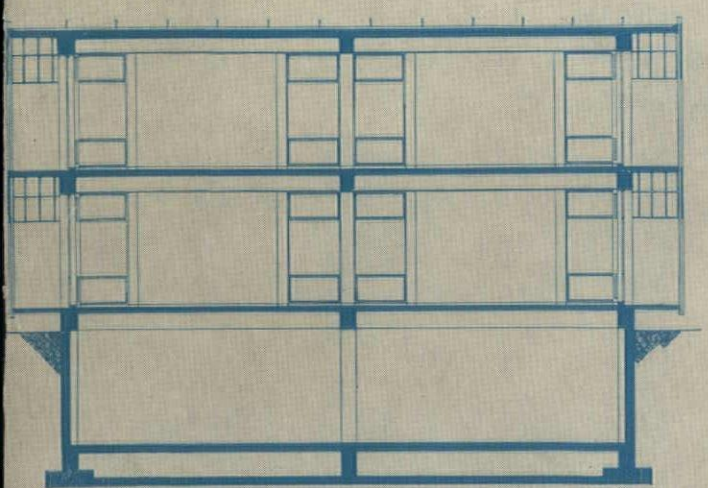
RCHITECTURAL RECORD

February 1958 **2**

197 Building Types Study: Schools

157 Yamasaki's Consulate in Kobe

165 Nervi's Unesco Structural System



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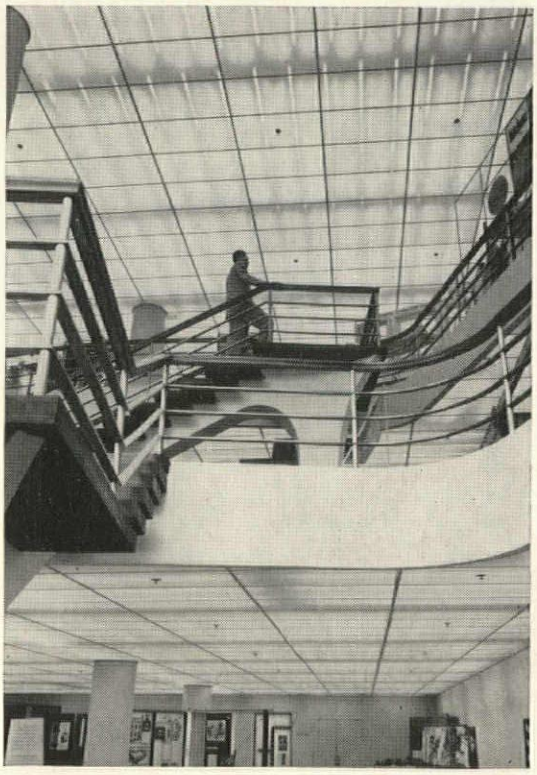

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Manufacturing, Engineering, and Installation of Fire Protection Systems since 1870

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liquid and lather soap dispensers

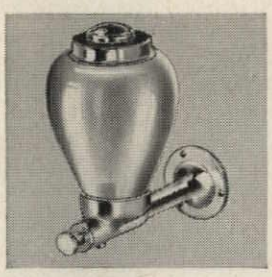
. . . The most complete and adaptable line on the market

At the nation's fingertips . . . installed in the best appointed washrooms . . . for almost half a century. That, briefly, illustrates the high regard architects have for Watrous soap dispensing equipment.

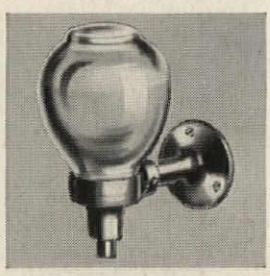
For here's the complete and adaptable line that perks up interior planning . . . offers built-in economy and trouble-free performance plus the ultimate in user convenience in scores of buildings. Watrous is a familiar installation in schools, hotels, hospitals, office buildings, department stores, clubs, theaters, air terminals, filling stations and many others. Companions to world-famous Watrous flush valves.

A number of Watrous soap dispensers are shown here — for wall or lavatory mounting. All deliver a measured quantity of soap . . . all are leakproof . . . all are designed with famous Watrous quality features which guarantee corrosion-free service.

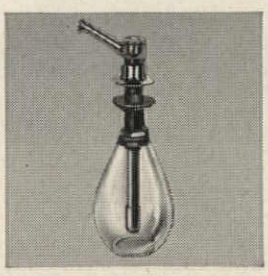
Watrous dispensers bring beauty, function and economy into the modern washroom



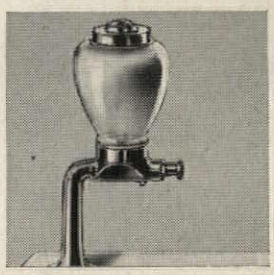
Push-in-type — Highly popular. Delivers measured quantity of soap. Liquid or lather types with glass or metal containers.



Push-up-type — Combines moderate cost, durability and exceptional convenience of operation. Glass or metal containers.



Lavatory-mounted concealed container — Fills from the top! Harmonizes with latest in lavatory trim. Liquid or lather types, with glass or metal containers.



Push-in slab bracket dispenser — Fits faucet hole or special drilling. Easily refilled. Available in liquid or lather types, with glass or metal containers.

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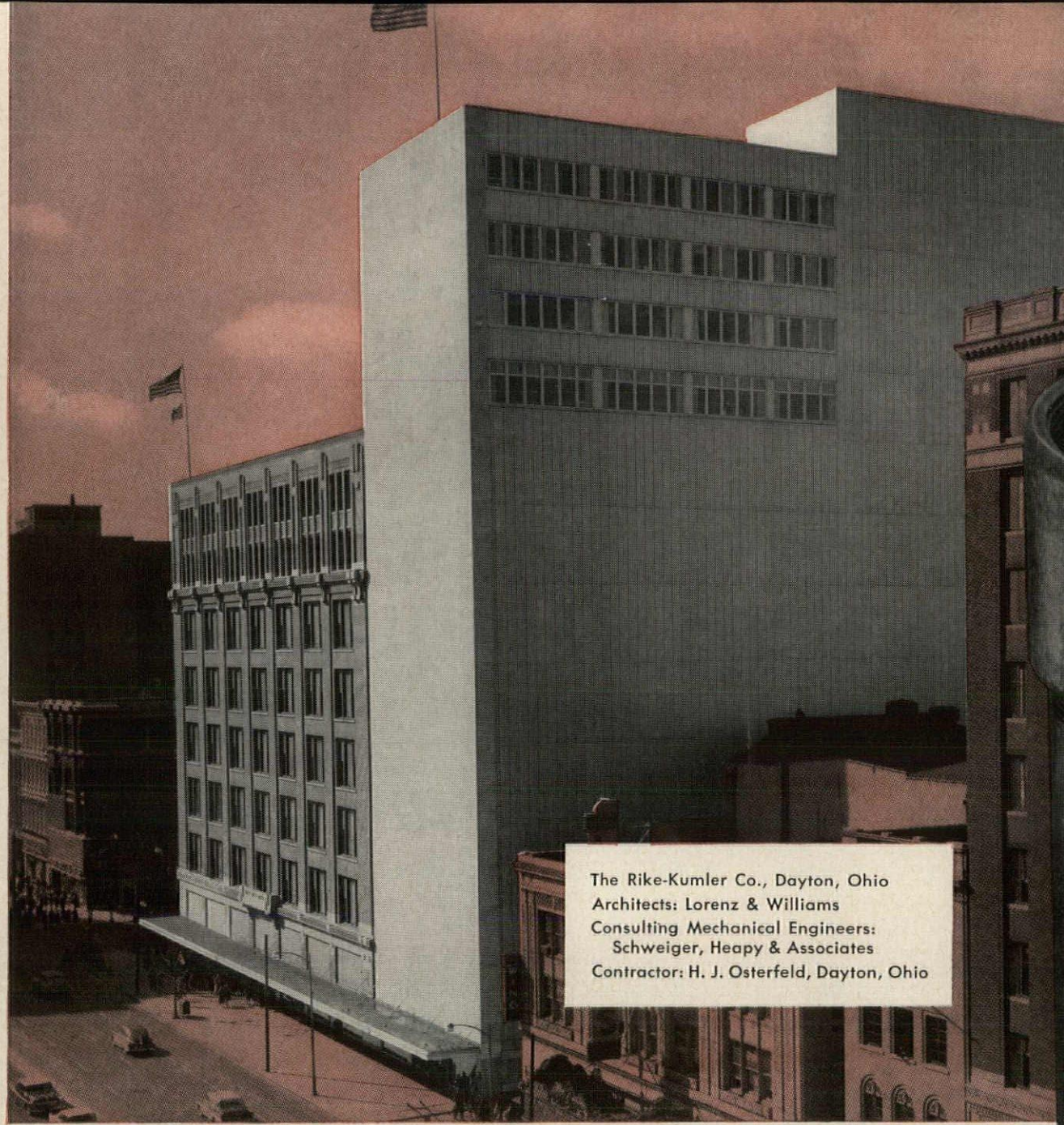
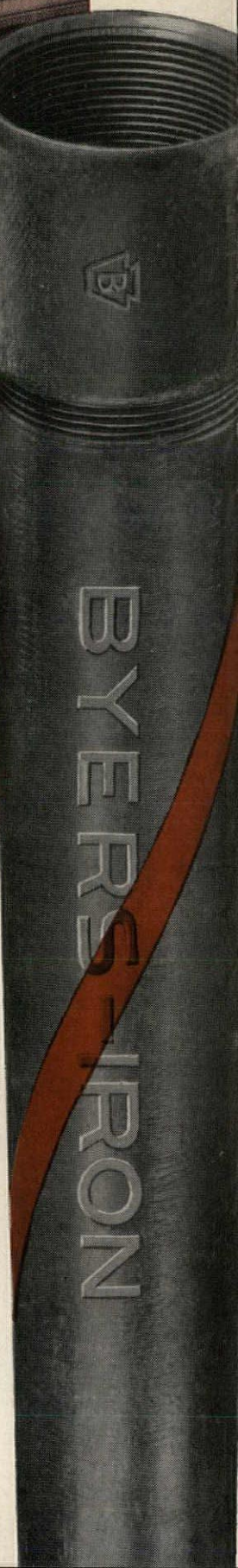


The Rike-Kumler Co., Dayton, Ohio
Architects: Lorenz & Williams
Consulting Mechanical Engineers:
Schweiger, Heapy & Associates
Contractor: H. J. Osterfeld, Dayton, Ohio



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ARCHITECTURAL RECORD

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February 1958 Vol. 123 No. 2

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Next Month in the Record

BUILDING TYPES STUDY: MEDICAL BUILDINGS

Private doctors' clinics, a crippled children's institute, a diagnostic center, a health insurance office and outpatient clinic, a speech and hearing clinic.

BREUER'S HOUSING DEVELOPMENT FOR PRINCETON

Five types of apartment buildings provide housing facilities for 100 families at the Institute of Advance Study.

A HIGH SPOT IN ARCHITECTURAL CRITICISM

Thought-provoking comments on church architecture by John E. Burchard following a pilgrimage to Ronchamp, Vezeleay and Raincy.

WORK OF GAUDI REVIEWED BY HITCHCOCK

SMALL OFFICE BUILDINGS

Four low-rise buildings located on the outskirts of their communities: offices for doctors and architects and a manufacturer of electrical equipment.

ACCENT: ENGINEERING

The structural system of Frank Lloyd Wright's Guggenheim Museum. Concrete hangars at Idlewild Airport and Miami International Airport.

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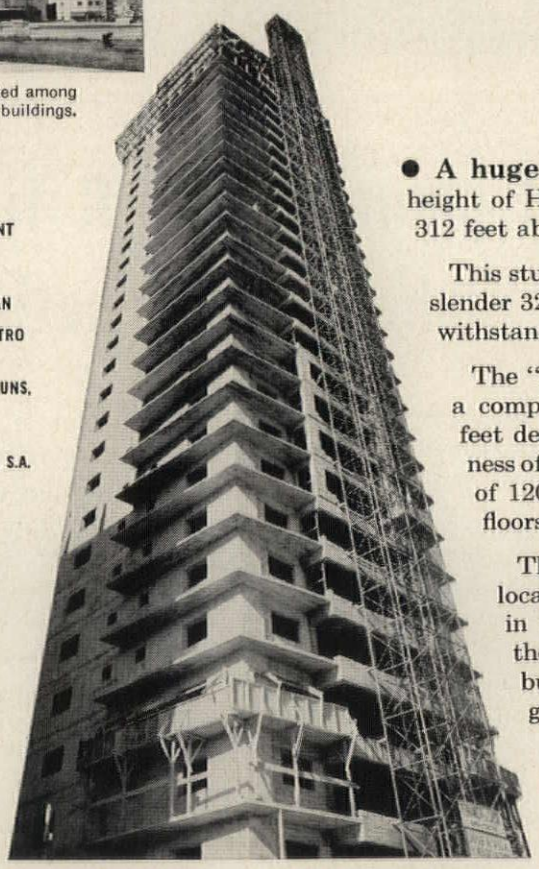
New "17 y 0" apartment building in Havana's Vedado.

Completed building seen above, situated among other new apartment and government buildings. (At right) dramatic construction view.

THERE'S A NEW "H" IN HAVANA



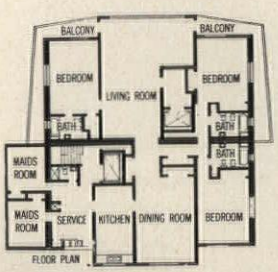
"17 y 0" COOPERATIVE APARTMENT BUILDING
Vedado, Havana, Cuba

Owner: **GUILLERMO SOMEILLAN**

Architect: **FERNANDO R. de CASTRO**

Engineers:
J. A. VILA, B. DESCHAPELLES, A. MUNS, R. GUTIÉRREZ

Contractor:
CONSTRUCTORA METROPOLITANA, S.A.



Huge reinforced concrete "H" beam forms the backbone of the structure.

● **A huge "H" beam** extends upward the entire height of Havana's newest luxury apartment building, 312 feet above sidewalk level.

This sturdy diaphragm forms the "backbone" of the slender 32-story structure and is carefully designed to withstand wind stresses due to hurricanes.

The "H" beam is built of reinforced concrete with a compressive strength of 5000 psi. Measuring 55 feet deep, with 60-ft. flanges and a variable thickness of web, it is constructed to resist wind pressures of 120 mph at lower levels to 180 mph on upper floors.

The building, known as "17 y 0"—its street location—towers above historic Malecón Drive in the famous Vedado section. It exemplifies the dramatic beauty of the many new modern buildings designed in concrete along Havana's growing skyline.

A total of 11,000 bbls. of El Morro Cement, produced by La Compañia Cubana de Cemento Portland, Lone Star subsidiary, were used in the project.

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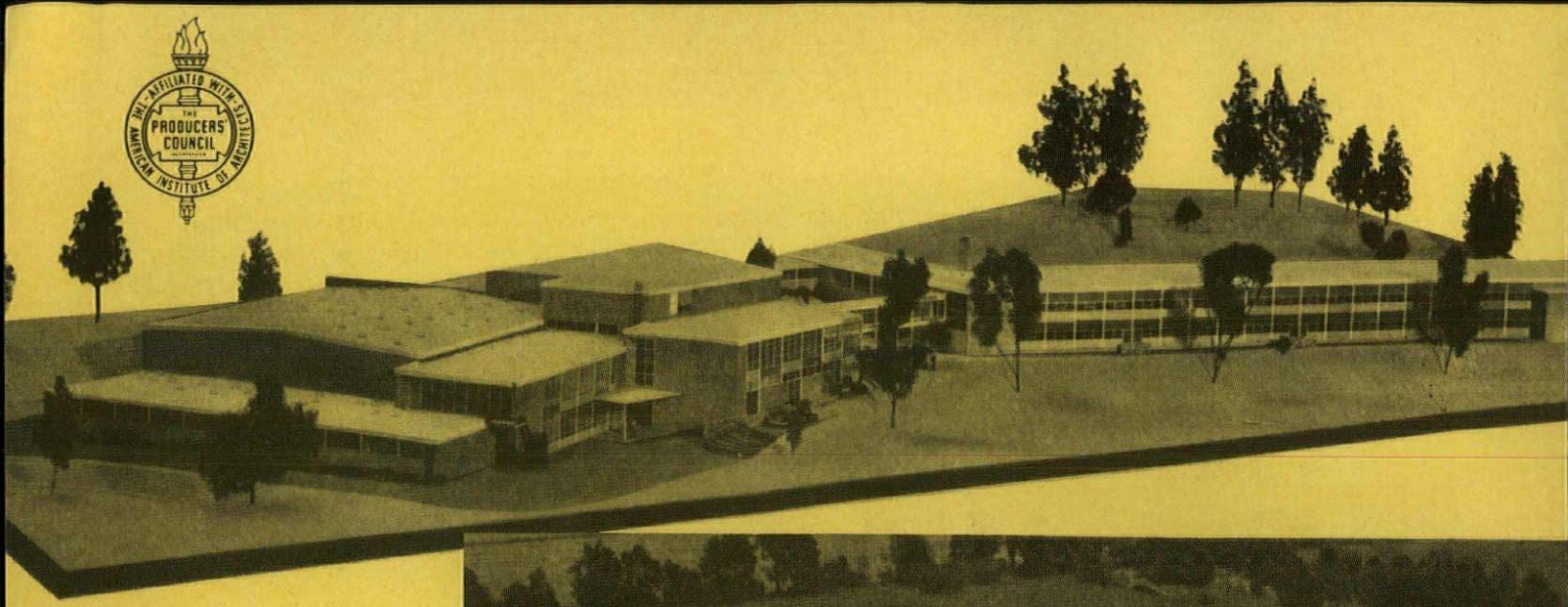
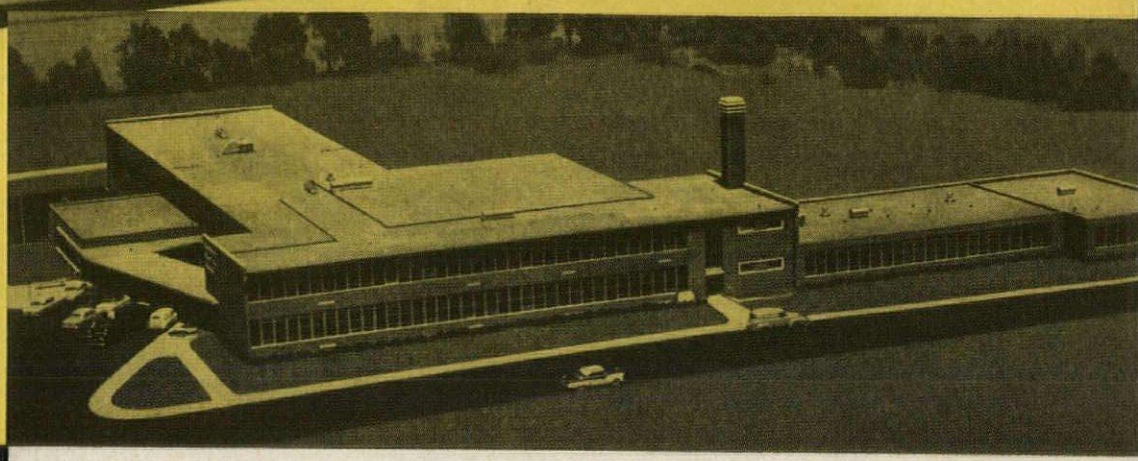
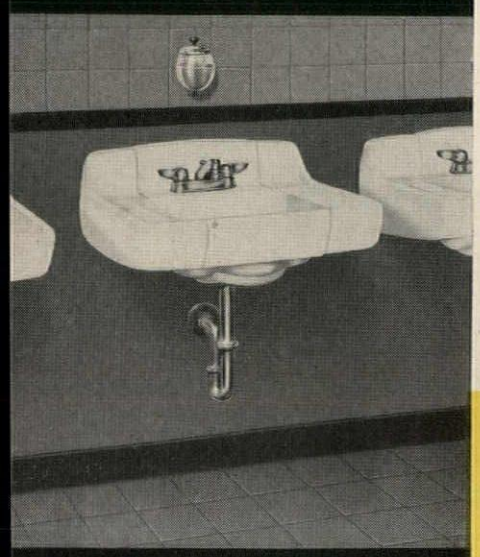


Above, the Riverside Park Intermediate School in Springfield, Vermont. **Right,** the Commodore Perry Joint Area School at Sheakleyville, Pa. Both schools are equipped throughout with U/R school fixtures.



The Chancellor. Wall hung, elongated rim, blowout bowl, with top spud for use with exposed flushometer.



The Caldwell. Battery installed vitreous china wall hung lavatory with 4" high back.

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Specify U/R plumbing fixtures for better satisfied school boards.

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Universal U/R Rundle

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John Knox Shear, A.I.A., architect, educator and, since November 1, 1954, editor of ARCHITECTURAL RECORD, died January 10 in Princeton Hospital, Princeton, New Jersey, after a short illness. His age was 40. Mr. Shear came to the RECORD from a brilliant career in architectural education which had brought him, at 32, to the position of head of the Department of Architecture at Carnegie Institute of Technology, the post he left to join the RECORD. He left also his architectural practice with the firm of Shear, Spagnuolo and Taylor, which he had organized in 1949. Born in Putnam, N. Y., Mr. Shear was educated at Carnegie (B.Arch., 1938; M.Arch., 1941) and Princeton University, where he held a graduate fellowship and received the M.F.A. (arch.) degree in 1941. After four years' Navy service, Mr. Shear was in 1946-47 an associate professor of architecture at Princeton and practiced with Marlier and Johnstone of Pittsburgh. He returned to Carnegie Institute of Technology as an associate professor of architecture in 1949.

JOHN KNOX SHEAR 1917–1958

John Shear was above all a sensitive, perceptive human being. And he was a man dedicated to his family, to his church, and to architecture.

We who have been associated with him in the brief span of his editorship of ARCHITECTURAL RECORD believe he has been a great editor. We believe he has been effective in all that he has done as a thoughtful, rational, and stimulating proponent of a more satisfying architecture.

The *doing* of architecture forever absorbed him: as an architectural editor, he was acutely and perceptively and incessantly aware of contemporaries who were currently accomplishing significantly on the frontiers of design: he valued their respect, and our mail since his death would indicate clearly that he was rich in such respect.

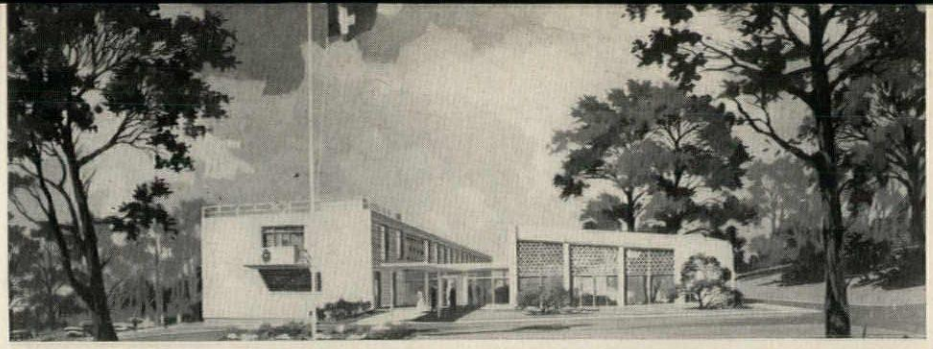
This issue of ARCHITECTURAL RECORD represents partial realization of another goal which John set up months ago. This was, simply, to achieve a format that would permit expression in a graphic medium of the order and clarity found in architecture.

Fortunately for the profession, John taught and built well within his staff—for his enthusiasm was infectious. Most of his basic contributions toward a stronger architectural journalism can and will be perpetuated.

The sad fact remains that architecture has lost a knowing, witty, and lovable friend. His family has lost a devoted son, husband and father. His church and churchmen in general have lost a strong ally. His associates here at Dodge have lost an honored companion.

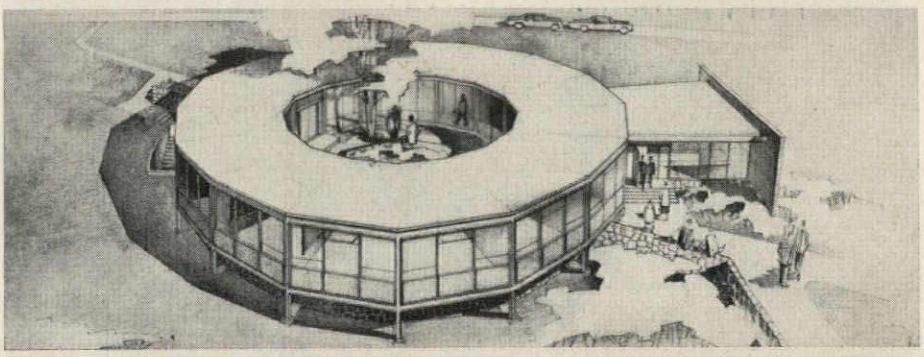
H. Judd Payne

Buildings in the News

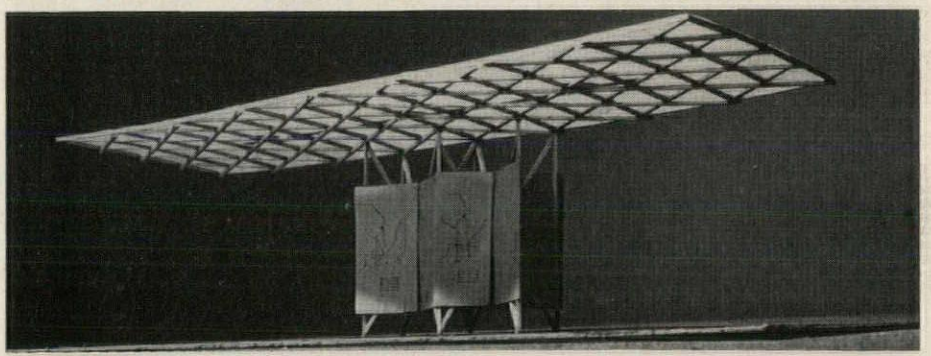


Swiss Embassy Chancellery Building, to be built in a residential sector of Washington, D. C.; preservation of the character of the neighborhood was important design determinant. Architect: William Lescaze

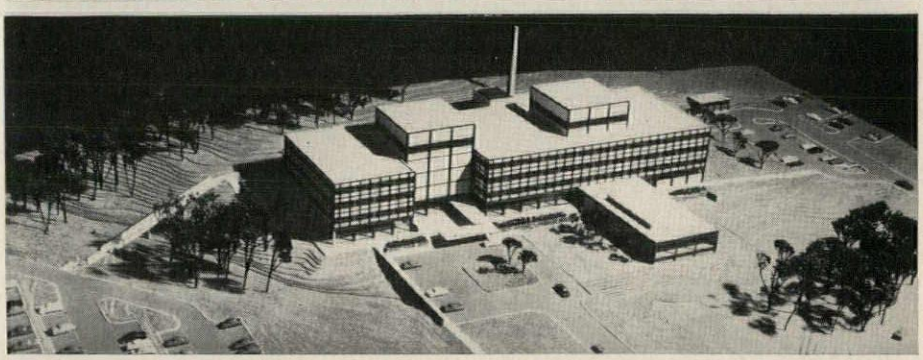
Civic center and pleasure boat marina, including a "boatel" for touring boaters, will be built as joint municipal-commercial venture by the city of West Palm Beach and developer Maurice B. Frank. Shell concrete dome 172 ft in diameter will house restaurant and yacht club. Architect: Bertrand Goldberg and Associates



Dioctagon describes new hearing and speech center for Gallaudet College, Washington, D. C., being built under GSA supervision; McLeod and Ferrara are architects. Ring of classrooms and offices will be bordered by inner corridor ring giving access to each room on main floor. Exterior panels are glass and masonry. Cost: $237,786



Design for downtown bus shelter developed for Atlanta Transit Company by Toombs, Amisano and Wells, Architects. Structural system proposed would develop aluminum tubular prefabricated sections adaptable to different size shelters; skin would be either a bonded plastic or riveted aluminum sheets. Shelters would offer such amenities as transit maps, timetables, clocks, telephones and vending machines



Government Employees Insurance Company plans 200,000-sq-ft $5 million operations office building in Washington, D. C. Vincent G. Kling is the architect. Structure will be reinforced concrete, facing colored porcelain enamel panels and tinted glass. Employes will enter at second-floor level via bridge from their parking lot; visitors at ground level; there will be no passenger elevators

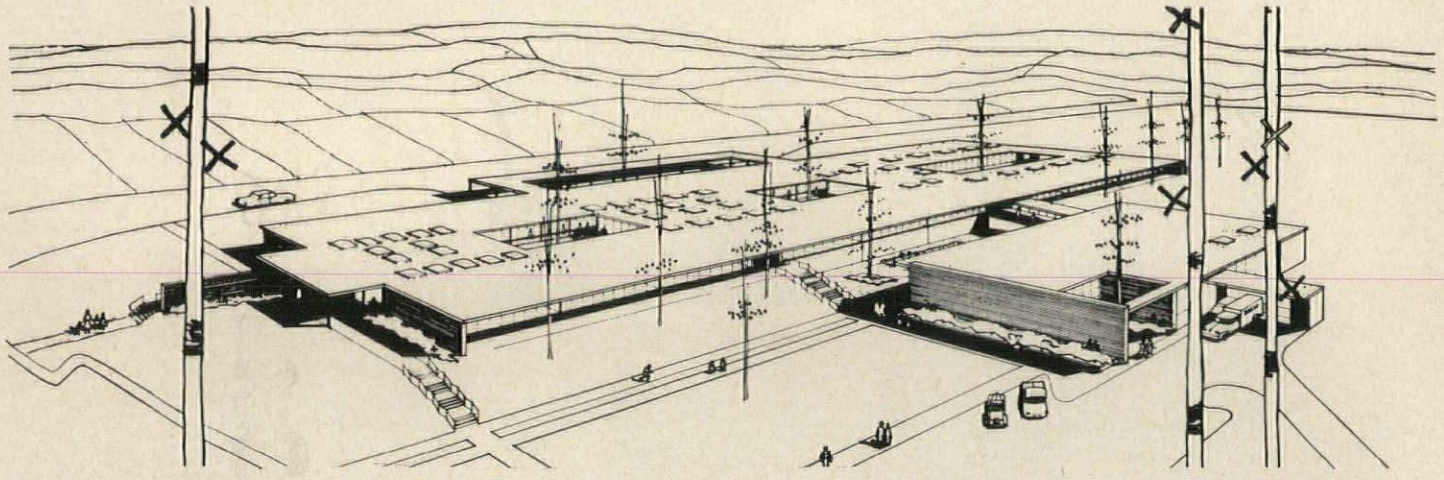
Dallas Memorial Auditorium, recently dedicated on 23-acre site near heart of city's business district, was built at cost of $8 million primarily to house national conventions, will also accommodate all kinds of shows, pageants and expositions. Main area building is 300 ft in diameter and 105 ft high, its roof a 204-ft-span concrete dome with 45-ft reinforced concrete arms cantilevering from 70-ft-high columns. George L. Dahl, Dallas, architects and engineers; Ammann & Whitney, New York, consulting engineers. Builder: R. P. Farnsworth & Company

C.I.T. Financial Corporation Building, 650 Madison Avenue, New York, recently completed—the façade polished black granite set in a grid of stainless steel. C.I.T. and a number of operating subsidiaries occupy entire building except for two ground-floor spaces. Architects: Harrison and Abramovitz. General contractor: George A. Fuller Company

Golden hotel for the Golden Triangle—Pittsburgh Hilton, now under construction in the heart of Pittsburgh's Gateway Center, will be sheathed in gold anodized aluminum. The 22-story $11 million hotel, scheduled for 1959 completion, was designed by William B. Tabler and Associates

St. Augustine's Church, Gary, Ind.; Edward D. Dart, Architect. Main structure is of exposed steel in main portion of nave with lower sections at sides enclosed by surrounding brick walls pierced by narrow glass slots. Upper portion is filled with reinforced concrete panels pierced with triangular-shaped colored glass

One of modern architecture's famous buildings—the 37-story, 27-year-old News Building, 220 East 42nd Street, New York; Raymond Hood and John Mead Howells, Architects—is getting an 18-story addition; Harrison and Abramovitz are the architects. Design effort was to harmonize with existing building, and new gray-white bricks have been selected to match the older ones



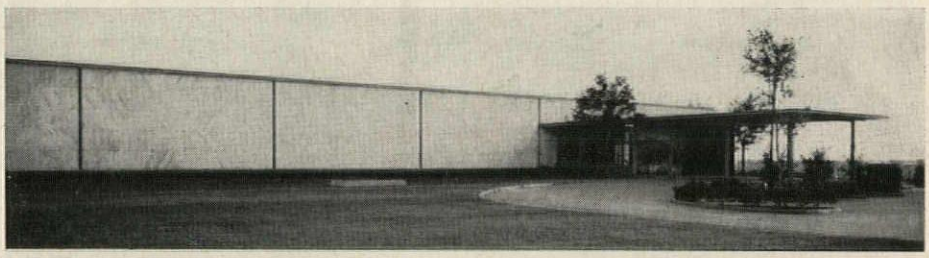
Thomas Andrew Woods Elementary School, Tyler, Tex. E. Davis Wilcox and Associates, Tyler, Architects

TEXAS ARCHITECTURE 1957: NINE BUILDINGS GET AWARDS IN ANNUAL COMPETITION

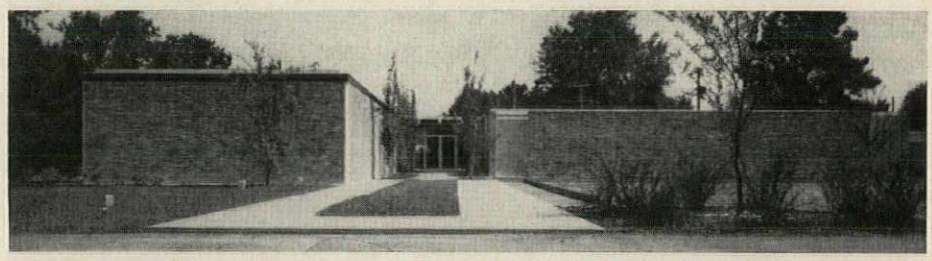
These buildings received First Honor Awards and five others (page 314) Awards of Merit in the annual competition sponsored by the Texas Society of Architects. Winners were on display in the exhibition of "outstanding Texas architecture" held each year, also under Society sponsorship, in the Dallas Museum of Fine Arts during the State Fair of Texas. Jury for the competition consisted of Walter A. Netsch Jr., general partner in charge of design for the Chicago office of Skidmore, Owings and Merrill; Don P. Stevens, partner in the firm of Ferguson and Stevens in Albuquerque; and John W. Lawrence, partner in the firm of Lawrence, Saunders and Calongue in New Orleans.

The jury's report: "In general the quality of all the submissions provided an exciting interchange of the basis for judgment. Primarily five factors influenced the jury's selection: 1. Quality of the plan to the problem; 2. Relation of the plan to the three-dimensional solution; 3. Character of the building in the round; 4. Selection of materials; 5. Technical detailing of materials. Some of the solutions were not premiated because the qualities expressed in the plans were not evident in the three-dimensional character of the building. In other submissions, the opposite lack of relationship was

continued on page 314



Laboratory and plant, Houston, for Texas Instruments Inc. Ford, Colley & Tamminga, San Antonio, Architects



Residence of Mr. and Mrs. A. J. Farfel, Houston. Bolton and Barnstone, Houston, Architects

Medical Towers, Houston. Golemon & Rolfe, Houston, Architects; Skidmore, Owings & Merrill, Consulting Architects

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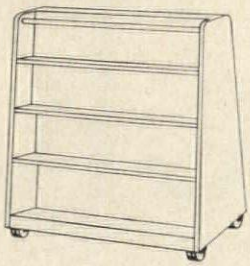
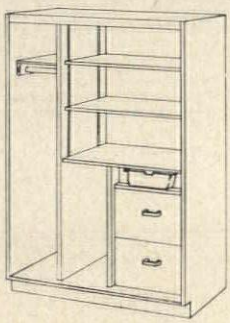
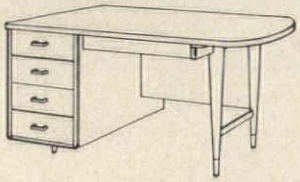


WARDROBE & STORAGE CABINETS
Teachers' Storage No. 101



FIXED COUNTER CABINETS
Sink Unit No. 519

TEACHERS' DESKS
No. 8701



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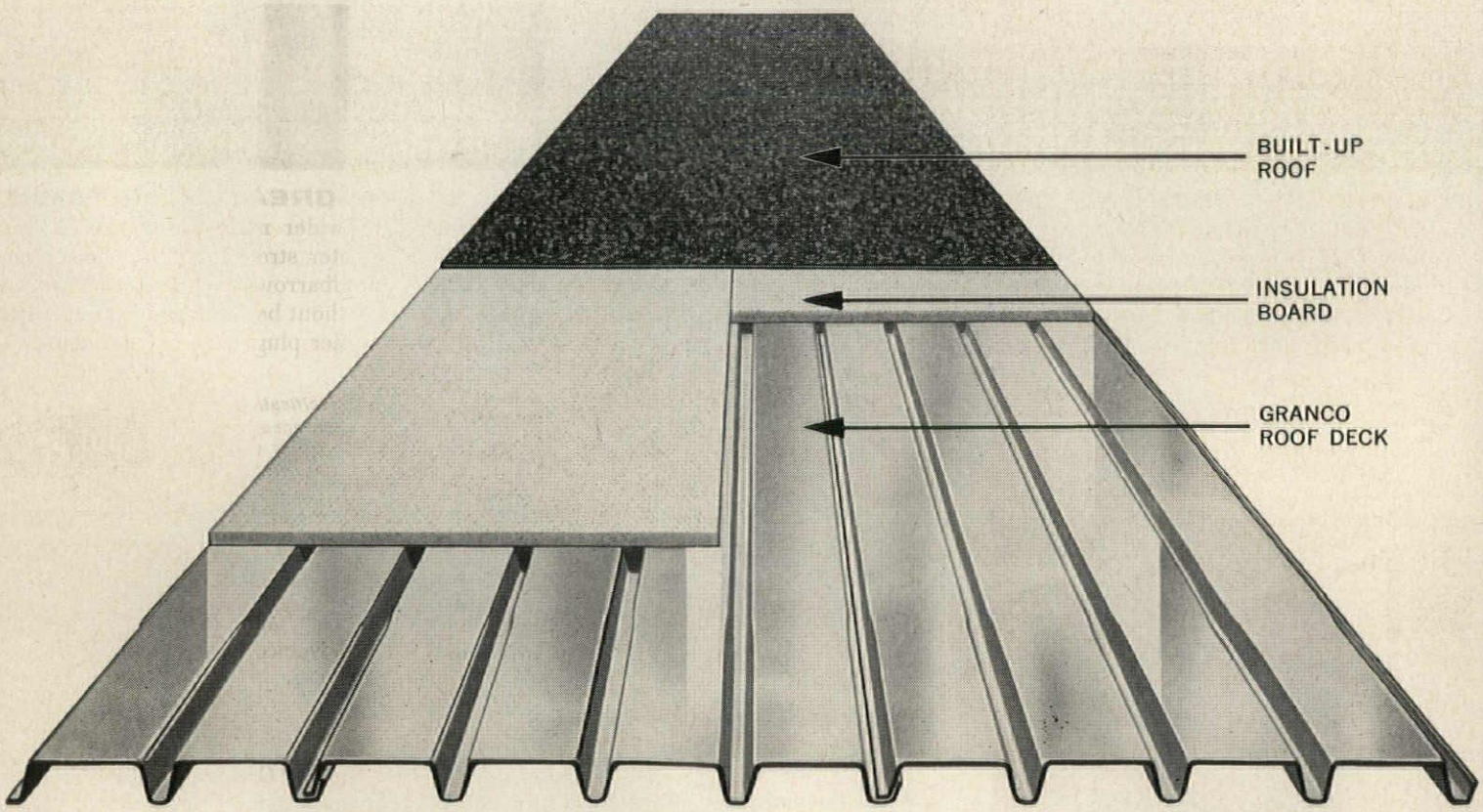

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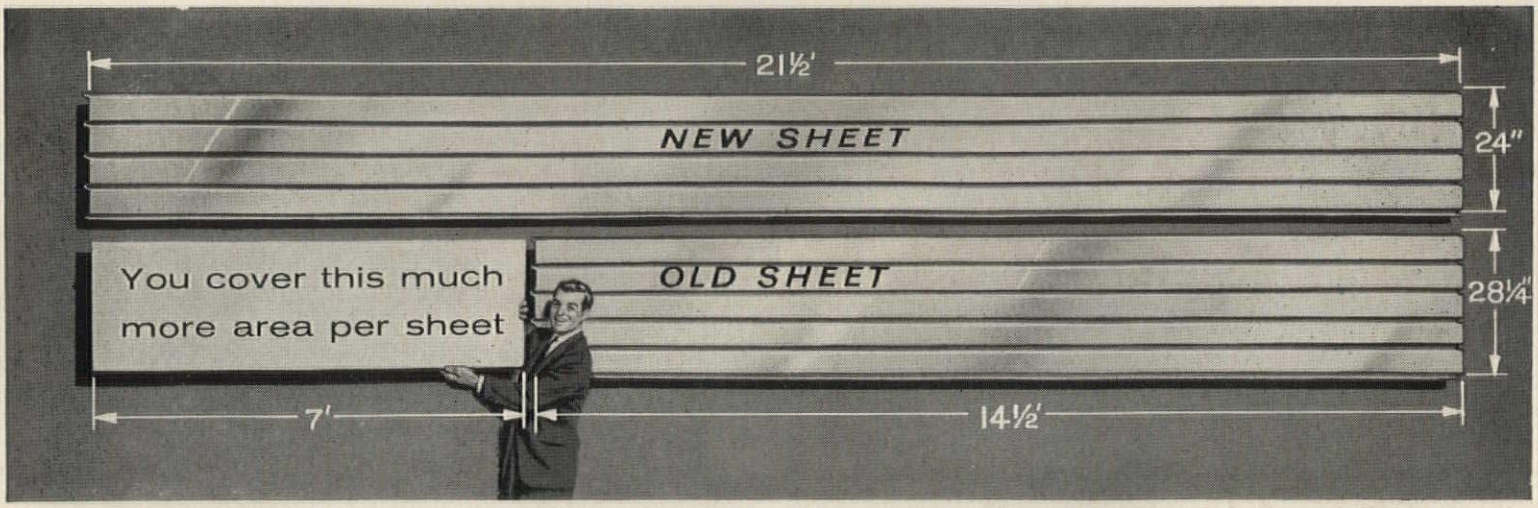

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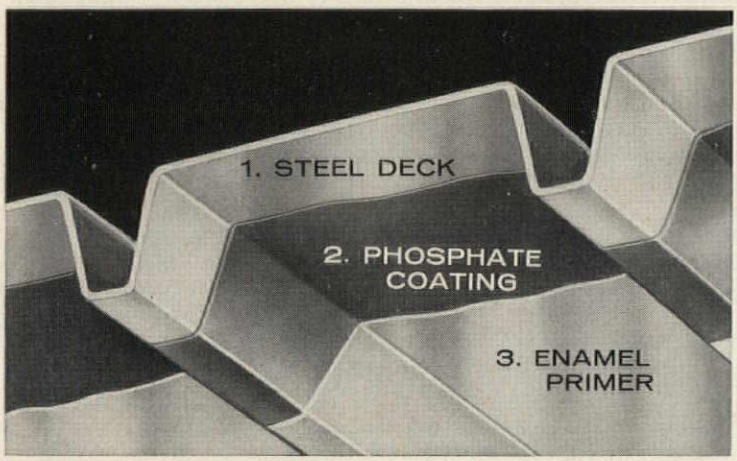

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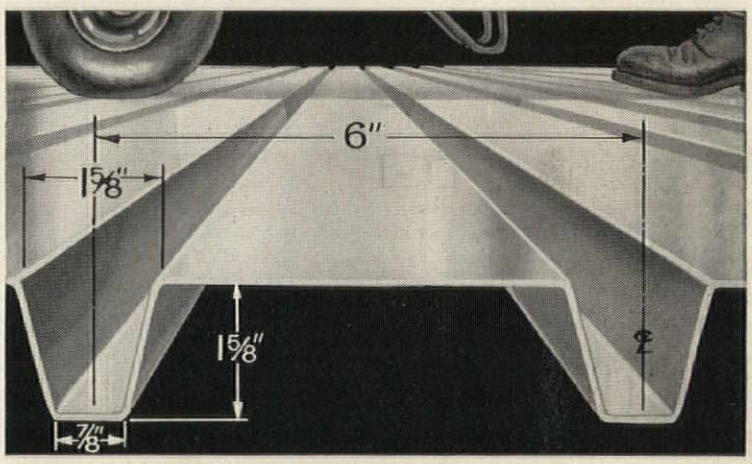

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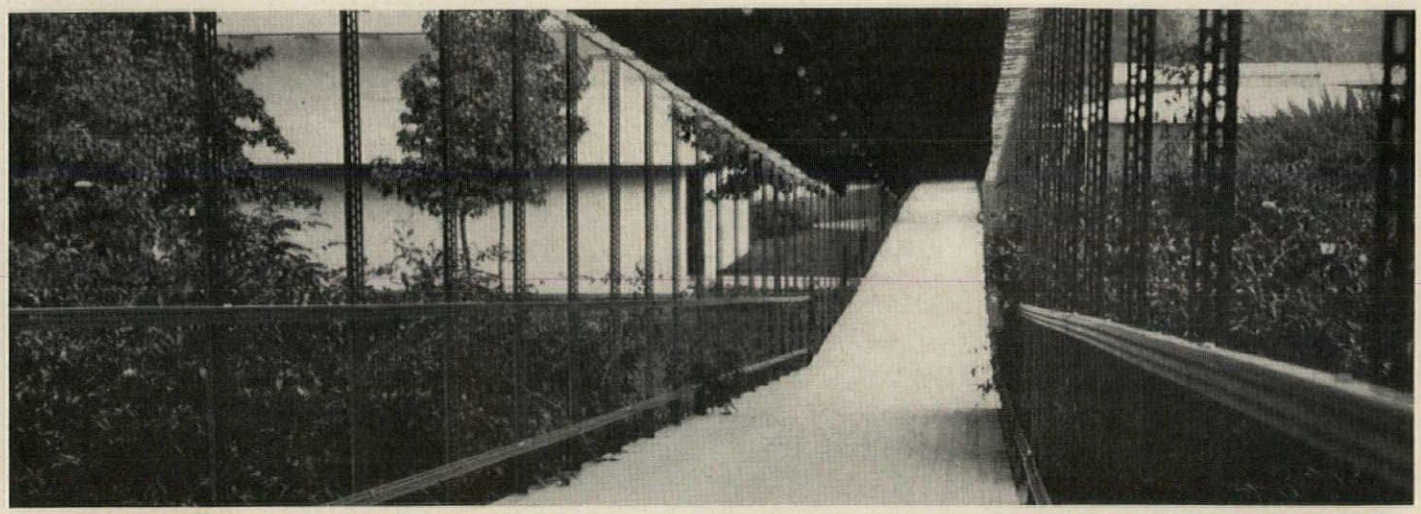

The covered way leading to the Park

MILAN'S ELEVENTH TRIENNALE: THE MOOD (MODE?) INTERNATIONAL

A Provocative Tour of the Latest Exhibition in a Special Report by Betty Campbell, Editor of the English Journal "Concrete Quarterly"

This summer's Triennale Exhibition at Milan has been described—and particularly by the sophisticated Italians—as just a little disappointing. Perhaps we have grown to expect too much of this Exhibition, which gathers together the best in architecture, decoration and industrial design. Of course, the standard of excellence was high. That one could even wish it higher is a tribute to the fabulous reputation the Triennale has built up for itself.

The architectural section was devoted to a historical outline of the development of structure, leading up to the exhibition of modern design and planning which made its greater part.

In some ways this section was the weakest in the Exhibition. That it contained little that was unfamiliar is perhaps an unfair criticism, since it was intended primarily for the general public and, as such, showed an admirable cross-section of the best work of the past decade. The presentation—clever—suffered at times from being too clever. Much of it led through narrowing and opening passages closed with false walls and ceilings, and trick lighting, at times highly effective, degenerated at others into a gloom in which it was difficult to see the exhibit at all.

The story led, by models and enlargements, from column-and-beam, through the false arch, the Roman vault, and medieval timber work, to Baroque, representing, as the caption said, the first "conquest of space through structure." It then moved on to the great iron engineers—Telford, Brunel, Paxton, Eiffel, Roebling, and to the early reinforced concrete work.

