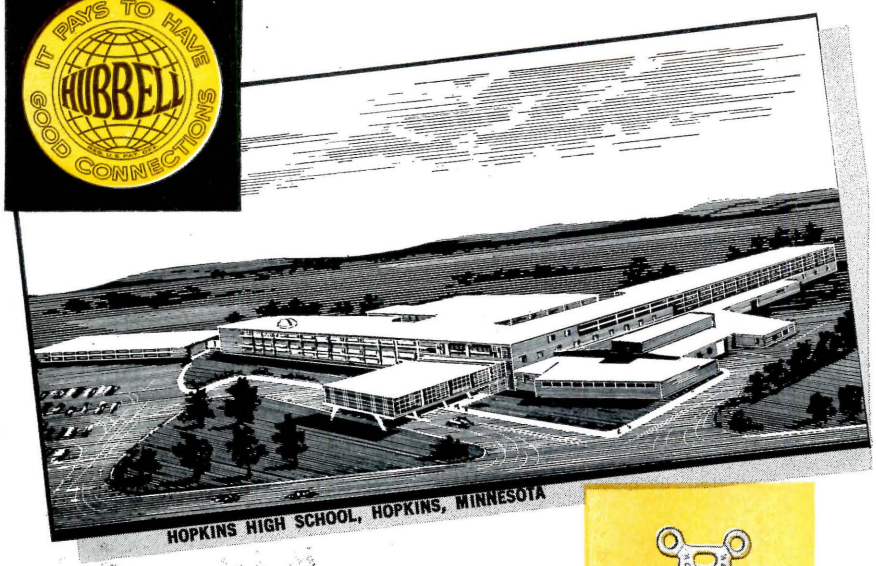
City_____ **Zone**_____ **State**_____

Koroseal—T. M. Reg. U. S. Pat. Off.

B.F.Goodrich ***Koroseal vapor barrier***

IT PAYS TO HAVE HUBBELL GOOD CONNECTIONS



Second impressions of a *Quality* school

When this beautiful new Hopkins High School opens its doors this fall, few of the teachers or students will notice many of the construction details of the building. Their first impressions will probably be general ones relating to the overall structural design and arrangement of the school. Second impressions will come later when they've "lived" in the school for awhile. These second impressions will be based not on outward appearances but on the things that contribute most to their comfort, convenience and security.

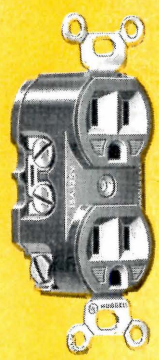
There are hundreds of "built-in" structural components that contribute to this sense of well being at Hopkins, and Hubbell is proud that its wiring devices are included. Hubbell specification grade switches, receptacles and plates are installed exclusively throughout the Hopkins School. Like all other quality materials used, they were specified because of their safety, convenience and long-term dependability.

Yes, second impressions at Hopkins are sure to be good impressions and they will be lasting ones, too, because quality in anything is always a lasting ingredient.

Architect: Bissell and Belair
Consulting Engineers: Orr-Schelen Co.
Electrical Contractor: Harris Bros.
Hubbell Supplier: Graybar Electric Co.

(All firms are in Minneapolis.)

CAT. NO. **1201**
Specification Grade
AC "Topper" Switch
15 amps., 120-277 volts



CAT. NO. **5262**
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Convenience Outlet
15 amps., 125 volts

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WIRING DEVICES • MACHINE SCREWS
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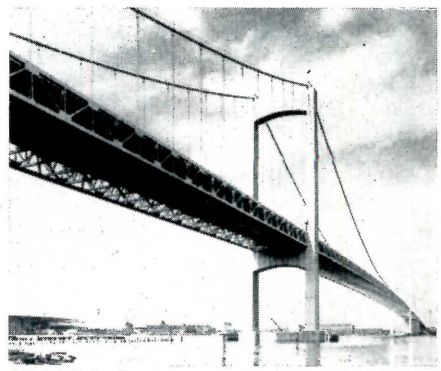
1160 Birchmount Road

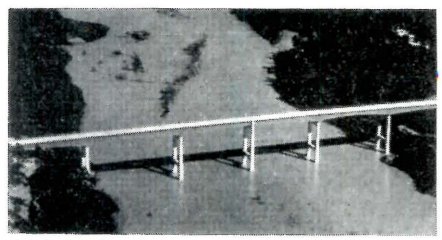
Technical Roundup

Beauty Contest for Bridges

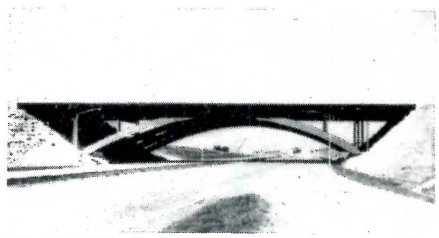
Fourteen bridges from a field of 81 were selected as the most beautiful opened to traffic in 1957 in the AISC's 30th Annual Aesthetic Bridge Competition. The jury, which lauded the simplicity of design of all the bridges submitted, was composed of three architects, a consulting engineer and the director of a decorative arts museum. Top winners are pictured below.



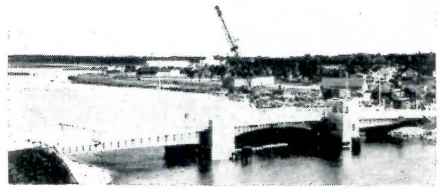
CLASS I, Spans over 400 feet: Walt Whitman Bridge, Philadelphia, Pa.; designers: Modjeski and Masters and Ammann & Whitney



CLASS II, Spans over 400 ft; cost over $500,000: General James Longstreet Memorial Bridge, Gainesville, Ga.; designer: Patchen and Zimmerman



CLASS III, Spans under 400 ft, cost under $500,000: Hampton Road Overpass, Dallas, Texas; designer: Powell & Powell



CLASS IV, Movable spans: Madison-Monroe Street Bridge, Two Rivers, Wisc.; designer: Hazelet & Erdal

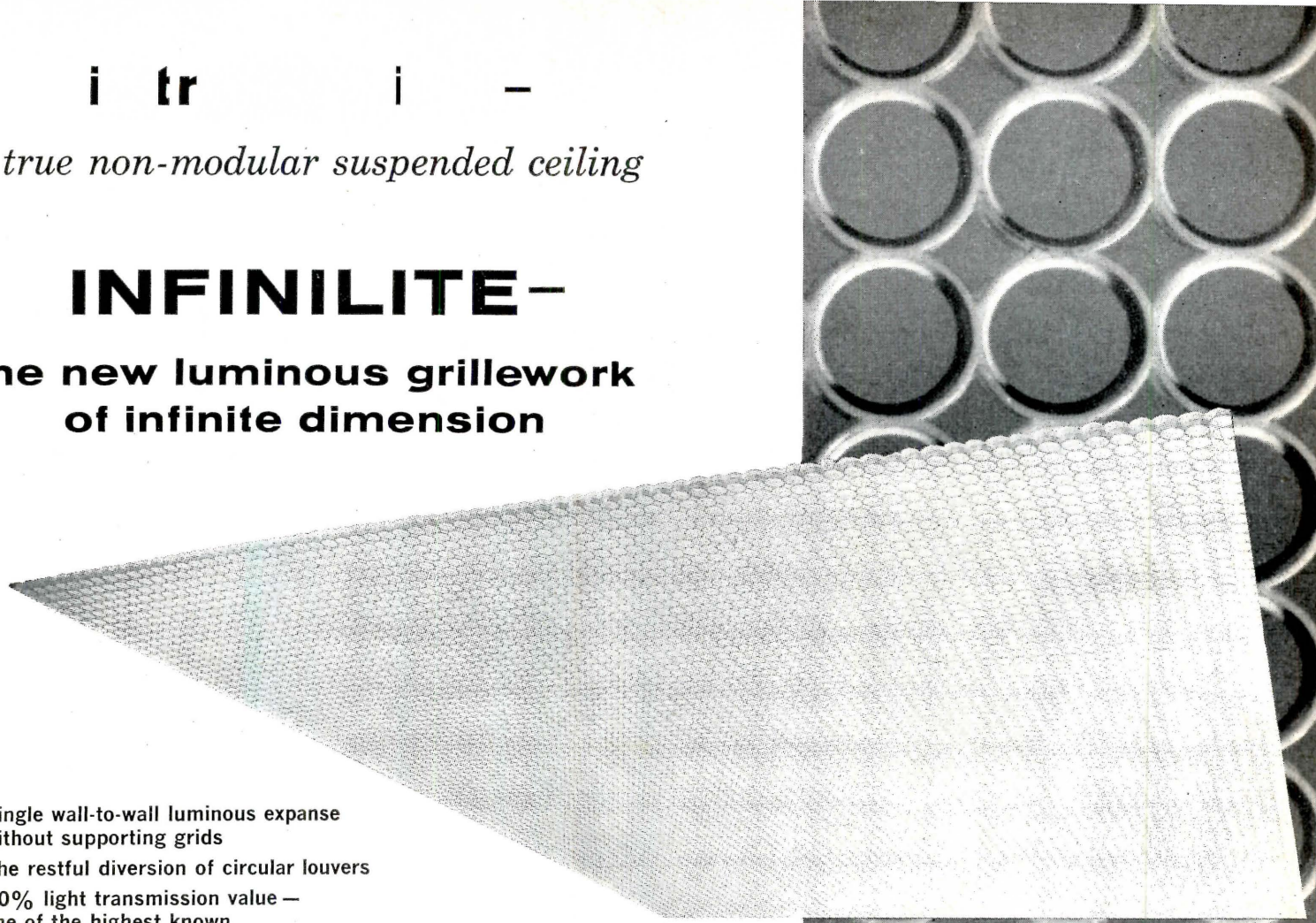
more roundup on page 268

i tr i –

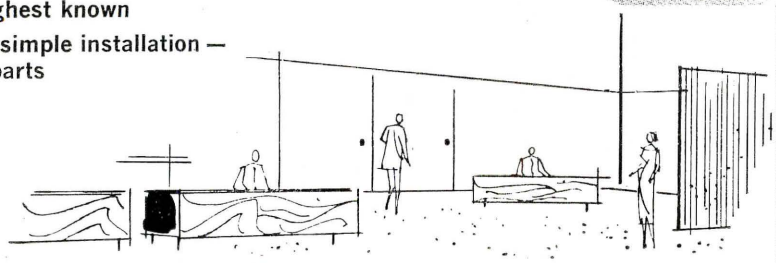
a true non-modular suspended ceiling

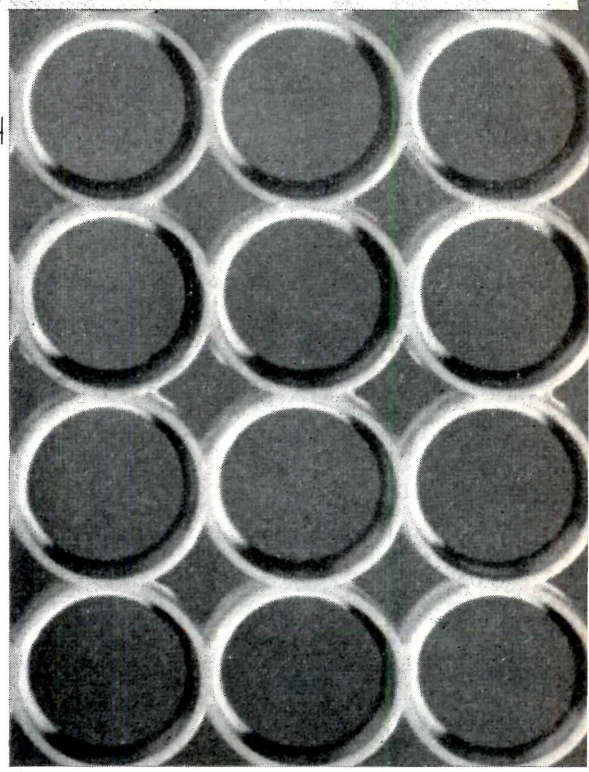
INFINILITE–

the new luminous grillework of infinite dimension



- Single wall-to-wall luminous expanse without supporting grids
- The restful diversion of circular louvers
- 80% light transmission value — one of the highest known
- Astoundingly simple installation — only 4 basic parts





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INFINILITE is manufactured from new light stabilized plastic. Specially designed Drop-Strip Fixture with V.T.S. Diffuser is first to completely eliminate direct view of lamps through grillework. We invite your inquiry.

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Each local Executone distributor is prepared to take full responsibility for the final and satisfactory operation of the system, whether installed by the contractor, or his own factory-trained crew.

But also this!

3 On-Premise Maintenance

Each local distributor is staffed with skilled, factory-trained technicians. They also have complete stocks of standard replacement parts. Continuous, uninterrupted performance of every Executone system is assured.

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Architects and engineers are invited to send for Executone's 325 page Reference Manual "S-17" No charge or obligation. Please use your letterhead.

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INTERCOM AND SOUND SYSTEMS FOR HOSPITALS, SCHOOLS, HOMES, PLANTS, OFFICES

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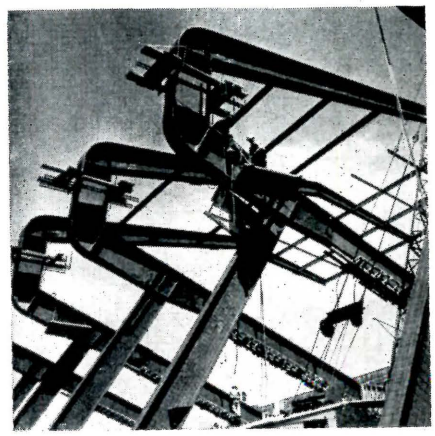
Technical Roundup



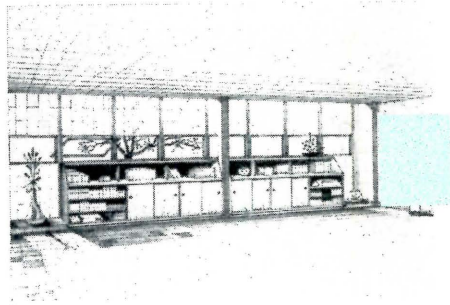
Steel Horseshoes Frame Grandstand

Stockton, California's new three-level racing grandstand features a cantilever roof supported by huge fabricated steel plate girders to give spectators an unobstructed view.

Fifteen horseshoe-shaped steel frames, standing 65 ft high and set on 25 ft centers, form the framework for the 350 ft long pavilion.

Each of the frames was fabricated in four parts and bolted together at the job site before erection. The cantilever sections extend about 60 ft out from the back wall to form a roof over the seating area.

The grandstand was designed by the California State Division of Architecture with Edwin A. Verner, San Francisco, as structural engineer.

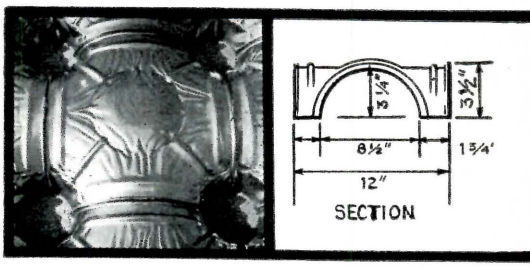


Plastic Wall for Conn. School

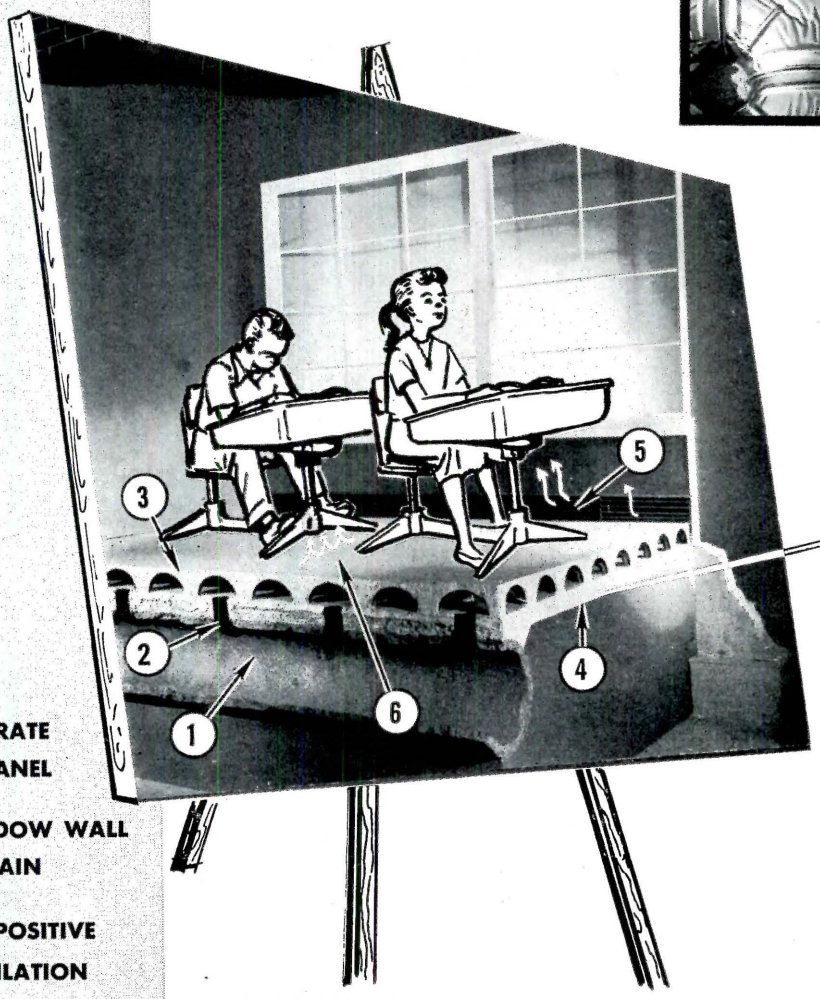
With the exception of narrow horizontal "vision strips" and porcelain enamel spandrels, the curtain wall for a new $4 million high school in Stamford, Connecticut, will consist entirely of translucent sandwich panels. The panels, which are made up of rigid sheets of plastic laminated to a metal grid core, are expected to give better light control and less heat loss than similar areas of glass. According to architects Urbahn, Brayton & Burrows of New York City, their low cost and ease of maintenance make them particularly suitable for school use. Cabinets will be built against the opaque spandrels so that the exposed portions of the wall are almost wholly translucent.

THE NATURAL THERMAL

Environment For Education

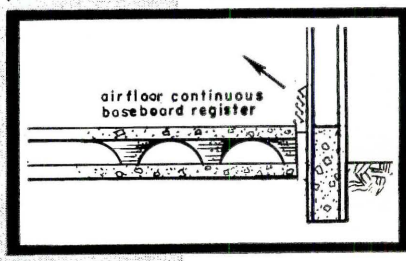


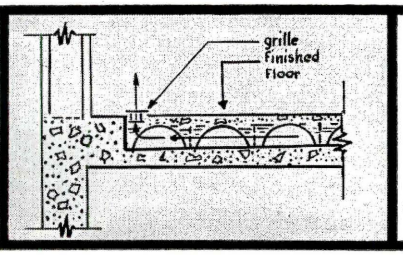
1. UNDERGROUND AIR SUPPLY
2. AIR FLOW THROUGH FLOOR
3. 1½" CONCRETE OVER FORMS
4. 2" SCREEDED PAD
5. AIR OUTLET
6. RADIATION THROUGH FLOOR

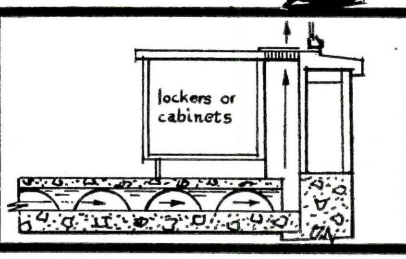


- PERMANENT TEMPERATE RADIANT FLOOR PANEL
- CONTINUOUS WINDOW WALL CONVECTION CURTAIN
- DRAFTLESS SILENT POSITIVE MECHANICAL VENTILATION

DIVERSIFIED CHOICE OF REGISTER OUTLETS







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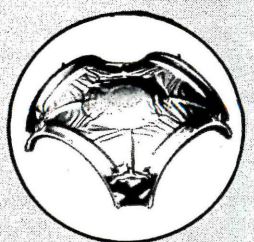
YOU CAN PERMANENTLY INTEGRATE WARM AIR RADIANT HEATING AND RADIANT COOLING WITHIN THE ACTUAL BUILDING STRUCTURE.



When cooling through an AIRFLOOR, the floor itself does approximately 50% of the cooling while 50% is convected through the perimeter register. The floor temperatures will vary between 66°F and 71°F while the discharge from the registers will also be in the same temperature range. On the heating cycle, the floor temperature will be between 70°F and 74°F in temperate climates, and between 70°F and 80°F in colder climates. The air temperature from the registers will range between 68°F and 85°F. With these moderate operating temperatures stratification and drafts are virtually non-existent and response to temperature change is excellent.

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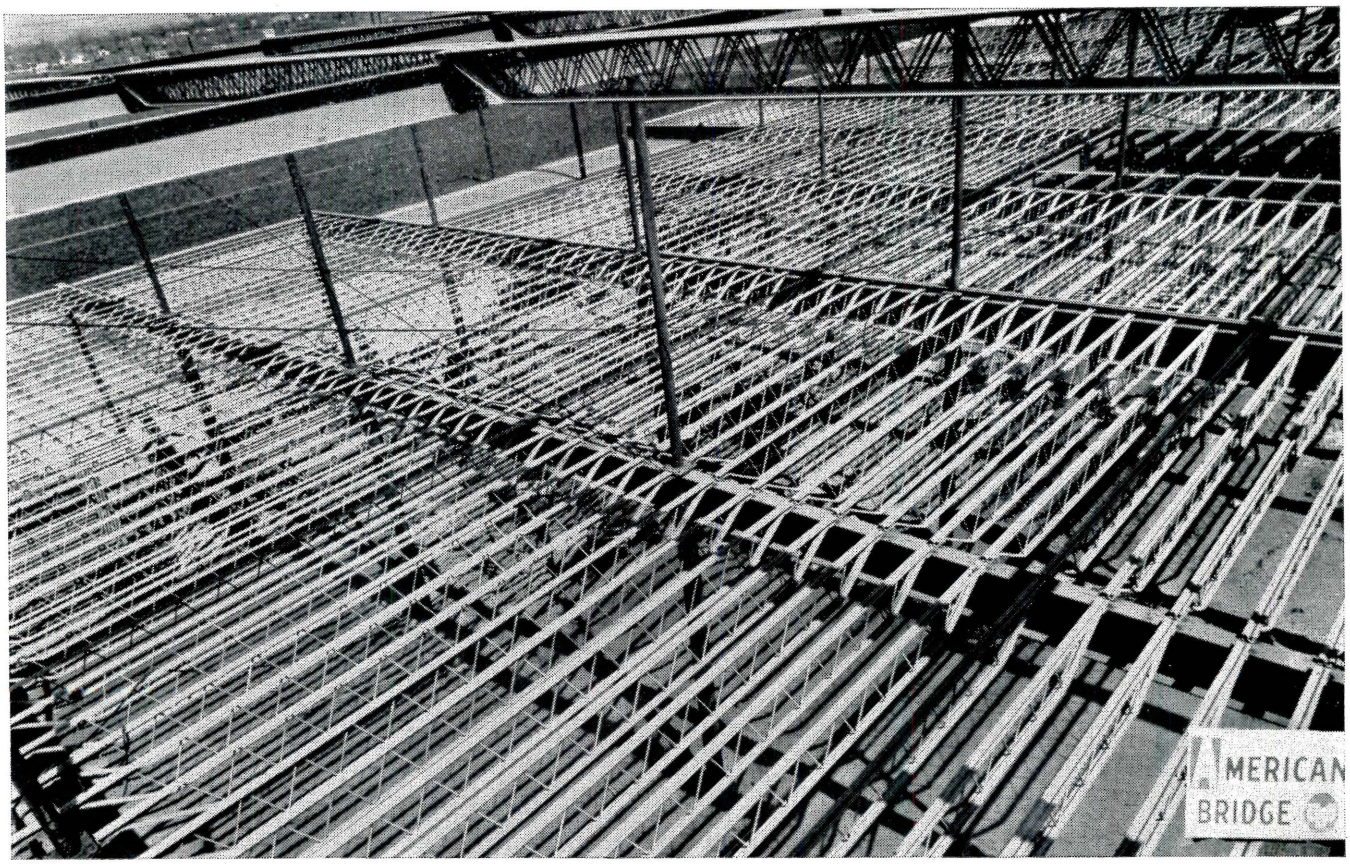
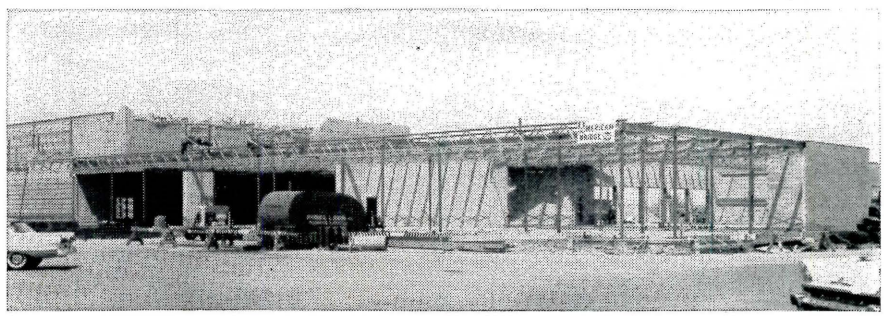


In one of Montgomery Ward's newest stores

USS AmBridge steel joists permit post-free floors

This two-story building, an addition to the Village Shopping Center in Gary, Indiana, will soon house Montgomery Ward & Company's newest store. The store will provide 122,965 square feet of merchandising space and will employ 250 people. **The builders of this store,** the Superior Construction Company, of Gary, are using 240 tons of USS AmBridge Longspan Steel Joists and USS AmBridge Standard Steel Joists for floor and roof construction. Longspan Joists permit post-free floors... allow the maximum in open-floor area for sales displays.

USS AmBridge Standard Steel Joists provide rigid, lightweight, economical construction, suitable for any type of floor, roof, or ceiling. Their underslung, open-web design allows free passage of pipes, ducts, and conduits in any direction. The ease of handling these joists cuts installation time and permits other trades to start work quickly. American Bridge also supplied the structural steel for this job.



Montgomery Ward Retail Store, Gary, Indiana; Owner: Village Shopping Center, Inc.; Designer: Frederic W. Collins, A.I.A.

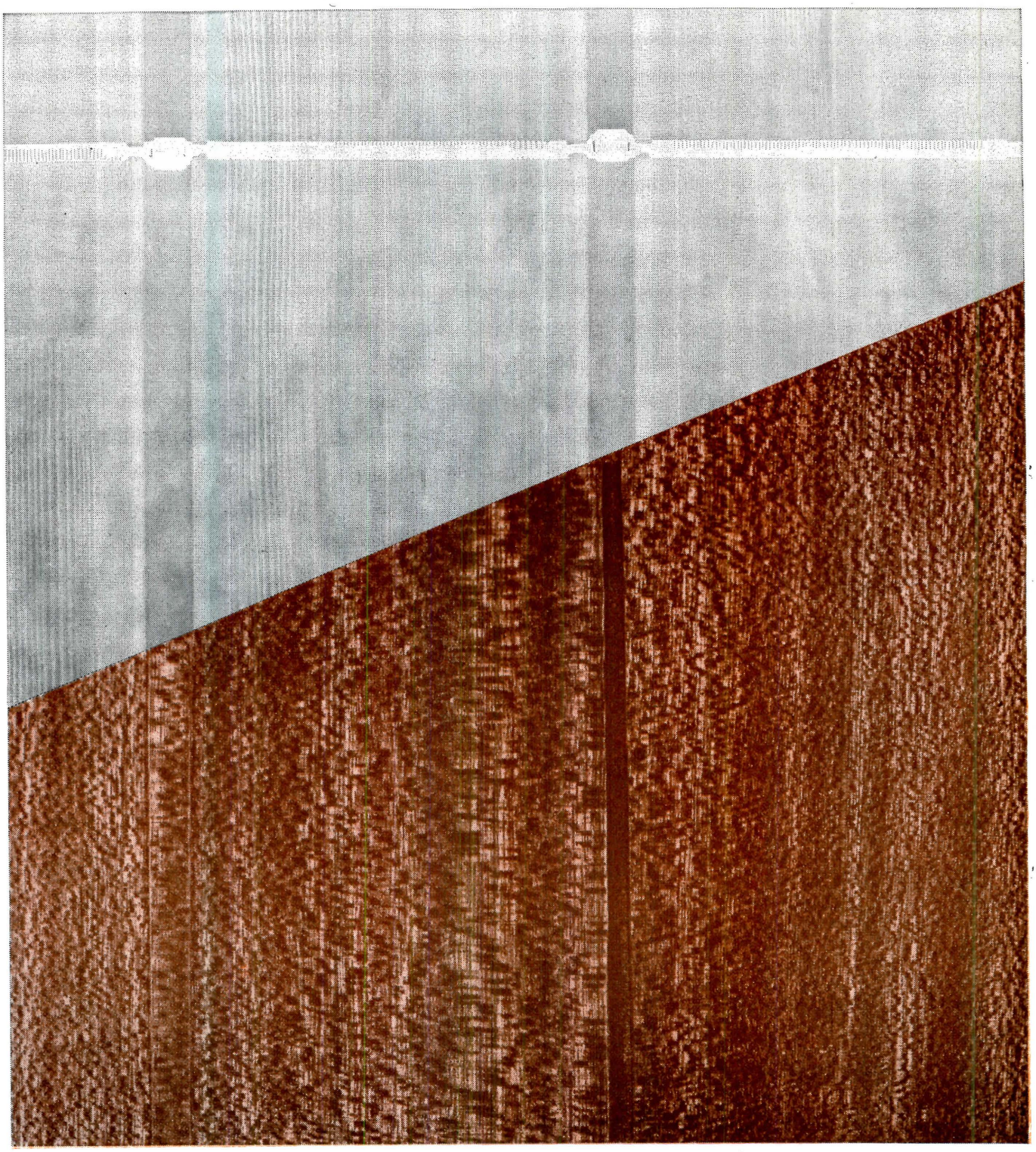
FREE BOOK—To get full details on all USS AmBridge Steel Joists, send for our free catalog. This 40-page catalog contains complete design information for spans up to 120 feet. Write to American Bridge Division, United States Steel Corporation, 525 William Penn Place, Pittsburgh, Pa. Or contact our nearest contracting office.

USS and AmBridge are registered trademarks

American Bridge Division of USS United States Steel

STEEL JOIST MEMBER INSTITUTE

General Offices: 525 William Penn Place, Pittsburgh, Pa. Contracting Offices in: Ambridge • Atlanta • Baltimore • Birmingham • Boston • Chicago • Cincinnati Cleveland • Dallas • Denver • Detroit • Elmira • Gary • Houston • Los Angeles • Memphis • Minneapolis • New York • Orange, Texas • Philadelphia Pittsburgh • Portland, Ore. • Roanoke • St. Louis • San Francisco • Trenton • United States Steel Export Company, New York



Pella®

X-RAY REVEALS SPRING HINGES

Each extending the width of one panel, individual alloy steel spring hinges keep panels of the PELLA WOOD FOLDING DOOR uniformly spaced in all positions—give the door a "live" action. "Lamicor" construction preserves alignment, prevents warping. Full specifications in SWEET's. Distributors throughout United States and Canada—see classified telephone directory for the one nearest you.

WOOD FOLDING DOORS

SEND COUPON TODAY

ROLSCREEN COMPANY, Dept. **J-126,** Pella, Iowa

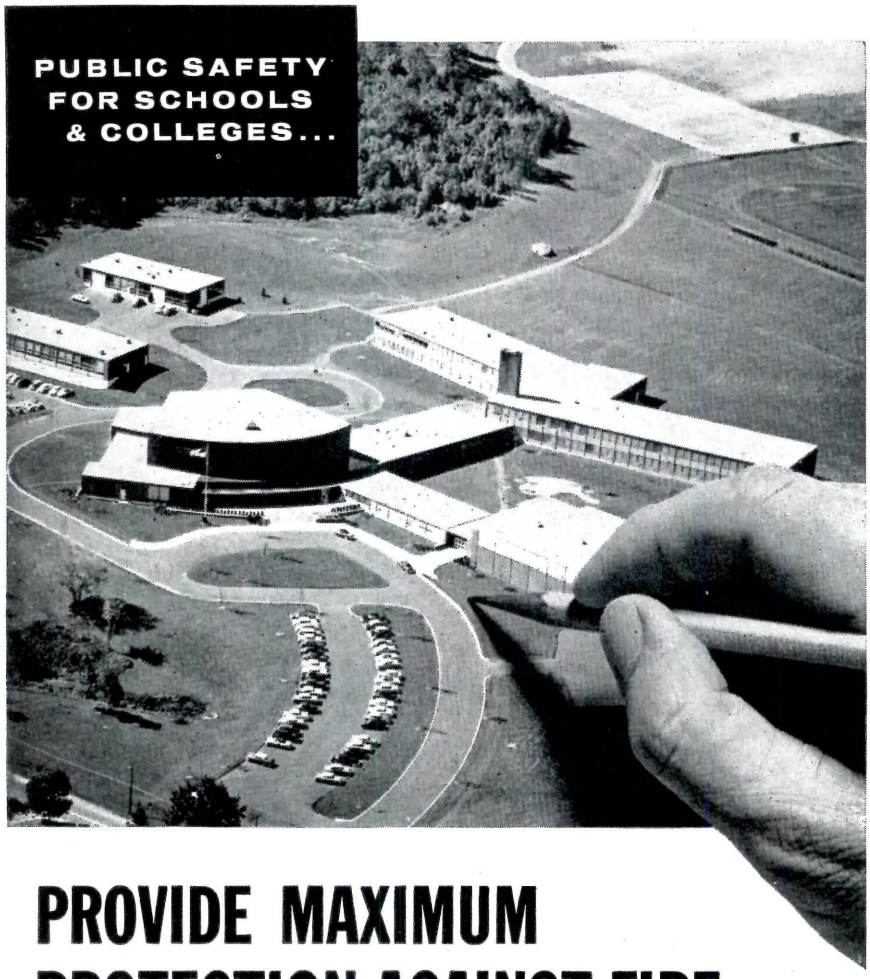
Please send literature on
PELLA WOOD FOLDING DOORS.

NAME

FIRM

ADDRESS

CITY ZONE STATE



PROVIDE MAXIMUM PROTECTION AGAINST FIRE with GAMEWELL FLEXALARM!

Schools and Colleges, like all public buildings, have special requirements for fire alarm systems and fire defense.

No combination or "catch-all" system can really give adequate protection! Maximum fire alarm coverage must provide 24-hour protection, be properly zoned, and engineered to life hazard and fire defense plans.

Flexalarm is the modern, all-in-one fire alarm system that can be precisely tailored to your building and its requirements. It features building-block design and unit type components for simplicity in satisfying all types of construction, fire codes and life hazards. It is easy to specify and economical to buy because of extensive pre-engineering and simplified unit-by-unit installation. Saves money all down the line . . . all from one source, one line of equipment — with complete engineering help if needed.

Send for New Flexalarm Manual. Clients and customers expect the best in fire alarm protection. This specialized, easy-to-use Manual will help you give them maximum protection against fire. Send for your copy, today. Ask for catalog F249.

Gamewell Fire Alarm Systems For All Types of Life Hazards and Fire Defense Plans

Flexalarm
Dualarm
Localarm
Sprinkler Watchman
Master Box
Direct Municipal Connections

THE GAMEWELL COMPANY
Dept. BB, Newton Upper Falls 64, Mass.

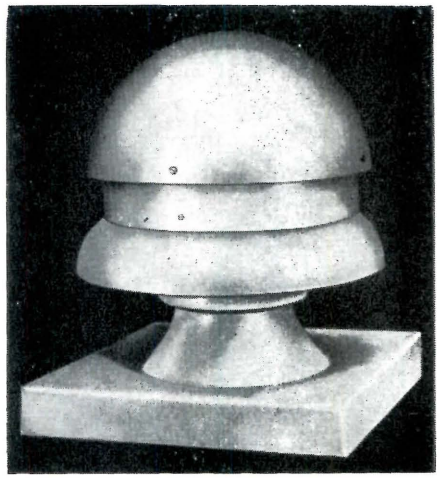
GAMEWELL®

SPECIALISTS IN PUBLIC SAFETY

GA 8-11

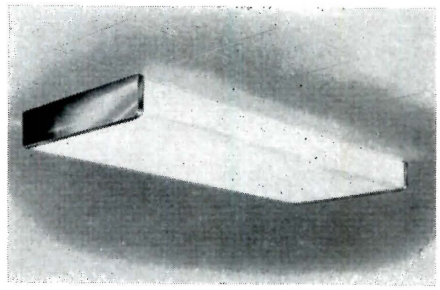
Product Reports

continued from page 244



Fiberglass Roof Exhauster

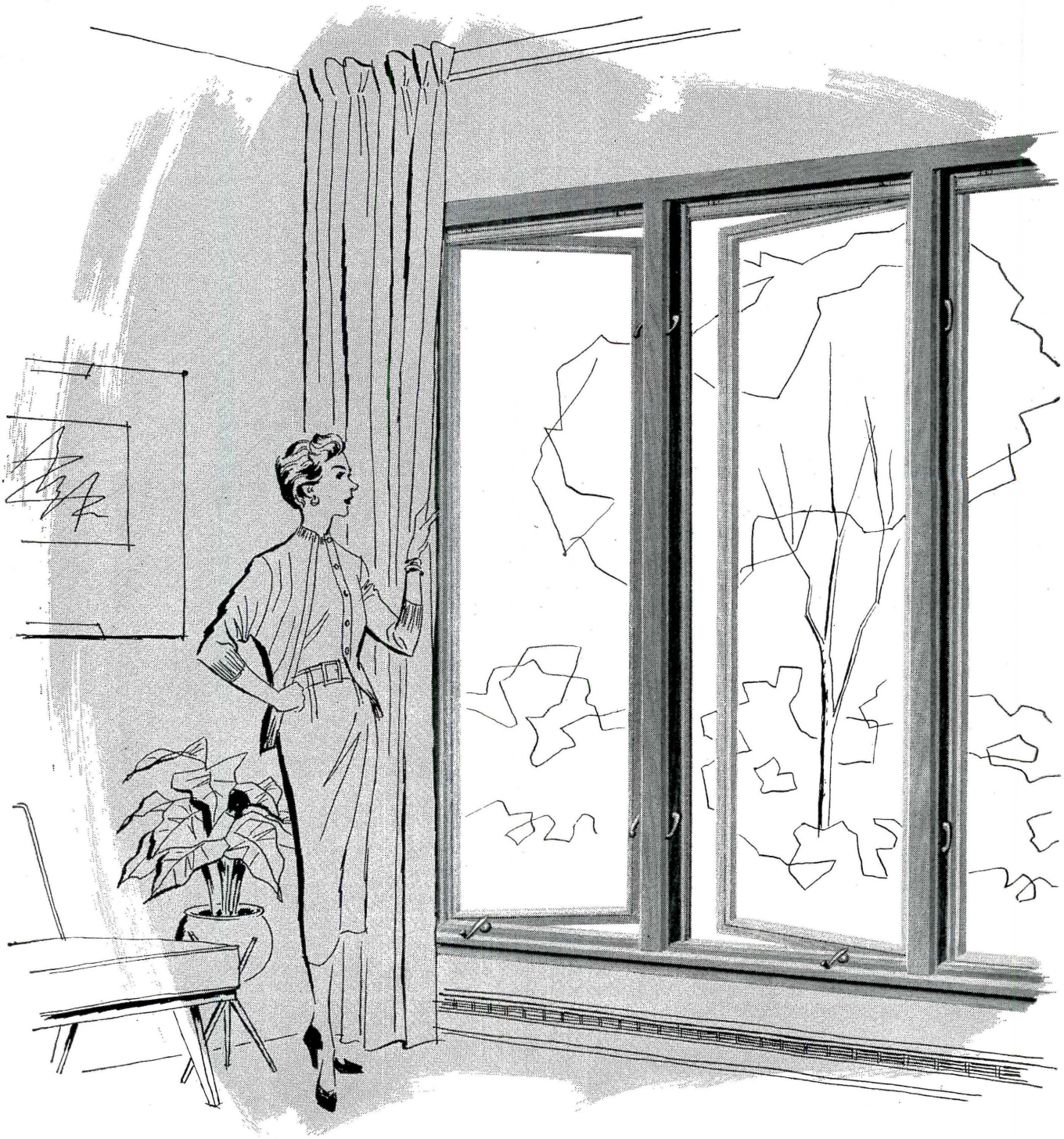
The advantages over similar metal units of a power roof exhauster molded in reinforced *Fiberglas* are said to include inherent quietness (units are self-damping), high structural and impact strength, integral maintenance-free finish, and corrosion resistance. In addition, its light weight means economy in both shipping and installation. The units come in capacities ranging from 100 to 11,000 cfm, with static pressures up to 4 in. They are furnished in standard light blue, but can be had in any color on special order. Prices are competitive with aluminum and steel. *The Gallaher Co., Omaha, Nebr.*



Wrap-Around Light Diffuser

The new *Venus* 4700 Series of fluorescent lighting fixtures features a wrap-around acrylic plastic light diffuser to provide shadow-free lighting. Internal ribbing eliminates the common center dark streak, and a translucent joiner band permits end to end assembly without visible connections. Installation brackets at the top give enough ceiling clearance for adequate ventilation and heat dissipation. Two and four lamp models are available for both the standard 48 in. tubes and the 96 in. slimlines. *Sun-Lite Mfg. Co., 2555 Bellevue Ave., Detroit 7, Mich.*

more products on page 276



LARGEST STOCK SIZE WOOD CASEMENT

Pella®

Now . . . here is *high style* in wood casements. These new PELLA CASEMENTS with 24″ x 68″ glass adapt perfectly to standard height walls. Plenty of room below for perimeter heating. Pleasing proportions above for ceiling-to-floor draperies. And, they trim out to standard doorway height. ROLSCREEN equipped. Insulating glass. See our catalog in Sweet's or mail coupon today. Distributors throughout U. S. and Canada. Consult classified telephone directory.

WOOD CASEMENT WINDOWS

ROLSCREEN COMPANY,
Dept. J-125, Pella, Iowa

Please send data on PELLA CASEMENT WINDOWS.

FIRM

ADDRESS

CITY ZONE STATE

ATT. MR. TEL. NO.

NEW ARCHITECTURAL ALUMINUM EXTRUSIONS FOR CONTEMPORARY DESIGNS

. . . now readily available from Kaiser Aluminum distributors

This Metals Service Center for Copper & Brass Sales, Inc. demonstrates an effective use of new Kaiser Aluminum architectural extrusions in contemporary design.

In addition to the gravel stop, facing system and window sill used on this project, Kaiser Aluminum offers a complete line of extrusion products engineered for the functional requirements of today's architecture.

Included in the line are a variety of gravel stops, copings, window sills, thresholds, and handrails as well as fascia expanders, fascia system, architectural and structural shapes, rod, bar, pipe and tube. All are now readily available in a wide range of sizes from Kaiser Aluminum distributors.

Investigate the advantages these lightweight architectural extrusions offer for your designs. Natural corrosion resistance assures permanent beauty, minimum maintenance.

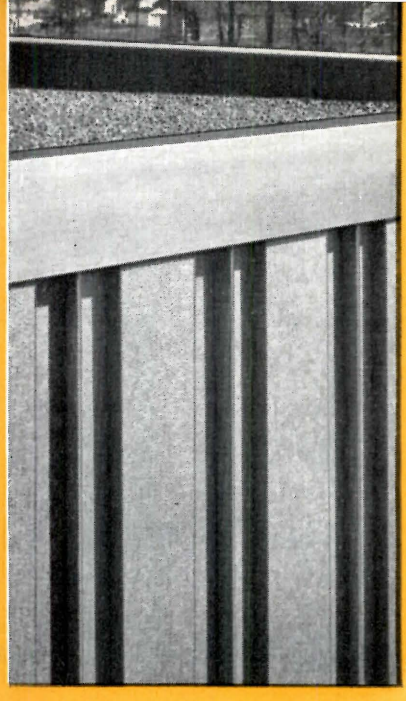
For more information and complete architectural specifications on any or all of these products, contact the Architect's Service Representative at the Kaiser Aluminum sales office listed in your telephone directory. Or write: Architect's Service Department, Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Ave., Chicago 11, Ill.

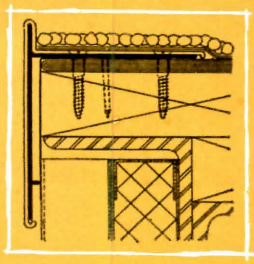
Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office,* Palmolive Bldg., Chicago 11, Ill.; *Executive Office,* Kaiser Bldg., Oakland 12, Calif.

KAISER ALUMINUM

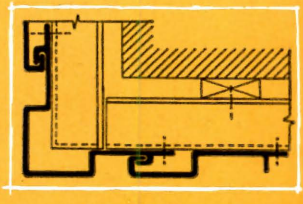
What the architect conceives ... aluminum achieves!

See "MAVERICK" • Sunday Evenings, ABC-TV Network • Consult your local TV listing

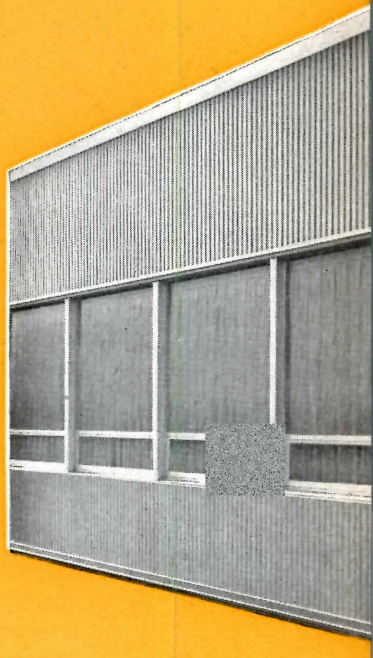




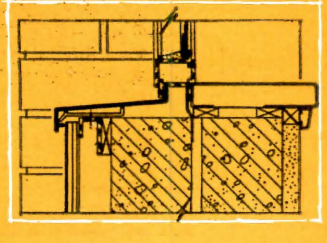
Typical detail and photo of Kaiser Aluminum's Type K-1 Gravel Stop. Note simplicity and pleasing shadow line that results from the straight drip edge feature.



Kaiser Aluminum's standard Facing System may be used for interior or exterior applications. Typical detail shows outside corner components in horizontal section. Photo shows pleasing texture effect of the configuration.



The straight drip edge feature of Kaiser Aluminum's Type K-1 Window Sill is shown in typical detail and photo. As in the Type K-1 Gravel Stop, this feature contributes to the structure's contemporary design. Standard sill widths range from 2⅛" up to 8¼" plus ⅜" drip overhang.



ENGINEERS AND ARCHITECTS: Giffels & Vallet, Inc., L. Rossetti

CURTAIN WALL FABRICATOR-ERECTOR: The R. C. Mahon Co.

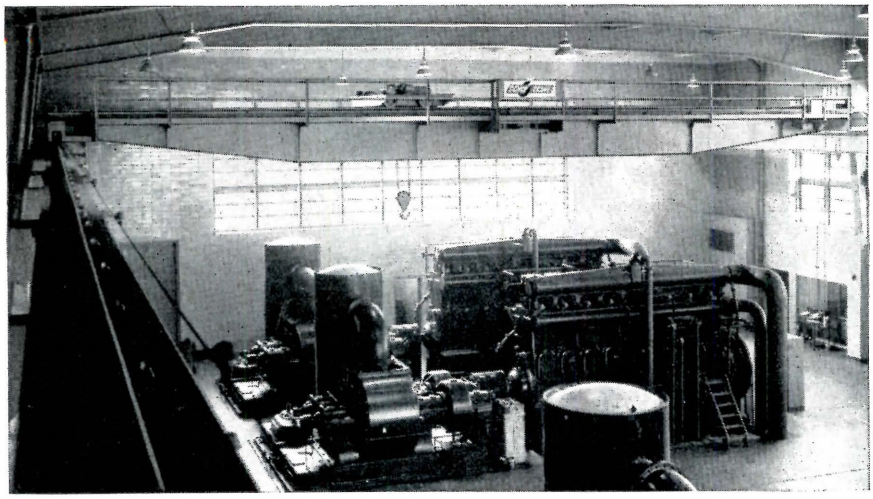
GENERAL CONTRACTOR: Perron Construction Co.

Copper & Brass Sales, Inc. (Kaiser Aluminum Distributor), Detroit, Michigan

WORM AND GEAR DESIGN ELIMINATES LOAD BRAKE ADJUSTMENT AND MAINTENANCE IN THIS

CONCO

OVERHEAD ELECTRIC CRANE



CONCO "CRB" OVERHEAD ELECTRIC TRAVELING CRANE installed in municipal sewage disposal plant.

A feature of this Conco "CR" series crane is a worm and gear mechanical load brake which provides maximum safety, lower first cost, and the elimination of any adjustment or service needs. The brake offers a virtually limitless service life. It has only 2 moving parts. Conco "CR" cranes are one of many types custom-built for all classes of service. To engineers Conco offers two important facilities: A plant flexibility that permits true custom-building at a practical cost. And, a staff qualified by 50 years experience to provide such design assistance as you may request. May we submit specification data, an estimate, or a proposal on your next crane requirement? Write for Bulletin 5000A.

APPLICATION NOTE: Conco has engineered special spark-proof and explosion-proof cranes for installations such as Naval Ammunition Depots, U. S. Air Force Bases, the U. S. Atomic Energy Commission, and Thiokol.

CRANES HOISTS CONCO

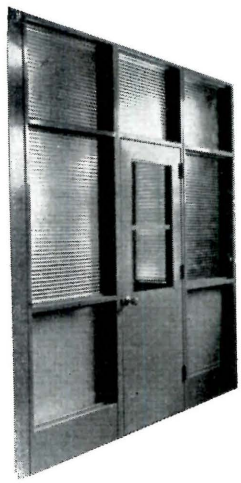
CONCO ENGINEERING WORKS

Division H. D. Conkey & Company
Mendota, Illinois

Affiliate: Conco Building Products, Inc.—Brick, Tile, Stone

See Our Catalog: Sweet's Industrial Construction File

Product Reports



Pre-Engineered Hollow Metal Units

To save time in delivery and installation, Superior Fireproof Door & Sash Co. has supplemented its line of custom hollow metal products with a new *Standardline* of doors, frames, borrowed light and sidelight partitions. The standard units feature the same precision engineering as the custom products, offer a wide variety of opening heights and widths, and can be quickly joined with an interlocking clip. The frames take either glass or solid vitreous and vinylclad steel panels. *Superior Standard-line Corp., 4175 Park Ave., New York 57, N. Y.*

Indoor Telephone Booths

The growing practice of installing telephone booths in public areas of buildings is aided and abetted by a new line of steel indoor booths in acoustic or see-thru models for free-standing or recessed installation, singly or in multiples. The fireproof booths are available in stainless steel or in color combinations to match or blend with their surroundings. *Sherron Metallic Corp., 1201 Flushing Ave., Brooklyn 37, N. Y.*

more products on page 282

Special activities unit, Westmoor High School, Daly City, Calif., houses gymnasium, auditorium, cafeteria, music room. Architects: Mario J. Ciampi, A.I.A.; Allyn C. Martin, Paul Reiter, associates.

L·O·F visits a high school...

a Seaside Showplace built on a budget

(Less than $15.00 per sq. ft. despite demands of a stormy site)*

It sits on a California hilltop only a half mile from the sea. From its windows you look down at San Francisco and the Pacific . . . but the building is as breathtaking as the view it commands!

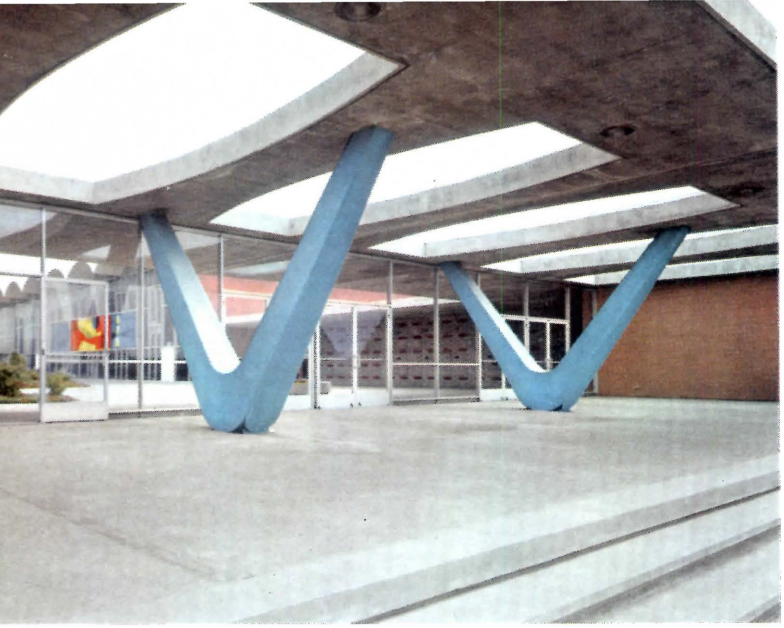
The school's sparkling glass and vivid colors make it as lively as the youngsters who occupy it. And there are wonderful surprises . . . like landscaped courts and window walls everywhere.

Rain, fog and wind swirl around the hilltop site much of the school year. To thwart the elements, Architect Mario J. Ciampi

**excluding site work, special equipment, furnishings and fees*

L·O·F GLASS

Daylighted perimeter hallways surround the classroom unit. L·O·F Heat Absorbing Plate Glass is used for relief from solar heat and sun glare.



Inner mall which separates the special activities unit from the classroom unit has glass walls at both ends to serve as "wind shields" for the protection of those within.

designed a structure enclosing all units around a central mall. This is sheltered from buffeting winds by glass "fences" on either end. Classrooms are in one unit, and special activities areas are in another. Glass-walled perimeter hallways relieve the compactness, affording students a refreshing view.

Do students like it here? Many have gone out of their way to thank Mr. Ciampi. They're proud of the world-wide renown the building has earned.

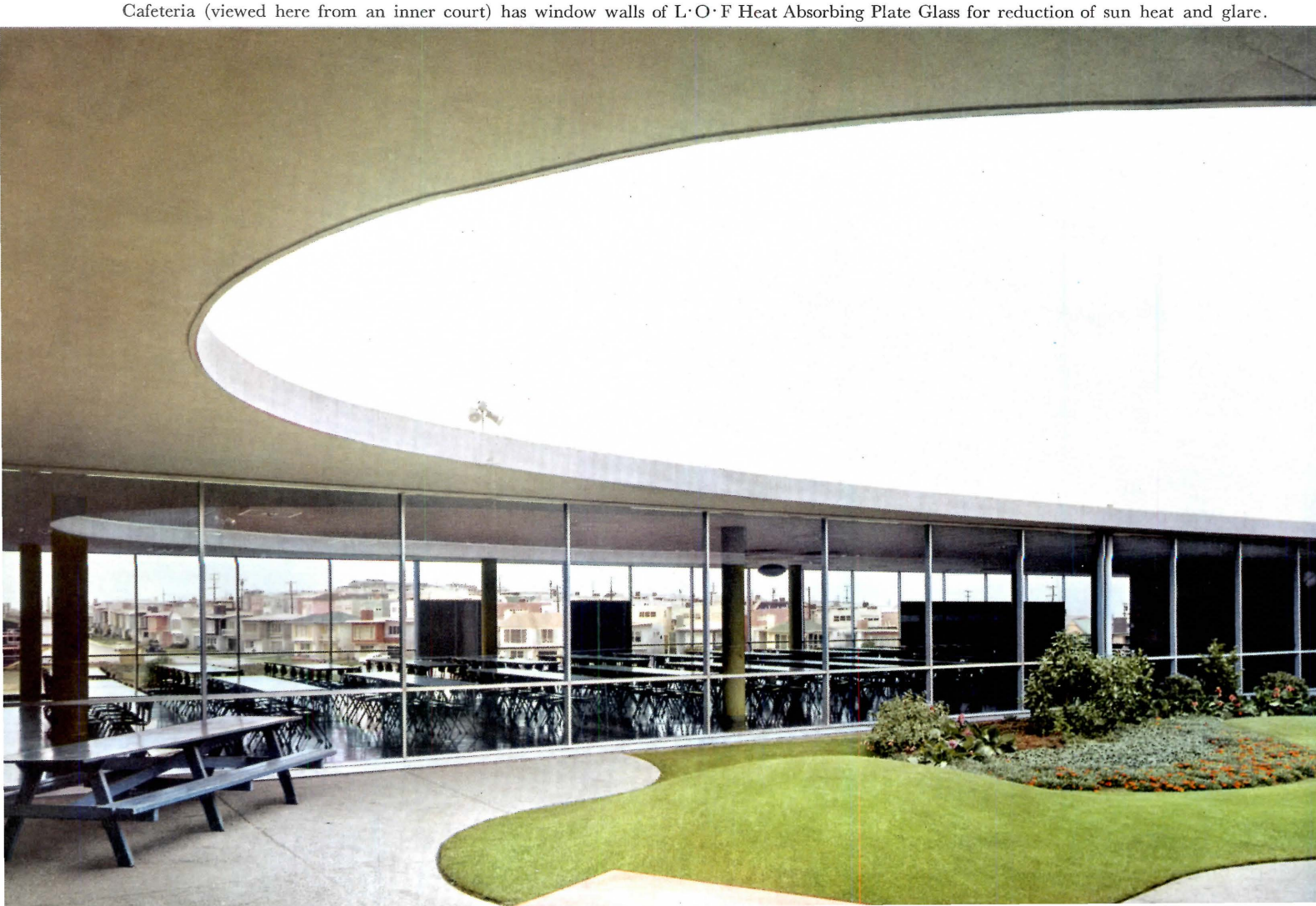
Architects have come from as far away as Austria and Japan to study and admire this school. Mr. Ciampi told us why:

"Westmoor is visual evidence that our original design philosophy was correct. It is a large school, designed to accommodate 1,500 students, yet the building never dominates. The proportions—human figures to structure—are pleasing. And the community paid no more for this unusual design concept.

"Westmoor costs are comparable to secondary school cost standards for this area—and I mean austere standards. The California State Aid School Program is a stringent law which requires school buildings to be built at very minimum of cost.

"This same design economy applies to the second increment, now in its early stages—consisting of additional classrooms, science labs and shops. These additions will be constructed within the State Aid Program."

Cafeteria (viewed here from an inner court) has window walls of L·O·F Heat Absorbing Plate Glass for reduction of sun heat and glare.



The library also opens onto an inner court. Notice the freedom from distortion in the objects seen through the plate glass walls.

EDWARD D. MORGAN
Superintendent
Jefferson Union
High School District

We wanted Superintendent Morgan's opinion. He told us:

"I definitely feel that Westmoor is a school which in practice is every bit up to its plan. In spite of its exposed hilltop position, it is a most welcome place. The kids love it.

"The community was slow to accept this design, citing the extensive use of glass as impractical for a school located on the San Andreas fault. Then came the big earthquake of March 1957. Not a pane was broken. That allayed their fears."