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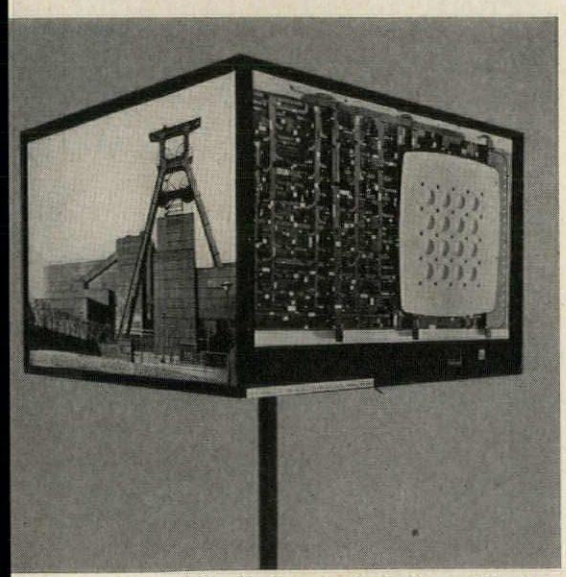
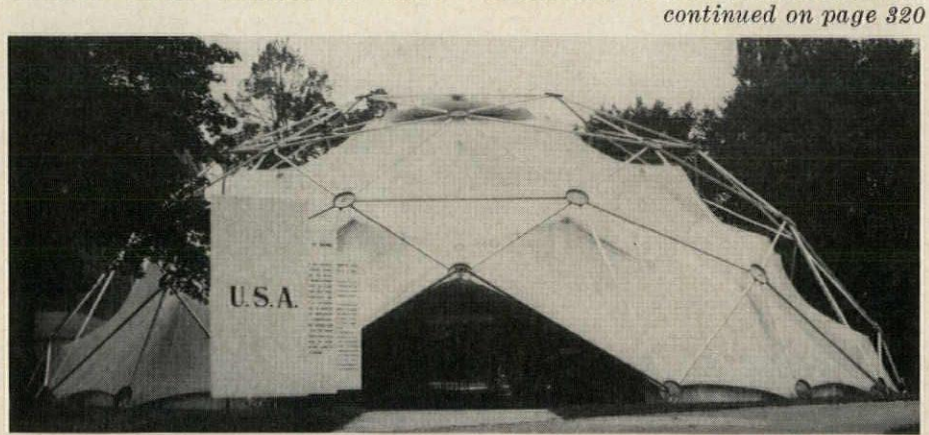
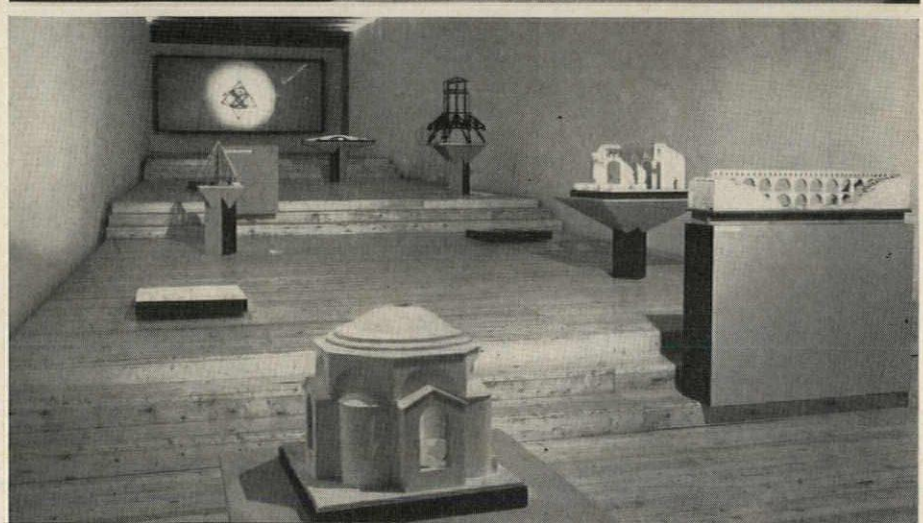


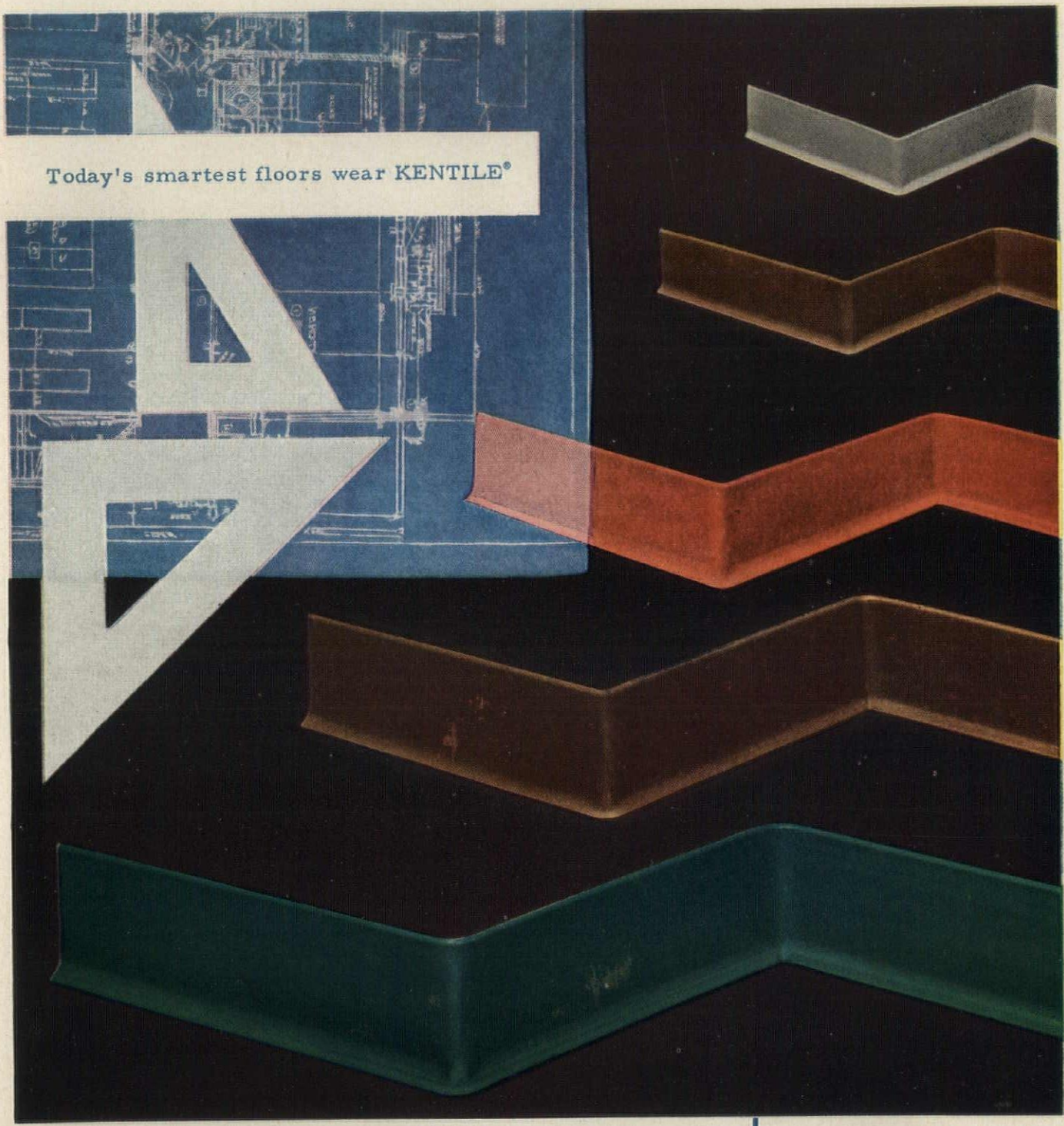
One of the display stands in the architecture section, with transparencies illuminated from within



The U. S. pavilion: the ubiquitous Bucky Fuller dome—framing here aluminum



Introductory exhibits in the Architecture section—"in some ways . . . the weakest in the Exhibition"



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ARCHITECTS AND SPECULATIVE HOUSING: CAN A MARRIAGE BE ARRANGED?

A.I.A. and N.A.H.B. Hold Joint Sessions to Discuss It: A Special Report by Ernest Mickel

A serious effort to define the architect's optimum role in mass housing in terms that are also realistic from both architect's and homebuilder's viewpoints may emerge from a current series of conferences between officials of the American Institute of Architects and the National Association of Home Builders. Sparked initially by A.I.A. President Leon Chatelain Jr.'s famous Centennial Convention jeremiad on the state of speculative housing design, the conferences are specifically directed toward better housing (architect-designed) at lower cost through architect-builder collaboration. The first two sessions, held last summer, produced some very forthright discussion of architect-builder differences; a third, scheduled for early this year, will focus on specific problems raised by building codes, zoning regulations, lenders and appraisers.

The current series of meetings is at least defining new areas of cooperation for the two groups. For many years they have *talked* of the need for closer scrutiny of the architect-builder relationship, while great tracts of development housing were erected without benefit of architect; they have seen too much "jerry" building in the residential field and wondered—but not very effectively—about methods of applying architectural services on a broader scale.

This thinking was brought into focus last May when the nation's home builders were abruptly and sharply challenged by Mr. Chatelain. In an address before A.I.A.'s centennial celebration convention in Washington, he made such far-from-cryptic remarks as these:

"The fact is that our vast suburban housing developments are being built, in large part, with little or no understanding of the needs of contemporary society. The speculative builder's house, nine times out of ten, is designed in a potpourri of styles whose overall result is imitation of the past and confusion about the present . . .

"The old center-hall plan, a mystic hangover from the past, has been compressed into today's smaller tract so that today's version comprises a postage-stamp house with a tiny hall, a mite-sized living room, a tiny formal dining room, a tiny kitchen, and a tiny recreation room or den—this last a sop to 'informal living'. . . .

"In the huge tracts of small houses, we have the fantastic monotony of the average temporary army post. We still suffer from our hangover of pioneer expediency. Just provide temporary shelter, we are told, and we can re-build everything later. . . .

"Instead of housing Americans as our national welfare demands of us, we are speedily building bigger and better slums of the future."

This, and much more of the same caustic reference in the Chatelain address, triggered a concerted move toward closer inspection of the problem. The National Association of Home Builders called for a meeting with A.I.A. officials and this was held during the summer to chart a course of action. It was agreed that the primary need was for a definition of differences and a second conference held in August was devoted to the question "Why and How the Architects and Home builders Should Work Together." It was at this session that more detailed definitions of need were laid out. It could still be described as "exploratory," however.

Here are some of the questions posed and general conclusions reached at the August meeting:

From the homebuilders' viewpoint—

Why don't more homebuilders use architectural services? For one thing, total architectural services have not been made clear to the builder. Heavy competition has been lacking for six or seven years. Reluctance on the part of builders to use architects' services could be connected with "bad experiences" by the builder with sub-standard architectural work.

Do good planning and design have market value? YES, said the August meeting. The "annual model" approach to merchandising was considered important in relation to sales. Design and planning can be advanced too rapidly, however. Housing should be designed for the buyers' current tastes. Potential buyers must be educated to upgrade their approval and demands.

Can this be assessed? By consumer and appraiser? The appraiser can, and often does, reflect additional market value through good planning and design. But buyers presently do not seem to relate good planning and design to market value.

Do architectural services produce this market value? Yes, immediately.

Are architectural services economically feasible within the assessed market value? Yes—all builders attending the meeting use architects in their own operations. One of the major problems is, of course, selling builders *not* presently using architects on the economic logic of employing an architect as part of the team.

From the architects' viewpoint—

What is involved in providing the architectural service required by homebuilders? With the architect highly trained, his abilities can extend far beyond designing the outward appearance of a house. If he works as part of the team, he can provide complete services, coordinating many architectural and engineering activities. Architect and builder working together make it possible to design with existing builder techniques and parts can be detailed for jig and die assembly. Good programming and close cooperation can be rewarding financially to both architect and builder. The architect can provide more services in a homebuilder relationship than is possible with other types of clients.

What is the relationship of this specialized service to complete architectural service? (Time, expense, work, etc.) It is specialized only insofar as it deals with multiples of one building type. Complete architectural services for homebuilding often are overlooked because of unfamiliarity with total architects' services.

Since the service has been proved rewarding, why don't more architects go in for it? Profit feature can be verified by experience. The architect and homebuilder should "choose each other." It is believed 90 per cent of builders are not interested in architects, and 90 per cent of architects are not interested in builders. Why? Fundamental lack of knowledge concerning services and remuneration. The architect working with the builder who provides all services or supervises all services is probably much more attracted to the homebuilding field. It was agreed the ar-

continued on page 338

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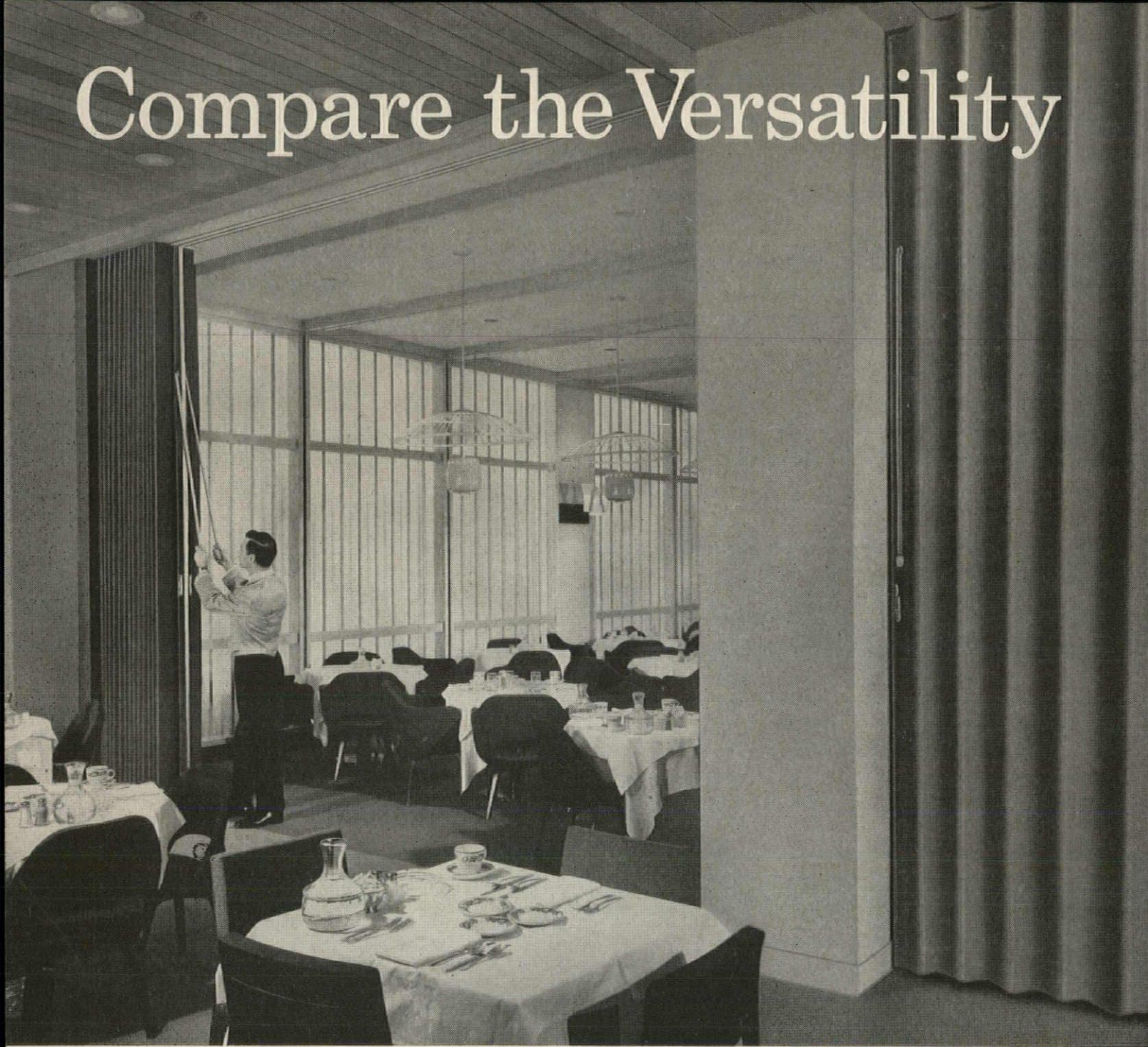

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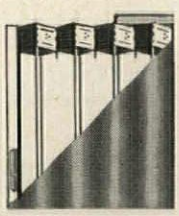

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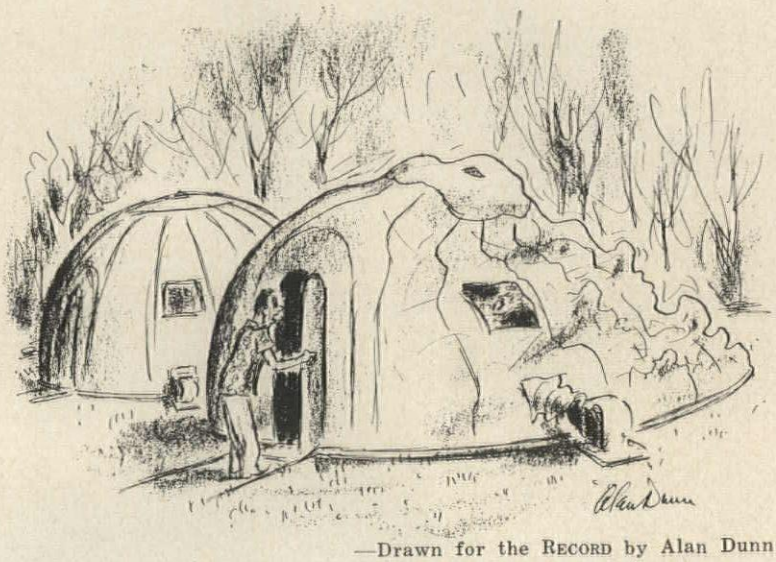
Meetings and Miscellany



—Drawn for the RECORD by Alan Dunn

"Run for it, Phyllis, Myrt, Paul, Gwendolyn, Towser—power failure!"

The State of Construction

The November totals on contracts for future construction in the U. S. held just about even with November 1956 figures, and cumulative totals for the first 11 months of 1957 were two per cent ahead of the 1956 period, F. W. Dodge Corporation reported. For November, contracts for housing and heavy engineering both rose, but these gains were offset by an approximately equivalent drop in the nonresidential category. For details, see page 386.

Zeckendorf Loves Architecture

Out of the world of realty impresarios late in December rode an unexpected Lochinvar to rescue Frank Lloyd Wright's Robie House—none other than William Zeckendorf, and he was offering $125,000 to buy the house from the Chicago Theological Seminary and its famous demolition plans (AR, April 1957, page 9). Mr. Zeckendorf will use the house as an on-site construction office during construction of a 47-acre redevelopment project he is sponsoring nearby and afterwards will turn it over to the National Trust for Historic Preservation. The $125,000 will enable the Chicago Theological Seminary to buy an alternate site for its dormitory. Not only the many active over the last several months in the battle to preserve the house but the world of architecture generally will agree with Mr. Wright's stately judgment that "Zeckendorf has done a good thing."

N.I.A.L. Medal to Henry Shepley

The Gold Medal for Architecture of the National Institute of Arts and Letters will be conferred this year on Henry R. Shepley, F.A.I.A., of Boston, senior partner in the firm of Shepley, Bulfinch, Richardson and Abbott. The Medal will be given in May at the annual joint ceremonial of N.I.A.L. and the American Academy of Arts and Letters. The Gold Medal of the Institute is conferred annually in each of two categories of literature and the arts, ten categories being designated over a five-year period. Among previous recipients of the Gold Medal for Architecture are Frank Lloyd Wright, Frederick Law Olmsted and William Adams Delano.

Sargent Named at Syracuse

D. Kenneth Sargent, F.A.I.A., senior partner in the architectural firm of Sargent, Webster, Crenshaw and Folley, has been named director of the School of Architecture at Syracuse University. Mr. Sargent succeeds L. C. Dillenback, who is retiring. Mr. Sargent, who has been a member of the university faculty for 27 years, assumes his new post February 3. He will continue his affiliation with his firm.

Toward a Museum of Architecture

The A.I.A. committee appointed to consider the purposes and functions of a Museum of Architecture—the fruit of Louise Mendelsohn's proposal of some years back—has recommended preparation of a prospectus to be brought to the attention of appropriate people for their consideration. The committee, which had John Richards as chairman and Hugh Stubbins, Samuel Wilson Jr., Nathaniel Owings and John Detlie as members, in its report envisioned the museum as containing areas assigned to five basic functions—a permanent exhibit demonstrating the story of architecture and planning through the ages; a constantly changing exhibit of contemporary architectural needs, techniques and solutions, demonstrating to the public and to the profession the vast potentialities and responsibilities of the profession of architecture to society; a depository for books, documents, drawings and other records which will ultimately become a world center for research and study, and a circulating collection of books, films, and microfilms; a publications program designed to reach a wide public, with a special slant toward the younger generation; administration, storage and work areas adequate to serve a program of changing and traveling exhibits. It is thought that the proposed new Smithsonian building might provide quarters for the museum.

This Year at Aspen (?)

The visual character of environment in various parts of the world and the designer's role in improving it will be the central concern of this year's International Design Conference at Aspen. (Although there appeared last month to be some question about whether this year's conference would actually be held in Aspen, the famous setting for the first seven, or in some spot more conducive to communication between conference and public, if not the conferees.) The major speakers this year, as plans were described at a press conference in New York last month, will all be men who have played or are playing an important role in building contemporary environment—Dr. Erwin A. Gutkind of Philadelphia, historian, city planner and author of the book "The World from the Air"; Willo von Moltke of the Philadelphia Planning Commission; Isamu Noguchi, internationally known sculptor and designer; Prof. Gordon Stephenson of the University of Toronto, planner of many postwar British towns; and Prof. Christopher Tunnard, head of the School of Landscape Architecture

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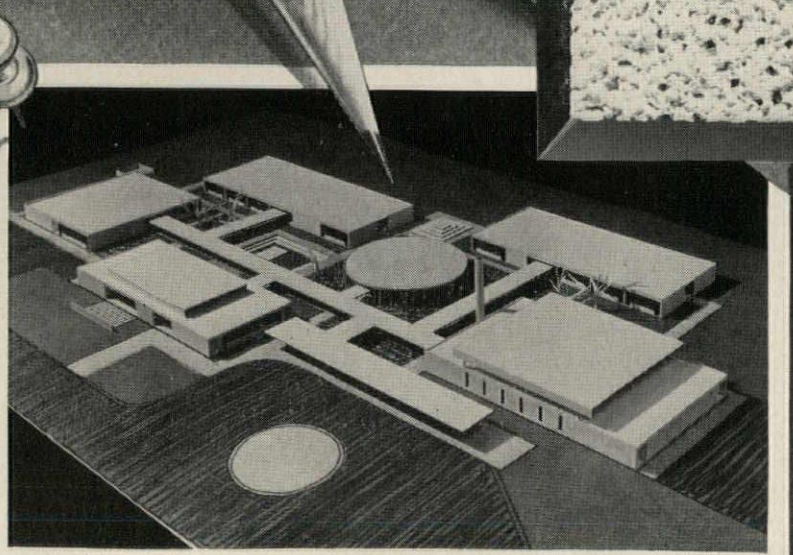

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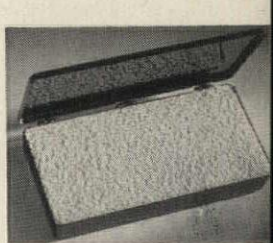

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at Yale. Projects to be discussed include the sculpture and murals of the new University of Mexico; the new Brazilian capital city of Brasilia; the sculpture gardens of the new UNESCO building in Paris; plans for the rebuilding of historic Philadelphia; and the reconstruction of Coventry, England. Dr. Albert E. Parr, director of the American Museum of Natural History in New York, is chairman of the Executive Committee for this year's conference. Attendance is open to all interested.

Architects Un-Anonymous

The *American Architects' Directory*, published in 1955 by the R. R. Bowker Company of New York under the sponsorship of the American Institute of Architects, may be limited to one edition unless some substantial portion of the 1825 copies still remaining from the first edition of 5000 are sold, either at the special A.I.A. members' price of $15 or at the price, for all others, of $20. George S. Koyl, F.A.I.A., former dean of the School of Fine Arts of the University of Pennsylvania and the editor and continuing faithful friend of the Directory, believes this can be achieved only if architects themselves take a greater interest in it. "The Directory is a responsibility of the profession," he says. "It must have greater support from architects than it has had to date." Dean Koyl, who would like to see the next edition come out next year, or 1960 at the latest, also personally believes that a second way of financing it must be found—he mentions advertising, as used by the American Medical Association directory, and the system of firm "cards" used in the lawyers' directory published by Martindale's. Editorially the hope is that the new edition will increase the listing of architects (from the present 10,800) and the architects' biographies (now over 7250) and add a separate listing for firms. For those interested in the present edition, the publishers' address is: R. R. Bowker Company, 62 West 45th Street, New York City.

Wanted: "Designs in Open Space"

From Ian McHarg, chairman of the Department of Landscape Architecture at the University of Pennsylvania, comes an appeal to architects:

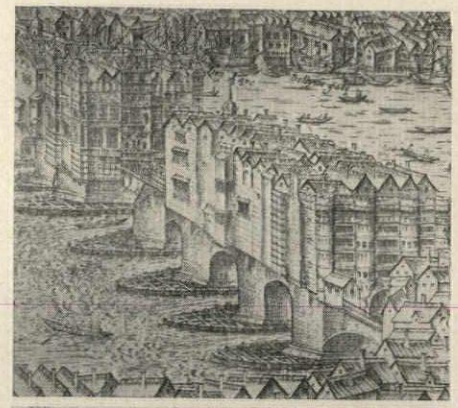
"As you know I have received a grant from the Rockefeller Foundation for research in Landscape Architecture. The research involves the simple collection of the best material in Landscape Architecture, published and unpublished, and the association of the material by titles with the twin ends of developing material for teaching purposes and the ultimate publication of a series of readers.

"I would like to appeal to architects through your magazine to send to me designs and projects in open space. The project is concerned with the assimilation of material on the design of open space, irrespective of by whom it has been done. Category titles into which material is being assembled include many which are of vital interest to architects, e.g., playgrounds, open space in housing, plazas, civic spaces, neighborhood and shopping centers, fountains, sculpture in open space etc.

"I do hope that you can place this appeal in your editorial column and that it will evoke a widespread response. As you know, the production of a literature in this field is a vital need."

Wanted: Rotch Scholar

From William G. Perry, secretary of the Rotch Travelling Scholarship (955 Park Square Building, Boston 16, Mass.), has come the following notice: Exercises preliminary to the selection of the sixty-ninth winner of the Rotch Travelling Scholarship will be held in April. Applicants must be American citizens whose architectural record includes study *or* experience in Massachusetts. A statement of requirements may be obtained by writing Mr. Perry before March 1. All applications are due Monday, March 17.



London, 1600 (top), and Paris, 1618, are two of the copper prints among the 50 from the De la Gardie Collection of the Royal Library in Stockholm which comprise the exhibition "A Century of City Views" shown at the Library of Congress in Washington under the auspices of the Smithsonian Institution Traveling Exhibition Service. The exhibition may travel later

1. Moving day at Seagram's new building in New York found clients and architects in this happy pose—Architect Mies van der Rohe; Samuel Bronfman, president, Distillers Corp.-Seagram Ltd.; Architect Philip Johnson; and Edgar Bronfman, president, Joseph E. Seagram & Sons Inc. 2. Another award for Ralph Walker of Voorhees Walker Smith & Smith—a silver plaque from the Building Stone Institute for his "outstanding contributions to American architecture." Dean Leopold Arnaud made the presentation while Institute President Samuel Sternberg and Executive Secretary Frank P. Tufaro looked on. 3. To Minoru Yamasaki recently went this award from the Copper and Brass Research Association

1

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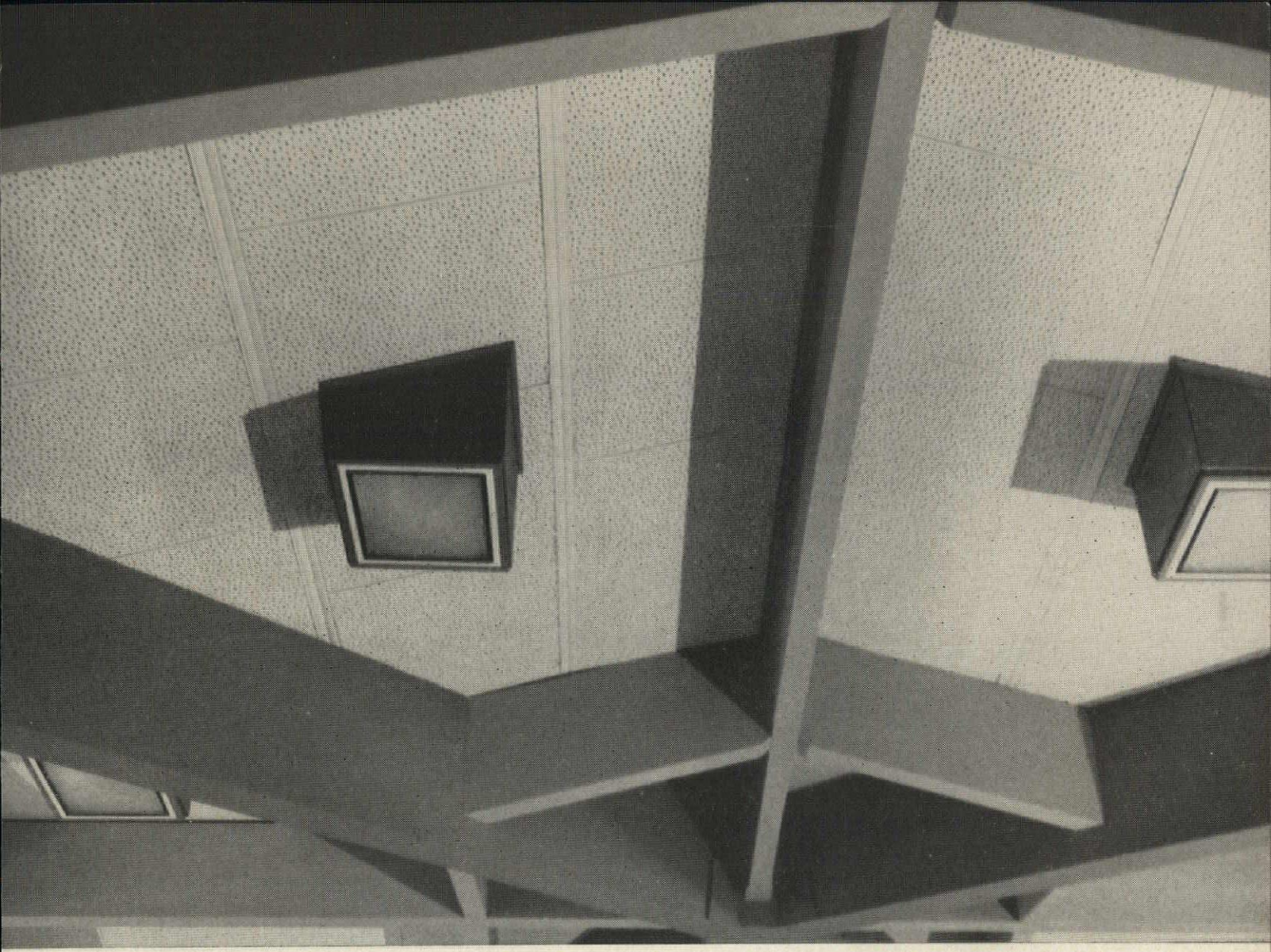


Exclusive Full Random pattern of Armstrong Acoustical Formboard adds dramatic ceiling interest to poured-in-place roof deck construction.

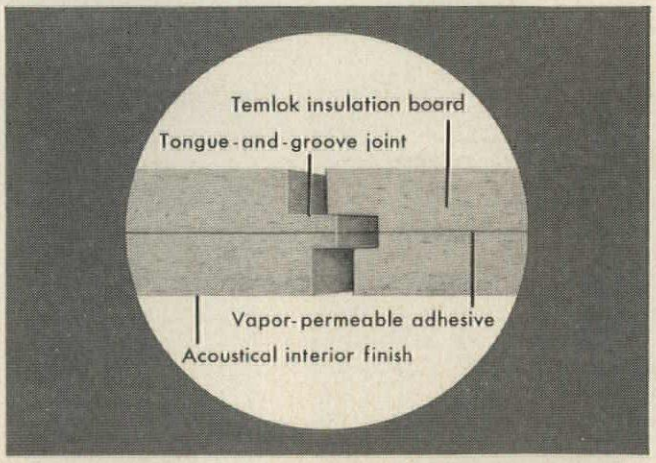
New Armstrong Acoustical Formboard needs no reinforcing cross tees or splines

YOU can reduce construction costs and introduce decorative ceiling effects by specifying Armstrong Acoustical Formboard for your next poured-in-place roof deck job.

The extra strong T & G joints on this new Armstrong Formboard are entirely self-supporting and need no reinforcement from main purlins, supplemental splines, or cross (joint) tees. This eliminates the cost of these reinforcing materials as well as the time and expense of installing them. Unbroken by the conspicuous markings of cross tees, ceilings of Armstrong Acoustical Formboard are attractively modern and offer a wide range of design possibilities.

Armstrong Acoustical Formboard is fabricated from two ½″ fiberboard panels, laminated with a vapor-permeable adhesive to form a full 1″ thick board. It is perforated in the attractive Full Random design and finished with two coats of factory-applied white paint. Acoustical formboard has an NRC specification range of .50-.60 and a Certified "C" value of 0.36 Btu at 75° F. mean temperature. It is available in 24″ x 48″ x 1″ and 32″ x 24″ x 1″ sizes.

For complete details and specifications, refer to Sweet's Architectural File 2h/Ar or write Armstrong Cork Company, 3802 Rock Street, Lancaster, Pennsylvania.



High Strength of Armstrong Acoustical Formboard results from two-layer lamination. Vapor-permeable fiberboard and laminating adhesive allow free escape of moisture for slab curing. Special adhesive retains its strength when wet.

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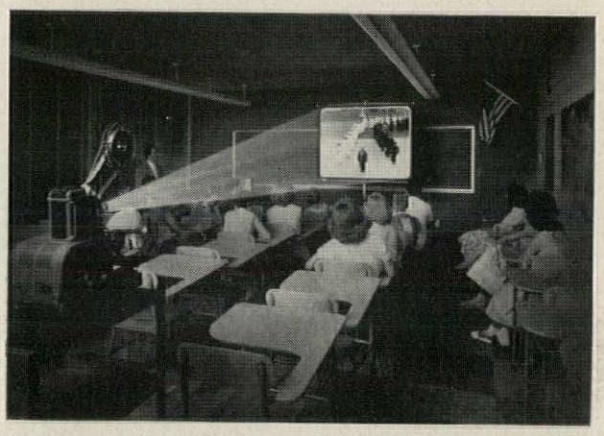

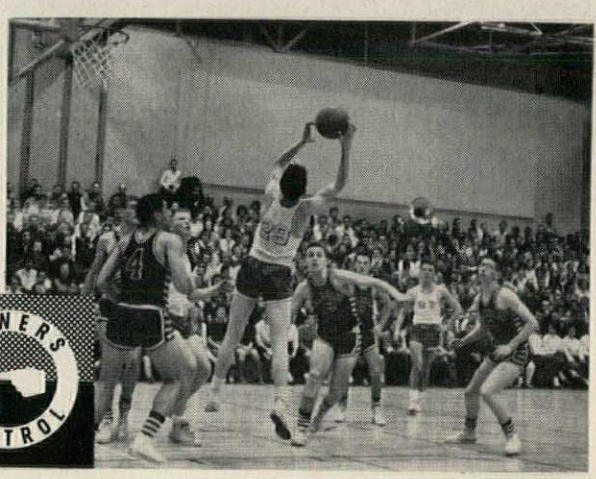

Above: one of three modern gymnasiums.

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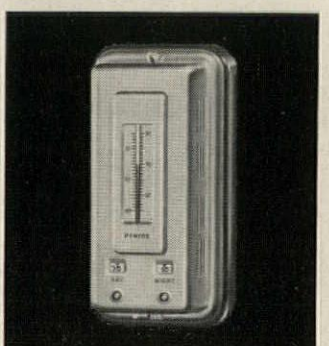

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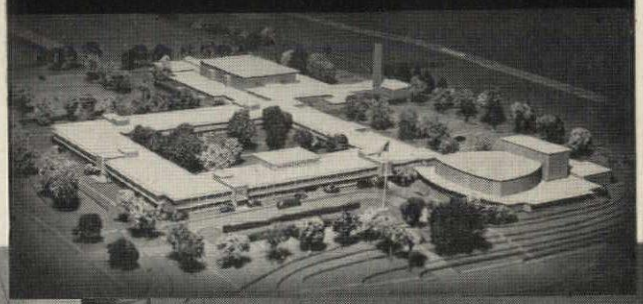

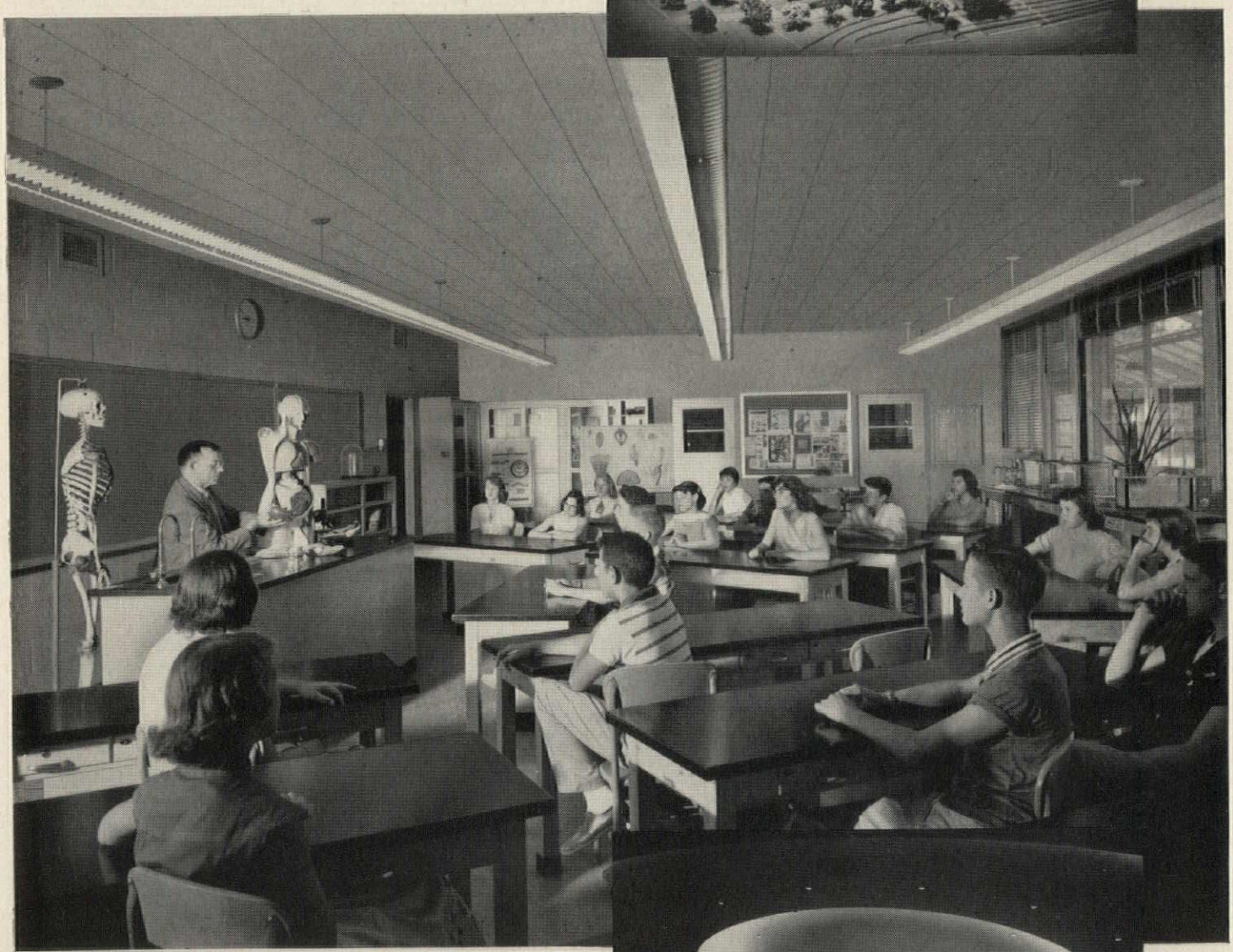

Science Department includes 5 general science labs, 2 chemistry labs, a physics lab, also 2 biology classrooms where students learn about the wonders of life.

The right room temperature for every school activity is provided by Powers DAY-NIGHT Thermostats.

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The heating system is divided into 16 zones for day-night control depending on type of activity. 212 Powers thermostats control 267 convector valves, 17 large supply units, 15 unit ventilators, 8 exhaust fan systems, 23 force flow heaters and 11 unit heaters.

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A NEW KIND OF ARCHITECTURAL EDUCATION FOR TEACHERS OF ARCHITECTURE

Harold Bush-Brown, Chairman of A.C.S.A.-A.I.A. Joint Committee on The Teaching of Architecture, Reports on the Aspen Teacher Seminar

Late last April two men journeyed south to Charlottesville, Va., one from Cambridge, Mass., Herbert Beckwith of M.I.T., and the other Walter Taylor of Washington, head of the American Institute of Architects Department of Education and Research. They were to meet with John Fitzpatrick, chairman of a subcommittee, to decide upon what applicants should be awarded scholarships to go to Aspen, Colo., to the second teacher-training conference.

Thirty heads of schools belonging to the Association of Collegiate Schools of Architecture had picked 36 candidates from among the younger teachers on their staffs as deserving of scholarships. Twenty-three scholarships, paying one half of all expenses, had been made available for this purpose by the A.I.A. Committee on Awards under the Rehman fund. To reject any of these top rank candidates was not an easy or pleasant task, but it was for this that the committee had been appointed and they made their selections on data submitted. Fortunately, later on, additional funds provided by the Ford Foundation were to result in seven more scholarships, so that every member of U. S. schools submitting recommendations was represented by a single recipient of a scholarship. The final count on enrollment amounted to 35.

To sketch in the background of this meeting at Charlottesville and to account for the desire on the part of 35 young teachers to come together in an isolated spot in the Rockies to talk for 12 consecutive days about architecture, one must go back to the A.I.A.'s survey report on architectural education. This report, published in 1953 under the title *The Architect at Midcentury*, contained forty-odd recommendations, one of which, No. 17, was on the subject of teacher training. The need for encouragement, broadening of the outlook, stimulation towards growth and improvement as well as to provide an opportunity for a restudy of teaching techniques and the advancement of knowledge: all of these were aims in view. A program or programs to meet these needs was strongly urged.

Referred to the A.I.A.'s Committee on Education, the project was put in the hands of the schools and the association of collegiate schools agreed to administer a trial run. Under the able leadership of Walter Bogner, chairman, and Lawrence Anderson, vice chairman, a meeting was arranged and took place in Cambridge in October 1956. Twenty young teachers from 19 schools were in attendance eight days, visiting classes and demonstrations and hearing expositions on objectives and methods at Harvard and Massachusetts Institute of Technology.

This venture proved successful and was endorsed by the participants. For the year 1957, however, under an enlarged joint A.C.S.A.-A.I.A. Committee, a different kind of program was proposed. The place selected was Aspen, Colo., and the time—June. This was on the basis of a report submitted by Sidney W. Little of Oregon and with the strong support of James M. Hunter, architect of Boulder, Colo., chairman of the A.I.A. Committee on Education.

We decided upon a program which would bring in all the elements of the curriculum affecting design—not the study of the teaching of design itself—but rather all those other subject areas to the extent that each contributed to the design process. Thus we engaged as speakers and panelists men like Joseph Hudnut and Richard Neutra, who could speak with authority on esthetics and the roll of science among the contributing factors and determinants of design. The application of esthetics in "basic design", a course which many schools have recently added to the curriculum, was explained by Filipowski of M.I.T. and Gordon Heck of Utah and others. This brought forth a debate in which sculptor Milton Horn took vehement exception to some of the ideas of the "avant garde".

It was in the human sciences dealing with sociology and also with the reaction of the mind and the body to environment that we were particularly fortunate in having Mr. Neutra on our program in addition to leaders in the teaching of science.

Physical environment, natural and man-made, and its relation to architectural design, was delightfully presented by Landscape Architect Robert Royston with slides of the American scene.

All of the foregoing was under the immediate direction of Walter Taylor, director of the A.I.A. Department of Education and Research.

A statement on history entitled "The Importance of Looking Backward" by Joseph Hudnut served as an introduction to this area of teaching and if there were any who still doubted the need for the study of history, there were none bold enough to challenge Hudnut's lucid words on its value in relation to design and its importance in the curriculum. Varying points of view, however, were aired by a panel moderated by Roger Bailey which dealt with architectural history in its broadest sense to include Landscape and Cityscape as well as the other arts. For example we listened to an interesting talk by James Acland on "Townscape and the Urban Core" illustrated by views of city spaces of bygone eras exemplifying certain principles of design. In dealing with history the emphasis was on architecture as art. This concept kept recurring, leaving, in the main, architecture as science or a function of society to the discussions which had already taken place—and architecture as engineering to what was to follow—the next item on the program.

And so we came to building materials and the structural design of buildings. Here we were confronted by an array of speakers—an engineer consultant (Milo Ketcham), an engineer teacher of architectural students (Polychrone), an engineer associate in an architect's organization (Contini), an architect teacher of building materials (Hanson) and an architect researcher and experimenter in new teaching techniques (Howard Fisher) and a contractor (Laytor). The first section of this portion of the program was moderated by Karel Yasko, Wisconsin architect, and the second section by Harold Hauf, architect, architectural engineer, author and administrator. It is not possible here to give any idea of the lively discussions which took place in this phase of the program. As a sampling, the following quotations are taken from the notes of participants (there was no tape recording or stenographic record due to lack of funds):

Contini: "Too many things are being done now with their bizarre qualities as the sole basis of judg-

continued on page 304

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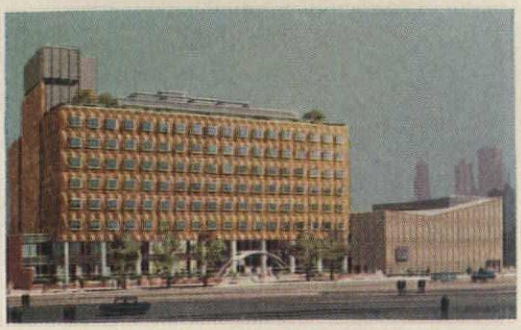

With a characteristic flair for color, the Fashion Institute of Technology Building brings a new hue to the New York scene this spring: a curtain wall building of Alcoa® Aluminum in rich Architectural Brown, 4020. The facade of 12-foot panels is beautifully accentuated by Alcoa Gold 4010 window frames. Gold mullions highlight the auditorium, too.

As part of Alcoa's *new look* for architecture, this development brings the number of colors available for aluminum-clad buildings to nine. To help you color-style your next building, and for color swatches and specifications, contact your nearest Alcoa sales office, or write: Aluminum Company of America, 1890-B Alcoa Bldg., Pittsburgh 19, Pa.

Building: Fashion Institute of Technology, New York, N.Y.; Architect: DeYoung, Moscowitz and Rosenberg, New York, N.Y.; Aluminum Subcontractor and Panel Fabricator: General Bronze Corp., Garden City, L.I., N.Y.; Alcoa Approved Architectural Color Processor: Stolle Corporation, Sidney, Ohio.

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A Washington Report by Ernest Mickel

BUDGET MESSAGE: DECREASING EMPHASIS ON FEDERAL AID AND CREDIT PROGRAMS

Two areas of special emphasis in the President's budget message to Congress last month held significant interest for the architect and engineer. Running throughout the 56-page document was the expected sense of urgency occasioned by Russia's scientific advances. This led to the inevitable proposals for increased expenditures in military construction, missile development and allied fields. There was also the expected move on the part of the Administration toward unloading many of its grants-in-aid and credit programs, returning them to states and localities.

The earlier State of the Union message this year was not concerned so much with domestic issues as it had been in the past and in it the President chose to ignore specific reference to construction programs. He indicated in both messages that he would have detailed proposals later on.

Thus the industry's attention focused on the budget, which set the Administration's spending pattern for fiscal 1959. This received more praise than condemnation on Capitol Hill and there was no doubt Congress would follow through with funds to support proposals in the defense fields.

Architectural and engineering work was awaiting the impact of these new military funds. As pointed out by the President, fully half of the proposed fiscal 1959 program of military construction was for facilities for the Strategic Air Command and for weapons systems and equipment which will have been brought into operational use since 1955. SAC bases will continue to be dispersed. Many new ones and what Mr. Eisenhower called alert facilities will be constructed. The readiness of these retaliatory forces must be measured in minutes, he said. Of total appropriations for fiscal 1958 and 1959, some $500 million is provided for this increased dispersal and general readiness of the Command.

A total of $62 million was estimated as the military construction expenditure for fiscal year 1959 and $1575 million in new obligational authority was requested. This included programs for all three services: in expenditure, $35 million for the Army, $47 million for the Navy, and $544 million for the Air Force; in obligational authority, $320 million for the Army, Navy, $290 million, and $965 million for the Air Force.

For purposes of comparison, the estimated military and related public works outlay for fiscal year 1958 was shown as $1963 million; for fiscal year 1959, $2104 million. Total public works expenditures are estimated to reach $6.7 billion next fiscal year, an increase of $1 billion over the current year's outlay.

For civil public works activities—flood control, navigation, irrigation, veterans hospitals, public buildings and other direct Federal construction—estimated expenditures will be $4.3 billion compared with $3.5 billion in this fiscal period. The increase results largely from commitments started in earlier years, mostly in the Federal-aid highway system, the Budget Bureau said.

As feared by civil works supporters, the new budget recommends that no new water resources projects be started in 1959 by the Army Corps of Engineers or the Bureau of Reclamation because of large commitments made for projects begun in 1956, 1957 and 1958. It does, however, propose $130 million for a start on certain other types of projects that would need $664 million more to complete them. These include a Court of Claims and office building in the District of Columbia, a New York City structure to house the United States Mission to the United Nations, and the Balboa Bridge over the Panama Canal.

Of great concern to many in the construction industry was the President's suggestion that the construction of waste treatment plants, now heavily aided by Uncle Sam, be turned over to the states completely beginning in 1960, and that the growing urban renewal program be modified so that states and localities will begin to assume a larger proportion of the expense.

Mr. Eisenhower put forward a five-point program for handling the urban renewal suggestion. With the volume of work approaching 600 projects completed or in planning or development sometime next year, he proposed:

1. That local communities share in the planning costs from the start. The Federal government has been advancing all the planning money in most cases with local shares paid only if and when projects started.

2. That each state create a special agency for urban development, housing, and metropolitan planning as recommended by his joint Federal-state action committee. These agencies, he urged, should assume as quickly as possible the financial responsibility for the local planning of the projects.

3. That in and after 1960 states and local units take on an increased share of the cost of buying and clearing land as well as other net project costs. The local agencies now pay only one third, Federal capital grants paying the balance. He called for annual reductions so that by fiscal year 1962 Uncle Sam would contribute not more than half the local project cost. State legislatures in the interim would decide the extent of their future participation and locals would adjust their own financial planning.

4. That the Federal government give states and cities positive assurance on the program by authorizing funds now for 1959 and each of the five succeeding years. He would pare down the amounts progressively until a 50 per cent Federal participation was provided for 1962-1964, thus enabling the Federal agency to support a larger program.

5. That Congress consider authorizing URA to help local public agencies finance nonresidential projects which did not require Federal capital grants by guaranteeing obligations issued to finance them.

The President's philosophy in the housing and community development field was expressed in this message excerpt: "The Federal government can help best by guaranteeing loans, encouraging the private market for housing obligations, and by making limited grants to state and local public agencies. We must avoid unnecessary reliance on direct Federal financing. Such financing not only burdens the taxpayer but, more important, by discouraging private financing, limits the total amount of housing activity."

A brief sentence confirmed reports the Administration would seek no aid for school building. "Previous recommendations for new programs, such as general aid for school construction, are being deferred." It was urged, however, that the aid program involving schools in "Federally impacted" areas be continued.

Noting that the hospital construction grant authority expires June 30, 1959, the message said that in view of progress already made toward meeting community hospital requirements for general beds, the Federal program should be modified to meet only the most urgent needs, with emphasis on specialized needs. As an example, it was suggested that Congress authorize Federal assistance in the construction of medical and dental schools, both teaching and research facilities.

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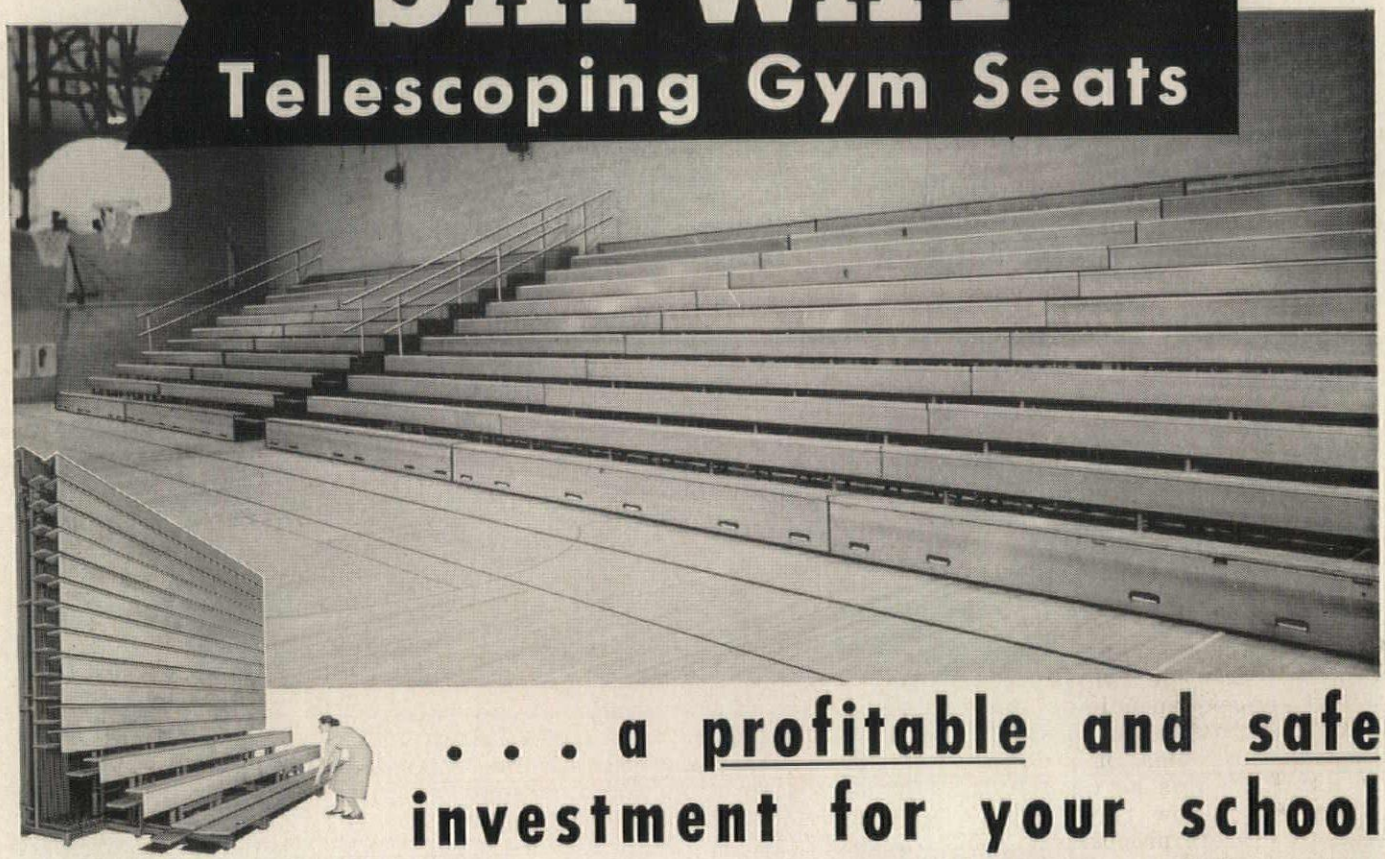

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SIMPLE, EFFICIENT DESIGN — Minimum of moving parts. Stable support with extra-long wheel carriages and 8 self-lubricating wheels under each row.

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(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 162.

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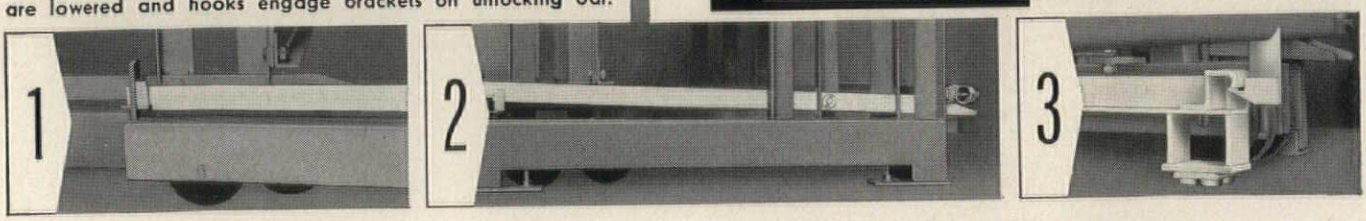


New dimensions

Interior by Backus Brothers Co.

A full color idea book on Formica Interiors is yours for the asking. Write Formica, 4603 Spring Grove Ave., Cincinnati 32, Ohio. Formica regional offices now have a color slide film "Decorative Art in Formica" illustrating a wide variety of Formica wall treatments and application methods as described on the facing page. A showing can be arranged at your convenience by calling your local Formica office.

in Formica®

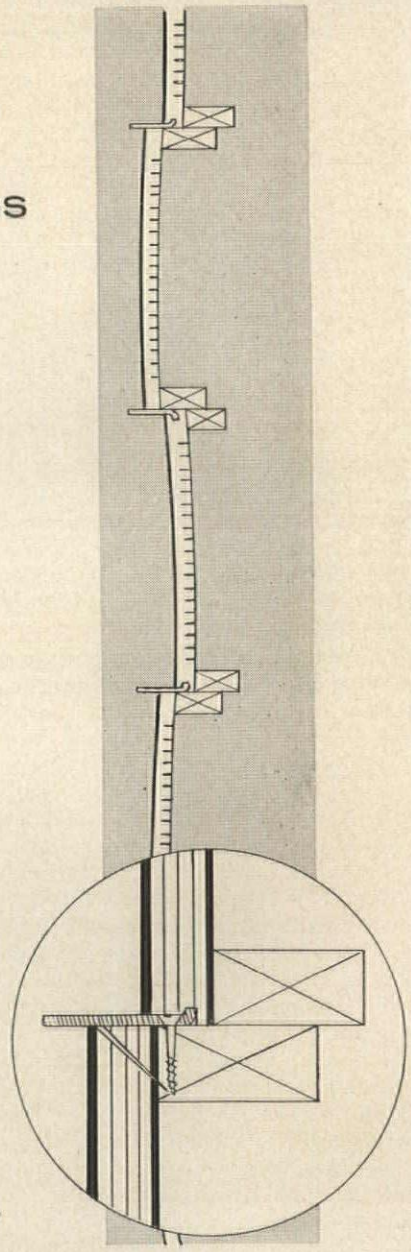
A Wall of Distinction with FORMICA AND BRASS

This serpentine wall is made up of 4′ panels of plywood scored or kerfed from the back for bending to proper radii. Using Formica Fast Dry Contact Bond Cement, 1/16″ decorative Formica and Formica backing sheet were veneered to either side of the formed plywood. The panels were shop assembled in sections and screwed and glued to vertical and horizontal framing.

Standard grades of Formica are completely satisfactory for any large radius of this type and no heating is required.

The brass divider strips were handled in accordance with the detail drawings.

A wide variety of Formica wall treatments can be obtained either through shop veneering or on-the-job application. Multicolor effects in random planking or geometric designs can be done with standard material.



New Decorative Art in FORMICA

For the first time in the laminated plastic field, a new kind of decorative art is available. Formica can duplicate your paintings and murals or execute original art pictures of your ideas. The art is sealed in the Formica sheet, thereby protecting it from dirt, fading and damage. In addition, nearly any pattern, trade mark or repetitive design can be produced in Formica via silk screen printing.

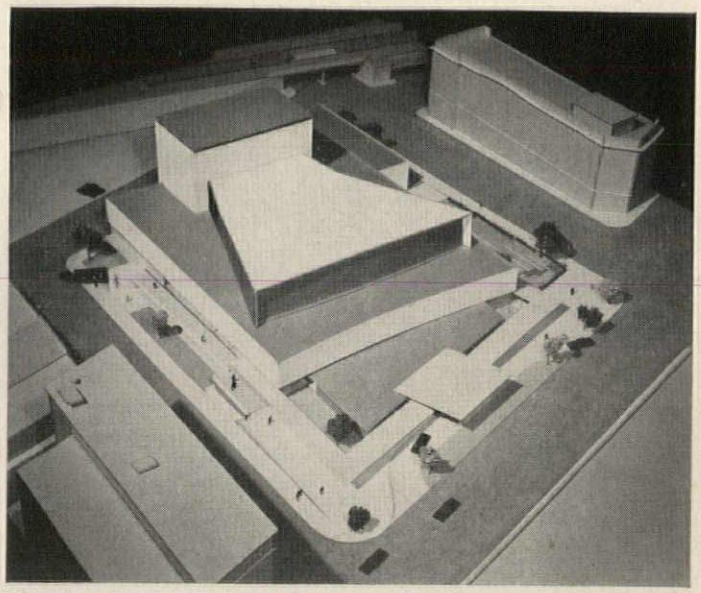
There is a Formica district representative near you who is well qualified to provide technical assistance. If you would like technical specifications on Formica wall surfacing, write Formica, 4603 Spring Grove Ave., Cincinnati 32, Ohio, ask for spec. bulletins 114A and 105A.

This mark certifies genuine FORMICA® Laminated Plastic

Guaranteed by Good Housekeeping

product of CYANAMID

Be sure you get genuine Formica. Look for this wash-off registered trade mark on the surface.



Limestone-faced auditorium section 200 ft sq rests on granite and glass base. Stage tower, also limestone faced, rises 100 ft above street level to house Canada's largest stage

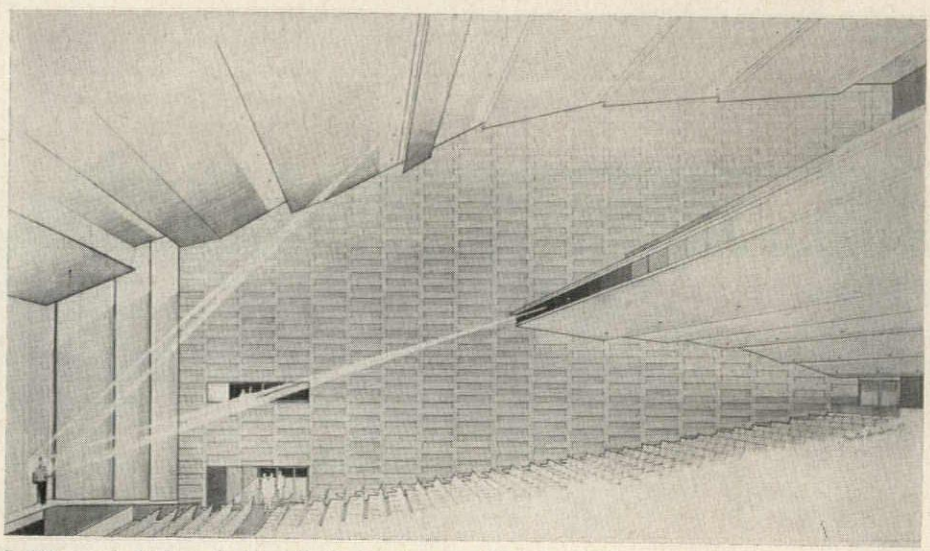
TORONTO GETS AUDITORIUM DESIGNED AS COMPLETE ENTERTAINMENT CENTER

Work is under way on a two and a half acre site in Toronto on the O'Keefe Auditorium, a multi-purpose entertainment center designed to provide proper facilities for such varied demands as musical comedy, name bands, drama, ballet and grand opera. The auditorium, to cost an estimated $10 million, is being built by the O'Keefe Brewing Company as a public service and will be operated by the company as a non-profit venture. Architects are Earle C. Morgan and Page & Steele of Toronto, with Eggers and Higgins of New York as architectural consultants.

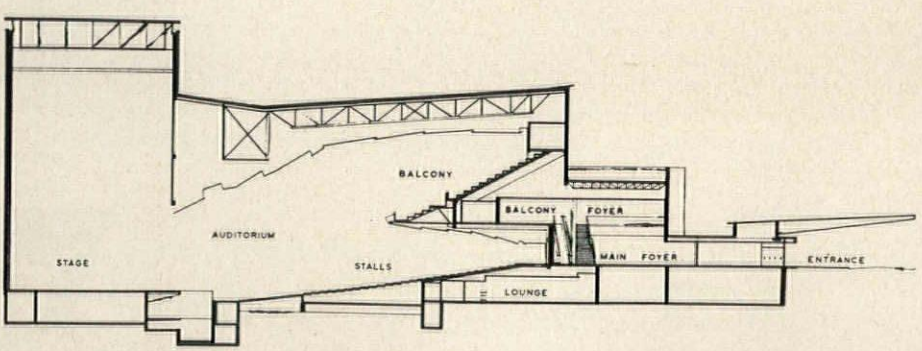
The auditorium has been designed, in consultation with technical, stage and music advisers, to be uniquely adaptable to the most widely varied uses. It will seat up to 3200 persons —2200 in orchestra stalls, 1000 in the balcony—and capacity can be reduced down to 1200 seats with appropriate acoustical adjustment. A 60-ft stage opening suitable for the largest productions can be reduced to 36 ft when desirable.

The acoustic design was developed by Prof. V. L. Henderson of the University of Toronto in consultation with Michael J. Kodaras of New York. Key to the solution is the design of the auditorium side walls, each of which consists of a latticework facing backed up by a sliding background composed of alternate rows of perforated and solid-faced wood. The background is moved laterally to align its perforated or solid sections with the openings in the exterior latticework, thus alternatively providing absorbing or reflecting qualities; it can also be adjusted to provide a desired combination of absorbing and reflecting qualities. The designers believe they have achieved a mechanically controlled acoustic wall that can be adjusted at will to provide the particular reverberation time that a given performance demands.

For musical performances on stage, there will be a stage-sized orchestra shell designed to project the music outward into the audience with true fidelity. Facilities in the stage tower, which rises 86 ft from stage floor to grid, will raise the shell completely out of view above the proscenium opening.

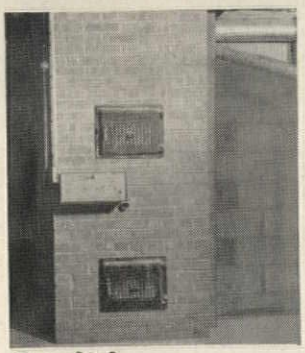


Latticework design of sidewalls is key to acoustical flexibility of the center. Sliding backgrounds alternately perforated and solid will be mechanically operated for desired absorption or reflection



Auditorium is contained in limestone structure nearly 200 ft sq, rising 47 ft on Front Street and following natural slope of site which drops 11 ft at rear. All seats are within 124 ft of stage

ONLY Donley INCINERATORS have all these exclusive features . . .



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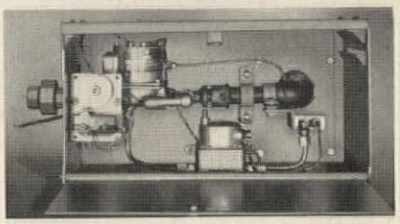
Only ❶ *FULLY* AUTOMATIC safety burner

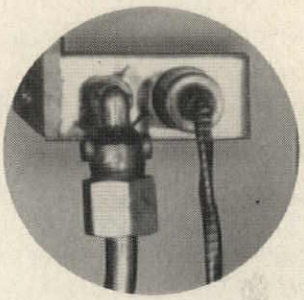


EXCLUSIVE! Only Donley's No. 300 Safety Burner* burns all types of refuse safely and automatically at regular intervals. Adjustable timer provides from 2 to 25-minute burning cycle every half hour.

*patent applied for

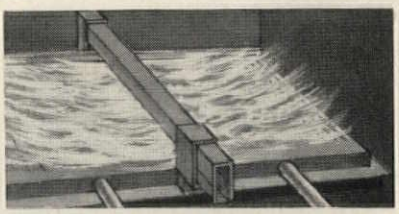
❷ 100% flame-failure protection

❸ BLOWOUT-PROOF safety pilot



EXCLUSIVE! Special protected position of pilot makes it virtually blowout-proof. Economical safety pilot provides 100% flame-failure protection.

Exclusive ❹ DONLEY heat spreader



EXCLUSIVE! Donley incinerators have greater disposing capacity because the Heat Spreader conducts flame across combustion chamber to assure complete, rapid burning of refuse.

It's smart to specify Donley incinerators and automatic burners because local contractors can quickly and easily build safe, reliable incinerators. All Donley safety burner parts are approved by Underwriters' Laboratories or the American Gas Association.

Donley's complete line also includes semi-automatic and manually controlled safety burners, doors, grates and prefabricated steel incinerator units. Send today for complete information.

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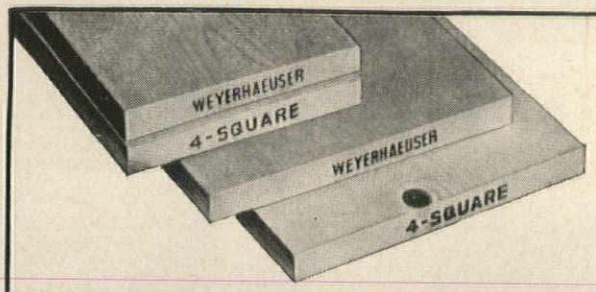
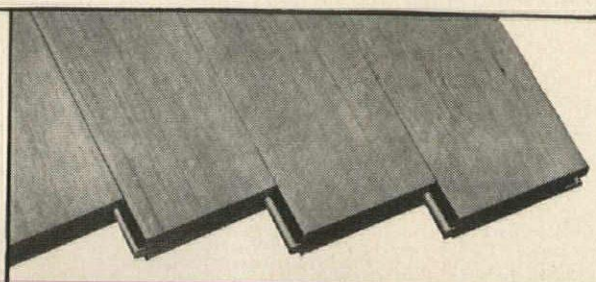
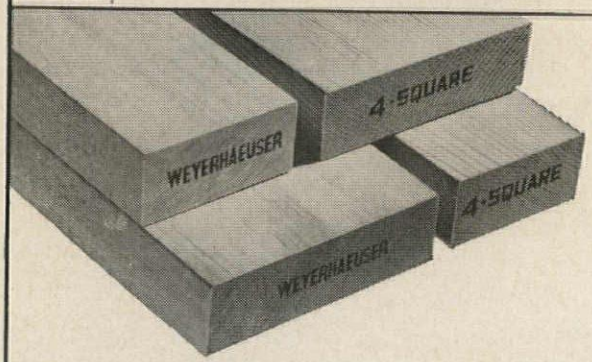


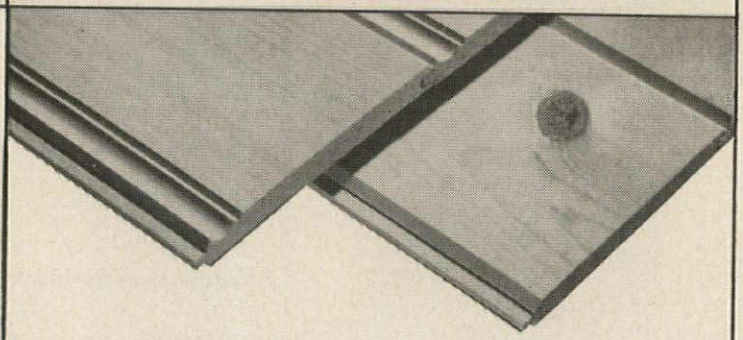
BOARDS: Seasoned before surfacing to size. Available in a wide range of species and grades.



FLOORING: Controlled kiln-drying means a firm, smooth surface for fine appearance and dependable service.



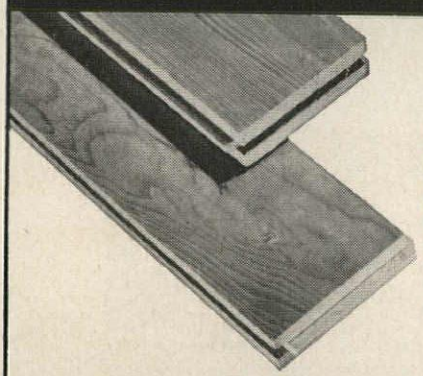
DIMENSION: Scientifically kiln-dried framing lumber contributes to sound, durable construction.



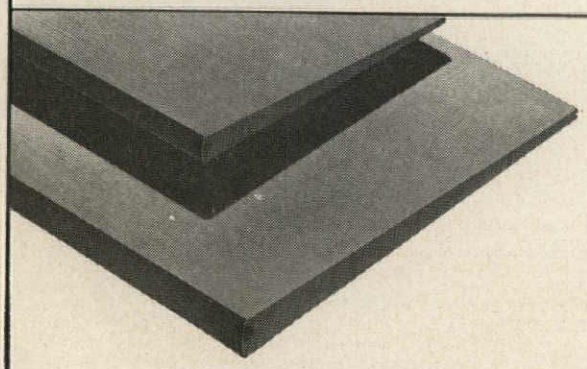
PANELING: Kiln-Dried Panelings come in a wide choice of species and patterns... also beautiful plywood panelings.

Weyerhaeuser 4-SQUARE®

LUMBER AND BUILDING PRODUCTS



END-MATCHING eliminates waste and reduces building time. End-Matched items include wall and roof sheathing, sub-flooring, finish flooring, drop siding, and ceiling.



SIDING: Weyerhaeuser 4-Square Kiln-Dried Sidings are available in a broad selection of patterns, grades, and species.

Basically better because...

IT'S KILN-DRIED

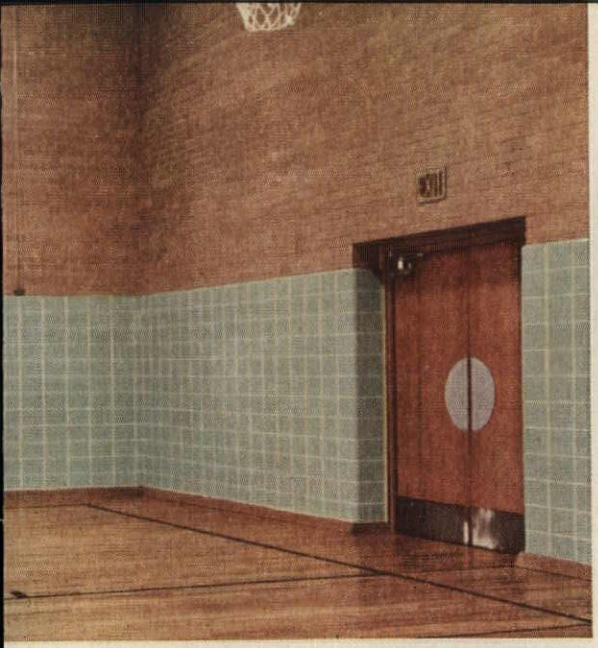
Shown here are a few of the items in the complete line of Weyerhaeuser 4-Square Kiln-Dried Lumber products . . . lumber which you can specify with complete confidence.

Trademarked Weyerhaeuser 4-Square Lumber is properly seasoned by scientifically controlled methods of drying. The result is lumber which has maximum strength, finishes easily, and holds nails securely. Kiln-drying also promotes dimensional stability.

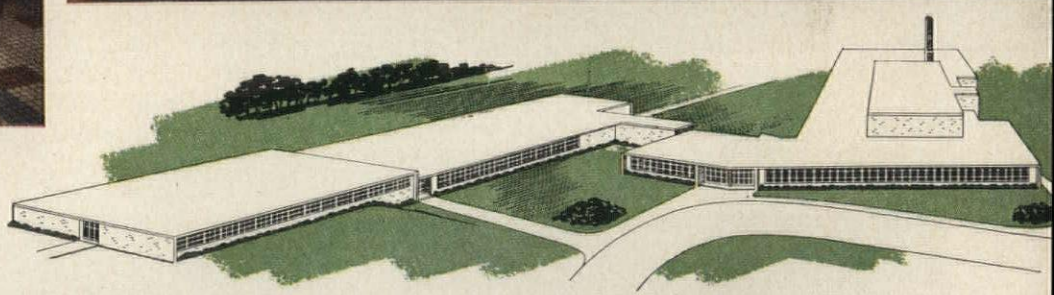
Besides being kiln-dried, Weyerhaeuser 4-Square Lumber is precision manufactured, uniformly graded, and carefully handled. Such features contribute to the uniformly high quality of Weyerhaeuser 4-Square Lumber and Building Products. The Weyerhaeuser 4-Square trademark is your assurance that you are specifying lumber and related building products which over a period of many years have earned the reputation for reliability.

Weyerhaeuser Sales Company

Saint Paul 1, Minnesota



Glen Lake Elementary School, Glen Lake, Minn.
Architects: Bissell & Belair, Minneapolis, Minn.
Tile Contractor: Dale Tile Co., Minneapolis, Minn.



Romany•Spartan tile selected for Glen Lake school

The advanced thinking of our architectural designers, their skillful blending of modern and traditional material, and their utilization of new building techniques are providing America with the world's finest school buildings.

In this program, ceramic tile is playing an important part. New setting methods offer new opportunities to use tile where cost or weight is a factor. And Romany•Spartan offers a complete line to fill every functional and design need. Little wonder that more and more architects the country over are specifying Romany•Spartan.

If you'd like design help or more information, contact your nearby Romany•Spartan representative or write United States Ceramic Tile Company, Department R-16, Canton 2, Ohio.

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UNITED STATES CERAMIC TILE COMPANY • THE SPARTA CERAMIC COMPANY

Bank of Montreal Announces Plans for New Building

A $10 million 14-story building will be erected next to its present head office in the Place d'Armes, Montreal, by the Bank of Montreal. The new building, to house head-office departments of the bank now scattered in various locations, will be connected with the present head office by a three-story wing. Structure will be steel and reinforced concrete faced in limestone with granite trim. A tower core rising some 50 ft above the rest of the building will house mechanical equipment including elevators. The ground floor will be entirely occupied by the branch post office formerly in the old building on the site; an employe cafeteria will occupy the second floor, the bank's executive offices the third and general offices of the bank the top 11 floors (each containing 10,500 sq ft of floor area). Occupation is scheduled in 1960. Architects are Barott, Marshall, Merrett and Barott, in association with Bruce H. Wright, chief architect for the Bank.

A hotel laundry planning service for architects

Consulting American at the *beginning* of a hotel project will relieve your organization of much costly, time-consuming detail work. The American Laundry Machinery Co offers a comprehensive planning service to help architects easily determine the size, layout and cost of hotel laundry facilities. Our survey engineers, furnished only minimum information, will provide the answers you need to integrate the laundry with the remaining elements of your hotel design.

Give us this information: Number of beds, average occupancy of rooms, number of employees who will wear uniforms and types of uniforms; whether plans include a coffee shop, cocktail lounge, dining rooms, banquet halls; whether there is a valet shop or guest laundry service.

Here's what we provide: Our survey engineers will prepare detailed drawings, floor plan layouts and complete specifications for your installation. Finished plans include size and type of laundry equipment needed, proper arrangement for smooth work flow, operating personnel required, water and steam requirements including size of piping, electrical connections, ventilation, lighting, foundation support, floor space, size of openings for admittance of equipment, approximate operating cost—every detail you will need to design an efficient, space-saving laundry department. This planning service is available to architects without obligation. Call your nearby American representative, or write.

Send for your copy of American's ARCHITECT'S REFERENCE GUIDE *showing our complete line of laundry equipment.*

Statler Hilton Hotel, Dallas, Texas. Architect: William B. Tabler, New York City. General Contractor: Robert E. McKee, Dallas. Laundry equipment: The American Laundry Machinery Company.

The American Laundry Machinery Company, Cincinnati 12, Ohio

You can expect more from American

NRC Housing Standards Adopted by CMHC

Effective January 1, Central Mortgage and Housing Corporation adopted the "Housing Standards" issued by the Division of Building Research, NRC, as the building requirements for houses financed under the National Housing Act.

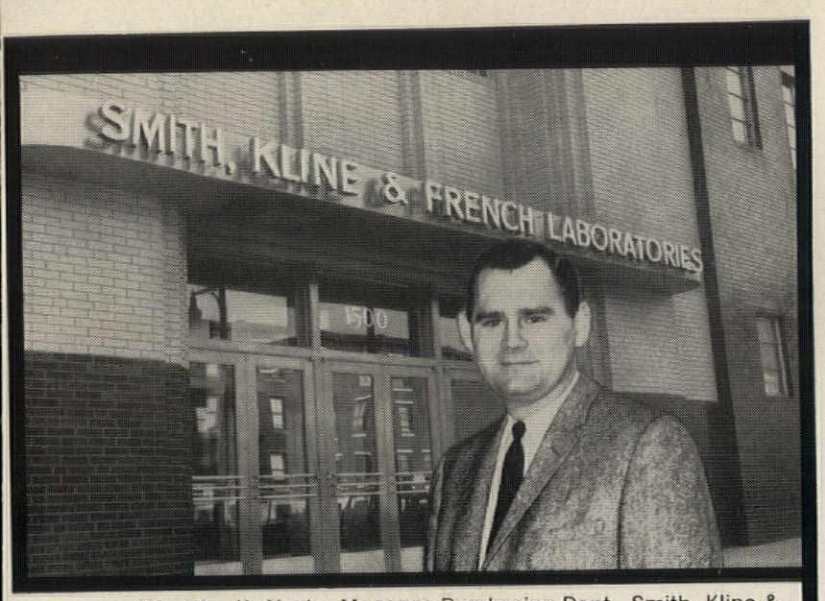
"As a result," this very important CMHC announcement pointed out, "Canada will have only one set of official minimum housing standards—based on the existing CMHC building standards but incorporating a number of minor changes in the technical provisions to overcome any variations with the National Building Code.

"The National Building Code is an advisory document published by NHC as a national service. It can be adopted by provinces and municipalities as their own building regulations. The Code was prepared by the Associate Committee on the National Building Code of NRC and has already been adopted by some 200 municipalities throughout Canada.

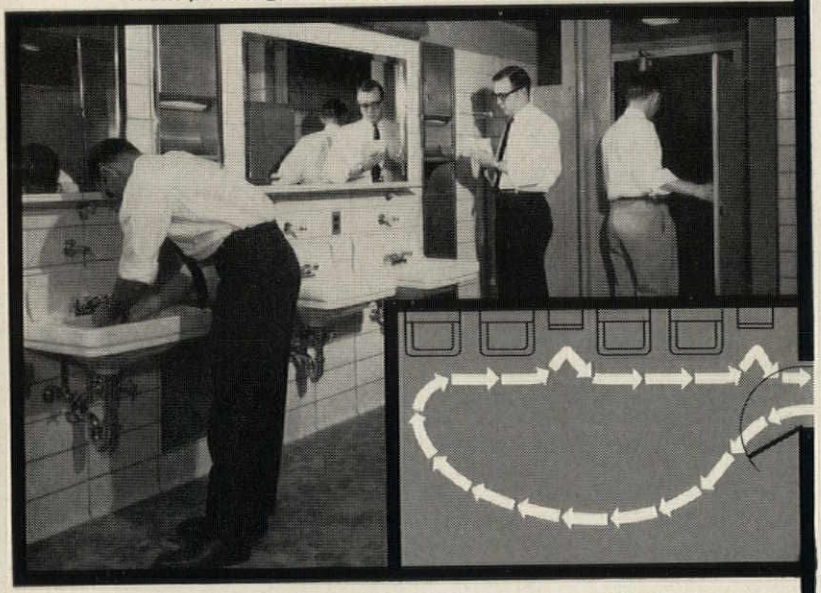
"The new NRC publication 'Housing Standards' will be published before the end of the year and will serve until 1960. A revised edition of the National Building Code will then be published and will include a new housing section. This section of the Code will, in effect, become the housing code for Canada.

"A Special Housing Committee, including representatives of industry, trade unions, consumers and professional organizations concerned with housing, is to be appointed by the Associate Committee on the National Building Code to prepare the new code for housing. The Committee will carry out a review of the 'Housing Standards' during the next two years and consider all recommendations submitted for possible inclusion in the proposed housing standards section of the National Building Code.

"Since its formation in 1946,



Mr. John K. Nevin, Manager Purchasing Dept., Smith, Kline & French Laboratories, says: "We employ about 2,400 people here. Our recently completed 12-story addition includes 18 new washrooms. SKF designed these rooms to be modern, efficient and streamlined, following Scott principles of washroom planning. The results are fine!"



SKF washroom traffic flows smoothly: washbowls to paper towels (and disposal) to exit. Off-the-floor equipment, recessed cabinets, recessed lighting, scientifically planned soap supply, tile walls and floor—all make SKF washrooms easy to supply, use and maintain. Popular with employees, too!

Mr. W. R. Ricketts, Buyer, discusses washroom efficiency with Mr. J. L. Blikle, Project Engineer. He says: "As a manufacturer of pharmaceuticals, it is important to SKF to maintain the highest standards of sanitation. Scott recessed towel dispenser-receptacle looks neat, eliminates litter, helps reduce maintenance costs."

this firm
planned washrooms
for comfort
and efficiency . . .

based on principles of Scott's Washroom Advisory Service

Scott has a free booklet you should read. It's on washrooms and what you can do about them . . . filled with diagrams, illustrations and ideas. It fully explains Scott's Washroom Advisory Service, available to executives. No obligation, of course. Just mail the coupon!

Get Scott's 14-minute film, too. It shows many quick, inexpensive changes you can make *now* to increase efficiency and cut costs!

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Chester, Pennsylvania

☐ Please send me the Washroom Advisory Service Booklet.

☐ Please tell me how I can see the Scott film, no charge.

Name _____

Title _____

Company _____

Street _____

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Scott UHA Towels **Scott Multifold Towels**
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For information on Scott recessed cabinets, write: D. J. Alexander Corporation, 2944 E. Venango Street, Philadelphia 34, Pa.

Typical school installation of Curtis New Londoner flush doors

GUARANTEED QUALITY

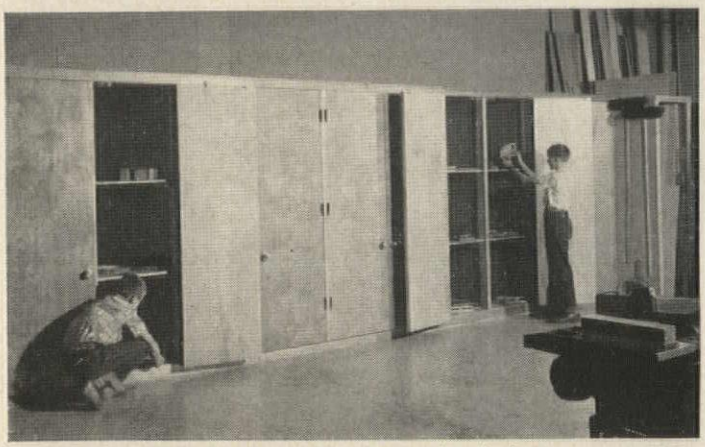
More than 90 years of business experience stand behind this guarantee for Curtis New Londoner hollow-core flush doors and Curtis American solid-core flush doors. The guarantee gives positive insurance that these superior doors are free from defects of materials and workmanship—and will be repaired or replaced without charge if not as represented in the guarantee. Another reason why so many architects and builders choose Curtis!

CURTIS

WOODWORK *heart of the home*

1866 CURTIS NEW LONDONER HOLLOW-CORE FLUSH DOORS

why so many well-known architects specify CURTIS NEW LONDONER DOORS for their new school buildings



New Londoner doors in woodwork shop

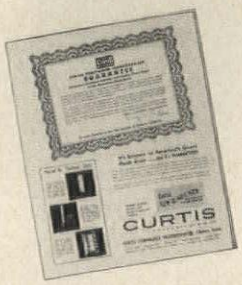
Architect approval speaks volumes for any building product. And for many years, Curtis New Londoner and Curtis American flush doors have won unqualified architect approval for use in institutional buildings of all kinds. Here are the doors you can specify with utmost confidence. Both New Londoner and American doors are first choice of many of America's leading architects and builders. More and more when guaranteed quality determines the choice, the specifications call for Curtis.

BEAUTY OUTSIDE!

Each New Londoner hollow-core flush door is actually a picture in wood. Carefully matched selected grain patterns—no two alike—make these doors outstandingly beautiful. Veneers are available in birch, maple, oak and other woods. The 3-ply face panels are securely bonded to all parts of the core.

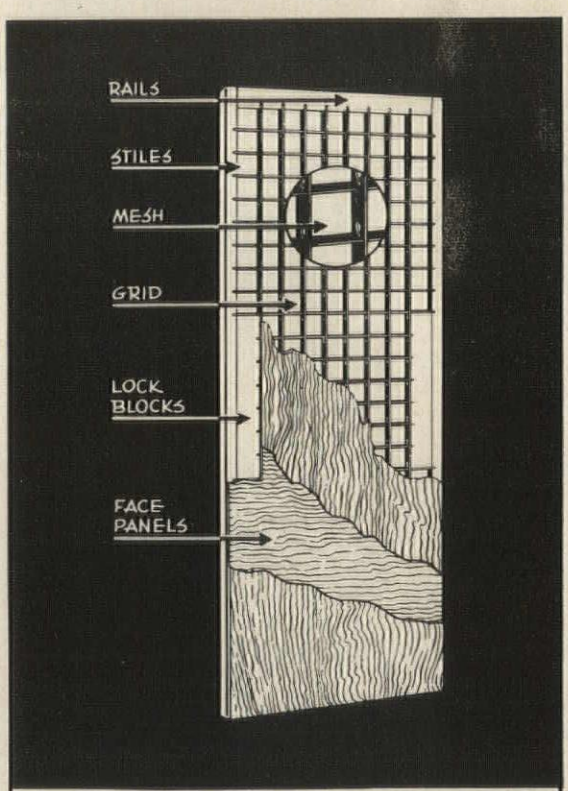
MORE STRENGTH INSIDE

Weighing only about one-third as much as a solid door, Curtis New Londoner hollow-core flush doors have the stamina that assures satisfactory school service. The interlocking grid—all wood—is meshed for maximum strength, then securely fastened to the wood stiles and rails. This all-wood "welded" construction withstands banging, slamming, moisture and severe temperature changes—as proved by "torture tests" and many years of actual experience.



SEND FOR THE FACTS

See "Sweets" Catalog—or send for literature and full data on Curtis New Londoner and Curtis American flush doors. For institutional use, Curtis combines the economy of hollow-core construction with extra heavy stiles, rails and crash and kick-plate rails. These accommodate all types of institutional hardware.



Curtis Companies Service Bureau
200 Curtis Building, Clinton, Iowa AR-2-58

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

Name.....

Address.....

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

CURTIS

WOODWORK *heart of the home*

CMHC has been responsible both for formulating and administering building standards for houses constructed with National Housing Act loans. Under the new arrangement the Corporation, in adopting the new housing standards, will be applying standards which are in many cases identical with those of the municipality."

B. C. Architects' Annual Meeting Names Executive Director

An agenda reflecting the widespread interests of the Architectural Institute of British Columbia greeted members at their 38th annual general meeting December 6-7, at the Empress Hotel, Victoria.

In his presidential report, Clive Campbell revealed that Institute membership has increased by 19 during the past year to a total of 211.

Mr. Campbell noted that a decline in construction volume during late months has had an adverse affect on many firms, especially those newly established. However, he predicted a gain in volume next year.

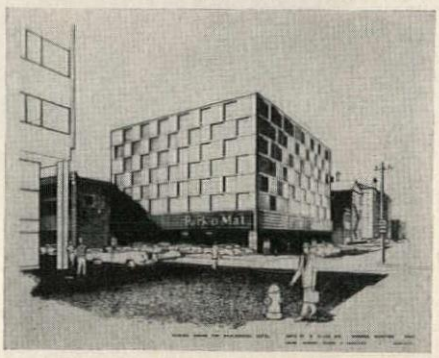
B. C. architects were urged to show more interest in the possibilities of modular coordination. Prof. Stanley Kent, of Toronto, consultant to the Division of Building Research, National Research Council, spoke at a seminar on this subject. He suggested formation of an Institute committee, charged with responsibility for promoting the use of this new technique.

New executive director of Architectural Institute of B. C., Warnett Kennedy (left), receives congratulations of Institute President Clive Campbell as Chairman C. E. ("Ned") Pratt of Institute Public Relations Committee looks on

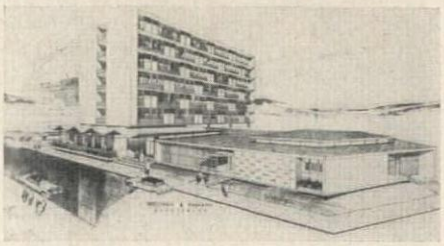
Appointment at the annual meeting of Warnett Kennedy, Vancouver architect, as executive director for the Institute, is believed to set a precedent for the profession in Canada.

Mr. Kennedy, who emigrated from Britain several years ago, will determine how the Institute can cooperate with allied arts, technical and other groups in realizing common objectives.

He will arrange speaking dates



Automatic Parking Garage, Marlborough Hotel, Winnipeg (above)—this project, designed by Libling, Michener, Diamond & Associates, ties in architecturally with the addition to the hotel recently designed by the same firm. Below: New hotel for Sudbury, Ont.; Bregman & Hamman, Architects. Estimated cost: $1.2 million



Westover Elem. School, Stanford, Conn.—Arch.: Wm. F. R. Ballard

Always Room for One More

Bradleys Serve More In Less Space

There is no lost time where there are Bradley Washfountains. Each student is served clean running water from the central sprayhead . . . no faucets to touch or manipulate.

Less water is consumed and none wasted because as the last one leaves and removes foot from the foot-ring, the water supply is cut immediately. Less space is required and there are 80% fewer piping connections.

School custodians like Bradley Washfountains too—there are no faucets to maintain, and floors remain cleaner since the self-flushing bowl prevents overflow.

Helpful data on Washfountain installations for new or existing buildings are contained in our complete Catalog 5601. Let us mail you a copy today.

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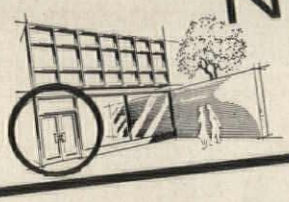
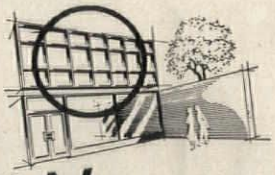
BRADLEY Washfountains
Distributed Through Plumbing Wholesalers

? WHAT'S NEW
in Entrances • Store Fronts • Window Wall



NEW Thru-bolted, contour milled and welded door corners making Brasco Aluminum Doors the strongest obtainable . . . Door Hardware and Accessories . . . Burglar Proof Lock and Hinges.

NEW Rolled and Extruded Snap-on Sash, Direct-on-Masonry Settings . . . 6" Bulkhead Sash . . . Extruded Aluminum Bar Reinforcements.



NEW Brasco Wall Construction featuring unique built in "drainage canals" to prevent leaks . . . stock size modular aluminum units completely installed and glazed from the inside.

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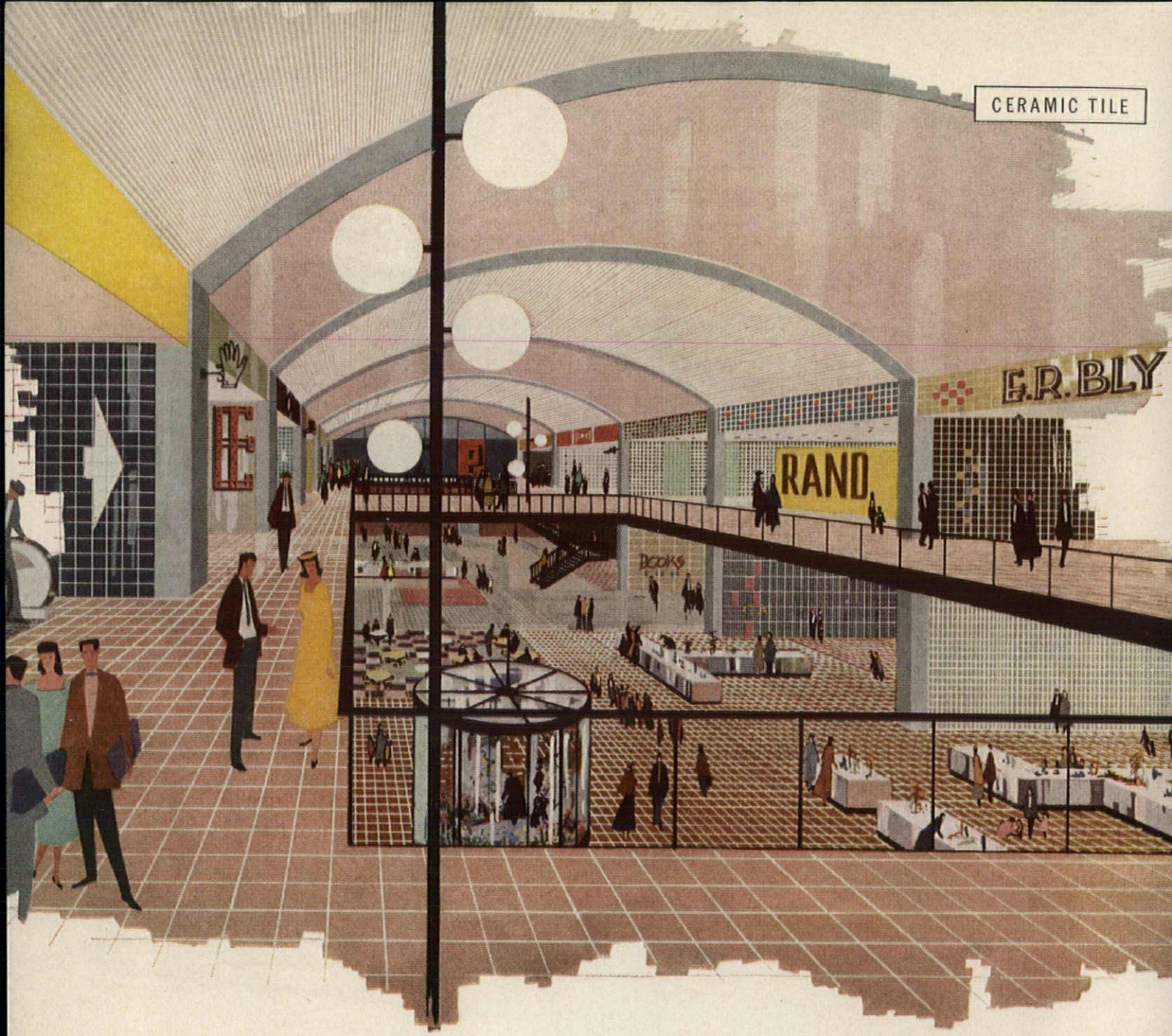


"CERAMIC TILE... FOR UNIQUE EFFECTS AND LOW MAINTENANCE"

HELLMUTH, OBATA & KASSABAUM

Gyo Obata

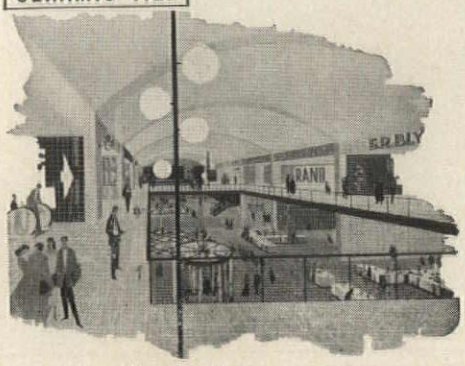
This shopping center captures the flavor of an Old World bazaar with the attendant gaiety which heightens the buying instinct . . . yet the functional, two-story design fits the modern shopping center concept perfectly.

The architects helped themselves liberally from ceramic tile's riotous palette . . . created with tile color and texture the "visual excitement" so necessary for a consumer buying climate. Function, too, is served by the device of having different tile colors serve as a visual separation of store units.

Add to this other ceramic tile benefits: unmatched durability of floors for shopper-traffic, no waxing needed, cleaning costs held to a minimum, fireproof surfaces. Ceramic tile subtracts from overhead costs—adds to the profit side of your client's ledger!

The Modern Style is

CERAMIC TILE



Design for a Shopping Bazaar
by Hellmuth, Obata & Kassabaum

The multiple benefits of ceramic tile will pay off handsomely for yourself and your client on any residential, institutional or commercial project you undertake. See your local tile contractor for up-to-date information—including all the details on the new lower-cost installation methods and the new dry-curing, thin-setting bed mortars.

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800 Second Avenue, New York 17, N. Y.;
Room 933, 727 West Seventh St., Los Angeles 14, Calif.;
Room 220, 3409 Oak Lawn Avenue, Dallas, Texas

CERAMIC tile

News from Canada

and exhibitions, maintain liaison with the various levels of government, extend the Institute's public relations program, look after press contacts and investigate possibility of the Institute operating a building materials display center.

The new executive director will work closely with R. B. Deacon, the executive secretary, who remains responsible for management of the office. Move will shortly be made from the present premises to new quarters at 1425 West Pender Street, Vancouver.

Members of the A.I.B.C. Council for 1958 are Clive Campbell and R. W. Siddall, both Victoria, Keith B. Davison, Prof. Fred Lasserre, W. G. Leithead, K. W. McKinley and C. E. Pratt, all Vancouver.

Construction Executive Sees 1958 Volume Close to 1957

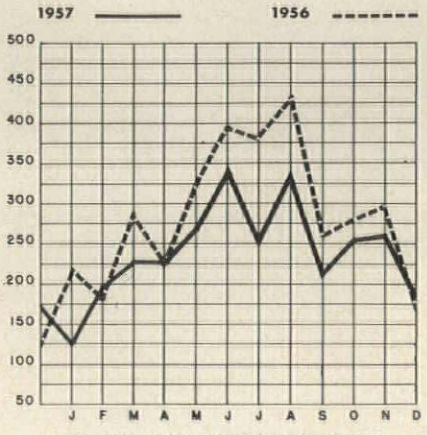
Construction volume in 1958 will be within a few per cent either way of the 1957 record level of $6,900,000,000, prophesies Tullis N. Carter of Toronto, president of the Canadian Construction Association.

"Canada's largest industry," he says, "with a volume of business greater than the combined budgets of the Federal and Ontario governments, will continue to be the backbone of our national postwar economy."

Road building and residential construction will increase, in Mr. Carter's opinion. Declines are looked for in industrial and commercial building, as well as in heavy engineering jobs. Total volume of public works is not expected to change, although defense construction may drop somewhat below the 1957 level.

Contracts Awarded: Comparative Figures*

(in $ million)



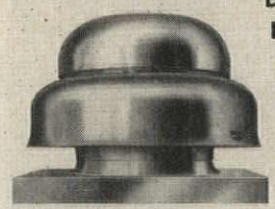
*Compiled by the Editor and staff of *The Building Reporter*, from information collected by Maclean Building Reports

Uniform appearance in COOK belt and direct drive models

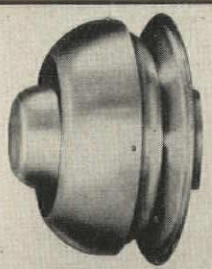
All-aluminum construction

Belt drive CENTRIFUGAL
COOK Model CB
Capacities to 13,939 cfm

Direct drive CENTRIFUGAL
COOK Model CD
Capacities to 10,263 cfm

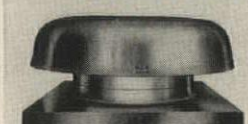


Direct drive PROPELLER
COOK Model FD
Capacities to 4,020 cfm



Direct drive WALL VENTILATOR
COOK Model W
Capacities to 2,580 cfm
Patent No. 2805615

Pressure relief VENTILATOR
COOK Model PR
Throat areas from .1964 to 5.157 sq. ft.



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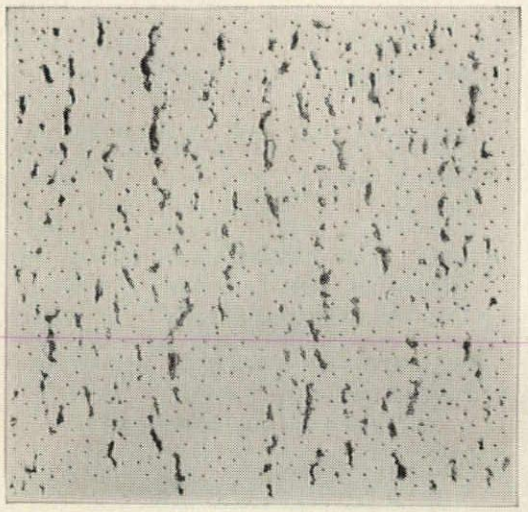


New Textured Cushiontone offers attractive fissured effect in economical wood-fiber tile

Now you can specify an economical wood-fiber tile that has a handsome *textured* design usually associated with more costly acoustical materials. New Armstrong Textured Cushiontone offers deep fissuring on a textured, snow-white background—a high-style ceiling at moderate cost.