Principal South also had some interesting comments:

"The central grouping, as well as the many other design factors, serves a dual purpose: it creates a refreshing atmosphere for the student, while protecting the school and its activities from the extreme weather conditions prevalent in the area.

"There's a noticeable change in student attitude. Just as a family receives a mental lift by moving from an old home to a new one, Westmoor students have experienced a similar lift in spirits."

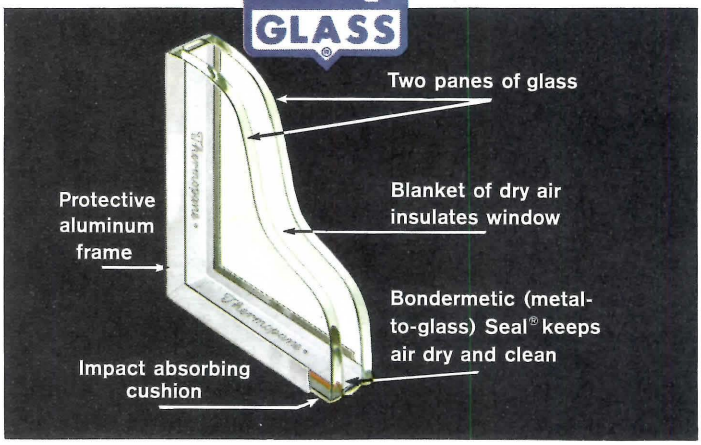
The huge window walls in the gymnasium are *Tuf-flex*® tempered plate glass. They flood the big gym with daylight. This glass is tempered for greater safety and lower maintenance.

GLEN SOUTH
Principal
Westmoor High School

L·O·F GLASS

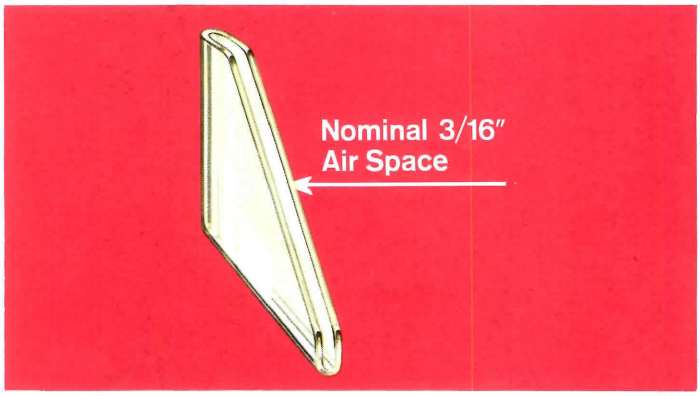
a Great Name in glass

LIBBEY·OWENS·FORD GLASS CO.



THERMOPANE®

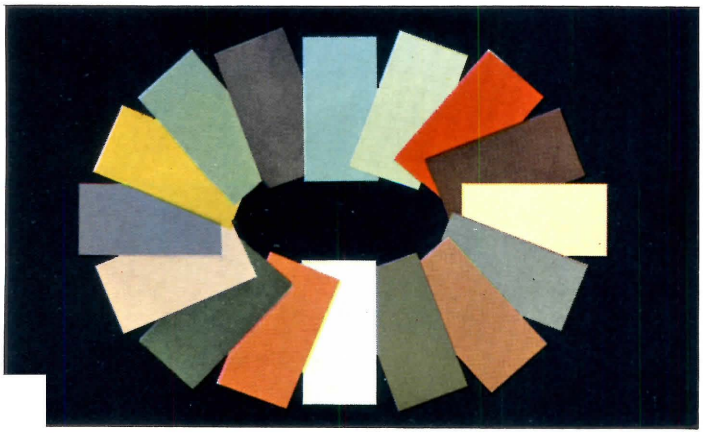
Thermopane insulating glass puts two panes of glass and a sealed-in blanket of dry, clean air between the children and the outdoors. Drafts are reduced so rooms are more comfortable, especially for children sitting close to windows. *Thermopane* deadens outside noises. Compared to single panes, 1″ *Thermopane* cuts heat loss almost in half. Recommended for all windows where its insulating properties would result in substantial savings in winter.



Thermopane is now available in two new, improved types: New Super *Thermopane* (left, above) with the famous *Bondermetic* (metal-to-glass) *Seal*® now has its edges protected with an aluminum frame. *GlasSeal*® *Thermopane* (left) sets new quality standards for all-glass insulating units. Made of DSA sheet glass, its uniformly rounded, smooth edges make glazing easier and faster. Ideal for both wood and metal sash.

TUF-FLEX®

Tuf-flex tempered plate glass is 3 to 5 times stronger than regular plate glass of the same thickness. Yet it's as clear as any fine plate glass. If maximum resistance is reached, *Tuf-flex* disintegrates into relatively harmless, rock-salt-size particles. Recommended for gymnasiums, entrance doors and side lights, areas facing playgrounds . . . any area where youngsters and missiles are in rapid motion.



VITROLUX®

Used instead of masonry as an exterior facing material, also for interior partitions. Rich color, fused to the back of this clear, heat-strengthened plate glass, adds youthful beauty and cheerful character to your school. Natural resistance to weathering, crazing and checking. Standard maximum size of *Vitrolux* panels is 48″ x 84″. Special orders up to 60″ x 84″. Thickness: ¼″ plus 1/64″ minus 1/32″. Sixteen standard colors plus black and white. Also in nonstandard colors subject to manufacturing limitations.

For complete information on any of these L·O·F products, call your L·O·F Distributor or Dealer (listed under "Glass" in the Yellow Pages). Or write to Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

LIBBEY·OWENS·FORD
608 Madison Avenue
TOLEDO 3, OHIO

AP-807

Litho in U.S.A.

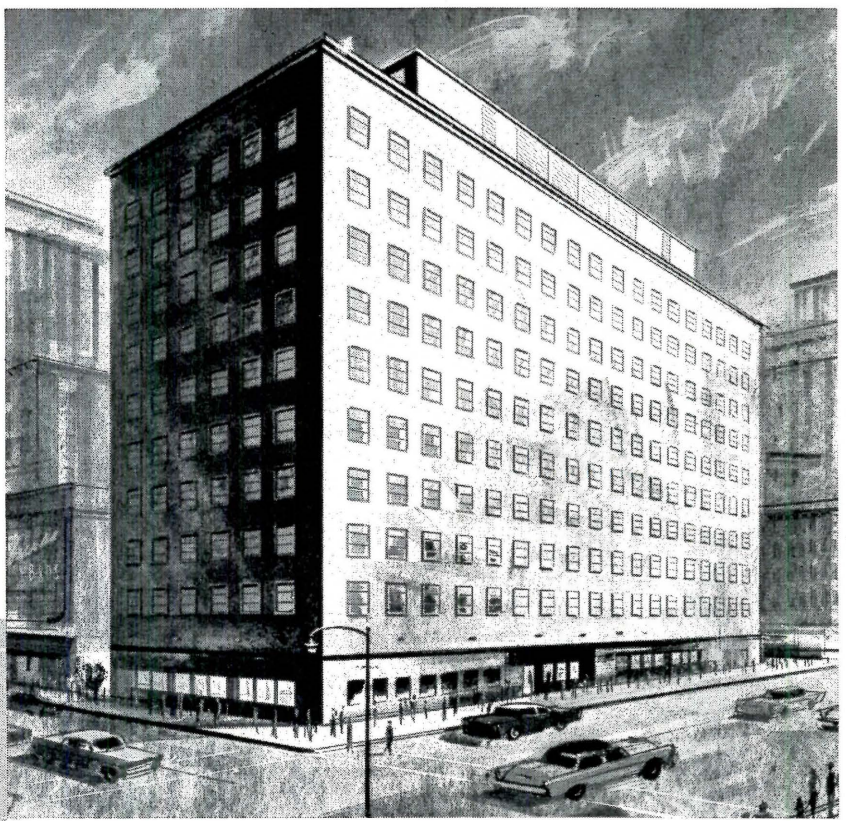
"Low cost **OASIS IN-A-WALLS** the complete solution to cooled water"

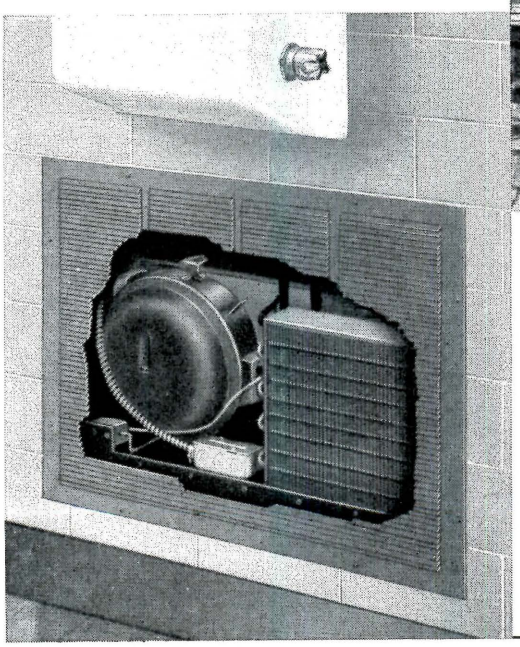
Ultra-modern new Howard Building in Providence, R. I., has built-in Oasis In-A-Wall Water Coolers. Architect—Albert Harkness & Peter Geddes, Providence.

The Howard Realty Company, of Providence, R. I., is unusually enthusiastic over the super-compact efficiency of the Oasis In-A-Wall Water Coolers in its new 10-story Howard Building. The owner says,

"We're greatly pleased with the low cost, the ease of installation, and the clean-cut modern look of our ten Oasis In-A-Wall Water Coolers. Everyone concerned feels that they are the complete solution to our problem of providing ample cooled water for each floor."

Versatile Oasis In-A-Wall Water Coolers are easy to mount on joists, in closets, or on a wall. They're built thin to build in —even in an 8-inch wall. In-A-Wall coolers can serve up to four remote fountains with cool, refreshing water.





Specify either of two models. IW-5 supplies 5 GPH for two remote fountains, serves 60 in offices, 35 in light industry. IW-10 has 10 GPH capacity for four remote fountains, serves 120 people in offices, 70 in light industry.

For every building need, there's an Oasis Water Cooler. Line includes models with capacities from 2 to 35 GPH, some with refrigerated compartments, and the famous Hot 'n Cold which also supplies piping hot water for coffee-breaks.

Send the coupon for complete specifications and roughing-in details

OASIS WATER COOLERS

The Ebco Manufacturing Company, Columbus 13, Ohio
Manufacturers of the most complete line of water coolers
Distributed in Canada by G. H. Wood & Co., Ltd.

THE EBCO MANUFACTURING COMPANY
Dept. 5-G, Columbus 13, Ohio

Send specifications and roughing-in details for Oasis In-A-Wall Water Coolers.

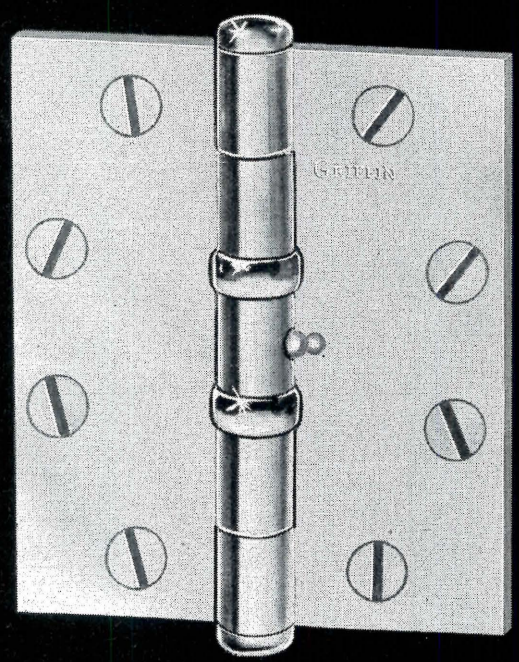
name_____

company_____

address_____

city_____ zone____ state_____

new from GRIFFIN



GRIFFIN-GRIP HINGE®*
"IT LOCKS THE PIN IN"

THE SECURITY HINGE THAT'S EASY TO INSTALL

When the Griffin-Grip Hinge is closed, the hardened steel ball is locked into the groove in the hinge pin. Makes it impossible to remove the pin.

EASY TO INSTALL—No more fussing with easy-to-lose set screws. Doors are hung faster than with any standard non-removable pin hinge when you specify new Griffin-Grip Hinge.

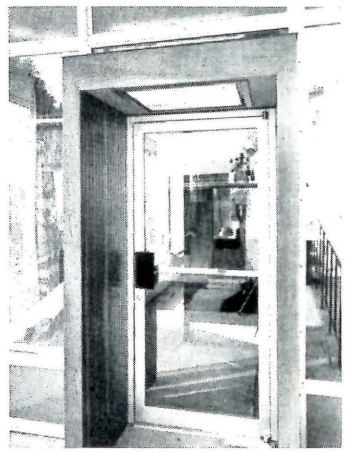
NEW Griffin-Grip is available on all ball-bearing and all template hinges 4" and larger in all standard hardware finishes. Specify GG for the impregnable Griffin-Grip hinge 'it locks the pin in.'

GRIFFIN MFG. CO. • ERIE, PA.

GRIFFIN

*pat. pend.

Product Reports



Aluminum Entrance Door

The *Vampco* line of aluminum curtain walls and windows has been expanded to include aluminum entrance doors, frames, side lites and transoms. The alumilite-finished doors come complete with hardware, glazing and weatherstripping, in standard and custom sizes. All-welded, they have no exposed screws or fastenings, and feature a tamper-proof hinge with "hidden" pins. *Valley Metal Products Co., Plainwell, Mich.*

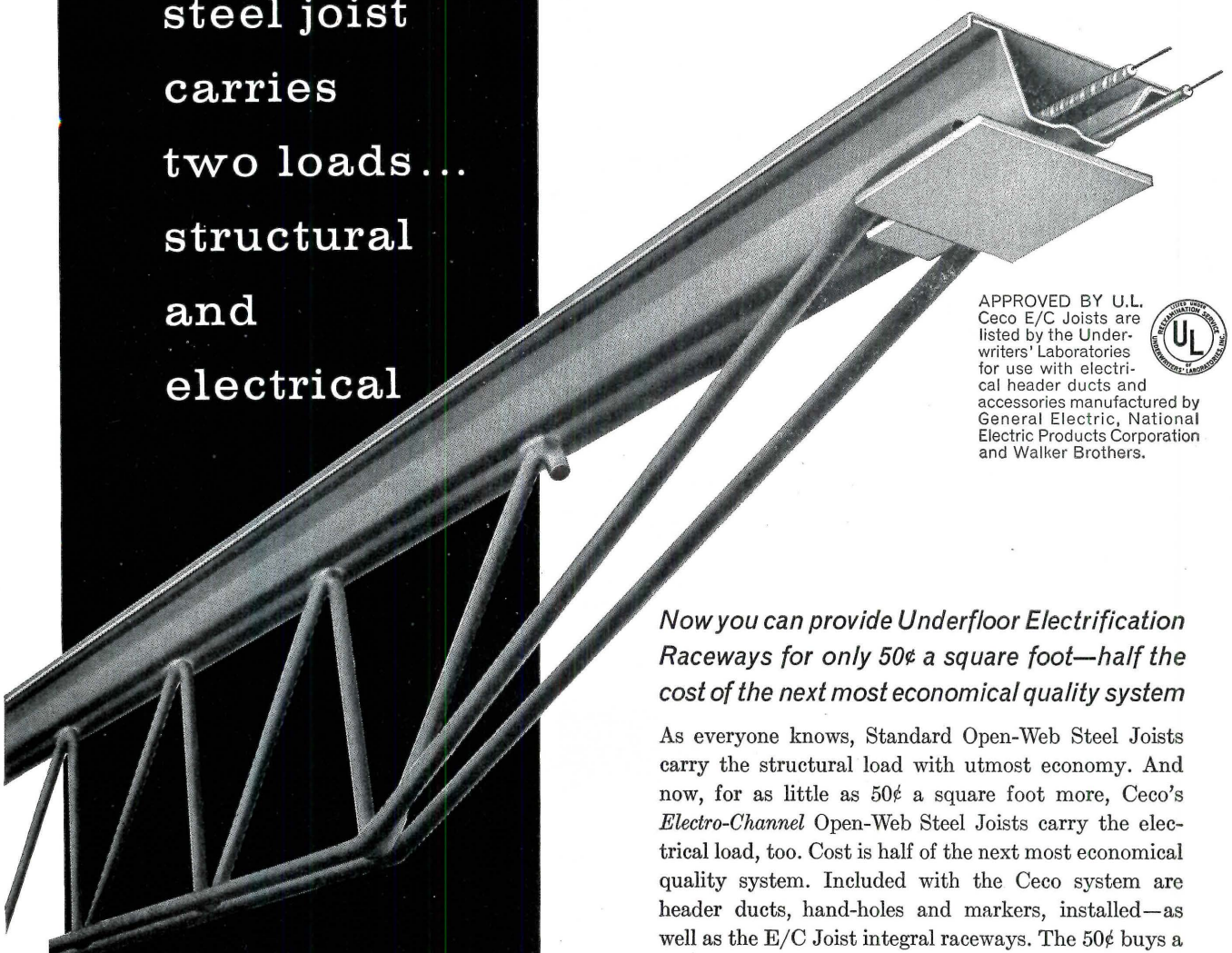
Flush Anchor Bolt Fitting

The new *Deco* anchor bolt fitting, a flat-topped box-like casting which eliminates above-floor projections until columns or equipment are actually installed, contains a floating oblong nut that can be adjusted in all directions to compensate for errors in setting. Columns or machines are attached to the fitting by screwing a removable stud into this nut. Cast of strong malleable iron, the fittings are available separately or complete with anchor bolt and stud in sizes from ⅜ to 1½ in. bolt diameters. *Decatur Engineering Co., 519 East William St., Decatur, Ill.*

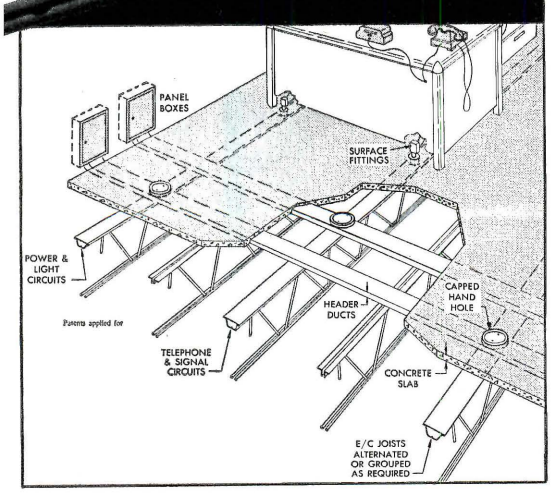
more products on page 286

This open-web steel joist carries two loads... structural and electrical

The E/C Joist is a Standard Open-Web Steel Joist with an electrical raceway substituted for the conventional top chord. Each E/C Joist has the same load-carrying capacity as a comparable standard joist, and the same load table applies.



APPROVED BY U.L. Ceco E/C Joists are listed by the Underwriters' Laboratories for use with electrical header ducts and accessories manufactured by General Electric, National Electric Products Corporation and Walker Brothers.



Electrical, telephone and signal wires can be run from the panel boxes down through the header ducts, into the top chord of the E/C Joist and up through the surface fittings to desks located anywhere on the floor. Whenever desks are moved, surface fittings can be placed along the joists to service the new positions.

Now you can provide Underfloor Electrification Raceways for only 50¢ a square foot—half the cost of the next most economical quality system

As everyone knows, Standard Open-Web Steel Joists carry the structural load with utmost economy. And now, for as little as 50¢ a square foot more, Ceco's *Electro-Channel* Open-Web Steel Joists carry the electrical load, too. Cost is half of the next most economical quality system. Included with the Ceco system are header ducts, hand-holes and markers, installed—as well as the E/C Joist integral raceways. The 50¢ buys a two-duct system on 6′ 0″ centers. Comparable savings are offered in three-duct systems. Call your Ceco engineer or send coupon for manual. Ceco Steel Products Corporation. Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 West 26th Street, Chicago 50, Illinois.

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Please send Introductory Manual No. 3011 covering Ceco Electro-Channel Steel Joist Construction.

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A MODERN CONCEPT FOR

Heating, Ventilating and Cooling of Schools

By F. J. KURTH, Vice President
in Charge of Engineering, Anemostat Corporation of America

Educational efficiency

The Anemostat Dual Duct High Velocity System provides a controlled and healthy environment in accordance with the highest standards of comfort and is therefore conducive to more vigorous activity in the classrooms. It is a modern heating and ventilating system, carefully researched and new in concept, and is economical to install and operate. It is an effective heating and ventilating system, which later can be readily adapted to air conditioning by the addition of a central-station type refrigeration system.

Because large sums of money must be spent for new schools, it is important to study all factors which will improve educational efficiency. Though well constructed and equipped, many new schools are not provided with modern heating, ventilating or cooling systems which furnish comfort during all seasons of the year. Experience has shown that a proper climatic condition will improve student and teacher efficiency to the extent of a cumulative gain of approximately twenty percent.

System design

First the volume of air required for a classroom must be determined. In most communities this is regulated by local codes on a cubic foot per pupil basis.

Although requirements vary in different localities from ten to thirty cubic feet of fresh air per minute, there are other factors which must be considered: for ventilation purposes, when cooling is not used, a large volume of air will, of course, do a better job than a small volume; however, the introduction of from 1000 to 1200 cubic feet of air per minute is adequate. If air conditioning is installed, the engineer may specify air temperature differentials of 30° or more between the supply air in the cold duct and the room temperature—Anemostat Air Diffusers will diffuse air at high temperature differentials without draft.

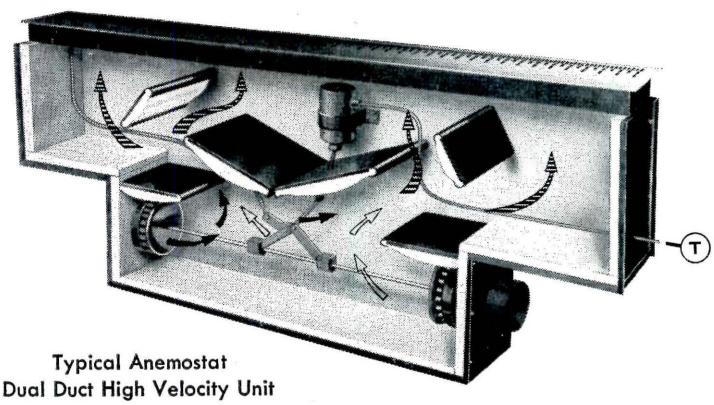
Location and type of units

The location of the units in the classroom is determined by the climate of the community in which the school is located and the construction of the school with particular reference to glass areas. When winters are severe the *under the window type units* must be used and two units per classroom should be installed as shown on the layout. The return air can be moved through corridors, ducts in corridors *or exhaust plenums* in the corridor ceilings.

In schools in mild climates or in colder climates where double glazing is used, the *sidewall units* will do an excellent job of year-round heating, ventilating and cooling. Two units providing from 500 to 600 CFM each per classroom are recommended. The return air can be returned to the fan through corridors, corridor ducts or plenums.

When two units are installed in a classroom, both are controlled by one

The Basic Principle of Anemostat School Units



Typical Anemostat
Dual Duct High Velocity Unit

The illustration shows a high velocity unit designed for a dual duct system for either heating and ventilating or complete air conditioning. To maintain ideal conditions, air is evenly and draftlessly diffused at high velocity throughout the classroom at controlled temperature; one duct carries cold air from the outside of the building, or cold air cooled by coils and mechanical refrigeration, the second duct carries warm air, which consists of a mixture of fresh and recirculated air heated by hot water or steam coils from heating boilers or by hot air furnaces. The thermostat in the classroom opens the hot air valve and closes the cold air valve, or vice versa depending on the room temperature requirements.

thermostat which should be located on an inside wall.

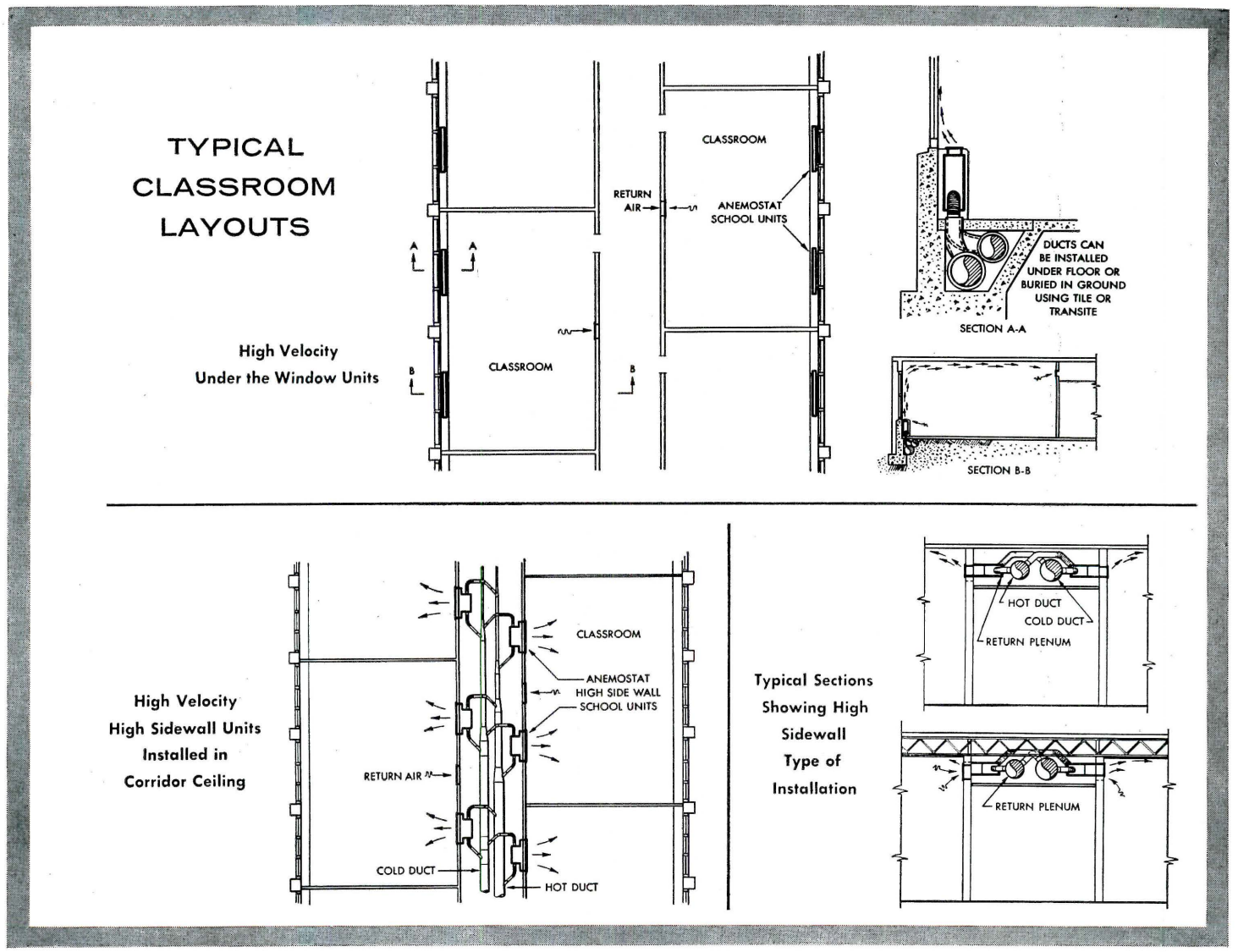
Ducts

The ducts can be installed in various ways depending on the type of structure: beneath the floor, on classroom or corridor ceilings, in roof spaces or on top of the roof. If tile or transite pipe is used the ducts can actually be buried in the ground. Because no water or steam is used, the ducts can be run in practically any space, as corrosion or trapping is not a problem.

Equipment room

For reasons of economy, the fan room or rooms should be so located as to keep the duct runs as short as possible. However, there is no problem in running ducts long distances; dual duct systems in commercial buildings often have duct-runs of over 500 feet. The fans are usually of the Class II type and can be either the forward or backward curve type. Consideration should be given to fans of the air-foil type, which are designed for quiet operation at high pressures.

Mechanical or electrostatic filters are generally used in high class commercial buildings and should also be considered for schools. Clean, filtered air properly diffused at controlled temperature is the answer to health and comfort in classrooms.

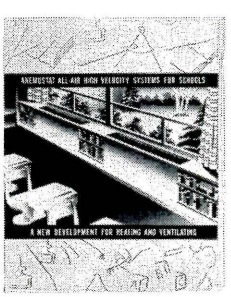


AC-1362

Advantages of the Anemostat Dual Duct High Velocity System

The Anemostat dual duct high velocity air distribution system for heating, ventilating and cooling is ideal for all types of classrooms from kindergarten through college. It offers many important architectural and engineering advantages:

1. *Low First Cost*
2. *Low Maintenance Costs*
3. *Draftless Air Distribution*
4. *Eliminates Window Down Drafts*
5. *Scientific Temperature Control*
6. *Easily Adapted to Future Air Conditioning*
7. *Quiet Operation*
8. *Rugged Construction*
9. *Meets All Code Requirements*
10. *Pressure Balanced*
11. *Meets Modern Architectural Design*



New Anemostat School Catalog
contains complete data on Anemostat Dual Duct High Velocity Units. Write for your copy to

Anemostat Corporation of America
10 E. 39 Street, New York 16, N.Y.

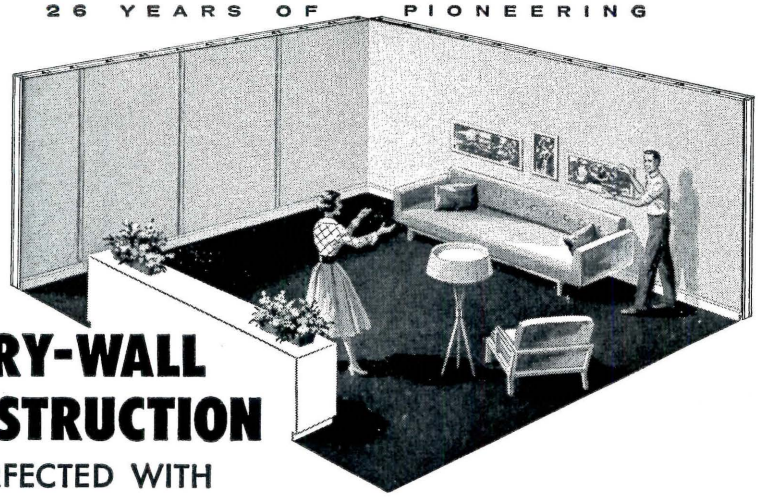
One-Coat Curing Compound

Newly-laid concrete floors can be cured, hardened and dustproofed with a single coating of *West* Concrete Floor Treatment applied immediately after trowelling. The quick-drying, membrane-forming liquid compound is colorless, leaves no streaks and will not alter the color of the finish floor. Protected surfaces can be walked on within 24 hours. *West Chemical Products, Inc., Building Products Div., 42-16 West St., Long Island City 1, N. Y.*

Non-Patterned Vinyl Wallcovering

The architect's need for a plain, wear-resistant, easy-to-clean wall finish is filled by a new vinyl wall-covering that looks like stippled paint but has all the advantages of vinyl. *Vicrtex VEF* "Stip-L-Tex" is stocked in 40 non-glossy shades, and can be matched to any desired color on orders of 300 yds and up. It may be hung on wood, metal, glass or plaster. *L. E. Carpenter & Co., Inc., Empire State Bldg., New York 1, N. Y.*

26 YEARS OF PIONEERING



DRY-WALL CONSTRUCTION

PERFECTED WITH

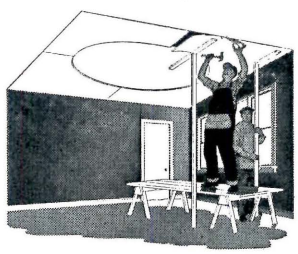
Homasote Big Sheets

$60,000,000 of homes have been built with Homasote Big Sheets — since we began, in 1932, our pioneering in Dry-Wall Construction. Between 1932 and 1946, we spent more than half a million dollars in research, covering all parts and materials in home construction.

Among the outstanding facts is the value of using materials in Big Sheets, wherever possible. Why handle four pieces to cover 112 sq. ft. of wall—when it can be covered with one 8′ x 14′ piece? 22 joints are eliminated in every thousand square feet. Less than half as many nails required.

X-NAILING... Expansion problems vanish with X-Nailing. Snap diagonal chalk-line marks — corner to corner. Nail along these lines—one nail in each stud. The panel moves far less when fewer nails are used.

Here is continuous, crackproof coverage for any ceiling area. It is actually "continuous dry-wall" construction, with no perceptible seams. The whole ceiling literally *floats* — clear of all walls—free to expand or contract as a unit in either dimension. No ceiling joists are needed — the Wilson Air-Float ceiling hangs from trusses, rafters or collar beams. No alteration of pipes or wiring is required. Air-conditioning and indirect lighting are easily introduced. Old ceilings can be "lowered". Multi-layer ceilings — for modern design and effective sound-conditioning—are "natural" to this method. Interior wall partitions are movable, because they are not load-bearing.



Ornamental Ceilings at minimum cost

Homasote Big Sheets lend themselves to many ceiling treatments—with and without beams. Every ceiling has the strength, the insulating and sound-deadening qualities always associated with Homasote.

Ornamental ceilings add interest—oval, diamond, square and rectangular patterns are easily and quickly built—and at far lower cost.

The 72-page Homasote Handbook gives complete application instructions for all Homasote products — from underlayment to ceiling to roof —from exterior finish to sheathing to interior finish. It gives the **know-how** of all our experience. Use the coupon today!

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Send the literature and/or specification data checked:

☐ "88", "48" and "44" Roofing ☐ Roof Deckings
☐ Wilson Air-Float Ceilings ☐ Grooved Vertical Siding
☐ One-Man Sheathing ☐ Underlayments
☐ Homasote (72 pg.) Handbook

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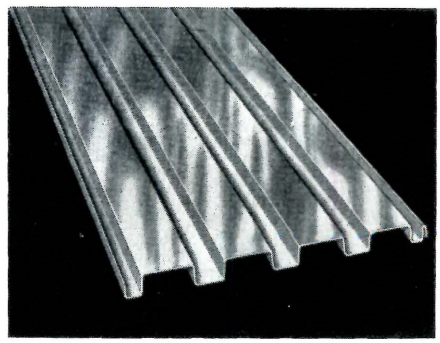
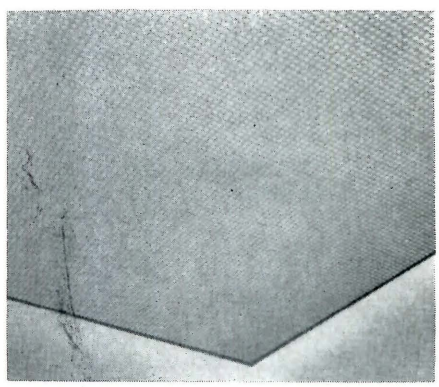


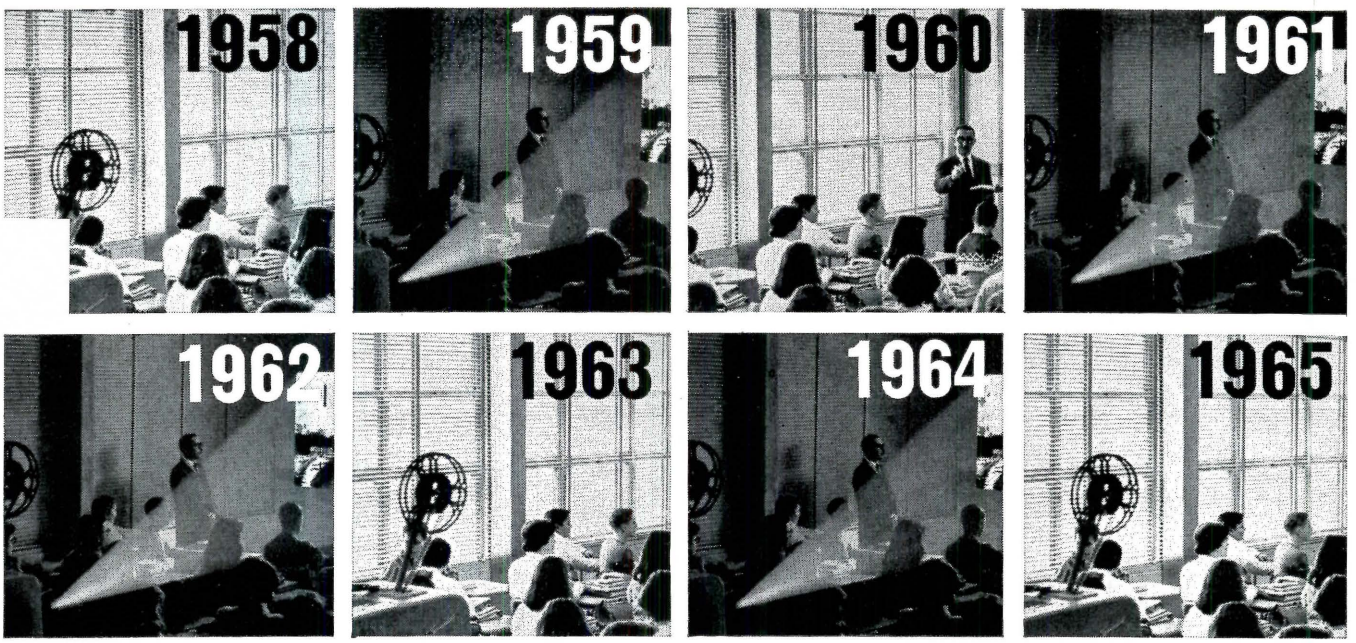
Acoustical Roof Deck

Milcor Acoustideck, a combination steel roof deck and acoustical ceiling, derives its .70 noise reduction coefficient from four rows of perforations located along the vertical webs. Precut sound absorbing batts installed between the ribs further reduce sound reflection. Made with the same profile as *Milcor* Type B roof deck and interchangeable with it, *Acoustideck* will span up to 10 ft under normal roof loads. It comes in 18, 20 and 22 gauge steel either Bonderized and prime coated or galvanized; 14 and 16 gauge, galvanized only. *Inland Steel Products Co., 4101 W. Burnham St., Milwaukee, Wisc.*



Low Cost Luminous Ceiling

A new finish trim is said to permit installation of a floating luminous ceiling at a cost competitive with conventional suspended acoustical ceiling and lighting systems. When used with *Infinilite* non-modular ceiling panels, which interlock to form a continuous circular-louvered ceiling, it makes intermediate "T" bars or a supporting grid unnecessary. *Integrated Ceilings Corp., 9011 Beverly Blvd., Los Angeles 48, Calif.*



OVER THE YEARS

Flexalum Audio-Visual blinds will be your most economical, most practical classroom window covering!

FLEXALUM A-V BLINDS GIVE YOU EVERYTHING FROM FULL DAYLIGHT (WITHOUT GLARE) TO "PROJECTION" DARKNESS—yet they *cost less to install* than any combination of black-out and conventional window covering. What's more, they *cost less to maintain*, too. Flexalum's special spring-tempered aluminum, wipe clean plastic tape and nylon cord give years of trouble-free service. (That's certainly a comfort in these days of ever-increasing maintenance costs.) And, the greater number of slats per blind, special tape construction and light trap channels enable you to turn any classroom into a dark auditorium at the flick of a cord. Less light comes in . . . less money goes out—with Flexalum A-V blinds . . . sold with a written five year guarantee by Hunter Douglas Aluminum Division of Bridgeport Brass Co.

(Installation shown: Carle Place High School, Long Island, N. Y.)

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BLINDS

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I am interested in getting (at no obligation) ☐ specification data
☐ cost estimates on Flexalum® Audio-Visual Blinds

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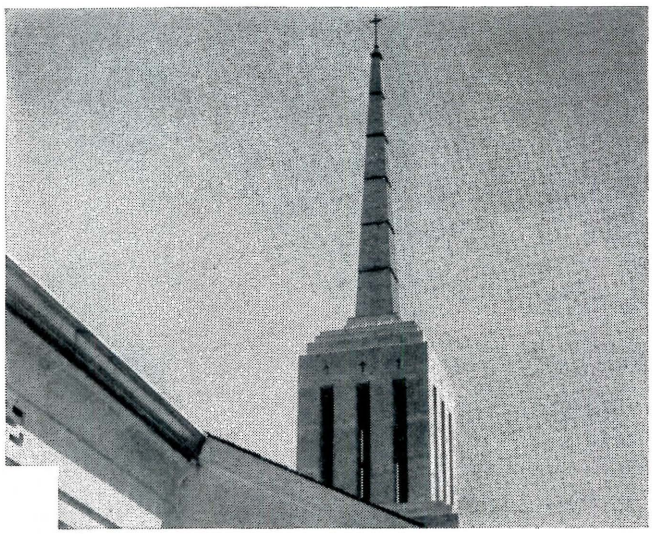
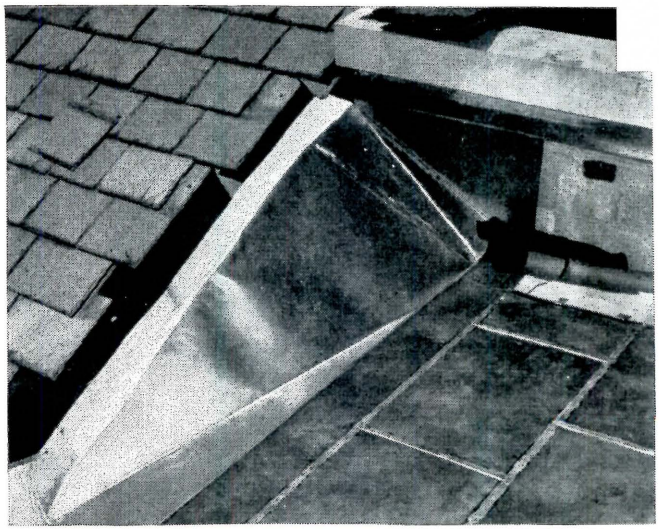
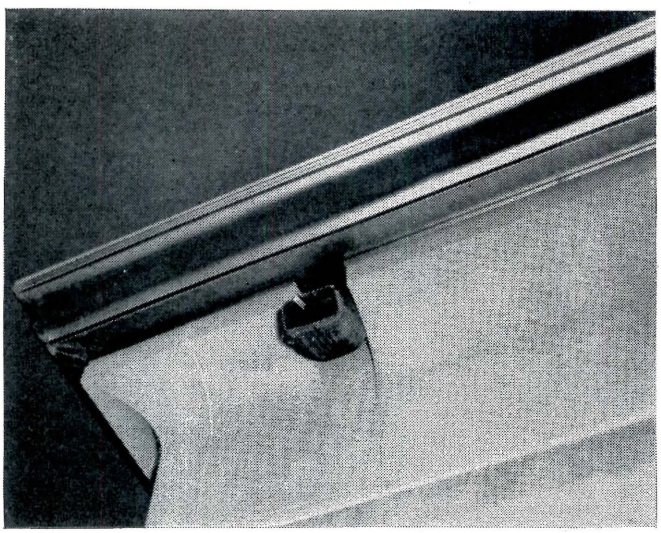


Plan for strength . . . For example, this graceful steeple on St. Dominic's Church, Cincinnati, O. It was built on the ground of rigid, double-locked Monel* nickel-copper alloy sheeting – then hoisted into place. With strong Monel alloy it will stand up to wind, ice, and snow. It works *with* its masonry setting too – has almost identical expansion.

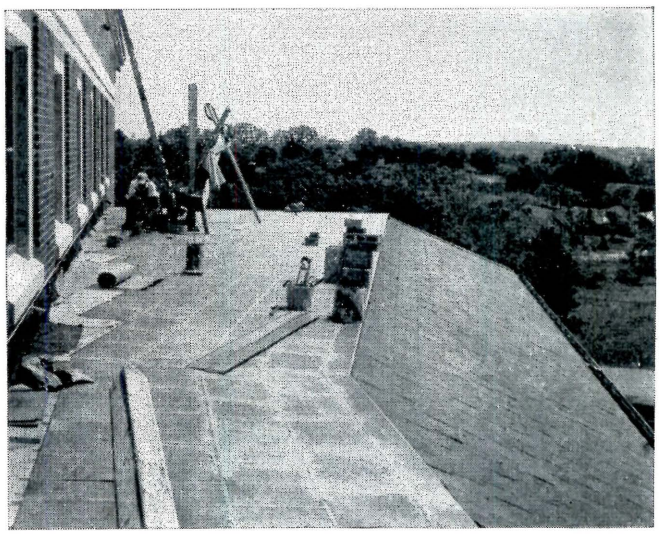


Plan for durability . . . Monel flashings and flat seam work on St. Dominic's will resist pitting, cracking. Monel roofing stands up to corrosive atmospheres, grit, soot. (Today, new crimped forms of Monel roofing sheet also practically eliminate the need for expansion joints – reducing another constant source of trouble.)

Plan for generations of protection with Monel roofing



Plan for lasting beauty . . . This Monel alloy gutter extends the cut stone's classic sweep. Monel roofing weathers to a satin grey that harmonizes with stone. Its corrosion resistance eliminates streaking. Architect – A. V. Walters; General Contractors – Edw. T. Honnert & Sons; Sheet Metal fabricators – Weitkamp and Robinson, Inc., Cincinnati, Ohio.



Plan for ease of installation . . . Monel roofing is easily cut, formed, soldered into place. It's strong, corrosion-resisting . . . permits the use of lighter, easy-to-handle gauges . . . takes years of flexing. Roofing contractors don't need any special forming or soldering equipment – and workmen use familiar techniques with Monel roofing. *Registered trademark

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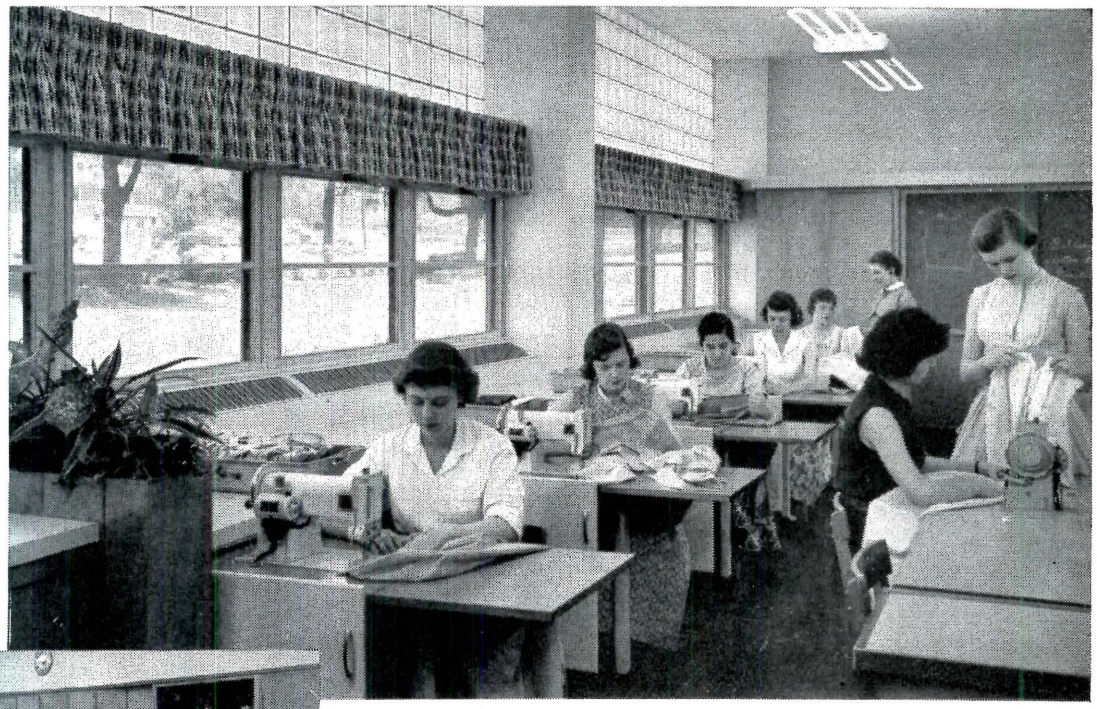

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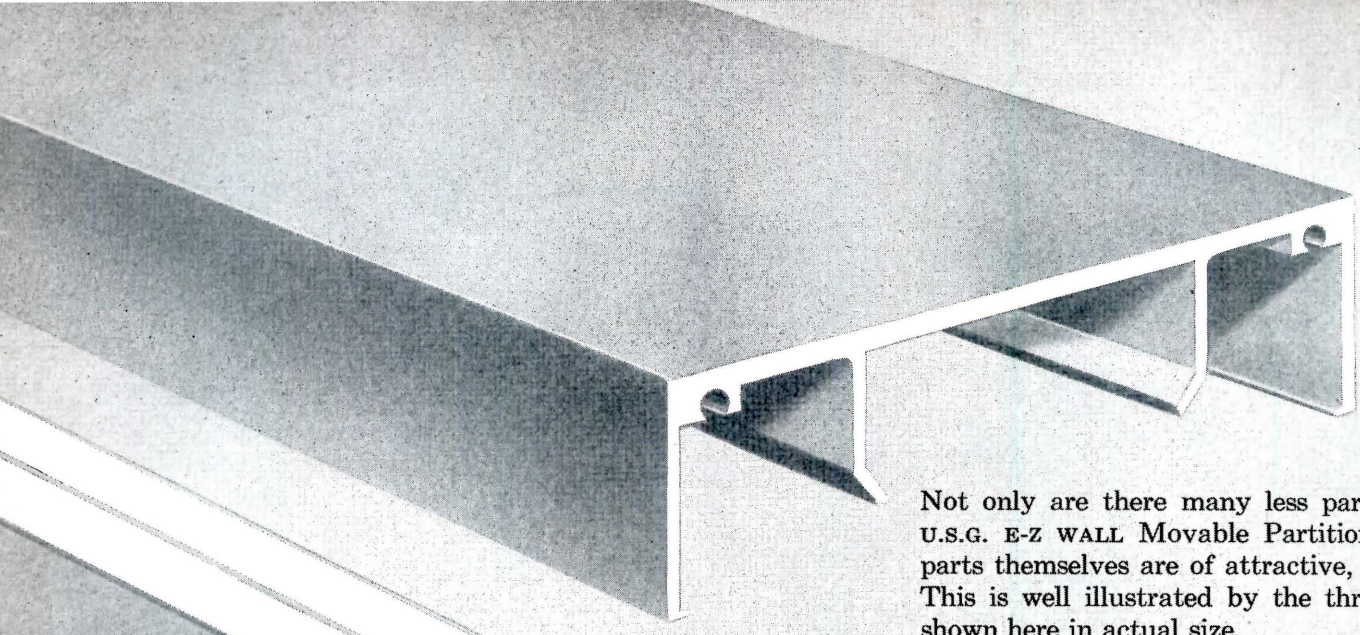

Not only are there many less parts in the new U.S.G. E-Z WALL Movable Partition system, but parts themselves are of attractive, simple design. This is well illustrated by the three basic parts shown here in actual size.

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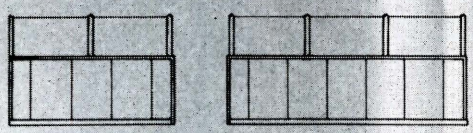
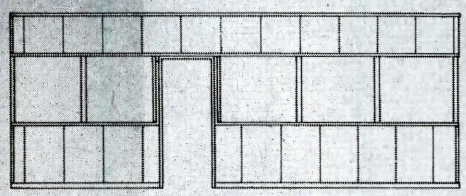
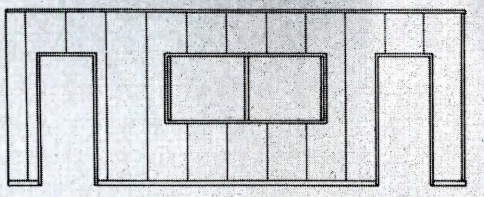
Modern space control that's simple,



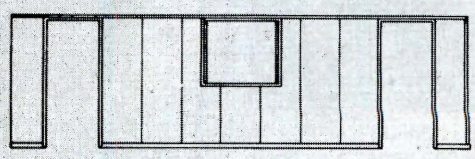
RAILING HEIGHT WALL ELEVATION



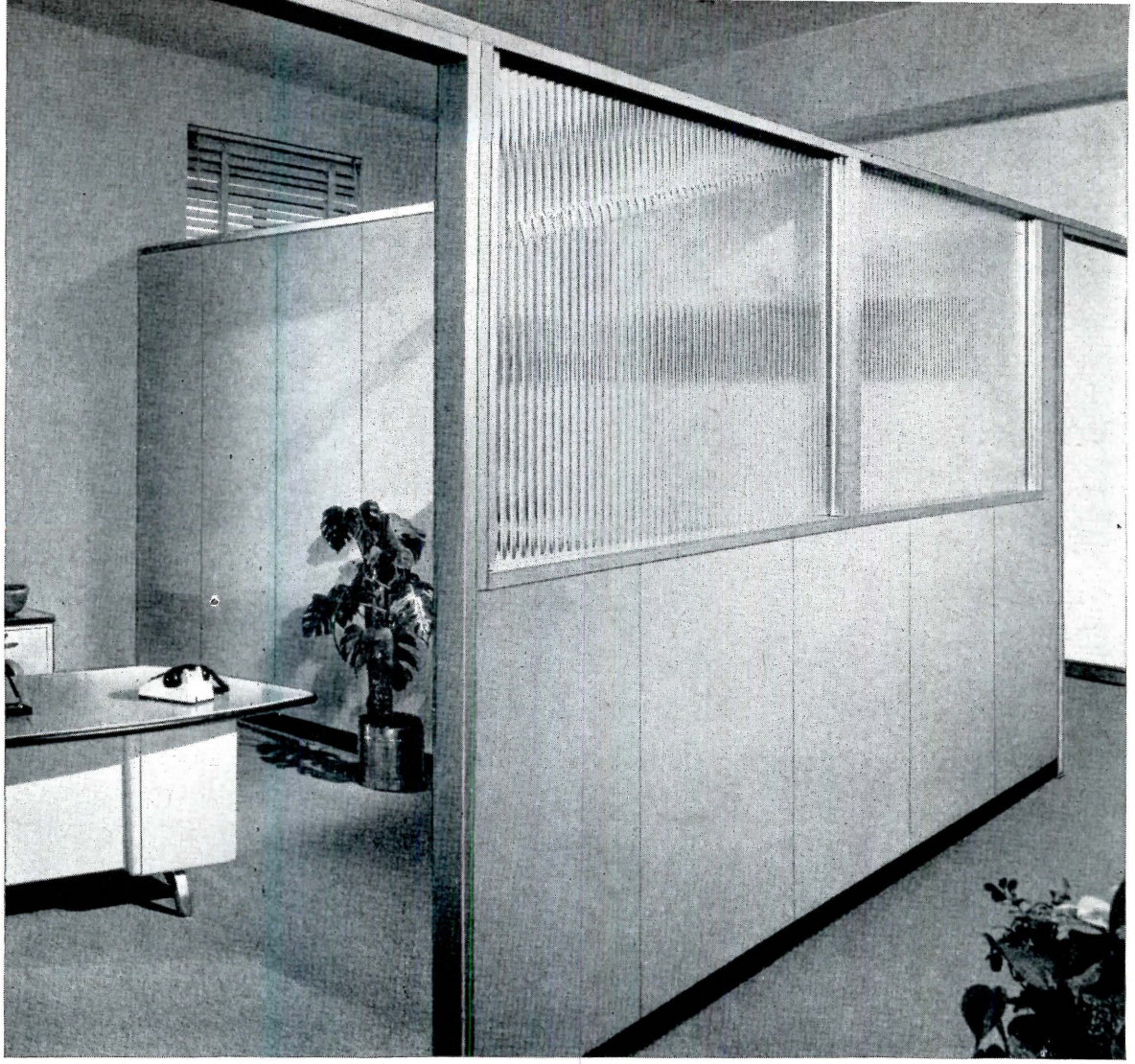
GLAZED HEIGHT WALL ELEVATION



CEILING HEIGHT WALL ELEVATION



CORNICE HEIGHT WALL ELEVATION



economical and incombustible

Simple elements in U.S.G.'s new E-Z Wall Movable Partitions reduce parts from the usual 200 . . . or even 300 . . . to less than 30!

Maximum simplicity, genuine economy, extra fire safety —these important advantages are yours with U.S.G.'s new E-Z WALL Movable Partitions!

These simpler, more economical partitions adjust easily to changing needs, yet maintain the privacy and appearance that go with permanent partitions. Hollow construction provides maximum flexibility for pipes and wiring. All basic metal parts are of anodized aluminum. Panels are of strong, incombustible laminated gypsum board that may be painted or decorated to match any decor.

E-Z WALL Movable Partitions are installed and serviced by a nation-wide organization of U.S.G. Partition Contractors. To learn how this new concept in movable partitions can solve space problems better, mail the coupon below.

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- ☐ Please send illustrated booklet about the new, simplified E-Z WALL Movable Partition System.
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Architectural Porcelain

(A. I. A. 15-M-1) Describes uses of porcelain panels with examples of buildings covered with this material. *Davidson Enamel Products, Incorporated, 1126 East Kibby Street, Lima, Ohio*

Booster Water Heaters

How to Design, Specify and Buy Booster Water Heating Systems contains full instructions, tables, and charts for estimating water heating requirements for various large installations, such as apartment houses, schools, swimming pools, etc. Also lists controls, safety devices and accessories for different types of systems. 24 pp. *The Cleveland Heater Company, Dept. LG, 2310 Superior Avenue, Cleveland, Ohio*

Drawing for Good Reproduction

Suggests techniques for improving reproduction; illustrations of drafting techniques and kinds and uses of drawing materials, including drawing and tracing papers and cloths, pencils and erasers. *32 pp. $1.00 National Association of Blueprint and Diazotype Coaters, 1757 K Street, N. W., Washington 6, D. C.*

Lighting Fixtures

Fluorescent, incandescent and floodlighting fixtures are described in this catalogue; illustrations, descriptions, dimensions, lighting curves and other data on fixtures for commercial, industrial and outdoor use. 112 pp., *Electro Lighting Corporation, 1355 South Paulina Street, Chicago 8, Ill.*

Watertight Masonry

Bulletin O.M.-8A discusses the important elements involved in the design and specification of watertight masonry; covers proportioning of ingredients, types of mortar, compatibility of brick and mortar, importance of shrinkage control, etc. 6 pp. *The Master Builders Company, 7016 Euclid Avenue, Cleveland, 3, Ohio*

Electric Heaters

and Heating Devices includes information on pipe heaters, 1-in. immersion heaters, domestic water heater replacement elements, new ratings and configurations of tubular heaters, and many others. Various heating processes are described in a power requirements section, and typical application problems are solved to give heating requirements in a short-form method: specifications, operating information and prices are included. 52 pp. *General Electric Company, Schenectady 5, N. Y.*

Tele-Power Duct Systems

(A. I. A. 31C-62) Describes a system for installing surface-mounted communication and power wiring. (The system consists of two parallel runs of raceway, one for power and one for telephone and communication wiring.) 4 pp. *Wiremold Company, Hartford, 10, Ohio**

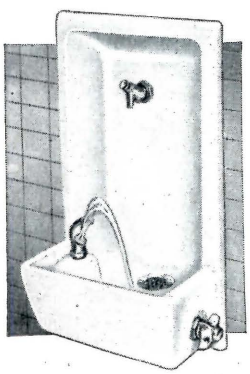
Nailing of Plywood Sheathing

. . . *with "Hi-load" Nails* presents data about the effectiveness of threaded nails. The paper shows that plywood sheathing can be applied more efficiently and more effectively if properly threaded nails of greater length and larger shank diameter are used in place of the traditionally used 6-, 8-, and 10-wire nails. Tables, charts and graphs are included. 16 pp. *Virginia Polytechnic Institute Wood Research Laboratory, Blacksburg, Va.*

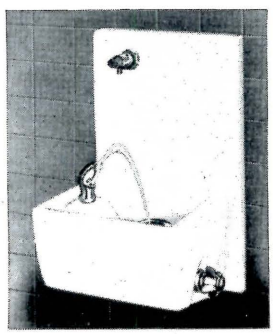
**Additional product information in Sweet's Architectural File, 1958*

more literature on page 298

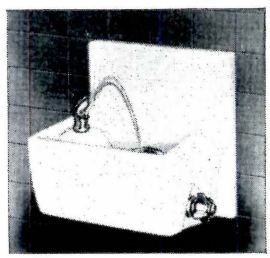
Halsey® Taylor ..the most modern line of drinking-water equipment you can specify



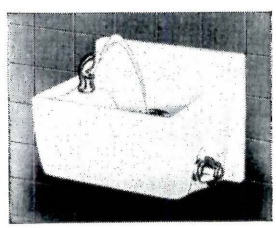
No. 5651—Ultra-modern recessed type; Vitreous China; self-closing stop, push-button glass filler. Two-stream projector, automatic stream control.