An efficient acoustical material, Textured Cushiontone has an N.R.C. Specification Range of .65-.75 (3/4″ thickness, nailed to furring strips). Armstrong Textured Cushiontone is available in 9/16″ or 3/4″ thickness, in tongue-and-groove or butt-edge joint detail—in 12″ x 12″ tile. Available with a flame-resistant finish that makes it Class C (Slow-Burning) under Federal Specifications SS-A-118b, it can be cemented, stapled, or mechanically suspended.

For additional information or samples, contact your nearest Armstrong District Office, your Armstrong Acoustical Contractor (Consult the Yellow Pages of your local telephone directory), or write directly to the Armstrong Cork Company, 4202 Rock Street, Lancaster, Penna.

Armstrong

ACOUSTICAL CEILINGS

Travertone* Crestone® Custom Minaboard* Minatone® Cushiontone® Arrestone® Corkoustic®

*TRADE-MARK

Krupnick & Associates, Inc., St. Louis. The ceiling is Armstrong Textured Cushiontone.

New School Aid Proposals Are Unveiled by N.E.A.

A new proposal for Federal aid to schools which called for Congressional approval of a Federal contribution to the states of $25 per school-age child was announced by the National Education Association just before Christmas. N.E.A.'s new more moderate legislative proposals for 1958 thus opened the legislative season on the issue of Federal aid for school construction.

Unlike the program backed by N.E.A. last year, the new suggestion would leave to state discretion the amount of Federal assistance money to be expended for capital improvement in the school systems. The proposed $25 per school-age child in the initial year should be increased within five years, N.E.A. said, to at least $100 per child.

It was pointed out that under this schedule, annual Federal appropriations would begin at approximately $1 billion, said to be less than 10 per cent of the present educational expenditures for elementary and secondary education.

Per-Pupil Formula the Key

The Association's proposals for this year differed markedly from those for 1957. N.E.A. now would like to see the Federal money apportioned to states on the simple per-pupil formula with the states themselves free to determine how much of the contribution would be spent for construction of school buildings and basic equipment, and how much for supplementing salaries of teachers in public elementary and secondary schools without regard for subject matter taught.

This aspect of the plan gave rise to much speculation that Congress would most likely refuse to appropriate funds with no more specific determination for their end use.

Buildings and Salaries Stressed

The school construction and teacher salary features comprised the heaviest portion of the N.E.A. program.

Other suggestions were for more specifically designated activities. N.E.A. said funds were needed for 20,000 scholarships per year for undergraduate study, and 80,000 per year for this purpose after a four-year period. Also, funds are required, it said, for 5000 fellowships per year for graduate study, rising to 15,000 at the end of a three-year period. The cost of this phase of the program was estimated to be $40 million annually at the start, rising to $160 million annually in four years.

An additional $25 million per year would be included to "strengthen state agencies," which were accused of being remiss in failure to offer specialized services in science and mathematics education or in testing and guidance.

The Association said it would continue to press vigorously for adoption of H. R. 4662, the King-Jenkins bill which would provide tax equity for teachers who spend their own money to improve their professional competence.

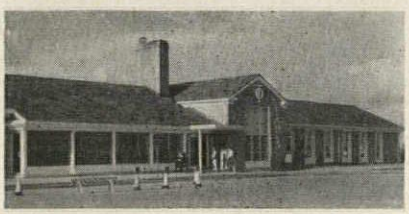
N.E.A. also said it would agree to termination of some of the present education assistance programs only if it could be demonstrated that the need could be met from other resources. It included among these established programs the one for aid to school construction in "Federally-impacted" areas.

"Bold Answers" Called For

The legislative recommendations

continued on page 356

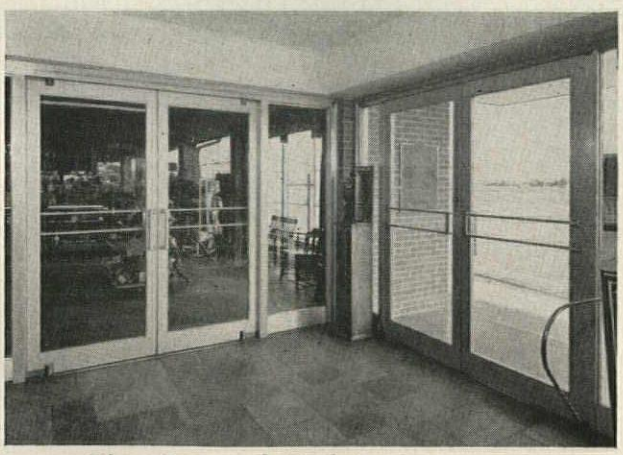
RESTAURANTS & SERVICE PLAZAS
on the OHIO TURNPIKE



Mahoning Valley Restaurant & Service Station
5 miles west of Pennsylvania - Ohio Line

Architect:
Bellman, Gillette & Richards

160 Balanced Doors in the entrances to the Restaurants & Service Plazas on the Ohio Turnpike.



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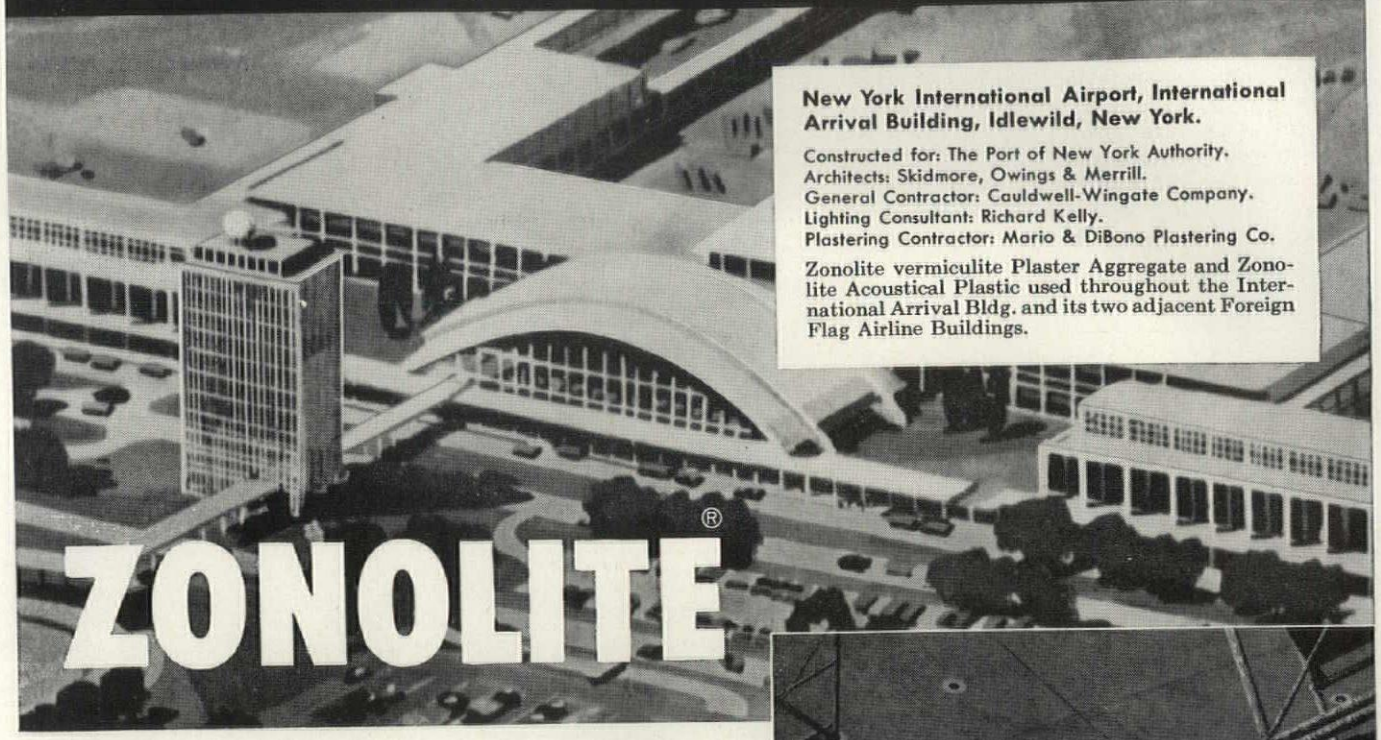

New York International Airport, International Arrival Building, Idlewild, New York.

Constructed for: The Port of New York Authority.
Architects: Skidmore, Owings & Merrill.
General Contractor: Cauldwell-Wingate Company.
Lighting Consultant: Richard Kelly.
Plastering Contractor: Mario & DiBono Plastering Co.

Zonolite vermiculite Plaster Aggregate and Zonolite Acoustical Plastic used throughout the International Arrival Bldg. and its two adjacent Foreign Flag Airline Buildings.

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Meets A Tough Design Problem

Look up into the dramatic parabola of the New York International Airport Arrival Building and you will see a vast and handsome expanse of ceiling composed of ½" Zonolite Acoustical Plastic on ⅝" Zonolite Plaster.

But back of this beauty is the story of a combination of plastering problems met and solved. These problems included acoustics...fire protection...the 3-inch expansion of this 204-ft. by 108-ft. arch...and securing the kind of light reflection which would help harmonize indoor artificial lighting with natural light coming in through the big glass front of the building.

Zonolite vermiculite Plaster Aggregate and Zonolite vermiculite Acoustical Plastic met fire safety and acoustical requirements. In addition, they contributed light reflection which was neither specular nor fuzzy. Expansion was handled by dimensionally stable Zonolite in 15- by 24-ft. panels with unobtrusive expansion beading between.

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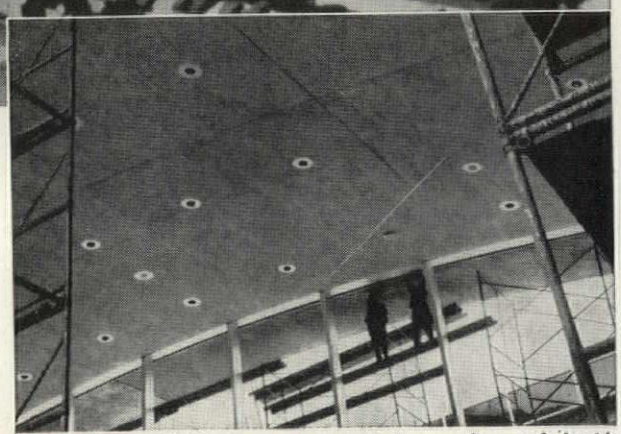

This 204- by 108-ft. clear span parabola was fireproofed with Zonolite vermiculite Plaster Aggregate and sound conditioned with Zonolite vermiculite Acoustical Plastic. Zonolite provided the desired light reflection and expansion was handled by dimensionally stable Zonolite in large areas with expansion bead between.

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Room design by Ving Smith, Photo by Pagano

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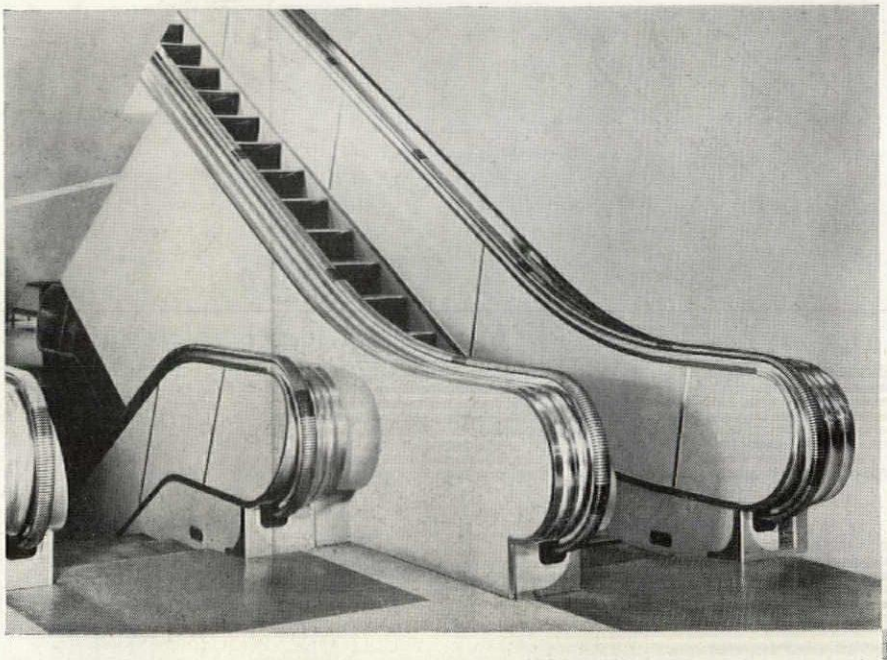
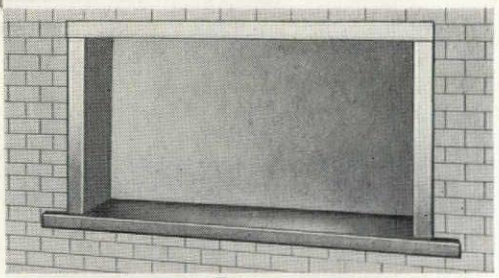


PEELLE MOTORSTAIRS

The New York City Board of Education has become the largest user of moving stairways in the school field. It has ordered 38 Peelle Motorstairs to be divided among the New York City schools as follows: Aviation Trades School, 12 Motorstairs; New York School of Printing, 12 Motorstairs; Fashion Institute of Technology, 14 Motorstairs.



DINING ROOM SIDE

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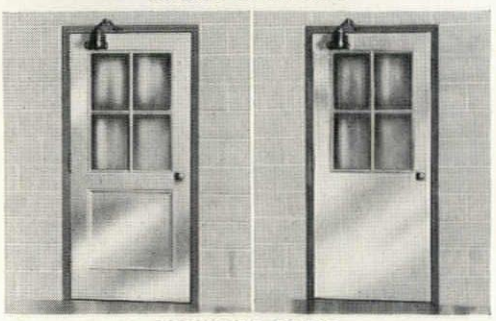
RICHMOND HOLLOW METAL DOORS AND RICHMOND KALAMEIN DOORS—New manufacturing methods make it possible to furnish quality Richmond Hollow Metal Doors at competitive prices. These doors are still custom made to suit the desired opening sizes. The sturdy Richmond Door has quiet and easy action essential for school use. Richmond continues to manufacture the top quality kalamein door and both hollow metal and kalamein doors can be furnished with the necessary Underwriters' Laboratories labels.



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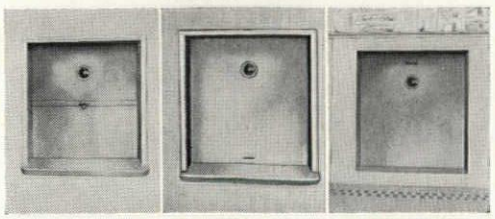
PEELLE DUMBWAITER DOORS – Peelle Dumbwaiter Doors should be specified in stainless steel construction or with stainless steel sills if plain steel units are desired.

See our Catalogs in Sweet's or write for further details



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THE RICHMOND FIREPROOF DOOR CO., Richmond, Indiana

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IN FERROUS AND NON-FERROUS METALS

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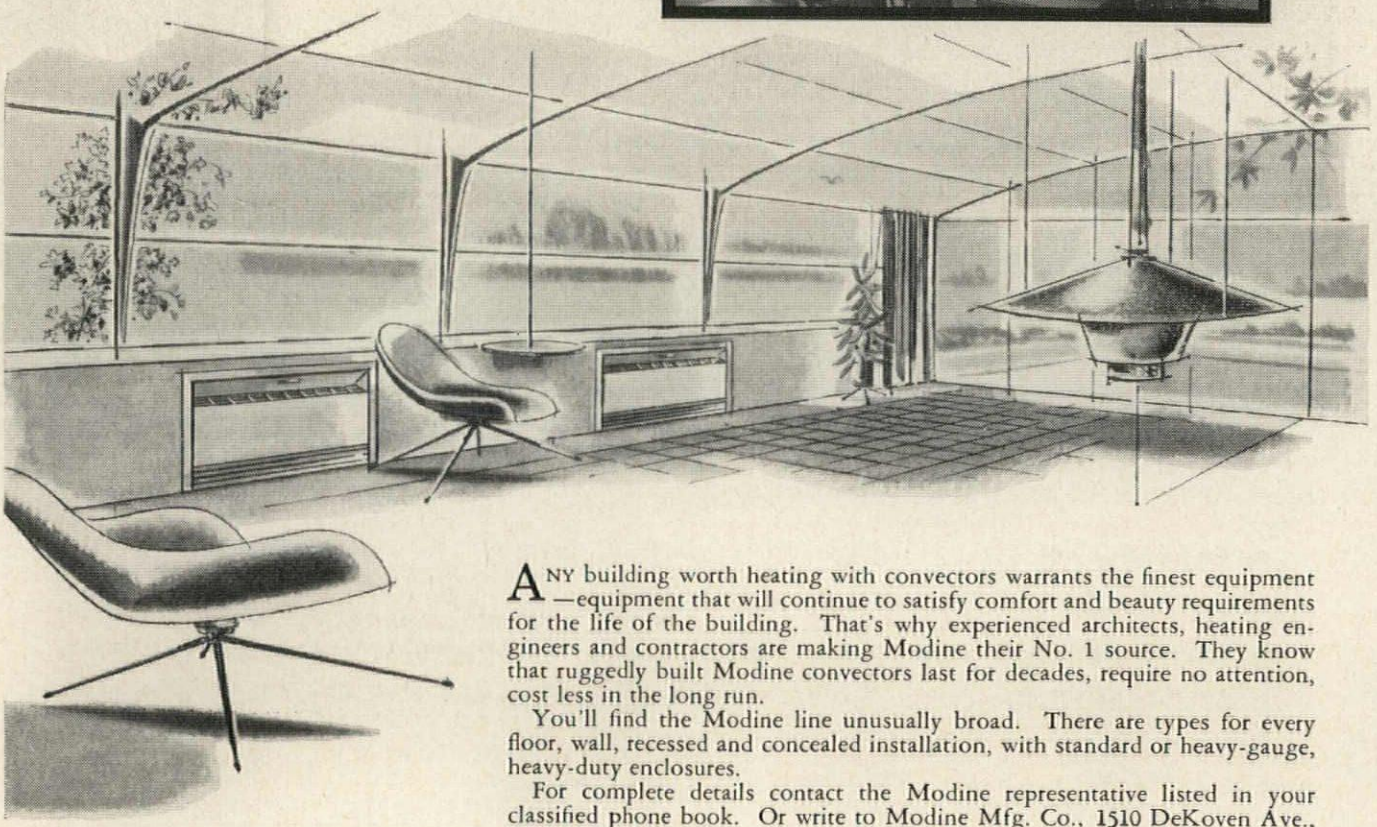

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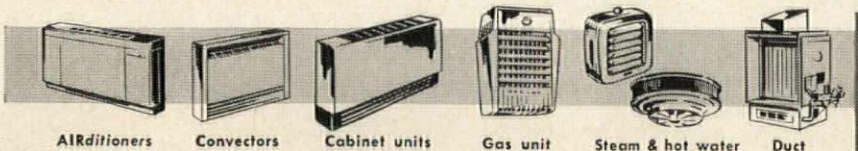
R-1352



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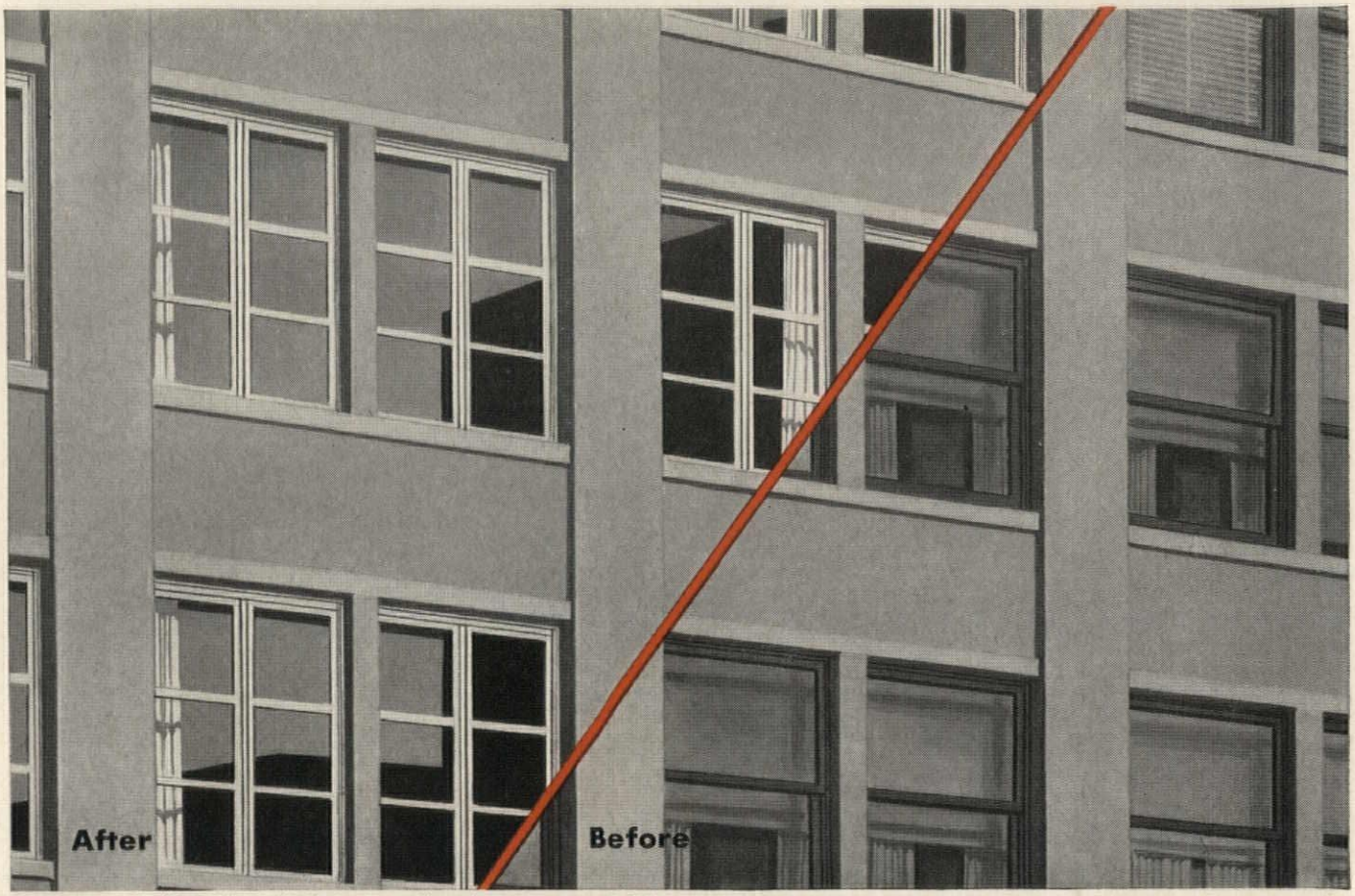

An actual example of Rusco Window Modernization: a midwest department store, with 196 openings.

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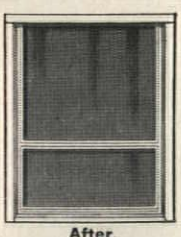
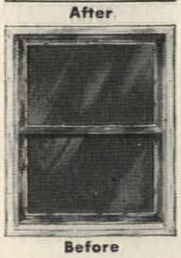


After



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Wright's most recently completed building: The Price Tower, 1956

A Testament. *By Frank Lloyd Wright. Horizon Press (New York), 1957. 256 pp., illus. $12.50.*

GOSPEL ACCORDING TO WRIGHT

By Charles W. Moore

Frank Lloyd Wright's *A Testament,* the publishers point out, "consists of two major books. 'Book One: Autobiographical' begins with the story of childhood influence . . . on through the challenging years in which he forged his own life and created a new architecture. . . . In 'Book Two: The New Architecture,' Frank Lloyd Wright presents an illuminating synthesis of the nine great principles upon which he has unremittingly based his life work." Running concurrently with these two books is the real work, and the reason almost every serious architect will want to own this volume: drawings, plans, and photographs, some of them never before published, of buildings and projects dating as early as 1888 and as late as 1957.

Apart from some murkiness in the photographs, there is little fault to find with the magnificent corpus. The difficulty, for most of us, is that the World's Greatest Living Architect is by no means only a contemporary phenomenon. A number of buildings and projects bearing very recent dates attest to his continuing creativity; but on the other hand he has for a long time been an historical figure, and his book becomes, automatically, an historical document. He means it, apparently, to be even more: Tennyson is invoked, before the title page, to say that "Most can raise the flowers now, For all have got the seed."

In the text that follows, though, repeated in-

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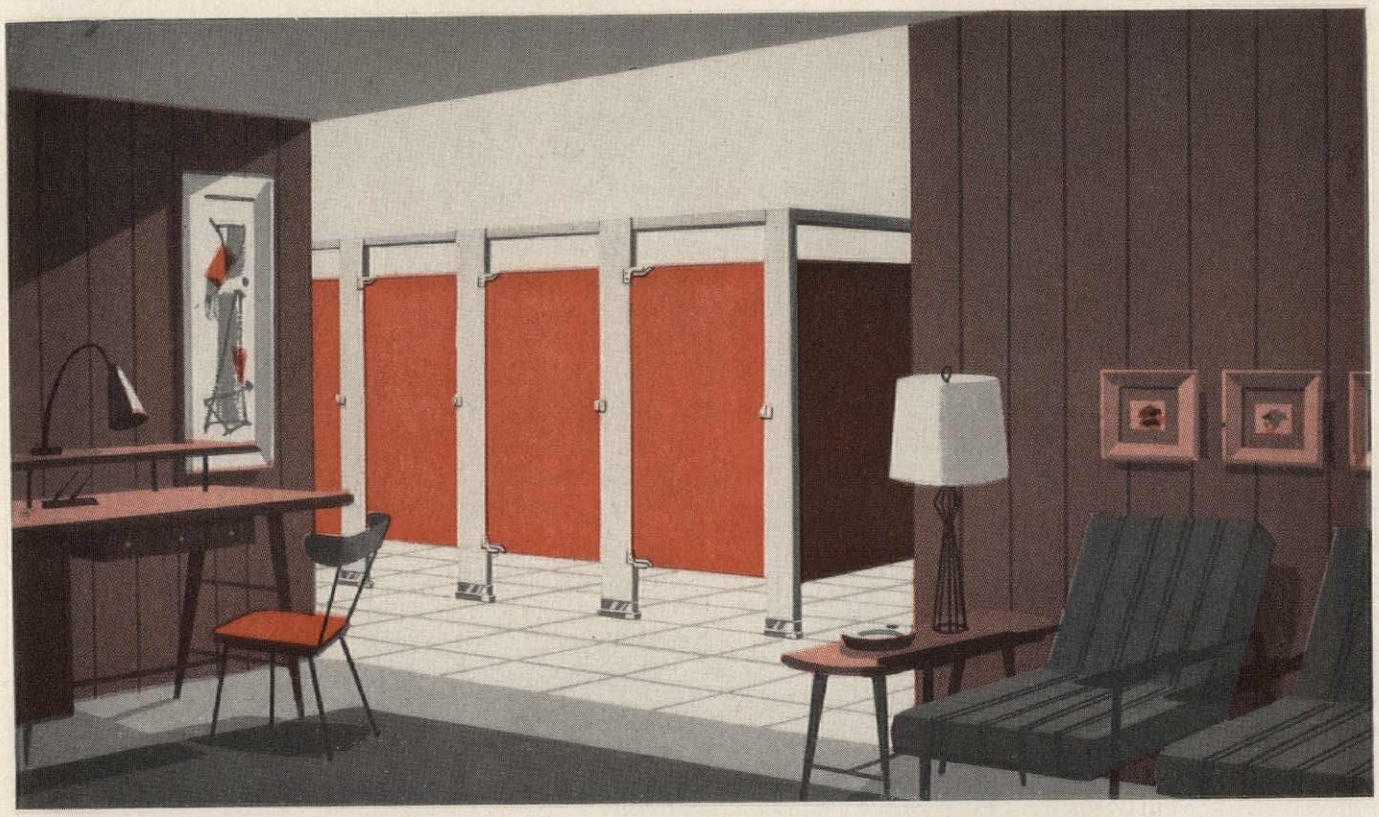

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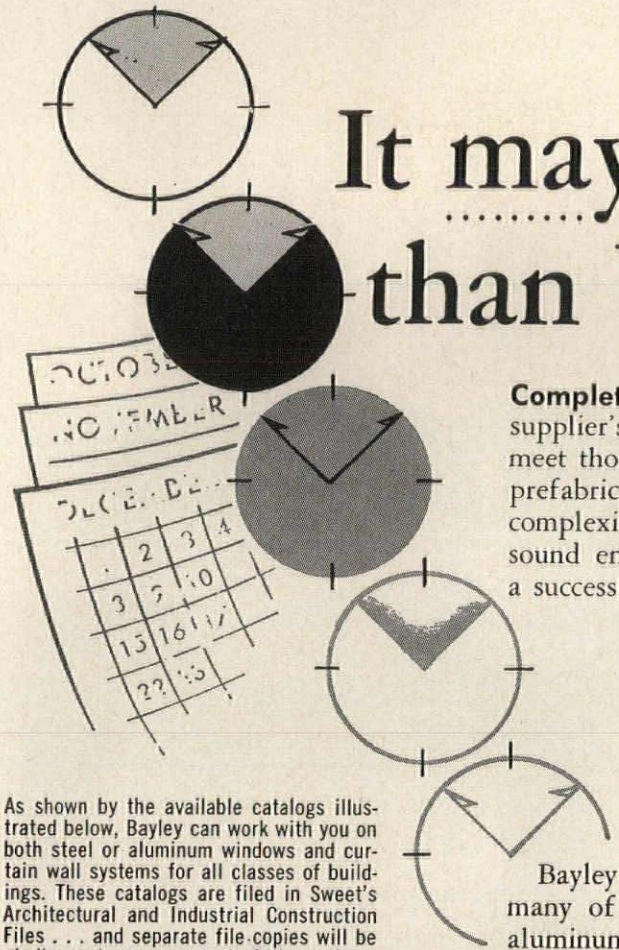

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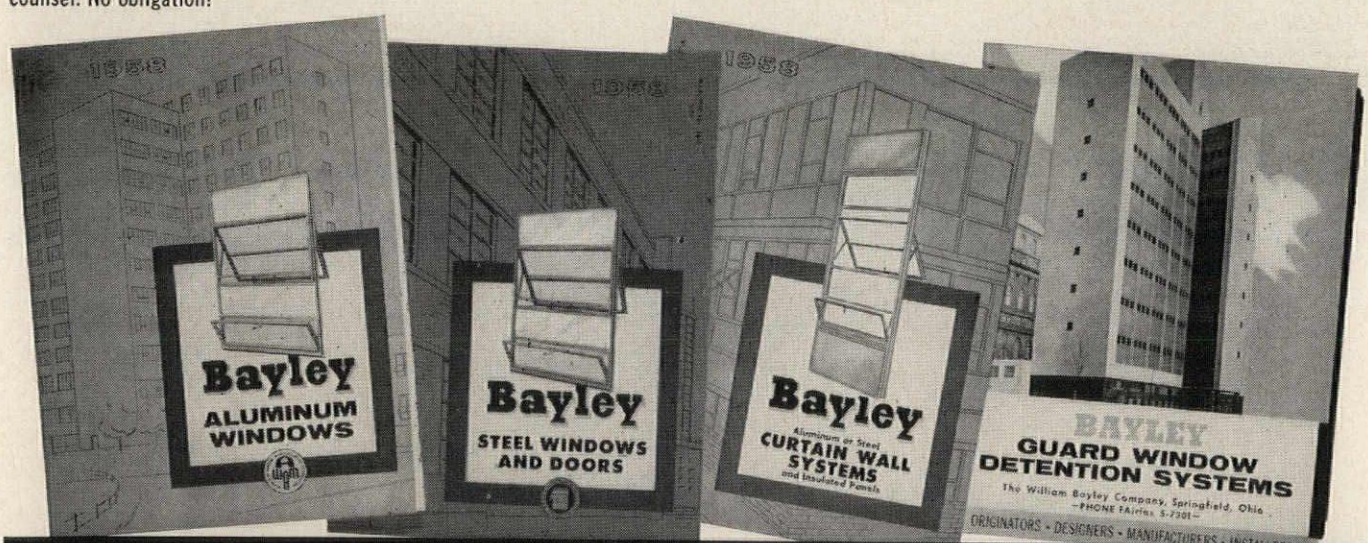

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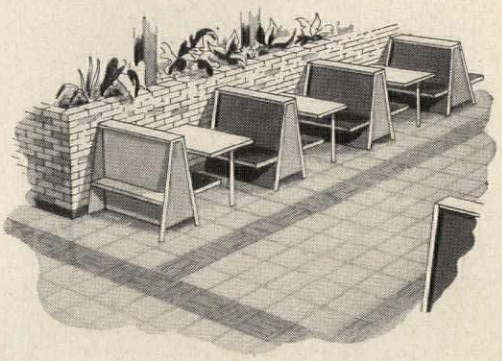

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Required Reading

. . . **Wright**

Continued from page 58

justice is done to the facts, and disservice to "organic" architecture by Wright's constant effort to make this architecture seem to be the product of his one-man crusade against the arrayed forces of pilastered Darkness. In fact, even if we allow the presence of columns and pilasters to disqualify as "organic" the consistent, natural, and very un-European towns built in New England during the first two centuries of this continent's settlement, the history of American architecture since the 1840's produces a steady stream of attempts, often very successful, to build so as to express the nature of the materials, of the structure, of the site, and of the life within. The "Stick Style" and "Shingle Style" buildings in the eastern United States after the Civil War, Furness buildings in Philadelphia, skyscrapers in Chicago, the domestic buildings of Greene and Greene, Maybeck, Howard, and others in California after the turn of the century, and such subsequent developments as the "Bay Region Style," like the work of Wright himself, display the American genius for creating natural "organic" architecture.

Wright has every reason to be proud of his successes over the forces of reaction; it is only unfortunate that these successes, made so personal, are wrested from the mainstream of the development of an indigenous architecture. For if this American development is eventually to triumph, as one might fervently hope it will, over the "brittle box emphasized as brittle," it will not be entirely on account of the work of Frank Lloyd Wright. A Frank Lloyd Wright with a little humility could, however, help.

In the pages of *A Testament*, the flowering of the World's Greatest Architect is superbly evident, but the fact of a fertile seed, as advertised, would seem to remain open to question. The book's last sentence is perhaps more clue than enigma: "Growth, our best hope, consists in understanding at last what other civilizations have only known about and left to us—ourselves comforted meantime by the realization that all one does either for or against Truth serves it equally well."

more reviews on page 382

Rolling Metal Doors

Provide Removable Dividing Wall in School Gymnasium!

The six aluminum rolling doors illustrated here, which form a dividing wall in a school gymnasium, are electrically controlled by push-buttons on a single panel. When the doors are fully opened, the mullions between doors on the main floor are moved out of the way by means of an overhead track and nested at either side, leaving the entire gymnasium floor clear.

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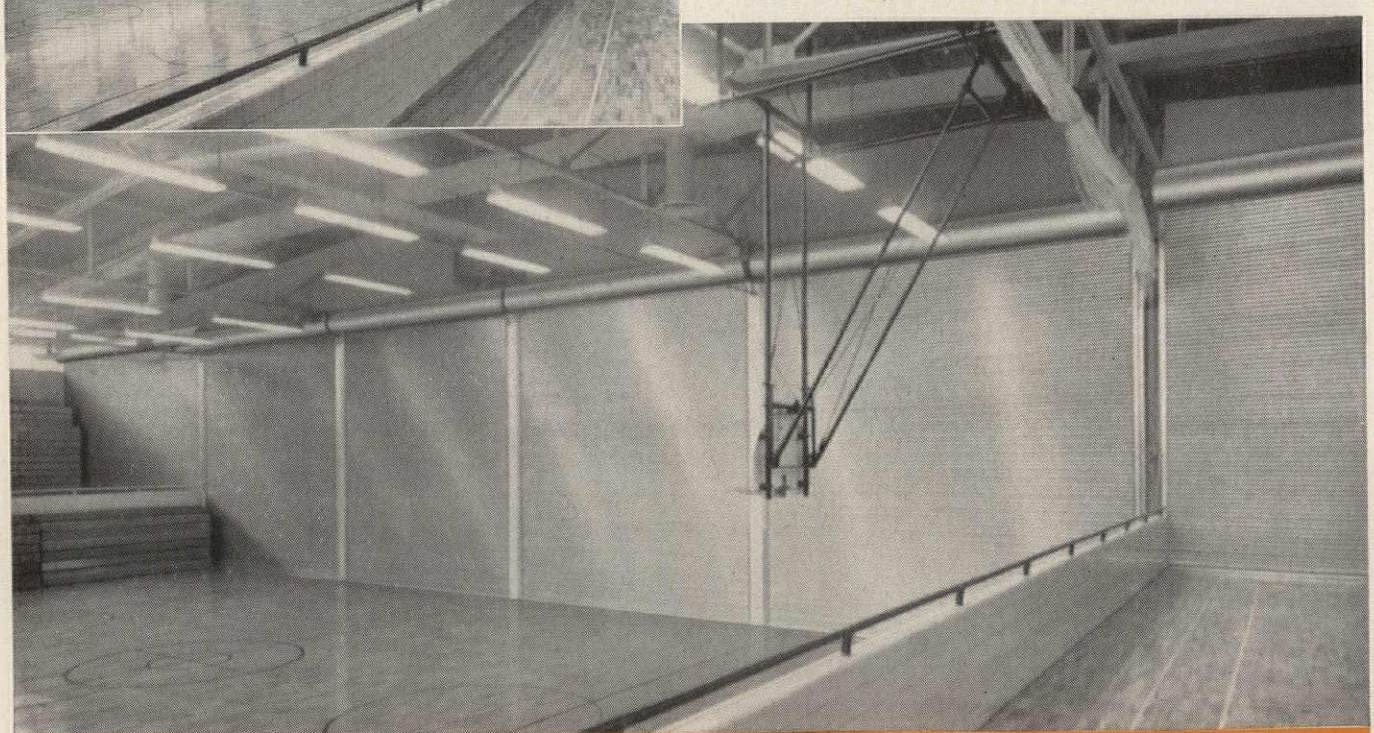

ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Interior view of Gymnasium in the new Birmingham High School, Birmingham, Michigan. Swanson Associates, Bloomfield Hills, Michigan, Architects. Cunningham-Limp Company, Detroit, Michigan, General Contractors.

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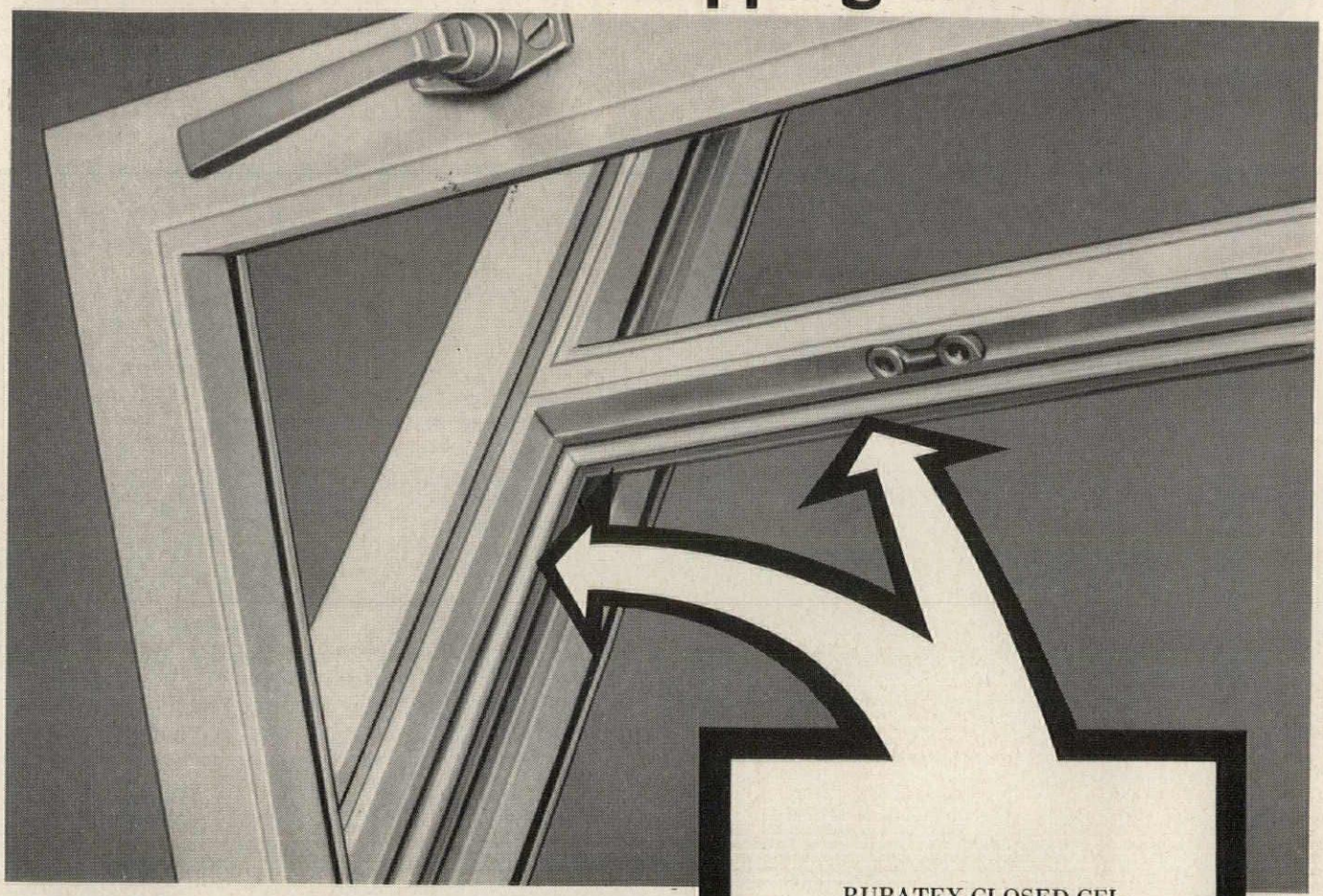

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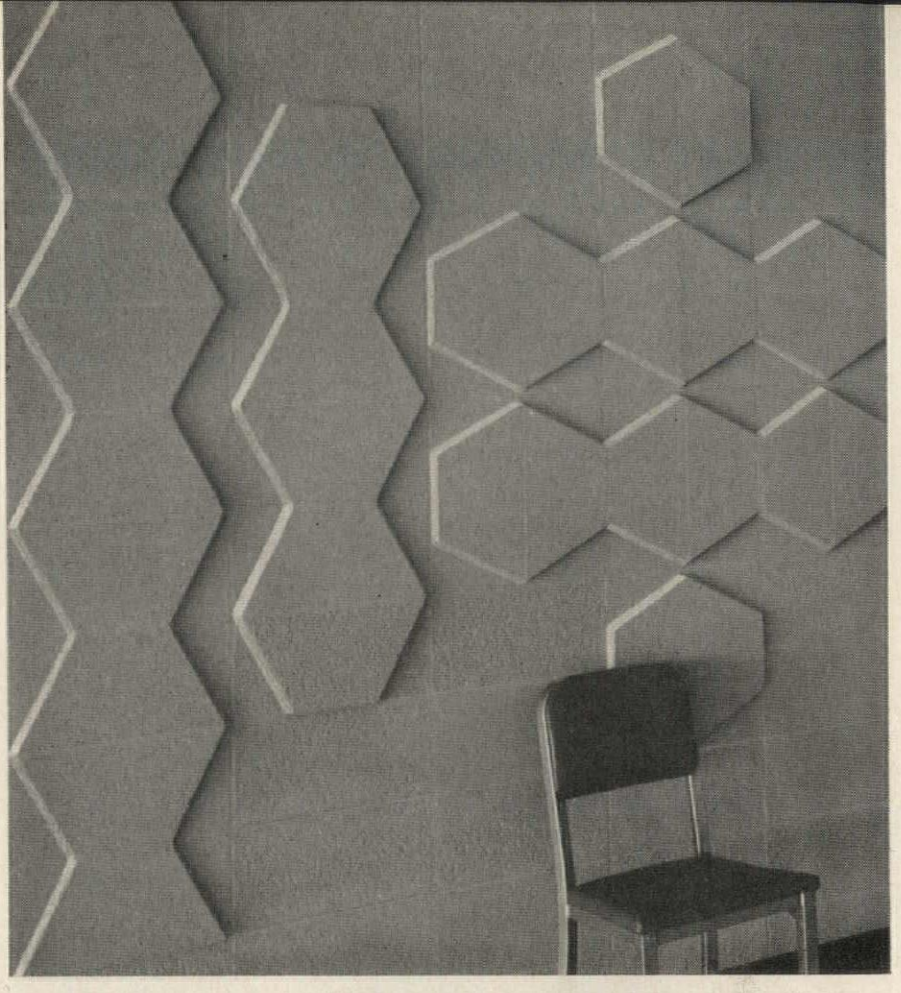

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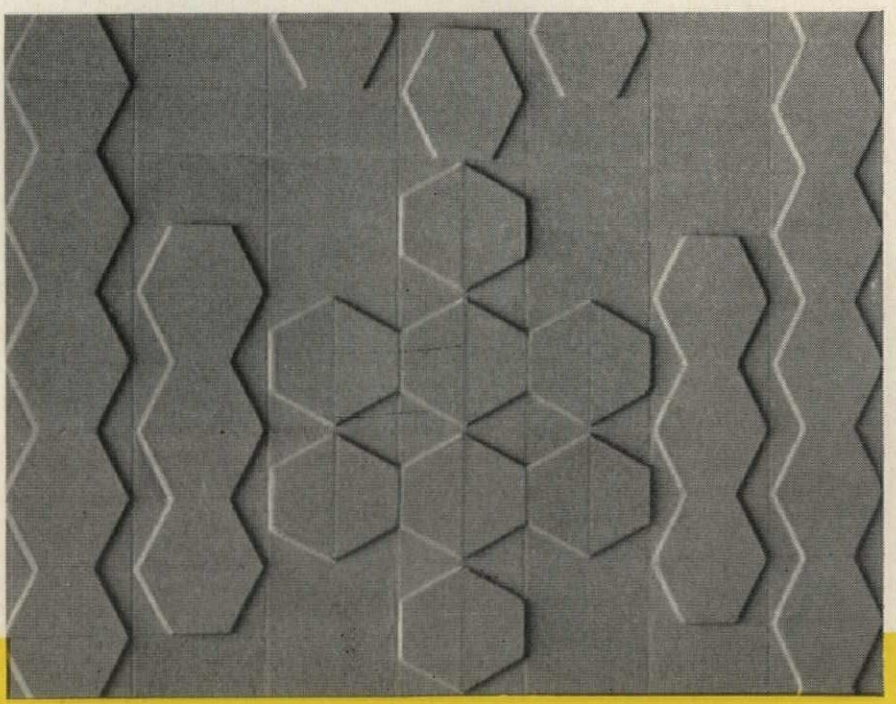

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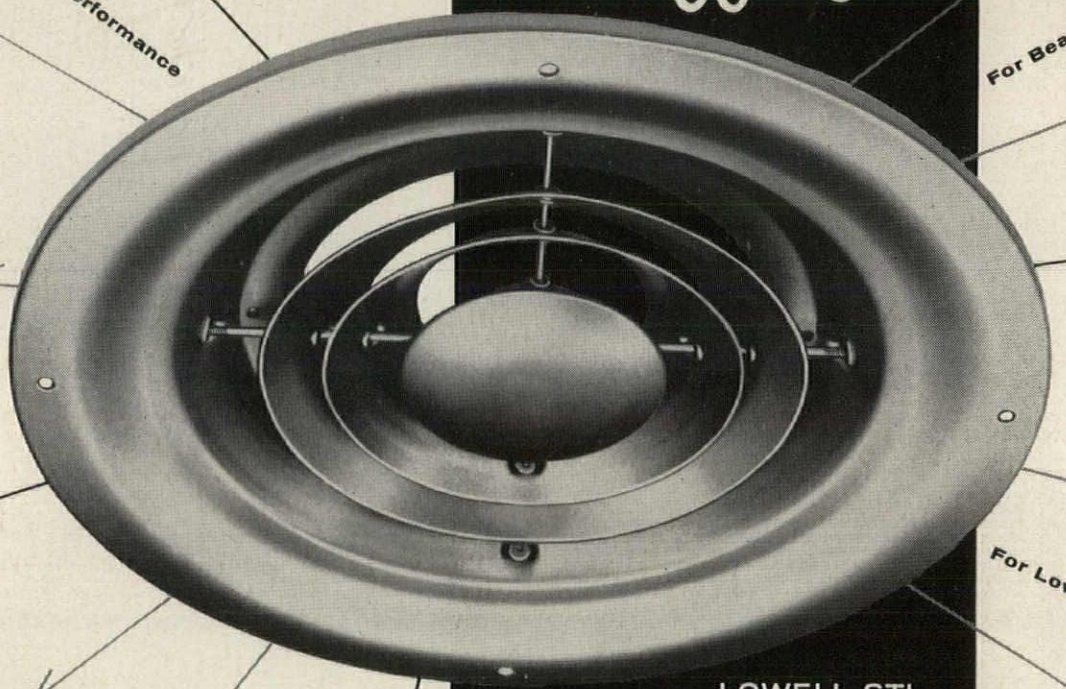

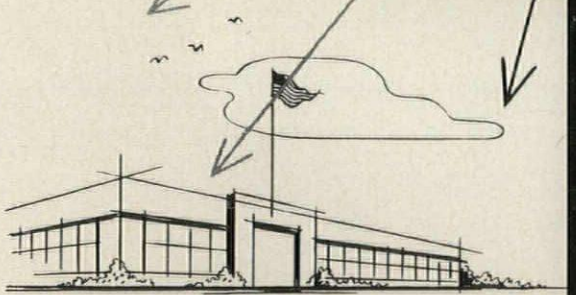

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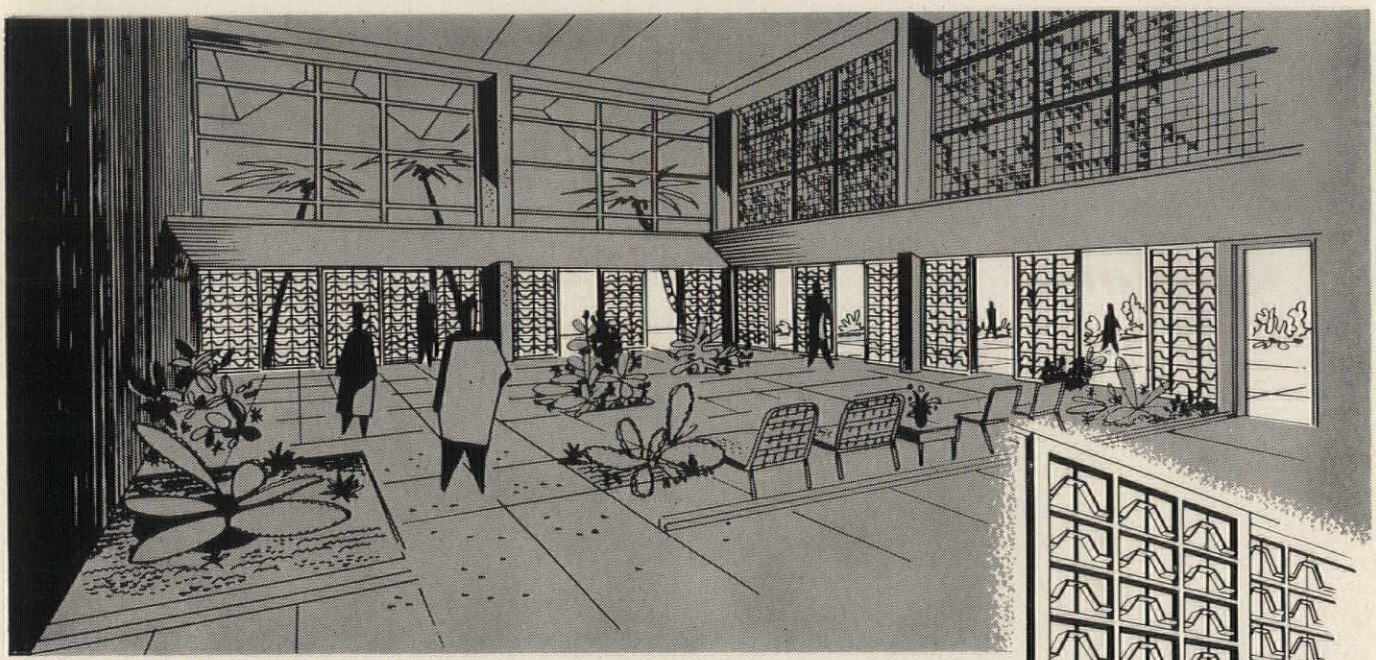

. . . Security with an open appearance

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Architects: Weed • Russell • Johnson, Miami, Florida

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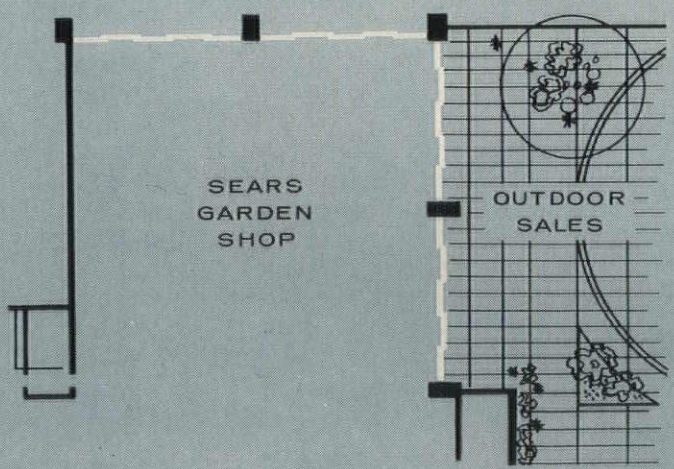

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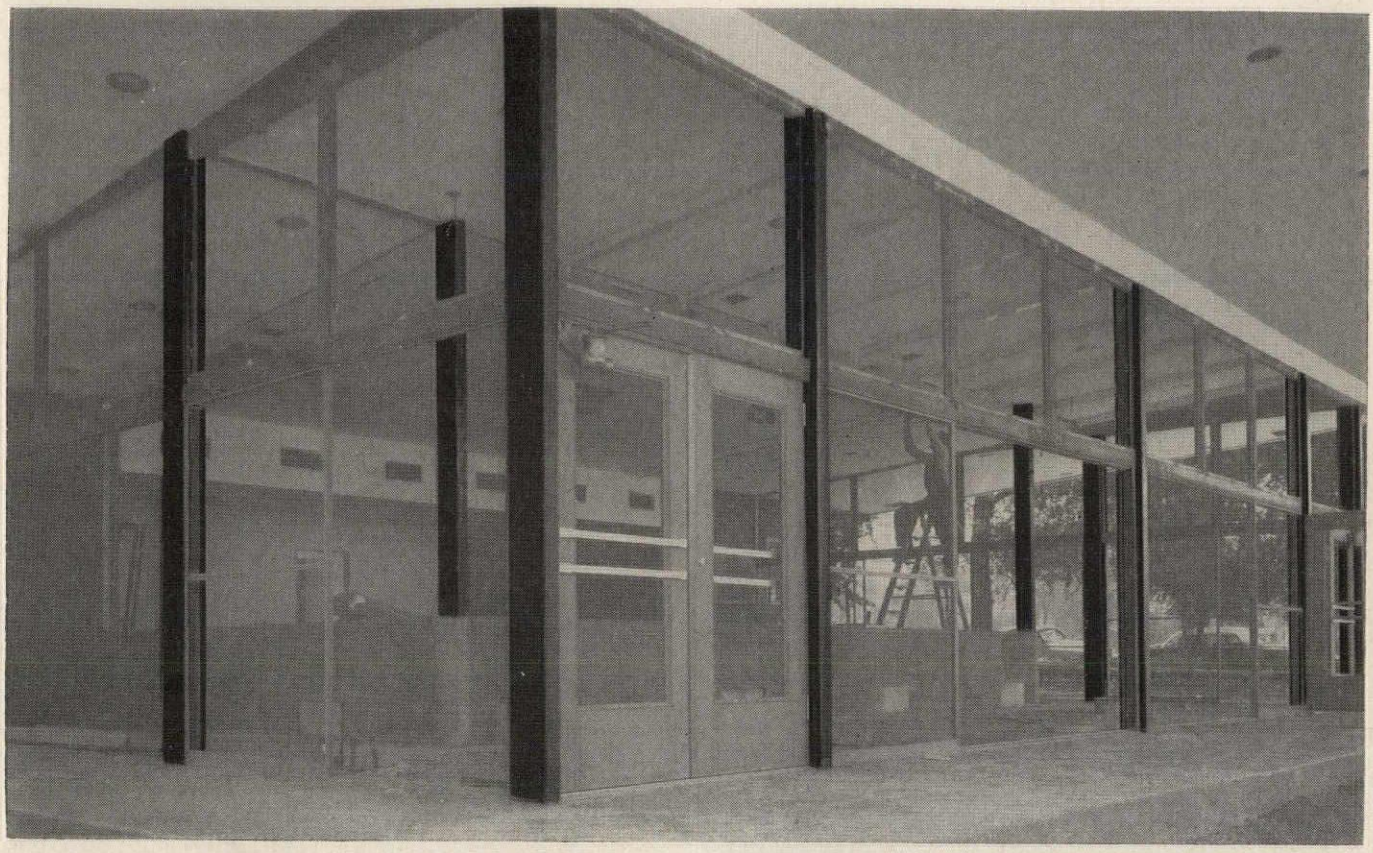

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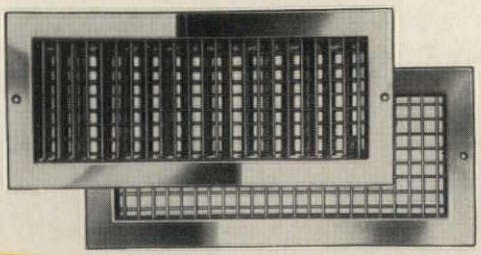

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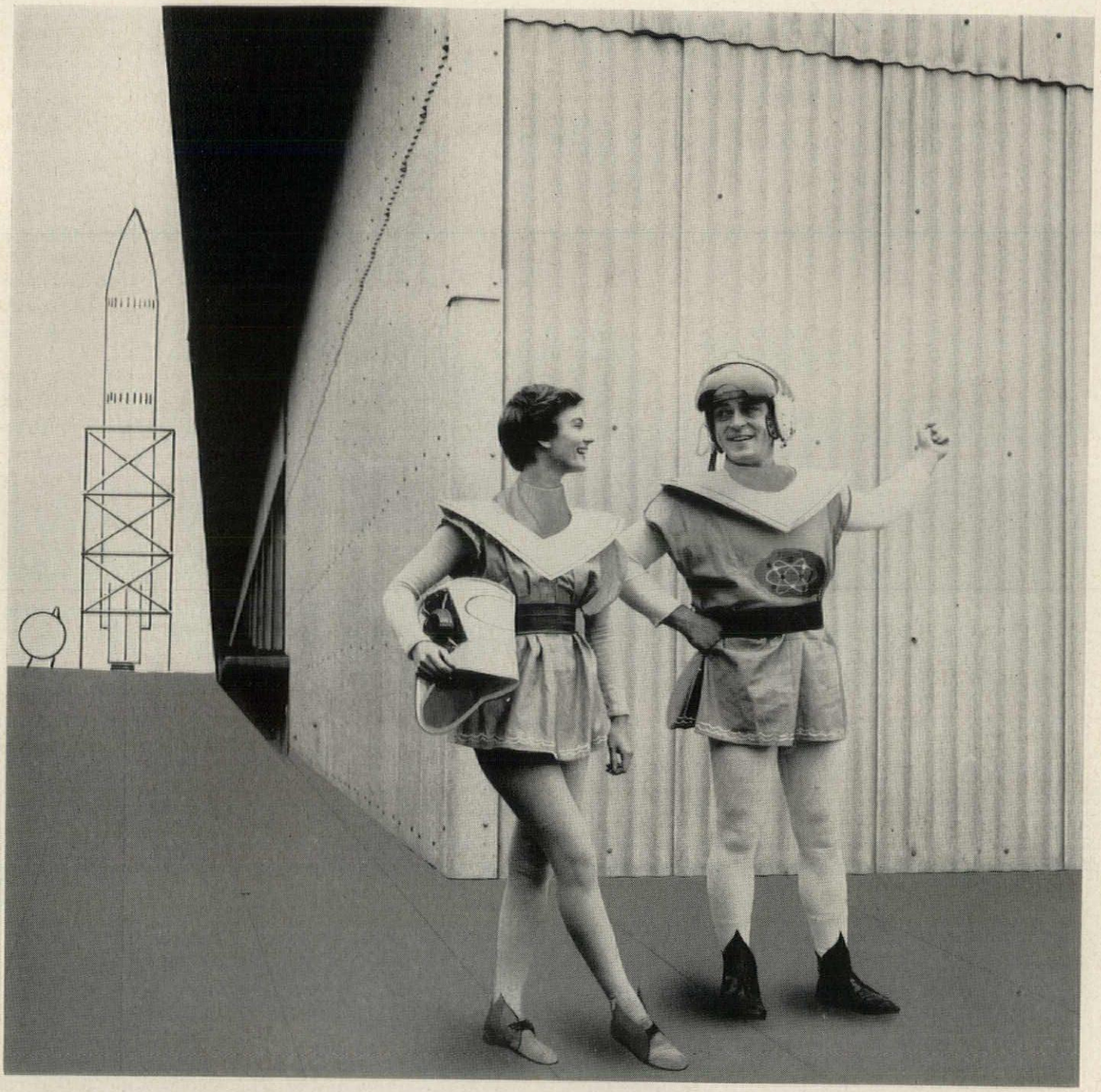

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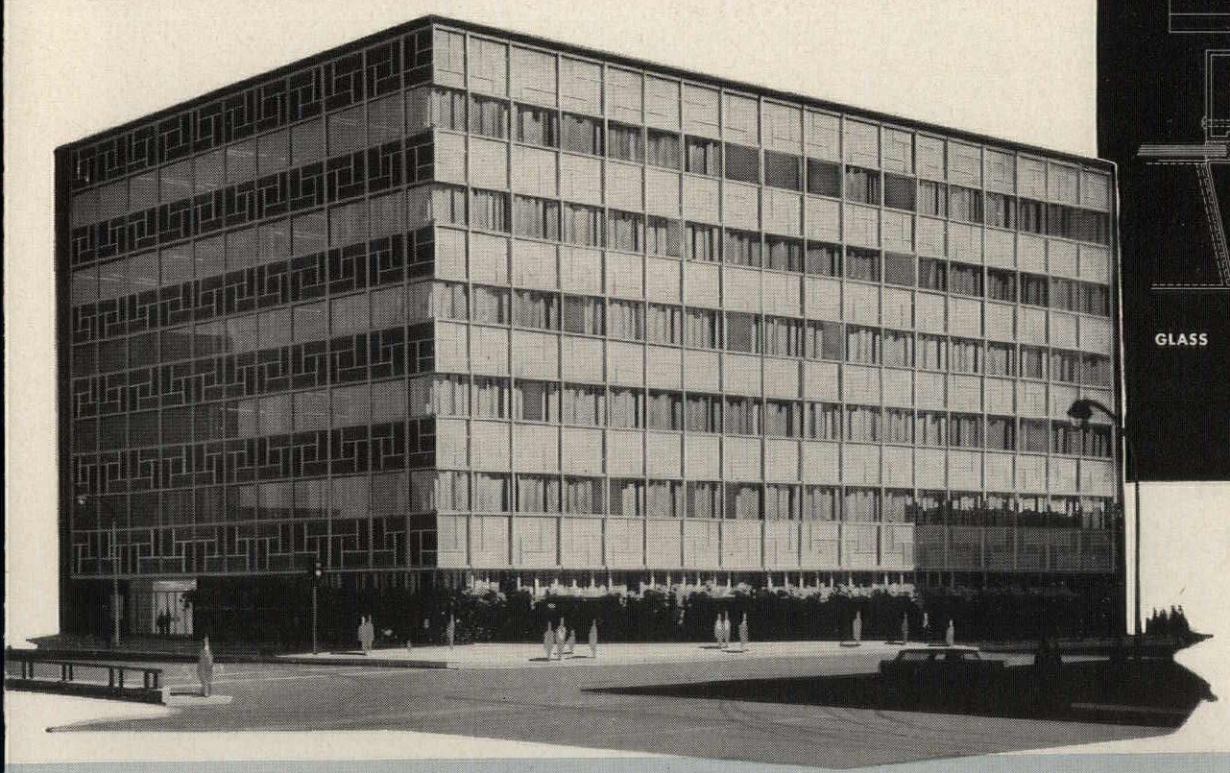

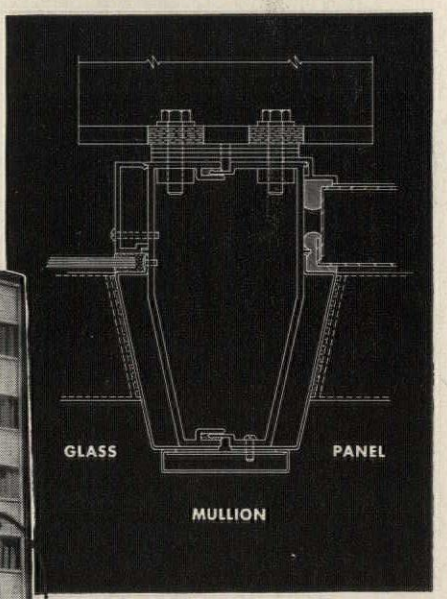

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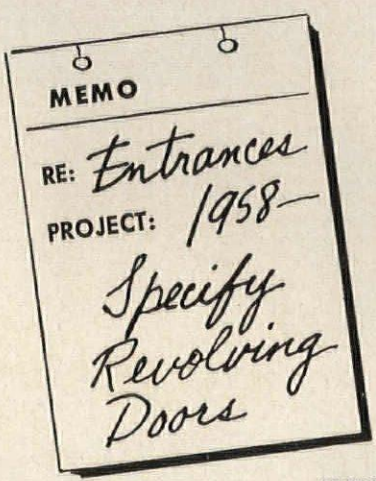


You'll hear a lot of good things later about the revolving door entrances you specify now. Particularly so where exterior beauty and design are deciding factors . . . when interior comfort and cleanliness are all-important . . . and where maintenance and operating costs are major considerations.

International offers you the advantage of a *single* responsibility for the complete entrance installation, as well as for all or any portion of the architectural metal treatment.

The nationwide International sales and service organization is available to work with you at your request.

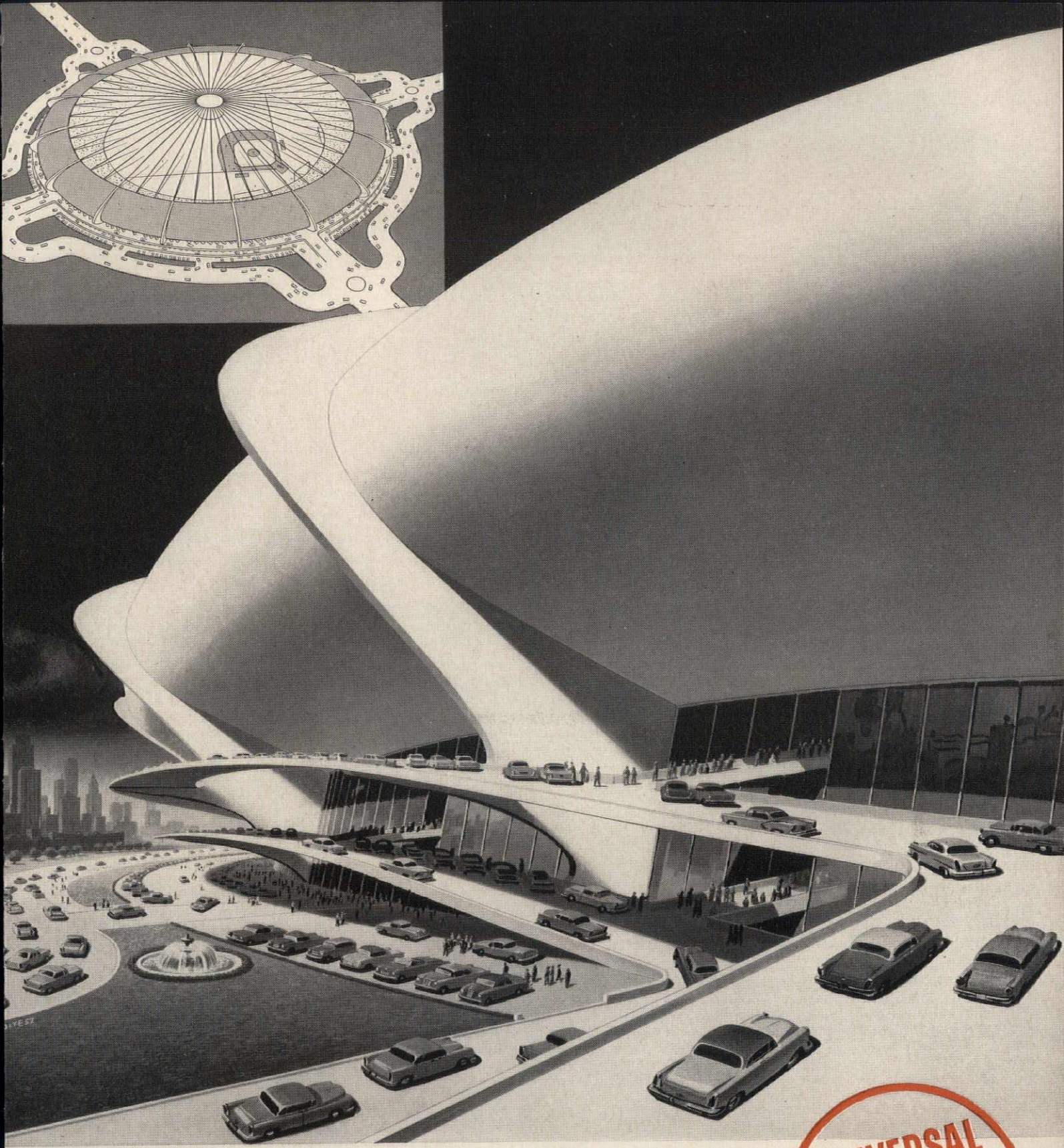
SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE OR WRITE FOR COPY

Revolving Door Entrance Division

INTERNATIONAL STEEL COMPANY

1329 Edgar Street • Evansville 7, Indiana

INTERNATIONAL ALWAYS OPEN ALWAYS CLOSED VAN KANNEL



TOMORROW'S ARENA:
concrete bowl with transparent cover

"This all-weather arena will meet almost any needs, can be made large enough to accommodate from 10,000 to 200,000 spectators. The design principles call for a minimum of structural materials, costly excavation and foundation work, since the prestressed concrete bowl is bound together into a unified structure by the steel cables that also support the transparent plastic roof. Land requirements, too, are held to a minimum. The problem of parking space is taken care of by the spacious multi-deck parking ramps that are an integral part of the underside of the bowl. This simple, practical arena design is made possible by the versatility of concrete."

LEV ZETLIN, *Consulting Engineer*

UNIVERSAL ATLAS CEMENTS

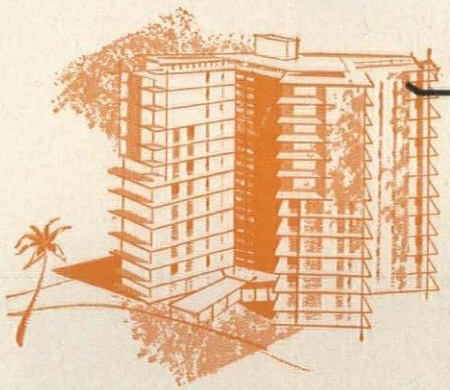
USS TRADE-MARK

One of a series of advertisements being presented in national magazines by Universal Atlas – to promote interest in architectural contributions for a greater America through the medium of concrete.

UNIVERSAL ATLAS CEMENT COMPANY, 100 Park Ave., New York 17, N. Y.–MEMBER OF THE INDUSTRIAL FAMILY THAT SERVES THE NATION–**UNITED STATES STEEL**

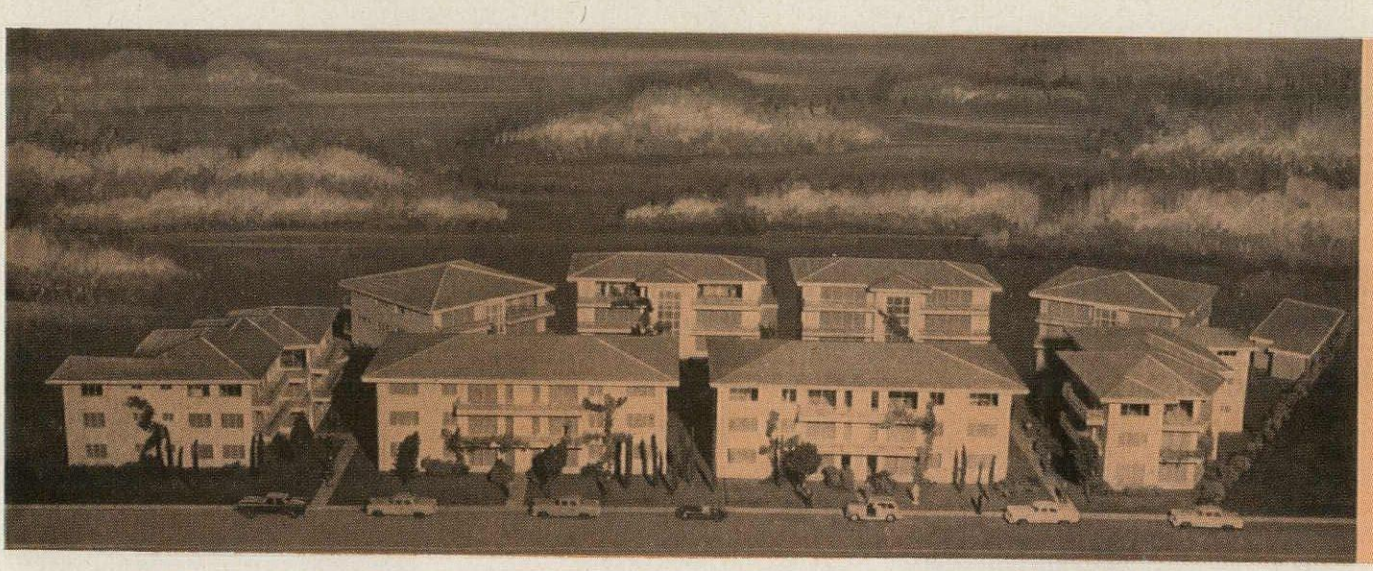
ATLAS PORTLAND CEMENT • UNIVERSAL PORTLAND CEMENT • ATLAS DURAPLASTIC PORTLAND CEMENT • UNIVERSAL PORTLAND SLAG CEMENTS • ATLAS MORTAR CEMENT • ATLAS WHITE PORTLAND CEMENTS • ATLAS LUMINITE CEMENT • UNAFLO OIL-WELL CEMENT

"UNIVERSAL," "ATLAS," "DURAPLASTIC," "LUMNITE" and "UNAFLO" are registered trademarks of Universal Atlas Cement Company.

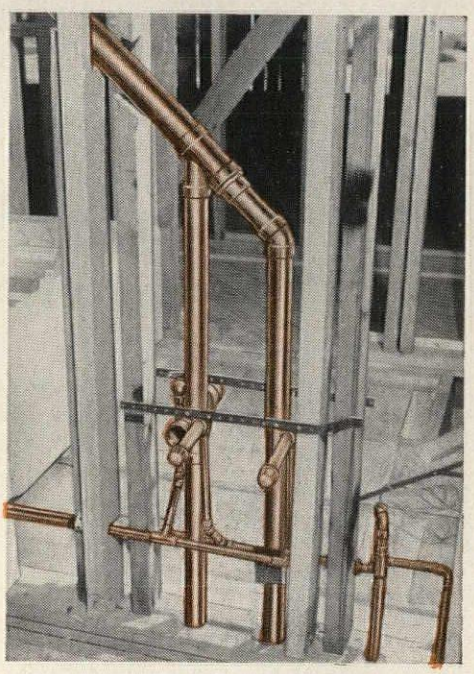


Streamline® QUALITY COPPER TUBE chosen for these magnificent apartments . . . the CAPRI AIRE and PHOENIX TOWERS . . . the ultimate in comfortable, carefree, modern living

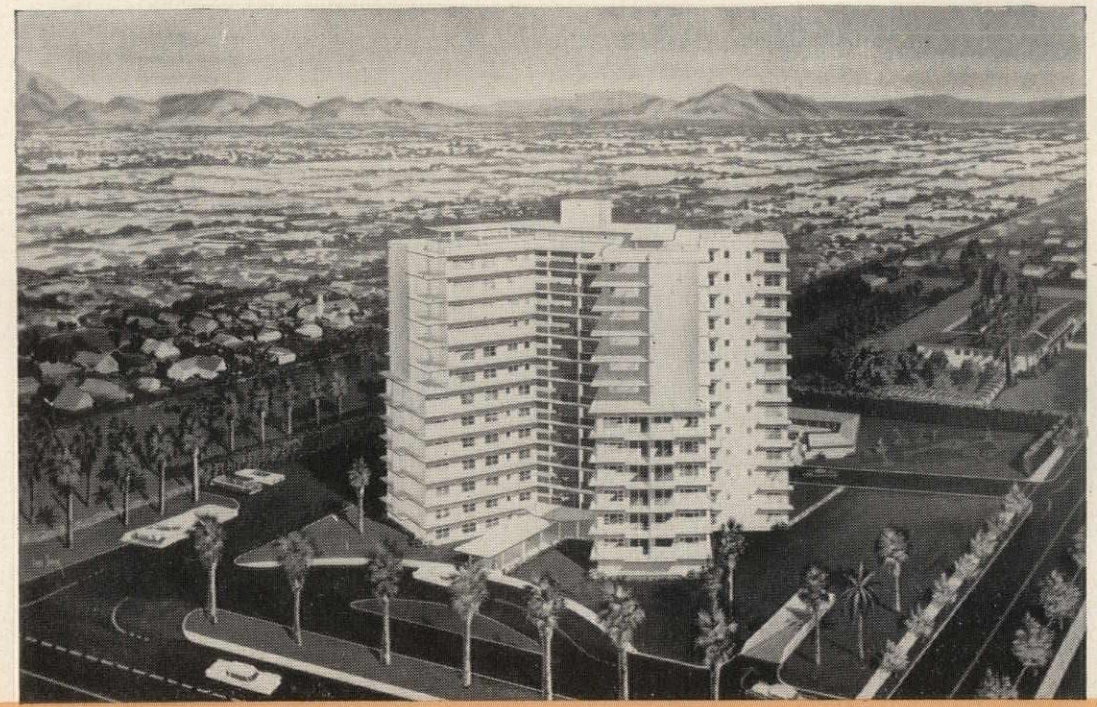
These two fabulous co-operative apartments . . . one at Phoenix, Arizona, the other in La Jolla, California . . . are setting the pace for a new kind of casual American living. Architects have designed both these luxurious buildings for an absolute maximum of comfort and operating efficiency. It was only natural that copper, the modern piping material, was used for plumbing systems in both projects . . . a decision certain to pay handsome dividends in trouble-free service for the life of the building. Rust-proof and practically clogproof, as well, copper's ease of installation is credited with keeping overall cost-of-installation below that of competitive material.



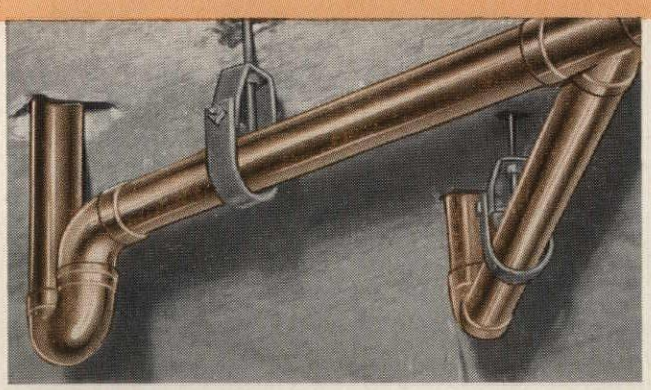
La Jolla Capri Aire, at La Jolla, California, combines outdoor and indoor living in a delightful grouping of lavishly-finished co-operative apartments in which quality materials and careful workmanship are combined to produce these attractive dwellings with distinctive California styling. Lionel V. Mayell, who has created a number of these beautiful co-operatives in other western cities is the developer of the Capri Aire project. The general contractor is the Del Anderson Construction Co., San Diego, and plumbing and heating installation is being handled by Ben Huntington and Sons, also of San Diego. These one-, two-, and three-bedroom apartment homes feature sound- and weather-conditioning, a swimming pool, ultra-modern radiant heat, and . . . of course, miles of Mueller Brass Co. Streamline copper tube.



In the Capri Aire co-operative, space-saving copper tube in long standard lengths is easy to handle and quick to install.

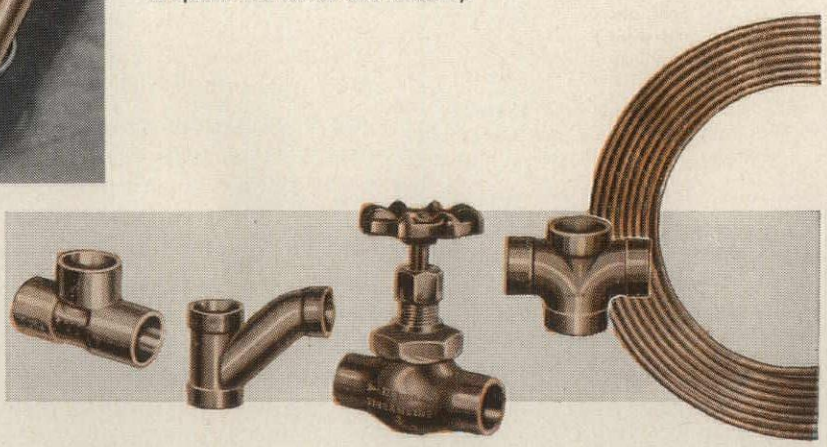


The $3 million, 14-story Phoenix Towers (above) . . . a 60-apartment co-operative unit in Phoenix, Arizona, was designed by Ralph C. Harris. The Del C. Webb Construction Co. was the builder, and Ralph W. Applegate Realty & Investment Co. of Chicago is the agent for the building. John Armer, the plumbing and heating contractor, points with understandable pride to this carefully-installed system. Armer's general superintendent on the Phoenix Towers installation was Mr. Bud Lindquist. In reviewing the project, Lindquist was extremely enthusiastic about copper, both from a standpoint of overall economy of installation, ease of handling, and the saving of valuable space as well. Little wonder, then, that the use of copper for supply and drainage systems is constantly increasing!



Gleaming copper drain lines from lavatory and closet in the Phoenix Towers co-operative provide valuable evidence to buyers of these apartment-homes that the builders have lavished more than mere extraneous beauty on the construction of these "apartments of the future". Long-lasting Streamline quality copper, like the drainage lines shown here, will assure years of complaint-free service and reliability.

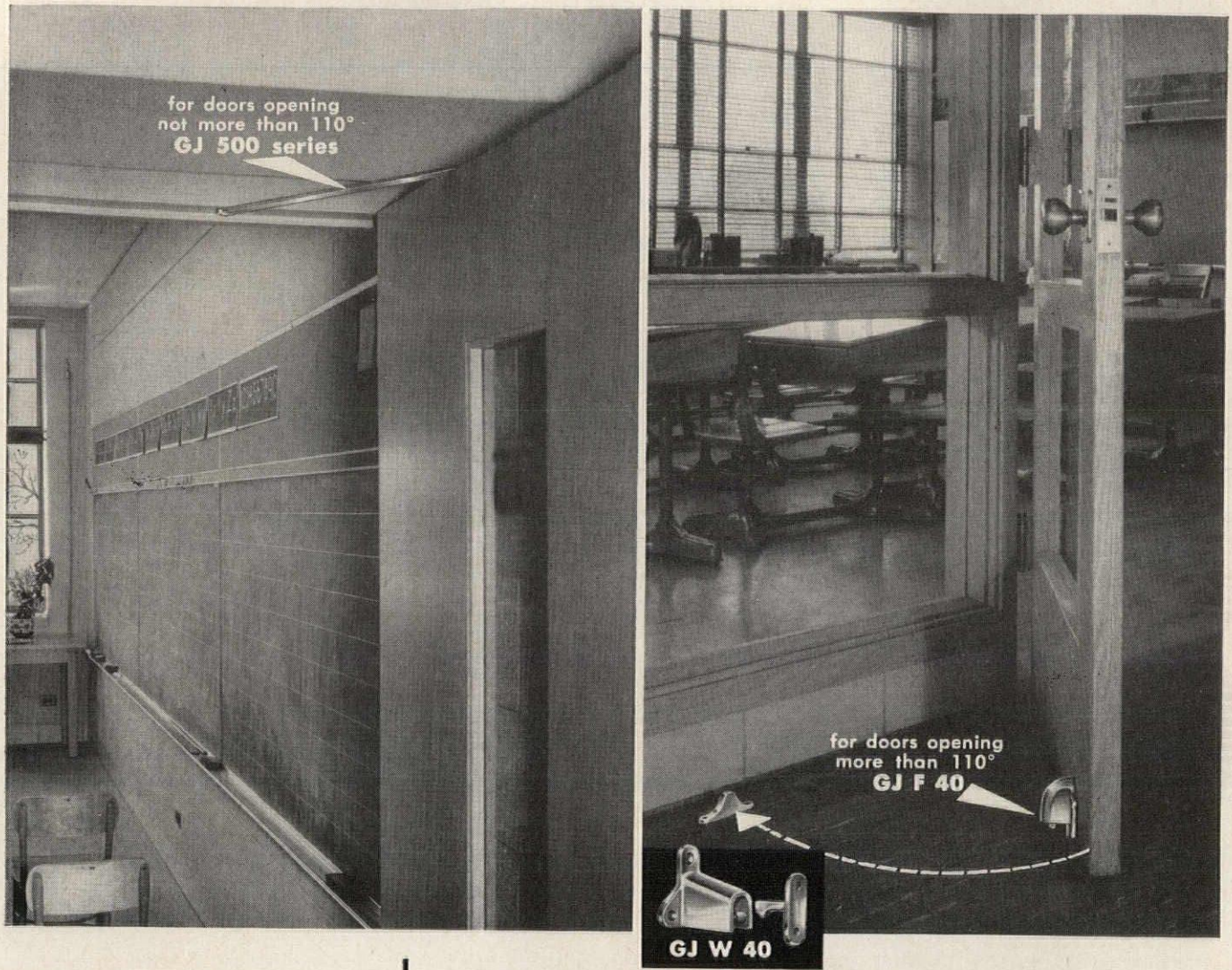
There is a complete range of Streamline tube and solder-type fittings for every installation need. Versatile, easy-to-install copper adds the finishing touch to the master plumber's finest work in *both* drainage and supply. Send today for kit No. 15 containing helpful information on copper for drainage, and Mueller Brass Co.'s catalog on Streamline copper tube and fittings, too. These two guides will help you plan better supply and drainage systems the modern way.



MUELLER BRASS CO. PORT HURON 8 MICHIGAN

219

2 ideal specifications for efficient CLASSROOM DOOR CONTROL



These ideal GJ specifications for classroom doors are used in such outstanding schools as:

Chicago Public Schools, Chicago, Illinois

John Muir Jr. High School, San Leandro, California. Schmidts, Hartman and Wong, Berkeley, Calif. — architects

Sinclair Lane Elem. School, Baltimore, Maryland. Edward J. Hofstetter — architect

Algonquin School, Des Plaines, Illinois. Childs and Smith, Chicago, Ill. — architects

Wellesley Senior High School Addition, Wellesley, Mass. Perry Shaw Hepburn & Dean, Boston, Mass. — architects

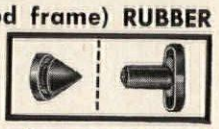
Also GJ shock absorbing door holders for entrance and other heavy duty doors.

"shall have GLYNN·JOHNSON . . .

GJ 500 series CONCEALED (or surface mounted) OVERHEAD DOOR HOLDERS." (Most efficient shock absorbing device for holding door open at any specified degree up to 110°. Resilient spring cushion absorbs force of violent openings. Holds door conveniently open for continuous "through" traffic. Overhead, they present no stumbling hazard, are tamper-proof and cannot interfere with cleaning.)

"GJ F 40 FLOOR TYPE (or GJ W 40 wall mounted) COMBINATION DOOR STOP AND HOLDER." (This simple, foolproof device engages silently and automatically to hold door open. Releases with a firm pull. Rounded surfaces prevent children from "riding" bumper or damaging floor plate. Especially recommended for doors opening more than 110°.)

"THREE GJ 64 for metal frame (or GJ 65 for wood frame) RUBBER SILENCERS." (Form pneumatic air pockets to absorb shock or noise of closing and create constant latch tension . . . no door rattling.)



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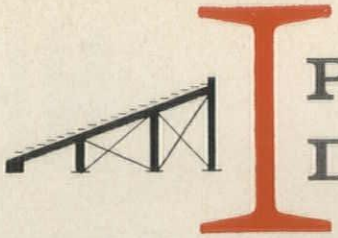

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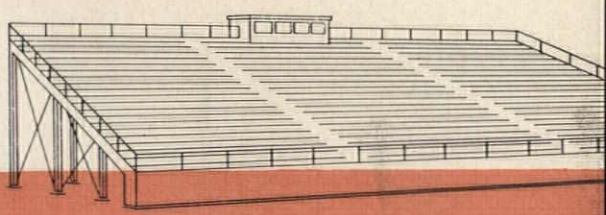

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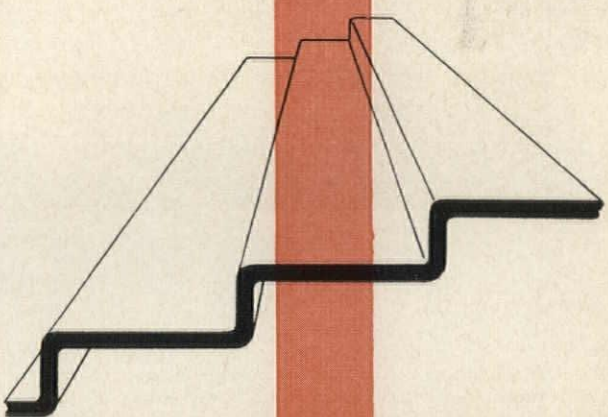

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Suntile SETFAST Wall Tile is the modern, strongest and fastest method of installing tile.

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. . . pre-bonded on durable fiber . . . strengthens tile-to-wall bond like the ribs in reinforced concrete . . . provides additional safety factor for vibration, structural shifts and temperature changes!
In 16 most popular colors.

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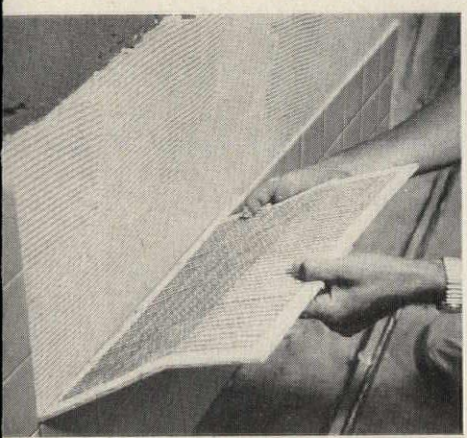

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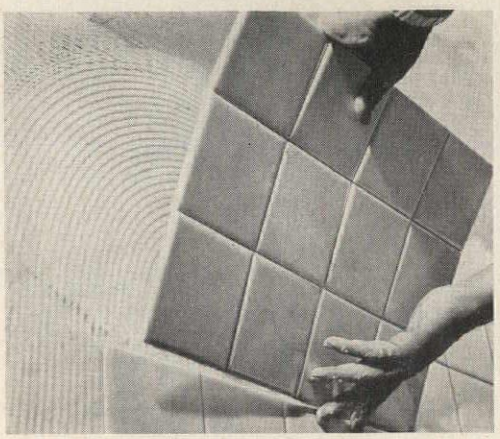

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Individual operations reduced.

PERFECT SPACING — beautifully precise, automatic alignment and easy handling.
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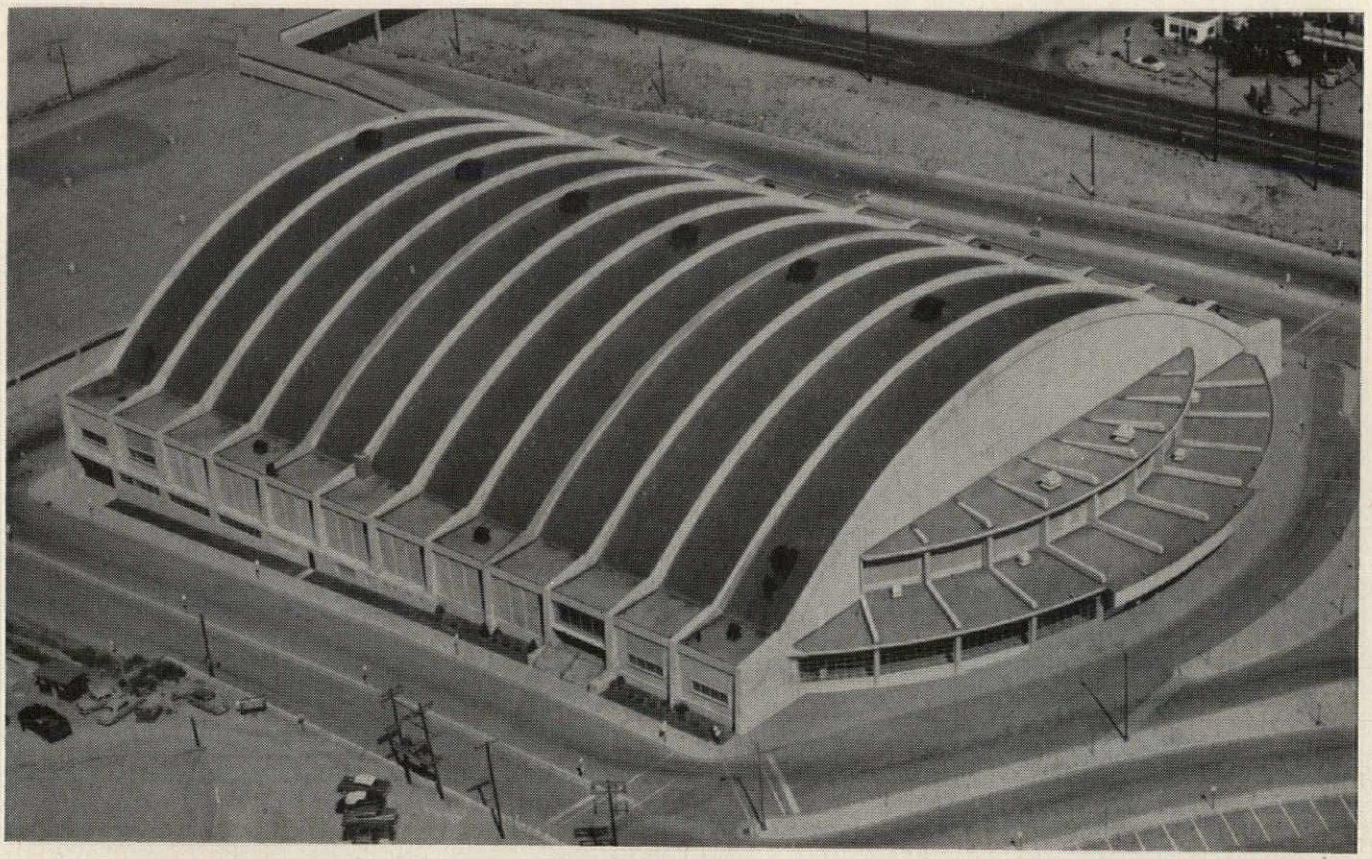

Denver's Coliseum...

Illustrates Versatility of Concrete for Arena Buildings

Denver's Coliseum is a handsome example of the functional use of concrete for arenas requiring uninterrupted enclosed space with minimum maintenance. Its arched construction requires no supporting pillars and provides a clear and unobstructed view of the entire arena area. Only concrete, the completely plastic building material, can be so molded and formed into any shape with all of its strengthening reinforcement inside.

Throughout the long years of its life, this concrete building will be virtually maintenance-free—a joy both to taxpayers and to spectators who attend the public functions held therein.

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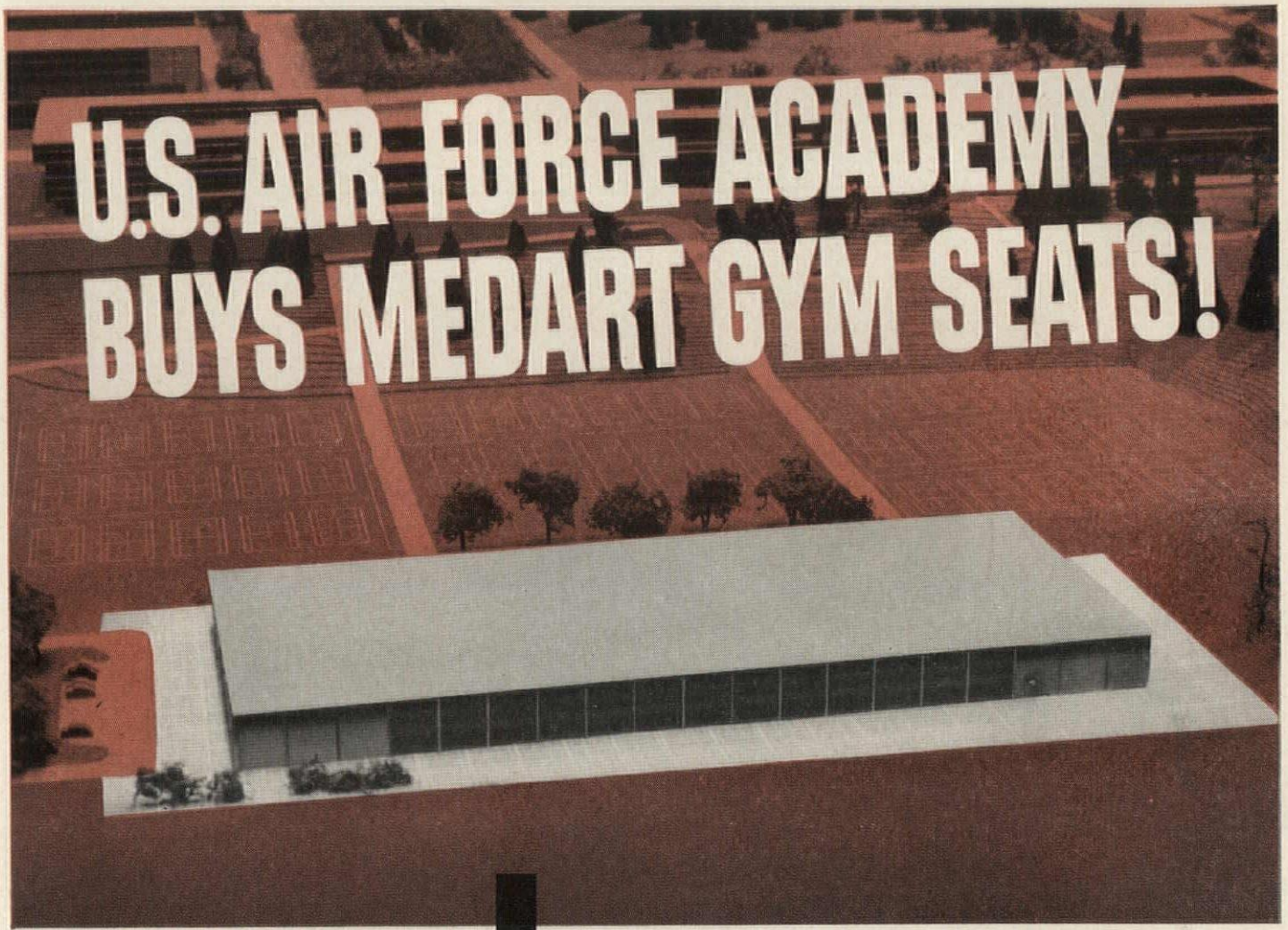
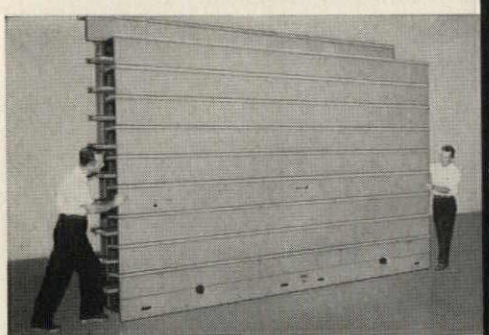
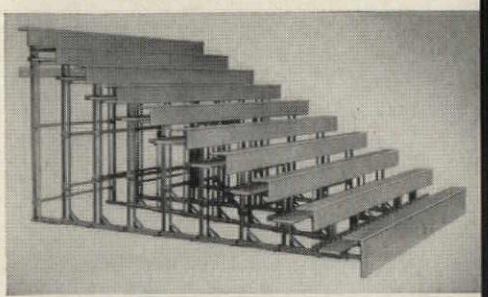
U.S. AIR FORCE ACADEMY BUYS MEDART GYM SEATS!



U. S. AIR FORCE ACADEMY GYM
Architects & Engineers:
Skidmore, Owings & Merrill,
Chicago, Ill.



All seat sections are movable for quick, easy positioning anywhere in the gym and for efficient storage in recessed bays.