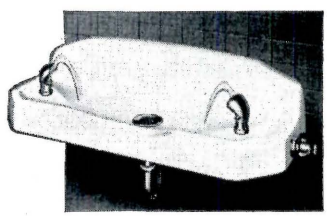
No. 5623—Streamlined face-mounted drinking fountain, heavy vitreous china, integral trap housing, concealed wall hanger. Two-stream mound-building projector and Halsey Taylor automatic stream control.



No. 5616—Face-mounted; vitreous china. Same specifications as No. 5623, except has 16" back wall face height.



No. 5601—Face-mounted; vitreous china. Same specifications as No. 5623, except has 12" back wall face height.



No. 5702—Battery Type. Concealed hangers. Two separate union supply connectors with positive shut-off valves. Two two-stream projectors, automatic stream control.

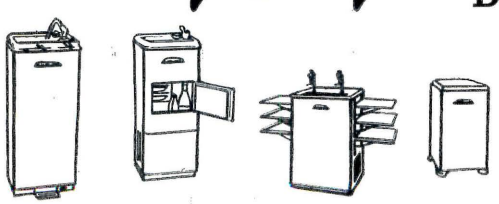
Modern in Design . . . TAYLORed for you!

You'll find Halsey Taylor Drinking Fountains modernly designed to blend harmoniously with individual interior decor! And, even more important, they are the products of a house devoted exclusively to the manufacture of quality drinking-water equipment.

Every Halsey Taylor feature is the development of years of research, providing you with maximum health-safety and dependable, fool-proof service.

The Halsey W. Taylor Co., Warren, O.

Halsey® Taylor Drinking Fountains



Halsey Taylor coolers, too, are available in wide variety—see latest catalog, or Sweets

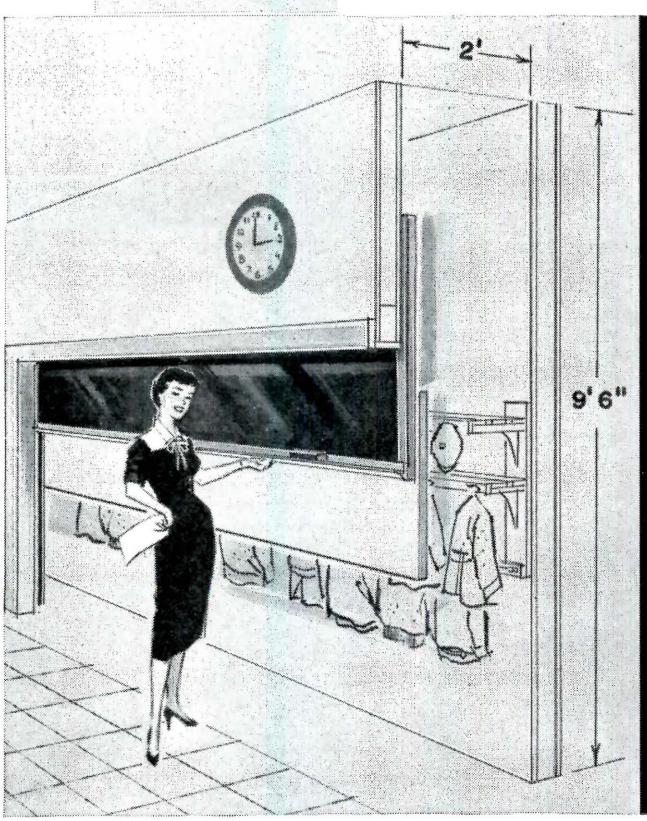
102A

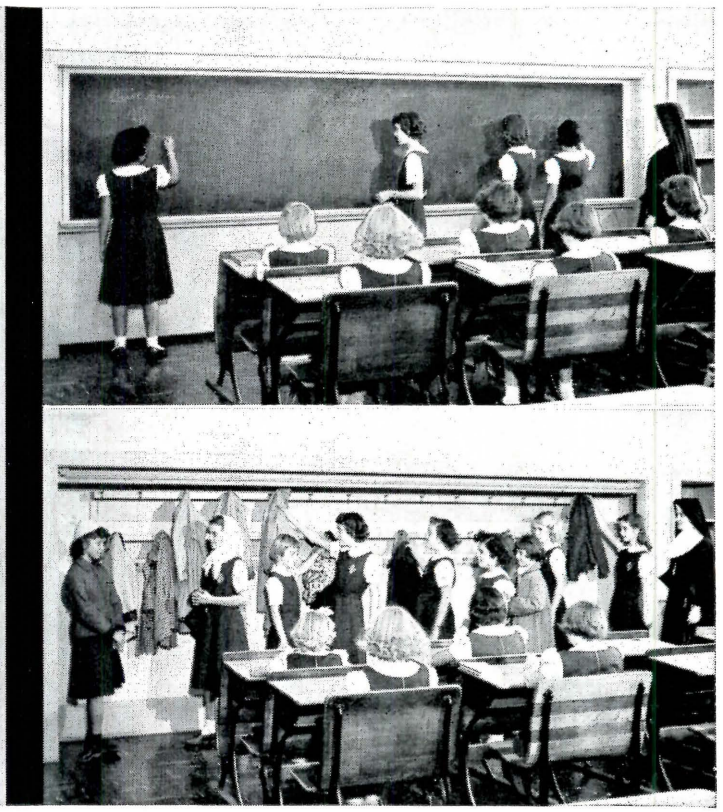
THE MARK OF QUALITY

BARBER COLMAN

NEW Barcol WARDROBEdoor only $240*... saves building costs, increases space utility

...AND TEACHERS WANT IT!





Budget-bound school planners and classroom teachers alike find the answer to their wardrobe needs in the new, easy-operating Barcol WARDROBEdoor.

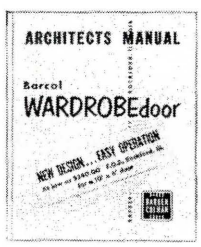
Upward action gives more space economy, open or closed. Roomy wardrobe requires only 2-ft depth . . . class has full use of contingent floor space at all times. Teachers say WARDROBEdoors eliminate exposed coat racks, cloakroom congestion, and desk-placement problems often prevalent with other type wardrobes.

Firm, unbroken chalkboard and tackboard mounting surface adds working wall space — teachers use raised WARDROBEdoor to keep written material out of sight until it is wanted.

Clear-access wardrobe, easy operation, and neat appearance make teachers happy with this building-economy facility. Floor and wardrobe are completely clear for student traffic and teacher supervision when WARDROBEdoor is raised. Easy, quiet, fingertip operation makes attractive, business-like class environment simple to maintain. Sections are highly scuff-resistant and have fine finishing qualities.

Announcements are also appearing in *Nation's Schools* and in *Catholic Building and Maintenance* magazines.

* f.o.b. Rockford, 10′ x 6′ door



New FREE Architect's Manual

Ask your Barcol distributor (under "Doors" in phone book) or send coupon for free copy. Fully illustrated, gives specifications and installation requirements for this important cost saver with the advantages teachers need.

BARBER-COLMAN COMPANY
Dept. P811, Rockford, Illinois

Name_____

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City_____ State_____

THE MARK OF QUALITY

BARBER COLMAN

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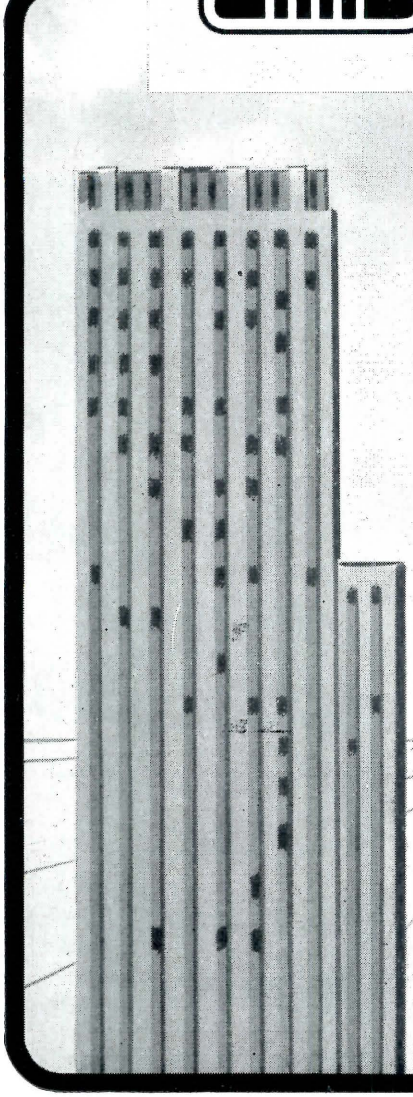
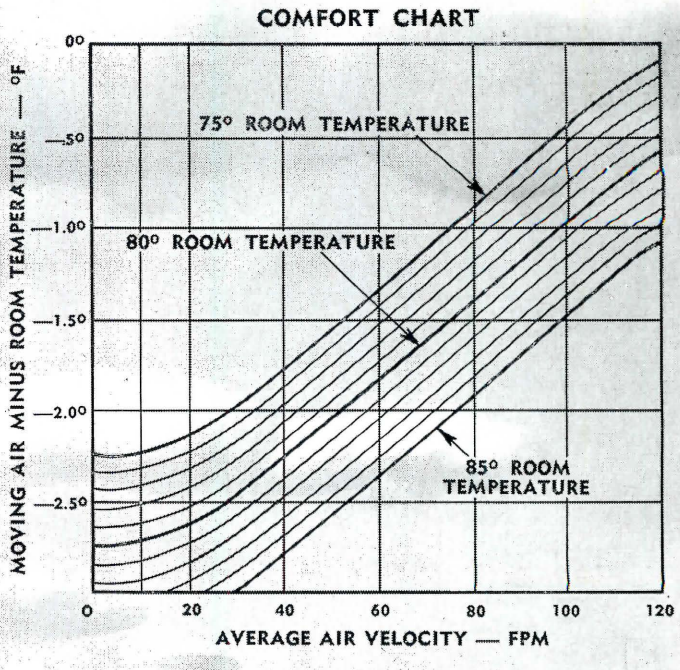
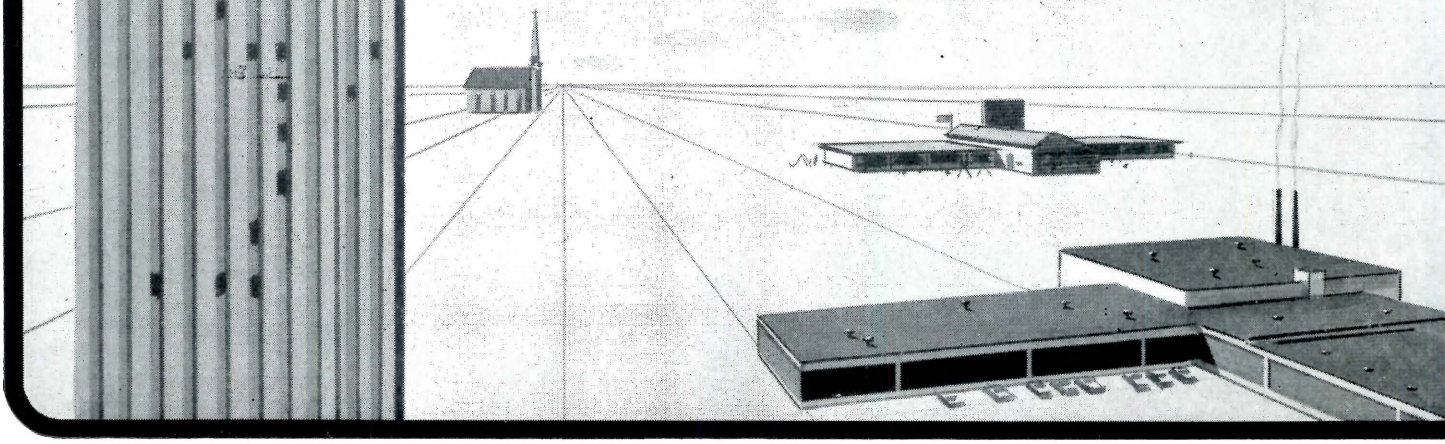
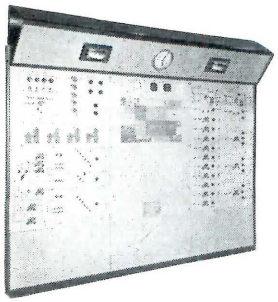


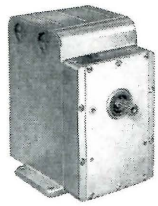




ELECTRIONIC AUTOMATIC CONTROLS...

A complete line of automatic controls for air conditioning, heating, and ventilating service.





NE OURCE...UNDIVIDED RESPONSIBILITY.....

very air conditioning job

onform to this comfort chart*

* When you combine Electrionic Automatic Controls with Uni-Flo Engineered Air Distribution

It is impossible to provide uniformly comfortable air conditioning without the correct correlation between air movement and room temperature. When occupants complain that a room is alternately too warm, too cool, or too drafty, you can be sure that the correct relationship between air distribution and temperature control has not been met.

The importance of this relationship cannot be overemphasized because an individual's comfort is affected by:

1. **Room temperature.**
2. **Velocity of conditioned air being introduced to the room.**
3. **Temperature of moving air in relation to average air temperature in the room.**

The scientifically correct relationship is plotted on the Barber-Colman Comfort Chart shown at the left. This requires closely coordinated functioning of the system's automatic controls and its air distribution units.

Failure to meet the Comfort Chart requirements is the cause of complaints and costs long after the job is "done." This is the point at which it is difficult to establish responsibility for the faults in the system.

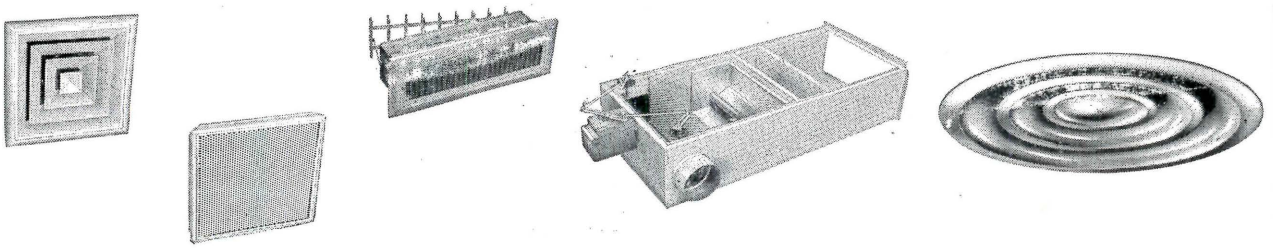
When Barber-Colman Electrionic controls and Uni-Flo engineered air distribution are combined on your job, you have complete assurance that the system will function correctly, providing constant comfort to the occupants of the building at all times. Barber-Colman guarantees this and assumes complete responsibility to see that it is accomplished.

Only Barber-Colman offers you years of combined experience in both automatic controls and air distribution — and assumes the *undivided* responsibility for delivering ideal indoor weather. Architect, engineer, owner, and occupant benefit by having this important obligation successfully discharged by a single supplier.

FOR COMPLETE INFORMATION ask for new fully illustrated Bulletin F-8326 which details the benefits of temperature control and air distribution combinations available through Barber-Colman.

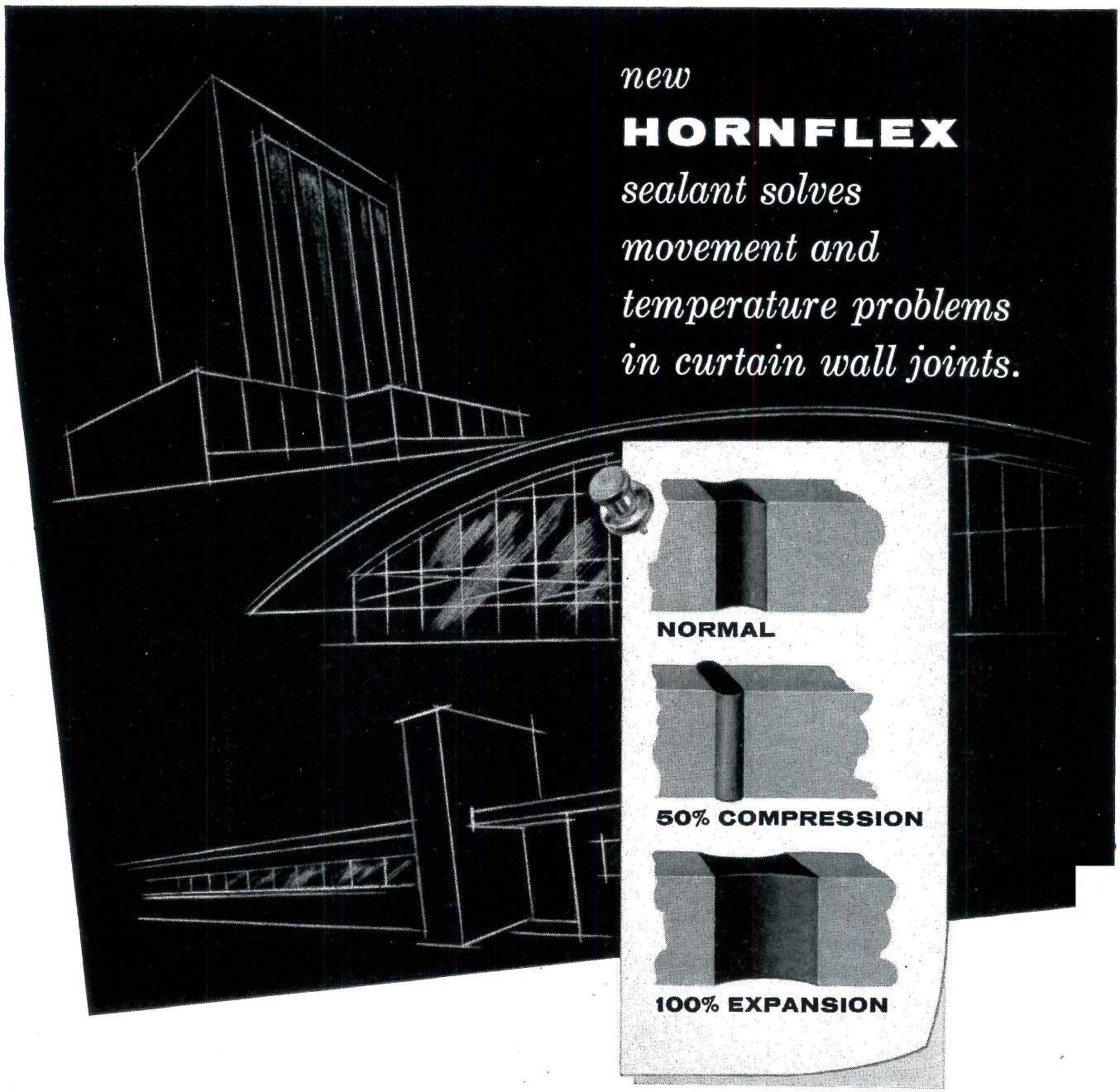
UNI-FLO ENGINEERED AIR DISTRIBUTION...

A complete line of air distribution products for better air handling.



.....BARBER-COLMAN COMPANY

Dept. K, 1604 Rock Street, Rockford, Illinois



Movement due to winds and extremes of temperature poses one of the most trying problems for the designer of curtain wall buildings. For not only must the joint material seal out water, it must be flexible as the building moves with the wind and its elements expand and contract with heat and cold. Too, unequal coefficients of expansion of different materials create additional joint stresses.

Hornflex Thiokol * LP-32 Compound is especially effective in curtain wall construction for sealing joints between panels of stainless or enameled steel, aluminum panels and glass in needlepoint glazing. The squeeze-stretch range of Hornflex absorbs exceptional stress without loss of bond! It provides an elongation of 325% to 500% and stays firm and elastic over a temperature range from 50°F BELOW ZERO to 250°F.

Laboratory test and job applications indicate that Hornflex, properly installed, will provide excellent protection for periods up to *25 years and more.*

Other uses for Hornflex are to fill and seal surface joints in bridges, highways, swimming pools, etc. It has excellent bond to other building materials including those of dissimilar surface density and structure. Hornflex does not oxidize or absorb moisture; effectively seals joints against air, dust and water.

Hornflex is supplied in a pleasing shade of grey which blends well with aluminum, stainless steel or concrete. It is also available in red, aluminum, white and black.

Like complete details? Call your local Horn representative or write for Hornflex Technical Bulletin to Dept. H56-911

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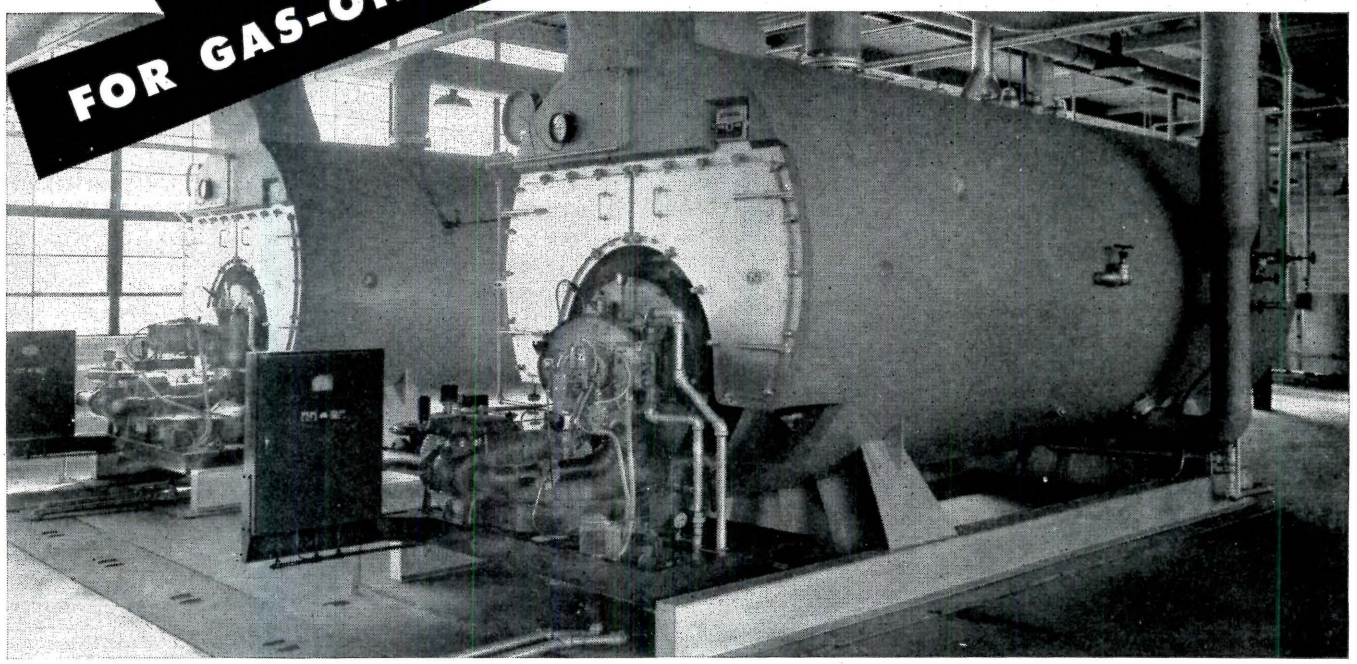
FOR GAS
FOR OIL
FOR GAS-OIL COMBINATION



Petro Boiler-Burner unit installation at the Lambert-St. Louis Municipal Airport , St. Louis, Missouri

Here in one complete package . . . is the PETRO FORCED DRAFT FIRING SYSTEM

Available as a complete boiler-burner unit. The Petro firing unit, integrated with matched Scotch boiler (as shown above), is a complete boiler-burner unit. Installation consists of little more than attaching fuel and power lines. No pitted boiler settings; no high stacks; no separate air supply; no panel wiring. It is a thoroughly engineered unit, factory tested, with all vital components matched and mounted on a single base.

Available as a burner unit only...will fit any boiler. Petro firing units can be applied to any boiler. The entire system is factory-built, wired and tested. Everything needed for ultra modern firing is mounted on a rigid steel frame ready to bolt to the boiler front. Integrated air system makes the usual firing arch, firebox pit and brick checker floor unnecessary.

Saves installation costs. Whether you buy the complete boiler-burner unit or install the Petro forced draft firing system in your present boiler, you save time and money and avoid several local contracts. The job is backed by factory responsibility. All the needed component parts have been engineered and installed as a working unit fitted to specific boiler and fuel requirements . . . it's ready to render peak service from the very start.

No stack needed. Petro forced draft firing units eliminate high stacks. In fact, the only flue connection necessary is to a simple vent for the spent products of combustion. Unlike induced draft systems, the Petro blower operates in clean, relatively cool air. No maintenance problems arise from overheated bearings or corrosive gases. Power consumption is cut, too, for with the contracted volume of cool air, a motor only about one-half as large as that used with induced draft burners is required.

Switches fuels quickly. The combination gas-and-oil firing system embodies distinct advantages of continuous operation. Alternate fuels may be introduced in as little as 60 seconds. No extended shutdown of equipment. Controls for completely automatic changeover of fuels are also available.

For more information please mail the coupon.

See Petro Catalog in Sweet's Architectural File

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

HEATING
AND POWER
EQUIPMENT

PETRO, 3218 West 106th Street, Cleveland 11, Ohio.
(In Canada, write to 80 Ward Street, Toronto, Ontario)

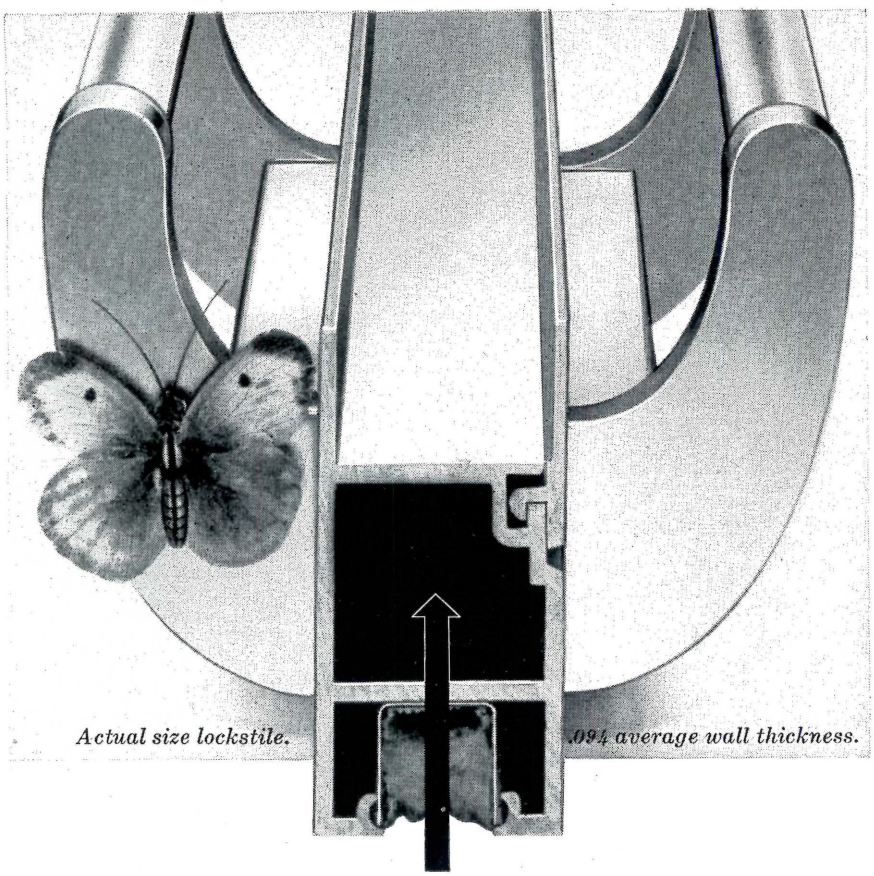
Please send catalog and specifications on Petro gas and oil firing units.

Name_____

Company_____

Address_____

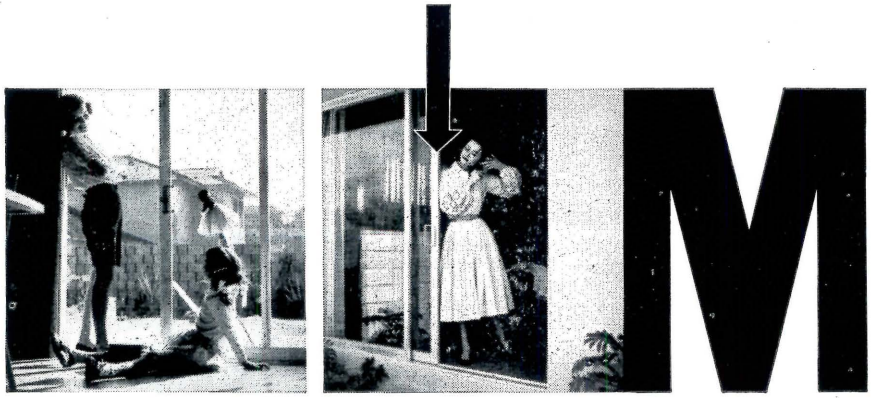
City_____ Zone____ State_____



HOW **BRAWN**
BACKS UP THE
BEAUTY OF MILLER
SLIDING GLASS DOORS

Because a door's performance is vital, Miller's use of heavy tubular sections–with their engineered method of construction–produces a door unmatched for strength and design freedom.

For maximum weatherproofing Miller double-seals the vents with Schlegel Certified woven pile (silicone treated). All aluminum frames are Alumilited for durability and permanent satin finish. Thus the beauty of the lines (2 in aluminum, 1 in steel) is backed by strength and dependability...plus strong selling aids and national consumer advertising. Write for name of your stocking Distributor. See Sweet's Arch. File 16d/Mi.



sliding glass doors by **Miller**

Miller Sliding Glass Door Co., Inc. • Dept. AR, 3216 Valhalla Dr. • Burbank, Calif.

Office Literature

Floatless Liquid Level Controls
Describes B/W system for controlling liquid levels sans floats or moving parts in the liquid. Selection data, charts and application diagrams are included. 16 pp. *B/W Controller Corp., 2200 E. Maple Rd., Birmingham, Mich.*

Roof Insulation and Roof Decks
(A.I.A. 4-E-13, A.I.A. 37-B-2) Eight new data sheets for vermiculite concrete roof insulation and roof decks are accompanied by a long form specification that covers both and gives venting details and load span tables for sub-purlins. *Vermiculite Institute, 208 S. LaSalle St., Chicago 4, Ill.*

Emeri-Crete Flooring Bulletin
Gives specifications, technical data, and maintenance and cost information on Cortland emery aggregate surfacing for heavy duty concrete floors. 8 pp. *Walter Maguire Co., Inc., 60 East 42nd St., New York, N. Y.*

Garcy Lighting Fixtures
Describes and gives details and photometric data on Garcy line of shallow fluorescent fixtures. 8 pp. Bulletin 582-L. *Garcy Lighting, 2475 Elston Ave., Chicago 47, Ill.*

Metal Lath and Accessories
(A.I.A. 20-B-1) Includes descriptions of and data on Ceco line of metal lathing products. *Ceco Steel Products Corp., 5601 W. 26th St., Chicago 50, Ill.**

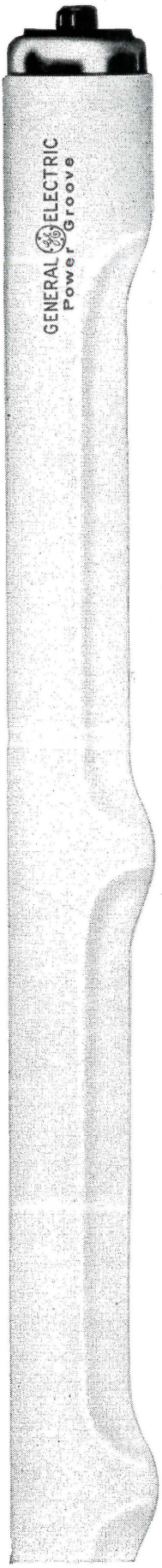
All-Brass Fittings
Covers *Galaxy* and *Constellation* series of all-brass fittings for a variety of plumbing fixtures. 26 pp. *Kohler Co., Kohler, Wisc.*

Counter Surfaces
Discusses advantages and limitations, relative cost, application methods and similar facts about commonly used counter surfacing materials. Circular F9.1, 15¢. *Small Homes Council, University of Illinois, Urbana, Ill.*

Reliance Grating and Treads
Features illustrations, descriptions and engineering data on a variety of gratings and treads, with supplementary information on fastening methods and surface treatments. 16 pp. *Reliance Steel Products Co., P. O. Box 510, McKeesport, Pa.**

**Additional product information in Sweet's Architectural File, 1958*

more literature on page 304

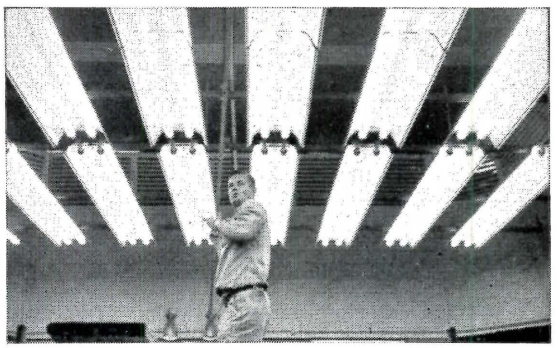


HOW AN ARCHITECT USED GENERAL ELECTRIC POWER GROOVE LAMPS TO HELP CREATE AN EFFECTIVE SELLING ENVIRONMENT

DENVER Architect R. L. Crowther says, "Our client, Mr. Harry Fontius, owner of the Fontius Shoe Stores here, knows from experience that good lighting helps sell merchandise. So we designed his store lighting around General Electric Power Groove Fluorescents. This functional system attracts attention to the display area—even from the street, even in broad daylight. The mass display area, situated between the front windows and the fitting area to the rear, is about half-way in visual effect between natural daylight and the light level in the sales and fitting areas. In this case, it's about 300 footcandles."

G-E POWER GROOVES ENHANCE MERCHANDISE and stimulate sales because customers can see the shoes easily . . . and can inspect each selling detail—the colors, stitching, texture, etc.

HOW DO G-E POWER GROOVES DO IT? By delivering nearly twice the light of High Output fluorescents . . . over 2½ times the light per foot of slimlines—at 5-20% lower initial cost per footcandle compared to other fluorescent lighting systems. This lighting helps capitalize on the efforts of the architect in the selection of color, form, shape and detail . . . making the entire decor more effective. G-E Power Grooves are available through



Banks of G-E Power Grooves located above a translucent panel ceiling. Architect: Richard L. Crowther, 257 Fillmore, Denver, Colo. • Electrical Contractor: Intermountain Electric Inc., Denver, Colo.

authorized G-E Large Lamp Agents — and are used by satisfied customers all over the country. Get your copy of the informative bulletin, "Power Groove Fluorescent Lamps" by writing: General Electric Co., Large Lamp Dept. C-845, Nela Park, Cleveland 12, O.

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carpets beautiful homes

From traditional to modern architecture, the beauty, quality and practical luxury of Seamloc carpet is always in good taste.

Architects and decorators throughout the country specify Seamloc carpet for installations of all types because:

Seamloc's thirty-three colors meet the demands of almost any color scheme.

Seamloc carpet, in comparable installations, will outwear all other carpets as much as four to one.

Seamloc carpet can be cut to any shape, re-cut or renewed at heavy traffic areas easily, economically. Seamloc's edges cannot ravel . . . need no binding.

Seamloc is economical too. The standard four and one-half foot widths join together to make any size carpet with almost no waste.

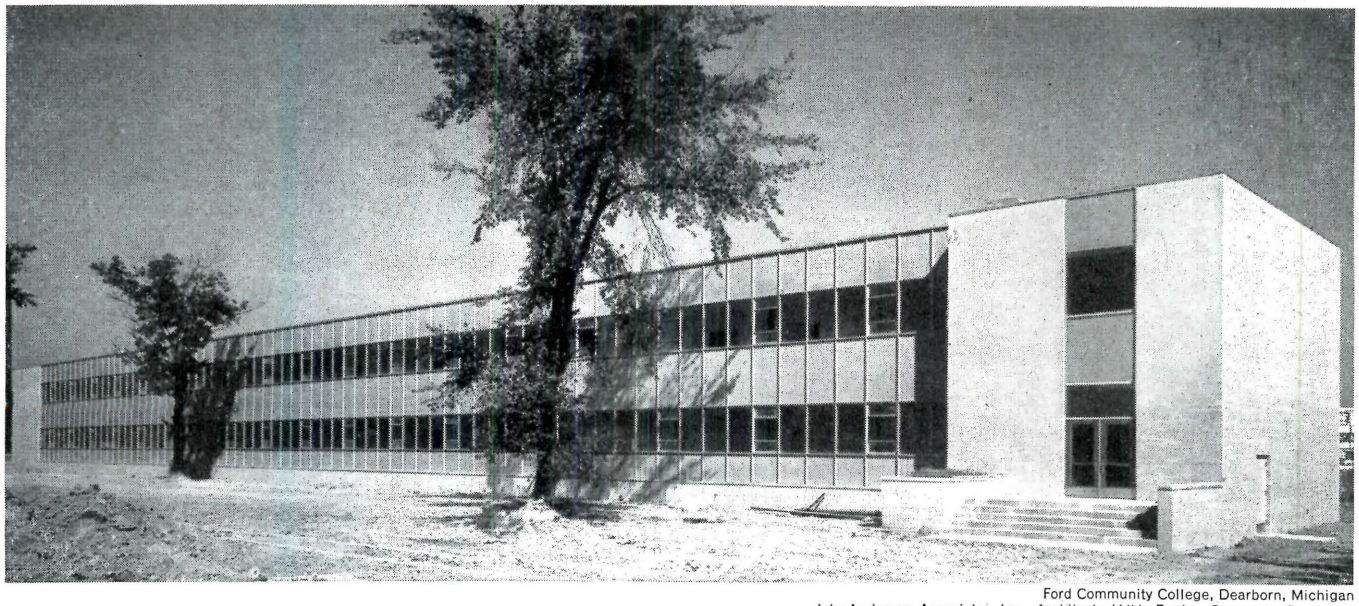
AND

Seamloc carpet is easier and cheaper to maintain than any hard surface flooring.

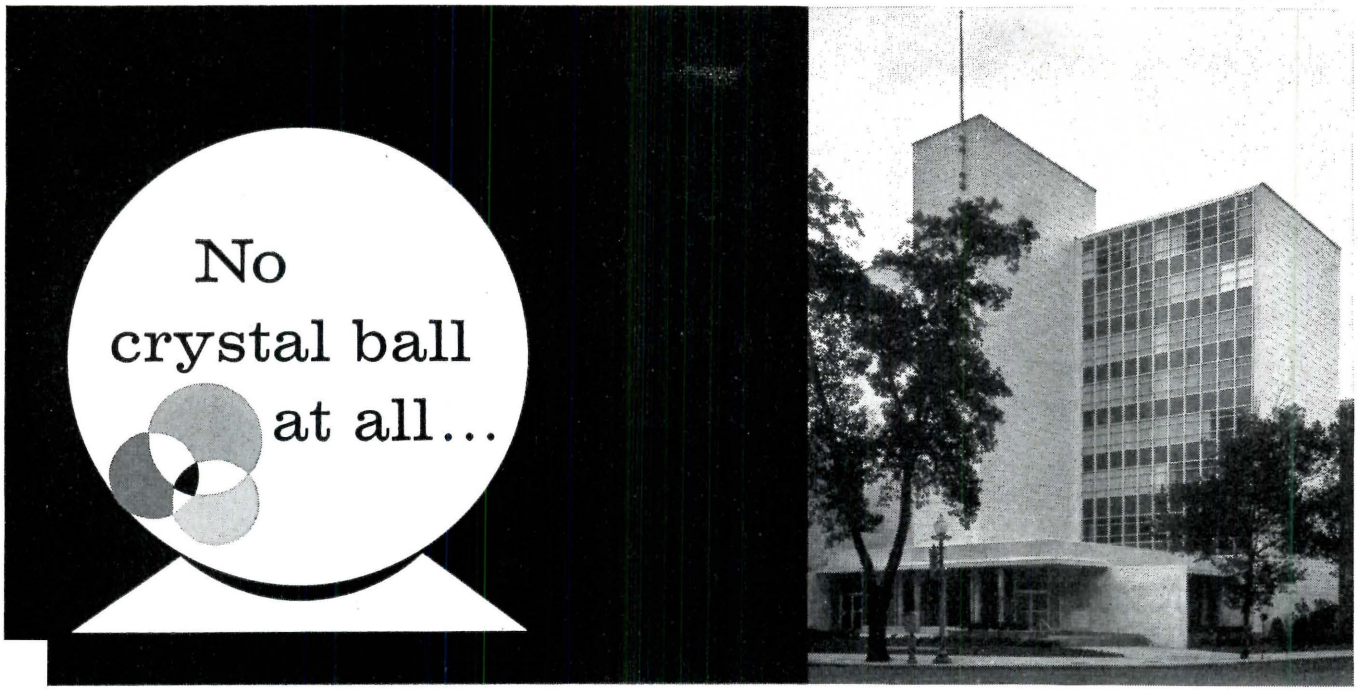
For your next floor covering job, specify Seamloc, the best in carpet.

For further details and color samples see your nearest Seamloc dealer or write:

SEAMLOC CARPET COMPANY-SANFORD, MAINE



Ford Community College, Dearborn, Michigan
Jahr-Anderson Associates, Inc., Architects / Atkin-Fordon Company, Contractor



B'Nai B'Rith Building, Washington, D. C.
Corning & Moore, Architects / Roscoe Construction Co., Contractor

Ceco Research shows what you need in Curtainwalls

There's a great deal of difference between construction and creation. But the two must work together. Though curtainwall construction permits creative freedom, architects, engineers and contractors agree it must be technically and economically sound. Ceco-engineered curtainwalls permit blending artistic expression with practicality. No guesswork is involved. Within the past year—through technical research in field and laboratory—Ceco has developed basic engineering principles which can be applied to almost any architectural design. You should have all this information before you start your next curtainwall plans. So come to Ceco's "library of experience"—ask your Ceco man for his help. Ceco Steel Products Corporation. Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 W. 26th St., Chicago.

CECO STEEL

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Curtainwalls, Windows, Screens and Doors / Steel Joists / Metal Roof Deck / Steelforms / Concrete Reinforcing / Metal Lath

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CECO STEEL PRODUCTS CORPORATION
5601 West 26th Street, Chicago 50, Ill.

Please have a Ceco engineer see me with Curtainwall data from your "library of Curtainwall experience."

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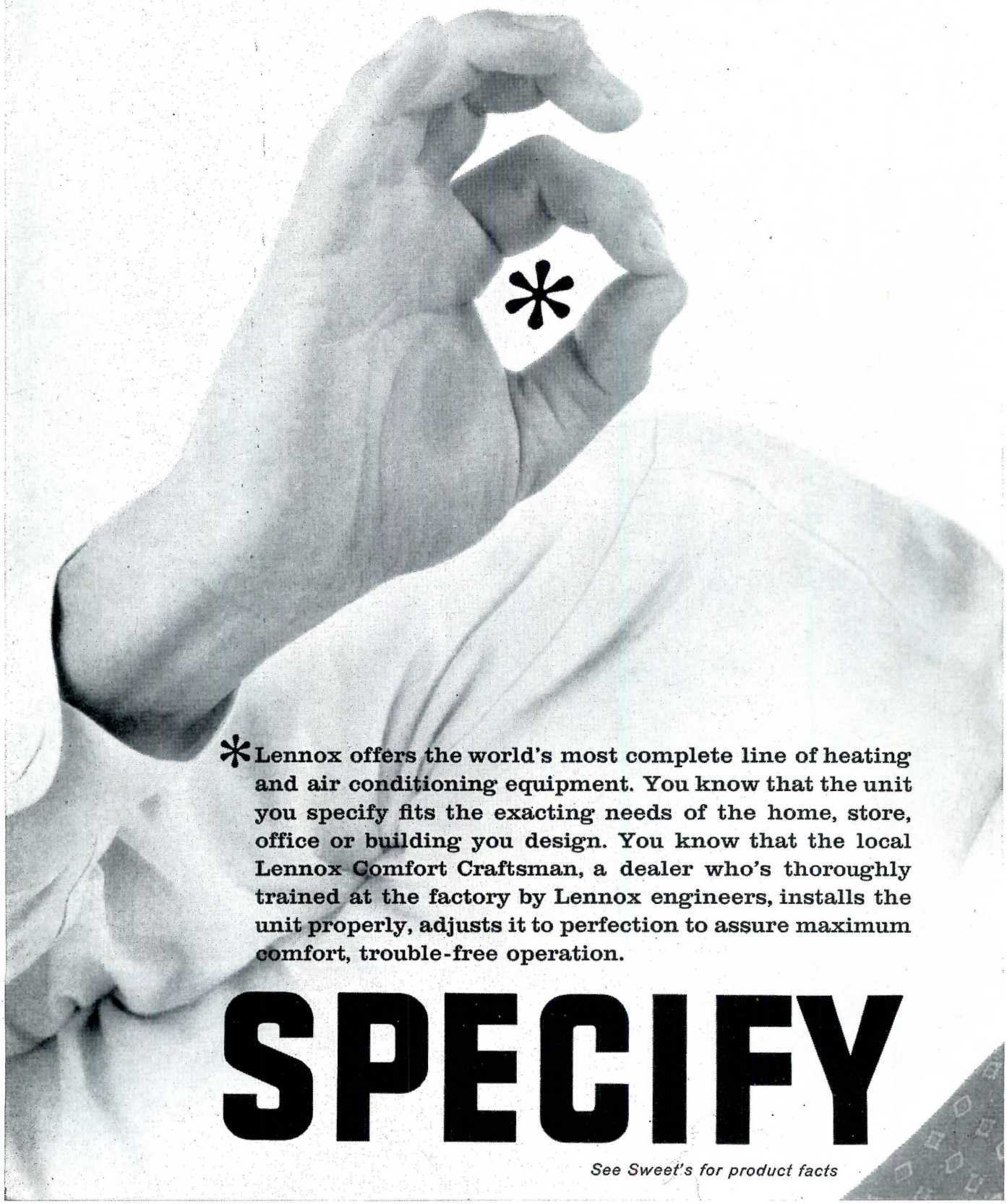
REST

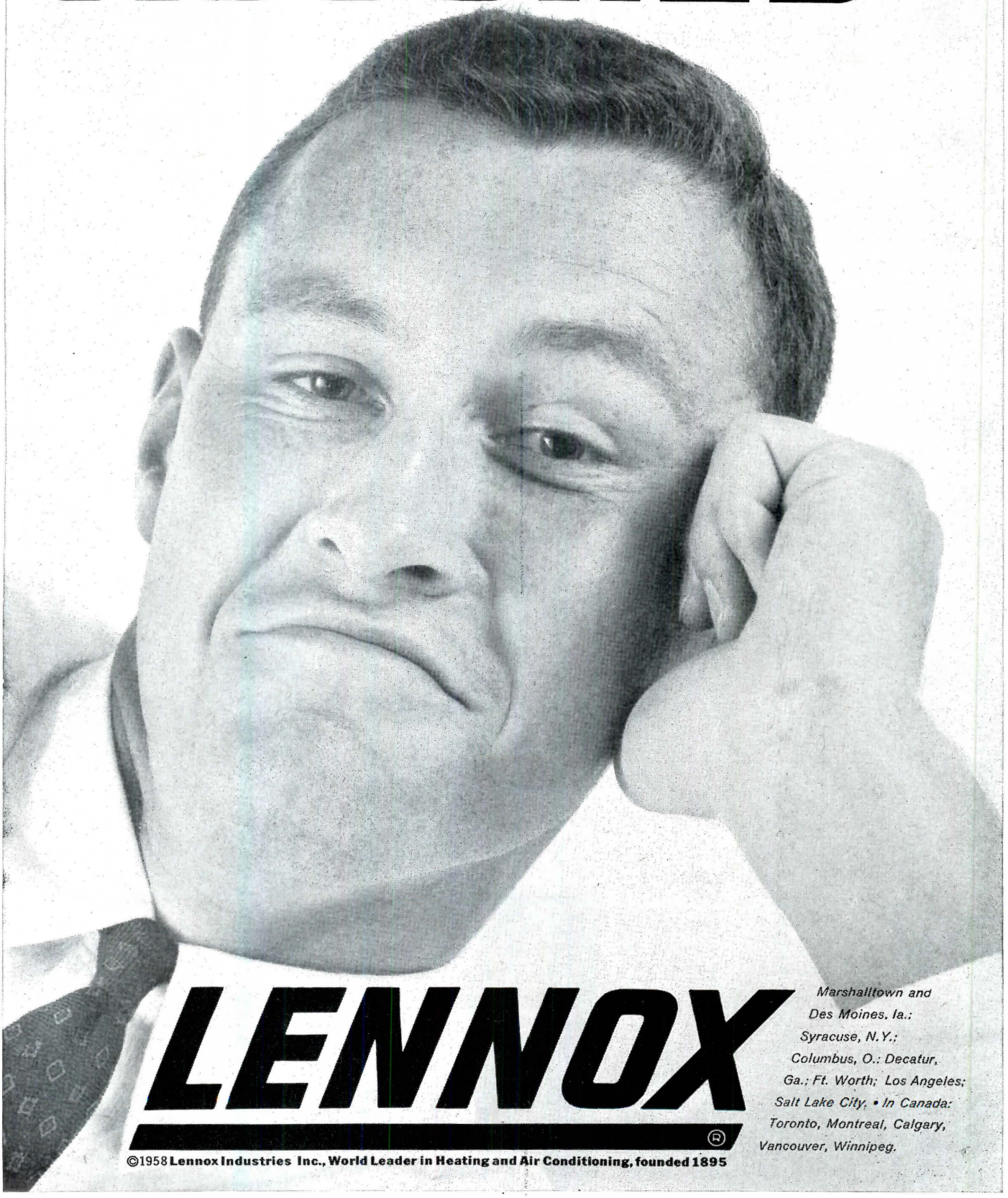


*Lennox offers the world's most complete line of heating and air conditioning equipment. You know that the unit you specify fits the exacting needs of the home, store, office or building you design. You know that the local Lennox Comfort Craftsman, a dealer who's thoroughly trained at the factory by Lennox engineers, installs the unit properly, adjusts it to perfection to assure maximum comfort, trouble-free operation.

SPECIFY

See Sweet's for product facts

ASSURED



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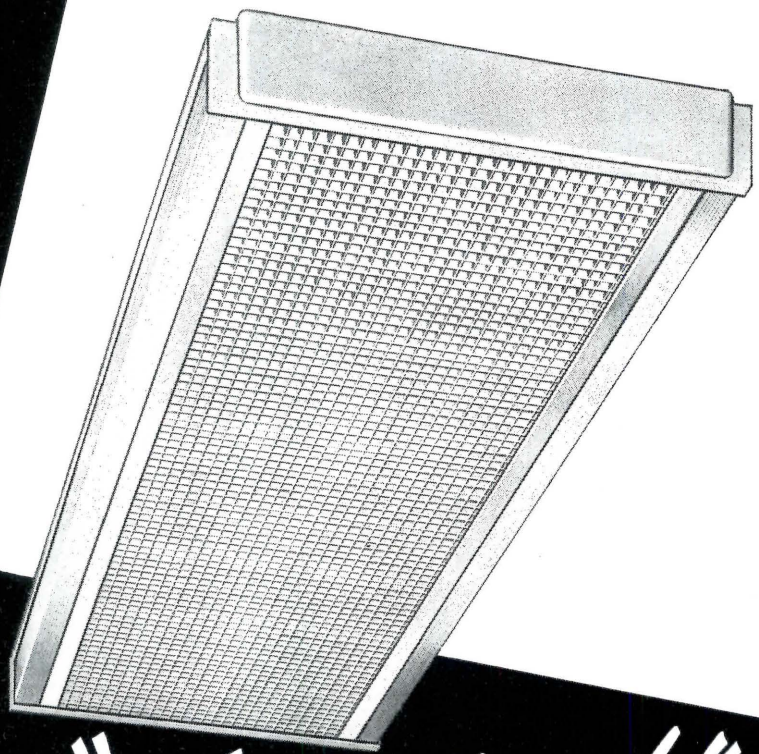
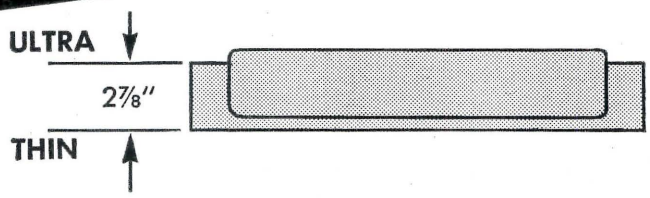
New ULTRA-SHALLOW Luminaire



"Skylark"



Graceful, Ultra-Shallow Styling Creates a Smooth, "New Look" in Lighting Appearance

The Mitchell SKYLARK luminaire has a modern Thin-line appearance combined with unusual high efficiency and low maintenance features. Pleasing, graceful styling, quick, easy, low cost installation features makes this attractive luminaire ideal for use in offices, commercial areas, shopping centers and schools. The SKYLARK is available in 2-lamp and 4-lamp matching units designed to provide abundant glarefree illumination.

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1800 N. Spaulding Ave. • Chicago 47, Ill.

Office Literature

High Velocity Valve Attenuators
Bulletin K33-A describes and illustrates complete line of high velocity valve attenuators, with supplementary information on sound control, duct design methods and proper selection of units. 24 pp. *Connor Engineering Corp., Danbury, Conn.**

Sure Power Estimating Kit
(A.I.A. 31-A-6) Enclosed folders, which contain complete information on hospital standby power requirements and hospital generator set installations, assist in selection of proper kilowatt coverage and type of installation for specific applications. *Allis-Chalmers, Engine-Material Handling Div., Milwaukee 1, Wisc.*

Armco Deep Corrugation
Describes advantages of Armco *Deep Corrugation* sheet steel; illustrates comparative safe loads and purlin spacing. 4 pp. *Product Information Service, Armco Steel Corp., 2458 Curtis St., Middletown, Ohio**

Bathmaid Vanity Cabinets
Shows sixteen basic units in the Bath Maid line of vanity cabinets, together with representative combinations and accessories. *Bath Maid, Inc., Andrews, Ind.*

Herman Nelson Cooling Coils
Contains complete coil selection information, construction specifications, dimensional data, surface charts, circuiting diagrams, etc. on *Herman Nelson* direct expansion coils and standard and cleanable water tubes. Capacity ratings and similar pertinent data are given in table and chart form. 52 pp. *Dept. PD, American Air Filter Co., Inc., 215 Central Ave., Louisville, 8, Ky.*

Combination Duct Systems
Catalog 758 describes and illustrates component parts (ducts, junction boxes and fittings) which make up new underfloor electrical distribution system. Dimensional drawings are included. 20 pp. *Walker Brothers, Conshohocken, Pa.*

Transite Air Duct (A.I.A. 30-B-2)
Gives complete information, with diagrams and pictures, on the use of *Transite Air Duct* for perimeter heating and cooling systems. 12 pp. *Johns-Manville, 22 East 40th St., New York 16, N. Y.**

**Additional product information in Sweet's Architectural File, 1958*

more literature on page 308

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Photo: Rondal Partridge

CALIFORNIA REDWOOD ASSOCIATION

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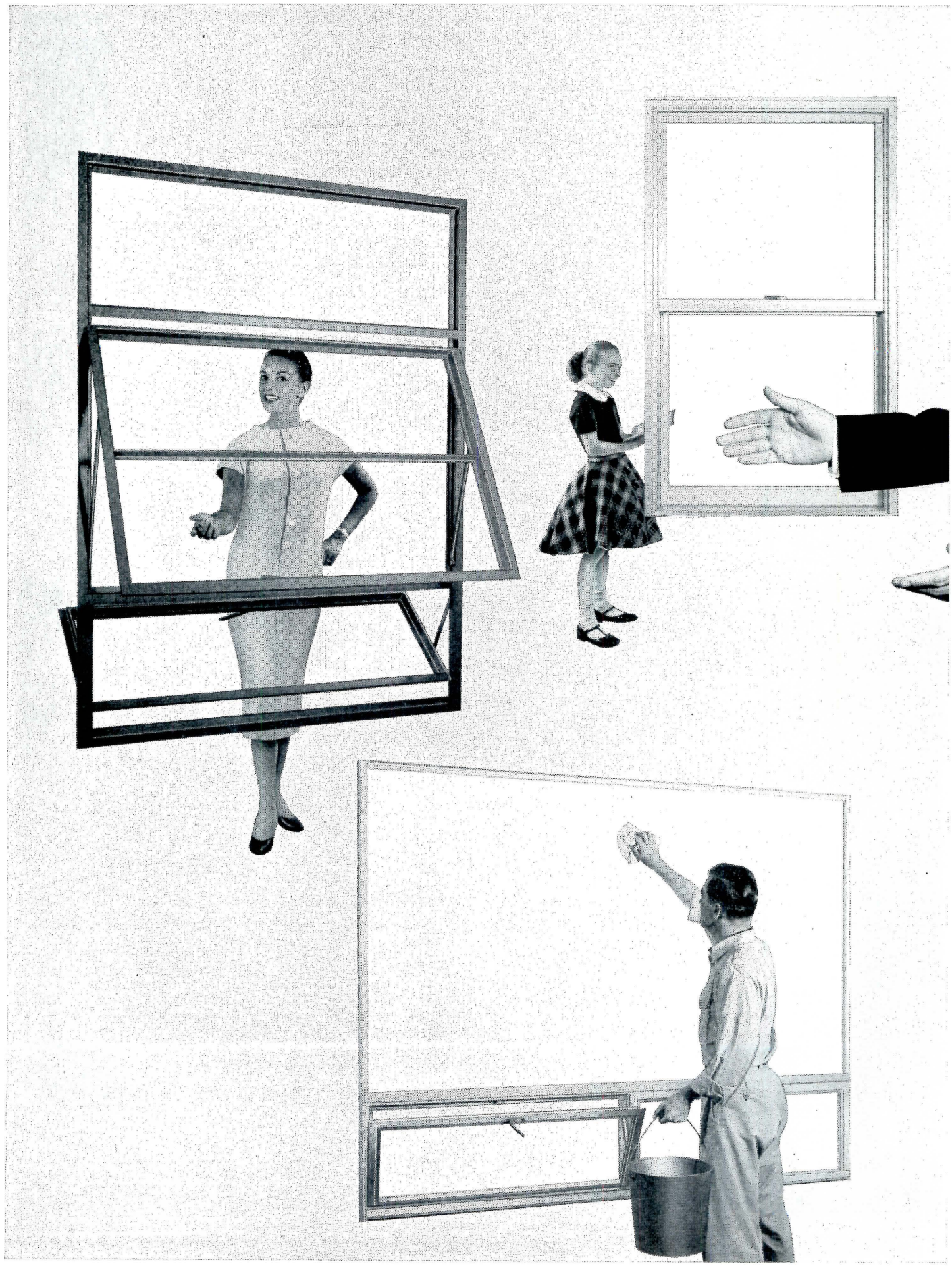

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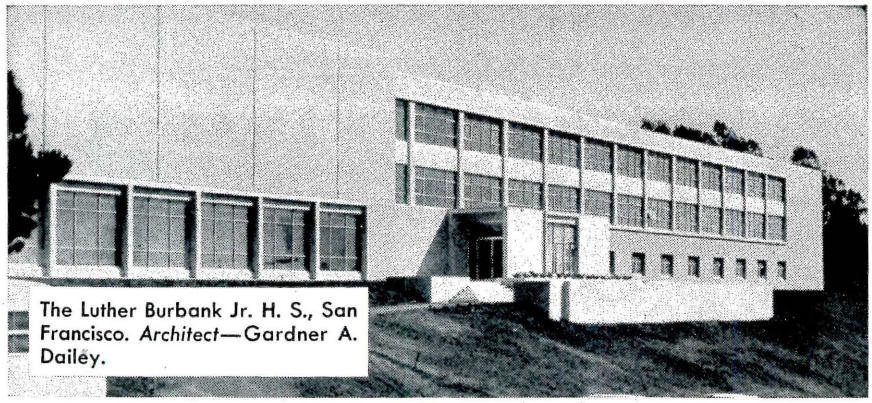
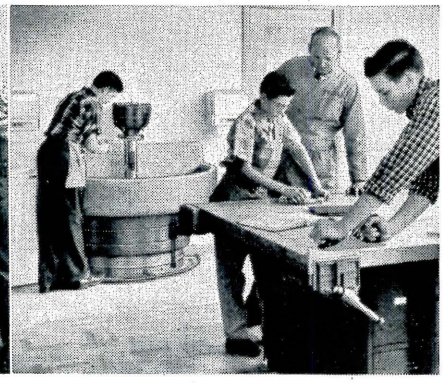


The Luther Burbank Jr. H. S., San Francisco. *Architect*—Gardner A. Dailey.