Medart Telescopic Gym Seats can be furnished in wall-attached or movable types with 10½" or 11½" row rise and 22" or 24" row spacing. Exclusive fully-automatic power operation is available.

Award Of Air Force Contract Follows By Few Months Medart's Gym Seat Installation In Naval Academy Field House At Annapolis

Another unusual installation where Medart Telescopic Seats meet requirements best of all!

Because all seat sections are movable, Medart's closed or open free-standing and self-supporting understructure is virtually a "must" since no wall attachment is necessary. Neither stability or load capacity is dependent on wood seats, risers or floorboards, but instead give each seat assembly extra strength . . . Maximum safety for seated audiences is assured with Medart's box channel anti-sway bracing and four double-angle vertical supports under each seatboard. . . . Interlocking of supports at top and bottom assure easy opening and closing, and straight-line trackage.

These and many more features make Medart Seats the "best buy" for every gym seat installation—usual and unusual—where maximum safety, easy operation and minimum upkeep are essential. ***Write for catalog.***

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TELESCOPIC GYM SEATS

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

FRED MEDART PRODUCTS, INCORPORATED
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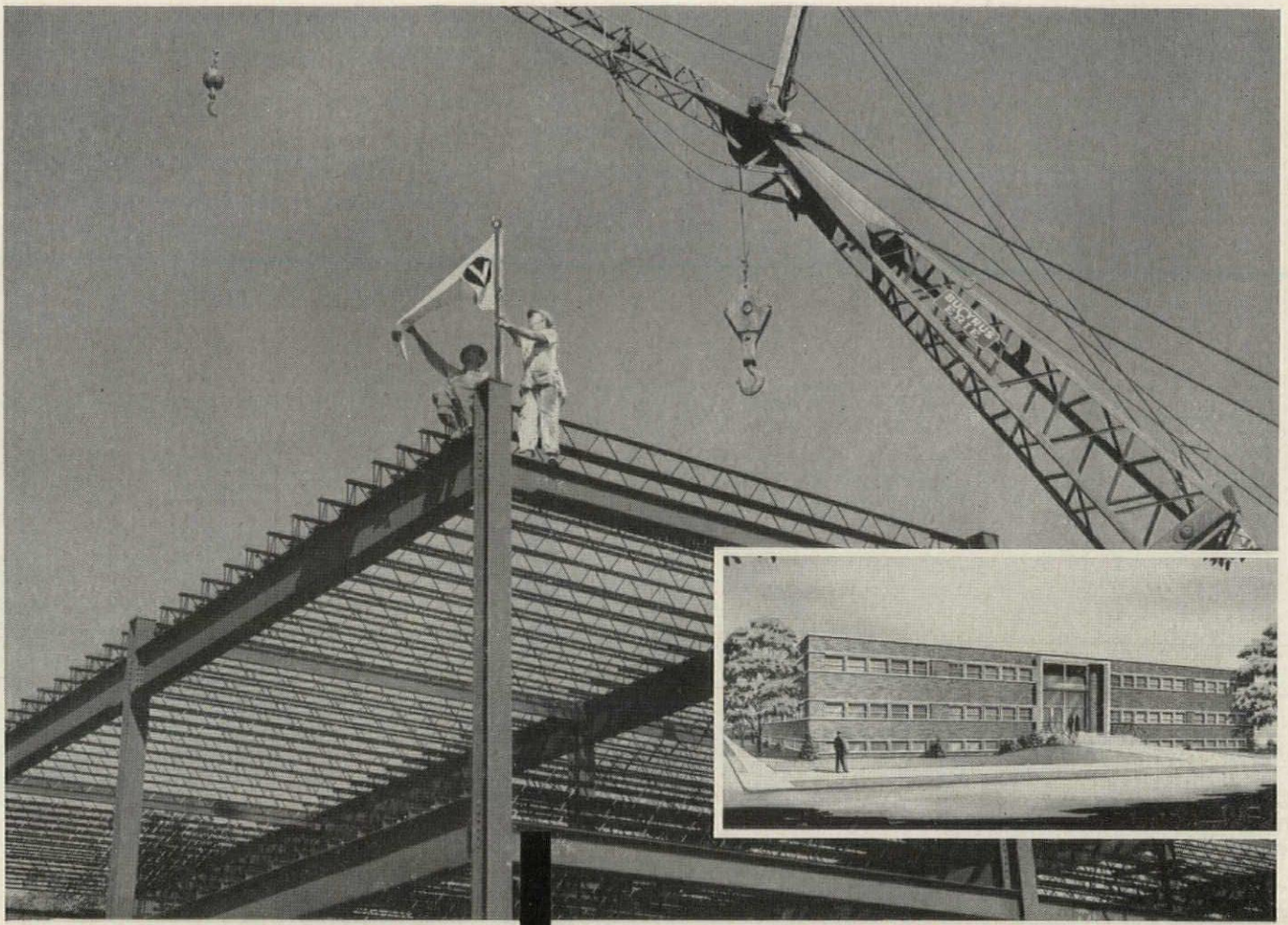

LIGHTWEIGHT PRE-DIMENSIONED LACLEDE STEEL JOISTS SPEED CONSTRUCTION

Owner: ST. LOUIS SHIPBUILDING & STEEL COMPANY
General Contractor: Vollmar Bros. Construction Company
St. Louis, Missouri

Hoisting of contractor's jack marks pre-schedule completion of steel work

Set for completion early in 1958, this new office building for St. Louis Shipbuilding and Steel Company is ahead of construction schedule.

Strengthened by Laclede open web steel joists, this two-story steel framed building was erected quickly because shop fabricated joists, dimensioned to close tolerances, eliminated costly and time-consuming field fitting. Identified at the plant for proper location in this steel framed structure, these Laclede joists were delivered to the site ready for immediate placement.

The open web construction of Laclede steel joists insures strength, minimizes dead weight and makes them easy to handle and place. Laclede Steel Joists are designed and manufactured in strict conformity to the sound engineering standards adopted and approved by the Steel Joist Institute.

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multi-rib reinforcing bars
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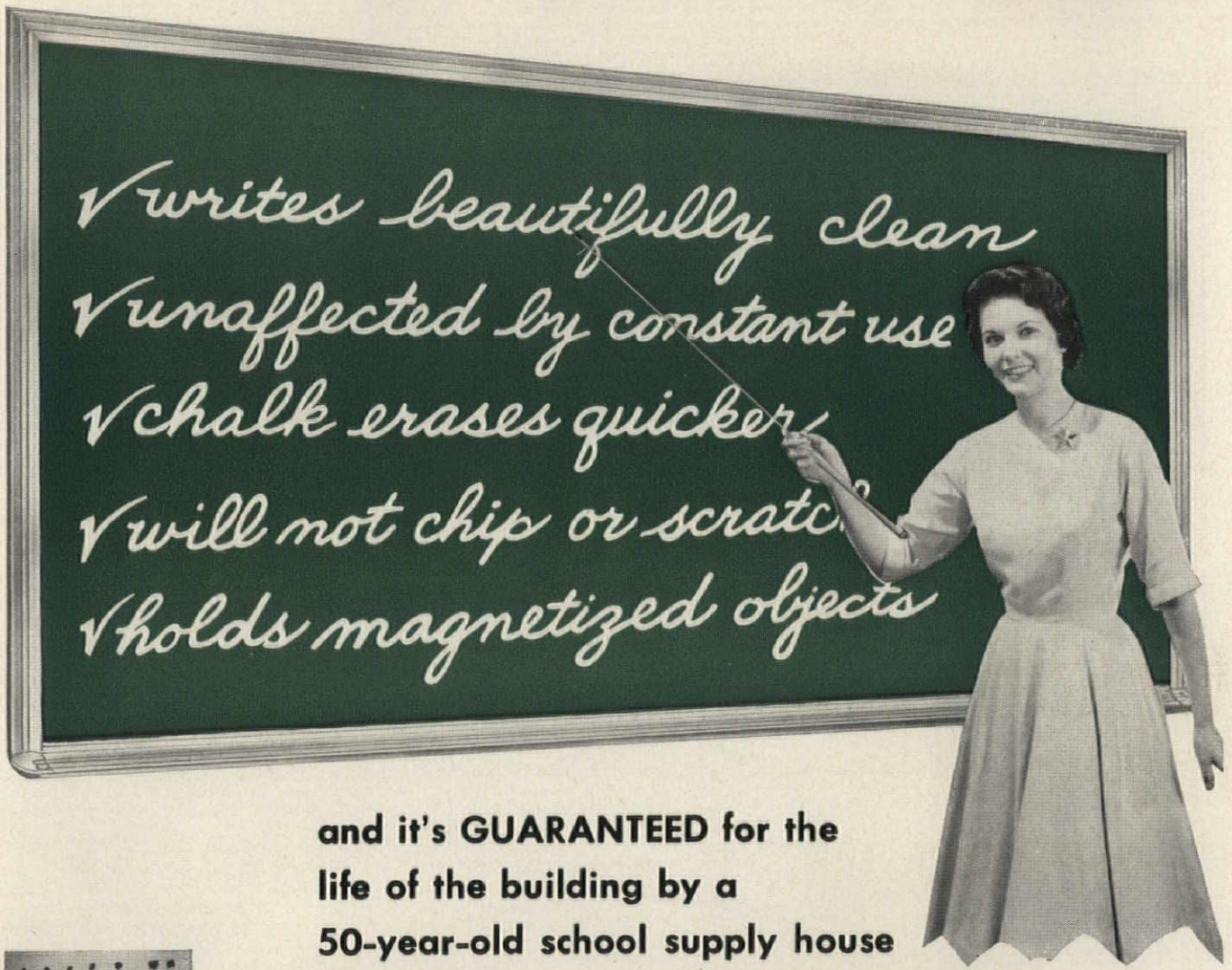
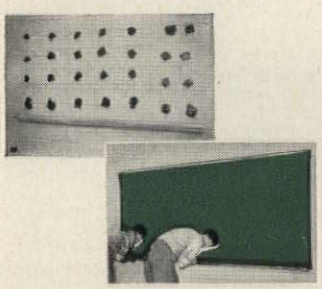
no other chalkboard with a surface like SLATO·STEEL



and it's GUARANTEED for the life of the building by a 50-year-old school supply house



easy to install...
No special wall construction is necessary. Choice of two types of anodized aluminum trim and chalk trough.

On SlatoSteel's non-absorbing, hard silicate surface, writing is never gray but always sharp and distinct. Neither will the surface ever become shiny from wear to form "blind spots". Thus eye fatigue is reduced. Holds magnetized teaching objects, letters, etc. for "see and move" learning.

SlatoSteel's coat of vitreous material is fused into a lightweight sheet of steel backed with a wood-fiber board, forming a tough, flexible, resilient chalkboard that cannot be cracked or chipped. Any cleaning solution may be used and water will never harm it.

SlatoSteel is light in weight, easy to handle and moderate in cost.

write for full details and prices of SlatoSteel and other BC chalkboards and corkboards

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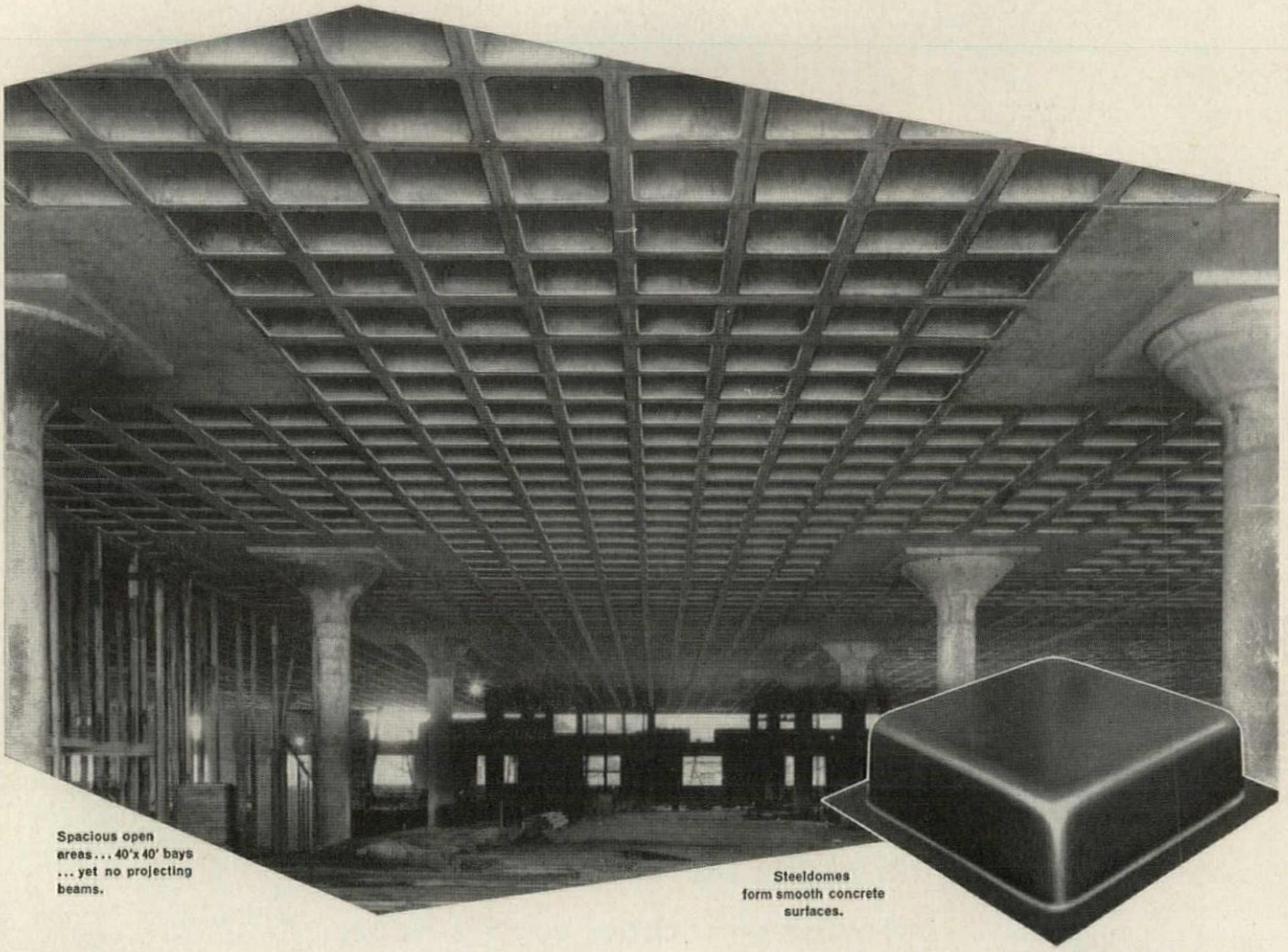

Spacious open areas... 40'x40' bays ... yet no projecting beams.

Steeldomes form smooth concrete surfaces.

CECO STEELDOME CONSTRUCTION

Wide 40′ x 40′ bays can be built with savings up to 30%

How to get wide open space in buildings and yet meet a budget is a problem faced by architects and structural engineers. This is difficult to achieve—but there is a solution—two-way slab construction formed with Ceco's new one-piece Steeldomes.

Employing this method, 40′ x 40′ bays supporting 150 lb./sq. ft. live load were built economically through the teamwork of Friedman, Alschuler & Sincere, architects-engineers, and contractor Wm. E. Schweitzer in constructing the plant and warehouse for Crescent Industries, Inc., Niles, Ill. A pilot study showed Ceco Steeldome construction was the most economical of all. Savings up to 30% were indicated.

Dome construction is essentially flat slab design with voids. The voids reduce deadload—the joists provide rigidity. Erection is fast and economical, on simple one-way open wood centering. With Steeldomes, the exposed waffle pattern presents a high-quality finish. Added to that, you get the advantages of wide open space and lower cost. On the Crescent project Ceco also supplied reinforcing steel and hollow-metal doors and frames. Ceco Steel Products Corporation. Sales offices, warehouse and fabricating plants in principal cities. General Offices: 5601 West 26th Street, Chicago 50, Illinois.

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IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Steelforms / Concrete Reinforcing / Windows, Screens / Hollow-Metal Doors / Metal Lath / Steel Joists / Roofing Products

NOW save 50% on 3 HR. (A) label Fire Doors by specifying Overline®

Savings in dollars:

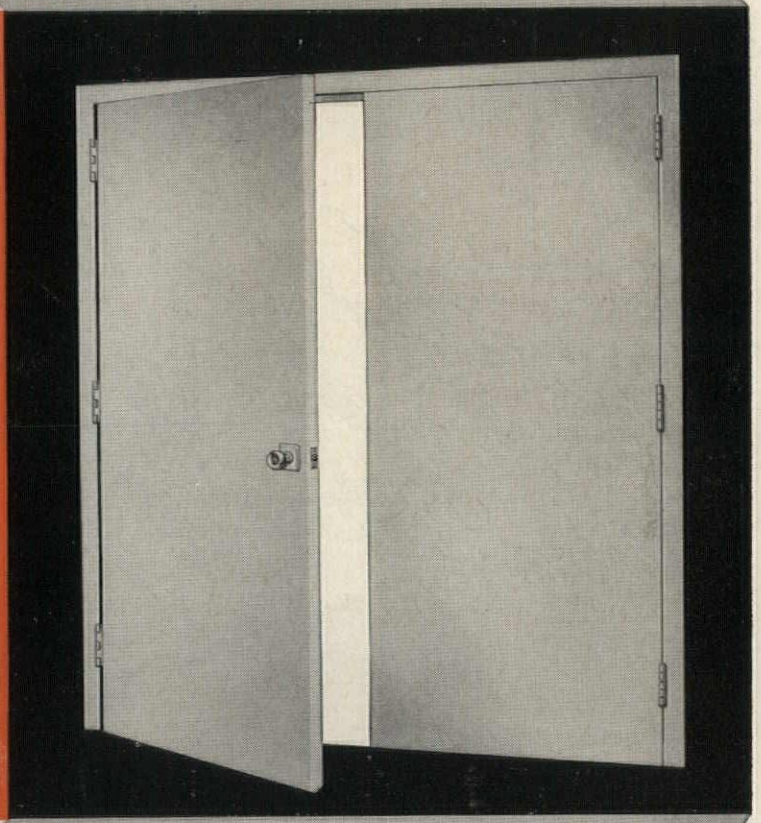
up to

$400.00

per pair

(including frame and hardware)

You can now afford to use 3 HR. (A) label Flush Hollow Metal Fire Doors for all openings where maximum fire protection is desired.



Here's why:

We have just developed and obtained Underwriters' Laboratories 3 HR. (A) label approval on a pair of Flush Hollow Metal Fire Doors featuring a simple ¾" throw lockset—mortise or cylindrical type—and flush bolts with standard weight hinges and closer. They are also approved for panic hardware operation. These new doors are the first in the hollow metal industry to eliminate the elaborate and costly 3-point lock and 2-point latch—enabling us to build a lighter weight, less expensive door that retains all the protective qualities of its predecessor. These new doors are also qualified for B, C, D, and E labels. Specify Overline 3 HR. (A) label doors wherever extreme exposure conditions exist. • Get our new TECHNICAL DATA SHEET from your nearest Overly representative, or write us direct—today.

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IN THE SPAN RANGE TO 48 FEET

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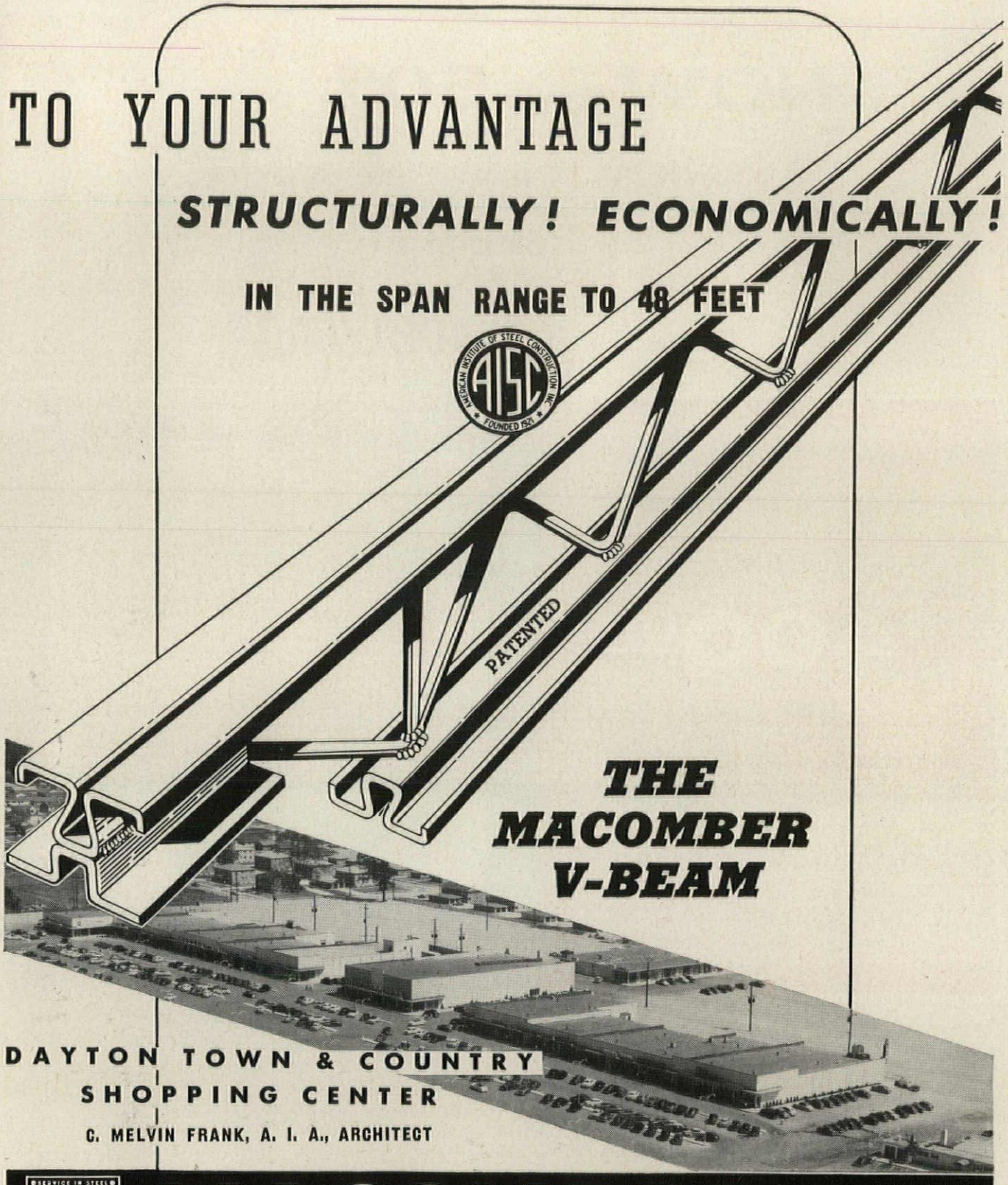

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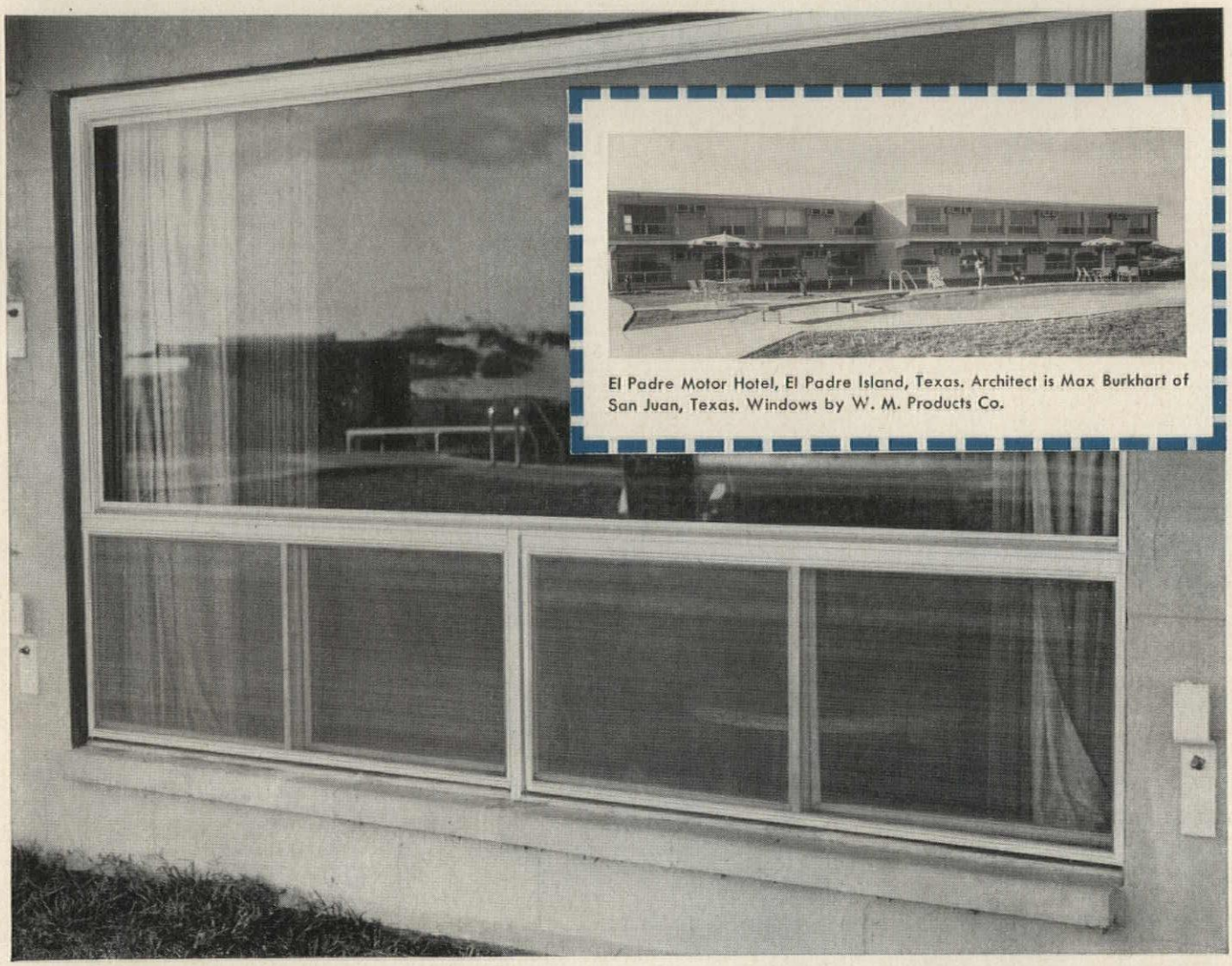
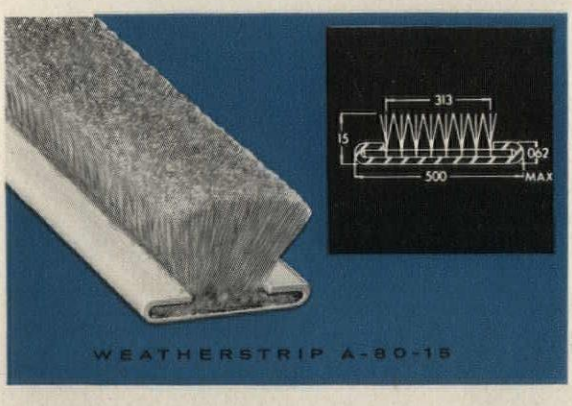
NAILABLE V-BEAMS • V-LOK STEEL FRAMING • SEND FOR V-BEAM CATALOG METAL DECK • V-BOWSTRING TRUSSES • V-GIRDERS STEEL JOISTS



El Padre Motor Hotel, El Padre Island, Texas. Architect is Max Burkhart of San Juan, Texas. Windows by W. M. Products Co.

Only the view gets through with DRAFTITE*

WOOL PILE WEATHERSEAL



Dense wool pile secured to an aluminum core provides an effective seal against air infiltration and exfiltration and at the same time permits the vent to be opened and closed quietly and easily.

Heat, wind, sand and ocean spray are kept outside . . . air-conditioned comfort is sealed inside. The El Padre Motor Hotel, El Padre Island, Texas, does it with Watson Horizontal Slide Windows by W. M. Products Co., and DrafTite* wool pile weatherstripping.

Manufacturers of quality metal windows adopt DrafTite . . . because there's nothing better for a permanent, leak-proof, wind-resistant seal around the perimeters of windows—whether sliding, double hung or other movable types. Why don't you call on our engineering facilities to help solve your sealing problems? Or send for our catalog illustrating DrafTite standard sizes and shapes for every type of window and door.

*Trade Mark

The Standard Products Co.

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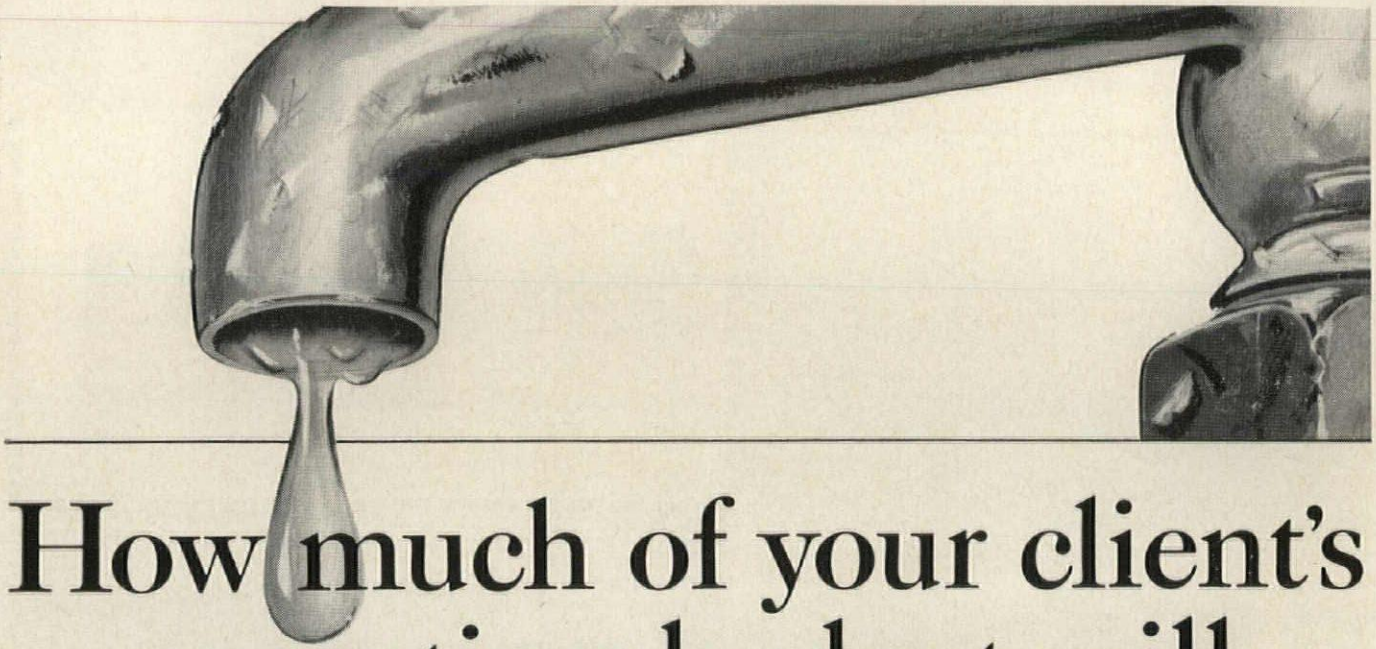
PLANTS AT LEXINGTON, KENTUCKY AND FULLERTON, CALIFORNIA



How much of your client's operating budget will drip down the drain?

More than you might think—unless you specify Crane Dial-ese controls, designed to cut down water loss and water heating bills

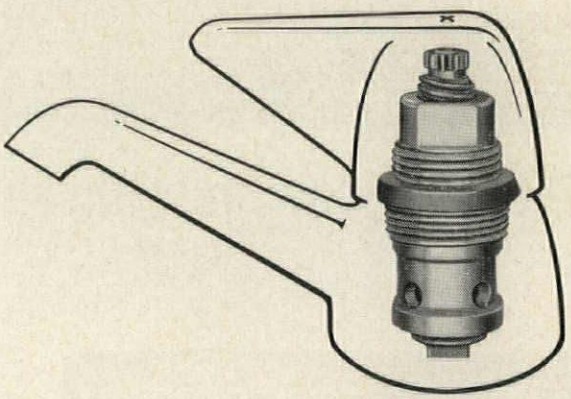
A drop of water a second, hour after hour, adds up to 2,300 gallons a year.

Multiply that by the number of faucets in your client's building, and you can see the incredible water waste that dripping can, and *does*, cause. And when it's *hot* water, there's big fuel waste, too!

Crane Dial-ese controls are designed to stop this constant waste. For one thing, a Dial-ese control shuts off easier and all the way because it closes *with* the water pressure—not against it. The water pressure helps instead of hindering the closing.

Dial-ese is designed to last longer, too. Stem threads are permanently lubricated at the factory —and sealed *inside* where water can't touch them. All working parts are in a single, simple cartridge that screws into the faucet. Replacement is quick and easy—just take out the old, put in the new.

All Crane fixtures (and *only* Crane fixtures) feature Dial-ese controls. Why not ask your Crane Branch or Crane Wholesaler for more details?



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The same renewable unit fits all Dial-ese controls . . . lavatories, bathtubs, showers, sinks and laundry tubs.

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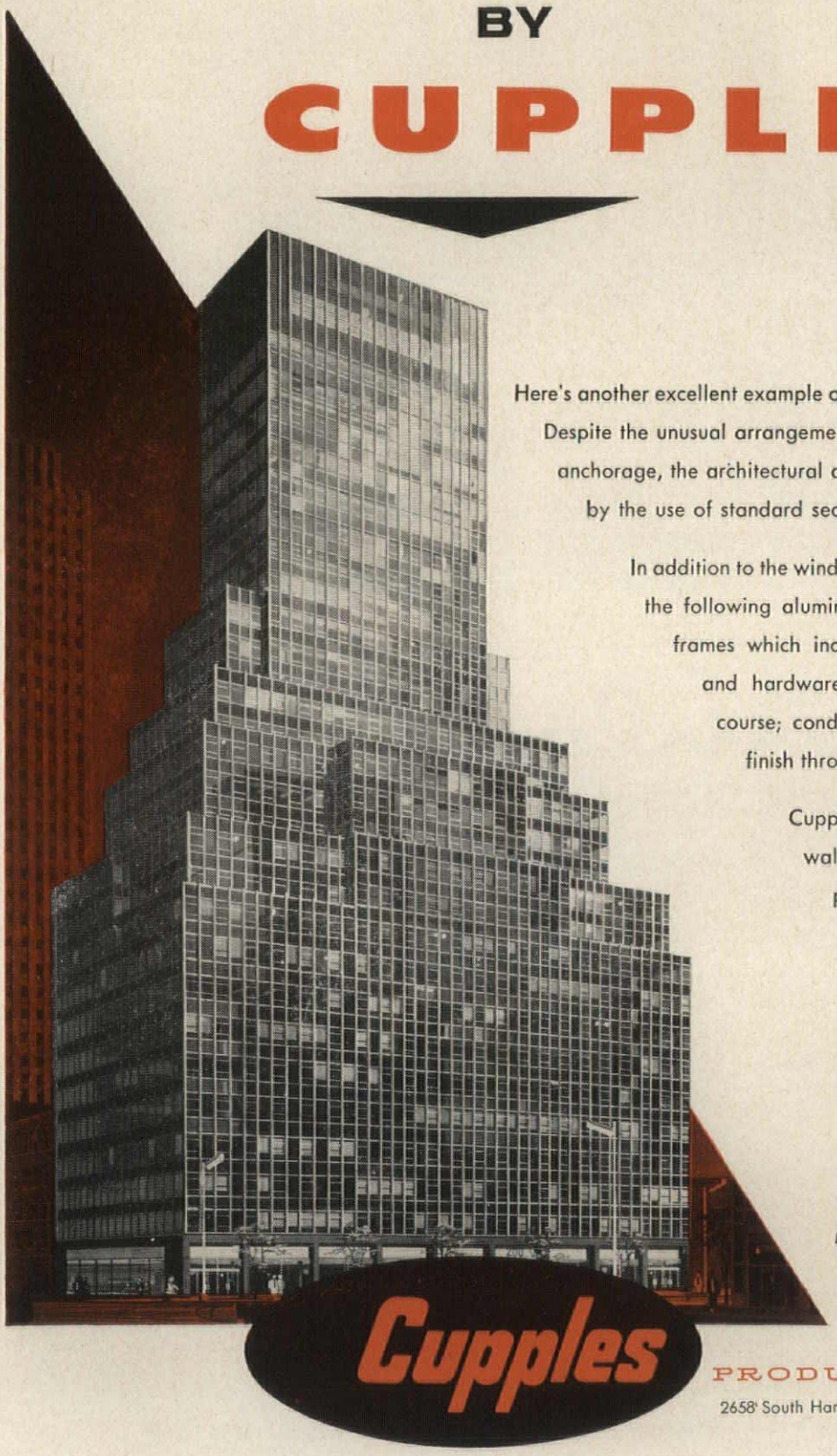
PROJECTED AND REVERSIBLE WINDOWS USED ALTERNATELY IN THIS UNIQUE

ALUMINUM CURTAIN WALL BY CUPPLES



Here's another excellent example of the versatility of modern skin construction. Despite the unusual arrangement of windows which complicated trim and anchorage, the architectural design was accomplished without deviation by the use of standard sections, thus holding the cost to a minimum.

In addition to the windows, aluminum panels and tubular mullions, the following aluminum features are also by Cupples: louver frames which include porcelainized blades; doors, frames and hardware; window cleaner safety devices; band course; condensation gutter; coping; sub-sill. Alumilite finish throughout.

Cupples' dominance in sound, economical curtain wall design, construction and erection keeps pace with its leadership in the fabrication of aluminum windows, doors, ornamental products and Alumi-Coustic grid systems. Our catalogs are filed in Sweets'.

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Throughout repeated exposure to all kinds of weather and innumerable washings the Seamloc red carpet retains its look of luxury.

- Wearability is just one of the reasons why Seamloc has been specified by many of the country's leading architects and decorators.
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- Seamloc's economical four and one half foot widths join together to make any width carpet. Edges cannot ravel . . . no binding necessary.
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- Seamloc can be cut to any shape, repaired . . . patched or reshaped . . . easily, economically.

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See Sweet's Architectural File

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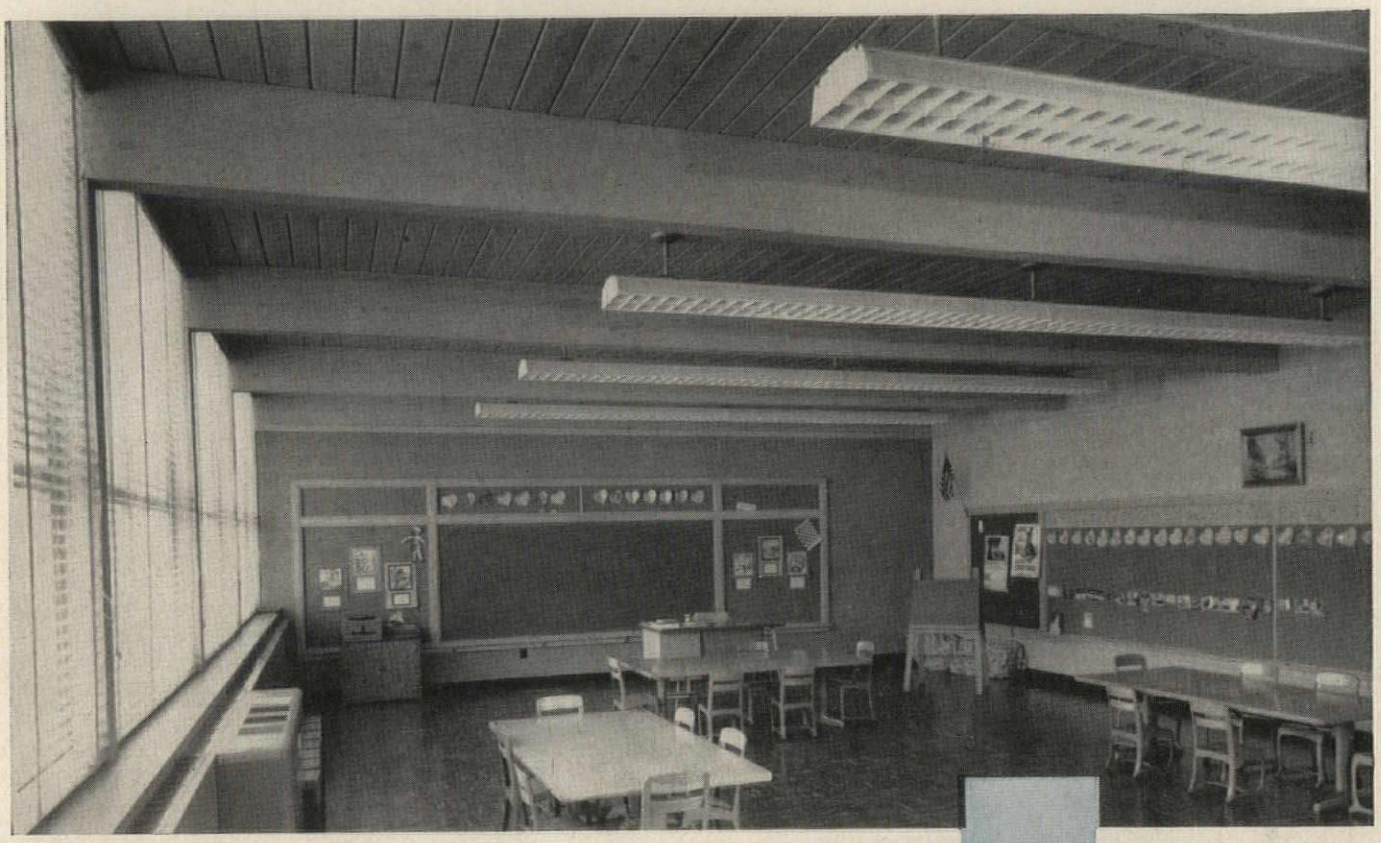

Walcott School, Walcott, Iowa,
Architect L. G. Soenke, Davenport, Iowa

Our Kids Deserve—

FIRE RESISTIVE *Schools!*

. . . and they can have them with UNIT Glued Laminated Wood Construction!

NEW FILM - An interesting new 16mm sound and color film entitled GLUED LAMINATED WOOD ARCHES available free for group showings. Write for Details.

What could be more desirable than a school that incorporates all the beauty and charm of wood. . . . . and is also fire resistive? It is a proven fact that glued, laminated wood structural members are safer in case of fire . . .* no danger of sudden collapse which can so easily happen with other unprotected structural materials . . . . . and that's only part of the story. The true economy which is achieved through the use of UNIT laminated wood construction is so important in today's budget-conscious building programs.

If you are planning a school now and want the very best, write for the facts on fire resistive, economical laminated timber construction.

* After a serious fire started by debris during the construction of a new super market, architect Doak Martin of Worcester, Mass. stated . . . "I am pleased with the performance of wood as it is obvious had the members been made of unprotected steel - they would have deformed under the extreme heat." . . . . . The Unit laminated arches in this super market were merely resanded to remove the char formed during the fire and construction continued without costly delay.

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Beautiful new St. Paul's Catholic Church, Princeton, N. J.

Recently completed St. Paul's Church, with a seating capacity of 650, is of modern American-Gothic architecture. Exterior is hand cut granite with limestone trim, designed to blend with general surroundings in Princeton.

All heating products were supplied by Dunham-Bush, not only for the church but also for adjacent new rectory and convent. Dunham-Bush hot water specialties, unit heaters, convectors, Fin-Vector and baseboard were used in the modern heating system. Reason for one supplier? Dependable products . . . "one source—one responsibility" supplier!

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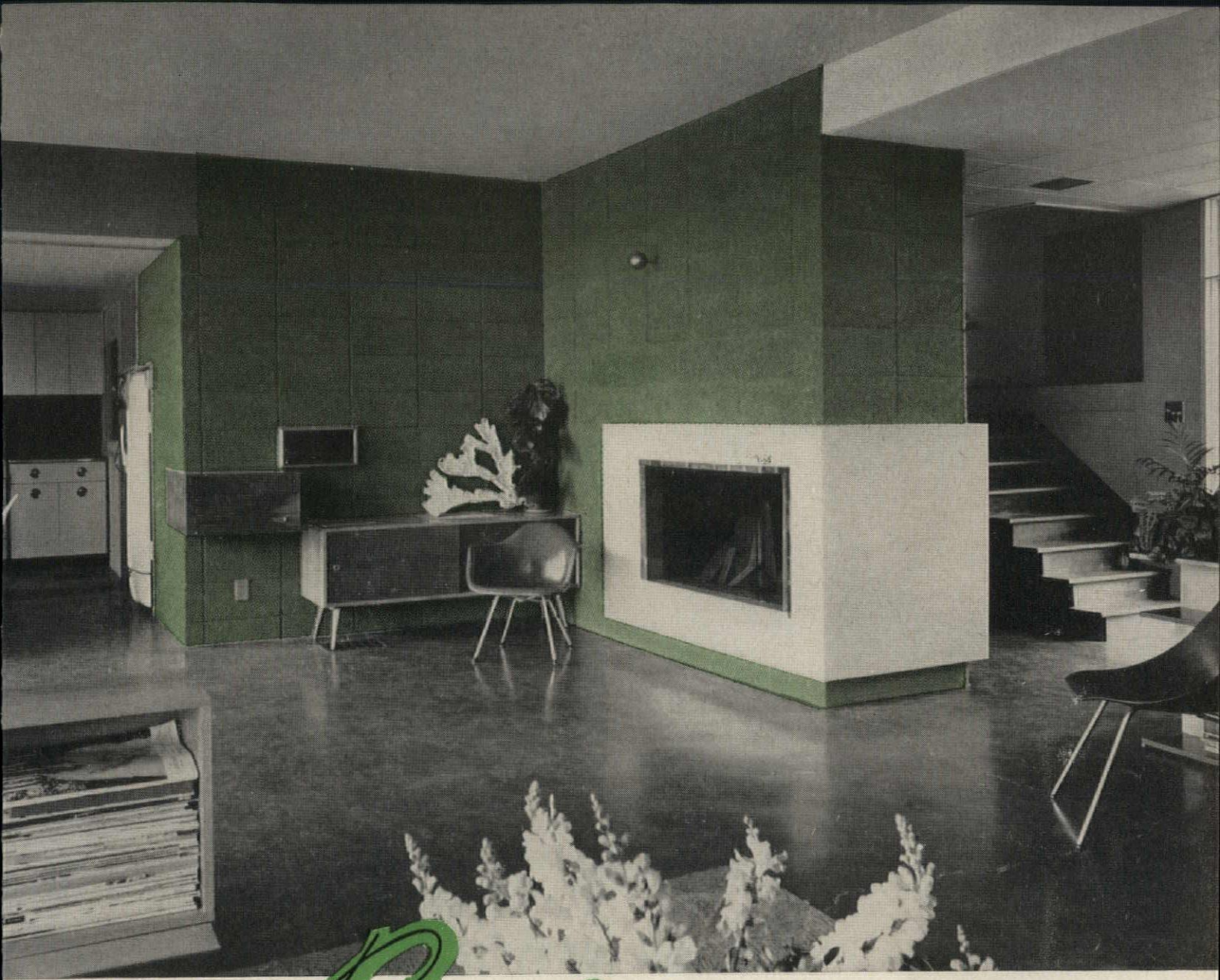

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New Fireman's Fund Building Utilizes General Electric 480Y/277-Volt System

System-engineered equipment achieves large savings, aids efficient operation of insurance firm home office

DESIGNED FOR EMPLOYEE EFFICIENCY AND COMFORT, the Fund Insurance Company's new home office is a dramatic addition to San Franciso's skyline. High-level lighting, year-round air conditioning, 190,000 sq. ft. of flexible office space, modern business machines, and built-in design features permit a 900-member staff to handle The Fund's operations smoothly, efficiently.

LARGE SAVINGS were achieved by adopting a General Electric 480Y/277-volt power distribution system for combined light and power loads. Due to higher voltages, smaller conductors and fewer wiring circuits were possible, and separate lighting power supply substations were eliminated. Added values: flexibility features of G-E 480Y/277-v systems provide capacity to handle future load growth; equipment economies were provided by using primary power and unit substations. Interrupting capacity at any point of the secondary circuits was lower than that possible with direct connection to a secondary system.

PROJECT TEAMWORK facilitated installation and startup of the electrical system. Working closely with officials of The Fund and their consultants*, G-E engineers conducted a system analysis early in project planning. General Electric also recommended basic system layout, provided service engineering and installation assistance at the site.

GENERAL ELECTRIC SYSTEM ENGINEERING CAN HELP YOU on your construction project. G-E engineers are available at all times to assist you and your consultants in planning your electrical system. Contact your nearest G-E Apparatus Sales Office or write General Electric Co., Section 680-13, Schenectady 5, N. Y.

* Architect: Edward B. Page, A.I.A.
Electrical Engineer: Clyde E. Bentley
General Contractors: MacDonald, Young & Nelson, Inc.
Electrical Contractor: Ets-Hokin & Galvan

Engineered Electrical Systems for Commercial Buildings

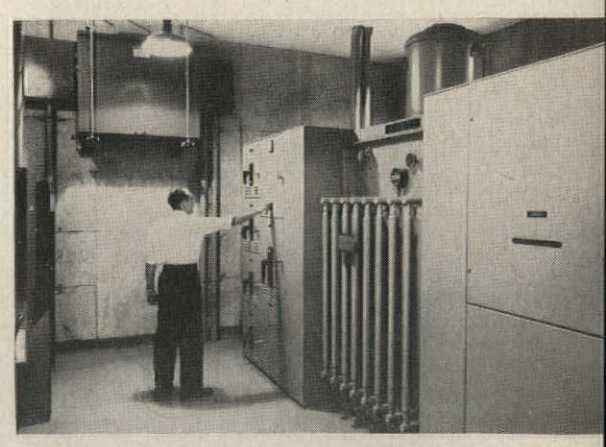
GENERAL ELECTRIC

PROJECT PLANNERS N. A. Begovich, Fireman's Fund official; Edward B. Page, architect; F. N. Blum, G.E.; Clyde E. Bentley, consulting engineer; J. M. Ets-Hokin, electrical contractor.

GLARE-FREE 277-V FLUORESCENTS in unique fixtures achieve ideal brightness ratio for office areas, create savings by combined lighting system, power source.

PROJECT POWER serves G-E 12 kv metal-clad switchgear lineup of main, two outgoing breakers to five unit substations.

OPERATING EASE, reliability of G-E drawout switchgear with AK-1 breakers provide safer switching of 480-v feeders.



500-KVA unit substation, with Pyranol* transformer, serves 120-v needs directly, 480-v loads through 150-kva transformer.

* Registered Trademark of General Electric Co.

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Architects: Brooks and Coddington

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For building panels like these, for rolling doors, roof decking, ventilators or other units exposed to atmospheric corrosion, Armco ALUMINIZED STEEL Type 2 assures long, dependable service at low cost.