Bradley Washfountains in the Luther Burbank School

One of 8 Semi-circular model Bradley Washfountains.



In Shop, too, the students have Washfountain handily located.

Located in corridors near rest-rooms and in manual training shop

Every practical facility was given consideration during the preliminary and final planning of the modern Luther Burbank Junior High School of San Francisco.

Important among the many features are the Bradley Washfountains. For this school, semi-circular models were selected, placed in corridors adjacent to boys' and girls' rest-rooms.

Maximum Sanitation and Economy!

Each of these 54-in. Washfountains serves up to six simultaneously with foot-control of water supply. There are no faucets to contact or manipulate, no chance of spreading infections. Since the bowl is self-flushing, there is never any residue from previous users . . . convenience, cleanliness, economy and maximum sanitation.

And you can provide more washing facilities in less space, reduce water consumption and installation costs. Each of these 6-person Washfountains requires only three piping connections, hot and cold water and drain.

For your new or present building

If you are remodeling, planning additions or new buildings—our Catalog 5601 has complete data and floor plans to help you. Send for a copy—no obligation. BRADLEY WASHFOUNTAIN CO., 2227 W. Michigan St., Milwaukee 1, Wis.

BRADLEY Washfountains

Distributed Through Plumbing Wholesalers

A copy of Cat. 5601 mailed on request.

Office Literature

Castle Engineered Sterilization
Discusses steam, dry heat and automatic gas techniques of industrial sterilization, and describes a new service designed to assist in selecting and establishing industrial sterilization processes for specific needs. 12 pp. *Wilmot Castle Co., 1923 East Henrietta Rd., Rochester, N. Y.**

Prime Window Catalog
Gives full information on available types and sizes in Capitol line of prime windows and rolling glass doors; with details, cross sections and specifications. 22 pp. *Capitol Products Co., Mechanicsburg, Pa.**

Instant-Lok Fact File
Contains comprehensive technical bulletins describing each type of *Instant-Lok* contact cement, its properties, recommended bonding techniques and handling. A general review of contact cements discusses types of materials that can be bonded, methods for combining them, preparation of surfaces, and application procedures. *Structural Products Div., National Starch Products Inc., 750 Third Ave., New York, N. Y.*

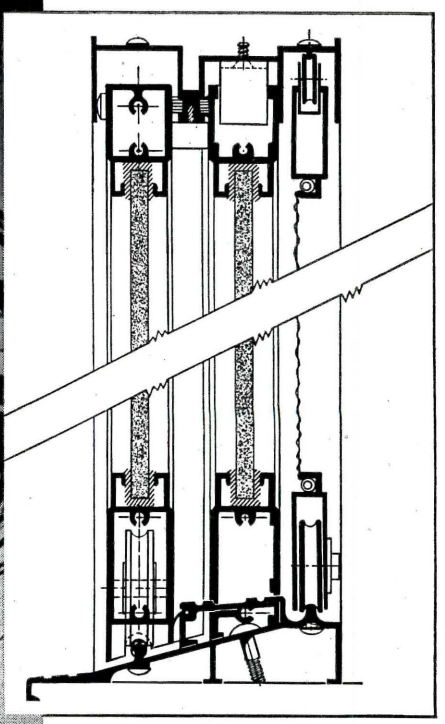
Metal-Clad Switchgear
Bulletin GEA-5664E provides detailed information on the operation. characteristics and application of complete line of indoor and outdoor G-E *Metal-clad* switchgear. 40 pp. *General Electric Co., Schenectady 5, N. Y.**

Electrical Distribution
. . . *and Control Equipment* covers 16 types of equipment, with information on operation, installation, applications, ratings, appearance, safety features, available accessories and similar technical and general data. Bulletin S, 12 pp. *Federal Pacific Electric Co., 50 Paris St., Newark 1, N. J.**

Playground Equipment
. . . *and Athletic Field Equipment* (A.I.A. 35-F-5) catalogues and gives specifications for a full line of equipment for playgrounds and athletic fields. A price list is included. 32 pp. *Jamison Mfg. Co., 8800 S. Mettler St., Los Angeles 3, Calif.*

Literature Requested
Wm. Henley Deitrick and Associates, 206 Davis Bldg., Wilson, N. C.; Bosworth C. Beckwith, Architect in Charge

**Additional product information in Sweet's Architectural File, 1958*



Sliding glass panels are equipped with nylon sheaves which roll smoothly and silently along nylon tracks on the sill. All glass panels are glazed with neoprene gaskets. In addition to their outstanding weather resistance, these gaskets have a low permanent compression set which enables them to maintain sealing pressure in spite of dimensional changes and deflection of the glass panels.

GLASS PANELS GLAZED WITH NEOPRENE LET NATURE IN—KEEP WEATHER OUT

This sliding door unit by Arcadia does more than bring the outdoors indoors. It also makes it easily accessible through a sliding glass panel that moves smoothly and silently at the touch of a finger. Available in various sizes, the unit forms a weathertight glass wall that is easily installed and requires little maintenance.

An important feature of Arcadia's Series 102 door is a neoprene sealing gasket which permits both the fixed and sliding glass panels to be glazed either at the factory or on the job. This preformed gasket snaps on around the periphery of the glass, then panel framing members are driven on and interlocked. This glazing operation is performed quickly and neatly. Neoprene was chosen by Arcadia because it combines the resilience and resistance to compression set necessary for an effective seal with outstanding weather and sunlight resistance.

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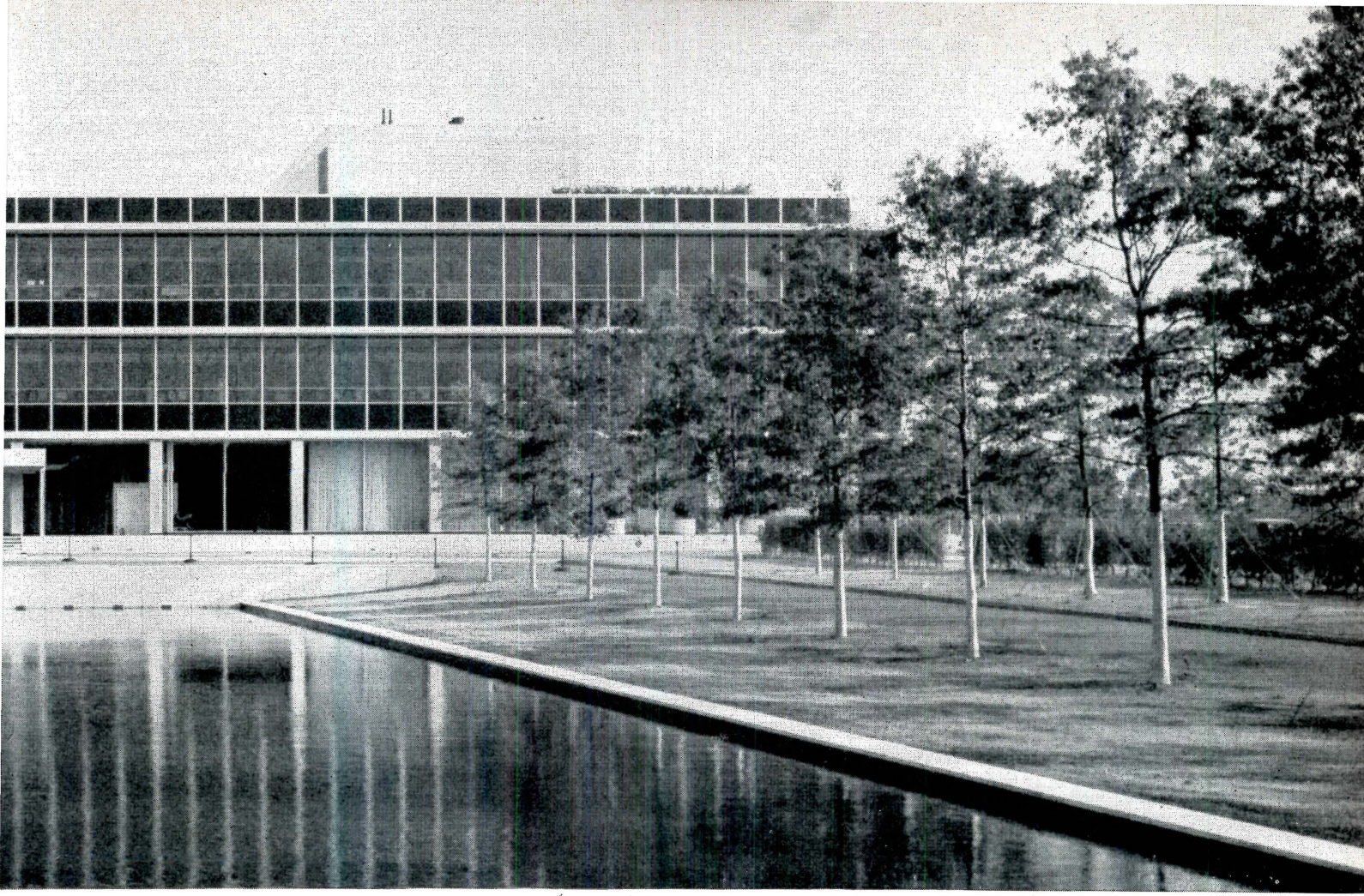
■ Maximum flexibility in space utilization is achieved at Reynolds through partitions that easily can be moved to expand or decrease area sizes. This can be accomplished without making costly changes in the lighting system. The Curtis wall-to-wall ceiling of light provides 80 ft. candles of maintained illumination. Attractive Hexcel Honeylite aluminum diffusers complement the inviting decor.

How a special Curtis Lighting system saved Reynolds Metals $50,000...



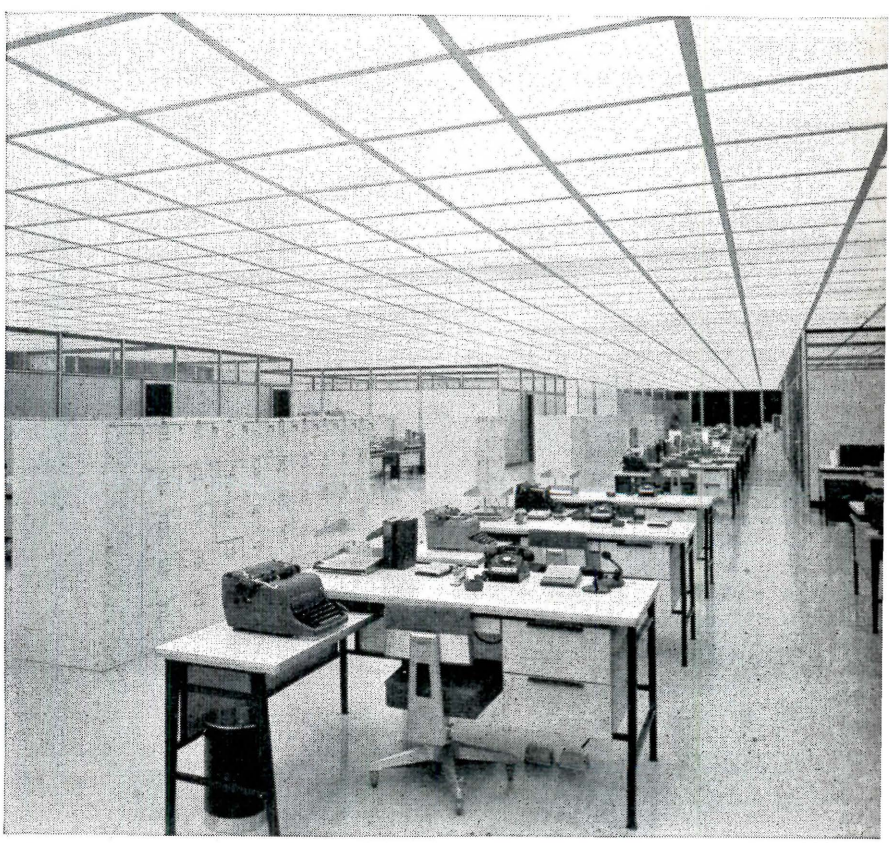
■ Here is the new home of Reynolds Metals Company, Richmond, Virginia. It is dramatically placed at the end of a reflecting pool bordered by willow oaks. The classic beauty of the building is enhanced by this unusual setting. Architect: Skidmore, Owings & Merrill; Consulting Engineer: Ebasco Services, Inc.

Unique all-aluminum folding grids in 100 sq. ft. units cut installation time 8,000 man hours . . . provided wall-to-wall illumination with low brightness quality

Installing a lighting system so flexible it can adapt to any internal building change without relocation is quite a feat. But when that is accomplished at important savings it calls for exceptional engineering ingenuity. That's what Curtis Visioneers achieved with a special custom-made aluminum folding grid system at Reynolds Metals Company, Richmond, Va. The unique folding "packages" made it possible to install 100 sq. ft. of lighting at one time. Result: a saving to Reynolds of an estimated 8,000 man hours, or approximately $50,000. A wall-to-wall ceiling of light was created with a beautiful satiny aluminum lighting tone of low brightness quality. Over-all ceiling illumination solved the problem of how to obtain stationary lighting for a 100,000 sq. ft. area, even though wall partitions would be moved in the future. Write today for the name and address of the Curtis Visioneer in the principal city nearest you. Curtis Lighting, Inc., 6135 West 65th St., Chicago 38, Ill. In Canada: 195 Wicksteed Ave., Toronto 17, Canada.

CURTIS

Visioneers in Planned Lighting

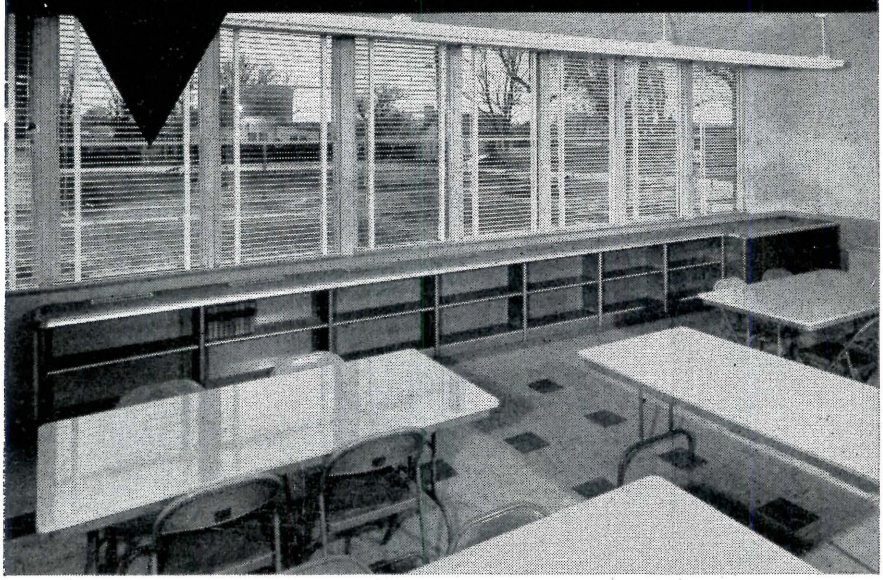


■ Large office areas are as effectively illuminated as small areas with a high degree of visual comfort assured. In this special Curtis grid installation, aluminum materials were used throughout. Maintenance features of the system include ease of relamping, ready access to wiring, and simple replacement of the ballasts.

Complete heating and ventilating

Classroom Comfort

PLUS TRIPLE ECONOMY



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ECONOMY OF INSTALLATION . . . no expensive boiler rooms, chimneys, tunnels or costly revamping of central system. Pre-wired, partially-assembled Norman Systems are installed quickly, room by room—important economy in school expansion.

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Photo Illustrates, Mingo School Addition, Tulsa, Okla.; Architect: Koberling and Brandborg A.I.A., Tulsa, Okla.; Mechanical Contractor: Palmer Plumbing and Heating Co., Tulsa, Okla.; Mechanical Sub-Contractor: Sand Springs Sheet Metal Co., Sand Springs, Okla.

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A Record Special Report

continued from page 13

mall to the north of Osgoode Hall could be readily achieved when the Armouries is replaced by the proposed Court House.

The interior design and arrangement of the building are of great importance. Referring to the Public Access Areas, those parts of the building which will be most frequented by the public, the competition conditions state, "This is the citizen's first impression of the City Hall. Without extravagance it should be impressive." The placing of the Council Chamber is also of great significance. For this the majority favoured the idea of emphasizing its location as a symbol of democratic government. In this way one aspect of the special nature of the City Hall might be brought out.

The functional organization of the City Hall and its structural economy were given most careful consideration. On this score, however, there were many entries that were entirely adequate. Differences between schemes were much greater in other aspects of the design and the majority made its selection of the winner from a careful weighing of all the factors involved.

General Description of the Winning Design

The winning design is a most imaginative and original concept. The southern part of the site is devoted to the Square and north of this is the building group composed of three main elements: a broad, low horizontal building above which rises a pair of tall curved towers and, nestled between the towers and immediately above the horizontal building, a structure whose upper surface is a low, broad dome and whose under surface is an inverted reflection of the upper side.

The total composition clearly and dramatically expresses the major functions of civic government. Opening directly from the Square, the low building contains all those activities in which members of the public are likely to be interested. The tall towers contain office space, repeated floor by floor. They are carefully placed and curved so that they focus inwards upon the domed structure. This structure rests at the evident center of the composition and contains the center of government, the Council Chamber and executive suites.

Viewed from close at hand the building stands out as a symbol in

Prospective buyers often judge a home on the merits of a well-designed kitchen. Photo courtesy The Lusk Corporation
Western Pine Region woods offer a selling *extra* . . . they create an immediate feeling of functional beauty and economy.

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Give the houses you build the customer appeal of Western Pine Region woods. Their attractive pattern and workability make them suitable for paneling, moulding and woodwork. Their stability and durability make them equally suited for framing, siding, sheathing, sub-flooring and roof decking.

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Quality. Every AmBridge Modular School Component has been tried and proven architecturally. Stainless steel, porcelainized or baked enamel exterior curtain walls and interior steel partitions are available in a wide range of pleasing colors, permitting great latitude for aesthetic consideration.

The structural components include AmBridge Standard and Longspan Steel Joists, steel roof deck, and tubular steel columns, assuring the great structural stability proved in thousands of other buildings.

Construction and design speed. Every AmBridge Modular School Component is fabricated to fit readily and precisely, making it possible to construct in weeks a beautiful building that will serve a lifetime. Furthermore, the modular design and speed of construction greatly reduce the architect's design time and site supervision.

Design freedom. The flexibility of the structural frame, the multiplicity of components and the great variety of panel colors and finishes give the designer great latitude for creativity. Modern architectural features can be freely expressed. USS AmBridge Modular School Components blend well with existing architectural atmosphere and other building materials which you may wish to use to complement the steel components. Whether you are designing a new school or an addition, attractive AmBridge Modular School Components will reflect the architectural character you desire.

American Bridge specialists will be glad to discuss with you the specific application of these time-saving modular steel components.

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Designed by J. Trevor Guy, A.I.A., Cleveland, Ohio.

THE PICTURES:

EARLY BIRDS—Left: This picture was taken in August. On September 2, the boys probably weren't nearly so anxious to get inside their new AmBridge Modular School. But, once in, they'll find that lots of natural light, color and modern beauty will help make learning a little easier for them.

A IS FOR ATTRACTIVE—Below left: The beauty of this AmBridge Modular School will always remain because the weather-tight, vermin-proof walls are made of durable steel. Permanent panels eliminate extensive refinishing and frequent cleaning. Modular construction makes expansion of this school a simple matter.

B IS FOR BRIGHT—Below center: A comfortable teacher's room—typical of the auxiliary features easily incorporated in any USS AmBridge Modular School. Interiors come in 16 colors.

C IS FOR CHEERFUL—Below right: Everyday is a bright day in this pleasant, well-lighted classroom . . . a natural environment for study. Since steel partitions don't support roof, the room size can be changed easily at any later date.

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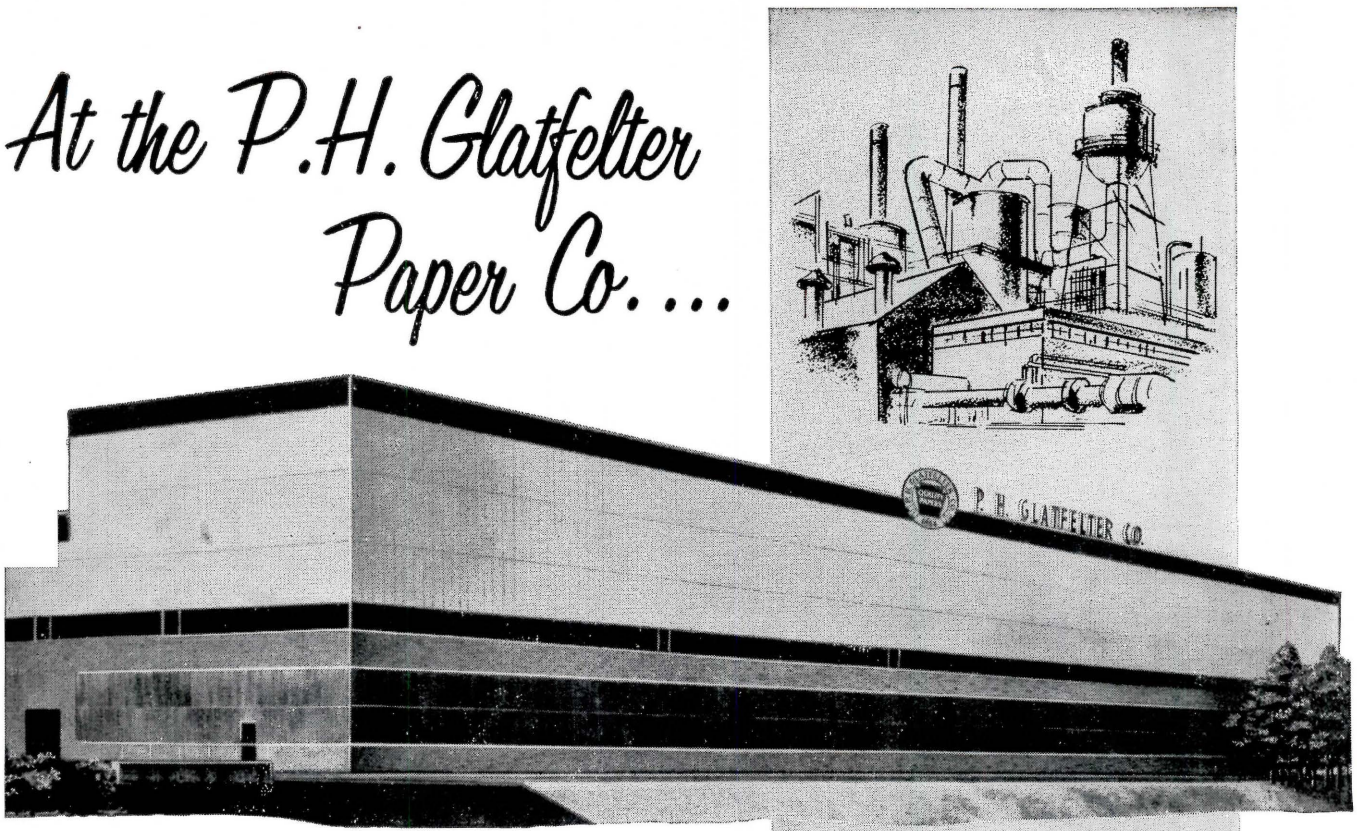

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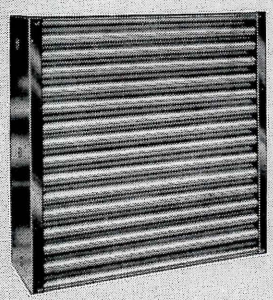

The P.H. Glatfelter Company's new paper mill in Spring Grove, Penna., is an excellent physical expression of a growing trend in industrial architectural planning—modern exterior beauty matched by modern interior function.

Here, seventy-eight modern, soundly engineered Dorex Air Purification Cells were used to purify outside air and protect electrical equipment against destructive atmospheric properties.

Dorex equipment is specified and installed by leading architects and engineers because of matchless efficiency and the substantial savings on original investment and operating costs it permits.

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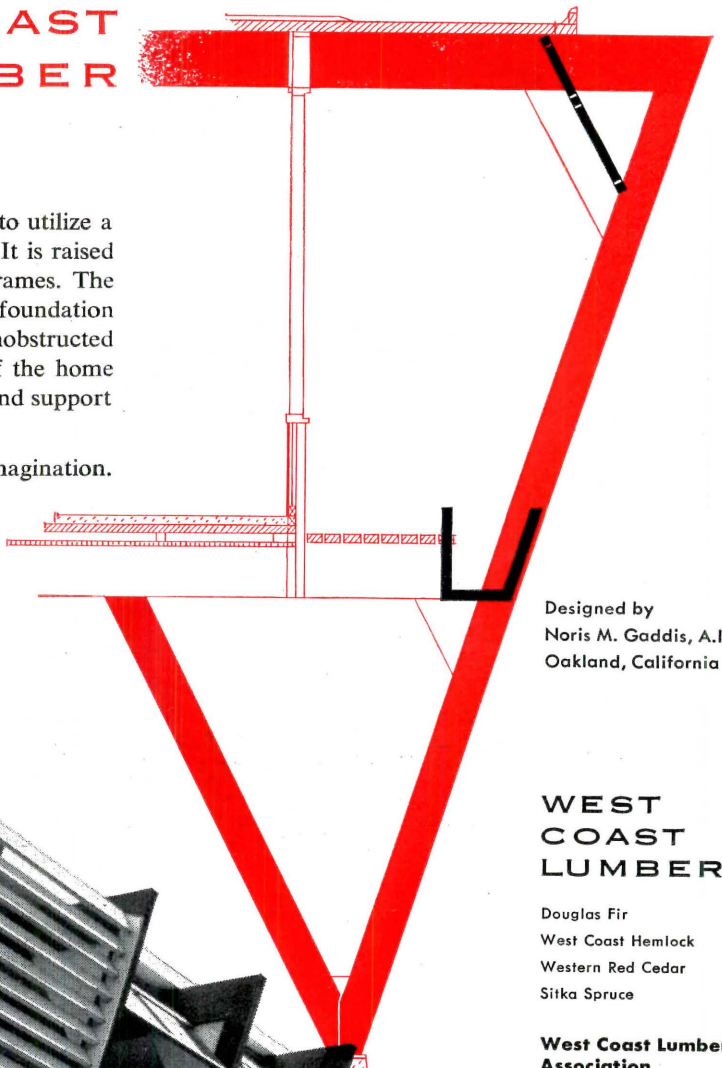
MODERN DESIGN USES WEST COAST LUMBER



Highly functional, this modern home was designed to utilize a steep hillside for maximum view at minimum cost. It is raised above the slope and supported by 11 rigid bent frames. The home's design eliminated grading, retaining wall foundation and drainage expenses . . . yet allows a completely unobstructed view to the west. The frames form the skeleton of the home while frame extensions, exposed, become the posts and support members. Frames were fabricated on the job.

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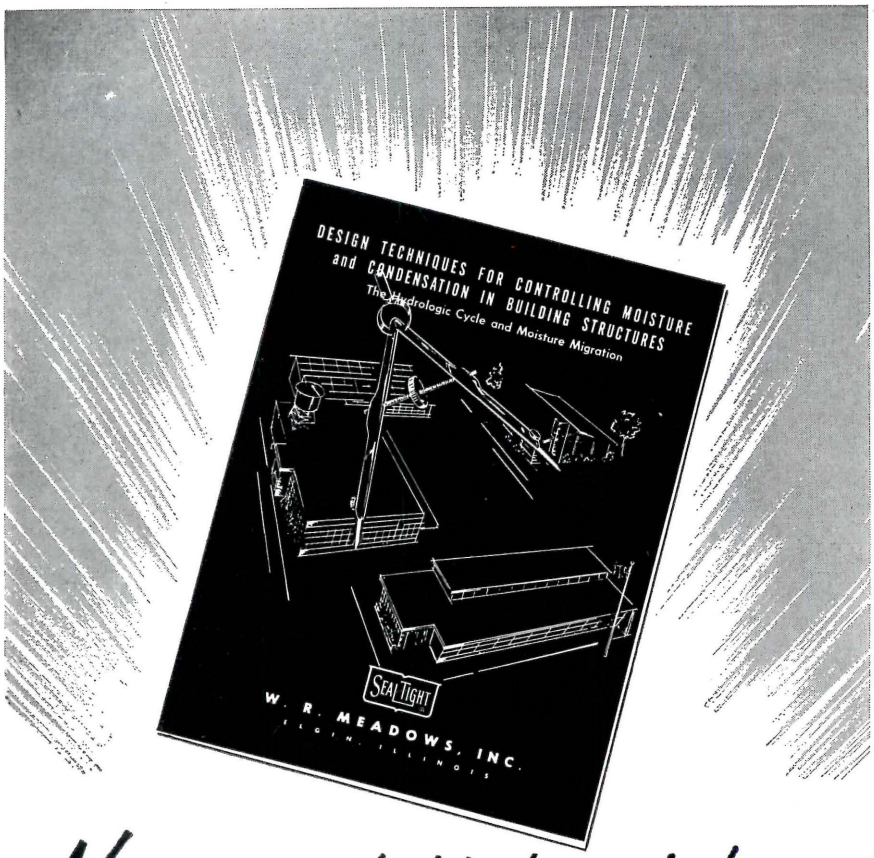

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Modern developments in building construction, with trends toward a more monolithic structure, the increased use of insulating materials, and the use of glass and other impermeable materials in the shell area, have introduced new problems in the form of condensation and the uncontrolled migration of free water. Some of the more common types of damage resulting from condensation, are the blistering and peeling of paint, loosening of plaster, efflorescence of masonry, interior dirt patterns, mechanical destruction of structural elements, warping and rotting of floors and the incursion of termites.

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the urban landscape, clear in all its parts. From the distance the curving forms of the towers would constitute a feature of the Toronto skyline, clearly different from all other buildings.

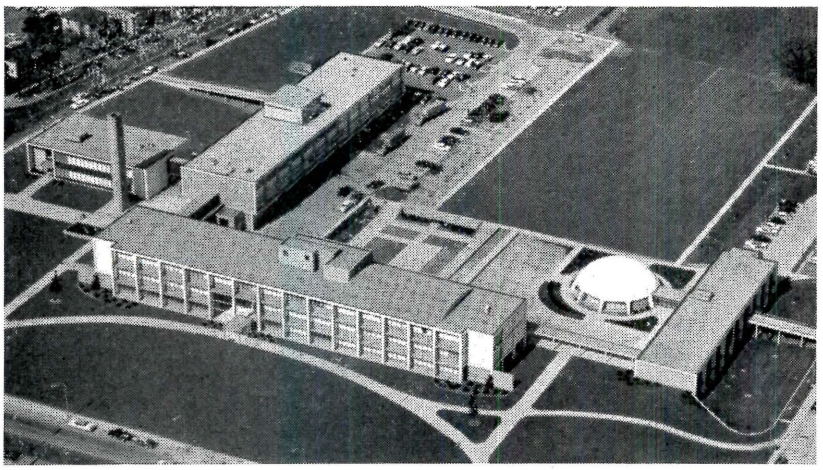
The roof of the horizontal building constitutes an upper plaza, the inner part contained within the curved towers, the outer part overlooking the Square. The diagonally curved southern wall of this building forcefully defines the Square at ground level. At the western end the sweep of the wall carries on to the site of the proposed Court House. At the eastern end it leads to the present City Hall, throwing this fine building into relief. Reflecting the curve there is an emphasis on the continuity of space on the south side of the Square and in front of Osgoode Hall, calling for a fine façade on the south side of Queen Street.

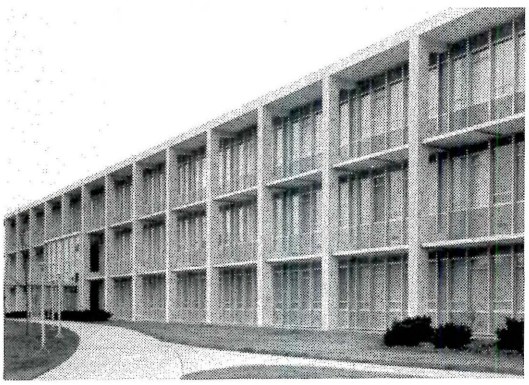
Comment on the Winning Scheme

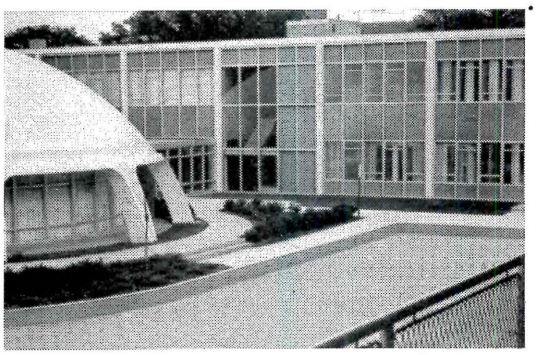
The majority is convinced that the basic concept of the winning design has great strength. Certain features, it is felt, could be modified with advantage and comments on these, as well as many fine features, are made in this section in the hope that they may be of value to the winner, and the City, in developing the final design. The majority feels certain that because of the strength and soundness of the proposal such modifications could be readily accommodated without detracting from its excellence. A great deal of detail remains to be worked out after consultations in Toronto and this should afford the opportunity to consider the various points raised.

The Civic Square has been carefully shaped in its broad lines and is enhanced by the enclosing arcade which both helps give it definition and provides shelter to the pedestrian. The pool has been well placed on the axis of the present City Hall. However, a great deal of the landscaping, trees and surface feature detail must be worked out to provide the necessary human interest, and it is rather unfortunate that the winner has developed this aspect so little at this stage.

The main public hall which the citizen enters whenever he goes to City Hall is a magnificent round room with a great circular rotunda cutting upwards through three floors to a skylight above. Around this room stretches a long counter where all business can be transacted, a very







. . . another achievement in curtain-wall!

Municipal Center: Flint, Michigan
Architects:
H. E. Beyster & Associates
Detroit, Michigan
Contractor:
Sorensen Gross Construction Co.
Flint, Michigan

These five integrated buildings required 60,000 sq. ft. of modular wall panels, completely engineered and erected by Knapp. Knapp furnished insulated panels, louvers, doors, frames, vestibules, aluminum windows, steel detention windows, sun canopies, soffits, special interior aluminum enclosures, glass and glazing.

Jail area in police building exemplifies Knapp's special engineering capabilities. There, steel detention windows were installed within the panels to preserve overall design unity.

KNAPP

aluminum ■ *steel*

modular ■ w ll panels

KNAPP BROTHERS MANUFACTURING CO., Cincinnati 36, Ohio

Please send me specifications and details of Knapp modular wall panel systems.

NAME_____

FIRM_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

KNAPP since 1905

"my masons like

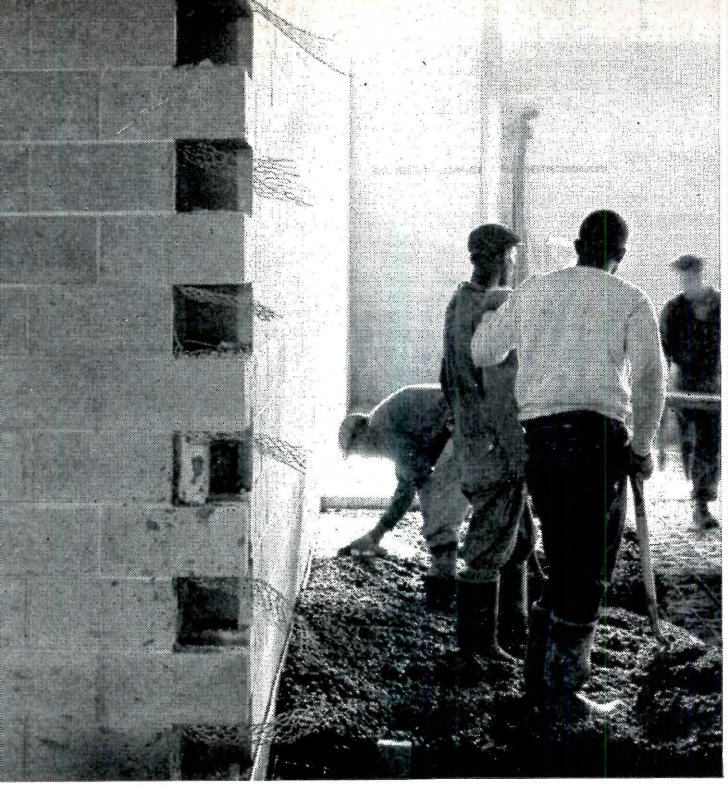
KEYWALL

GALVANIZED MASONRY JOINT REINFORCEMENT

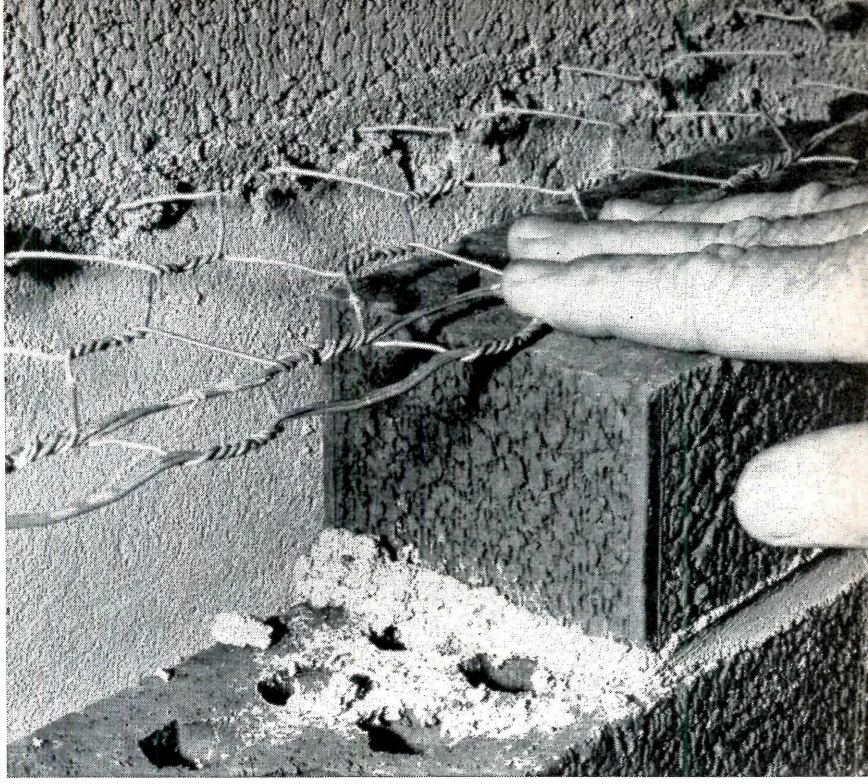
best"

That's the conclusion of

The National Wax Company has 41,000 sq. ft. of floor space in its new headquarters in Skokie, Illinois. Ragnar-Benson engineers specified Keywall in every concrete masonry course outside and as a tie for the brick facing. Keywall was specified in every other course for interior walls.



When partition walls are to be built later, Keywall may be cut to extra length to serve as a wall tie. Then Keywall ends may be moved out of the way until needed. Smooth edges of Keywall won't cut or tear hands.



Note how readily Keywall adjusts to variation in brick and masonry courses. Here it serves as tie between brick and block.

Joe Alberti, masonry superintendent, Ragnar Benson, Inc., Chicago Engineers-Builders

Mr. Alberti, as well as his masons, is enthusiastic about this new joint reinforcement. Ask one, Joe Wittye, for his opinion, "I'd use Keywall in my own home." Then ask Ragnar Benson designers, "We're specifying Keywall wherever masonry reinforcement is needed."

You get the same enthusiastic agreement whenever you go on a job where Keywall was used. Architects have seen its superior ability to reduce shrinkage cracks. Its design assures full embedment and strong bond. Masons prefer to use Keywall. They use it as specified. Keywall takes little space on the scaffold. Unrolls in place on the wall. Cuts easily. Installation is fast—without waste. No wonder that on job after job, builders are switching to Keywall.

KEYSTONE STEEL & WIRE COMPANY

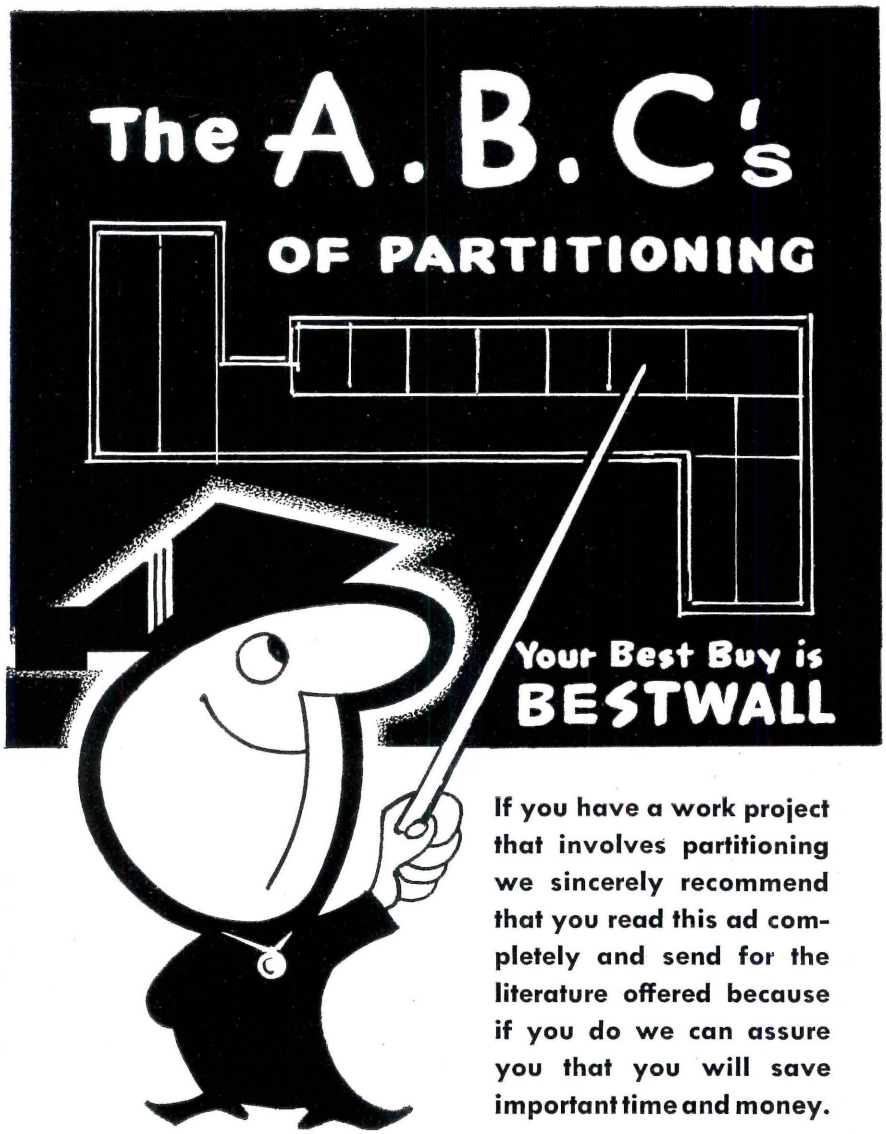
Peoria 7, Illinois

Keycorner • Keybead • Keymesh • Keywall • Welded Wire Fabric • Nails • Non-Climbable Fence

architects:

Because masons like to use Keywall, they apply it as you specify. Keywall is adding strength and reducing cracks—at lower cost—in buildings all over the country.

Keywall is easy to apply. You roll out only as much as needed, cut without waste. Lapping Keywall gives uninterrupted reinforcement without adding to thickness of mortar joints.



If you have a work project that involves partitioning we sincerely recommend that you read this ad completely and send for the literature offered because if you do we can assure you that you will save important time and money.

These savings for you and your clients are based on use of the unique Bestwall Hummer Systems of drywall construction. Of the three systems available . . . "A modified," "B modified," and "C" . . . there is one with a solution to any particular partition problem you may have.

The Bestwall Hummer Systems include one, two or three hour fire resistive non-load bearing partitions: a special, and extremely economical movable partition; factory laminated or field fabricated partition systems; smooth finish or panel effect partitions.

The Bestwall Hummer Systems of partitioning are *special.* They are a service of the Bestwall Gypsum Company designed to give Bestwall customers the finest quality partitions at the lowest possible cost. Space in this ad does not permit giving you all the facts. Therefore, we suggest that if you are going to build partitions you send for our new Hummer "C" System Brochure outlining the newest, best and most economical approach to partitioning.

Sold by Bestwall Certain-teed Sales Corp. offices in all principal cities.

FIREPROOF GYPSUM BESTWALL® BUILDING PRODUCTS

Bestwall Certain-teed Sales Corp., Dept. ARC
120 E. Lancaster Ave.
Ardmore, Pa.

Gentlemen:

Please send me your new Hummer "C" System Brochure

Name.....
Company.....
Address.....
City.....Zone.....State.....

BESTWALL GYPSUM CO., ARDMORE, PA.

efficient arrangement within a handsome room.

Above this main floor is a mezzanine devoted to traffic circulation and above this again is a second mezzanine with government areas which have to be close to the Council Chamber. This achieves a very satisfactory relationship between the different areas. Generally this space is efficiently used, a most important consideration in view of there being almost half the total floor area in this horizontal part of the building. However, there appears to be a surplus of vertical circulation facilities and this should be reconsidered.

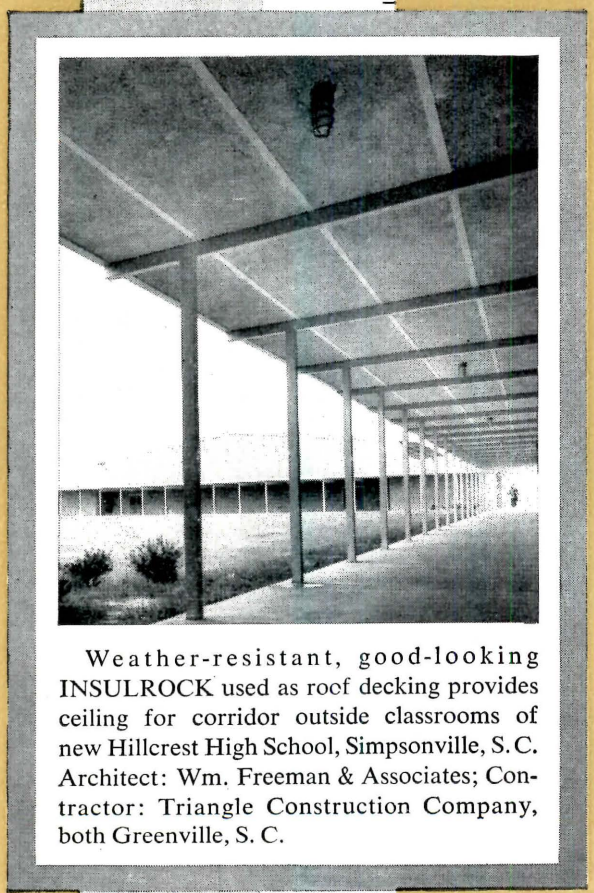
The Council Chamber and related executive offices are well located in the center of the building, but the arrangement of the offices could well be restudied after consultation with those familiar with their operation. They have the potential of a very interesting series of rooms.

The two office towers are superb esthetically, their carefully shaped and related curves achieving a balance and total effect of strength and dignity. They also offer many fine views from the inner walls. Undoubtedly these advantages have been achieved at some expense and it is hoped that the architect will do whatever he can to reduce costs. It is suggested that both space and structural economies be sought. The architect is to be commended for the substantial saving in space already made between the preliminary and final competitions. Further analysis of plans might produce additional savings. Structurally the greatest economy which, it appears, could readily be pursued would be in devising ways of reducing the size of the cantilever at present shown. In reviewing plans for the towers the placing of departments to ensure their most efficient relationship might also be reviewed.

The architect has switched the positions of the two office towers between the preliminary and final competitions, possibly influenced by certain remarks of the Jury following the preliminary competition. There are, however, other factors to be considered and the majority has some reservations about this change. Not only did the earlier arrangement offer a simpler and more economical air conditioning problem but a wider knowledge of development of the district around the Square also indicates some advantage in the earlier proposal.

Any adjustments in these regards should leave the basic concept strong and clear and it is the majority's view that this would be possible. The City

AS A RULE, SCHOOL-BUILDING WITH INSULROCK ADDS UP TO SIZABLE SAVINGS



Weather-resistant, good-looking INSULROCK used as roof decking provides ceiling for corridor outside classrooms of new Hillcrest High School, Simpsonville, S. C. Architect: Wm. Freeman & Associates; Contractor: Triangle Construction Company, both Greenville, S. C.

Extra schoolrooms may cost nothing extra!

Insulrock Building Slabs, used for load-bearing, long-wearing, incombustible roof decks, sometimes cut building costs enough—by costing much less to buy, apply, maintain—to help build extra rooms without extra appropriations.

Extra safety never costs extra!

Incombustible Insulrock minimizes fire hazard for roofs, partitions, ceilings. It's "weather-cured," weather-resistant, strong, unharmed by insects and fungi. Its soft, off-white ceiling finish reduces glare, increases lighting efficiency, protects children's eyesight.

Extra comfort—no extra cost added!

Insulrock, honeycombed by thousands of sound-trapping air pockets, provides acoustical ceilings that reduce room noise, clatter, and confusion by at least 80%. Insulrock insulates from temperature extremes, summer and winter.

Plus bonus ceilings that Insulrock always gives!

Use Insulrock, top-side, for roof deck. Use the same slabs, underside, as exposed, attractive acoustical ceiling. So ceiling really is free!

Write for free Insulrock folder detailing how this most modern, economical building material meets UL standards, applies easily to any surface year 'round, and is today's jack-of-all-jobs for architects, builders, building planners, building committees.

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INSULROCK COMPANY

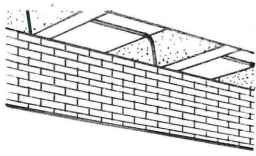
Sales Office, EAST RUTHERFORD, NEW JERSEY

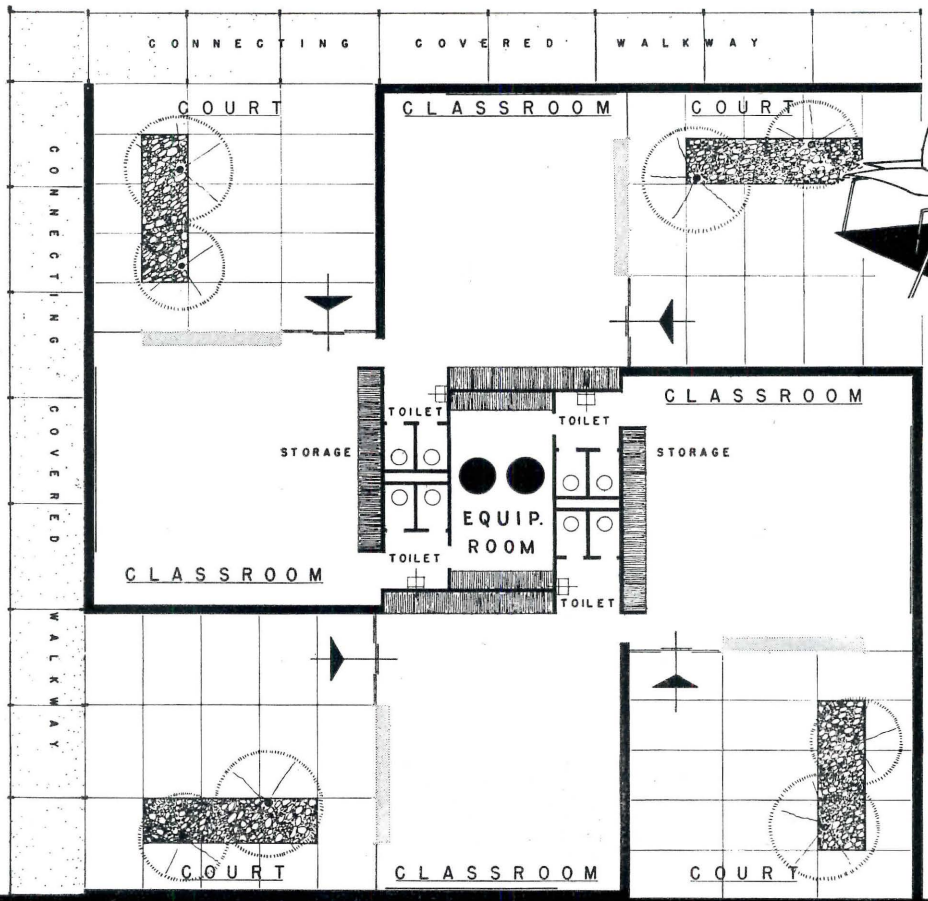
Plants: LINDEN, NEW JERSEY • RICHMOND, VIRGINIA • NORTH JUDSON, INDIANA

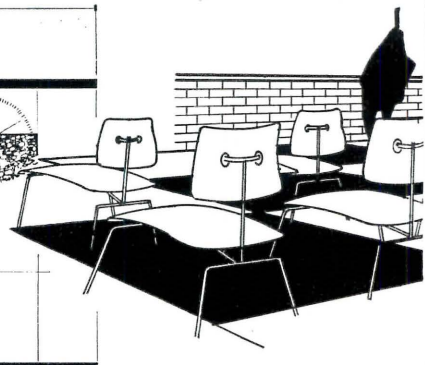
FLINTKOTE BUILDING MATERIALS

A Division of The Flintkote Company

Plan of "cluster" unit. Unique, four-way orientation assures low air conditioning costs. Peak air conditioning load would occur in each classroom at a different time during the day. Central toilet and equipment room area is surrounded by the four classroom-and-court units. Darkening glass walls between classrooms and courts are fixed, only a sliding door is operable.

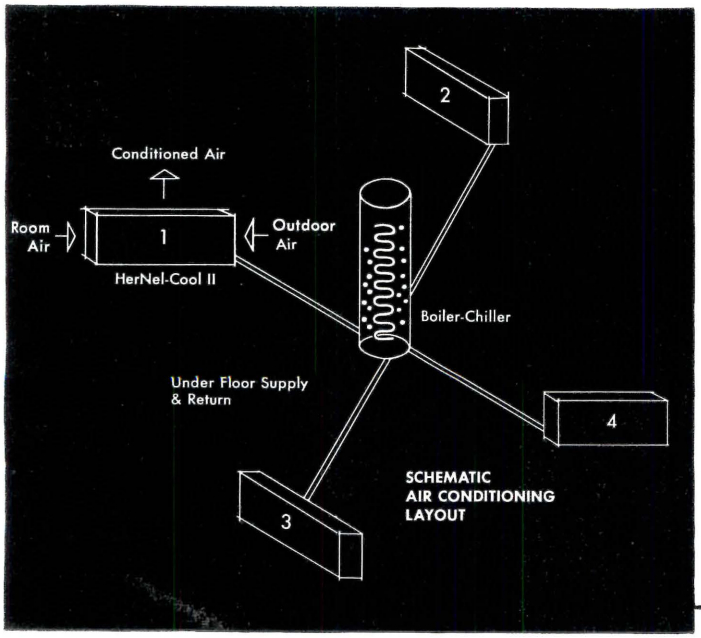






Number six of a series . . .

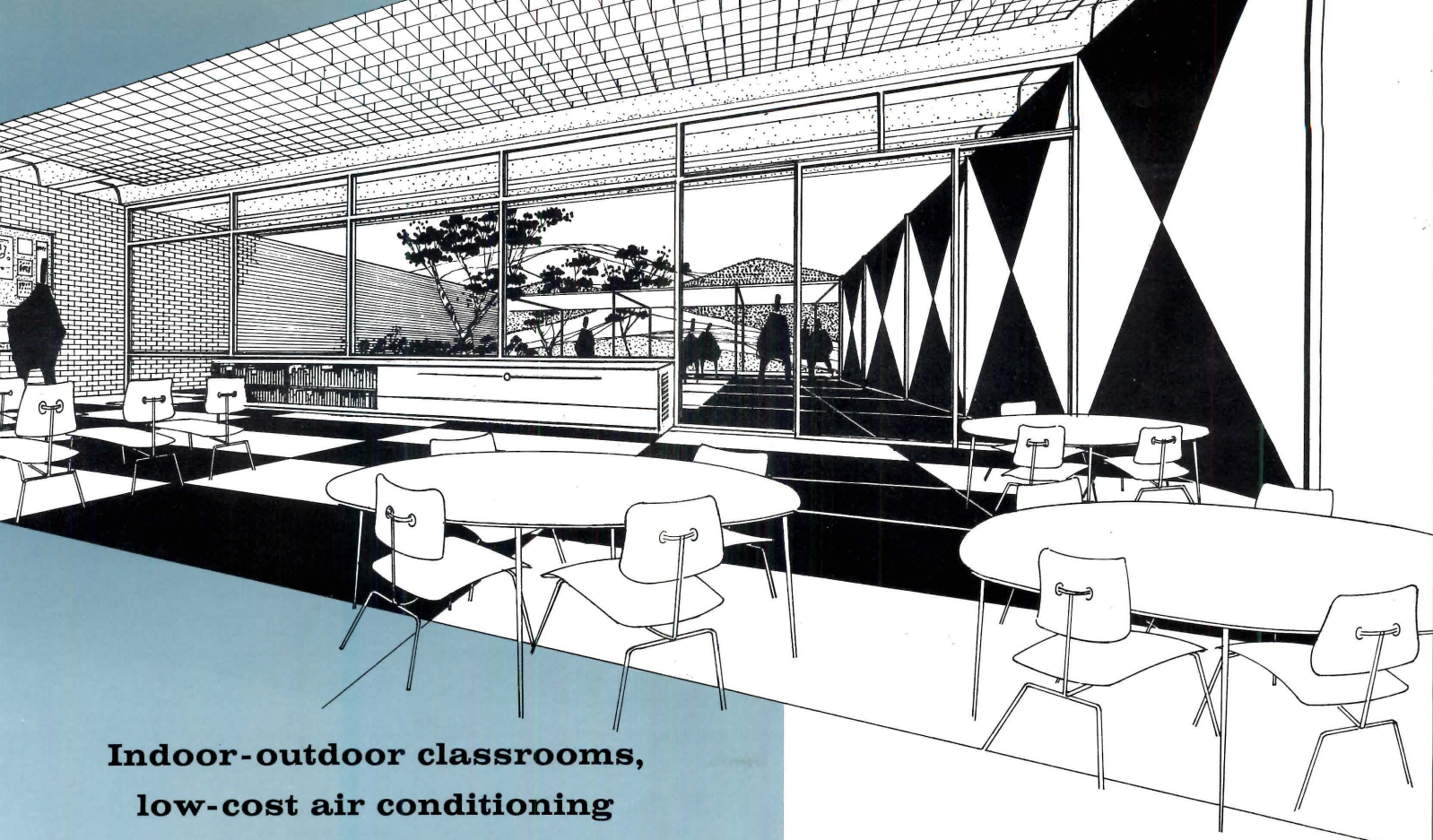
The herman nelson file of



CLASSROOM AIR CONDITIONING, more and more is becoming an important factor in school design. Architects everywhere are recognizing the trend in their structural considerations for school buildings.

Educators, too, are thinking—talking—stressing air conditioning. They have found that classroom temperature, air movement and humidity have a direct bearing on learning and development. They realize that it is just as important that a student be as comfortable in hot weather as in wintertime.

For these reasons, many schools are already air conditioned, or are planning for it in the future. Throughout the country, the need for air conditioning is being reflected again and again in basic school design. The building plan shown on these pages is an outstanding example.



Classroom view, looking out on exterior court. Exclusive DRAFT/STOP eliminates winter downdrafts from glass divider wall without using heat. For this reason, it is the only draft-elimination method compatible with year-round air conditioning.

Indoor-outdoor classrooms, low-cost air conditioning keynote this school design

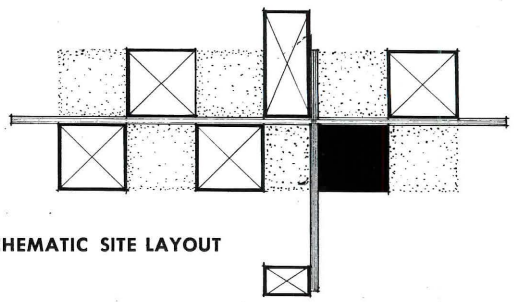
This Washington State school design by Culler, Gale, Martell & Norrie, Spokane architects and engineers, combines a stimulating out-of-doors atmosphere with extremely low-cost air conditioning.

The design is based on completely air conditioned four-classroom "cluster" units—with each classroom opening to its own private court. This provides immediately-accessible outdoor activity along with the ultimate in controlled indoor environment.

air conditioned school design

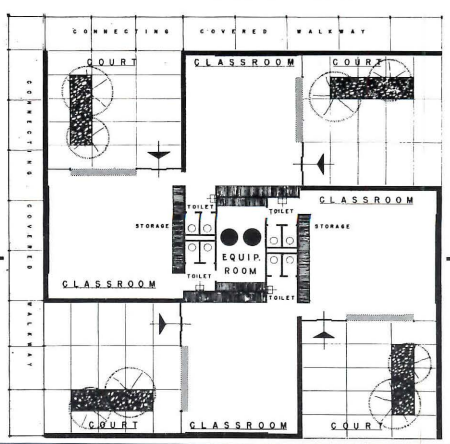
The "cluster" conception is also responsible for the extremely low installation and operating cost of the air conditioning. *Four-way orientation* makes sure that no two classrooms will require the peak air conditioning load at the same time. In addition, the deep overhang over the glass divider wall and the protection of the court's wing wall contributes to minimizing and dividing the solar load. As a result, *a 5-ton packaged chiller is all that's required to air condition the "cluster".*

Expanding on the original "cluster", other units and their group activity spaces are in a checkerboard arrangement connected by a covered walkway.



SCHEMATIC SITE LAYOUT

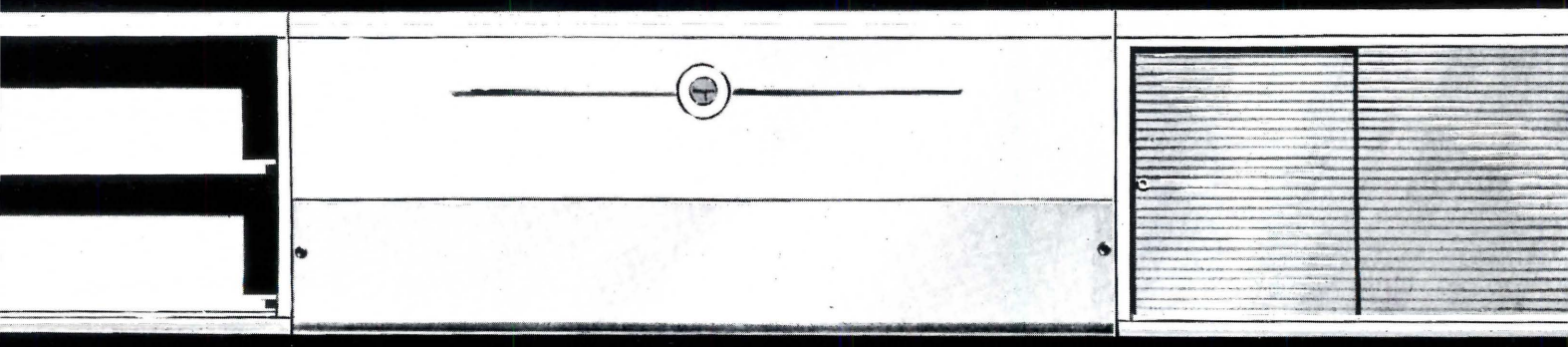
PLAN OF "CLUSTER" UNIT



AAF herman nelson

hernel-cool II

UNIT VENTILATOR
with optional air conditioning



already selected by more than ~~150~~ 200 schools

Will the school you are planning *ever* need air conditioning? The answer is definitely—yes. Architects and educators agree on the importance of the proper learning environment. And only air conditioning can assure that your school will have it when the weather outside is warm.

That's why today—less than a year after its introduction—the HerNel-Cool II unit ventilator with optional air conditioning has been selected for use in more than 200 schools, which are either air conditioned now or have planned for it.

HerNel-Cool II is the first unit ventilator to offer optional air conditioning, as well as heating, ventilating and natural cooling (with outside air). Units can be installed so the school enjoys the usual benefits of Herman Nelson unit ventilation, including the famous DRAFT|STOP system—*the only type of draft control that is compatible with air conditioning.* Then at any time—immediately, or whenever the school budget will allow it—the mere addition of a chiller in the boiler room is all that is needed for complete hot weather air conditioning.

This can be accomplished without disruption of classroom activities . . . without expensive alteration and installation charges. The cost is far less than for separate heating and air conditioning systems—both for installation and operation.

Want information? Write today to Herman Nelson Unit Ventilator Products, **American Air Filter Company, Inc., 215 Central Ave., Louisville 8, Ky.**

AAF

herman nelson

UNIT VENTILATOR PRODUCTS

System of Classroom Cooling, Heating and Ventilating

JUST HOW MUCH DOES PROVISION FOR FUTURE CLASSROOM AIR CONDITIONING COST? The answer is: probably far less than you think—when you install HerNel-Cool II air conditioning unit ventilators. Actually, it costs only fifteen to twenty cents per square foot more than the cost of basic heating and ventilating equipment in average new construction—or between one and two percent of total building cost. Complete, immediate air conditioning is approximately fifty to fifty-five cents more.

By using Herman Nelson unit ventilators, schools have held heating and ventilating costs—including provision for future air-conditioning—to a total of less than $1.35 per square foot. Other schools have heating, ventilating and immediate air conditioning—for a total per square foot cost of less than $1.70! (And, in many cases traditional design concepts were used.) These are current costs, too! HerNel-Cool II unit ventilators have been available for little more than a year.

Look at the costs shown below. They are particularly interesting when you realize that they are truly representative—for Herman Nelson equipped schools in all parts of the country. Locations range from California to New York, from Wisconsin to Georgia.

TEN SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION ONLY

School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating Cost Per Sq. Ft.	Per Cent of Total Cost
A	$ 659,000	$15.33	$1.15	7.6
B	416,211	9.05	1.13	12.4
C	435,270	11.21	1.48	13.2
D	131,223	9.00	1.98	22.0
E	260,164	13.56	1.47	10.9
F	1,013,960	11.27	1.25	11.1
G	577,193	8.39	1.07	12.9
H	310,178	9.84	1.05	10.7
I	344,291	10.43	1.11	10.7
J	118,147	12.38	2.09	16.6
Average	$ 426,564	$11.05	$1.38	12.8

SEVEN SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION PLUS FUTURE AIR CONDITIONING

School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating Cost Per Sq. Ft.	Per Cent of Total Cost
K	$ 666,000	$15.49	$1.32	8.5
L	423,511	9.21	1.29	14.0
M	356,800	10.04	1.55	15.4
N	2,813,000	15.44	1.78	11.5
O	2,745,381	16.54	1.76	10.7
P	1,311,000	10.40	1.55	14.9
Q	500,000	15.63	1.72	11.0
Average	$1,259,385	$13.25	$1.57	12.3

Avg. add. cost provisions for future air conditioning..0.19

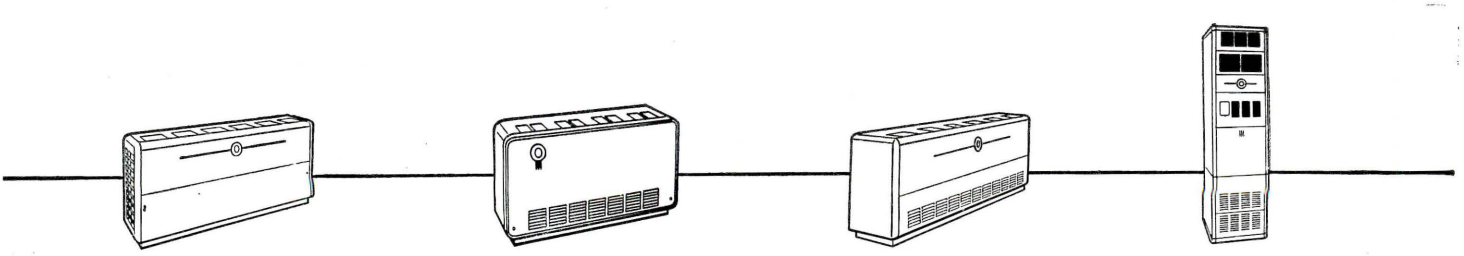
FIVE SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION PLUS COMPLETE AIR CONDITIONING

School	Total Cost	Total Cost Per Sq. Ft.	Heating Ventilating & Air Conditioning Cost Per Sq. Ft.	Per Cent of Total Cost
R	$ 690,000	$16.04	$1.88	11.7
S	371,100	10.44	1.95	18.7
T	406,463	14.38	2.41	16.8
U	360,700	13.11	2.22	16.9
V	1,094,387	11.55	1.68	13.8
Average	$ 584,530	$13.10	$2.01	15.6

Average added cost for complete air conditioning.....0.71

Complete cost studies—for schools employing immediate air conditioning as well as for those which are planning for its installation later—are available upon request.

Get all the facts now. Classroom air conditioning—immediate or eventual—is being included in more and more school planning. You'll want to consider it in yours. Write today to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., 215 Central Avenue, Louisville 8, Kentucky. *In Canada: American Air Filter of Canada, Ltd., Montreal 9, Quebec.*



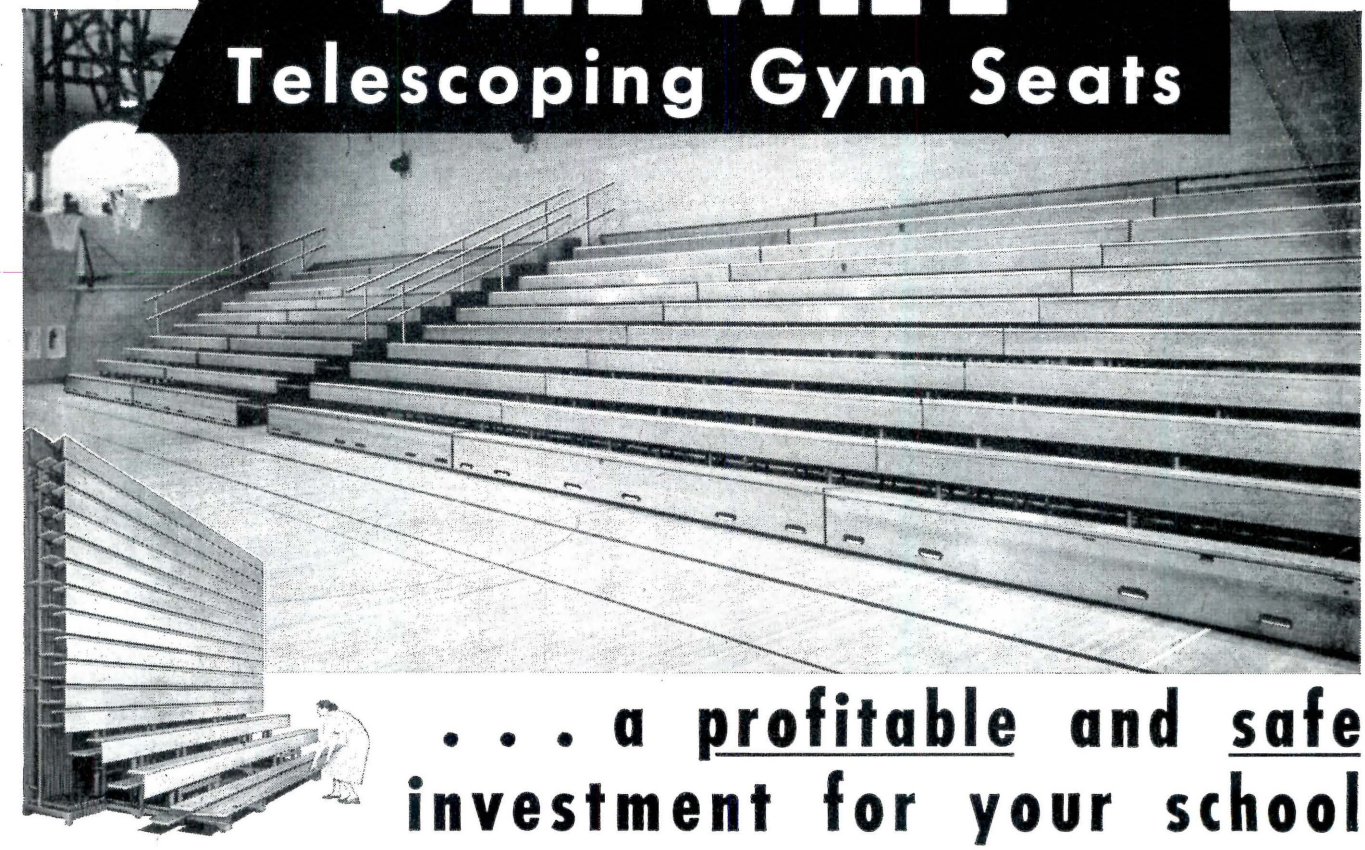
Hot water or steam unit ventilators

Amervent unit ventilators

Electric unit ventilators

UniVent gas-fired unit ventilators

SAFWAY
Telescoping Gym Seats



. . . a profitable and safe investment for your school

YOU'LL GET profitable *full-time use* from your gymnasium—planned or existing—when you install Safway telescoping bleachers.

With the seats extended over the floor, you provide superior vision and comfort for spectator events such as basketball. Nest the seats back into their "cabinet" and you instantly clear the floor for daily gym work.

And with only one or several rows locked open, you can set up convenient sideline seating for athletic practice, dancing parties or other gym floor activities.

Safway's advanced gym seat design also gives you these important benefits:

STRONG, SAFE CONSTRUCTION—8 steel columns under every row; uniform load distribution through vertical and horizontal steel bracing; 3 automatic locking devices.

SIMPLE, EFFICIENT DESIGN — Minimum of moving parts. Stable support with extra-long wheel carriages and 8 self-lubricating wheels under each row.

SMOOTH, EASY OPERATION — Minimum metal-to-metal friction. No costly power equipment needed.

HANDSOME, FURNITURE-LIKE APPEARANCE—Seat and foot boards have rich, glossy Golden Oak finish.

SAFE AUTOMATIC LOCKING

Safway's exclusive gravity latch automatically locks each row in relation to every other row (see three photos below).

(1) LOCKING OPEN. As each row is extended, latch drops behind lock bar on carriage ahead to prevent movement between rows.

(2) RELEASING LATCH. After unlocking the cylinder lock, pushing seats inward forces tapered end of latch against unlocking bar, raising notched front end and freeing row ahead.

(3) LOCKING SHUT. With all rows nested, brake pads are lowered and hooks engage brackets on unlocking bar.

Ask for engineering help!

Submit your seating requirements for recommendations by experienced Safway engineers. There is no charge for this service. And write today for your free copy of the new Catalog 1611.

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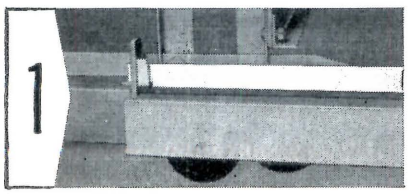
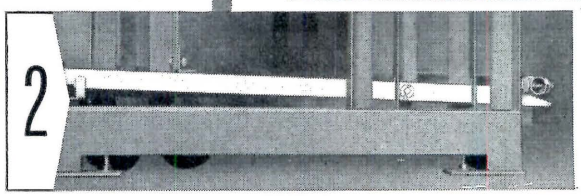
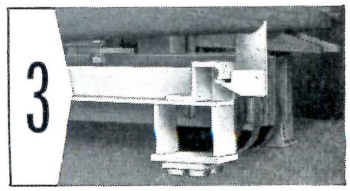
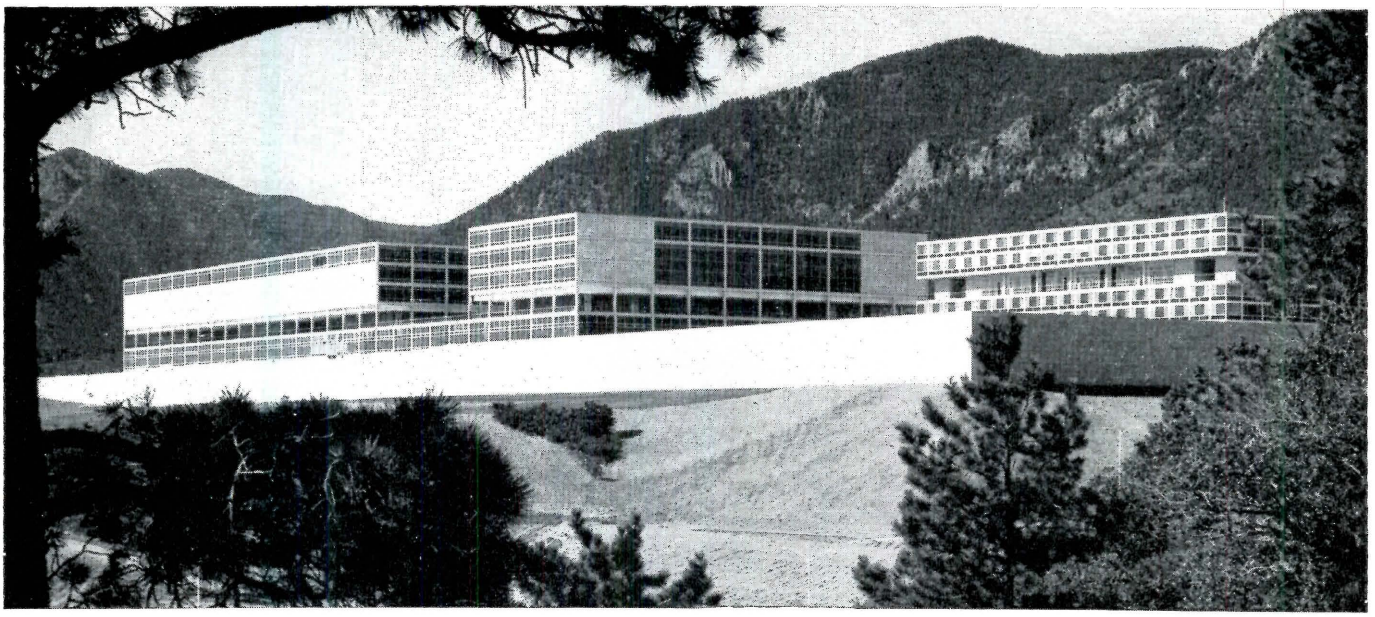
STEEL PRODUCTS, INC.
6237 W. State St., Milwaukee 13, Wis.





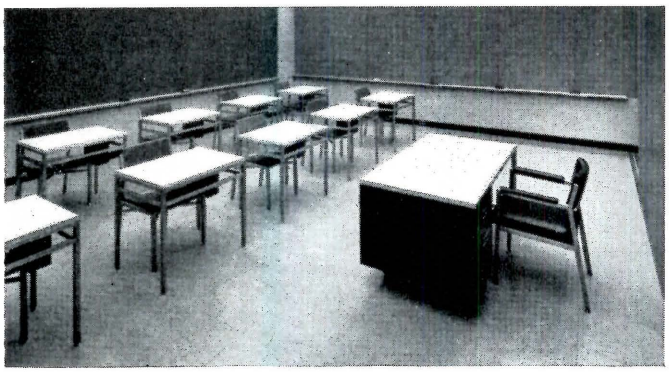




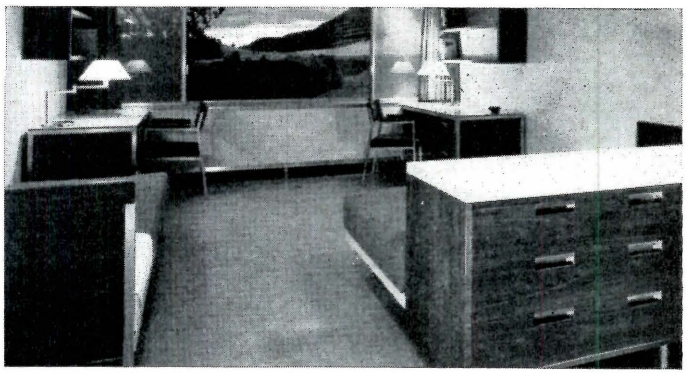
LOCATION: U.S. AIR FORCE ACADEMY

SPECIFICATION: Good Looks, Utility, Durability

INSTALLATION: PANELYTE



From classrooms to sleeping quarters, light gray Panelyte on walnut makes an attractive setting.



Sound-deadening properties and low reflectance value of Panelyte make studying easier.

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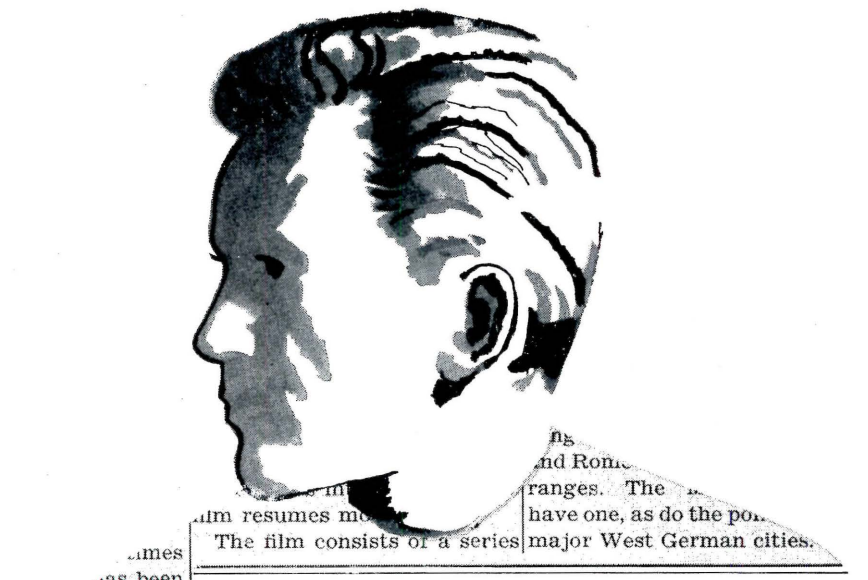

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Alberene Stone is a natural silicate stone. It has no surface glaze to chip, crack or peel. Its all-silicate mineral components resist chemical attack. Its low absorbency rate of 0.15% makes it essentially nonstaining. Discoloration can be removed by scouring or honing without harm to the surface — which goes all the way thru.

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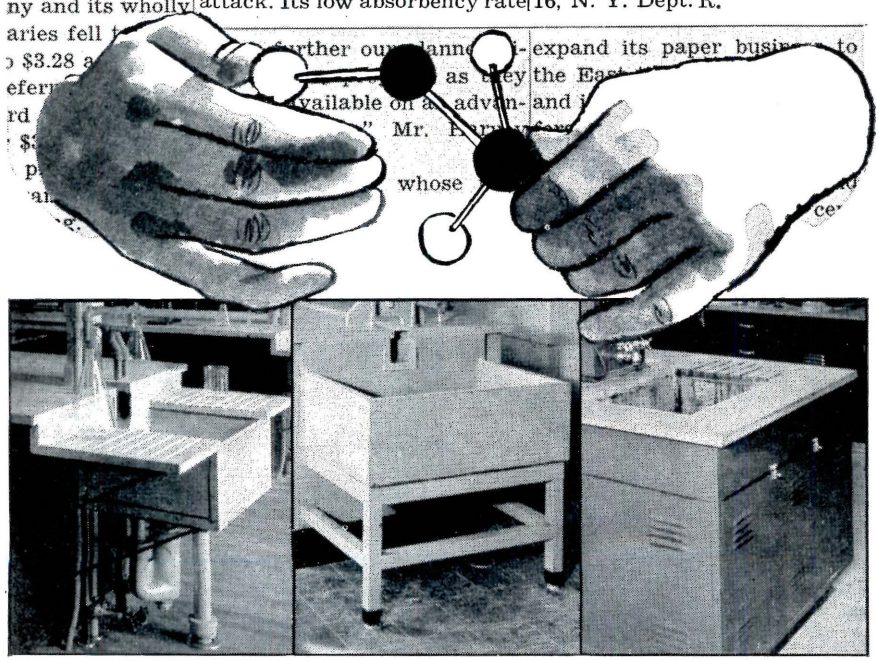

ALBERENE STONE

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A Record Special Report

Hall and Square should retain all the visual significance of this important public space and building.

Minority Report

The jury were unanimous in regarding the winning design as the most original in conception of any of those submitted.

They were less unanimous about the suitability of this monumental design to the site prepared for it, and as an answer to the requirements of the administrative program. On this there were strong differences of opinion—as there are likely to be in any democratic assembly.

As a minority we were highly critical of some aspects of this design. We were also conscious of the carefully drawn conditions, the cost of the project in the minds of the Council and the public, and the need for a building which is efficient and workable, and flexible enough to meet the requirements of growth and change.

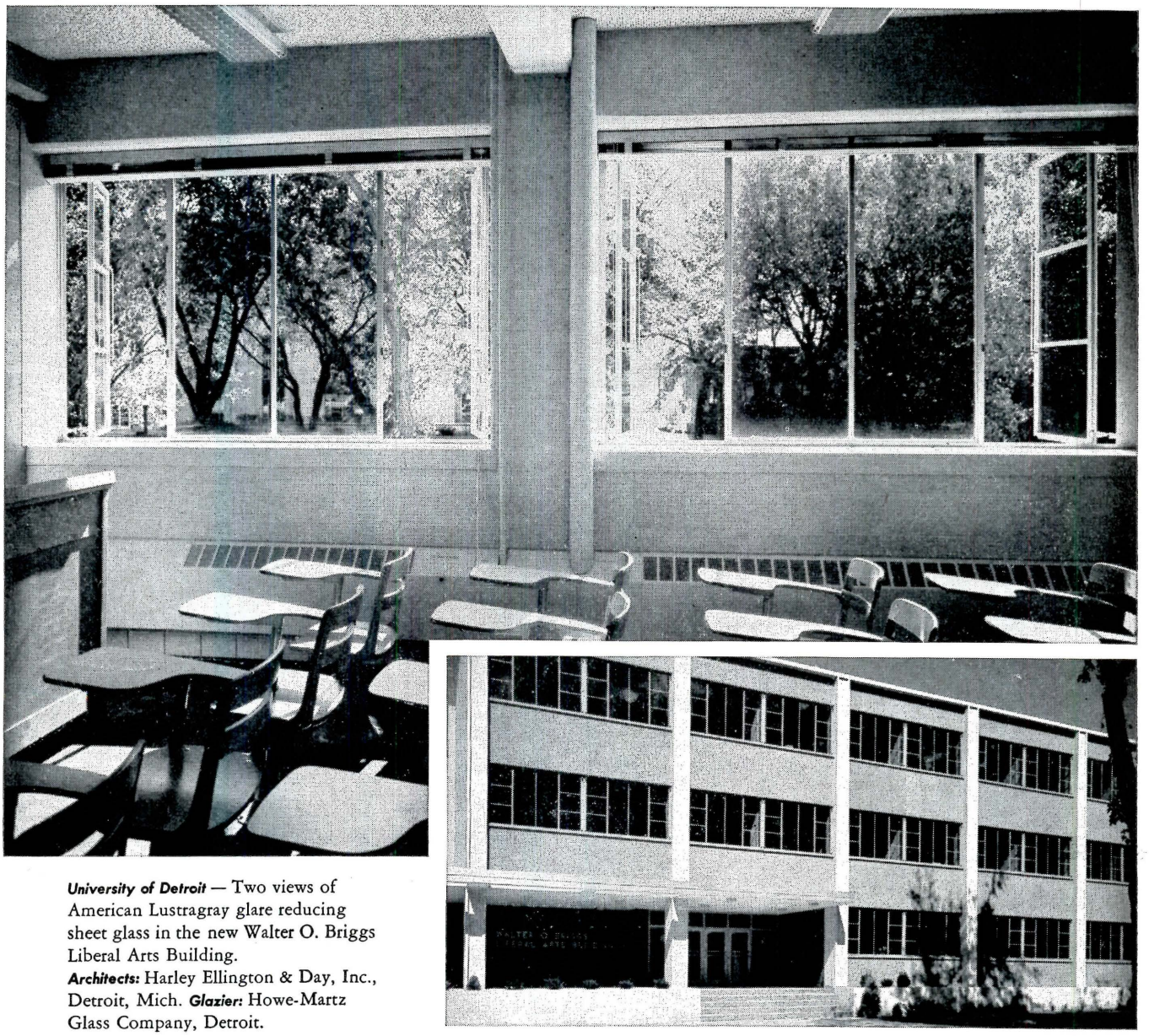
In this dilemma the easiest but less constructive course for the minority would have been withdrawal from the Jury, with whom however we have been in agreement over all decisions in the preliminary stage and over many in the final. Instead we have written this minority report containing our reservations. This will of necessity expose the degree of disagreement or doubt held by the minority, and the reason why these disagreements could not be resolved, as is usual, within the Jury itself. But since no worthwhile judgment is entirely uncritical, the reservations may also be useful to strengthen or modify the design of the City Hall and the City Square as it is finally executed.

Reservations Concerning the Winning Design (No. 006)

Relation to the City

1. On the east and north sides, and to some degree to the west as seen from University Avenue, the winning design shuts out the city around it, presenting blank concrete walls (356 ft and 290 ft in height) to surrounding streets and buildings. This might have an adverse effect on the future redevelopment of these sectors; whereas the new City Hall could otherwise be expected to spark off a number of surrounding projects, eventually leading to a really significant renewal of this part of the City. Much could be done to reduce this adverse effect.

2. The City Square, which in our



University of Detroit — Two views of American Lustragray glare reducing sheet glass in the new Walter O. Briggs Liberal Arts Building.
Architects: Harley Ellington & Day, Inc., Detroit, Mich. ***Glazier:*** Howe-Martz Glass Company, Detroit.

Another AMERICAN Lustragray Installation

...the glass that reduces sun glare and heat without sacrificing vision

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Glare Reduction—minimizes eyestrain and fatigue.

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"Clear Glass" Vision from Interior—creates a spacious atmosphere conducive to learning and necessary for top task efficiency.

Exterior Opacity—sufficient to add to the skin wall effect of a building and provide increased privacy.

Neutral Shade—complements all colors and removes all restrictions on interior decorations.

Economical Price—another benefit that encourages its wide use. And no expensive special glazing is required.

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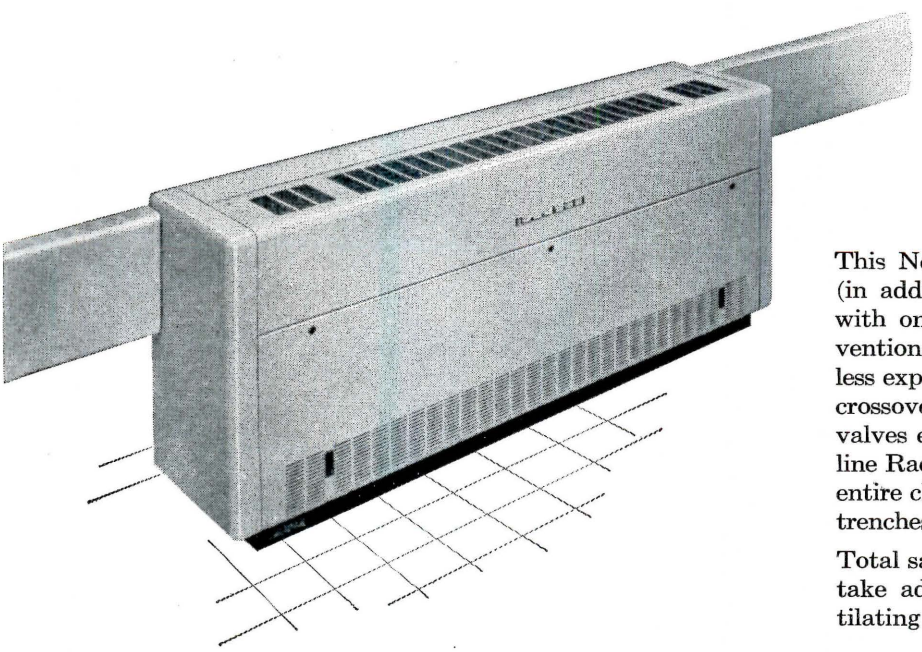

A Nesbitt Syncretizer in each classroom provides heating, ventilating and natural cooling. Wind-o-line Radiation solves the dual problem of cold walls and window downdrafts. Combined, they provide optimum comfort for every student . . . at savings of 20% or more on construction, installation and equipment costs.

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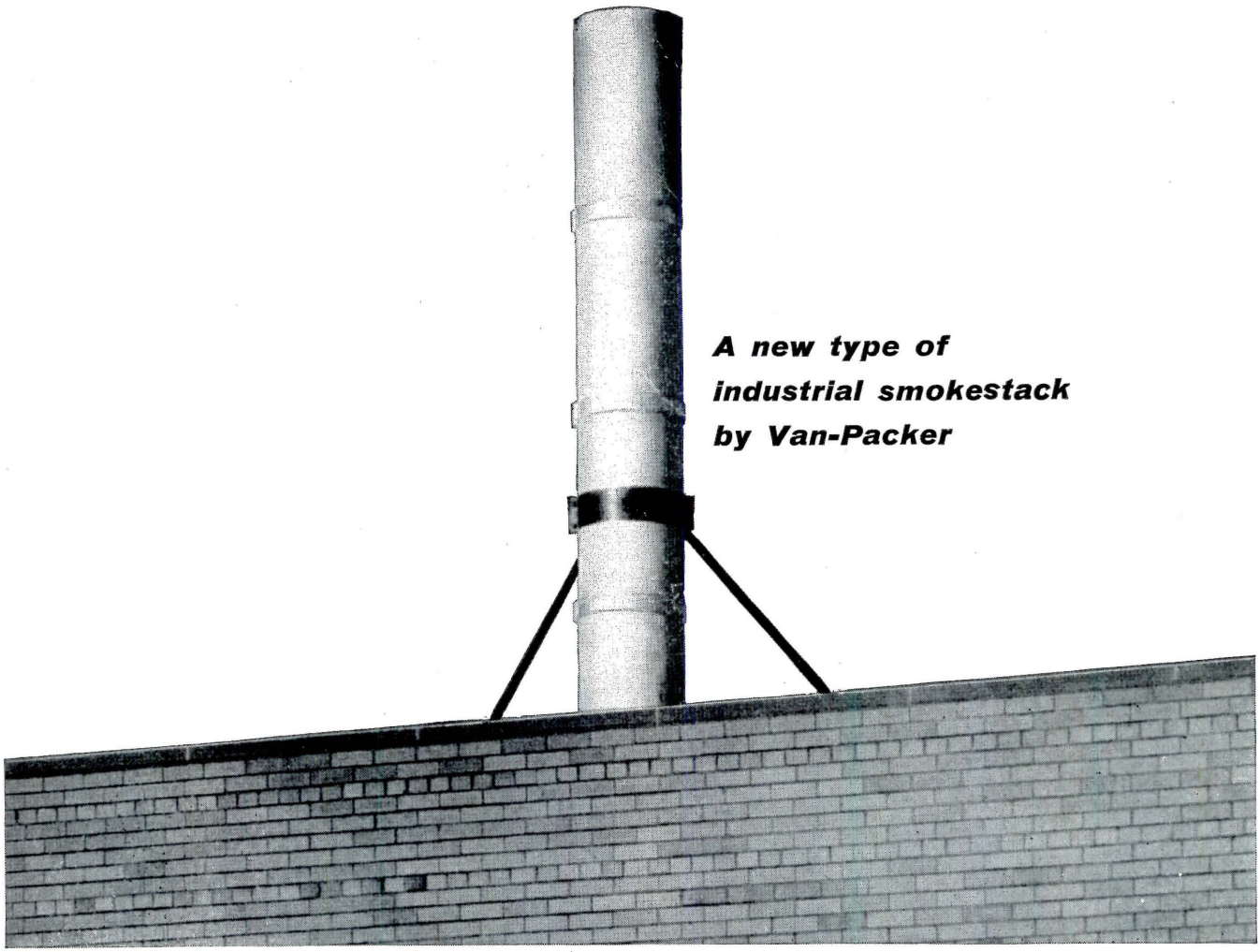
Total savings make it possible for every school to take advantage of this finest heating and ventilating system money can buy.



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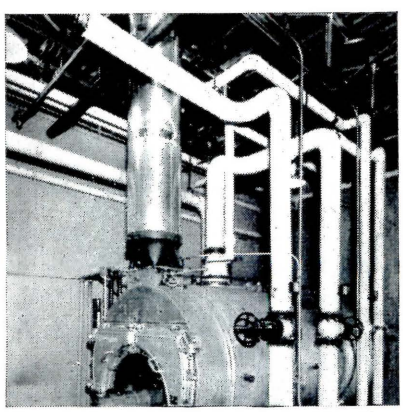
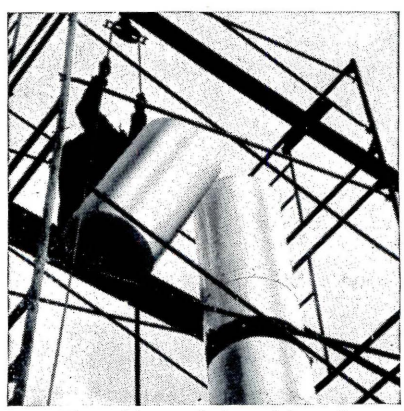
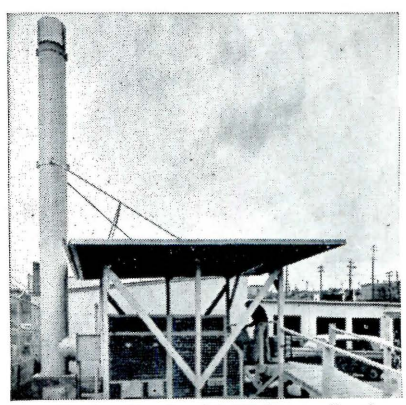


Van-Packer Stack with Standard Sections handles boilers and furnaces efficiently. Can be superimposed or floor supported.



Installing this stack is quick and easy. Three-foot sections are simply cemented atop one another with acidproof cement.



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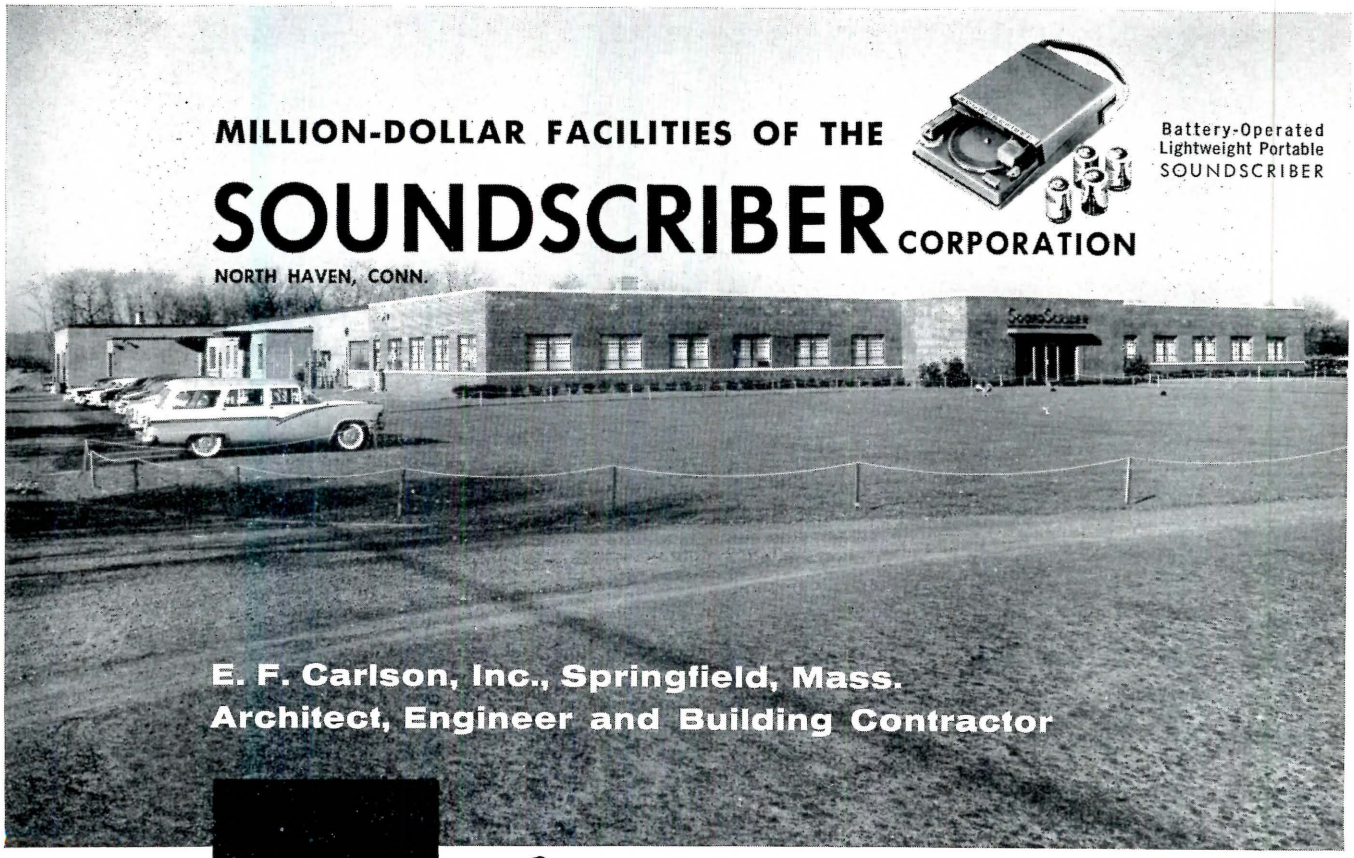

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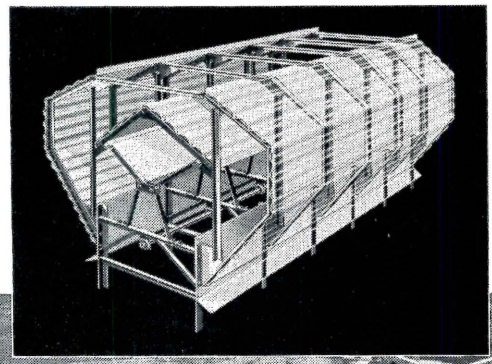
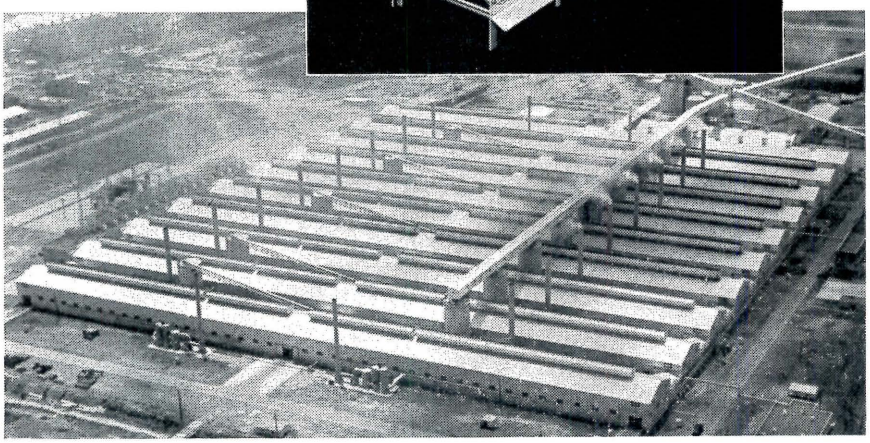


Burt Monovent Continuous Ridge Ventilator converts roof ridge to a quick-acting, giant air valve . . . economically



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opinion should hope to attract citizens of all ages in a rich and varied way, still appears in the final stage of the competition as a somewhat stark design. It could be given greater landscape interest and amenity, and a more human scale.

The Building as a Working Proposition

3. The four main elements in the scheme—the Civic Square, the four-level base or podium (which covers nearly half the site), the two office towers, and the Council and Executive suite—are connected to each other by an external ramp, by escalators, by a large number of elevators in ten different places, as well as by emergency stairs. Internal circulation within the building is complicated, as it involves movement from one office tower to another or to the Council suite; and the one-sided office towers have longer horizontal lines of communication than are found in two-sided arrangements of offices.

4. The Council Chamber and suite, although placed in the very focus of the design, have defects as working accommodation, and a poor outlook.

Structure and Cost

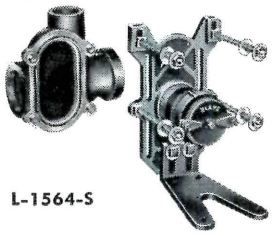
5. The form of construction proposed for the office towers is probably the most expensive which could be devised for vertical slabs. The huge cross-buttressed reinforced-concrete walls support floors which are, in effect, trays cantilevered in one direction. The open ends of the trays are covered by a glazed curtain wall. It is doubtful whether the cantilevers would register in the mind of an external observer, and it seems reasonable to suggest that the form of construction could be modified and reduced in cost.

6. Because of the variety of unusual structural forms, and the considerable space demanded for circulation, the design as presented would, in our estimate, cost much more than the figure which the Council had in mind. By considerable revision, economies in space and structure could be made without changing the main effect of the composition.

Both in the Conditions of Competition (para. 15), and in the report of the Jury on the preliminary stage, the need for reasonable economy was stressed. In order to realize the design and preserve its integrity, even with the revision suggested, the Council should be prepared to increase the sum voted.

BLAKE

COMBINATION ADJUSTABLE "TY" FITTINGS AND CARRIERS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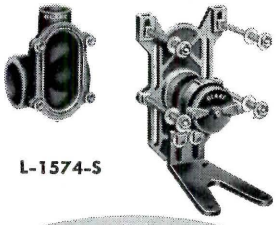
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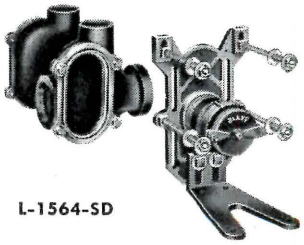
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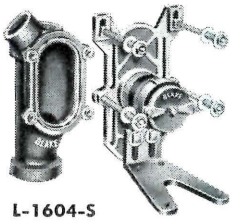
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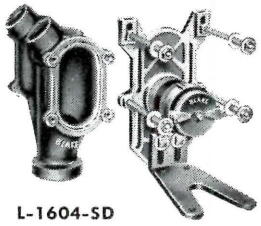
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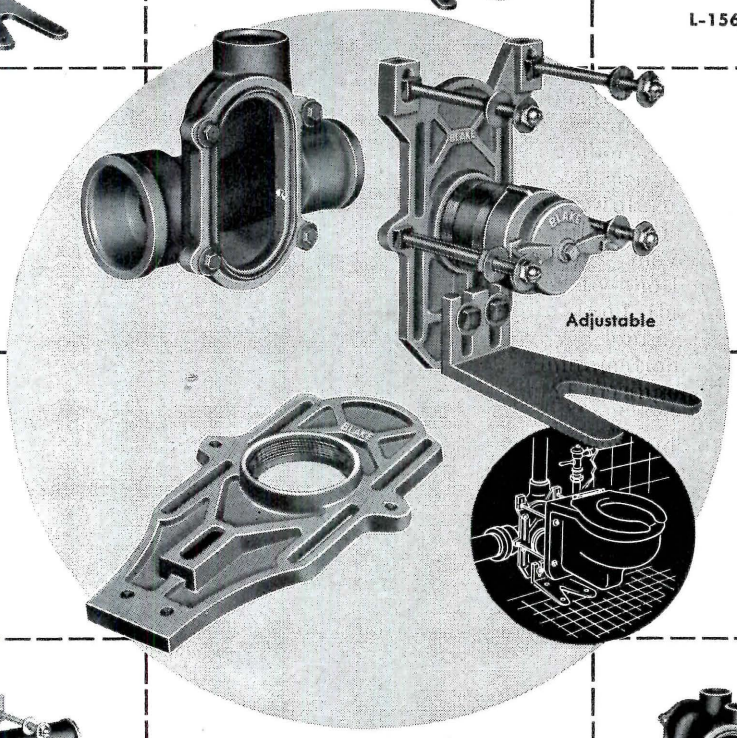
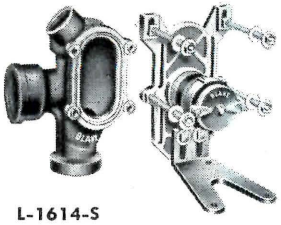

Adjustable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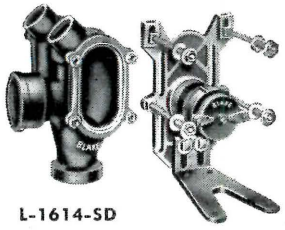
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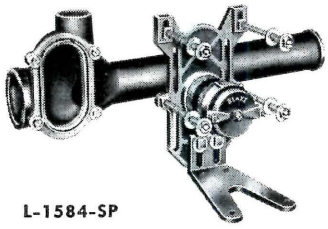
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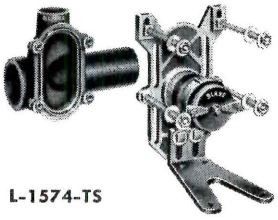
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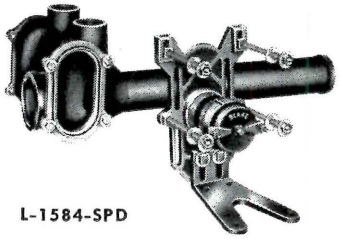
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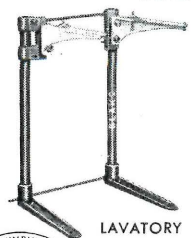
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Andersen *Windowalls*

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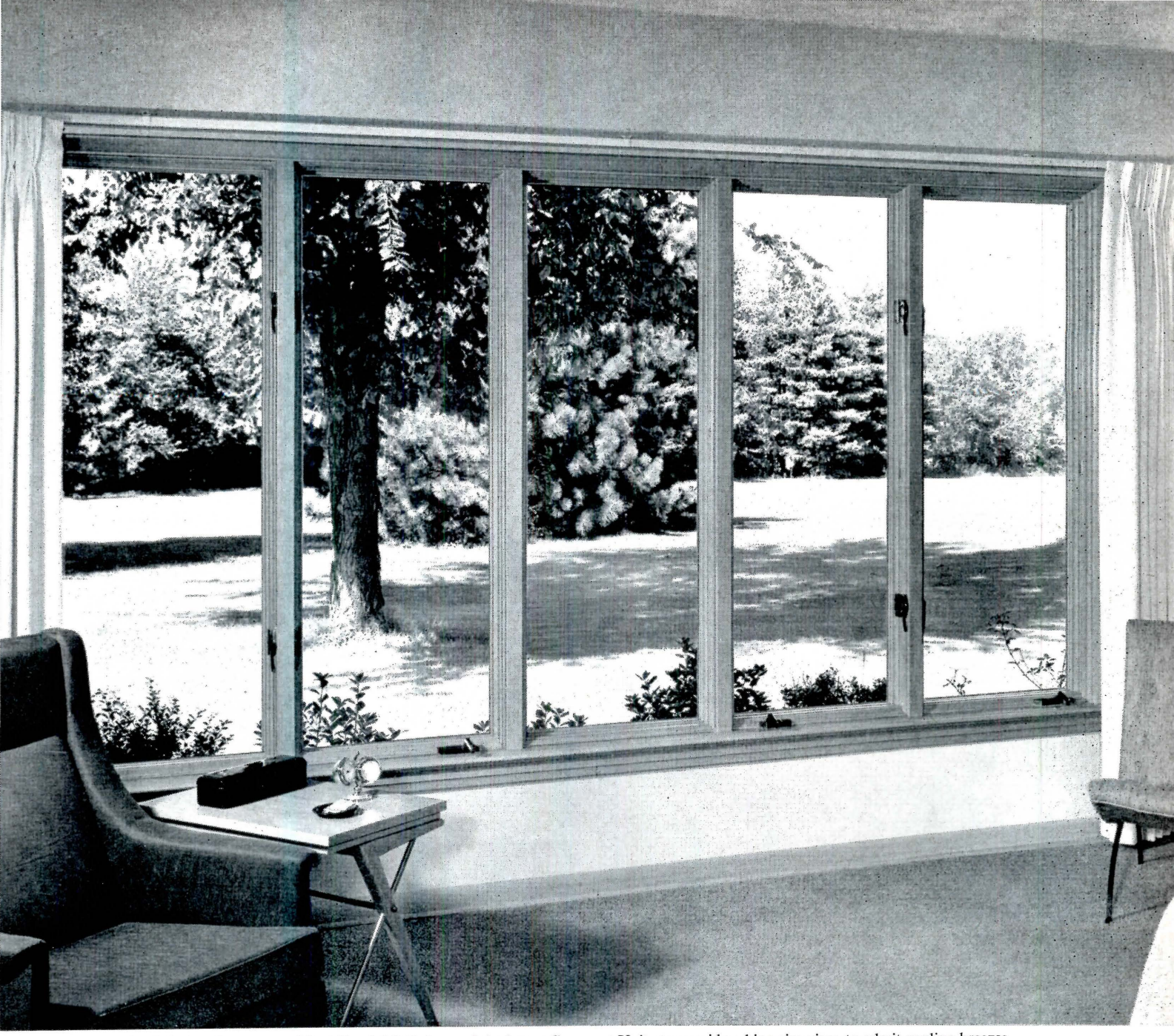
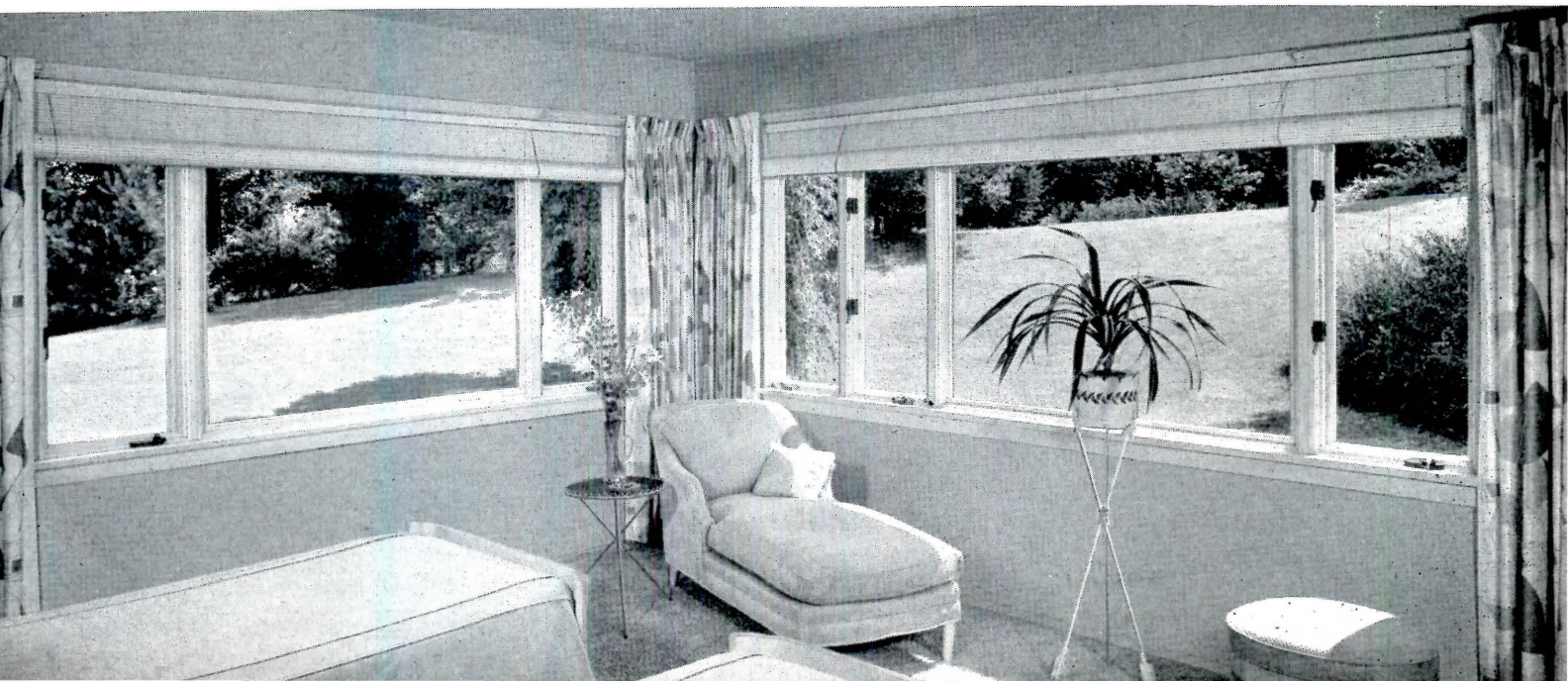
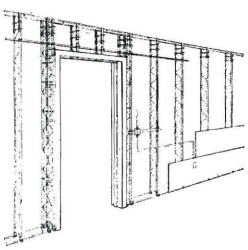
In the living room, Andersen Flexivents® combine with Flexiviews for picture-window effect with operating sash. E. F. Gordon, A.I.A., architect.