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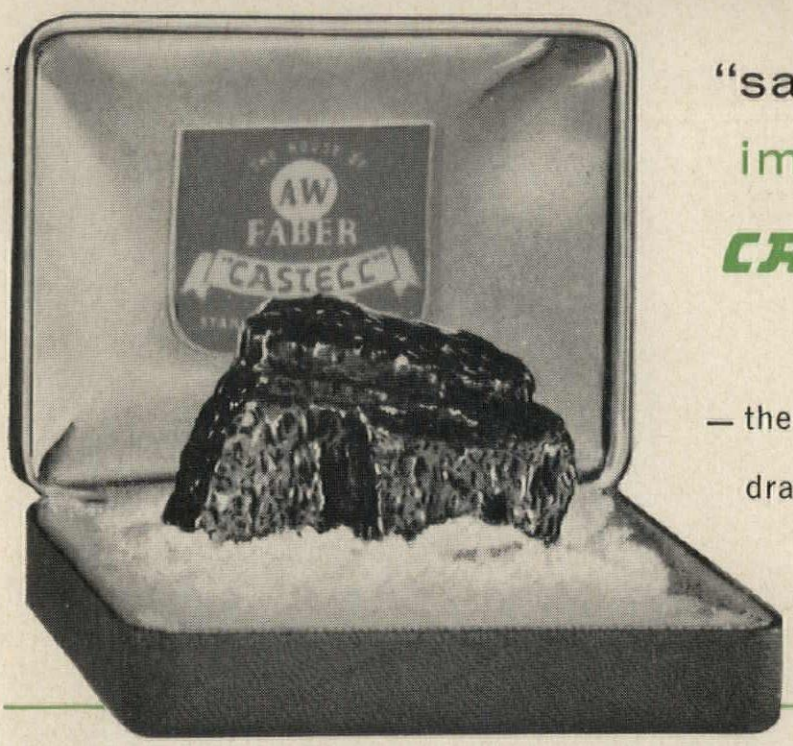

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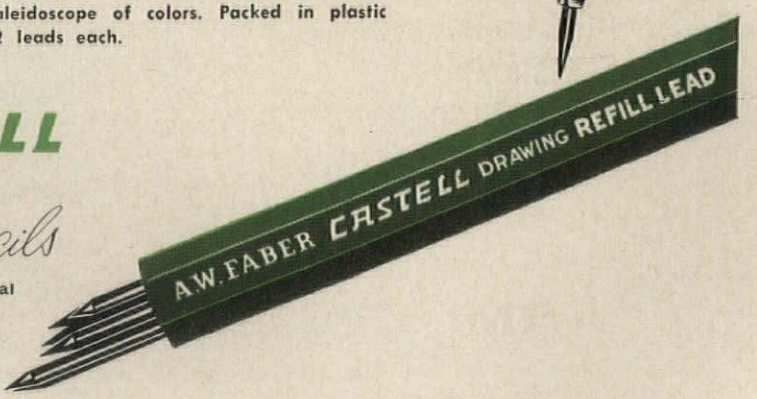

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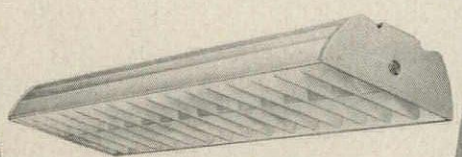

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In the process of learning, young people remember what they *see* much longer than what they hear. Recognizing this fact, school administrators value the importance of providing sufficient light for visual acuity in close classroom work, as well as other activities. Result: an ever-increasing demand for Curtis Planned Lighting Systems. Only natural, because Curtis Visioneers have made detailed and scientific studies of lighting problems inherent to schools. All Curtis school lighting—properly installed—offers uniform level of illumination without objectionable shadows or glare. Curtis Lighting also meets all requirements for *quality illumination . . . low initial cost . . . quick and easy installation . . . minimum maintenance . . . long-run economy.* So, whatever your lighting problem, 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.

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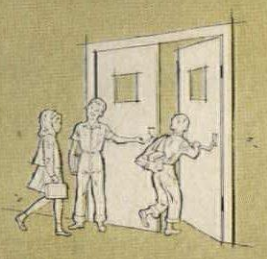

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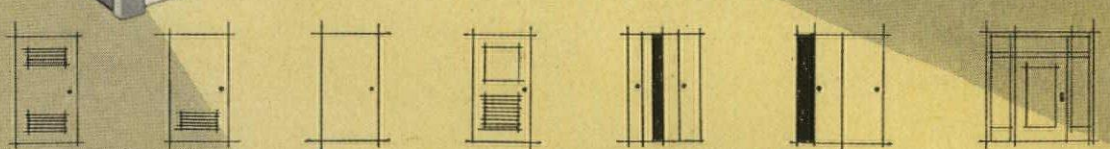

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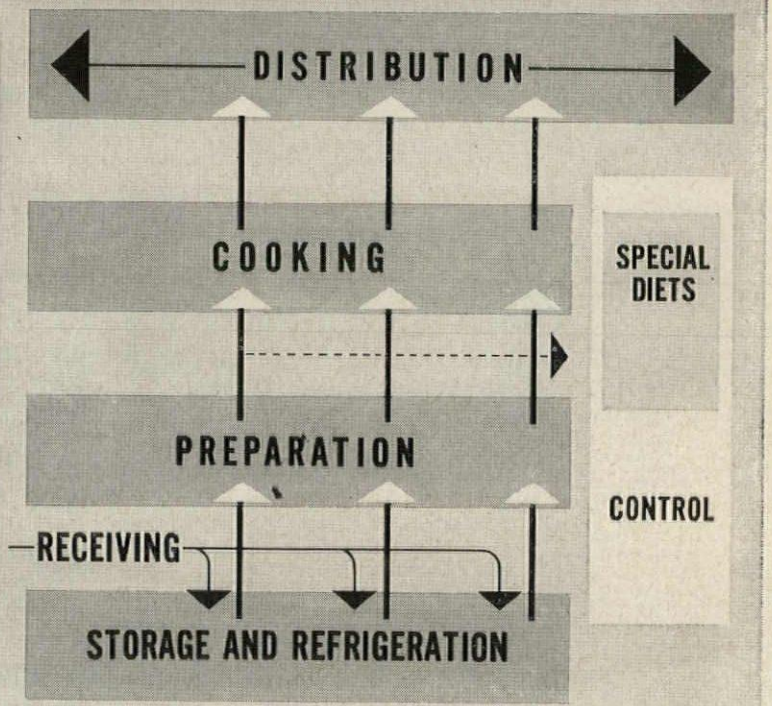
STRAIGHT-LINE WORK FLOW

Materials are delivered along a wide corridor to the bank of storage areas and walk-in refrigerators. To facilitate inspection and control, dieticians' offices open at end of this corridor, and adjoin the special-diet alcove. From storage, food moves straight to the line of preparation areas, then straight to the bank of cooking facilities, then to the line of counters where it is assembled in Blickman bulk food conveyors for final distribution.



End of Production line, where food is picked up for delivery throughout the hospital. Beyond is the bank of cooking facilities—ranges and roast ovens at left, kettles at right.

Administrator: Dr. Howard W. Baker; Architects: James A. Nolen, Jr., Philadelphia, and Skidmore, Owings & Merrill; General Contractor: John McShain, Inc., Philadelphia.

When the new building at Temple University Medical Center in Philadelphia was first planned, Blickman worked with the architects and dietary director to develop a "straight-line" kitchen layout featuring wide corridors, plentiful work surfaces, easy sanitation, full integration of facilities. The new kitchen prepares food for distribution in Blickman bulk food conveyors, to decentralized floor pantries in old and new buildings—and to the new staff cafeteria and public coffee shop, both Blickman-Built.

This is another recent example of Blickman design, fabrication, and installation of advanced systems for hospital food service. For further information, write: S. Blickman, Inc., 7002 Gregory Avenue, Weehawken, N. J.

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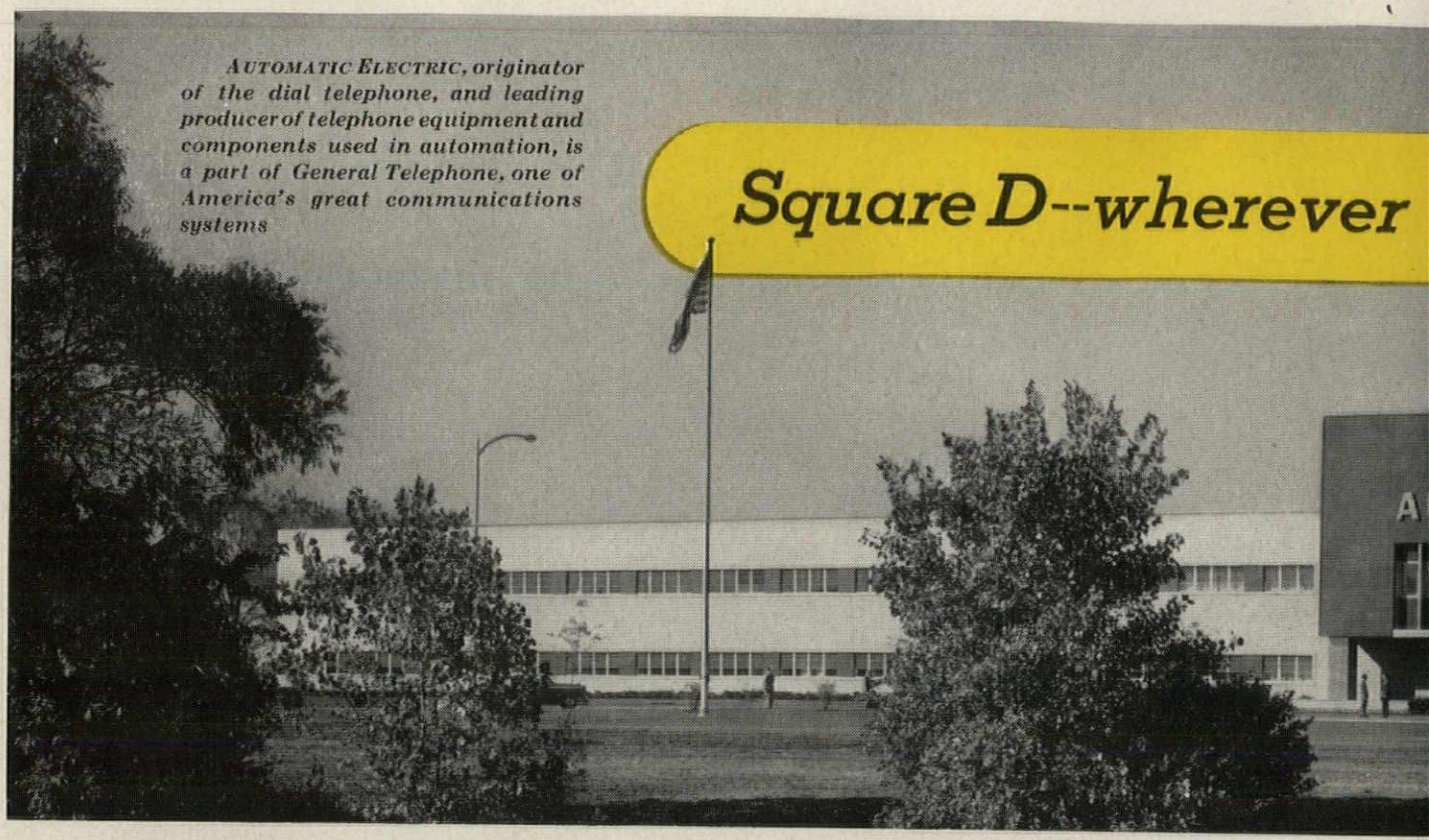
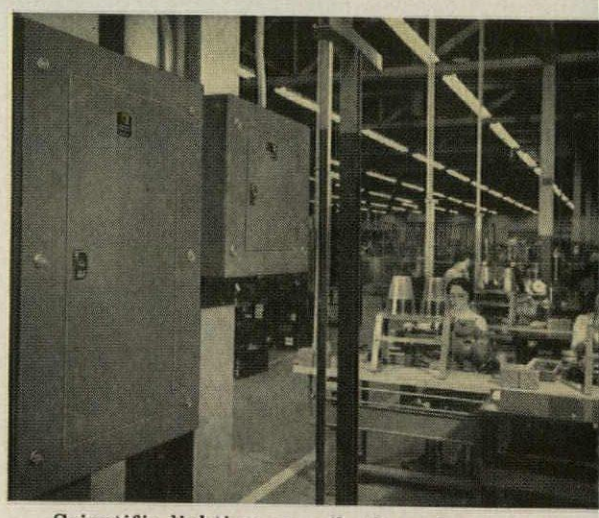


THIS NEW 1,520,000-SQ. FT. PLANT* REPLACES 17 MULTI-STORY BUILDINGS!

Automatic Electric Company's new plant at Northlake, Illinois, is an outstanding example of more capacity per square foot through straight-line production design. Specifically, production capacity has been increased approximately 100%— *and with only 25% more floor space!*

Square D electrical distribution and control equipment plays an important part in many key operations of this beautiful, highly efficient new plant.

**Designed and built by The Austin Company*



Scientific lighting prevails throughout the factory and office areas. Square D lighting panelboards are used exclusively. Shown above are two of hundreds installed in every part of the plant.

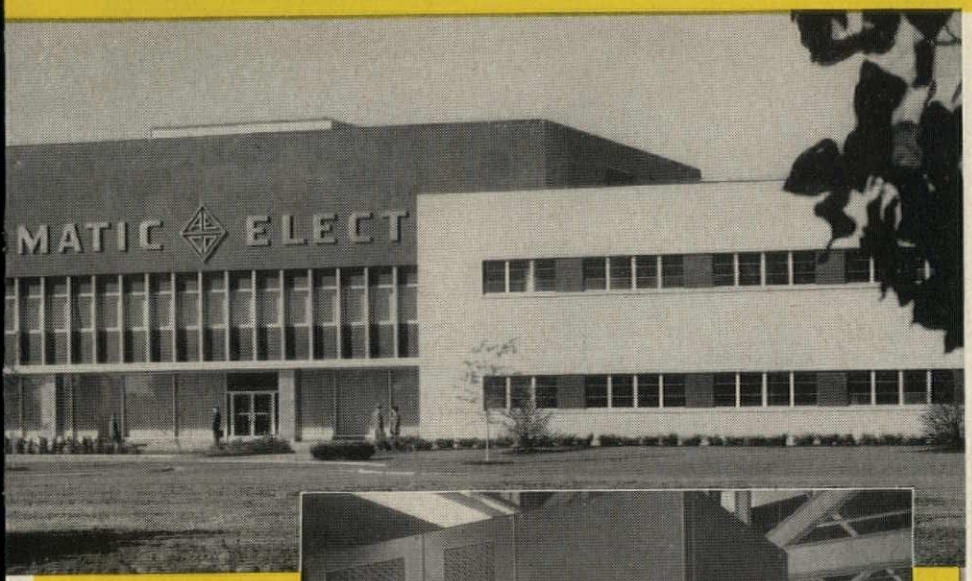
FIELD ENGINEERING SERVICE is available through more than one hundred Square D offices, backed by an international network of over 1000 authorized electrical distributors and 17 plants in the United States, Canada, Mexico and Great Britain.

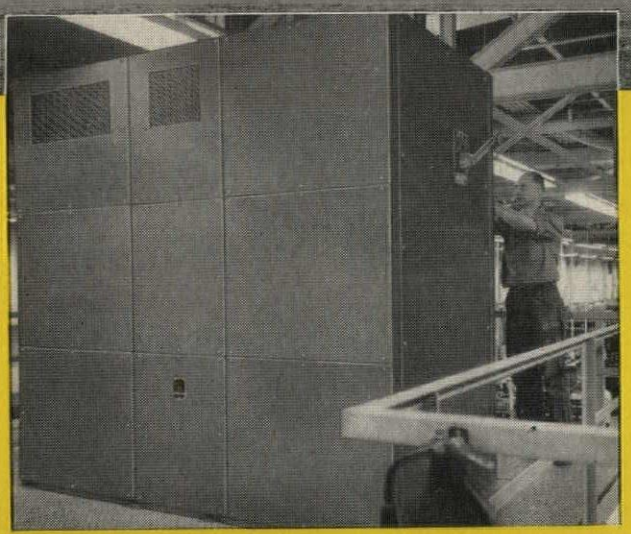
Executive Offices • 6060 Rivard Street, Detroit 11, Michigan

EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT...NOW A PART OF THE SQUARE D LINE

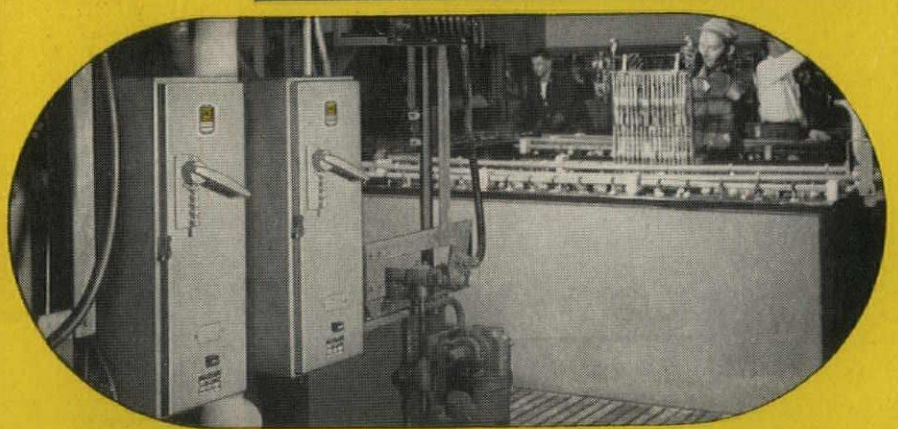
SQUARE D COMPANY

electricity is distributed and controlled





Good example of space saving—this Square D switchboard is a mezzanine installation, releasing many square feet of valuable "main floor" space.

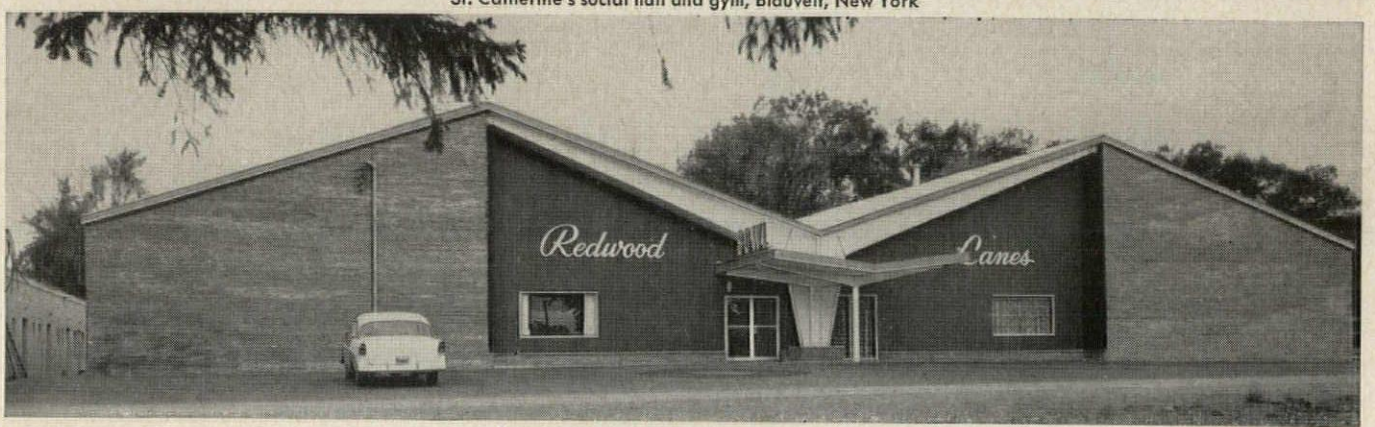


Here are Square D combination starters on duty in the plating department. There are hundreds of them serving dozens of departments.

A *Complete* LINE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT

ADJUSTABLE SPEED DRIVES
BUSWAYS & WIREWAYS
CIRCUIT BREAKERS
CONTROL CENTERS
CRANE & HOIST CONTROL
DISTRIBUTION SWITCHBOARDS
ELECTRIC TRUCK CONTROL
HIGH VOLTAGE CONTROL
LAUNDRY CONTROL
LIFTING MAGNETS
LIGHTING AND POWER PANELBOARDS
LIGHTING CONTROL—LOW VOLTAGE
LIMIT AND FOOT SWITCHES
MACHINE TOOL CONTROL
MAGNETIC BRAKES
METER MOUNTINGS
MOTOR STARTERS
PRESS CONTROL
PRESSURE, FLOAT, & VACUUM SWITCHES
PUSHBUTTONS
RELAYS AND CONTACTORS
RESISTORS
SAFETY SWITCHES
SERVICE ENTRANCE EQUIPMENT
STAGE DIMMERBOARDS
STEEL MILL CONTROL
SWITCHGEAR & UNIT SUBSTATIONS
SYNCHRONOUS MOTOR CONTROL
TERMINAL BLOCKS
TEXTILE MACHINE CONTROL
TIMERS
VOLTAGE TESTERS
WELDER CONTROL

St. Catherine's social hall and gym, Blauvelt, New York



Redwood Lanes bowling alley, Latham, New York

One system of building helped create both these buildings on modest budgets

And, that's not all these two uncommon looking buildings had in common. The Butler Building System offered architects and clients other advantages over traditional building methods.

Architects saved hours of preliminary engineering because the Butler structural frames and roof systems were pre-engineered to meet building codes and other load requirements.

Clients were able to build well on modest budgets . . . take possession sooner than ordinary building methods would have permitted. Mass-produced Butler components eliminated costly custom fabrication. Available from stock . . . precision-made to assemble quickly. They also effected substantial savings in construction time and labor costs.

The clear-span design permitted maximum flexibility in the handling of interior space. The load-bearing frame permitted using economical exterior curtain walls.

For full details on the advantages the Butler Building System offers architects and clients, contact your Butler Builder. He's listed in the Yellow Pages of your phone book under "Buildings" or "Steel Buildings." Or write direct.

see our catalog in Sweet's or write for copy

BUTLER STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY

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Manufacturers of Buildings • Oil Equipment • Farm Equipment • Dry Cleaners Equipment • Outdoor Advertising Equipment • Custom Fabrication

Sales offices in Los Angeles and Richmond, Calif. • Houston, Tex. • Birmingham, Ala. • Atlanta, Ga. • Kansas City, Mo. • Minneapolis, Minn. • Chicago, Ill. • Detroit, Mich. Cleveland, Ohio • Pittsburgh, Pa. • New York City and Syracuse, N.Y. • Boston, Mass. • Washington, D. C. • Burlington, Ontario, Canada

Handsome is... and more than handsome does!

These compartments are practically indestructible—
finished in vitreous porcelain enamel, fitted with rugged hardware.
Supported from the ceiling, they also speed maintenance,
lower costs. And, they are far easier to install than expensive
marble or glass. Colors (22) are permanent . . . no staining,
breakage or defacement problems either. Weis *Vitre-Steel*
costs less when you install it; goes right on handsomely
saving dollars for years and years.

WEIS

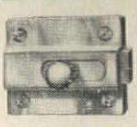
WRITE FOR NEW CATALOG — OR SEE SWEET'S ARCHITECTURAL FILE, NO. 22b/We

HENRY WEIS MANUFACTURING COMPANY, INC.
Dept. H-2102, Elkhart, Indiana

SPECIFICATIONS: Panels, stiles and doors shall be flush construction, and shall be made of two face plates of not less than 18-gauge enameling iron with formed edges, cemented under pressure to fiberboard core and joined by welding abutting edges at suitable intervals. Edges shall be bound with die-drawn stainless steel moldings interlocked under tension onto formed edges, mitered and welded at corners and welds ground smooth. Partitions and doors shall finish 1″ thick; stiles shall finish 1¼″ thick.

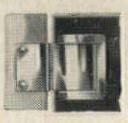
All surfaces, concealed and exposed, shall receive a vitreous porcelain enamel ground coat. All exposed surfaces shall then be given a cover coat, in a color selected from the Weis color chart of decorator colors.

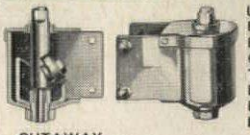
Doors shall be hung on WEIS gravity hinges with upper hinge mounted in recess in edge of door. Doors shall be fitted with slide bar latch, combination keeper and bumper and coat hook with rubber-tipped bumper, all to be brass, chromium plated. Latches and coat hooks shall be attached with theft-resistant screws.


SLIDE BAR LATCH

COMBINATION KEEPER AND BUMPER

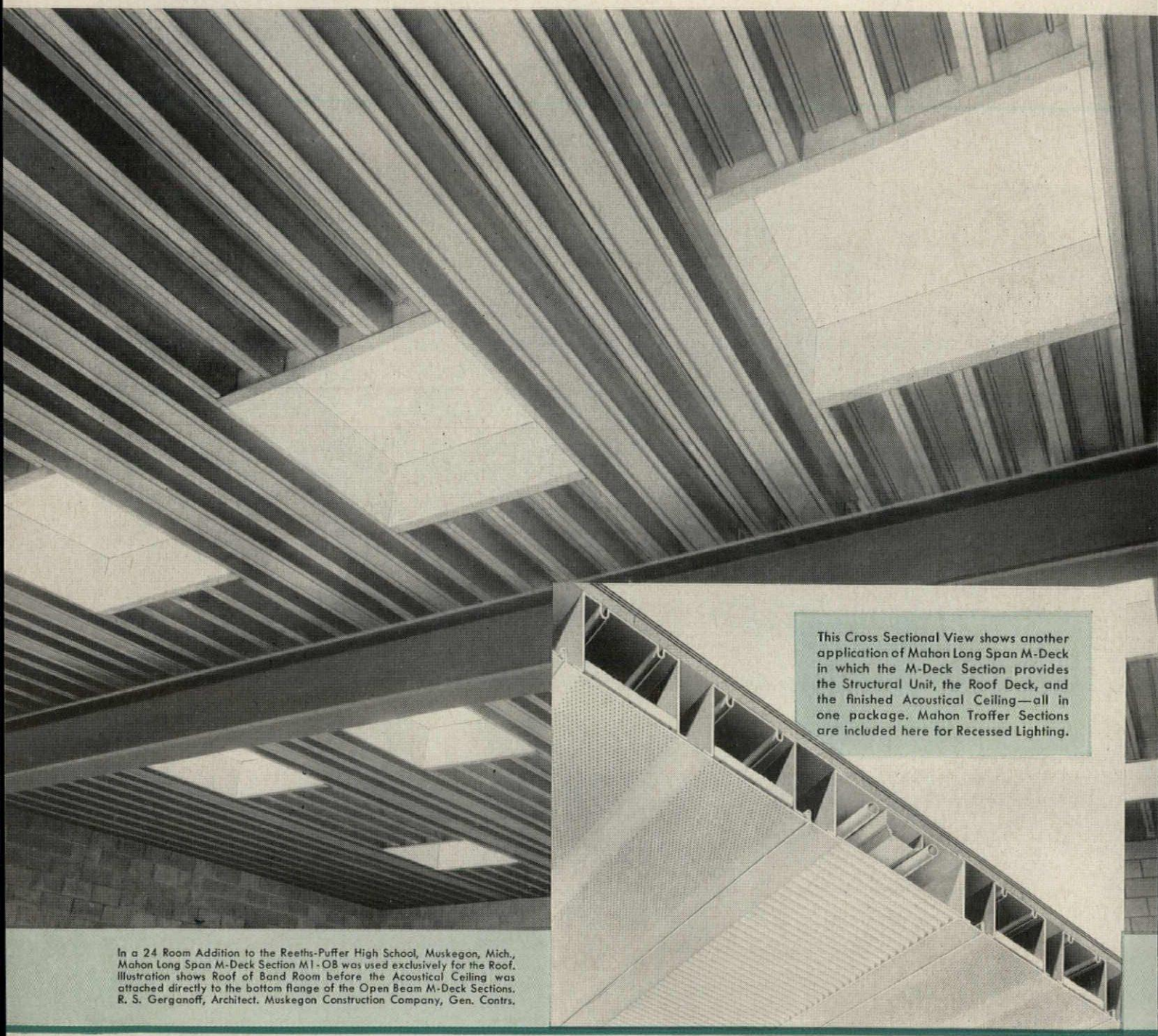
COMBINATION COAT HOOK AND BUMPER


CUTOUT TYPE TOP DOOR HINGE


CUTAWAY

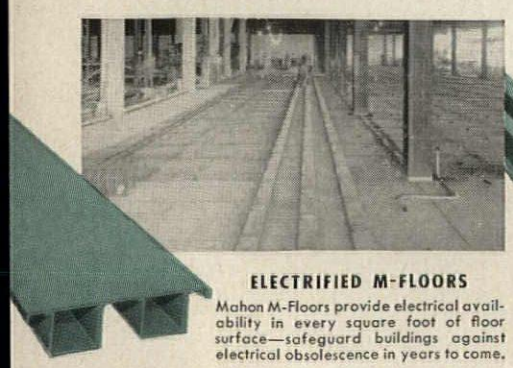
UNIVERSAL BALL BEARING GRAVITY TYPE BOTTOM DOOR HINGE

M-DECKS Span Up To 35 Ft.



In a 24 Room Addition to the Reeths-Puffer High School, Muskegon, Mich., Mahon Long Span M-Deck Section M1-08 was used exclusively for the Roof. Illustration shows Roof of Band Room before the Acoustical Ceiling was attached directly to the bottom flange of the Open Beam M-Deck Sections. R. S. Gerganoff, Architect. Muskegon Construction Company, Gen. Contrs.

This Cross Sectional View shows another application of Mahon Long Span M-Deck in which the M-Deck Section provides the Structural Unit, the Roof Deck, and the finished Acoustical Ceiling—all in one package. Mahon Troffer Sections are included here for Recessed Lighting.



ELECTRIFIED M-FLOORS

Mahon M-Floors provide electrical availability in every square foot of floor surface—safeguard buildings against electrical obsolescence in years to come.

CONCRETE FLOOR FORMS

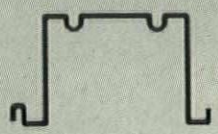
Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.

ACOUSTICAL and TROFFER FORMS

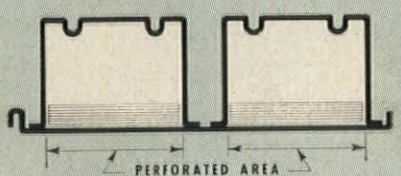
Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.

. . . Simplify Roof Design and Construction . . . Provide Finished Ceiling Material!

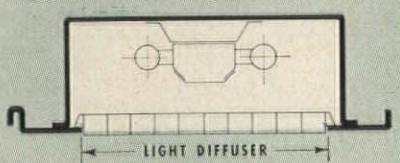
MAHON
Long Span
M-DECK SECTIONS



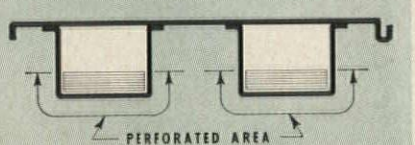
SECTION M1-OB
OPEN BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M2SR (Acoustical)
CEL-BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M1T (Troffer)
DEPTH 6" or 7½"



SECTION M2 (Acoustical)
CEL-BEAM DEPTH 1½", 3", 4½", 6 or 7½"

Mahon M-Decks are now produced in two types of Long Span Steel Structural Sections: One is an economical Open Beam Section; the other is a Cel-Beam Section—both are available in four standard depths of 3", 4½", 6" and 7½". In this wide range of structural roof Sections, the architect is given a versatile building product that permits him to design a simple, economical roof, or a combined roof-ceiling in which the structural supporting members, the roof deck, the finished ceiling material, and the acoustical treatment can all be contained in one light weight, quickly erected unit.

In schools, auditoriums, sports arenas, field houses, churches, or any type of building where the roof is supported by bearing walls, rigid frame or exposed truss construction, Mahon M-Deck Sections provide the structural roof and the finished ceiling material combined. Many arrangements are possible, and many ceiling effects are obtainable.

The long span structural M-Deck Sections span from wall to wall or from truss to truss. This eliminates roof beams and the cluttered effect of roof purlins, and produces a neat, continuous beamed or flat metal ceiling surface which is virtually indestructible. If recessed lighting is desired, Mahon Troffer Sections can be included in this type of roof-ceiling construction in any ratio to meet specific lighting requirements. Exposed metal surfaces of both M-Deck and Troffer Sections, which form the ceiling, can be readily painted to harmonize with any interior decor.

All Mahon cellular, Long Span M-Deck Sections can be furnished with bottom metal perforated and sound absorbing material inserted to provide a highly effective acoustical ceiling . . . Noise Reduction Coefficients range up to .85 in ceilings constructed with Mahon Sections recommended for this use.

See Sweet's Files for complete information or write for Catalogue LSD-58.

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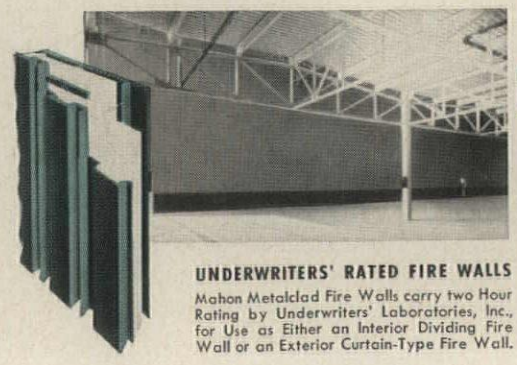
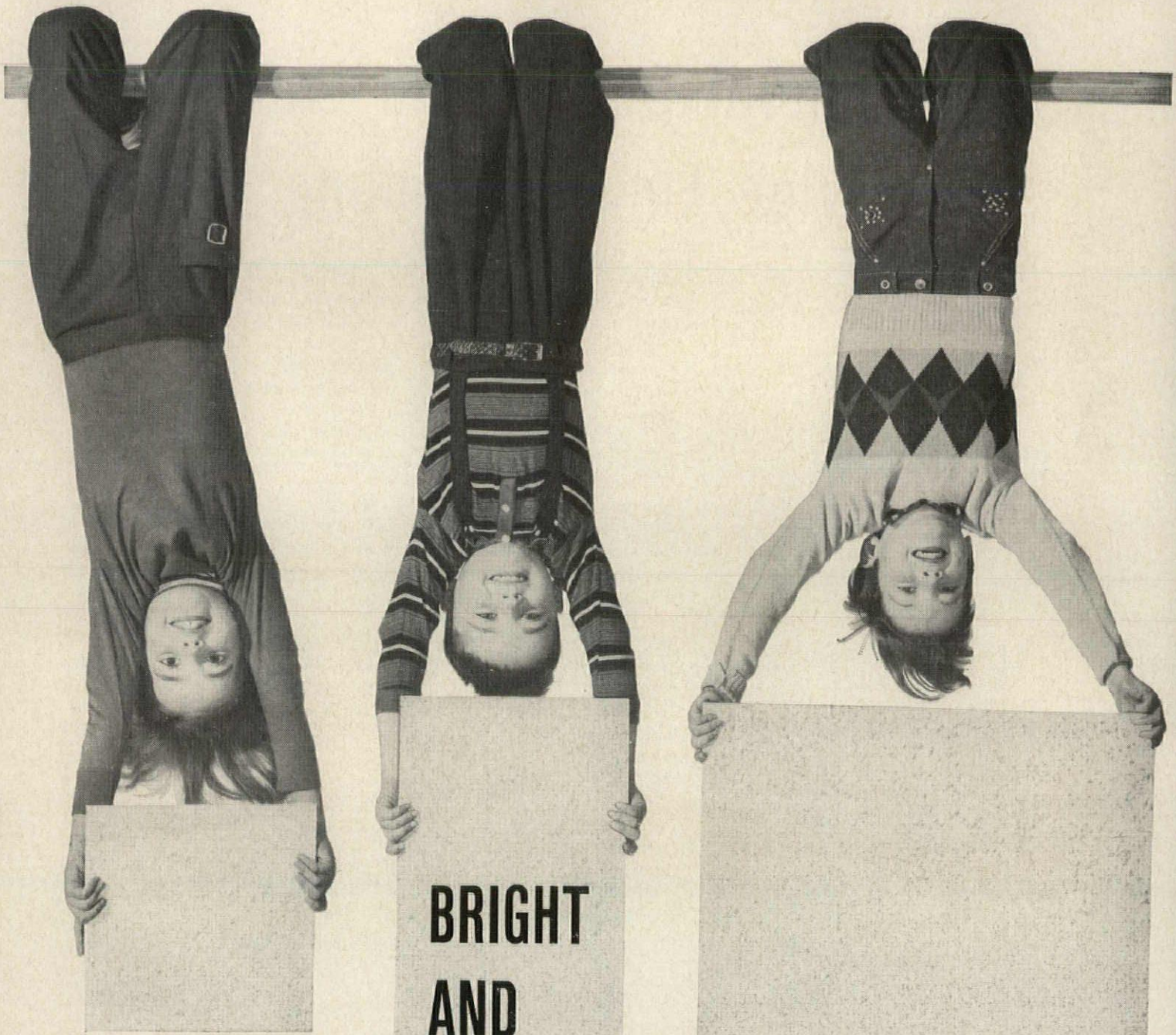
INSULATED METAL WALLS
Three Distinctive Patterns with "U" Factor Superior to that of Conventional Masonry Wall with Lath and Plaster. Erected up to 60 Ft. in Height without a Horizontal Joint.



UNDERWRITERS' RATED FIRE WALLS
Mahon Metalclad Fire Walls carry two Hour Rating by Underwriters' Laboratories, Inc., for Use as Either an Interior Dividing Fire Wall or an Exterior Curtain-Type Fire Wall.

ROLLING STEEL DOORS
Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles. Underwriters' Labeled Automatic Closing Rolling Steel Fire Doors and Fire Shutters.



BRIGHT AND WASHABLE FACES...

GOING UP ALL OVER AMERICA...

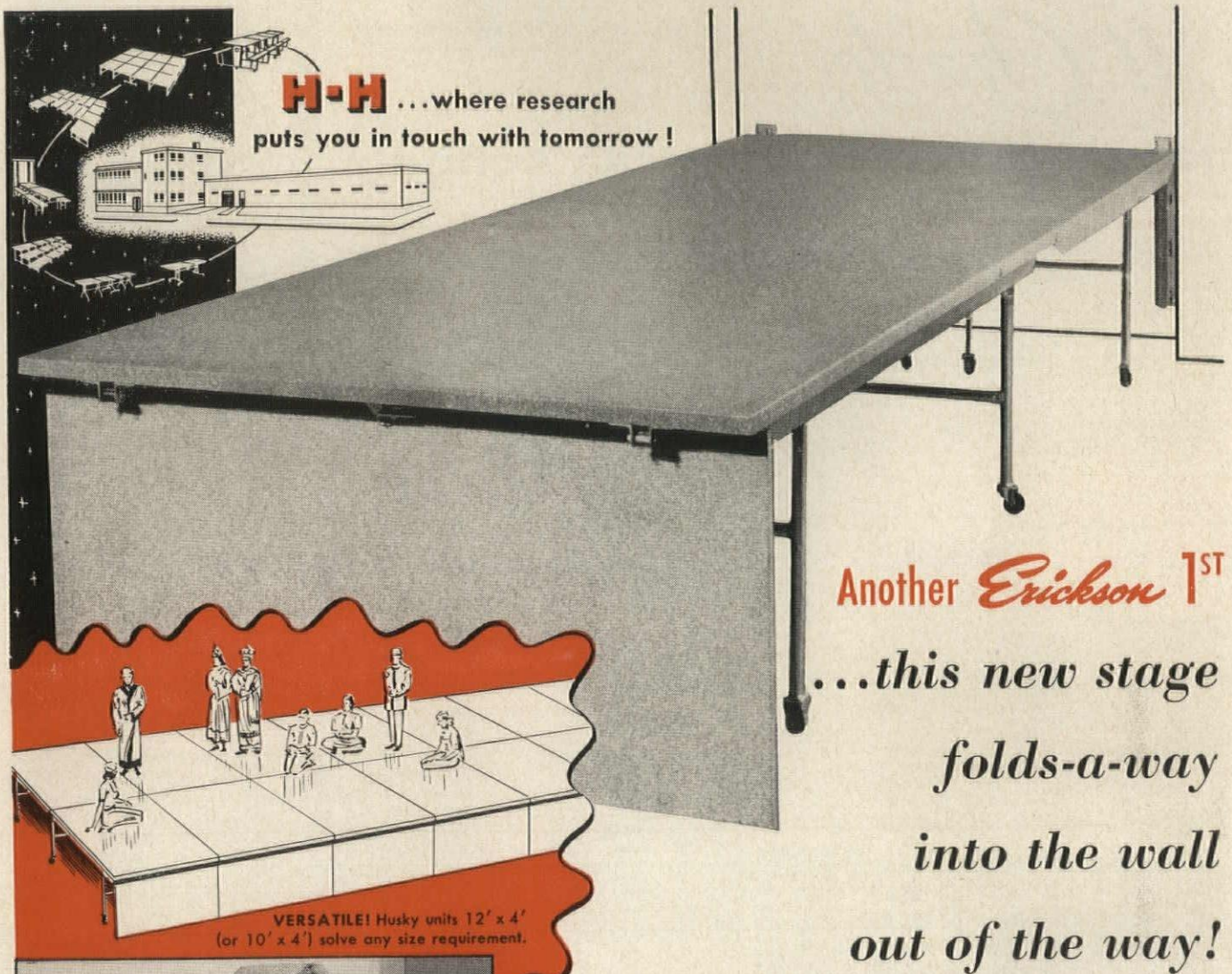
Fiberglas Acoustical Ceilings in offices, stores, hotels, hospitals and schools. Pictured above is the Main Lobby of the Fontainebleau Hotel in Miami Beach, Florida, where Fiberglas SONOFACED Tile was used.

FIBERGLAS SONOFACED TILE

New Design "C" SONOFACED* Tile is pleasingly bright to start with—and it stays that way because its surface is easily washable. At one and the same time, Fiberglas* SONOFACED Tile provides an acoustical ceiling, a thermal barrier and a beautiful decorative effect. Available in 24" x 24" as well as standard tile sizes. You've never specified a more versatile ceiling! Owens-Corning Fiberglas Corp., Dept. 68B, Toledo 1, Ohio.

OWENS-CORNING FIBERGLAS

*T.M. (Reg. U. S. Pat. Off.) O-C.F. Corp.



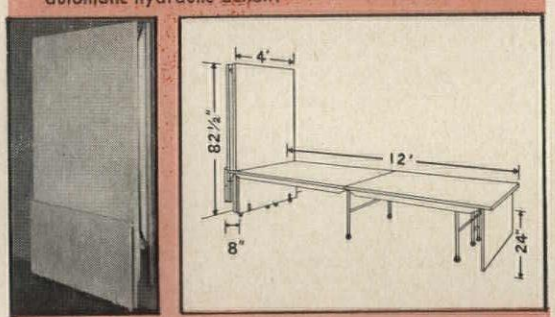
H-H ...where research puts you in touch with tomorrow!

Another *Erickson* 1ST

...this new stage folds-a-way into the wall out of the way!

VERSATILE! Husky units 12′ x 4′ (or 10′ x 4′) solve any size requirement.

AUTOMATIC! Each unit sets up by itself thanks to automatic hydraulic action!



COMPACT! Each unit folds-a-way into shallow recess only 8″ deep, or may be mounted on wall. Drawing shows stage folded and unfolded.

Erickson FOLD-A-WAY PRODUCTS FOR MULTI-USE OF SPACE

This new stage unfolds out of the wall in seconds . . . ready for use. When not needed this new stage quickly folds-a-way . . . out of the way . . . giving you use of *all* the floor space in your gym or multi-use room.

Phil Helffenstein

HALDEMAN HOMME MFG. CO.

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Gentlemen:
Please send complete information on your new Erickson in-wall fold-a-way stage.

NAME_____ TITLE_____

SCHOOL_____

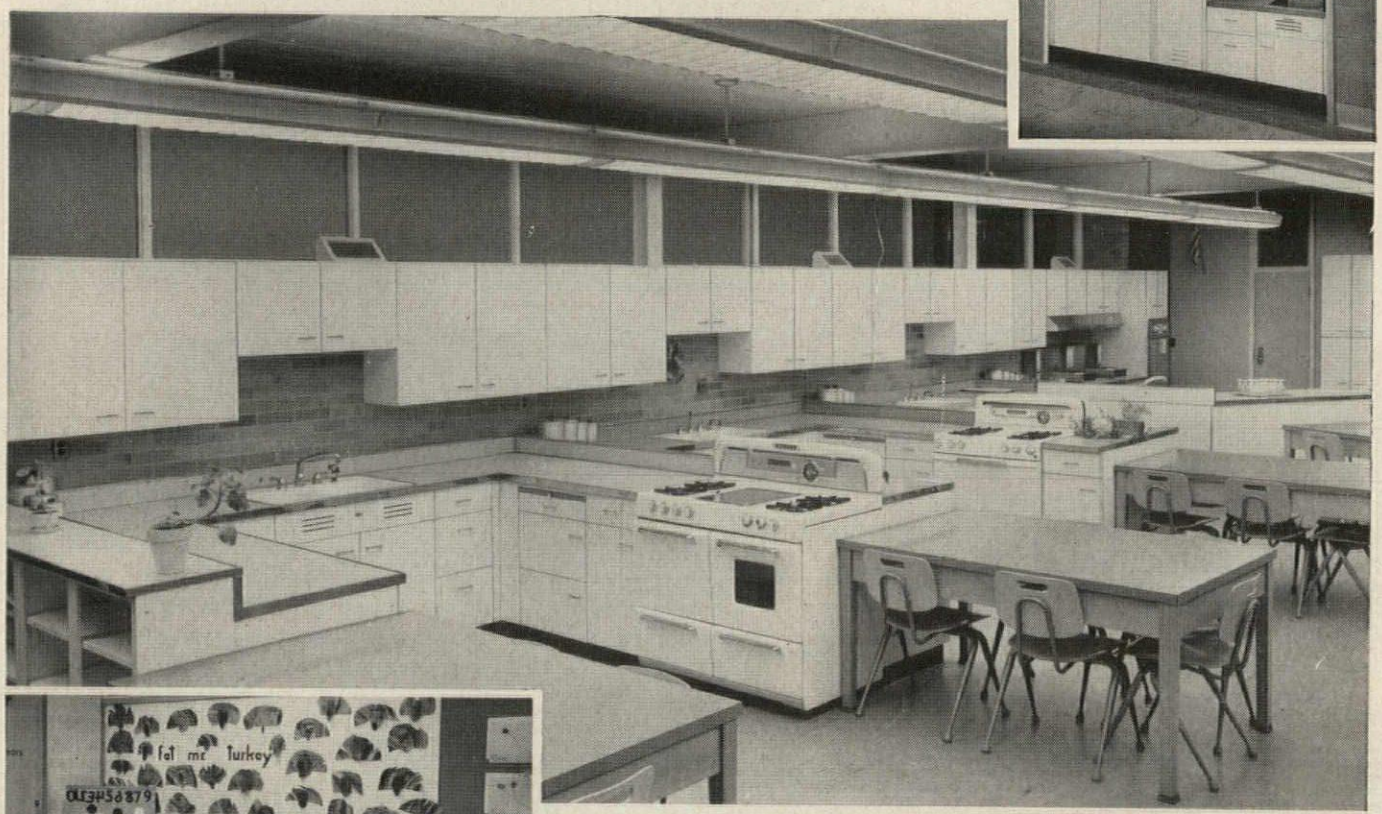
ADDRESS_____

CITY_____ STATE_____

St. Charles...

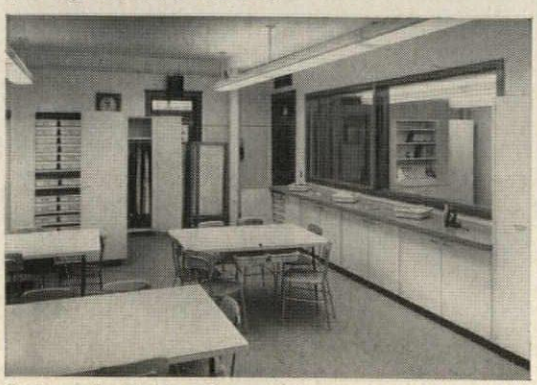
Now in 126 Detroit area schools

Storage and Instruction Units — custom-built to special classroom needs



Special Elementary Classroom Units
(24" high counters shown here)

Custom-Built Steel Kitchens • All photos are of classrooms planned and installed by St. Charles School Specialist, C. B. Wright, following close consultation with Detroit area architects, school administrators and home economists.



Custom-Built Clothing Classrooms

Steel Kitchens and Casework... custom-built for all levels of teaching!

In the last seven years . . . in the Detroit area alone . . . 126 schools have ordered new homemaking classrooms designed, planned and built with St. Charles *custom steel units!* The reason is simple: only St. Charles *custom* construction offers such flexibility to meet individual classroom needs—*at all levels of teaching.*

When you specify St. Charles, you can depend on careful individual planning by a skilled St. Charles specialist — and quality construction throughout! Quality — and custom construction . . . two reasons St. Charles was selected for 126 Detroit area schools, and for hundreds of other schools throughout the country.

For your free copy *of PLANNING HOMEMAKING CLASSROOMS, write on your letterhead to St. Charles, Dept. ARS-2*

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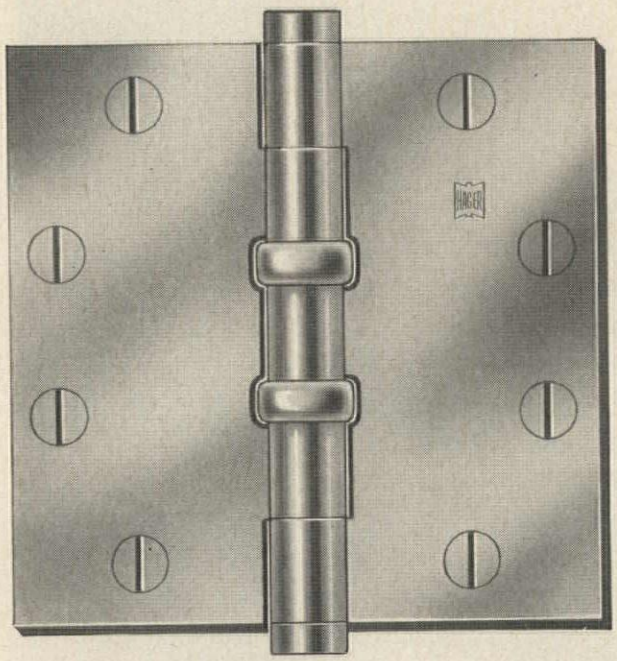
casework • sinks and counters • special purpose units

ST. CHARLES MANUFACTURING COMPANY, ST. CHARLES, ILLINOIS

speaking of 2-ball-bearing hinges...

ONLY A HAGER HAS THE EXCLUSIVE

"Life-Time Bearing"



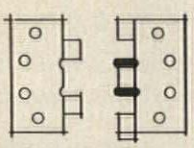
PERMANENTLY ANCHORED IN THE KNUCKLE WITH CASE HARDENED STEEL—NOT BRASS

In the wear-away zone (zone of bearing anchorage) soft brass rubs steel in other leading hinges and they sometimes fail. Not so with Hager!

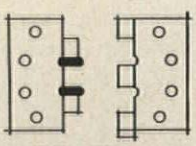
Hager's advanced, two-knuckle-bored construction puts steel against case hardened steel in this failure zone. The result is flawless ball bearing performance—life-time performance.