In this bedroom, architect Frank McGuire used Andersen Casement Units to provide a king-size view, to admit cooling breezes.

More wall space is available with the smaller Andersen Casement Units. Architect is Kenneth E. Wischmeyer.





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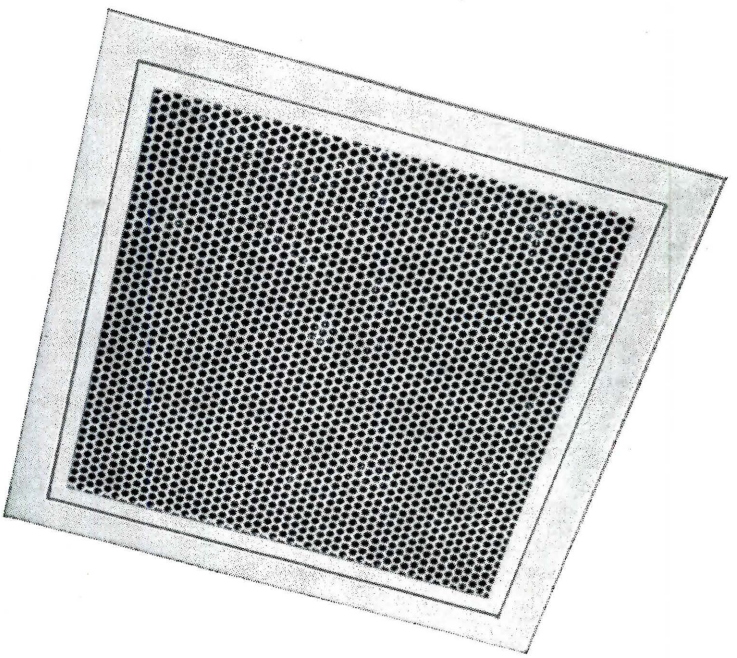

WITH THESE PRACTICAL PERFORMANCE FEATURES

- Provide Uniform Ceiling Design
- Can Be Located Anywhere In Ceiling
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- Unlimited Patterns
- Built-In Air Controllers
- Adjustable for 1-2-3-4 Way Blows
- No Blank-Offs Required
- Maximum Turbulence — Aspiration
- Quick Temperature Equalization
- Uniform — Draftless Air Distribution

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AGITAIR PERFAIR air diffusers incorporate all the essential features to meet the architects and engineers requirements.

The architectural styling of PERFAIR, both supply and matching return units, conform to all interior designs. The interchangeable core feature and built-in air controllers permit the location of PERFAIR units in any part of the ceiling as desired by the architects.

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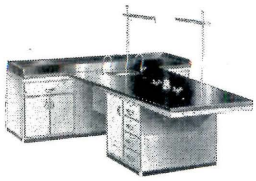

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The Record Reports

On the Calendar

November

3-7 43rd Annual National Hotel Exposition—The Coliseum, New York

8-13 Annual Convention, National Association of Real Estate Boards—Masonic Memorial Temple, San Francisco

10-12 Annual Convention, Structural Clay Products Institute—Shamrock-Hilton Hotel, Houston

17-21 Eighth National Plastics Exposition, sponsored by Society of the Plastics Industry—International Amphitheater, Chicago

18-20 Ninth National Conference on Standards, sponsored by American Standards Association—Hotel Roosevelt, New York

20-21 Conference on Electronic Computation, sponsored jointly by Kansas City Section and the Committee on Electronic Computation of the Structural Division of American Society of Civil Engineers—Kansas City

20-22 44th Annual Convention, Florida Association of Architects—Deauville Hotel, Miami Beach

22-25 Fifth Annual Building Products Exposition, sponsored by National Retail Lumber Dealers Association—International Amphitheater, Chicago

24-25 National Conference on Metropolitan Growth, sponsored by U.S. Chamber of Commerce—Washington

30ff Annual Convention and Exposition, National Swimming Pool Institute; through December 3—Ambassador Hotel, Los Angeles

30ff Annual Meeting, American Society of Mechanical Engineers; through December 5—Hotels Statler and Sheraton-McAlpin, New York

December

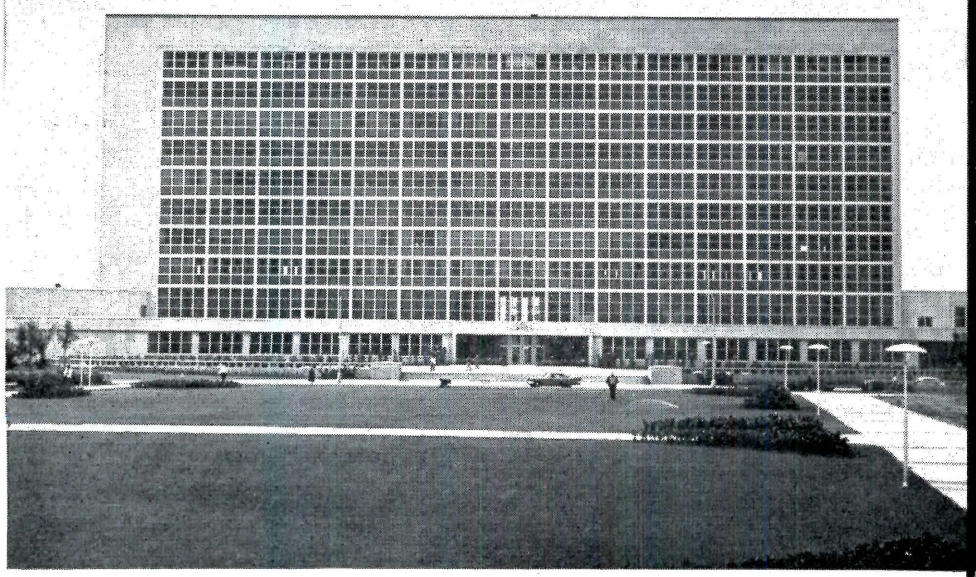
3-4 Building Research Institute Conference on Field Applied Paints and Protective Coatings, co-sponsored by National Paint, Varnish & Lacquer Association and Painting & Decorating Contractors of America—Shoreham Hotel, Washington

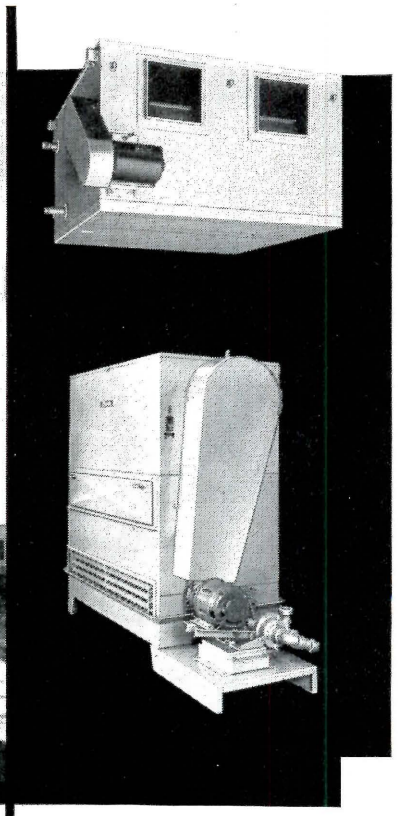
8-10 Winter Meeting, American Nuclear Society—Sheraton-Cadillac Hotel, Detroit

10-11 "Creative Trends in Urban Building," fourth annual Na-

Marlo Air-Conditioning

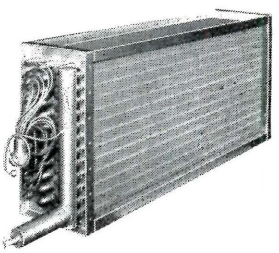
equipment cools *New Orleans* modern city hall





In contrast to the Old World atmosphere of the French Quarter, this new crystal-and-concrete structure shows us another side of New Orleans—crisp and clean-lined, modern and functional.

But sweeping areas of glass like these demand an air conditioning system of flexibility and dependability. To meet these special needs, three types of Marlo equipment were installed: floor type central station units, coils and cooling tower. In the muggiest heat that New Orleans can muster, city hall workers and visitors stay fresh and unwilted.



This striking building was designed by Favrot, Reed, Mathes & Bergman. Engineers were De Laureal & Moses, mechanical contractor Emile M. Babst Co.

There's a Marlo representative near you. For complete information on modern Marlo air conditioning and heat transfer equipment, call him or write directly to us.

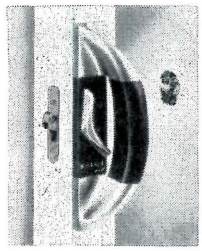
Marlo coil co.

SAINT LOUIS 11, MISSOURI

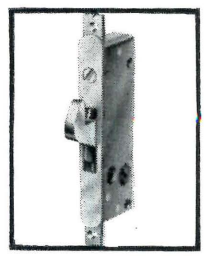
Quality Air Conditioning and Heat Transfer Equipment Since 1925

Here's How "5 GRAND" Looks!

(NUDOR d'COR series 5000)



d'Cor's charcoal finish door pull is contour styled to blend with any decor.



Only quality materials like this famous Adams Rite lock are used in the "5 Grand."

The door you've asked for . . .

It will excite your customers . . . when they see its rugged, clean line, luxurious styling with the famous d'Cor charcoal finished contoured pull . . . when they grasp the comfortable contoured shape and feel the feather light pull it takes to "float" the "5 Grand" along the threshold. There's no bend or give to locking style.

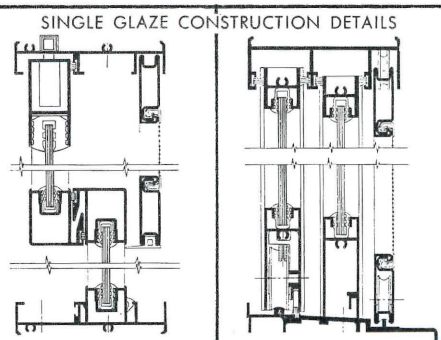
"5 GRAND" reasons why you'll specify it!

1. Sure to be a top volume seller because it looks, feels and *is* a premium, quality door . . . but it costs less than a medium quality door. **2.** It has more quality features than any other door in its price range. **3.** This new "5 Grand," like all other Nudor products, is produced under their famous quality control system. Precision engineered and precision manufactured. **4.** Famous Adams Rite locking mechanism in the exclusively designed exterior escutcheon pull, is tamper and burglar proof. **5.** Weather seal formed by single plane network of Schlegel wool pile & Ryko vinyl glazing bead prevents water, air & dust infiltration.

SINGLE GLAZE SIZES

TYPE VIEWED FROM EXTERIOR	DOOR SIZES W - WIDTH	DOOR SIZES H - HEIGHT	GLASS SCHEDULE WIDTH & HEIGHT	GLASS SCHEDULE REQ.
XO	5′ 11½″	6′-10″	34″ x 78″	2
	7′ 11½″	6′-10″	46″ x 78″	2
OX	9′ 11½″	6′-10″	58″ x 78″	2
	Custom	Custom	$(\frac{W}{2}-1\frac{1}{2}'')$ x (H—4″)	2
OXO	8′ 11″	6′-10″	34″ x 78″	3
	11′ 11″	6′-10″	46″ x 78″	3
	14′ 11″	6′-10″	58″ x 78″	3
	Custom	Custom	$(\frac{W}{3}-1\frac{17}{32}'')$ x (H—4″)	3

SINGLE GLAZE CONSTRUCTION DETAILS



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AIA file number 16E

British Overseas Airways Corporation waiting room at Idlewild Airport, Long Island. Architects: LaFarge, Knox & Murphy, New York. Flooring Contractor: Builders Wood Flooring, New York. Flooring: Nairon Custom Vinyl Tile in Venetian* by Congoleum-Nairn.

B·O·A·C says "Welcome to America" with Vinyl Floors by Congoleum-Nairn

Famous airline combines British smartness with American utility in new Idlewild Airport waiting room.

First impressions mean a lot. You expect that and much, much more from a heavily trafficked floor. That's why BOAC attached such importance to combined good looks and durability for their new waiting room where visitors from all over the world come and go each day.

Furnishings of luxurious modern simplicity were chosen with taste and care. Then they were set against the elegance of the "Venetian" pattern in Nairon Custom Vinyl Tile by Congoleum-Nairn.

Nairon* Custom Vinyl is the flooring that exemplifies the compatibility of beauty and practicality. Colors are clear, non-fading, more vivid or subtle—to enhance any decor. The patterns are sharper, newer, and since they go *all the way through* Nairon Custom Solid Vinyl Tile, the patterns never wear off, never show "traffic lanes" of wear. Upkeep is reduced to the absolute minimum. This vinyl cleans easily, needs no heavy waxing. Takes heavier loads without indenting, too (up to 300 lbs per square inch).

That's why time after time individuals, architects, builders, decorators specify Congoleum-Nairn custom-quality vinyl floors.

When you are concerned with choosing materials that will form a public impression of character for your clients, specify Congoleum-Nairn fine flooring with assurance of satisfaction . . . every time.

SPECIFICATIONS: Available in 40 different colors and patterns 9″ x 9″ and 12″ x 12″ tiles (18″ available on special order).

INSTALLATION: Above-grade floors of wood, concrete, or ceramic tile. On-grade floors of concrete or ceramic tile, with or without radiant heating.

Below-grade installation with special adhesives. Wall installation with special adhesives.

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Congoleum-Nairn
FINE FLOORS

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NOW . . . two new Magnetic Catches that fine furniture and cabinets can

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because these new plastic cases harmonize beautifully with any wood grain or finish

They're practical, too! The case is high-impact rigid polyethylene plastic. Concealed lifetime floating magnets are self-aligning to enlarged strike plates. These catches have positive holding power and help prevent door warpage. Mountings can be varied and installation is easy and quick. Standard case color is beige. Other colors available on special order.

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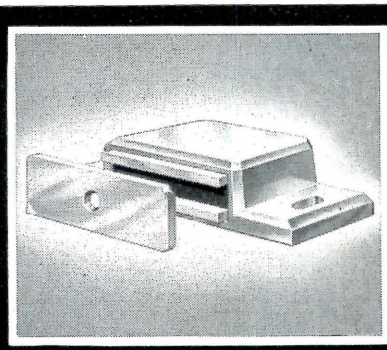
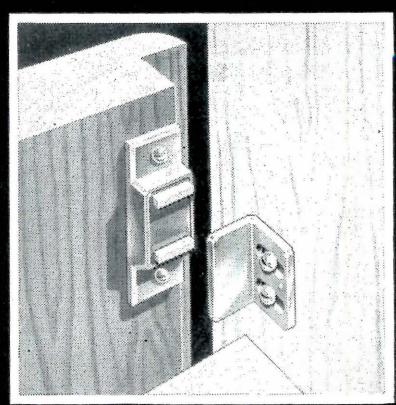
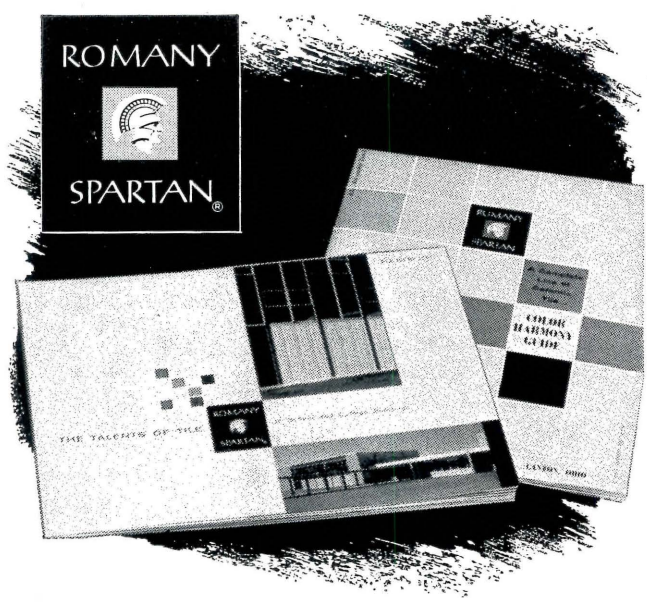


#1000 MAGNETIC CATCH
15 lb. pull lifetime ceramic magnet. Has universal mounting applications.



#1001 MAGNETIC CATCH
7½ lb. pull alnico lifetime magnet. Mounts on door. Strike can mount in various ways.



For your file on ceramic tile

"The Talents of Tile"—12 color pages of Romany• Spartan school and college installations. "Color Harmony Guide"—8 pages illustrating Romany• Spartan's complete tile line, with helpful chart showing harmonious combinations. For either or both, write United States Ceramic Tile Company, Dept. R-27 Canton 2, Ohio.

PROBLEM: Find the Grinnell Automatic Sprinklers.

SOLUTION: They are *completely* out of sight, hidden above the modern ceiling in this department store.

Grinnell has been a leader in the engineering, manufacture, fabrication, and installation of fire protection systems for more than 85 years. For architecturally right solutions to your fire protection problems, contact Grinnell Company, 277 West Exchange St., Providence, Rhode Island.

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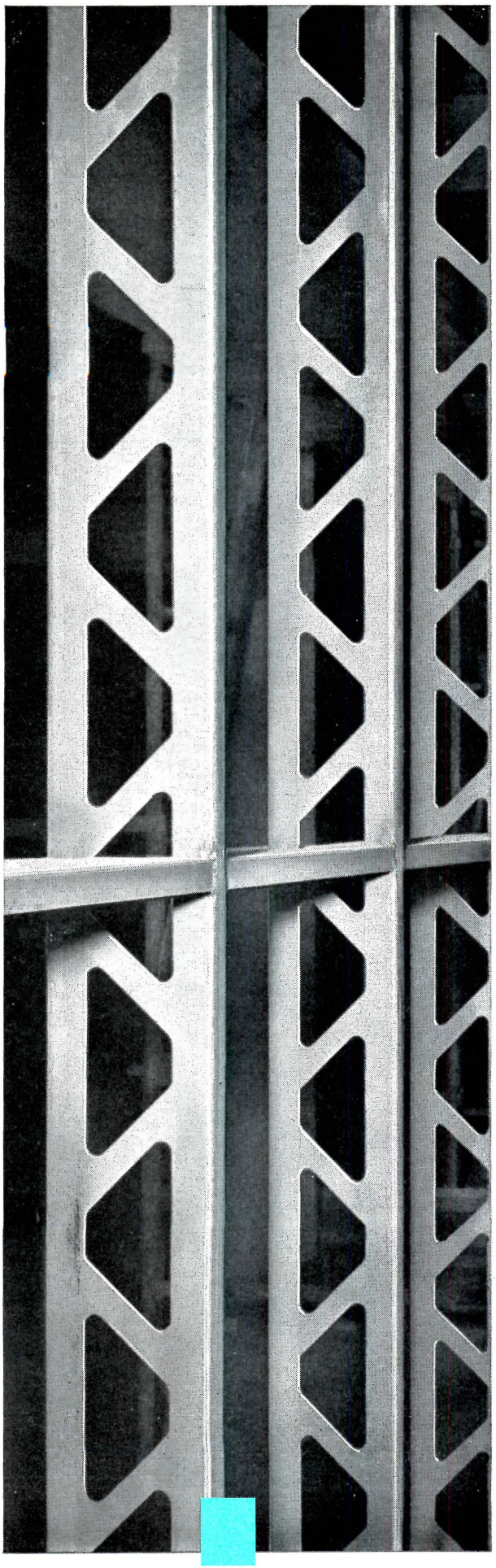

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Punched Channel Studs are the newest addition to the complete system of Stran-Steel structural components—lightweight steel for economical, space- and time-saving construction of commercial or industrial buildings, single or multi-floor. For specifications, mail the coupon now or contact your Stran-Steel Architectural Products dealer. He's listed in the Yellow Pages under *Steel*.

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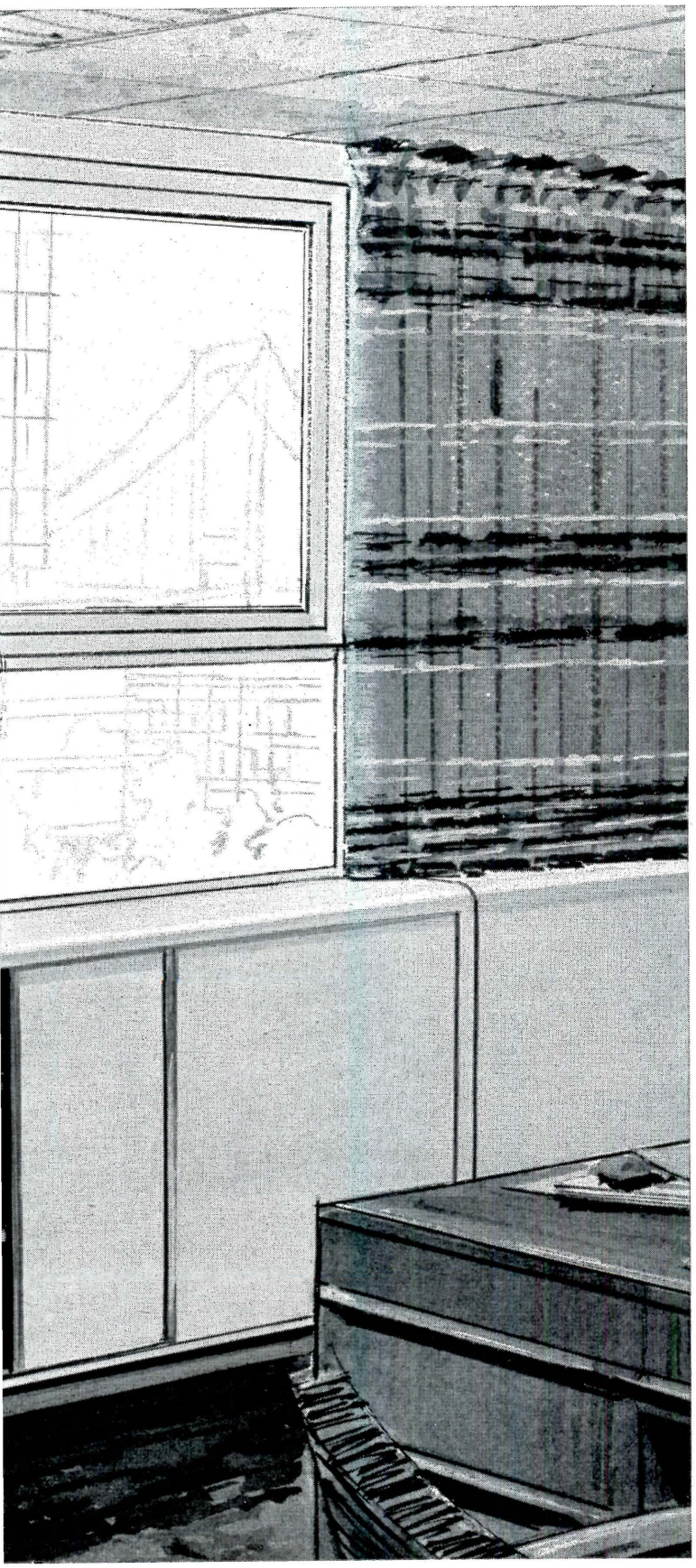

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New LUPTON Aluminum Curtain Wall adds cooling and dehumidifying . . . with individual regulation.

LUPTON's brand-new concept in curtain wall function will simplify your design problems . . . provide more income-producing space . . . for all true perimeter buildings.

It will reduce installation costs to 40-60% of those for a central system. You'll no longer need unsightly, expensive cooling towers or bulky, space-eating ductwork and plumbing connections . . . *only electrical connections.* Skilled LUPTON crews will assemble the units . . . giving you one-source responsibility.

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Air conditioning costs go down. LUPTON's personalized controls eliminate costly over-air-conditioning. Give each occupant the exact amount of comfort conditioning he desires. Allow complete variations from office to office.

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Write today for more information about this revolutionary new advance in aluminum curtain wall design and function.

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tional Construction Conference, co-sponsored by American Institute of Architects, American Society of Civil Engineers, Armour Research Foundation of Illinois Institute of Technology, Building Research Institute, Associated General Contractors of America—Hotel Sherman, Chicago

17ff "20th Century Design," first exhibition of entire Design Collection; through Feb. 23—Museum of Modern Art, New York

January

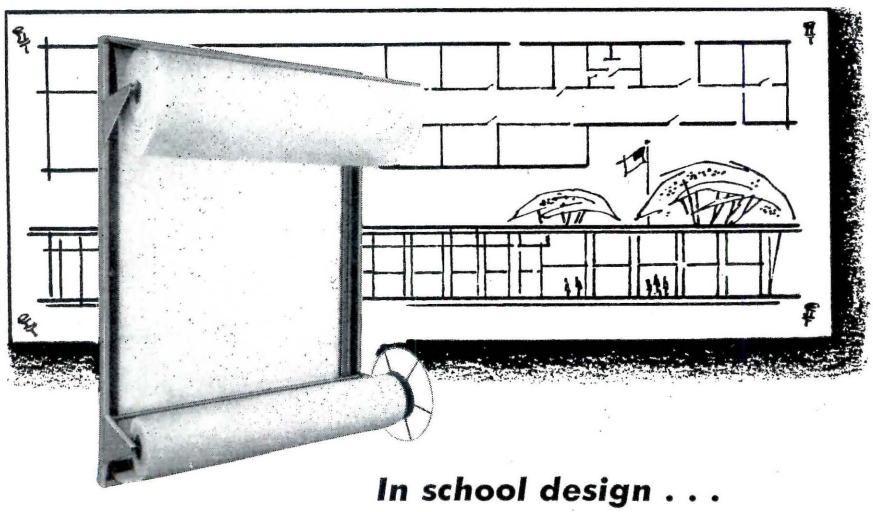
14-15 Building Research Institute Conference on Acoustical Design in Buildings—Hotel New Yorker, New York

18-22 15th Annual Convention and Exposition, National Association of Home Builders—Chicago

26-29 Plant Maintenance and Engineering Show—Public Auditorium, Cleveland

26-30 Annual Meeting and Exposition, American Society of Heating and Air Conditioning Engineers—Philadelphia

29-31 Annual Meeting, Society of Architectural Historians—Cleveland



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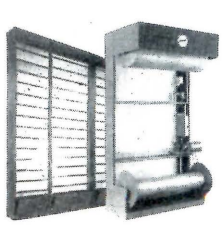
For complete details ask your local Continental Representative for Bulletin No. 850 . . . or write direct to:



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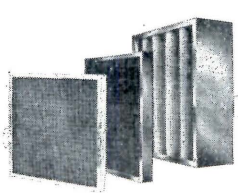

Office Notes

Offices Opened

William P. Greening, A.I.A., and Joel W. Sayers, Jr., A.I.A., announce the formation of a partnership, Greening & Sayers, Architects, at 200 Seabreeze Blvd., Daytona Beach, Fla.

Robert S. Loomis announces the formation of a partnership for the practice of professional engineering in structures and soils mechanics with Raymond H. Loomis under the name of Loomis and Loomis, Consulting Professional Engineers, 252 Broad St., Windsor, Conn.

Norbert L. Troller, A.I.A., has opened an office at 230 E. 73rd St., New York 21.

Lorand West, A.I.A., has opened an office at 7233 Beverly Blvd., Los Angeles 36.

Firm Changes

Curtis and Davis, architects and engineers of 2475 Canal St., New Orleans 19, announces the appointment of Kamlah L. Johnson, A.I.A., I. Mary Mykolyk, A.I.A., Aubrey G. Code, C.E., and William B. Settoon, C. E., as associates.

The firm of Wm. Henley Deitrick and Associates, Architects, of Raleigh, N. C., announces that it has opened a branch office at 206 Davis Bldg., Wilson, N. C., with Bosworth C. Beckwith in charge.

The partners of I. M. Pei & Associates, New York, announce that Araldo Cossutta, Leonard Jacobson, and Vincent de Pasciuto-Ponte have been appointed associates.

New Addresses

J. Lloyd Conrich, A.I.A., 45 Second St., San Francisco 5.

André Merle Associates, Consulting Engineers, 1500 Massachusetts Ave., N.W., Washington 5.

Wood & Sibbert, Consulting Engineers, Cat Rock Rd., Cos Cob, Conn.

Corrections

The RECORD deeply regrets an error on page 213 of the September issue. The credit for the Temple University Medical Center should have read: James A. Nolen, Jr., and Skidmore, Owings & Merrill, Architects. The RECORD also regrets an error in the name of the project manager for the Medical Center, which should have been given as Harold J. Olson.

"WE SECURED EVEN TEMPERATURES THROUGHOUT THIS 14-STORY BUILDING WITH SARCOTHERM HEATING SYSTEM CONTROLS,"

say Slingerland and Booss, architects and engineers

New York's "Avon House," completed in 1957, Architects and Engineers: Slingerland and Booss, 120 Greenwich Street, N. Y. C.

Mechanical Contractors: Fein-Schlosberg, Inc., 1770 Second Avenue, N. Y. C. Owner: The Ten Men Realty Co., Leon Finley, President, N. Y. C.

In the superbly appointed "Avon House" apartments at 340 East 74th Street, New York, the complete automatic heating control job is Sarcotherm. The architects and engineers, Slingerland and Booss, called on Sarco's experienced engineering department to work with them and the mechanical contractor in working out components—controls, vacuum pumps and steam specialties. Besides setting up undivided responsibility of one manufacturer, this policy assured a balanced system with no weak links.

Accurate orifice calculations by Sarcotherm insured proper distribution of subatmospheric steam in the system, even in mild weather. Each of the 2 zones of this building is controlled by a Sarcotherm Continuous Flow Modulating Steam Control Valve. These valves meter the steam to furnish proper heat at any given outside temperature. Control Valves are influenced by outside temperature, wind velocity, and solar radiation, plus differential steam pressure between supply and return mains. A Master Control Panel supplies complete programming operation with automatic control for day, night and morning pickup cycles.

There is ample testimony to the sound judgment of the architects in making this a complete Sarcotherm vacuum heating control system. Since its first day of operation the installation at the new Avon House has been 100% trouble-free.

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Arrangement of BILT-WELL Casements

a

BILT-WELL
CASEMENT WINDOWS

Arrangement of BILT-WELL Awning Windows

b

BILT-WELL
AWNING WINDOWS

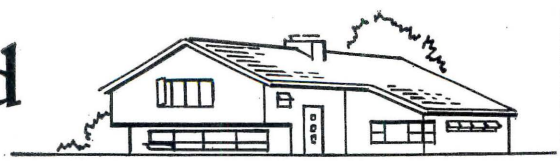
AWNING
HOPPER
FIXED
PICTURE

Arrangement of BILT-WELL Double-Hung Windows

c

Combination of BILT-WELL Windows

d



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DOUBLE-HUNG
Super 7
REMOVABLE WINDOWS

The Harmonious Arrangement of

BILT-WELL Engineered Wood Products

Adds to the Appearance and Efficiency of Every Home

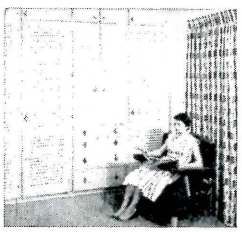
one basic house plan and.....

Design Flexibility

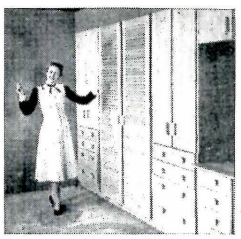
If you design houses for tract builders, you are probably well aware of the "look alike" problem. In attempting to solve this problem, how much consideration have you given to window arrangements?

Using the same basic floor plan, you can add a distinctive appearance to individual homes by taking advantage of the design flexibility offered by the BILT-WELL line of windows, doors and cabinets.

For Example: The sketches on the opposite page show the same basic house plan with four different window arrangements. The A version uses BILT-WELL Casement Windows, B is designed with BILT-WELL Awning Windows, C uses BILT-WELL Double-Hung Windows and D uses a combination of all three. Different designs of the popular New Orleans Front Door provide another variation in the exterior appearance of the homes.



Wherever storage areas are desired in the home.



Inside the house, standard BILT-WELL Cabinets are used to create two entirely different kitchens. And the same standard units are combined to supply solutions for a variety of storage problems throughout the home.

The DESIGN FLEXIBILITY inherent in the BILT-WELL line of wood windows, cabinets and doors is the result of a continuing program of product research and development, at BILT-WELL, geared to the advanced thinking of today's leading home designers and builders.

When you specify the complete line of BILT-WELL millwork you provide your homes with products that are unmatched in design, workmanship and operation. Products that have gained broad consumer acceptance through years of proven performance and regular national advertising.

All BILT-WELL Products are precision-machined from the finest woods, pre-fitted (where applicable) and delivered to the job site ready for easy, labor-saving installation.

Specify BILT WELL WOOD WORK REG. U.S. PAT. OFF.

THE BILT-WELL LINE: WINDOW UNITS, Double-Hung, Awning, Casement, Basement, Storm and Screen. CABINETS, Kitchen, Multiple-Use, Wardrobe, Storage, Vanity-Lavatory and Vinyl Counter-tops. DOORS, Exterior, Interior, Screen and Combination.

Ask your Building Supply Dealer about BILT-WELL *today, or write:*

CARR, ADAMS & COLLIER COMPANY

(SINCE 1866)

Dubuque, Iowa

For complete information on BILT-WELL Products see Sweet's Architectural 17c/Car and 24b/Car, or Sweet's Light Construction 5c/Car and 9a/Car.

continued from page 28

News From the Campus

STUDENT ANNUAL: The 1957-58 *Student Annual,* the second in the series edited by architectural students to show work in the American schools of architecture, has been published by the American Institute of Architects. It may be ordered from the A.I.A for $3 a copy ($2 for students and libraries).

FACULTY APPOINTMENTS: Clemson College—joining the School of Architecture (recently elevated from departmental status): Ewart Arthur Wetherill, assistant professor of architectural design; Elbridge S. Gordon, instructor in art; Kirk Robins Craig, part-time design critic. . . . Cornell University—College of Architecture, critics, 1958-59: George Nemeny, Serge Petroff, Hansen & Thuesen, John Simonds, Richard Aeck, Fred Langhorst, Lloyd Flood, Fred Emmons, William Caudill, Dan Kiley, Caleb Hornbostel, Buckminster Fuller. . . . Illinois Institute of Technology—Alva C. Todd, lecturer in electrical engineering; Paul A. Thomas III, instructor in architecture. . . . University of Michigan—Serenus Glen Paulsen, associate professor of architecture; Robert C. Metcalf, assistant professor of architecture; Harold J. Borkin and Arthur P. Opperman, instructors in architecture; William A. Werner, visiting lecturer in architecture; Walter L. Chambers, professor of landscape architecture and chairman of the department; William J. Johnson, associate professor of landscape architecture; Wells I. Bennett, professor emeritus of architecture and dean emeritus of the College of Architecture and Design. . . . Rensselaer Polytechnic Institute—Alcoa Foundation Series visiting lecturers, 1958-59: Josef Albers, Fred N. Severud, Carl Feiss, R. K. Thomas, William B. Tabler, Minoru Yamasaki. . . . Syracuse University—Rolf G. Strahle, assistant professor of architecture; George T. Rockrise, visiting critic.

AWARDS: Frank P. Brown Medal of The Franklin Institute to Charles M. Spofford, professor emeritus, Massachusetts Institute of Technology, for his engineering, esthetic, and educational accomplishments. . . . National Institute for Architectural Education: William Emerson Memorial Prize to Gerald C. Gugini, Princeton '57, for his design of an interfaith chapel; ARCHITECTURAL RECORD Prize to L. G. Hildinger, Oklahoma State University, for the design of a resort hotel; First Prize sponsored by Tile Council of America to L. W. Rylee, Georgia Institute of Technology, for an outpatient rehabilitation center; First Kenneth M. Murchison Prize to J. S. Daley, Oklahoma State University, for a small office building in a tropical climate; 1958 Thesis Award to David B. Falconer, Yale University, for a boat yard. . . . First place, "Solite Competition Award" contest, sponsored by the Southern Light-Weight Aggregate Corporation, to Sinclair S. Hui, Virginia Polytechnic Institute. . . . Yale University: Everett Victor Meeks Graduate Fellowship in Architecture to Robert G. Ernest; Charles O. Matchem Fellowship to Robert M. Swedroe; Annie G. K. Garland scholarship to Folke E. Nyberg; William Sutherland McCay Fellowship to Stanford O. Anderson and Melvin Charney; Franklin U. Gregory Memorial Fellowship to William Ming Sing Lee; James Raymond Goodrich Prizes to John E. DeCell III and Peter S. Hockaday; H. I. Feldman Prize to David P. Jeffrey; Alumni Fellowships to Thomas G. Green, David L. Niland, Thomas E. Woodward, department of architecture, Konrad Perlman, section of city planning.

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Stand-by, Primary, Portable

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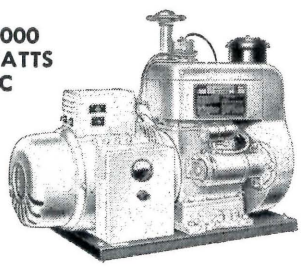

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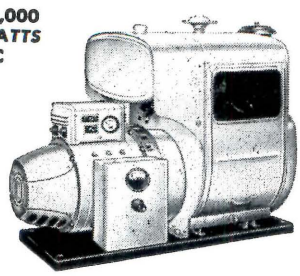

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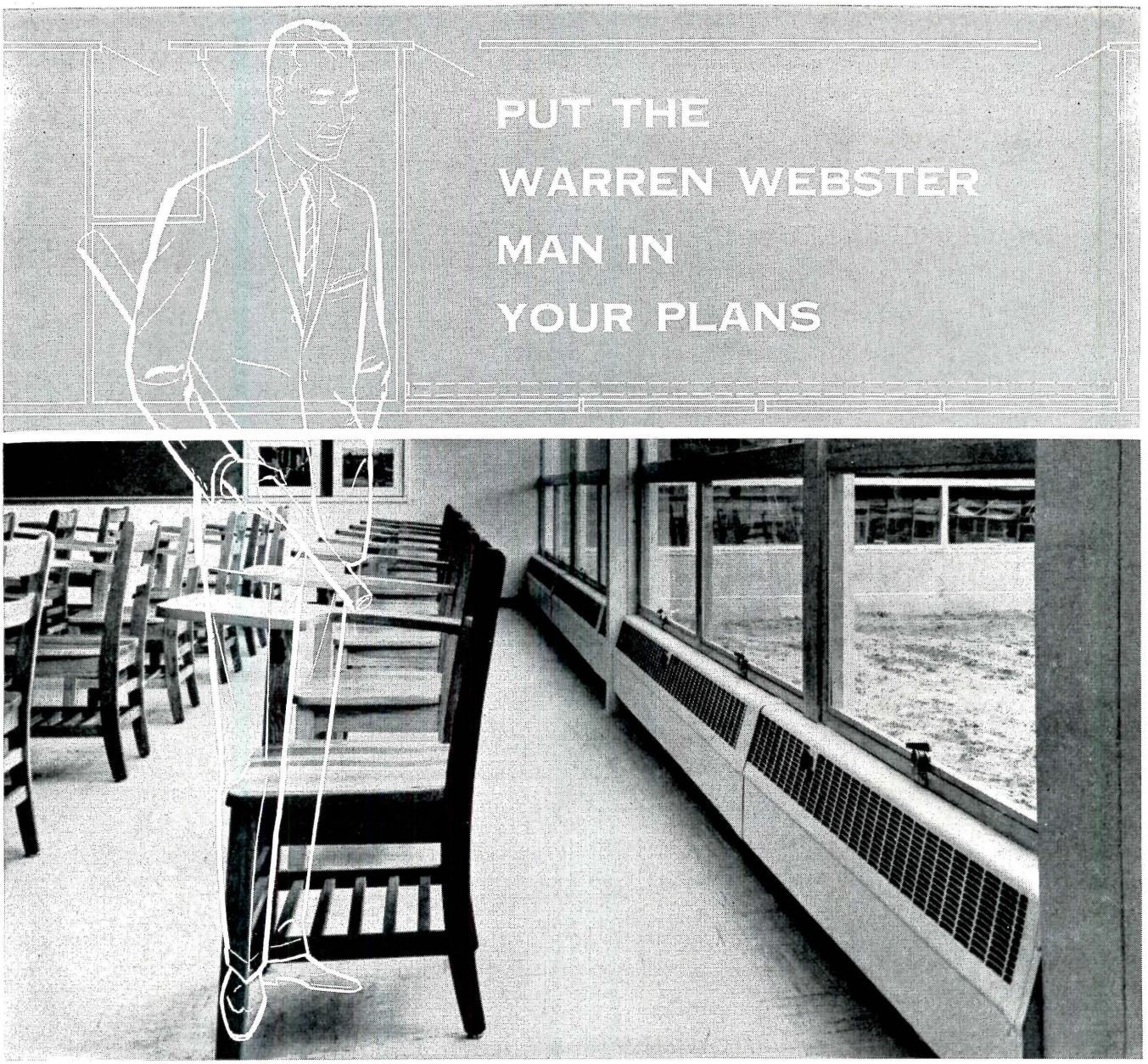

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Yes, your heating dollar goes farther, more comfortably, when your Warren Webster Man puts Webster Walvector in your plans. Ask him for the exciting details. Or write for Bulletin B-1551. Warren Webster & Company, Camden 5, New Jersey. Since 1888. Offices in principal U.S. cities and Canada.

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HEATING . . . COOLING

Prestige Photographers—No. 1 in a series, at the right, Dick Boyer, one of Chicago's top creative photographers, who holds the Chicago artists guild Gold Brush award for Artistic Achievement. A teak panel by Stem furnishes a background of elegance for this self-portrait.

PRESTIGE VENEER ...THE TRADITION OF TEAK

Capture Teak's royal elegance by specifying STEM veneer from actual samples

The tradition of Teak goes back thousands of years—the fury and glory of history, ages of romantic legends, beauty that has graced emperors' palaces—all are distilled in the Teak veneers manufactured by Stem. On any project requiring 1,000 square feet or more of fine wood wall paneling Stem affords the important and additional means of capturing fully this royal tradition of elegance by specifying from actual log samples the veneer of your choice. You can be sure of just the right color gradation—just the right configuration of grain—the perfect background. Stem offers the *world's largest collection* of architectural flitches (a log or part of a log cut into veneers) from which you can choose Teak and many other fine, rare architectural veneers. If you identify in your original specifications the selected flitches by wood specie and flitch number, only then can you be comfortable in your confidence that the finished installation will achieve the full elegance and nobility to which you are entitled when you select a decorative background with royal tradition. Don't compromise for less. CHESTER B. STEM, INC., NEW ALBANY, INDIANA.

RARE WOODS FROM STEM

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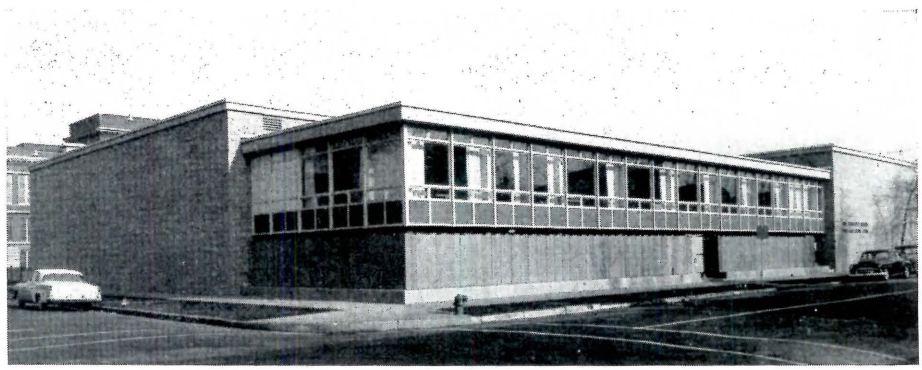
CHICAGO

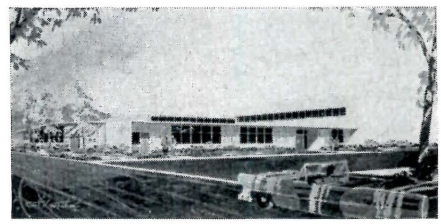
New Boys' Clubs Cover Country In $10.3 Million Program

The Boys' Clubs of America are currently engaged in the largest building program in the history of the organization (it was founded in 1906). About $10.3 million had been spent by August 31 of this year on 10 new buildings ($2.9 million), five additions, and six camp projects completed, plus 26 new buildings ($6 million), 16 additions, and four camps under construction. Similar expenditures during 1957 totaled $8.3 million. Facilities in nearly 40 cities throughout the country are involved in the program. There are now more than 500 boys' clubs with a membership of about 600,000.



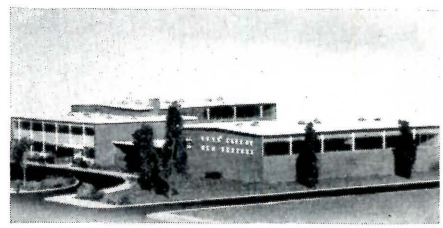
The Robert E. Wood Chicago Boys' Club. Perkins & Will, architects; B & W Construction Company, Chicago, general contractor. Cost: $978,000

Each club selects its own architect because building funds are raised locally. The central office in New York, however, maintains a Building Service Department which acts in an advisory capacity to all clubs. Typical plans for clubs of all sizes and a volume of standard details are made available. Preliminary drawings are then submitted to the organization's Building Consultation Service for review, as are working drawing specifications.



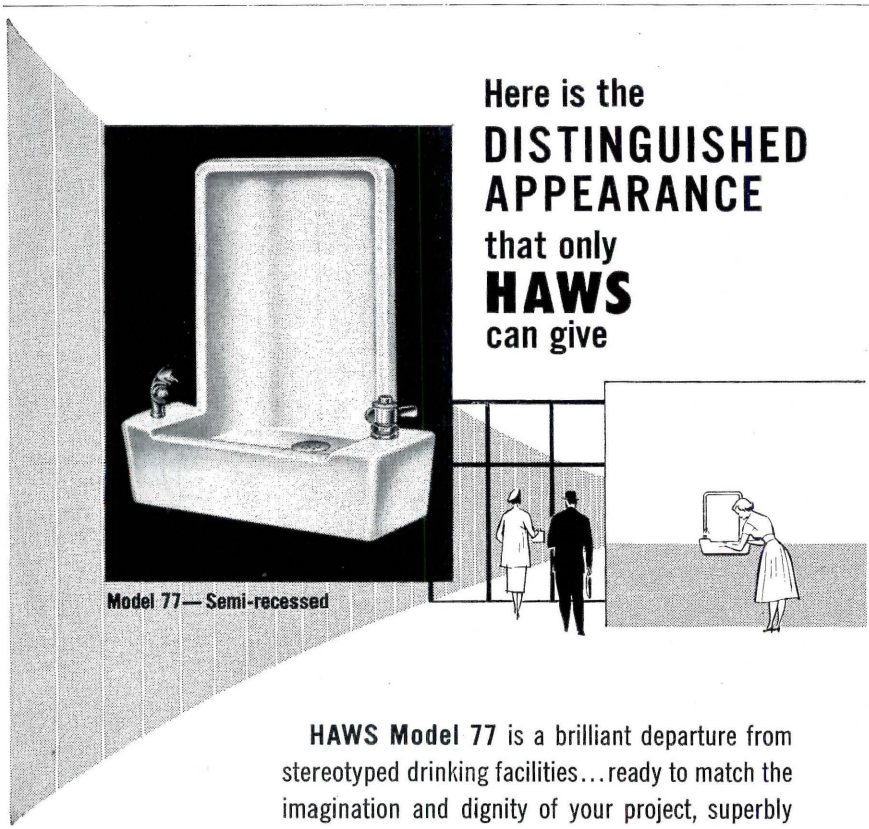
The Southern Area Boys' Club, Los Angeles. Kistner, Wright & Wright, architects; Myers Bros., Los Angeles, general contractor. Cost: $196,000 (excl. equipment)

The Building Service Department



The Boys' Club of New Bedford, Mass. Bishop & Hackett, archs. Est. cost: $700,000

also has put together a 34-page manual "establishing principles for guidance of Boys' Clubs, their architects, engineers, and builders contemplating new building projects." The various types of areas in a club and their requirements are described; included is a table of finishing materials showing "desirable" and "satisfactory" materials for floors, wainscots, walls, and ceilings, by room types.



HAWS Model 77 is a brilliant departure from stereotyped drinking facilities... ready to match the imagination and dignity of your project, superbly styled, precision-engineered. Model 77 is a semi-recessed wall fountain—in durable vitreous china, available in striking colors, with automatic volume and pressure controls. And the same design is available in stainless steel (Model 73); or in remarkably tough, lightweight fiberglass (Model 69, in choice of colors at no extra cost).

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Ask for HAWS complete new catalog, too!

For nearly 50 years, HAWS has provided finer drinking facilities to match forward-looking architectural design. Here's a design in vitreous china, stainless steel and fiberglass worthy of your attention.

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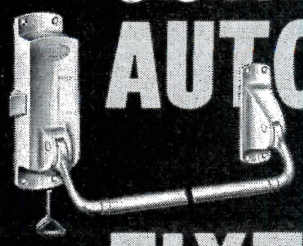
WHERE SO MUCH IS AT STAKE . . .



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CORBIN

Another "first" from Roddis

NOW...a flush veneered C-LABEL fire door!

Now architects can get all the beauty of a flush veneered wood door . . . ¾ hour Underwriters approved . . . with Light Openings as large as 30″x40″. Every door guaranteed for the life of the installation.

From the advanced door research program of Roddis comes another development of importance to America's architects—

Roddis now makes available, for the first time in the industry, an all-wood, flush veneered, ¾ hour fire door. It's the new Golden Dowel C-label Fire Door!

For use in interior walls of corridors, or for room partitions, this C-label door gives you all the richness and beauty of a wood veneered door . . . plus excellent fire protection . . . at a considerable savings over the more costly B-label door.

The core of this amazing new door is made by a *patented* Roddis process. Special, fire-proofed wood particles are bonded with a waterproof, thermo-setting resin under heat and pressure. Then each side is faced with two-ply veneer panels. This exclusive construction has earned the C-label classification from the Underwriters' Laboratories.

What's more, you can have larger light openings with the Golden Dowel C-label door than are possible with a B-label door. Vision openings up to 1,200 square inches have been approved by Underwriters for this new door. And Roddis will cut them and supply the complete panel assembly for you. (Standard sizes, 30″x40″, 30″x36″, 24″x36″, 18″x30″, 8″x12″, 10″x10″.)

You enhance your designs, assure protection and lower costs for your clients when you specify the new Roddis flush veneered, C-label Fire Door. And remember . . . the GOLDEN DOWEL means "guaranteed for the life of the installation".

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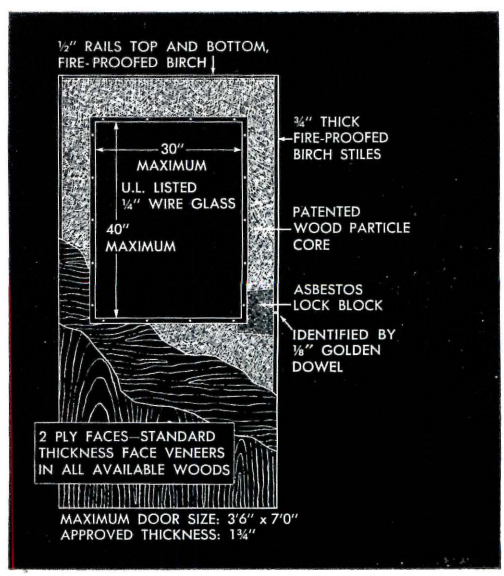
from the prime-and-seal coat to the final finish coat

For maximum factory-to-installation protection, finer end results, you can specify your Roddis Doors *primed and sealed* at our factory before shipment. Roddis' new, automated production line applies a special synthetic resin sealer to the double-sanded, dust-free doors. After drying, the doors are sanded again to emerge with a tough, smooth undercoat that assures a perfect on-the-job finish application.

Completely pre-finished doors are also available. You can specify doors finished in color tones to match any of the 9 woods in the Roddis Craftwall paneling line . . . or to match your own color sample.



ONE SOURCE FOR ALL YOUR WOOD DOOR NEEDS

High standards of workmanship and beauty over the years have established famous Roddis Doors as first choice among architects and builders. Choose from the most complete line of wood doors in the field . . .

HOLLOW CORE **B and C-LABEL FIRE DOORS** **INSTITUTIONAL**
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BEAUTY...STRENGTH...PROTECTION

Construction of new Golden Dowel C-label Fire Door includes patented, fire-proofed wood particle core of exceptional strength and stability. Asbestos lock block marked with Golden Dowel. 2-ply faces in standard thickness face veneers. Wide choice of first grade woods. Light openings up to 30″x40″. ¾ -hour protection approved by Underwriters' Laboratories.

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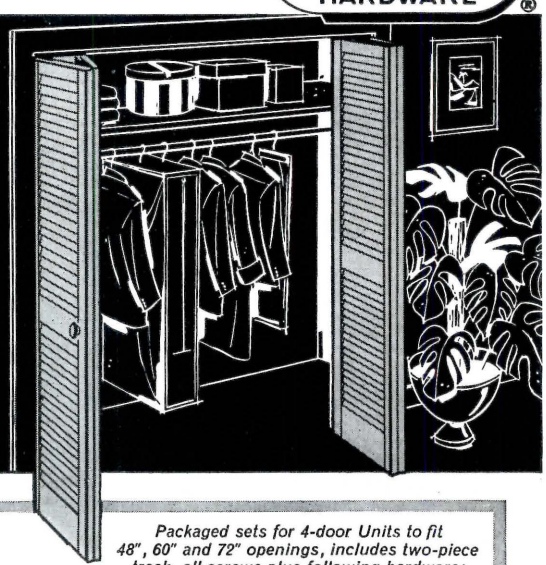
Changing the Older Order

For several weeks this summer alert New York pedestrians passing the corner of Fifth Avenue and Forty-Fourth Street were treated to the spectacle of two enormous doric columns standing in lonely splendor, seemingly the last guardians of a vanishing tradition, within the steel skeleton of a building that had been stripped of all other masonry. The steel skeleton was to be utilized in the construction of the new Bankers Trust Co. building, but the columns, prominent features of the older building designed by Henry Ives Cobb in 1906, had proved to be functional as well as decorative. It was not possible to remove them until the steelwork they were supporting had been placed on jacks and raised one inch. Once the building had been lifted, the jacks locked, the columns were laboriously chipped away and construction proceeded; but one could not help feeling that, somehow, tradition had had the last laugh.

QUALITY

that is typically Sterling HARDWARE®

...now in new FOLDING DOOR HARDWARE



FASCIA TRACK
Satin aluminum or Satin brass finish

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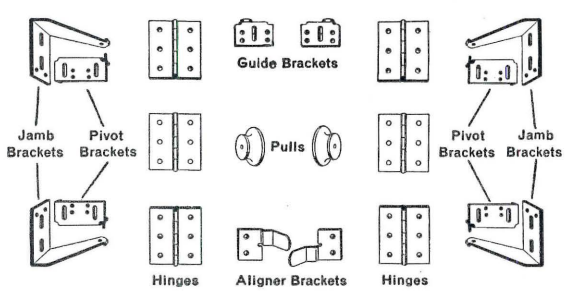
Packaged sets for 4-door Units to fit 48", 60" and 72" openings, includes two-piece track, all screws plus following hardware:



NOTHING ON THE FLOOR!
Jamb brackets eliminate track and pivot plates on floor. Aligner brackets mount on doors.

NO HOLES TO RE-DRILL!
Door pivots are mounted on jambs—track can be cut to fit opening without interfering with door pivots.

EASIEST INSTALLATION!
Pivot brackets fit corners of doors. No templates necessary.

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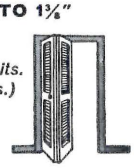
Doors fold back at a finger-touch. Nylon guide brackets provide smoothest, quietest operation. Aligner brackets keep doors flush.

FOR ALL WOOD FOLDING CLOSET DOORS ¼" TO 1¾"

Also packaged sets for 2-door units. (To fit 24", 30" and 36" openings.)



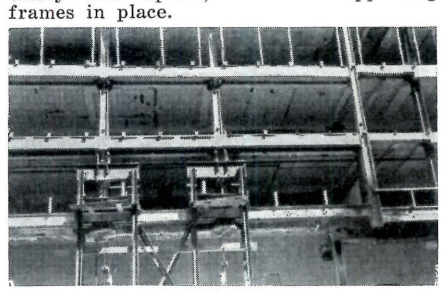
WRITE TODAY FOR LITERATURE

John Sterling Corporation

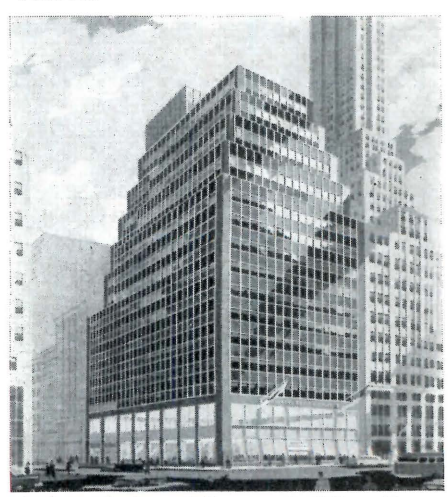
RICHMOND, ILLINOIS

1. The original building as it appeared in the Record in 1907

2. The columns, which weighed an estimated thirty tons apiece, with the supporting frames in place.



3. The steelwork jacked up and the columns removed



4. A rendering of the new building. Emory Roth and Sons are the architects

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Now you can use FOAMGLAS® on roofs requiring less than 2″ of insulation. This unique, multi-benefit insulation is available in a thickness of 1¾″. And this new thickness makes possible a new 25% lower price.

With the new 1¾″ FOAMGLAS, you enjoy the same insulating efficiency at the same cost per square foot installed as with any other insulation board, including wood fiber. One reason is the low cost of the new thickness. Another is that FOAMGLAS does not require the vapor barrier recommended with other insulating boards. The closed cells of FOAMGLAS form a natural vapor barrier which maintains original thermal efficiency.

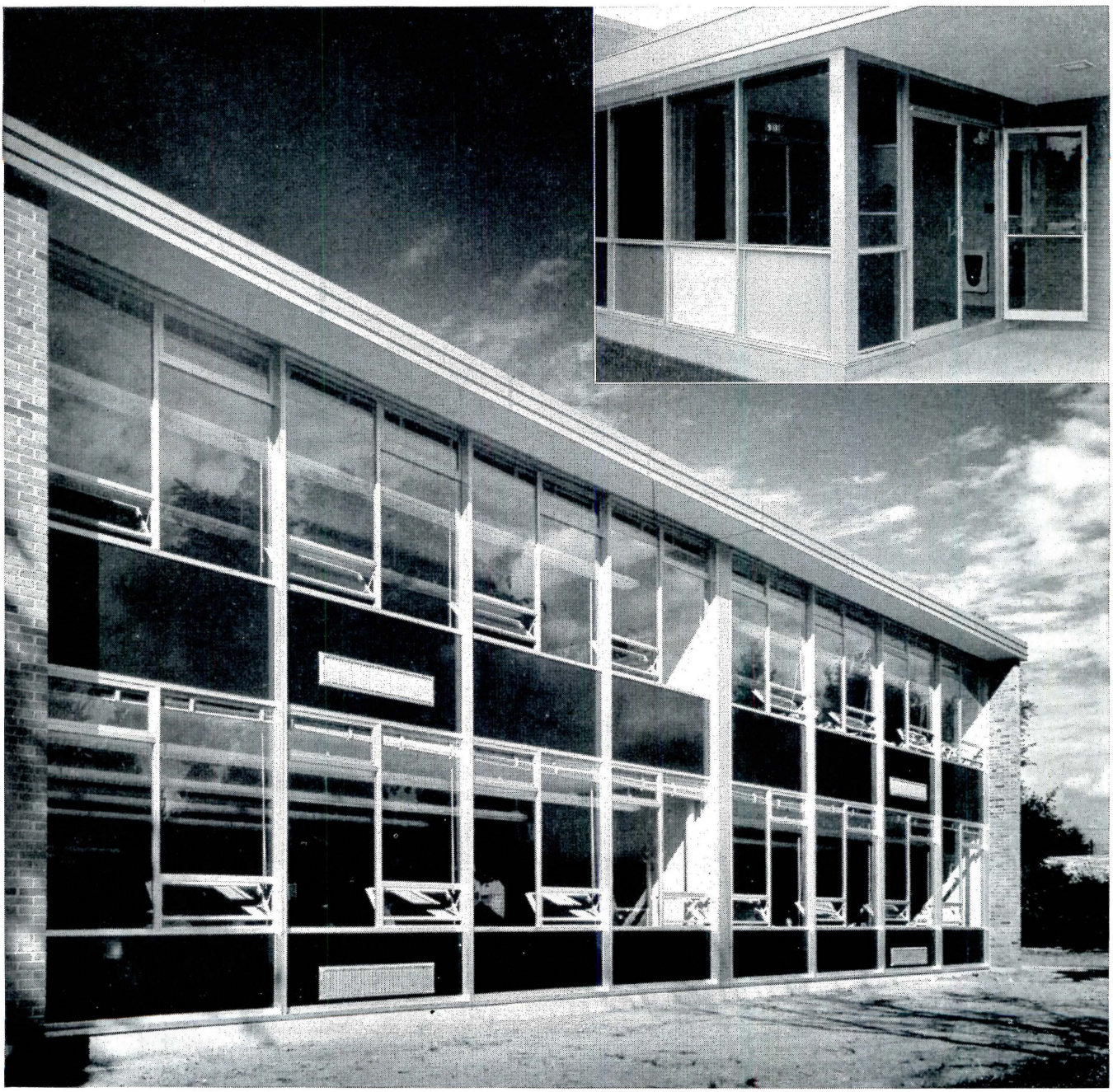
And, the new 1¾″ thickness retains all of the many extra benefits of FOAMGLAS roof insulation. It is strong enough to take all roof and traffic loads during and after installation, but it is lightweight for easier handling. It can't burn. It is easy to cut and fit . . . and a new quick opening carton eliminates bothersome paper separators.

Write today for complete information on this new roof insulation development by Pittsburgh Corning Corporation, Dept. B-118, One Gateway Center, Pittsburgh 22, Pennsylvania.

PC Glass Blocks are another outstanding building product of Pittsburgh Corning Corporation.

PITTSBURGH PC CORNING

you can't look at, in, a school without



East Side School, Niles, Mich. Edward R. Duffield, A. I. A., Niles, Mich.

A CHOICE OF WALL SYSTEMS TO SUIT YOUR BUILDING AND YOUR BUDGET

Shown is a Kawneer Unit Wall, the pre-engineered, pre-fabricated wall system. It is only one of many Kawneer wall systems designed for schools. They range from the simple systems that are cut and fabricated for the job to precision-engineered, custom pre-fabricated systems. If insulated or facing panels are required, Kawneer can supply a wide range of colors. Each has its own particular advantages for certain types of buildings. That includes the price.

through or out of seeing applications for KAWNEER products!

the quality is artistocratic, and prices are now plebeian!

Look at the entrances . . . Here are doors that can withstand those repeated school's-out explosions longer than any other. It's either the Kawneer Wide Stile School Door—a rugged door with a clean, attractive design—or the durable Narrow Stile that's serving in many schools. Either can be equipped with a Kawneer Panic device. Kawneer has available the widest range of doors in the industry including type and color. Of course, frames are built of trim Kawneer Narrow Line members, whose lines harmonize with either door.

Look at the color trim . . . It may be Kawneer Zourite, a ribbed wall facing material that comes in a wide range of standard colors. Or it may be Kawneer Colorwall—panels faced with porcelainized steel or aluminum.

Look at the inner doors . . . The double doors inside the entrances and the office doors may be Kawneer Narrow Stile Doors. They combine sleek, slim lines with great strength. Spots of color may be added with Kawneer Color Glass Stops, with matching or contrasting Colorware Door Hardware. Kawneer Triple-Strength Flush Doors—plain or with single or multiple lights and louvers are available, too.

Look outdoors . . . Weather protection can be supplied by Kawneer Walk Covers. The sun control devices protecting the windows are Kawneer K-Louver sun shades.

Look in the laboratories, lavatories and shower rooms . . . There's Kawneer Colorwall again, doing the job that tile used to do, and at much less cost! Its myriad colors make the rooms bright and attractive, and it wipes clean with the whisk of a damp cloth.

Look down the halls . . . Where glazed areas separate rooms from the halls, Kawneer Division Bars or Narrow Line glazing members hold the lights of glass. Kawneer furnishes a complete line of doors, trophy and poster cases.

Everywhere in schools, there's a place for products with the "Kawneer Touch."

FREE! TEMPLATE TO REDUCE DRAFTING TIME
plus complete information on Kawneer School Products

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☐ Kawneer Trophy Case Doors for Schools

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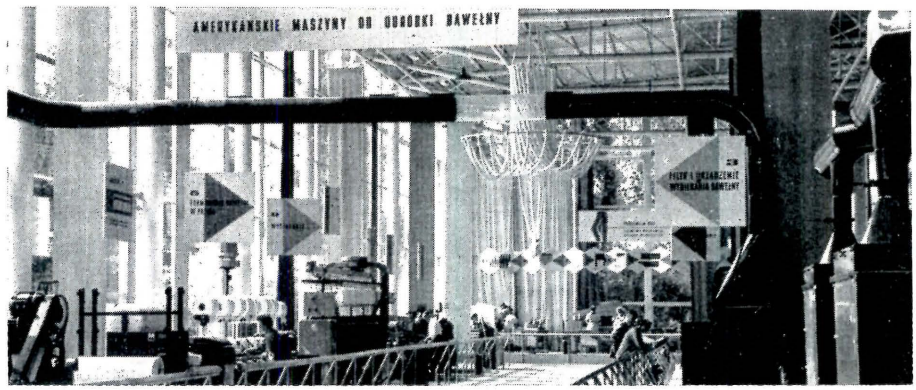
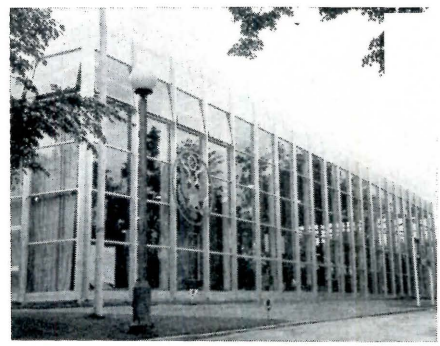
*Firm Name*_____
*Address*_____
*City*_____ *State*_____

Trade Fair Building in Poland Is Permanent U.S. Exhibit

The large U. S. pavilion shown here and a smaller one next to it are permanent structures in Poland for American exhibits and offices. They were part of the recent American-sponsored International Trade Fair in Poznan for which all buildings and exhibits were designed by Reino Aarnio, A.I.A., New York architect and industrial designer. Severud, Elstad & Kruger were structural engineers; Fred S. Dubin Associates were mechanical engineers.

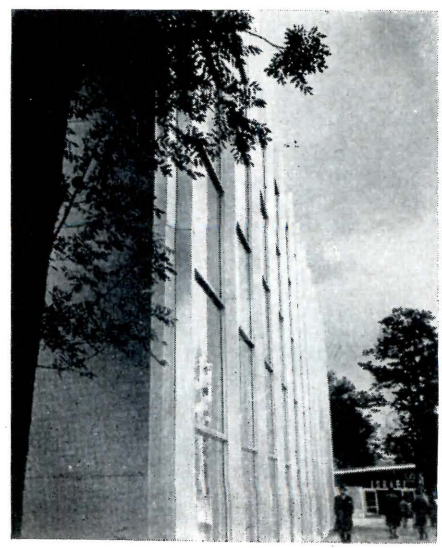




Fabricated in Italy, the large building is steel with three walls of glass supported by vertical aluminum frame members; the other wall is of asbestos paneling. Unobstructed exhibit space is achieved by means of welded tubular steel trusses fastened to round steel columns on the perimeter. The concrete floor slab is laid over electrical ducts. The building is 170 ft long, 95 ft wide, and 32 ft high.

Exhibits included cotton spinning and weaving (shown in top picture), millworking, a library, and television.

The fair gave American business an opportunity to exhibit products and processes behind the "iron curtain." "Technology in the Service of Mankind" was the theme.



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Van equipped food service of modern Michigan high school

★ Built to serve a fast-growing suburb of Detroit, this huge school plant, which now has facilities for 1200 students and provides for expansion up to 1800, has been featured by the magazine PROGRESSIVE ARCHITECTURE as an excellent example of an ultra-modern high school.

★ The cafeteria illustrated above . . . entirely of shining stainless metal . . . is located on the ground floor adjacent to the kitchen . . . both of which were equipped by Van. This is another shining example of an outstanding food service operation where you expect to find the Van name plate.

★ When you have food service equipment needs . . . be sure to make use of Van's *century of experience*. Call Van in early.

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One of 4 schools in the Ontario School District, Cal. for which Rilco supplied laminated pitched and tapered beams. Architect: Jay Dewey Harnish; Contractor: Hoefer Construction Company.

Schools with RILCO are Beautiful Fire Safe Economical

One of the schools shown here was built for $7.75 per sq. ft., one cost $10.24, another $7.30, that's economy. The beauty of Rilco laminated wood members is a plus — a beauty only wood can offer. There is no institutional chill — warmth of wood that mellows with age makes youngsters feel at home.

Rilco arches, beams and trusses help reduce erection time and costs — delivered carefully wrapped for protection—drilled for furnished hardware, they go up *fast* with regular job-site labor. Maintenance free — laminated wood is not subject to chemical change, rust, corrosion, splitting or warping.

Fire resistant Rilco laminated wood, arches, beams and Rilco Deck are slow to burn, won't collapse under high temperatures — allow time to save structure and contents.

Rilco laminated wood members bring all three *Beauty*, *Fire Safety*, *Economy* to any school. For more information on building *bigger* and *better* for *less* contact your closest Rilco office.

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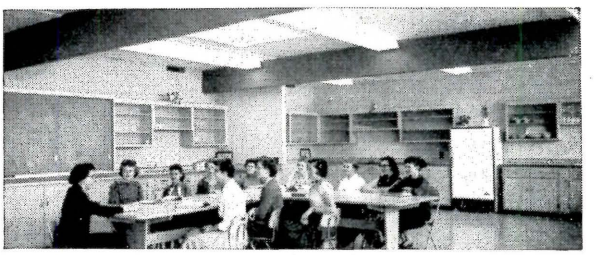
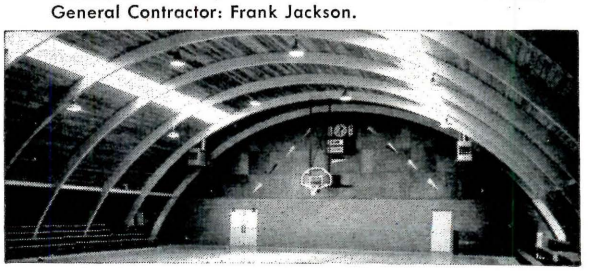


Banner County High School, Harrisburg, Nebraska was built for $10.24 sq. ft. including all fixed equipment. Architect: Robert Ditzen; Contractor: Fullen Construction Co.

Total cost was $7.75 sq. ft. to construct St. Joseph's School, McPherson, Kansas. Architect: Robert E. Marr; General Contractor: Frank Jackson.



Gymnasium of Kiowa Elementary School, Kiowa, Colorado. School was built at a cost of $7.30 sq. ft. Architect: Robert W. Ditzen; Contractor: Broadway Construction Co.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT AND CIRCULATION OF

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General Manager.

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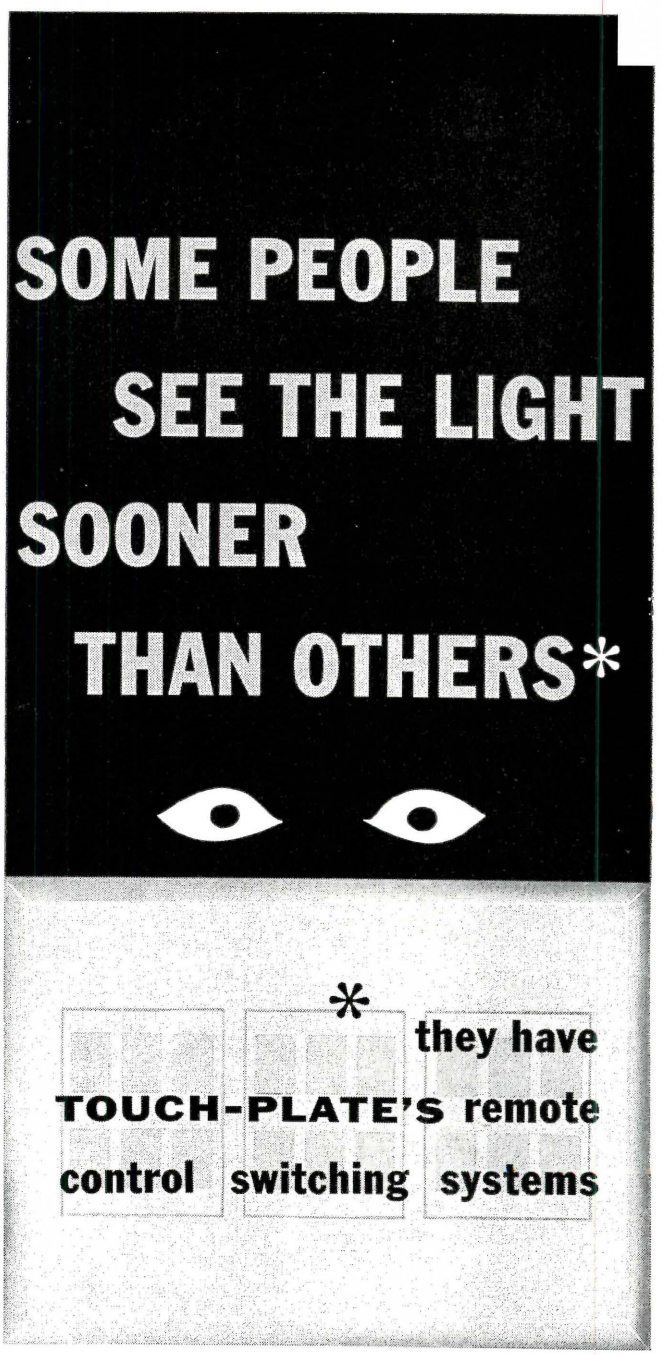

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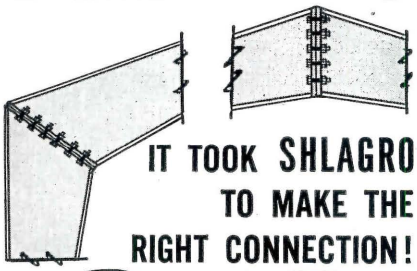

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Washington Topics

Lumber Industry Campaigns for Greater Use of Wood

The lumber industry prepared to throw new weapons into its fight to hold its traditional markets against the inroads of newer competitive materials.

The opening guns in this intensified struggle sound this fall with the launching of a $1-million program by the lumber manufacturers through their National Lumber Manufacturers Association.

As N. Floyd McGowin, N.L.M.A. president, puts it, the industry is faced with a challenge it no longer can ignore. This comes, he says, from the makers of competitive materials —steel, brick, plastics, aluminum "and other products that have toppled lumber from its once-dominant position in the market place."

The challenge will be met with a positive, coordinated plan of action, the lumber manufacturers have decided. All segments of the lumber industry have been invited to join the campaign.

The job, according to Mr. McGowin, will be the all-embracing one of preselling the customer on wood as opposed to competitive materials "so that our regional associations and individual companies can move in and promote their particular brands and species."

Another phase of the campaign involves the expansion of N.L.M.A.'s work in the field of building codes and fire insurance rates. This looks toward the elimination of so-called "discrimination" against wood and wood products.

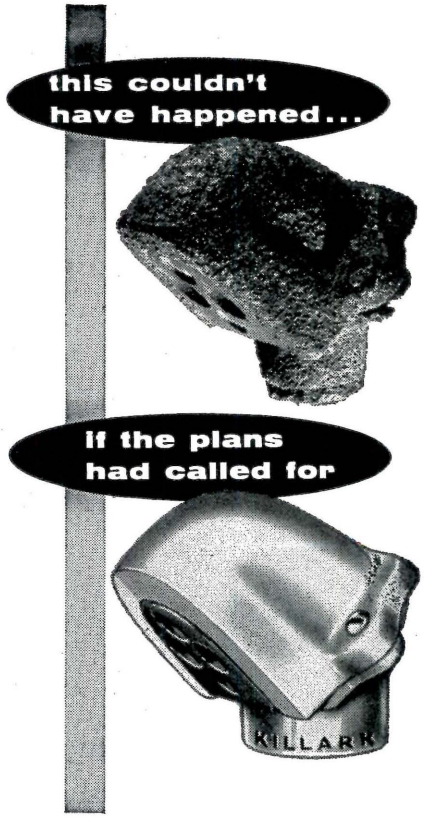
A technical promotion field staff is working with architects, engineers, contractors, school officials and others who influence the use of wood.

Mechanization Called Spur to Work for Building Trades

Lathers and plasterers have been told by a prominent government spokesman that mechanization in their trade has actually increased the volume of work. The official was W. F. Patterson, special assistant to the Secretary of Labor.

Acoustical application techniques have increased considerably the demand for lathers, he said. And the stapling machine he described as an example of a new tool resulting in the improvement of the quality and quantity of service provided consumers.

"Every innovation or change means an impelling requirement for



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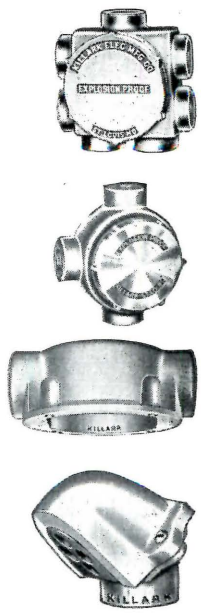
- Explosion-proof fittings and fixtures
- Dust-tight fittings and fixtures
- Explosion-proof plugs and receptacles
- Outdoor lighting fixtures



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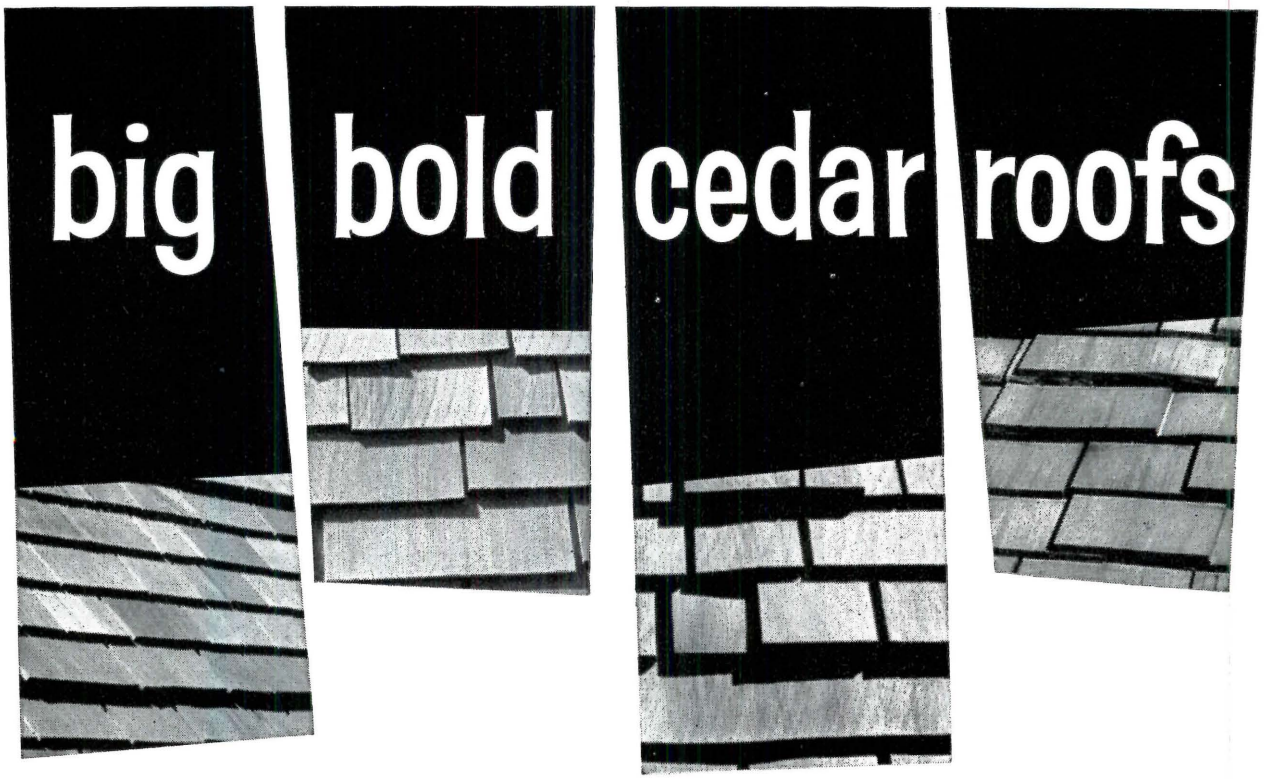

The qualities of cedar shingle roofing transcend passing fancy. Custom home designs—*of any period*—are characterized by expansive roof areas, distinctive roof textures, important roof pitches. The versatility and integrity of natural materials—notably cedar shingles for exteriors—afford the designer limitless scope, infinite expression.

Shingles of Western Red Cedar have that vital *third dimension* . . . the thick butt-lines that catch the sun and create shadow accents of dramatic depth. Only cedar shingles offer the natural graining and rich texture of the genuine. Because only cedar *is* the genuine.

When you think of roof design . . . think *big* . . . think *bold* . . . *and you will think of cedar!*

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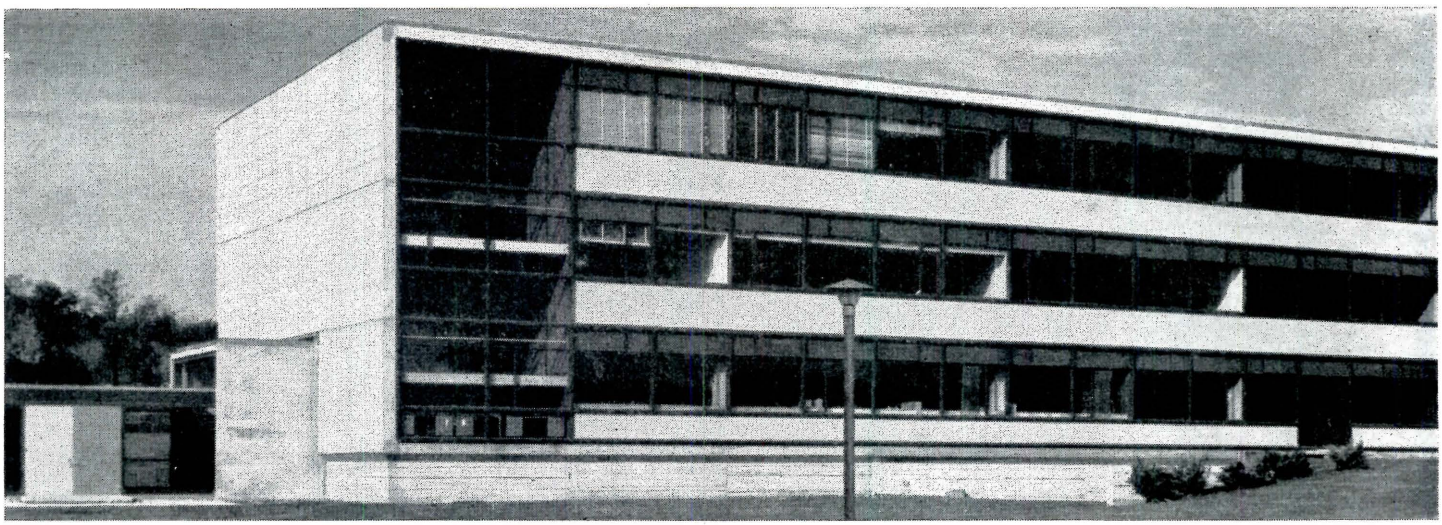

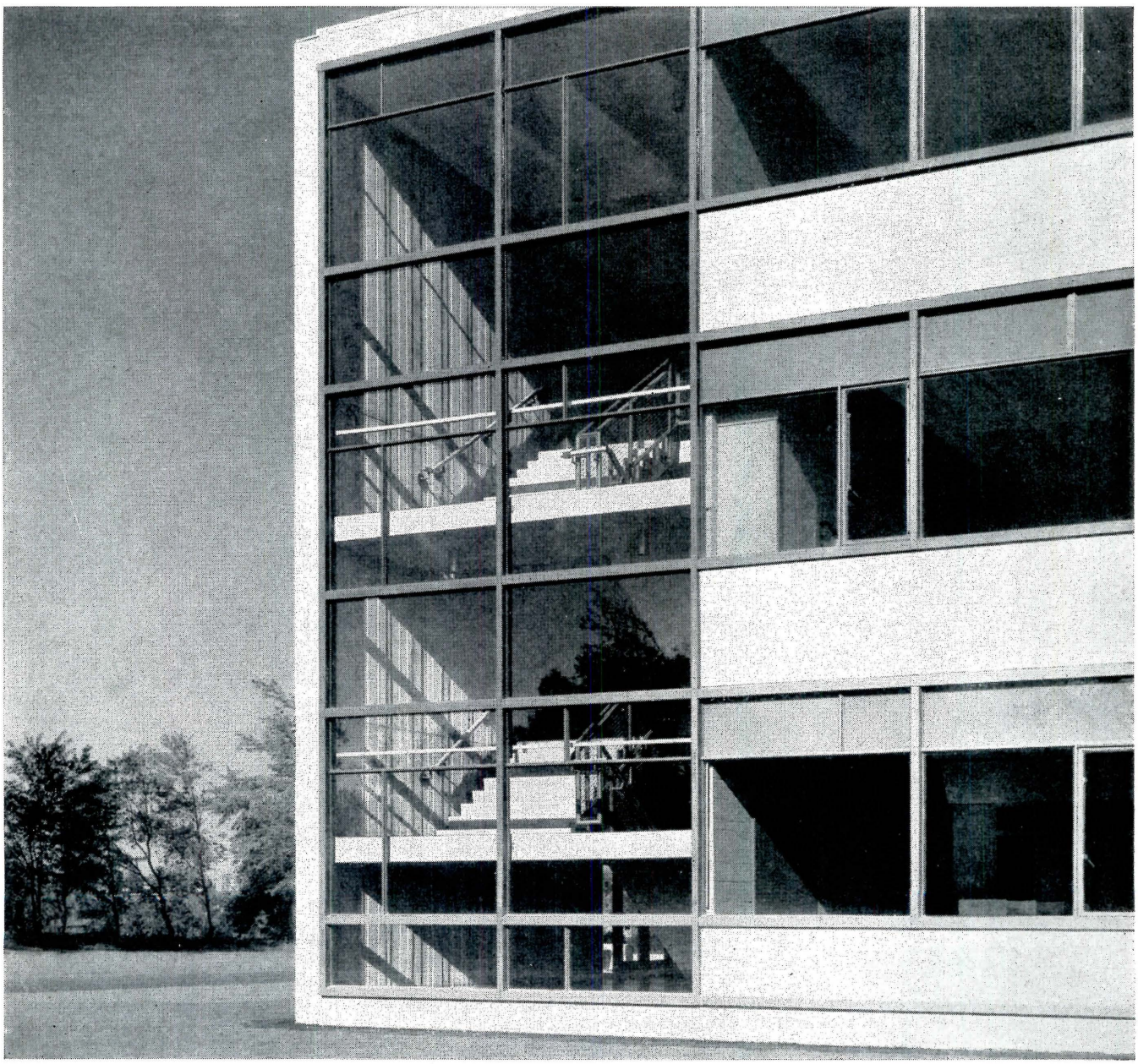

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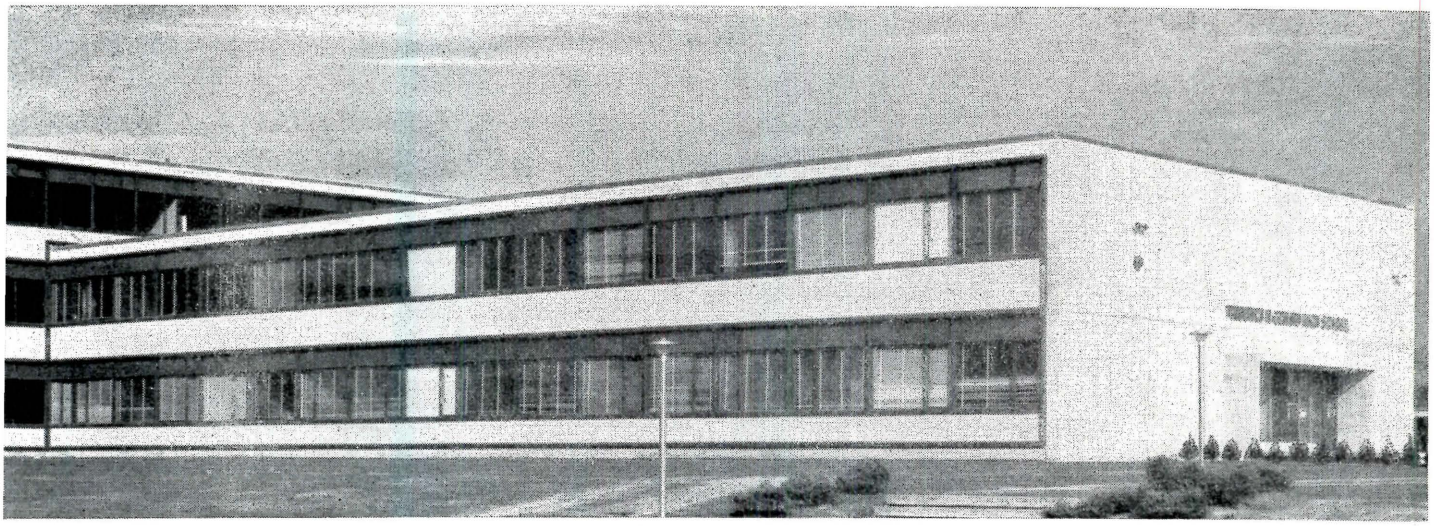

35,000 square feet of functional glass

Here's a real attention-getter—the new Frederick U. Conard High School in West Hartford, Connecticut. 25,000 square feet of PENNVERNON Sheet Glass and 10,000 square feet of colorful SPANDRELITE Glass form the handsome window walls . . . beautifully simple in design *and completely functional.*

Conard High School is rich with natural daylight that streams through the large PENNVERNON Windowpanes. Students and teachers benefit from the extra light and unrestricted vision made possible by PENNVERNON's clear transparency.

Visitors at the school are impressed by the bright SPANDRELITE panels that complete the window wall. This beautiful, non-fading glass will resist weather and corrosion for the life of the building. There are no maintenance problems with SPANDRELITE.

Every new school can reap these handsome benefits of Pittsburgh Glass—beauty of design, improved lighting, and a pleasing indoor-outdoor atmosphere.

Architect: Nichols & Butterfield, West Hartford, Connecticut

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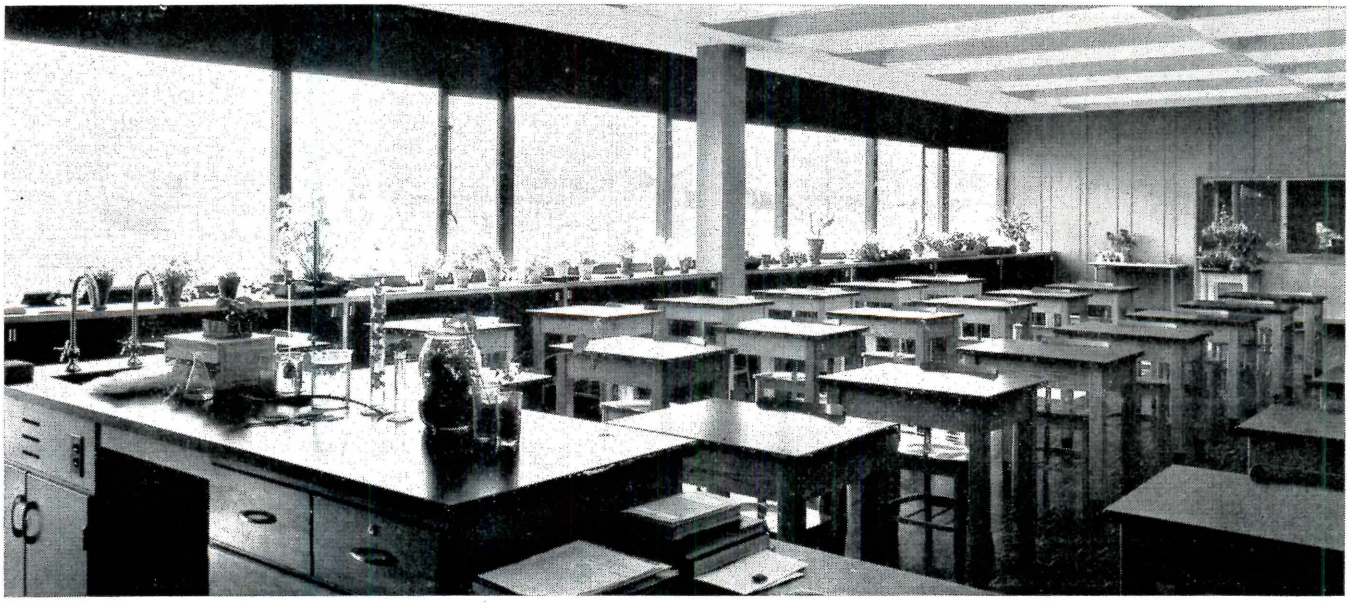

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Washington Topics

training designed to equip workers to meet new skill needs," Mr. Patterson commented. Of training in general, he said that every conceivable public relations medium should be used to convince architects and prospective home buyers that the industry training program can furnish the manpower necessary for the application of lath and plaster.

Mr. Patterson warned that the pace of the apprentice recruitment program must be stepped up by the lathing and plastering industry or it will face a serious shortage of workers in future years. His remarks were given before a recent Long Beach, Cal., convention of the Wood, Wire and Metal Lathers International Union.

Increase in Speculative Housing Shown in New BLS Survey

The Bureau of Labor Statistics ran a survey on housing in the calendar years 1955 and 1956 and found that approximately two thirds of all privately owned single-family houses started in nonfarm areas were constructed by speculative builders. The builder group included large tract operators and small-scale speculative builders as well, defined by BLS as contractors who plan and execute construction of houses or apartments on their own land to their own specifications for sale or rent.

As for the remaining one third of new houses started in those two years, the agency found that responsibility for acquiring a building site and arranging for construction was assumed by a person who intended the house for his own use. Construction of such houses was divided about equally between builders operating as general contractors and owner builders who executed construction plans without the services of a general contractor by employing subcontractors directly.

BLS found that when the general contractor and speculative or operative builder were combined, they accounted for around four fifths of all new nonfarm housing started in the two-year period.

Placed with earlier figures of the same type, these results showed that since 1950 "the initiative in determining the amount and kind of housing to be built and its location shifted increasingly from the user to the producer." Operative builders accounted for 70 per cent of all new single-family nonfarm homes started in the first quarter of 1955 compared with less than half of the 1949 total.

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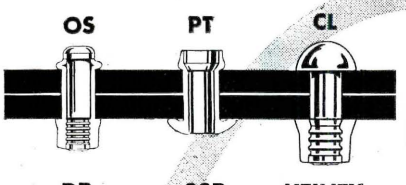

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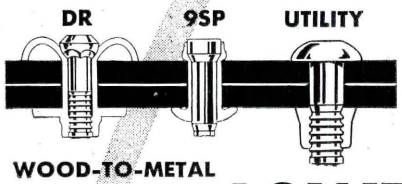
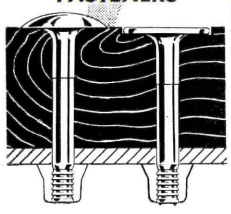


FASTER

WOOD-TO-METAL FASTENERS



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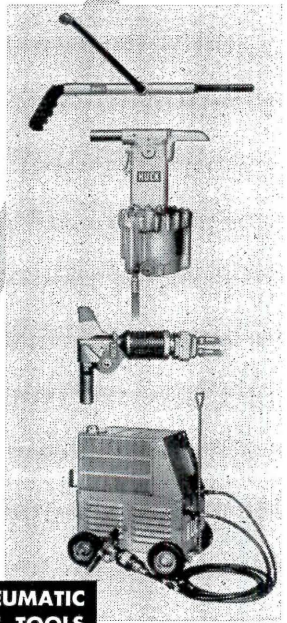

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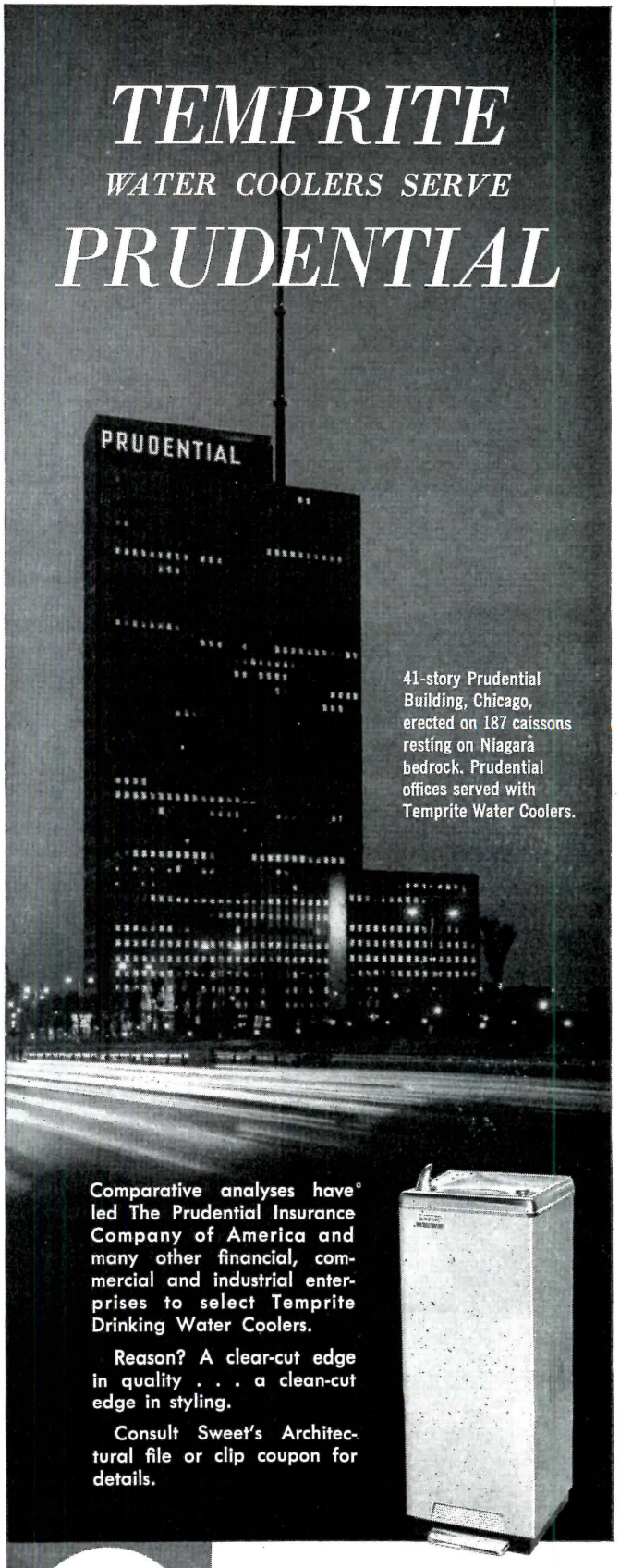

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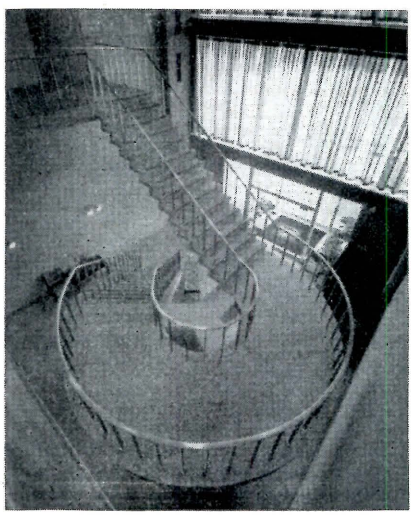

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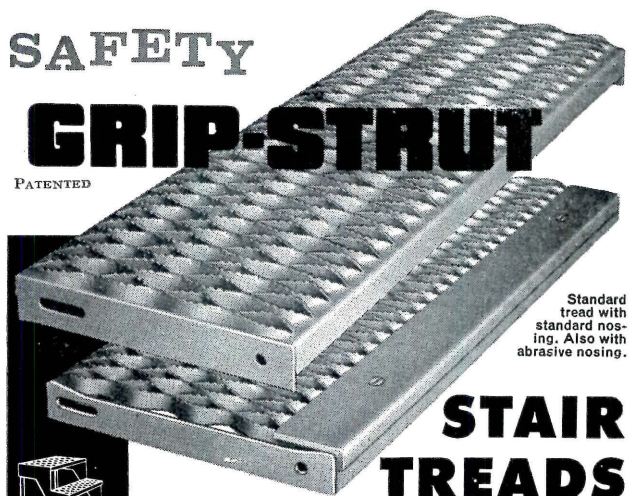

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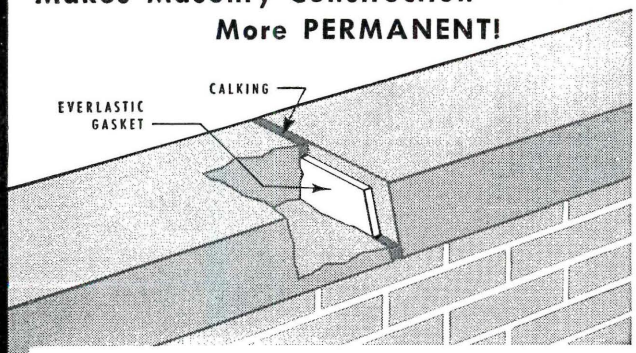

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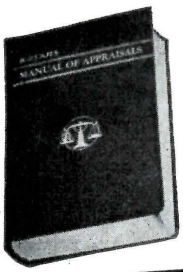

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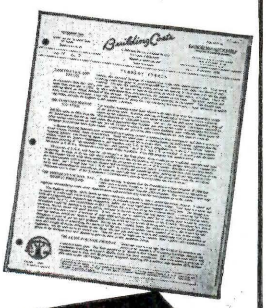

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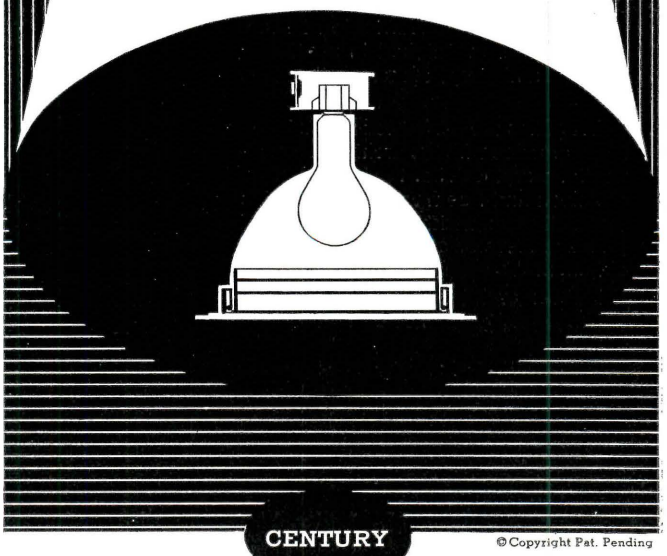

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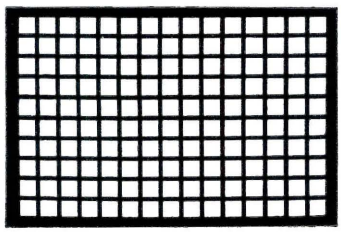

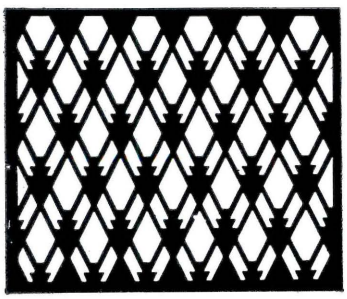

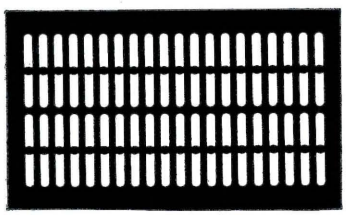

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Washington Topics

New Effort Planned to Speed Up Waste Treatment Construction

Early indications of the Administration's proposed efforts to speed up the construction of waste treatment facilities throughout the country appeared recently when Health, Education, and Welfare Secretary Arthur S. Flemming confirmed reports that Congress would be importuned to authorize 30 per cent of the present Federal telephone tax for this purpose. He told a press conference that under such an arrangement an additional 10 per cent of the present tax would be distributed among the states. Passed out under a variable formula with relatively larger grants going to lower income states, this would mean that some $145 million in annual Federal grants would be available to cover both waste treatment construction and vocational education.

During the first two years of the Federal Water Pollution Control Act of 1956, communities received grants for more than 1000 projects which involved $95 million in Federal grants and $610 million in state and local funds.

But the Administration is anxious to substitute the tax deferment plan for the present Act which authorizes $3 million a year for five years in annual Federal grants to support state and interstate pollution control programs. Admittedly, under the new plan, states would be left to the guidance of their own consciences as to application of the funds. Secretary Flemming said he would expect the states to demonstrate good faith by using the Federally collected funds for cleaning up their streams.

HEW and its Public Health Service, which administers the present law, take the view that pollution control grants differ from other types of Federal allotments such as highway funds in that the pollution control problem is purely local.

Under the 1956 Act, states and interstate agencies have used program grants for hiring technical personnel, purchasing special laboratory and field study equipment, research and stronger enforcement of state laws. The research phase has been centered largely at the Robert A. Taft Sanitary Engineering Center at Cincinnati. Some 30 projects presently underway at the center aim principally at development of more effective and cheaper sewage treatment processes. Other research at Cincinnati involves methods of freeing water supplies from viruses

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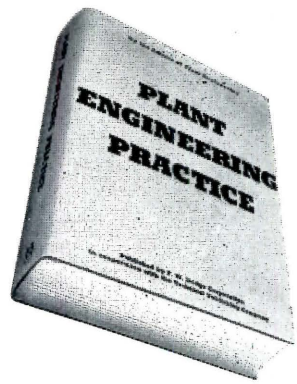

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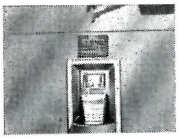

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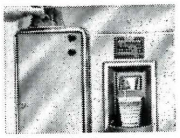

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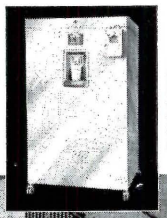

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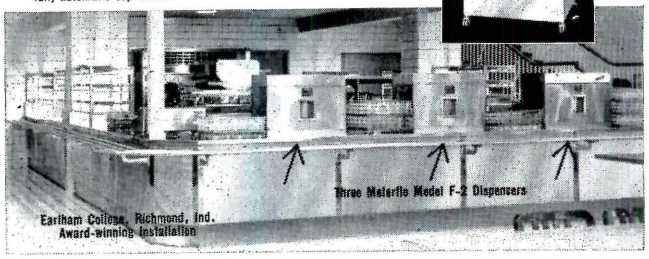

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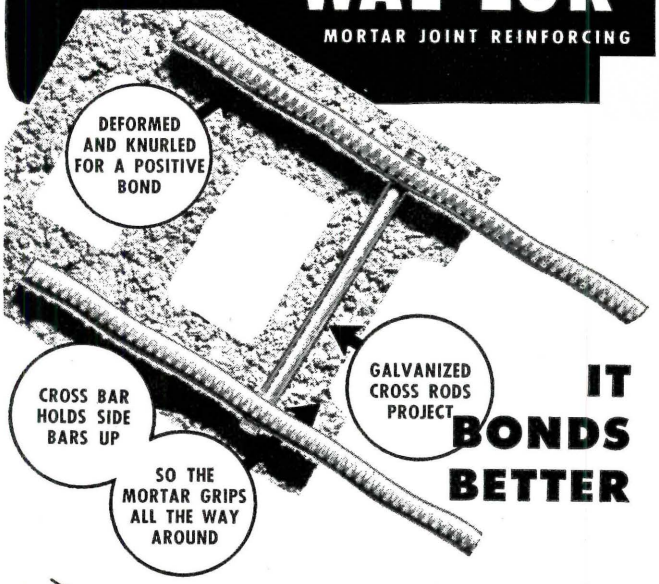

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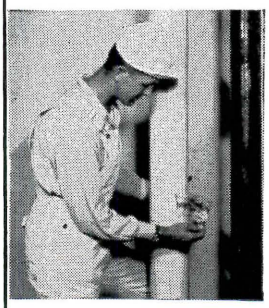

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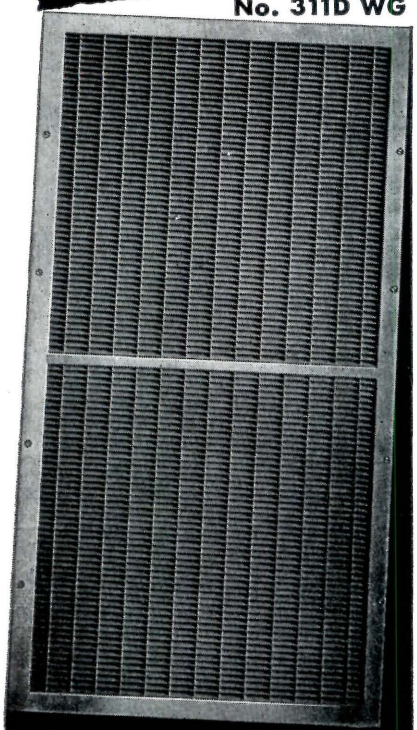

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Washington Topics

and bacteria, detergents, insecticides, radioactive contaminants, and other substances which can make water unfit or unsafe, HEW explained.

Addenda

The program of Federal aid for airport construction and improvement —what was left of it at least—was scheduled to pass from the Civil Aeronautics Administration in the Commerce Department to the new Federal Aviation Agency. Congress created the new FAA and directed that it absorb the functions of CAA and most of the duties of the Civil Aeronautics Board, also a Commerce agency. President Eisenhower last month named Lt.-Gen. Elwood R. Quesada (USA-ret.) to head the new unit. He had been the President's special adviser on aviation matters. Also to FAA go the functions of the Airways Modernization Board, an organization also headed by General Quesada. The construction assistance program is running out its string since President Eisenhower vetoed the measure which would have extended it beyond the June 30 expiration. All contract authorization was allotted to states months ago.

Construction grants for health research facilities numbered 177 and involved $30,200,095 in Federal funds for non-Federal institutions during the fiscal year ending June 30, the U.S. Public Health Service said. Grants to help build, equip, or expand the 177 research facilities were awarded on a matching basis to 134 institutions throughout the country.

The Business and Defense Services Administration of the Commerce Department issued new figures for estimated maintenance and repair expenditures in the construction industry showing that in 1957 the figure advanced to a new high of $17.7 billion. The total for last calendar year exceeded the old record of 1956 by $800 million, or four per cent. This continued a long-term climb. The statistics were from a study just completed by the Construction Industry Division of the BDSA. All major classifications of construction shared in the increase, the agency pointed out. The increase in outlay was due to higher unit costs applied to more structures and facilities rather than to a greater amount of work on the average structure or facility, the announcement explained.

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BUILDINGS FOR RESEARCH

by the editors of Architectural Record

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by the editors of Architectural Record

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Provides an accurate, foolproof system for estimating all direct production costs in earthwork, reinforced concrete, masonry, structural steel, and carpentry. This unique system can be applied at any time and in any place with equal validity, and can never go out of date. It was developed and perfected by the author during his 22 years as an estimator in heavy construction and building.

Presents an index set of unit costs for typical shift crews, against which you compare local crews, arriving at a productivity percentage. By checking that figure against only three tables, you arrive at the shift cost, output range, and unit cost of the operation. There is a total of 160 tables and checklists in the book.

205 pages, 6 x 9, $8.50

RELIGIOUS BUILDINGS FOR TODAY

by the editors of Architectural Record

Presents 35 new religious buildings, each of which is the work of a gifted architect collaborating with a clergyman and building committee who were not afraid to break with the architectural past. Protestant, Catholic, and Jewish buildings are shown, from all parts of the United States as well as Europe and Asia. Each is shown in brilliant photographs, and plans and drawings.

There are several other sections. One is called "Worship and the Arts". It explores the relationship between eternity and the present, as it pertains to the design of churches. There follow six articles on worship and the arts in different traditions — Jewish, Catholic, Orthodox, Episcopal, Reformed, and Lutheran. Also contains cogent studies by leading architects, clergymen, and secular authorities. Over 300 excellent illustrations.

184 pages, 8¾ x 11⅝, $7.50

THE MODERN CHURCH

by Edward D. Mills

A comprehensive study of the requirements and design standards of Christian churches. Covers new church construction step by step from the site selection and approval by church authorities through acoustics, materials, furnishings and religious art, and building costs. Some 200 illustrations of the best in contemporary church architecture in America and Europe.

189 pages, 7 x 9½, $9.75

ADVENTURE IN ARCHITECTURE

by Whitney S. Stoddard

The exciting story of the rebuilding and expansion of 100-year old St. John's monastery in Minnesota. The client is the Benedictine order of monks. The architect is Marcel Breuer. How he was selected, the rapport established between him and the building committee, and the flexible master-plan they drew are all explained here. The text has a narrative quality, and the 100 photographs and drawings cover every phase of the project.

128 pages, 8½ x 11, $8.50

THE CHAPEL AT RONCHAMP

by LeCorbusier

LeCorbusier's own account and explanation of the chapel of Notre Dame du Haut, which is one of the truly revolutionary buildings of our time. He presents the building in its 3 facets: as a place of worship, as a work of art, and as a practical exercise in architecture and construction. Contains notes and sketches in LeCorbusier's own handwriting.

136 pages, 7¾ x 8⅛, $5.50

PLANT ENGINEERING PRACTICE

by the editors of Plant Engineering

The mammoth new reference work of plant operation and maintenance. Presents 226 separate case studies, each of which is designed to save time, work and money for the plant engineer and his staff, and architects and engineers doing industrial building work. Over 800 illustrations.

704 pages, 8¾ x 11⅝, $18.50

HOW TO BUILD MODERN FURNITURE (Second Edition)

by Mario Dal Fabbro

Clear, easy-to-follow instructions for building your own professional quality furniture, plus step-by-step plans for 53 contemporary pieces by a famous furniture designer.

The first section gives instruction in basic woodworking operations, selection of materials, joints, assembly, wood finishing, and upholstery. Standard measurements of all furniture pieces are listed.

The second section presents 53 separate furniture pieces: Hi-fi cabinets, chests, tables, chairs, beds, and many others. Text is brief and clear — unique exploded diagrams do most of the teaching. Each project contains a list of materials, directions for assembling, and several plans and diagrams. There are over 1200 diagrams and drawings in all.

224 pages, 7⅛ x 9¾, $4.95

HOW TO MAKE BUILT-IN FURNITURE

by Mario Dal Fabbro

Step-by-step instructions for constructing 102 contemporary built-ins. Indispensable for making any home more livable, beautiful, and spacious with expertly-designed, easily-made built-ins. This practical book presents unique sequence plans and illustrations which virtually eliminate the errors and miscalculations which arise in these projects. Projects can all be built from standard grades of wood using common woodworking tools.

Included are pieces for living rooms, kitchens, bedrooms, playrooms, attics and cellars. Hundreds of variations and adaptations can be made from these unusual plans, and the book is also an excellent source of data for designing your own built-in projects.

259 pages, 7⅛ x 9¾, $6.95

BUILDINGS FOR INDUSTRY

by the editors of Architectural Record

An outstanding selection of new industrial buildings, together with a series of informative studies on trends and factors in present-day industrial building design. 74 projects from all over the United States, as well as a few from overseas, are completely analyzed. Explains choice of site, plan, lighting, colors, loading docks and rail spurs, employee facilities, and many more features. Over 700 illustrations.

315 pages, 8¾ x 11⅝, $9.75

THE ART OF HOME LANDSCAPING

by Garrett Eckbo

Here is the book which helps the user recognize his landscaping needs, plan them on paper, substitute pencil work for shovel work, and eventually provide useful, beautiful outdoor space to the limits of his lot. Especially valuable to the new home buyer or builder, who cannot afford the services of a landscape architect, and cannot afford to make costly mistakes in his basic planning.

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256 pages, 6⅝ x 9¾, $5.95

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by Garrett Eckbo

This professional-level volume examines the purposes, problems, and practices of landscape design. Entire sections are devoted to materials, plants and planting, site conditions, structural factors, gardens, public buildings, group housing. Included are many photographs, renderings, and diagrams of fine landscaping.

288 pages, 8 x 10½, $10.00

TIMBER DESIGN AND CONSTRUCTION HANDBOOK

prepared by Timber Engineering Company

The complete master handbook of timber design and construction, written and edited by 34 engineers and timber specialists. Serves two purposes: It is a comprehensive timber design refer-

ence, and it is also a practical field handbook. Offers every bit of essential information needed to develop and construct the best wood structures.

The first portion covers the fundamental structural characteristics of wood. Lists types, grades, and ways of preservation. The next ten chapters analyze preliminary design considerations, design details, fabrication and erection. The final chapter presents 129 pages of design and engineering specifications and precise tabular data allowing easy conversion for particular grades and species.

622 pages, 6 x 9, $12.75

ARCHITECTURAL ENGINEERING

by the editors of Architectural Record

100 case studies which present the latest developments in architectural engineering. Each study was chosen for being a detailed, up-to-date source of specific information for which there is current professional demand.

The book is composed of six extensive sections: The Building Shell, Environmental Control, Utilities, Site Planning, Materials, Special Problems. The book is complete with over 1,400 plans, diagrams and photographs.

495 pages, 8¾ x 11⅝, $11.50

APPLIED STRUCTURAL DESIGN OF BUILDINGS

by Thomas H. McKaig, Consulting Engineer

A practical office manual containing simple, standardized procedures for solving structural design problems. This unique handbook had its inception as a series of notes used by the author in his instruction of architects and engineers preparing for state licensing examinations. Strictly a practical work with no attempt made to develop theory, which is obtainable in any textbook.

The structural designer will find in simple, convenient form the processes which will serve him best as working tools. Here are short cuts, tables, formulae, sketches — a wealth of practical information — all designed to save countless hours of detail, help standardize office practice and simplify the designer's work. Every piece of information in this book has been tested, by actual experience and proven to be reliable and useful.

442 pages, 7⅛ x 10, $12.50

JAPANESE TEMPLES AND TEA-HOUSES

by Werner Blaser

The English edition of a prize-winning Swiss book, profusely illustrated with brilliant photographs (8 in full color), line drawings and plans of classic examples of Japanese architecture. Its thoughtful text examines the social, historical, and spiritual forces which produced this highly defined art, and gives — as a result — a richer, new perspective in which to view all architecture, including our own contemporary work.

Although the text is lucid and analytical, it is the author's intention to let the photographs speak for themselves; in Blaser's own words, ". . . to suggest how these structures might shadow forth a new spiritual style for the West."

156 pages, 9¼ x 12¼, $12.75

STRUCTURES

by Pier Luigi Nervi

Pier Luigi Nervi of Rome draws on over 30 years of experience as architect, engineer, and builder. Contains much valuable information on the properties of concrete and "Ferro-cemento", which was developed by the author and used by him in the construction of some of the largest and most beautiful thin-shell concrete structures in the world.

Alternately practical and philosophical, the book considers such varied subjects as architect-client relations, training of designers and builders, theory of structures, and building in reinforced concrete. Contains photographs of all of Nervi's major works, as well as numerous sketches and plans.

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NEW GERMAN ARCHITECTURE

by G. Hatje, H. Hoffman, K. Kaspar

A brilliant study of the renaissance of German architecture from 1945 until the present. The best of all postwar construction is presented — a total of 133 projects of all types, each illustrated with 3 or more photographs, plans, and sketches, and each discussed in a frank, constructive text. Over 550 photographs and drawings.

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PRACTICAL HOUSES FOR CONTEMPORARY LIVING

by Jean and Don Graf

Displayed in this new book are forty houses with "built-in personalities" — houses that reflect their owners' tastes and living habits. Selected from all regions of the U. S., they represent many prevailing styles of architecture, and prices range from $7500 up.

174 pages, 8¾ x 11¼, $6.95

A TREASURY OF CONTEMPORARY HOUSES

by the editors of Architectural Record

Here are 50 contemporary houses designed by some of the world's leading architects; the ultimate in quality contemporary design.

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ERIC MENDELSOHN

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by Arnold Whittick

A thoughtful, handsomely illustrated study of the works and life of one of the outstanding architects of our time. Covers Mendelsohn's work from 1919 until his death in 1953. Seventy-five of his major projects are shown — in Germany, England, Israel and the United States. Over 175 illustrations.

219 pages, 7¼ x 10⅝, $9.85

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Since 1946 *Time-Saver Standards* has served as a working partner to thousands of architects, engineers, designers, builders, and other specialists in the construction field. Users consider this book the one indispensable reference to any and every question of building principle, practice, and procedure. As a daily working tool on construction projects of every size, description, and dollar value, *Time-Saver Standards* has saved endless hours of research time, immeasurable extra work, and many costly mistakes, as well as millions of dollars on construction costs.

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DESIGN FOR MODERN MERCHANDISING

by the editors of Architectural Record

Here is a detailed study of the physical design of selling establishments of all types: stores for soft goods and hard goods, food stores, department stores, wholesale showrooms, and shopping centers. Over 600 photographs, plans and diagrams take the reader through a vivid selection of successful selling establishments.

247 pages, 8¾ x 11⅝, $8.95

MOTELS, HOTELS, RESTAURANTS AND BARS

by the editors of Architectural Record

Emphasis here is on current design trends, techniques and structural features. Within each category, buildings of many sizes, styles, and localities are included. Each project is profusely illustrated with photographs, plans and renderings.

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DESIGN AND CONSTRUCTION OF GENERAL HOSPITALS

by the U. S. Public Health Service

Step-by-step guidance in planning the general hospital. 30 master plans for hospitals of every size are shown. Each plan is fully detailed, and visualized in skillful rendering. Site plans and numerous tables and charts are also included.

214 pages, 8¾ x 11⅝, $12.00

COMMERCIAL BUILDINGS

by the editors of Architectural Record

Office buildings, banks, transportation buildings, TV studios and theaters are shown here in photographs, plans, and drawings. All of them clearly demonstrate the new materials and methods which have won acceptance in recent years.

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SCHOOLS FOR THE NEW NEEDS

by the editors of Architectural Record

66 new school buildings which are working proof that sound planning can pay off in better buildings at lower costs. Elementary and secondary schools are shown from all areas of the country. Over 900 illustrations.

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SCHOOL PLANNING AND BUILDING HANDBOOK

by N. L. Engelhardt, N. L. Engelhardt, Jr., and Stanton Leggett

The authoritative work which contains every item of basic information needed to execute a successful school building program. Analyzes and defines the exact duties of every party in the building program. Provides complete checklists and specimen contracts covering every contractual relationship.

626 pages, 6 x 9, $12.75

PLANNING ELEMENTARY SCHOOL BUILDINGS

by N. L. Engelhardt, N. L. Engelhardt, Jr., and Stanton Leggett

A comprehensive study of design standards, equipment, and facilities required for today's elementary school buildings. Traces the pattern of daily pupil-teacher-administrative activities, and relates them to the problems of physical design. Over 250 excellent illustrations.

268 pages, 8¾ x 11⅝, $12.50

TOWARD BETTER SCHOOL DESIGN

by William W. Caudill

Relates school design to the aims and methods of education, to the influence of environment on the learning process, and to the role of schools as community institutions. Shows how the planner must assess each factor to arrive at an architectural solution. Includes 91 case studies where the author's approach has resulted in better schools.

288 pages, 8¾ x 11⅝, $12.75

PLANNING STORES THAT PAY

by Dr. Louis Parnes

In this book Dr. Parnes demonstrates the amazing degree to which good design speeds and increases sales in department stores and specialty chain stores. With more than 500 illustrations, this book explores each detail of the store and its equipment — entrances, arcades, show windows, furniture and fixtures, receiving services, departmental and floor layouts, display counter and cabinets, lighting.

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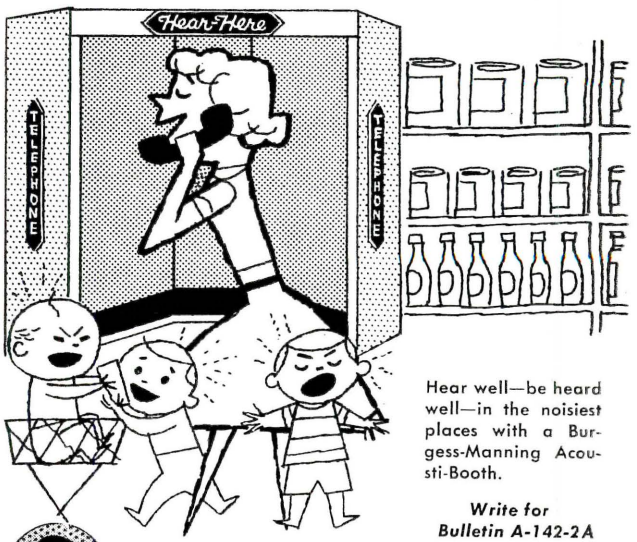

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The Marble Institute of America has issued a bulletin incorporating the warning of The A.I.A. This is available without cost.

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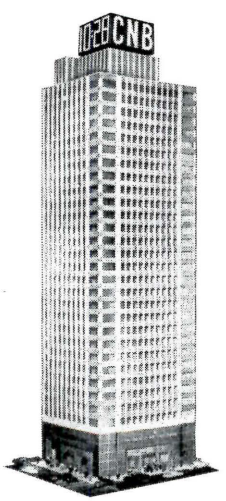

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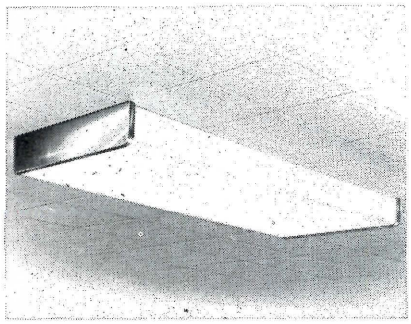

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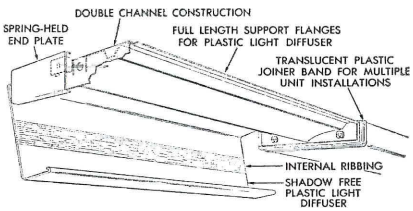

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Required Reading

continued from page 64

Other Books of Interest

GUIDE TO WESTERN ARCHITECTURE. *By John Gloag. Macmillan Co., 60 Fifth Ave., New York 11. 407 pp., illus. $12.50.*

This is a valuable general history, from 600 B.C. to the present.

ARCHITECTURE, YOU AND ME: THE DIARY OF A DEVELOPMENT. *By S. Giedion. Harvard University Press, Cambridge 38, Mass. 221 pp., illus. $5.*

Most of this book first appeared in the form of articles and lectures. Monumentality, the architect-painter-sculptor relationship, the renewal of the human habitat, and the demand for imagination are some of the topics.

GAUDI. *Edited by J. Prats Vallés. Preface by Le Corbusier. George Wittenborn, Inc., 1018 Madison Ave., New York 21. 60 pp., illus. $5.75.*

A fine collection of photographs, some in color, of Gaudi's work. The book, printed in Spain, has text in English, French, and Spanish.

LEARNING TO LOOK: A HANDBOOK FOR THE VISUAL ARTS. *By Joshua C. Taylor. University of Chicago Press, 5750 Ellis Ave., Chicago 37. 152 pp., illus. $4.50.*

HOW TO ESTIMATE THE BUILDING NEEDS OF A COLLEGE OR UNIVERSITY: A DEMONSTRATION OF METHODS DEVELOPED AT THE UNIVERSITY OF MINNESOTA. *By William T. Middlebrook. University of Minnesota Press, Minneapolis 14. 169 pp., illus. $15.*

DIE ARCHITEKTONISCHE GROSSFORM: GEBAUTES UND GEDACHTES. *By Otto Ernst Schweizer. Distributed by George Wittenborn, Inc., 1018 Madison Ave., New York 21. 197 pp., illus. $7.50.*

PROCEEDINGS OF THE 1958 DAY HOSPITAL CONFERENCE: A MENTAL HOSPITAL DESIGN CLINIC. *American Psychiatric Association, 1700-18th St., N. W., Washington 9. 129 pp., illus. (offset). $2.*

THE GOLDEN NUMBER. *By M. Borissavlievitch. Philosophical Library, Inc., 15 E. 40th St., New York 16. 91 pp., illus. $4.75.*

A LIBRARY OF ARCHITECTURE AND BUILDING *(bibliography). Compiled by Jane D. Spoore. Rensselaer Polytechnic Institute, Troy, N. Y. 27 pp. (offset). $1.*

PUBLICATIONS RELATING TO URBAN RENEWAL: 1957 *(bibliography). Public Library, 499 Penna. Ave., N.W., Washington 1. 49 pp. (mimeo.). Free with 5¢ stamped, addressed envelope.*

WASHINGTON: CITY ON THE POTOMAC. *Sketches by Fritz Busse. Text by Russell Baker.* NEW YORK: CITY ON MANY WATERS. *Sketches by Fritz Busse. Text by Meyer Berger. Arts, Inc., 667 Madison Ave., New York 21. Each 60 pp. $3.50 and $2.95, respectively.*

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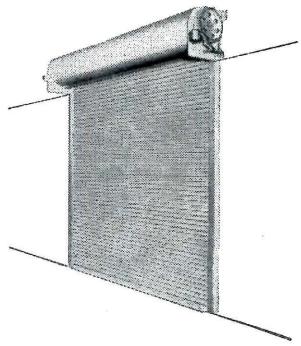

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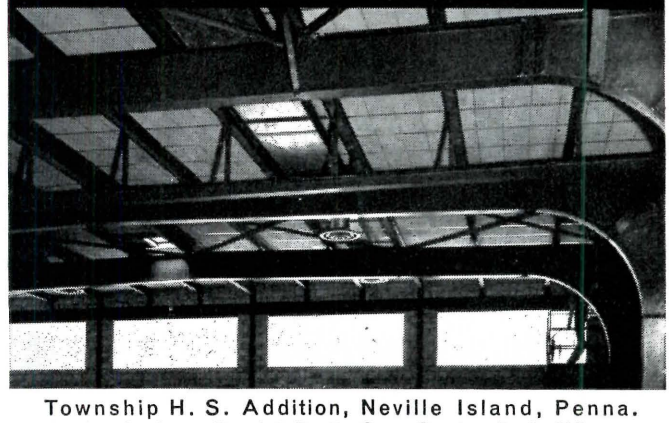

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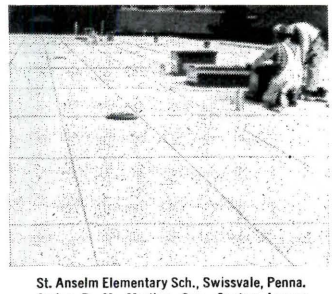

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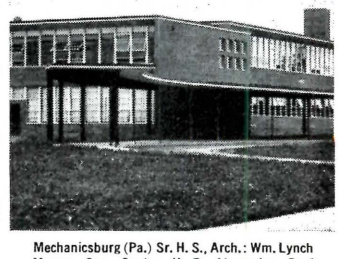

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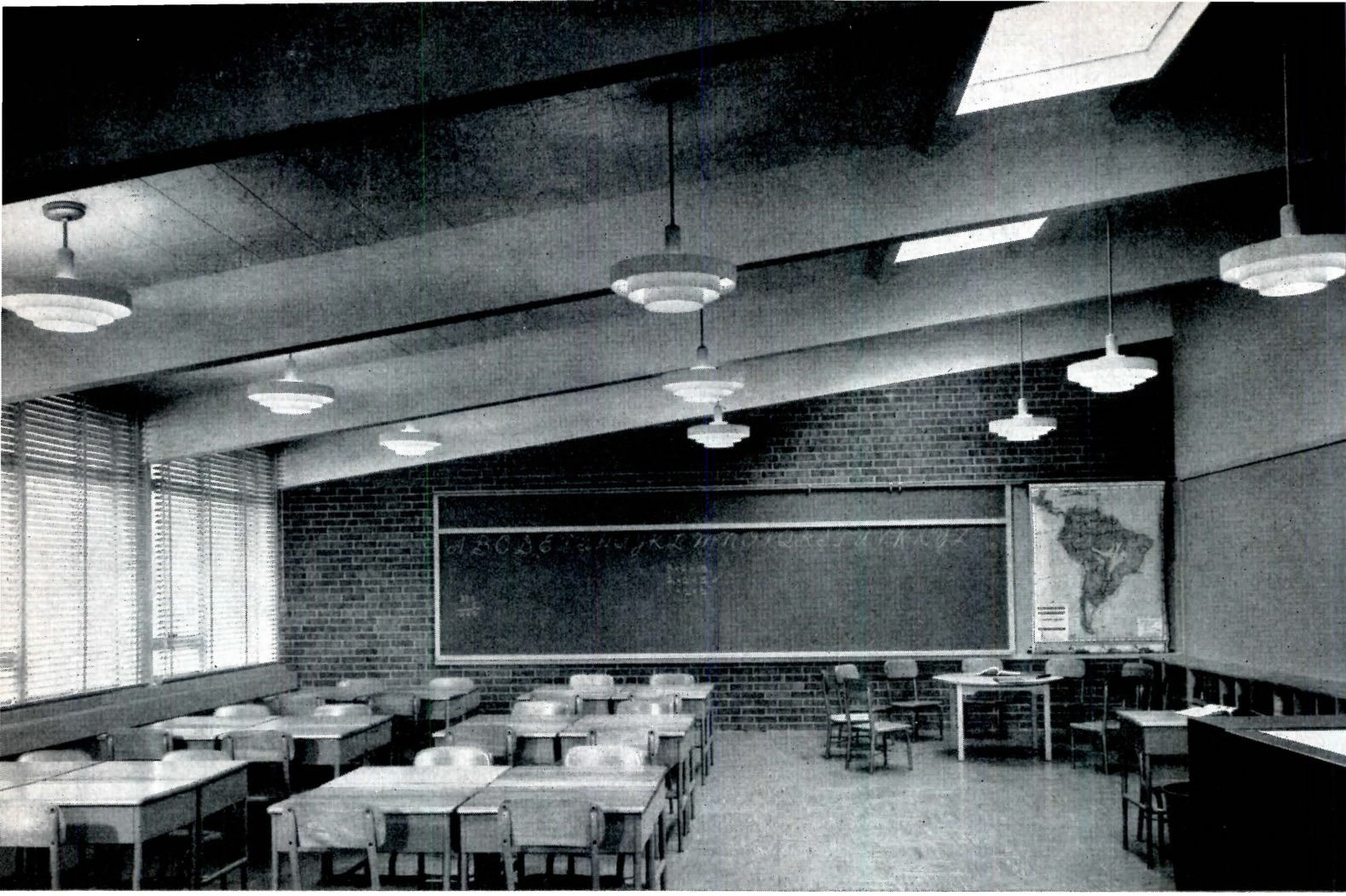

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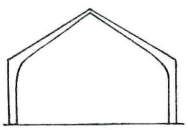
1

Broadmeadow School, Needham, Mass.

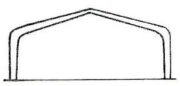
Simple construction is promoted by sloping glulam beams which support heavy timber decking with acoustical tiles on under side. Plastic skylight domes admit daylight into the interior of the room. Architect: Hugh Stubbins Associates, Cambridge, Mass. General contractor: Vara Construction Company, Boston.



2

High School Gymnasium, Vero Beach, Florida

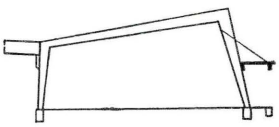
Eight glulam timber arches of 93'-6" span are spaced at 12' and covered with 3-inch tongue-and-groove decking. Architects: Duncan, Steward & McVay and William G. Taylor, associate, Vero Beach, Florida. General contractor: Edward M. Fleming Construction Company, Miami.



3

Library, Chico, California Junior High School

Structural framing features glulam timber arches with arch extensions which permit clerestory lighting on both sides of the room. Architect: Lawrence G. Thompson, Chico. General contractor: Ellis Barker, Salt Lake City.



4

Common Room, Tokeneke Elementary School, Darien, Connecticut

Serves as auditorium and cafeteria. Glulam timber beam-and-column bents support roof deck of heavy timber sheathing. Architects: O'Connor & Kilham, New York City. General contractor: George L. Hickey, Inc., Stamford, Conn.

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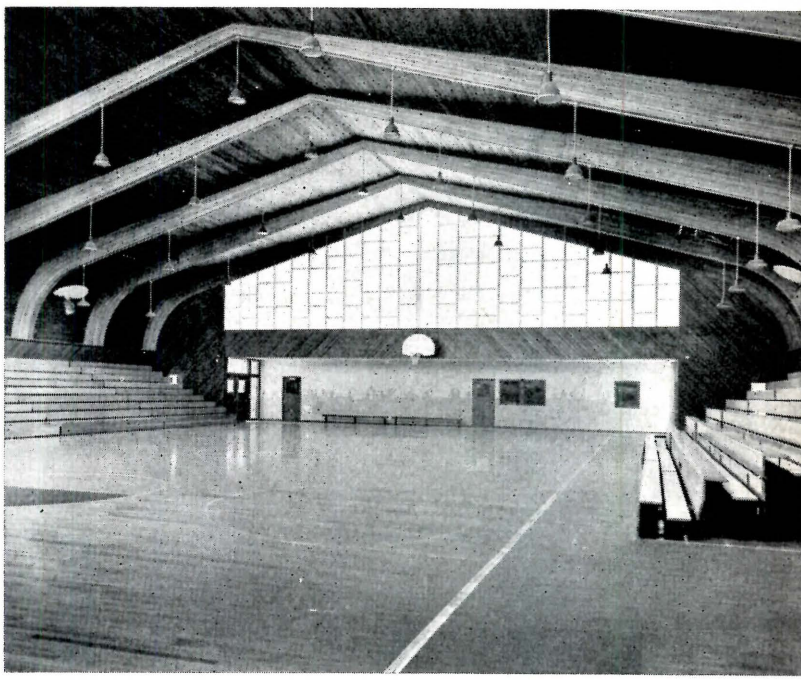

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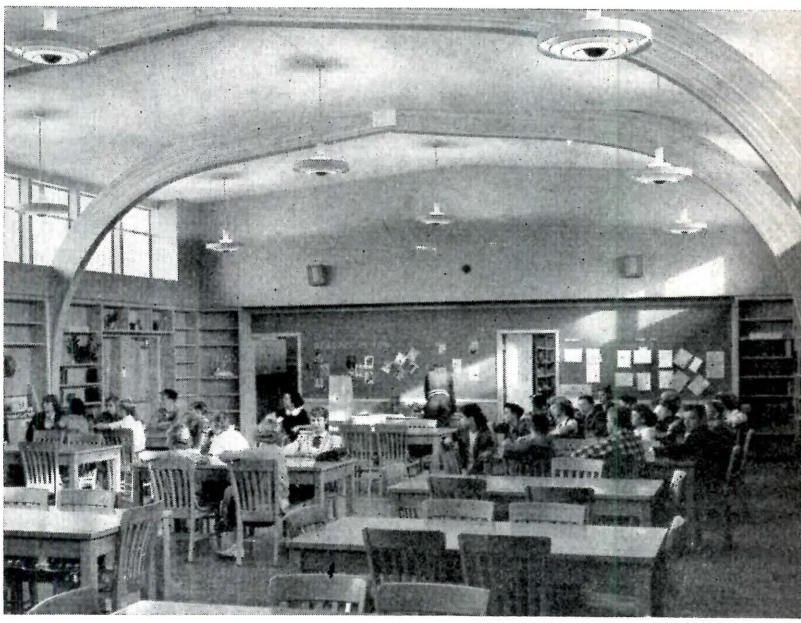
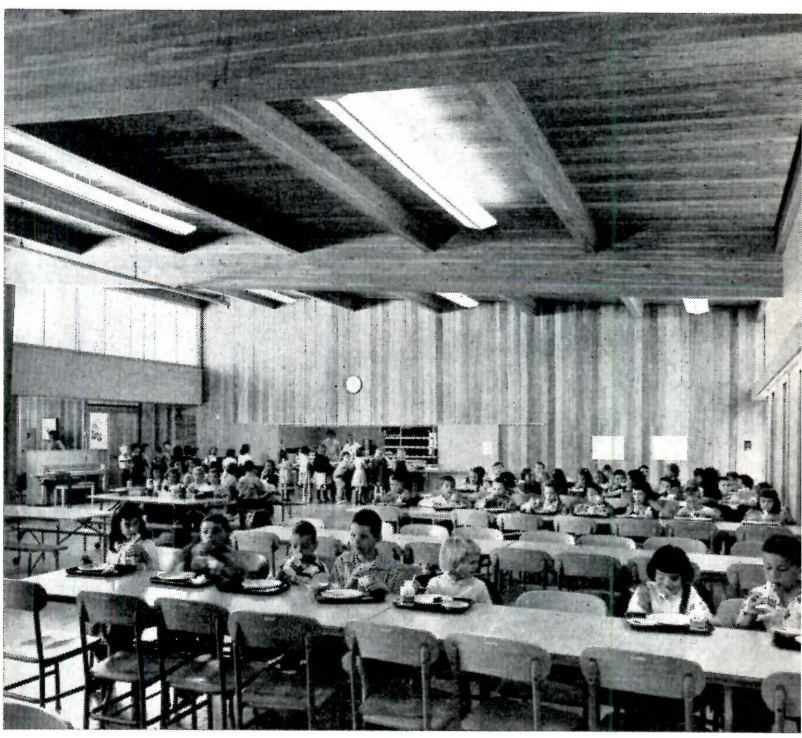


4



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Required Reading

continued from page 60

Planning . . .

or structural plan. Indeed, it is this very integration of multiple facets into a single concept that distinguishes a work of architecture from mere building. With equal force in City Planning, the question of appearance should be integral with the total planning concept.

However, this is not, fortunately, the best of all possible worlds. It is very likely that we must go through the self-conscious process of producing something somewhat similar to the community design plan as advocated by the authors before we will get out of the very bad stage we are now in. We may have to have architectural control by boards, but I do not think we should have a single board for a whole community under any circumstances. I think that all of the responsibility for the three-dimensional aspect of site planning at the governmental level should be left to the Planning Commission and *not* given to a special "design board." And, to my mind, the mark of our success in really treating with the problem of community appearance would be our arrival at the point where architectural control boards could be dissolved (except in historic areas).

Basically, what the report reveals to me is that, if the architects did what they are supposed to do anyhow, only much better, and if the city planners did what they are supposed to do anyhow, only much better, the community appearance problem would be solved and design would be thought of as integral with the whole articulate and clearly structured community.

The Congress of the United States so far has appropriated one and a quarter billion dollars for redevelopment in the belief that the planners and architects can produce a new environment for cities which is worth the price. If we are not to let Congress down, we must evolve means for architects and planners to work together in an effective, functional, and happy way to produce a total result. This book most assuredly helps to start us on the road, but there still is a long way to go.

If only a few more architects realize their responsibility to the larger community in the design of their individual work as a result of reading this book, then it will have done its work well.

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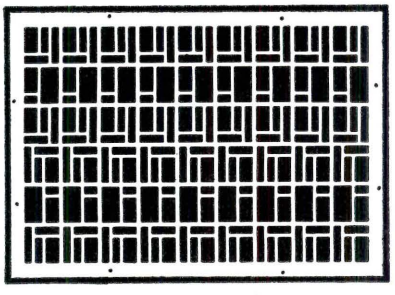

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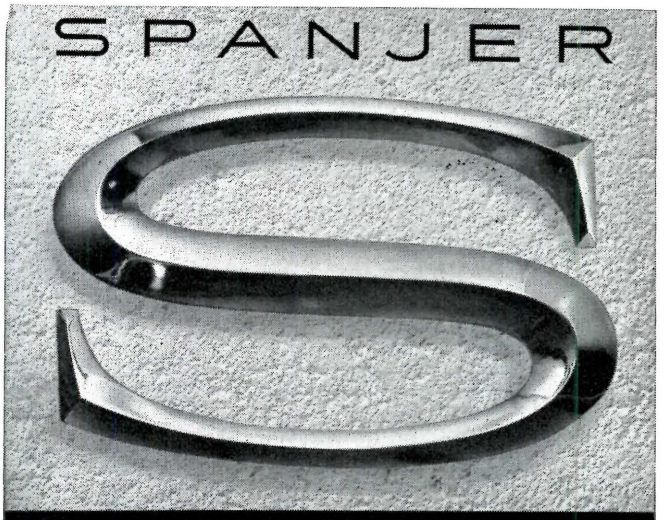

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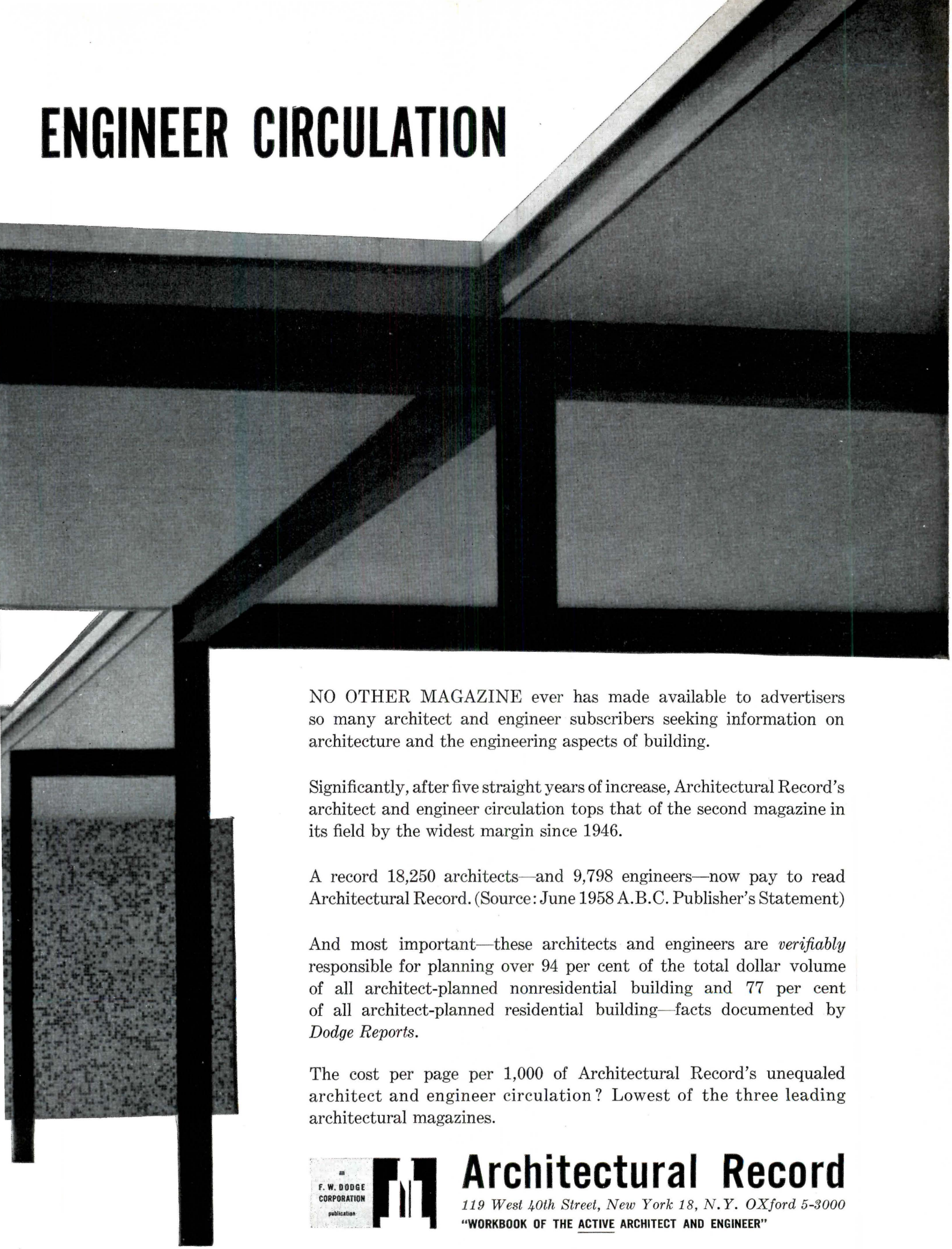

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Current Trends in Construction

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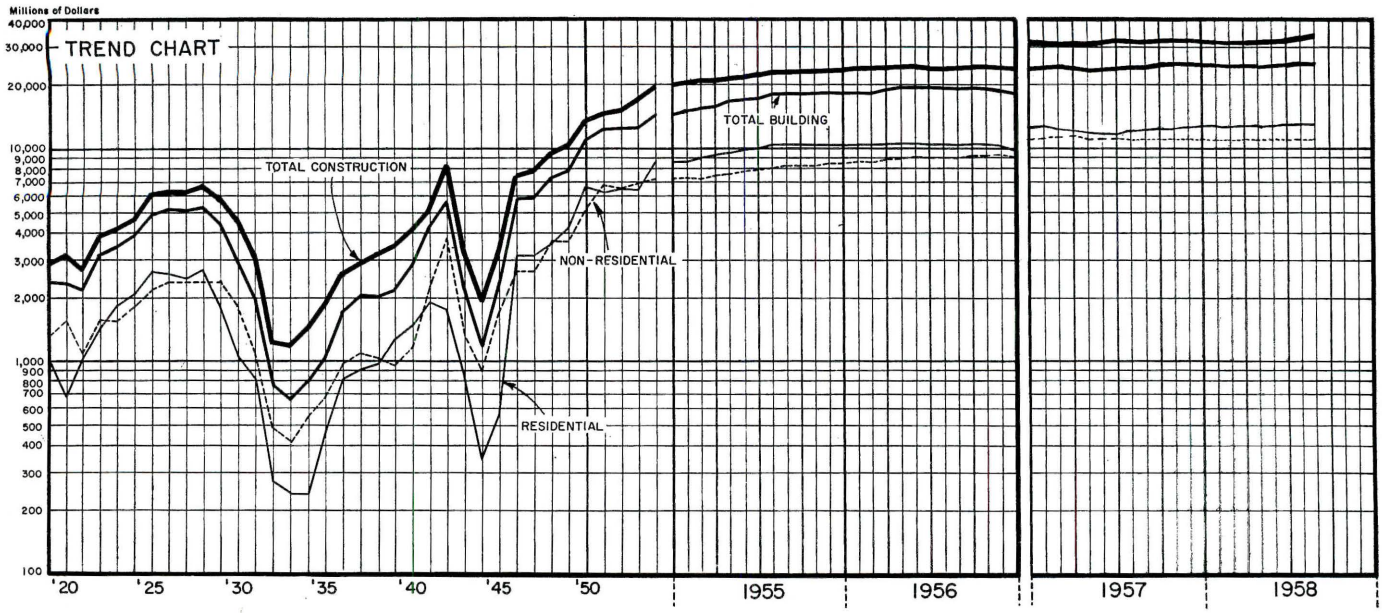


BIGGEST MONTH-TO-MONTH INCREASE OF 1958 RECORDED

The total of $3,215,919,000 in contracts for further construction in the United States reported by F. W. Dodge Corporation in September constituted an increase of 26 per cent over September 1957; it was the greatest increase over the corresponding month last year reported by Dodge so far this year.

The September figures also brought the cumulative total for the first nine months of the year to $26,985,813,000, up seven per cent over the like 1957 period.

By categories, the largest percentage increase in September was registered by heavy engineering contracts: at $863,415,000, they were up 62 per cent from September 1957. Residential building contracts totaled $1,460,270,000, a 27 per cent increase from the 1957 month; nonresidential building, at $892,234,000, showed a three per cent increase.

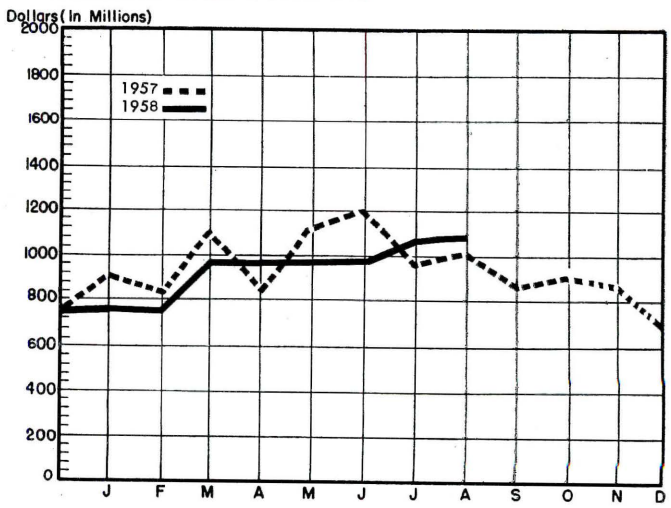
Commenting on the September figures, Dodge vice president and economist Dr. George Cline Smith noted that the September increase of 26 per cent was the greatest increase over the corresponding month of 1957 that has been recorded so far this year. "However," he added, "September marks the third month in a row with an increase of more than 20 per cent over last year, and the fifth consecutive month in which the dollar volume of contracts amounted to more than $3 billion."

Publicly owned projects, Dr. Smith reported, continue to provide the major part of the stimulus, but in September privately owned projects also increased sharply. Public-ownership contracts rose 29 per cent over September 1957 and private projects were up nearly 25 per cent.

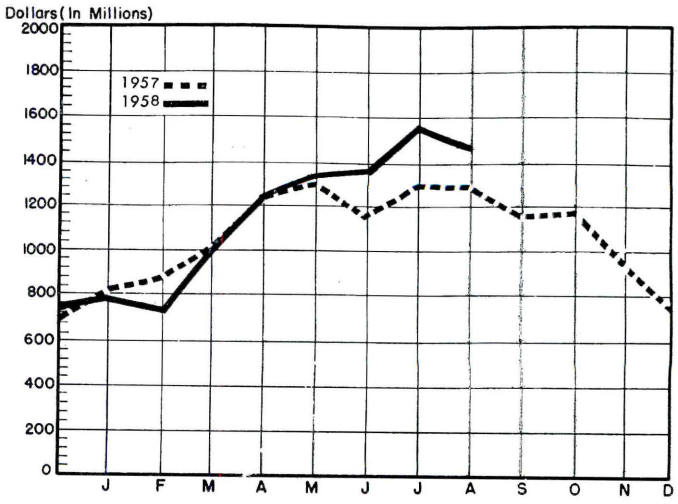
The residential total in September covered 114,642 dwelling units, an increase of 33 per cent over the 1957 month and the largest percentage gain in this category this year. The spread between the percentage gain in dollar volume and in the number of units reflects the trend toward smaller average size units, particularly apartments.

Cumulative totals for the first nine months by categories were: nonresidential—$8,504,854,000, down three per cent; residential—$10,945,492,000, up seven per cent; and heavy engineering—$7,535,467,000, up 21 per cent.

NONRESIDENTIAL BUILDING



RESIDENTIAL BUILDING



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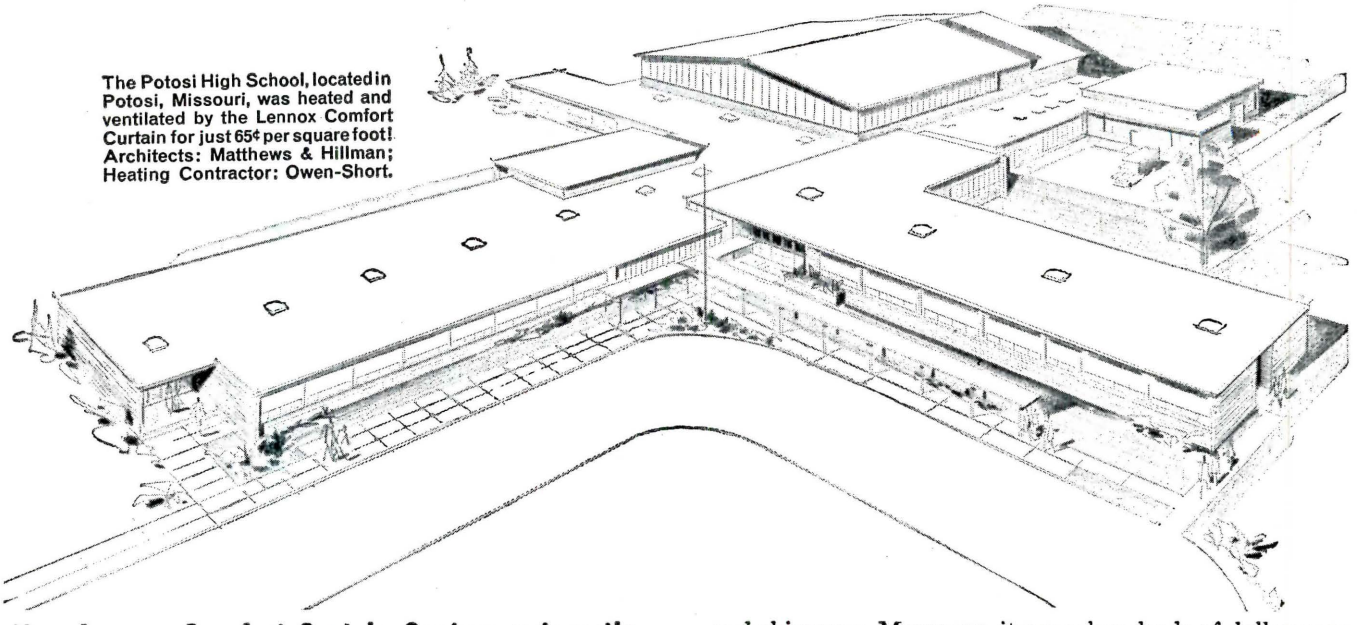

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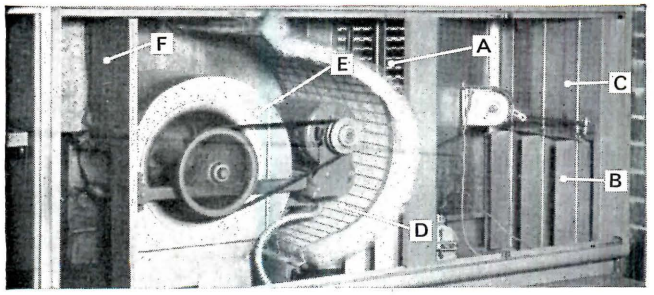

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PRE-FILED CATALOGS of the manufacturers listed below are available in the 1958 Sweet's Catalog Files as follows: (A) Architectural File (green), (IC) Industrial Construction File (blue), (LC) Light Construction File (yellow).

A-IC-LC Adam, Frank Electric Co. 53
A Adams & Westlake Company .. 245
Adrian-Peerless, Inc. 389
Aerofin Corporation 130
A Aetna Steel Products Corp. 103
Air Devices, Inc. 341
Airfloor Company of California 269
A Alberene Stone Corporation ... 330
Albro Metal Products Corp. .. 30-31
A All-Steel Equipment, Inc. 72
A-IC Aluminum Company of America 17, 39
Amchem Products, Inc. 97
IC American Air Filter Co., Inc. 324-327
A-LC American Biltrite Rubber Company (Amtico Flooring Division) 157
A-IC American Blower Division . 116-117
A-LC American Brass Company 90-91, 397
IC-A American Bridge Division 270
American Bridge Modular .. 314-315
American District Telegraph Co. 335
American Gas Association 82-83
American Laundry Machinery Co. 372
A-LC American-Saint Gobain 331
A-LC American Telephone & Telegraph Co. 65
A-LC American Welding & Manufacturing Co. 397
A-LC American Window Glass Division 331
A-LC Andersen Corporation 338-339
A Anemostat Corp. of America 284-285
Architectural Record 402-403
A Armco Steel Corporation .. Cover II
A-LC Armstrong Cork Company 26-27
A Azrock Products Division 145

A-IC Balfour, Walter & Co., Inc. .. 396
A-IC Barber-Colman Company 293-294-295
A Barclite Corp. of America 369
A Bastian-Blessing Co. 153
A-IC Bayley Co., William 144
A-LC Bell & Gossett 131
A-LC Bell Telephone System 65
A-IC-LC Bestwall Certain-teed Sales Corp. 322
A-IC Bethlehem Steel Company 80
Bituminous Coal Institute 139
Blank, Frederic & Company, Inc. 73
Boekh, E. H. & Associates 387
A Bogen, David Co. 40
A-IC Borden Metal Products Co. 21
A-IC Bradley Wash Fountain Co. 308
A-LC Bruce, E. L. Co. 401
A Brunswick-Balke-Collender Co. 158-159
A Burgess-Manning Company ... 395
A-IC Burns & Russell Company 123
A-IC Burt Mfg. Co., The 336
A-IC Byers, A. M. Company 4

A-LC California Redwood Association 305
A-IC Carey, Philip Mfg. Company 136-137
A-LC Carr, Adams & Collier Co. .. 350-351
A-IC Ceco Steel Products Corp. .. 283, 301
A Century Lighting, Inc. 387
A Ceramic Tile Panels Inc., U. S. Ceramic Tile 63, 344B
A Chase Brass & Copper Co. 45
Committee on Steel Pipe Research 162-163
IC Conco Engineering Works 276
A-IC Concrete Reinforcing Steel Institute 110
A Congoleum-Nairn, Inc. 344A
A Connor Engineering Corp. .. 102, 316
A-IC Continental Air Filters, Inc. ... 348
A-LC Corbin P & F Division 357
A-LC Crane Co. 86-87
A Curtis Companies 120-121
A Curtis Lighting, Inc. 310-311
A Cutler Metal Products Co. 61

Dodge Books ..... 388, 391 to 394
A-IC-LC Douglas Fir Plywood Association 128-129
A-IC-LC Dow Chemical Company, The 374-375
A Dubuque Products, Inc. 161
A-IC Du Kane Corporation 260-261
A Dunham-Bush, Inc. 258
Du Pont, E. I. De Nemours & Co., Inc., Elastomer Chemicals Dept. 309

A Eastern Products Corp. 33
A-IC Ebco Manufacturing Co., The .. 281
A Educators Manufacturing Co. .. 64
Engineered Products Co. 344B
A-IC Executone 268

Fair-Play Scoreboards 386
Federal Seaboard Terra Cotta Corp. 47
A Fenestra Incorporated 306-307
A Fiske, J. W. Architectural Metals, Inc. 386
A-IC Flynn, Michael Manufacturing Company 347
A-LC Formica Corporation 50-51
A-IC Frick Co. 38

Gamewell Company, The 272
A General Bronze Co. 138
A-IC General Electric Co., Air Conditioning 146
General Electric Co., Lamp Division 299
A-LC General Electric Co., Textolite .....3rd Cover
A-IC-LC Gering Products, Inc. 59
Geyser, E. K. Co. 24
Globe Company, The, Products Division 386
A Glynn-Johnson Corp. 96
A Goodrich, B. F. Company 43, 101, 265
A Goodyear, Flooring Dept., Goodyear Tire & Rubber Company 1
A-IC Granco Steel Products Co. 18-19
A-IC Great Lakes Carbon Corp. 377
Griffin Manufacturing Co. 282
A-IC Grinnell Company, Inc. 344B

A Hako Building Products 69
A Hall-Mack Company 100
Hamilton Manufacturing Co. ... 342
A Harrington & King Perforating Co., Inc. 388
A-IC Haskelite Manufacturing Corp. 248
A-IC Hauserman, E. F. Company 66-67
A Haws Drinking Faucet Co. 356
A-IC Hendrick Manufacturing Co. .. 401
A Hillyard Chemical Co. 126
A Hobart Manufacturing Co. 93
A Hoffman Specialty Mfg. Corp. . 337
Holophane Company 148
A-LC Homasote Co. 286
A Hope's Windows, Inc. 74
A Horn, A. C. Companies 296
Hotel Cleveland 390
A Hubbell, Harvey, Inc. 268
Huck Mfg. Co. 385
A Hunter Douglas Aluminum Corp. 287
A Huntington Laboratories, Inc. 384, 400
A Hussey Mfg. Co. 368

A Independent Register Co., The 390
Infra Insulation, Inc. 11
A-IC-LC Inland Steel Products Co. 262-263
A Insulrock Co. 323
Integrated Ceilings, Inc. 267
International Heating & Air Conditioning Exposition 400
International Nickel Co., Inc. . 288
Iron Fireman 297

A Jamison Cold Storage Door Co. 46
A-IC Jennison-Wright Corporation .. 77
A-IC-LC Johns-Manville 54
Johnson Brothers Incorporated 378

A-IC-LC Kaiser Aluminum & Chemical Sales, Inc. 94-95, 274-275
A Kawneer Company 362-363
A-LC Kentile Company 389
A-IC Kewanee Boiler Division 156
Keystone Shower Door Company 261
A-IC Keystone Steel & Wire Co. .. 320-321
Killark Electric Mfg. Co. 380
A Knapp Brothers Mfg. Co. 319
Kohler Co. 34
Koppers Company, Inc., Industrial Sound Control Dept. ... 150
Koppers Company, Inc., Plastics Division 81

A LCN Closers, Inc. 256-257
Lehigh Portland Cement Co. ... 246
A-IC Lennox Industries, Inc. 302-303, 405
A-IC-LC Libby Owens Ford Glass Co. 277 to 280
Lighting Dynamics 378
Linen Supply Association of America 92
A-LC Louisville Cement Company ... 89
A Lowell Manufacturing Company 88

A-IC Macomber, Inc. 70
A-IC Mahon, R. C. Company 108-109
A Marble Institute of America, Inc. 395
A-IC Marlo Coil Company 343
Masland Duraleather Co. 151
A-IC McKinley Iron Works 407
A McPhilben Lighting Co. 384
A Meadows, Inc., W. R. 318
A Medart, Fred Products Co., Inc. 111
Meterflo Dispensers 389
Midget Louver Company 395
Miller Sliding Glass Door Co., Inc. 298
Mitchell Lighting Company ... 304
Modu-wall, Inc. 164
A-IC Montgomery Elevator Co. 152
A Moore, P. O. Inc. 395
A-LC Mueller Brass Co. 41
A-LC Mutschler Brothers Company .. 289

A-IC-LC National Gypsum Company ... 340
A National Terrazzo and Mosaic Assoc. 84
National Supply Co. 118
A Neo-Ray Products, Inc. 134
Nesbitt, John J. Inc. 332-333
A Norman Products Co. 312
North American Extrusion ... 164
A Norton Door Closers 76
A-LC Nudor Manufacturing Corp. .. 344

Oasis Water Coolers 281
A Otis Elevator Company 35
A Overly Manufacturing Corp. .. 254
A-IC-LC Owens-Corning Fiberglas Corp. 154-155

A-IC Peelle Company 42
A-IC Peerless Electric Company 114
A Petro 297
Pioneer Division, The Flintkote Co. 334
A-IC Pittsburgh Corning Corp. 361
Pittsburgh-Des Moines Steel Co. 149
A-LC Pittsburgh Plate Glass Co. 78-79, 382-383
A-IC Portland Cement Association 55, 252
A Powers Regulator Company ... 98-99
A Pratt & Lambert, Inc. 75
A-LC Precision Parts Corp. 378
Red Cedar Shingle Bureau 381
A-LC Republic Steel Corp. 124-125
A-LC Richmond Plumbing Fixtures Division Rheem Mfg. Co. 57
A Rilco Laminated Products, Inc. 365
A Rixson, Oscar C. Company 58
A Robbins Flooring Company 52
A-LC Roddis Plywood Corp. 358-359
A Rolscreen Co. 271-273
A-IC Rotary Lift Company 2-3
A Rowe Manufacturing Co. 122

A St. Charles Manufacturing Co. 373
St. Clair Rubber Co. 389
A-LC St. Regis Paper Company 329
A Safway Steel Products, Inc. 328
A-IC Sanymetal Products Co., Inc. . 49
Saran Yarns Company 22-23
Sarco Company, Inc. 349
A Schlage Lock Company 115
A-IC Schundler, F. E. & Co., Inc. . 370-371
A Seamloc Carpet Company 300
A-IC Shlagro Steel Products Corp. .. 380
Sico Manufacturing Co., Inc. .. 152
A Silvray Lighting, Inc. 107
A-IC Sloan Valve Company .... 4th Cover
A-IC-LC Sonoco Products Company 264
Southern Equipment Company 160
Spang-Chalsant 118
A Spanjer Bros., Inc. 401
Sperti Faraday, Inc. 250
Staedtler, Inc. J. S. 142
A Standard Products Company .. 85
Stem, Chester B. Inc. 354-355
A-LC Sterling, John Corporation 360
A-IC Stran-Steel Corporation 345
A Structural Slate Co. 376
A-LC Stylon Corporation 260
A Summitville Tiles, Inc. 29
A-IC Sunbeam Lighting Company .. 37
Sun-Lite Manufacturing Co. ... 396
Superior Standardline Corp. 112-113
Sweet's Catalog Service 407

A-IC Taylor, Halsey W. Co. 292
Teco Plywood Company 71
A-IC Temprite Products Corp. 385
A Thomas Industries, Inc. 408
Thompson Electric Co. 48
Thonet Industries, Inc. 135
A-LC Thrush, H. A. & Company 68
A-IC Timber Structures, Inc. 398-399
Touch-Plate Mfg. Corp. 379
A-IC Troy Laundry Machinery Division American Machine & Metals, Inc. 44
Underwood Corp. 255
A United States Ceramic Tile Co. 63, 344B
A United States Gypsum 290-291
A-LC United States Plywood Corp. .. 7
A-IC United States Steel Corporation (subs.) 132-133, 140-141, 147, 270, 314-315
A Unit Structures, Inc. 259
A Universal Atlas Cement Co. ... 147
A Uvalde Rock Asphalt Company 145
A-IC Upco Company 386
A Van-Packer Company 334
A-IC Van Range, John Co. 364
A Virginia Metal Products, Inc. 104-105
A-IC-LC Visking Company 106
A Vonnegut Hardware Co. 62
Wabash Filing Supplies, Inc. .. 401
A-LC Ware Laboratories, Inc. 8
Webster, Warren & Company .. 353
Weirton Steel Company 119
A Weis Mfg. Co., Inc. Henry 143
A West Chemical Products, Inc. .. 127
A-IC-LC West Coast Lumbermen's Association 317
Western Pine Association 313
A-IC Westinghouse Electric Corporation, Water Cooler 366-367
A-IC- Williams Equipment & Supply Co. 378, 387
Winpower Mfg. Co. 352
A Zero Weather Stripping Co., Inc. 16
A-IC-LC Zonolite Company 397

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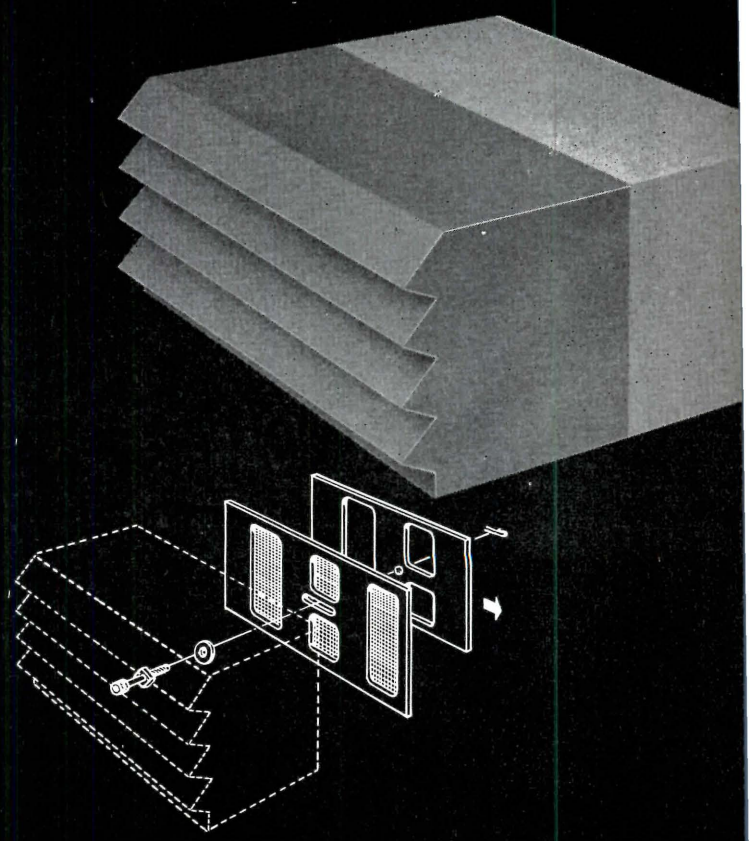

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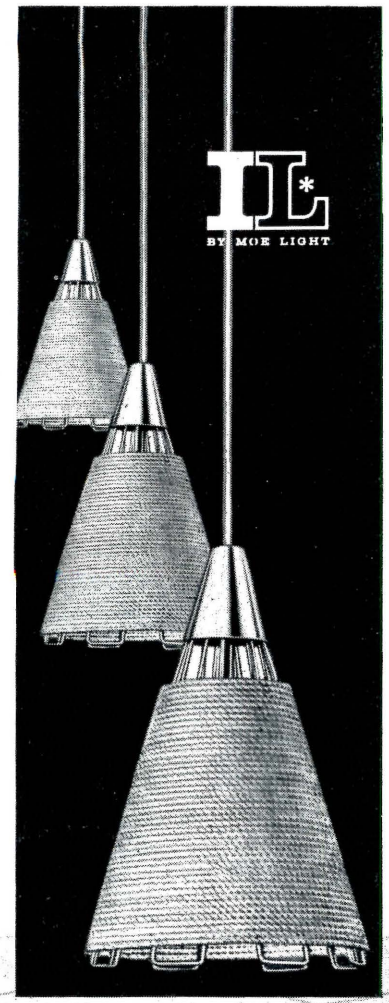

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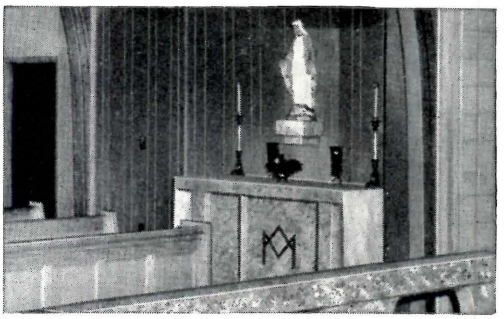

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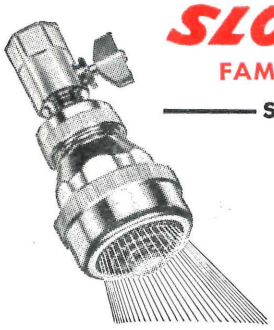

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