Yet you pay no premium for Hager's superior design and material. Compare and discover: Hager 2-ball-bearing hinges are unequalled in the industry!

These same life-time features are also a part of the Hager 4-ball-bearing hinges.

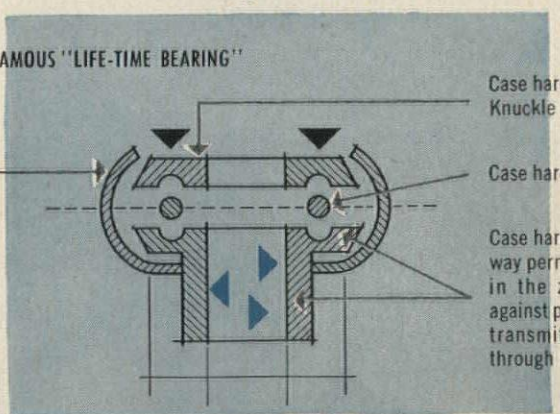


NOT THIS...
not one-knuckle-bored with wear-away brass to anchor the bearings. (Bearings finally fall out when pin is removed)



BUT THIS...
two-knuckle-bored construction with bearings anchored with case hardened steel.

EXPLODED CLOSE-UP OF HAGER'S FAMOUS "LIFE-TIME BEARING"



(Both stainless steel raceways and balls are available on stainless steel ball-bearing hinges.)

EVERYTHING HINGES ON HAGER®

EVERYTHING HINGES ON HAGER

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if it can't pass these tests don't put it underground!

- **Is it rust and rot-proof?**
- **Is it acid and detergent-proof?**
- **Does it provide permanent protection against ALL corrosive wastes?**
- **Is its interior smooth enough and its diameter large enough to permit free flow of wastes . . . eliminate clogging?**
- **Will it handle harsh drain-cleaning compounds?**
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Substitute materials can pass some of these tests . . . but only *Clay Pipe* can pass them *all.*

And now new, longer, stronger Clay Pipe speeds up installation . . . cuts material and labor costs. Specify and install Clay Pipe—the only pipe with *all* the features you can trust. *It never wears out.*

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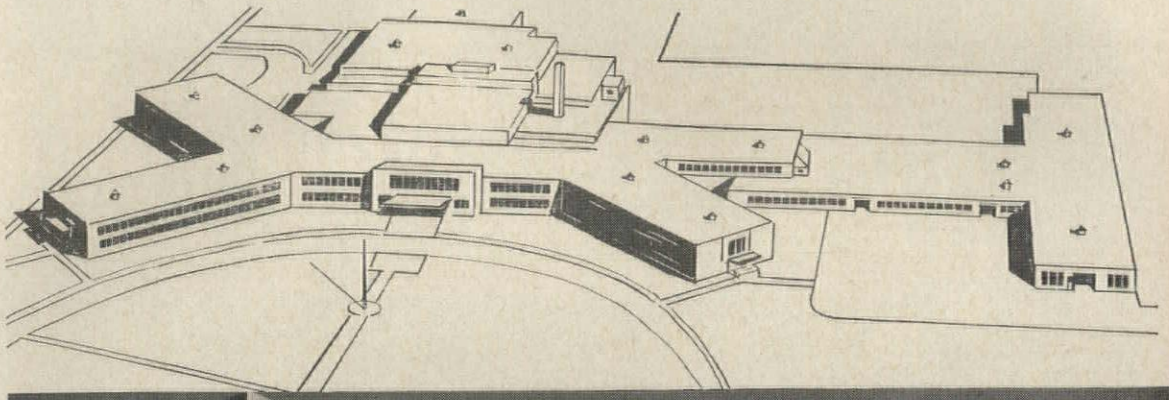
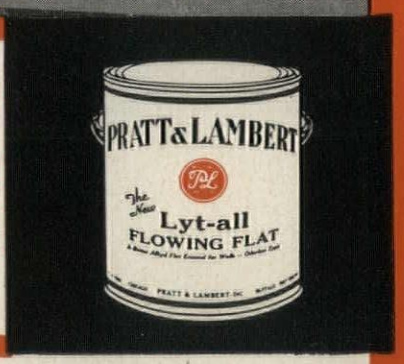


SANDUSKY HIGH SCHOOL
Sandusky, Ohio
Architect: McLaughlin & Keil
General Contractor: Knowlton Construction Co.
Painting Contractor: Bay Glass & Paint Co., Inc.
P&L Products Used: *New* Lyt-all Flowing Flat, Primafil, Vitralite Enamel Eggshell, "38" Pale Trim Varnish.

CRAFTSMANSHIP IN THE PACKAGE



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PRATT & LAMBERT

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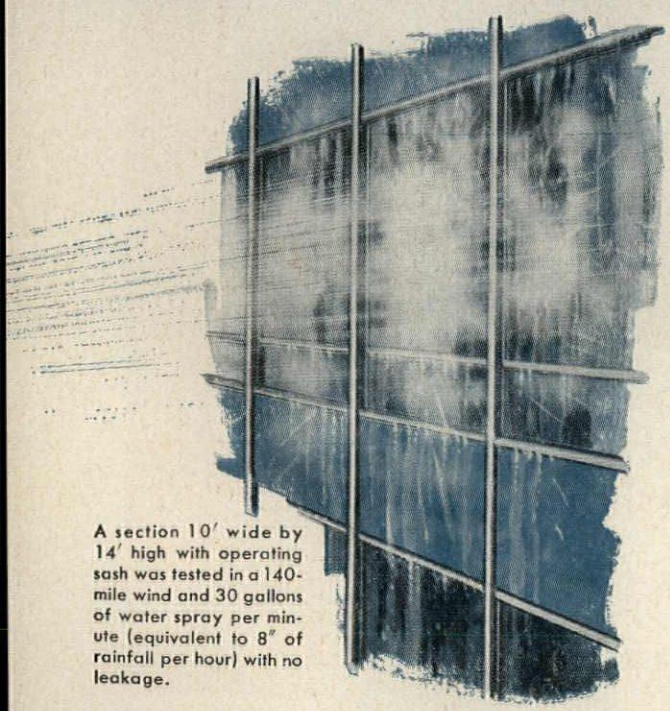
New Versatile-Wall offers weather-

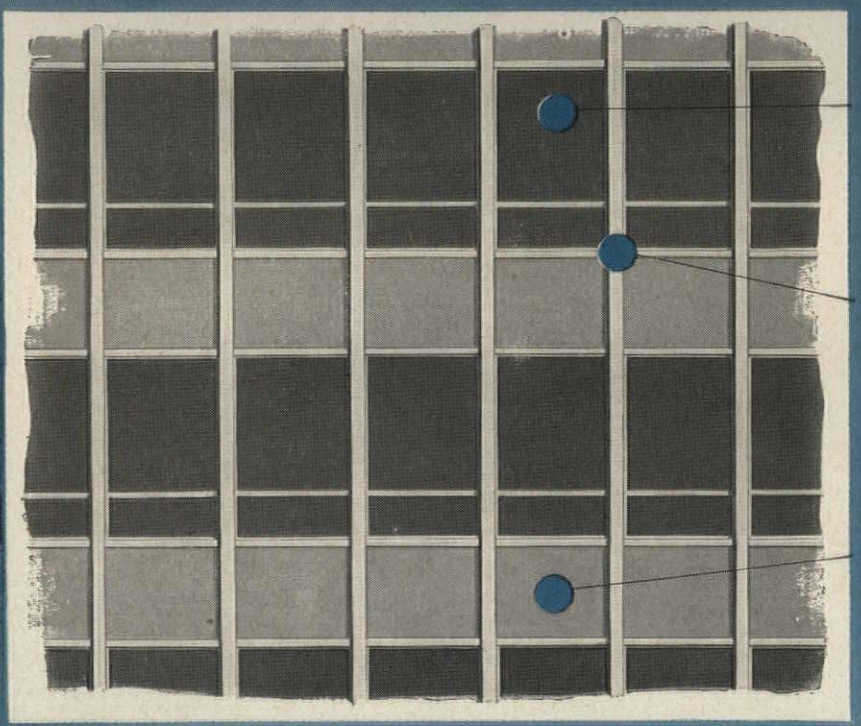


A section 10′ wide by 14′ high with operating sash was tested in a 140-mile wind and 30 gallons of water spray per minute (equivalent to 8″ of rainfall per hour) with no leakage.

With Robertson Versatile Wall, architects and engineers can enjoy full freedom of expression in the use of modular units and colors and still be sure of the precision of fit necessary to resist the ravages of weather. Developed after years of experience, research and testing, this curtain-wall system combines the advantages of standard units with the artistic latitude of tailor-made walls.

The results of extremely severe tests proved beyond a doubt that the rugged, weathertight construction of Robertson Versatile Wall can more than withstand the devastating forces of hurricanes and tornadoes. Units are designed to expand and contract to take care of building movement and steel framing tolerances without loss of tight seal. Yet infinite design variety is available. Verticals can be made with a variety of sizes and shapes in stainless steel, aluminum, bronze or porcelain enameled metal. Spandrels also can be designed in a great variety of colors and textures.

tightness plus extra design freedom



ROBERTSON V-WINDOWS

Exclusive new side hinged inswinging windows make cleaning easier and safer, and seal positively when locked. There is no interference from pivot pins if hopper is used below, and the entire window can be removed in minutes for easy shop reglazing.

MULLIONS AND SILLS

Great versatility is yours. Trim members can be porcelainized aluminum, stainless, aluminum or bronze. Trim also can vary greatly in depth and surface because of new positive "snap-on" design. A system of weep holes provides positive drainage and ventilation for condensation.

SPANDRELS

Here the designer has infinite choice. The V-Panels are available with a wide variety of surface patterns and can be fabricated in aluminum, bronze, stainless steel, Color Galbestos or vitreous enameled aluminum or steel. *Versatile Wall is as individual as your signature!*

Robertson

Versatile

Wall

Though any type of window can be specified, there are many advantages to the new Robertson V-Window. Hinged at the side, it swings into the room for safer and easier cleaning, plus a more positive seal than possible with a pivoted window. An ingenious hinge allows the window to be removed and replaced with a spare, so that any reglazing can be done in the shop. Moreover, when a hopper window is specified underneath, weight is better distributed on the sill, and it is not necessary to accommodate pivots.

When you design your next curtain-wall building, take advantage of this completely "weather-wise" system which allows so much architectural latitude. Write for literature.

With 150 trained sales engineers and 60 qualified service dealers, Robertson is ready to serve you in any part of the country. You will always have the best of technical assistance when Robertson products are specified.

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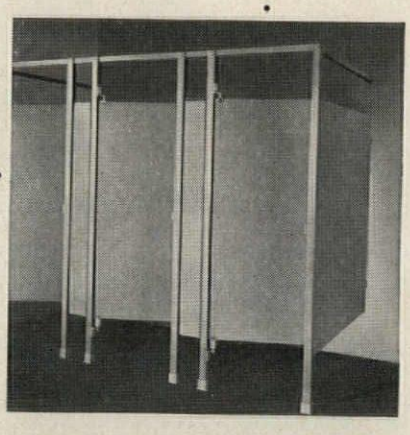
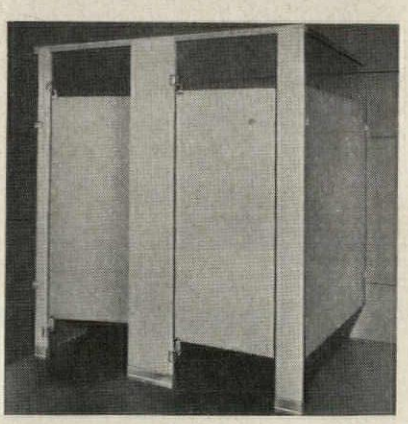
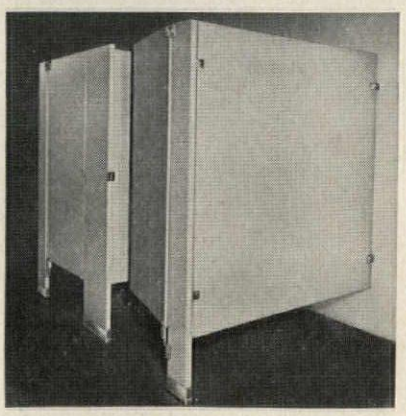
You can specify *Quality* in toilet compartments, too . . .







. . . *you get outstanding quality when you specify NICHOLSON*

Maximum gage metals, where they're needed, assure the right combination of strength and beauty . . . for quality toilet compartments that complement the finest equipment and construction details.

Compare these quality features, and you'll know why discerning architects and builders are specifying Nicholson toilet compartments:

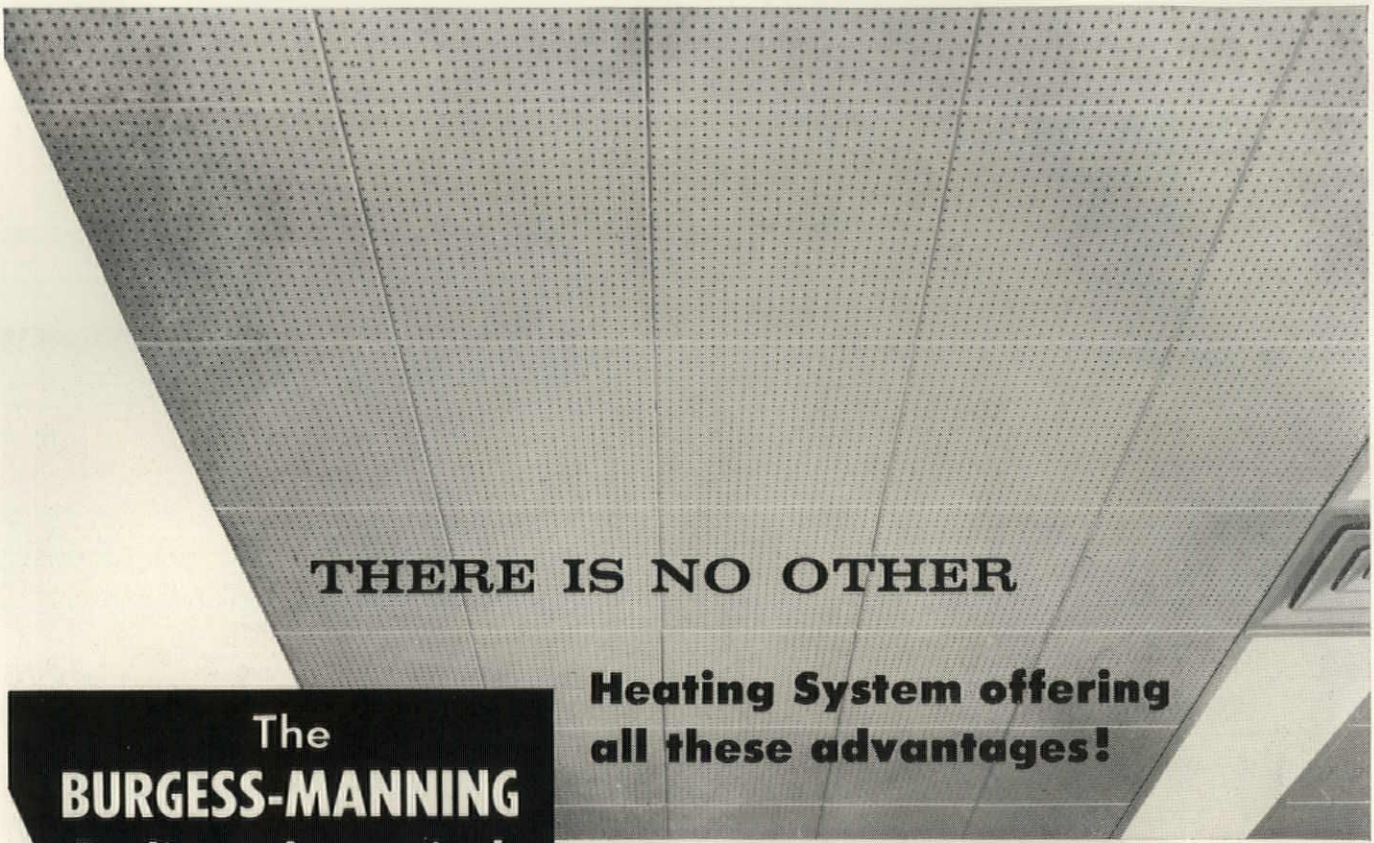
- **Panels and doors are 20 gage, 1" thick**
- **Pilasters are 16 or 20 gage, 1¼" thick with 6-ply fibre core**
- **Moulding is 18 gage, die-drawn**

Standard Nicholson designs range from distinctive, modern to sturdy, utility units . . . all available with attractive and lasting finishes in a variety of colors.

When you're looking for *quality* toilet compartments, without a premium price . . . look to W. H. Nicholson and Company, 12 Oregon St., Wilkes-Barre, Pa. Sales and Engineering offices in 98 principal cities.

NICHOLSON

of Wilkes-Barre



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Heating System offering all these advantages!

The
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Remember—

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The Burgess-Manning Radiant Acoustical Ceiling has been thoroly proved in many schools, hospitals and other institutional and commercial buildings all over the country. No other heating system offers so many advantages, not only in body comfort, but in efficiency and economy!

Because this ceiling heats by radiant energy exclusively, and does not depend on air currents, room temperatures are more uniform with no drafts. Response to temperature controls is instantaneous with practically no lag or over-run. Floor temperatures are always higher than room temperature.

The Burgess-Manning Radiant Acoustical Ceiling utilizes less valuable building space than conventional heating systems — with no radiators to occupy usable floor space. It offers maximum freedom of architectural design. Add to this, the highest noise absorbing capacity available today for complete acoustical control!

With direct metal-to-metal contact between coils and radiant panels, heating and cooling are accomplished with a minimum input of energy or fuel consumption. With fewer mechanical parts, maintenance, too, is cut down.

No other heating system offers so many advantages—in comfort, in efficiency, in economy.

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

Write for Descriptive Burgess-Manning Catalog No. 138-2L

3 Heating Cooling Acoustical

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complete line

now covers

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Regardless of design, function, material and cost considerations, the HAUSERMAN complete line now includes Movable Walls to meet every space division need.

The atmosphere of the executive office suite shown above, for example, is in sharp contrast with the clinical efficiency of the dispensary. Yet both areas have Movable HAUSERMAN Walls. The rich wood paneling in the office and the blue, baked-enamel steel back wall of the reception room are both of the new HORIZON System. And take special note of the vinyl-textured HORIZON panel in the foreground. Its opposite side is the easy-to-clean, baked-enameled wall of the dispensary.

Wherever you meet a problem in space division, you'll find the ideal solution in HAUSERMAN's complete line of movable walls. Call your nearest HAUSERMAN representative for details. He's listed in the Yellow Pages (under PARTITIONS).

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A complete line to meet every space division need

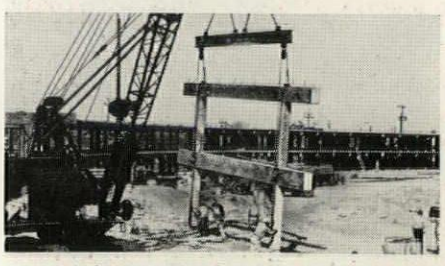
Precast Floors and Roof on Precast Frame

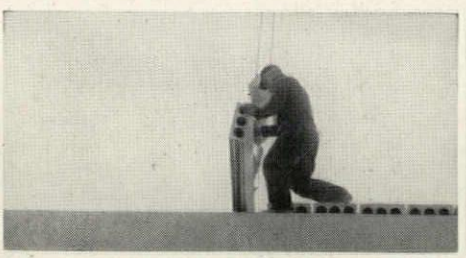
The new Seahorse Hotel in Galveston, Texas is unusual because it is all precast concrete. The frame is formed of 51 concrete bents cast on the site and erected as shown in the photo below, left.

The second floor and roof are 6″ x 16″ precast Flexicore units, which clear span an average of 13 feet between bents. The Flexicore slabs were left exposed for guest room and sun deck ceilings, and were cantilevered to provide covered walkways. Flexicore units are hollow-cast concrete slabs that can be designed for clear spans up to 26 feet for floors and 30 feet for roofs.

The Seahorse Hotel is owned by the Beach Corporation of Galveston. Thomas M. Price was the architect and R. L. Reid the structural engineer.

A six-page descriptive folder on this project showing plans, sections, and details is available to architects, engineers and contractors. Write or phone any of the manufacturers below or The Flexicore Co., Inc., Dayton, Ohio. Ask for Flexicore Facts No. 77.





Left: Erection of precast bent. Center: Flexicore slabs used for second floor and roof. Right: Flexicore exposed for guest room ceiling.

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How you can REDUCE SCHOOL COSTS...

Instead of stinting on the heating and ventilating system in an effort to economize, many school boards have reduced the cost of their new school buildings by the installation of an advanced hot water system—and at the same time have increased their classroom thermal comfort.

Q. *What is this heating and ventilating system that saves up to 20% of the construction, equipment and installation costs incurred by some other systems?*

A. It is the Nesbitt Series Hot Water Wind-o-line System. Every classroom has its own Syncretizer for heating, ventilating, and natural air cooling. Wind-o-line fin-tube radiation (in wall-hung enclosures or in storage cabinets) extends along the sill to protect against cold walls and window downdraft.

Q. ***How does this system save so much money?***

A. The copper tubing of the Wind-o-line radiation becomes the supply and return mains for the Syncretizers in a group of classrooms or an entire wing. This saves on pipes and covering and eliminates expensive pipe trenches, mains and runouts. Circulating less hot water, smaller pipes and pumps are needed. Piping within the units is factory-assembled; labor costs are reduced. Night temperature is maintained by gravity heating, saving controls.

Q. ***How does the system create a better thermal environment?***

A. By solving (in the only sure way, with Wind-o-line radiation) the cold wall and window downdraft problem, as well as providing (by means of the Syncretizer) the heating, ventilating and natural cooling called for in each classroom. This double protection assures healthful comfort—without physical distraction — for every pupil in the room—even those along the windows. It is "the thermal environment most conducive to learning"—a Nesbitt distinctive.

These schools saved money

Some of the recent low costs for heating and ventilating:

In Ohio — $1.49 sq. ft.

Bath High School, Lima, Ohio
Architect: Robert A. Helser
Capacity: 550 pupils
Gross area: 37,942 sq. feet
Total contract: $372,635
Heating and ventilating: $56,700
Nesbitt Series Hot Water Wind-o-line System
970 feet of pipe trenches and 1,000 feet of pipe covering eliminated

In Illinois — $1.75 sq. ft.

Rural Street Elementary School
Rockford, Illinois
Architect: Hubbard and Hyland
Engineer: E. R. Gritschke and Assoc.
Capacity: 700 pupils
Gross area: 47,250 sq. feet
Total contract: $545,713
Heating and ventilating: $82,826
Nesbitt Series Hot Water Wind-o-line System
1,000 feet of pipe trenches eliminated

In Wisconsin — $1.62 sq. ft.

Mequiock Elementary School
Town of Scott, Wisconsin
Architect: John B. Somerville Associates, Inc.
Engineer: R. J. Cott
Capacity: 180 pupils
Gross area: 14,420 sq. feet
Total contract: $163,409
Heating and ventilating: $23,371
Nesbitt Series Hot Water Wind-o-line System
210 feet of pipe trenches, 120 feet of mains and piping, 60 feet of pipe covering, and night controls eliminated

■ ■ ■ The Nesbitt Series Wind-o-line System is an engineering development of John J. Nesbitt, Inc., pioneers in the field of classroom thermal comfort.

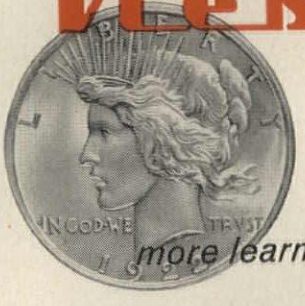
No other unit ventilator is equipped to perform as well nor so economically as the Nesbitt Syncretizer; and with Wind-o-line Radiation integrated, the Nesbitt System provides its protected learning environment on the coldest days, even in classrooms with large window walls.

The forced hot water arrangement here described makes it possible for every school to afford and enjoy the unequalled benefits of the Nesbitt System.

Schools in moderate climates where finned radiation is not essential may have the economies of the series piping arrangement through the Nesbitt Mainline System.

Send for the big book, *More learning per school dollar.*

Nesbitt



THERMAL COMFORT ALL WAYS

more learning per school dollar

Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa.

Sold also by American Blower Corporation
and by American Standard Products (Canada) Ltd.

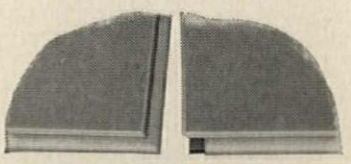
Here's a new prefinished, hollow-core panel that saves installation time and dollars

Marlite Korelock® *ceiling and wall panels*

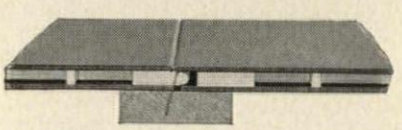
Ready for use without painting or finishing, Korelock is available in 10 decorator colors in new satin-lustre finish, plus 6 distinctive wood patterns. Particularly adaptable to building and modernizing heavy traffic areas, Korelock has a soilproof baked finish which stays like new for years. Maintenance time and expense is drastically reduced because Korelock wipes clean with a damp cloth.

Korelock's simplified installation eliminates backing materials and adhesive. Available in easy-to-handle sizes 24 inches by 48 inches and 24 inches by 96 inches. All panels are tongued and grooved, eliminating the need for joint coverings.

Get complete details on Korelock ceiling and wall panels by writing Marlite Division of Masonite Corp., Dept. 205, Dover, Ohio.



Structurally Strong—Korelock is really a wall in itself! The face of Korelock panels has the same baked plastic surface as all Marlite panels, laminated with a rigid interlocking wood core, and a sealed back of Masonite Tempered Duolux. The 1/4" thick panels combine beauty, strength and durability.



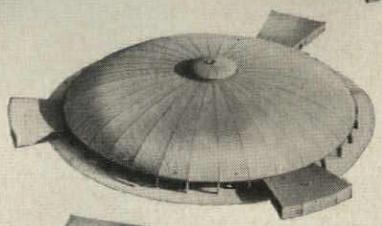
Easily Installed—The special tongue and groove "V" joint makes installation rapid and simple, over studs or furring strips, requiring no backing material, adhesive or joint coverings. Tongues are pre-drilled for screw-type nails, provided with panels.

Marlite® *plastic-finished paneling*

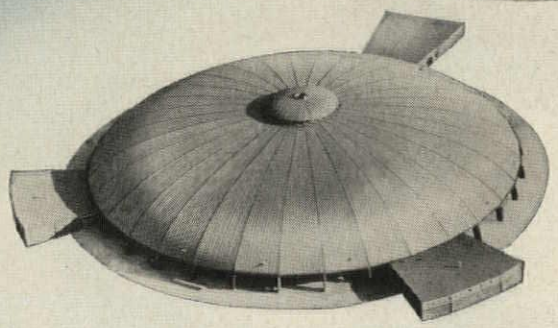
MARLITE IS ANOTHER QUALITY PRODUCT OF MASONITE® RESEARCH

versatility

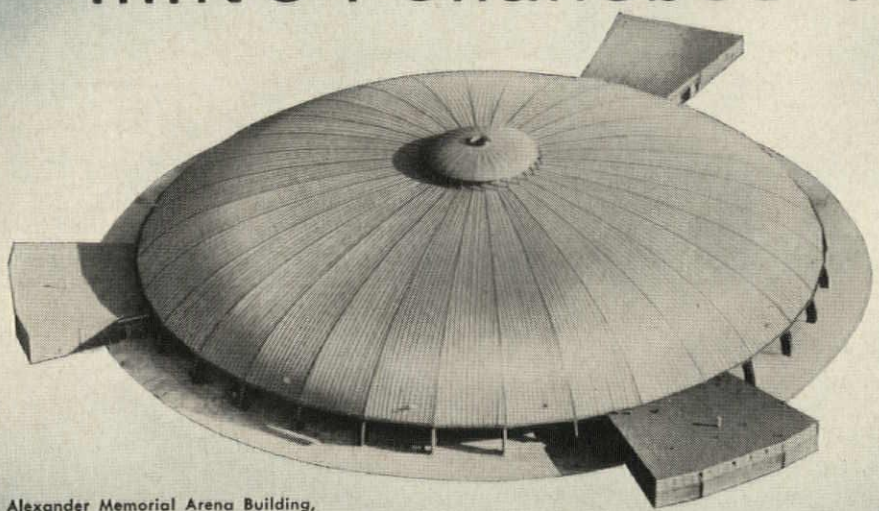
functional design



and beauty



....it's Follansbee Terne



Alexander Memorial Arena Building,
Georgia Institute of Technology
Architect: Aeck Associates, Atlanta, Georgia
General Contractor: Mion Construction Company, Atlanta, Georgia
Roofing Contractor: R. F. Knox Company, Inc., Atlanta, Georgia

Follansbee Terne performs its job of providing shelter beautifully. Terne will last a lifetime, is fireproof, windproof and weathertight. It can be painted any color, any time. Its versatility allows you to put design in any roof. Distinctive effects can be achieved with the use of standing or batten seams or with the new horizontal seam Bermuda roof.

Complete specifications in Sweets Architectural File

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Cold Rolled Strip • Terne Roll Roofing • Polished Blue Sheets and Coils
Sales Offices in Principal Cities

WE WANT MAPLE!

"Floors instead of doors," "The boys have it, why can't we?" demand the placards. "We want maple!" shout the high school girls in East St. Louis, Illinois. They march en masse into the school board meeting to insist on maple flooring for the girls' gymnasium in the new East St. Louis Senior High School. They explain to the board members their reasons for wanting maple. "Substitute floors hurt their feet," they say, "and provide a poor surface for games." For the small extra cost, they feel maple flooring is well worth it.

The board listens to their plea and considers, weighs the advantages of maple against substitute flooring . . . and then changes the plans. The girls win the day.

They argued so strongly because they *play* in gymnasiums and *know* there's a lot of difference in quality between maple flooring and substitutes. And the board had to agree that the big difference in quality was worth the small difference in cost.

Don't you?

East St. Louis Journal

Photo courtesy East St. Louis Journal. Faces obscured in accordance with state privacy laws.

MILLIONS WALK DAILY ON ROBBINS FLOORING

ROBBINS FLOORING COMPANY

Reed City and Ishpeming, Michigan

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

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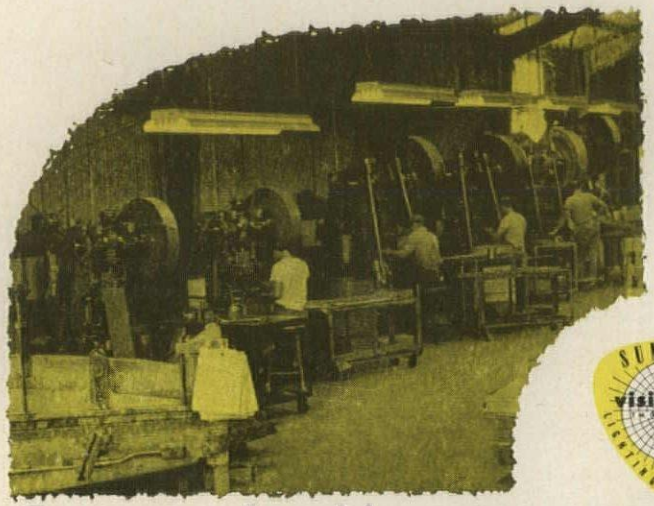

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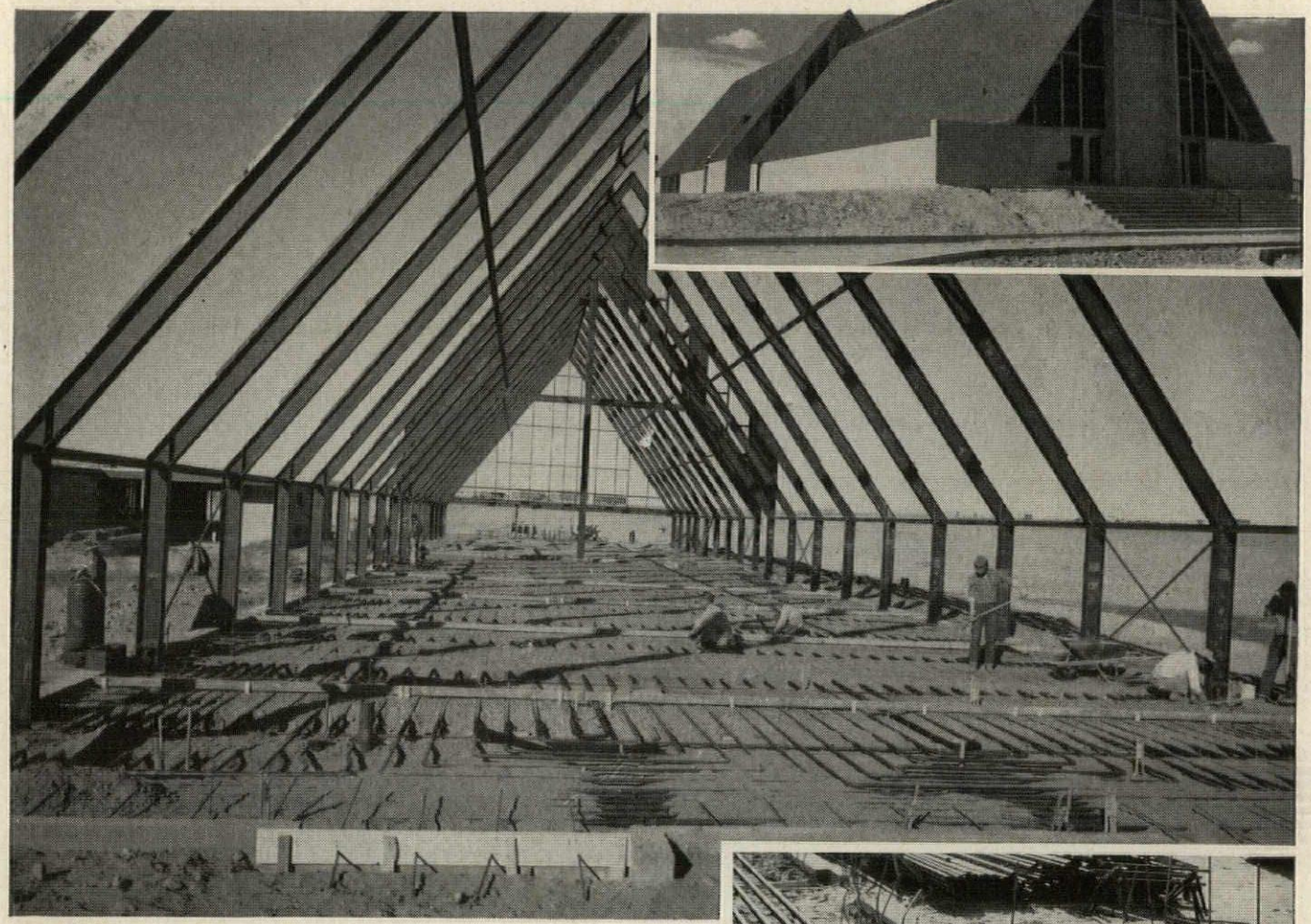
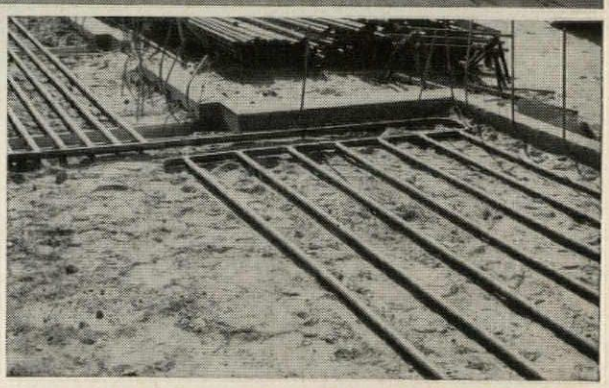
Like Sunbeam Lighting's home plant in Los Angeles our new plant in Gary, Indiana has the same complete line of manufacturing facilities which have made our fixtures nationally renowned in quality. A fully automated conveyor system, electronically controlled-electrostatic spray finishing process, a multi-stage Bonderite System for cleaning, surface-treating and corrosion-proofing all metal parts—everything necessary to step-up production and delivery of our uniquely large and versatile quality fixtures across the country!

SUNBEAM LIGHTING COMPANY LOS ANGELES, CALIF., GARY, INDIANA

Another modern church chooses Steel Pipe Radiant Heating



Steel Pipe Radiant Panels in main auditorium, 1" standard black pipe on 12" centers.



Perimeter of building, 1¼" standard black pipe on 6" centers with 1½" headers.

While the beautiful churches of yesteryear are loved and admired, the need for more, but less pretentious, suburban churches has brought a fresh architectural concept to these.

In modern church construction, comfort, practicality and all-week usefulness are keystone factors. An adequate kitchen may rank with auditorium acoustics in importance. Certainly steel pipe radiant panel heating and sidewalk snow melting are part of today's suburban church planning.

In this Pueblo, Colorado, Christ the King Catholic Church, as in many others, a steel pipe radiant panel heating system will provide perfect, draft-free comfort for 9120 square feet of floor area.

Yes, steel pipe is first choice for radiant heating . . . as it is for snow melting, plumbing, fire protection systems, electrical conduit, gas, steam and air transmission lines, and structural pipe applications. Steel pipe gives the ultimate in service for every dollar spent!

Committee on
STEEL PIPE RESEARCH
AMERICAN IRON AND STEEL INSTITUTE
150 East Forty-Second Street, New York 17, N. Y.

Steel Pipe is First Choice

Write for the free 48 page color booklet "Radiant Panel Heating with Steel Pipe"

Only Steel Pipe gives all these advantages!

- Low cost with durability
- Strength unexcelled for safety
- Formable—bends readily
- Weldable—easily, strongly
- Threads smoothly, cleanly
- Sound joints, welded or coupled
- Grades, finishes for all purposes
- Available everywhere from stock

Poor little fresh air Kidz

Schoolrooms should have ceilings! Schoolrooms *can* have fine, handsome acoustical ceilings *free*, when the school is roof-decked with Insulrock slabs.

Insulrock Building Slabs provide an exposed acoustical ceiling without a penny of extra cost.

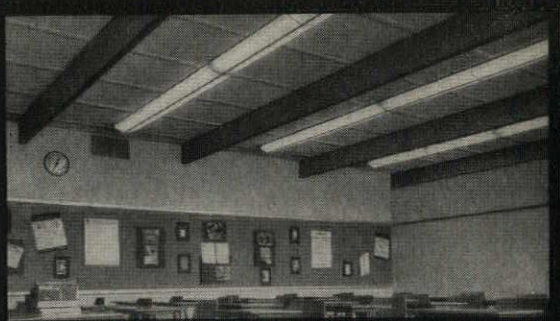
Insulrock Slabs, laid easily, fast, and permanently as roof decking on steel, wood, or concrete framing, make a tough, strong, incombustible, insulated roof decking for all-weather protection.

The *other* side—the side of the Insulrock Slabs seen from inside the schoolrooms—makes a random-texture, good-looking acoustical ceiling . . .

Off-white, reflecting more light, reducing illumination costs . . . *sound-absorbing*, trapping up to 80% of efficiency-robbing room noises that reach the thousands of air pockets honeycombing the tightly packed wood fibers pressure-bonded with portland cement to form Insulrock Building Slabs.

One material, one operation, two jobs!

Insulrock insures other economies, too. It can be applied all year. It's easy to handle. Its savings stretch school dollars and provide schoolroom expansion without expansion of building budgets.



Exposed acoustical ceiling provided by Insulrock Roof Decking (Bulb-Tee on steel framing)—East Williston Junior-Senior High School, East Williston, Long Island, N. Y.

See your Sweet's or ask

INSULROCK COMPANY

Sales Office: EAST RUTHERFORD, NEW JERSEY

Plants: LINDEN, NEW JERSEY
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Insulrock

Division of The Flintkote Company

FLINTKOTE BUILDING MATERIALS

Mobile, Ala.—Photo from interior of Old Spanish Fort Motel restaurant shows that LUSTRAGRAY reduces sun glare, yet provides "clear glass" vision.

Photo from exterior. This main building of Old Spanish Fort Motel has nine full-length picture windows glazed with LUSTRAGRAY by The Prichard Glass Co., Mobile, Ala. **Architects:** *Hammond & Woods, Mobile, Ala.*

GLARE REDUCING SHEET GLASS

Picture windows of american LUSTRAGRAY

draw tourist trade

Specify AMERICAN LUSTRAGRAY for your new commercial buildings—and your clients will tell you that the attractive gray windows act as "beacons of welcome."

Here's a case in point. According to the owner of the motel, George Fuller Sr., the LUSTRAGRAY glazing "invites more casual tourist business than any other form of outdoor advertising tried by the Company."

And—from the inside looking out—sun glare is softened by this neutral gray glass. Through giant picture windows, diners enjoy the view of Mobile Bay in bright sunlight without squinting.

AMERICAN LUSTRAGRAY also reduces a significant amount of solar heat, adding considerably to comfort. This economical gray glass is available through more than 500 glass jobbers. Thicknesses: 3/16", 7/32", 1/4". Maximum size: 6′ x 10′. Check your classified telephone directory for listing.

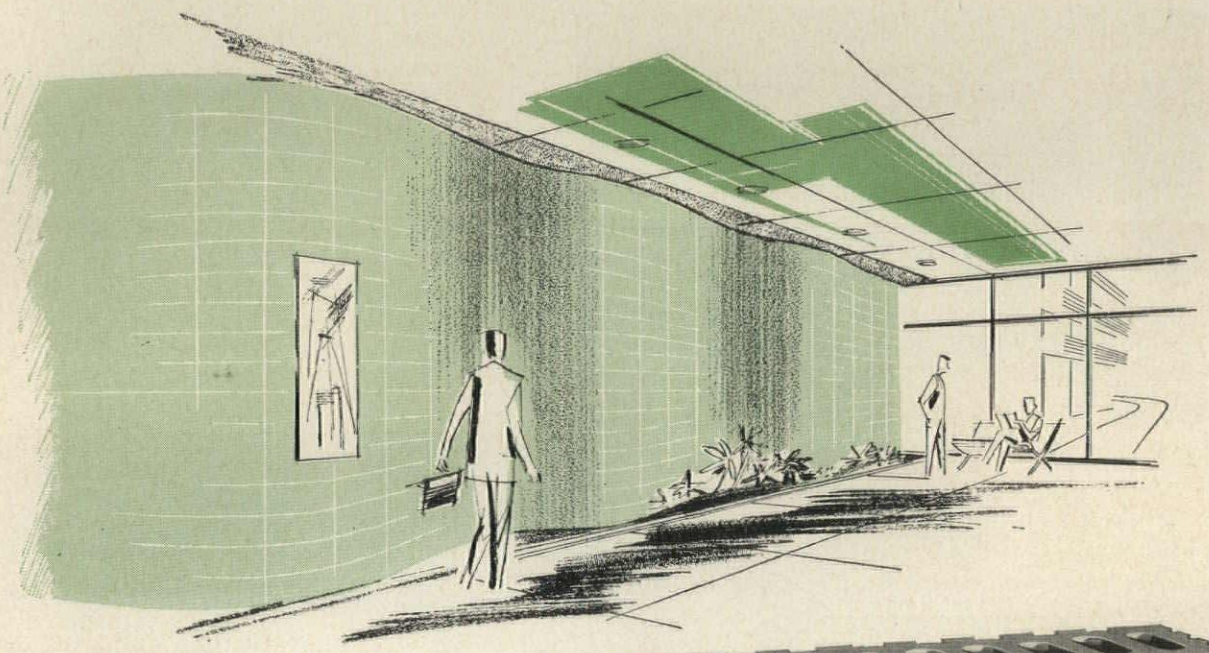
CLEAR GLASS for Maximum Daylighting
GRAY GLASS for Controlled Daylighting

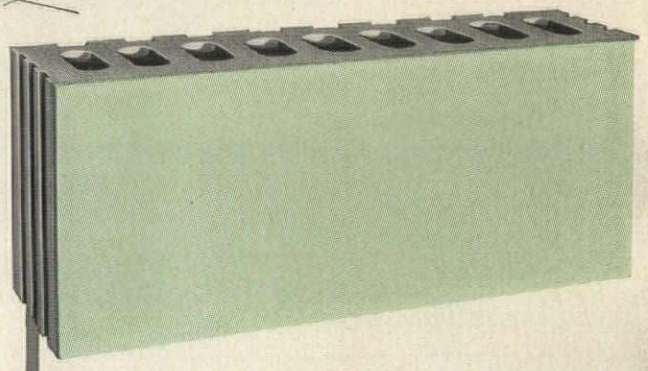
american
WINDOW *Glass* COMPANY
PITTSBURGH, PA.

PLANTS: ARNOLD, PA. • ELLWOOD CITY, PA. JEANNETTE, PA. • OKMULGEE, OKLA.

WSW 6993

STARK IDEA FILE





An idea!

BEAUTIFUL LOW-COST WALLS cut echoes ...add interest

The original serpentine wall was one brick thick and derived its strength from its smooth, flowing shape.

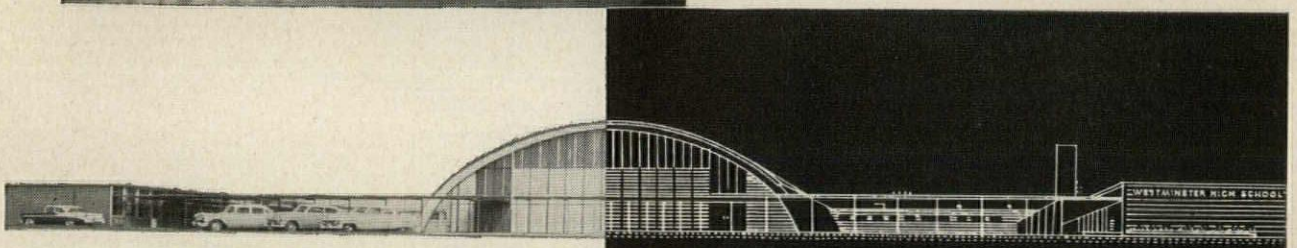
This same wall design could be utilized with a modern material... Stark Structural Glazed Facing Tile. Such an interior wall is strong, beautiful and practical for partition type walls. It relieves the monotony of design so often found in long corridors. It reduces echoes caused by the required hard surfaces of floors and walls.

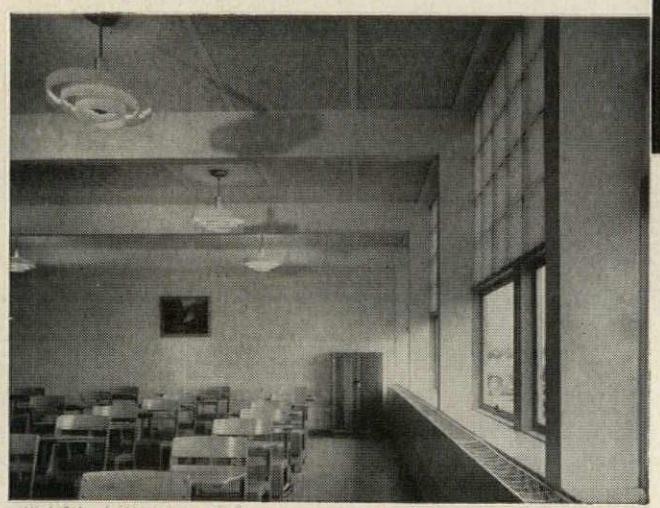
Structural Glazed Facing Tile is as versatile as it is practical... sanitary, economical, low in maintenance cost and permanently beautiful.

When you specify Structural Tile, specify Stark and get all the advantages you deserve.

STARK CERAMICS, INC.
CANTON 1, OHIO

A new, complete and detailed catalog is now available... Simply request on your letterhead.





High School, Westminster, S.C.
Architect: Harold Woodward

DESIGN ECONOMICALLY WITH FULL FREEDOM

Wolmanized®

PRESSURE-TREATED LUMBER

Westminster High School was built for $7.69 per square foot by using contemporary design and modern Wolmanized® pressure-treated timber products. Pressure-treated arches, posts, beams and decking afforded economical construction . . . a structure of decided aesthetic appeal. The glulam timber design effected a $130,000 saving at a contract price of $393,893 for the building.

If you are designing schools, churches and similar buildings—see for yourself how Wolmanized pressure-treated lumber can effect substantial savings with full design freedom, structural strength, permanency.

W-39

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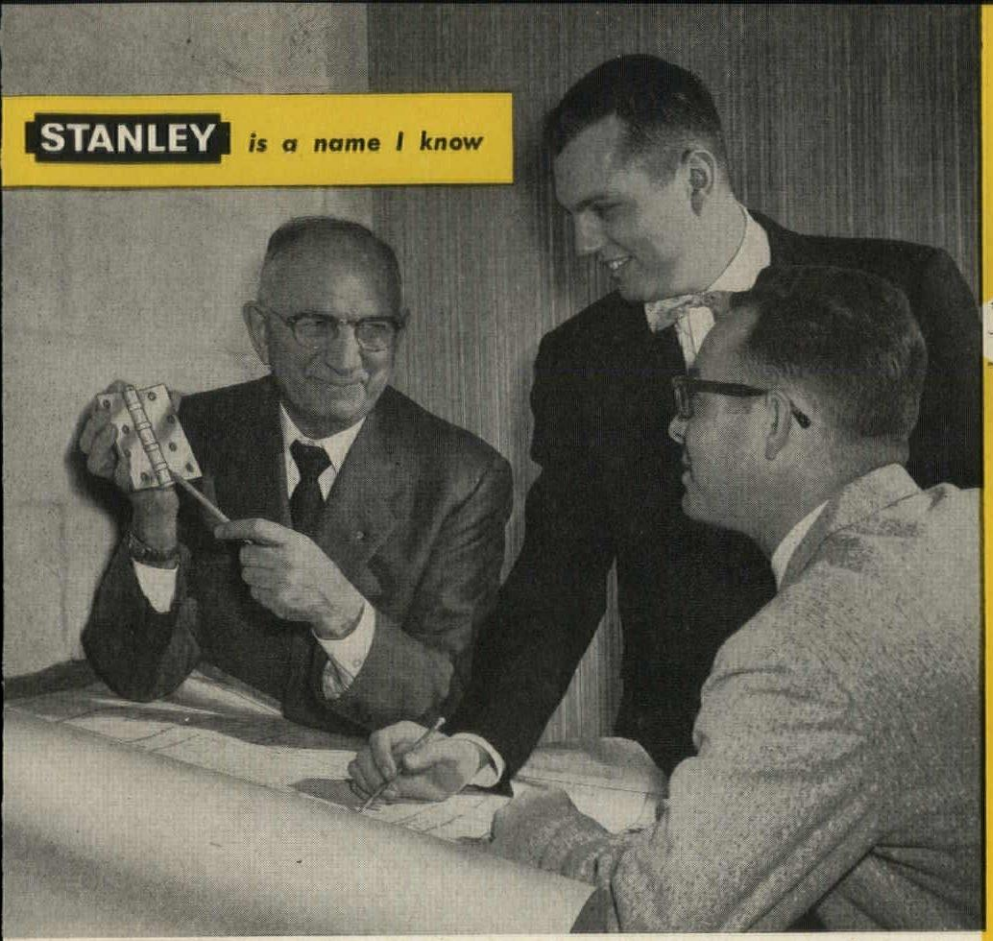
Please send me the 16-page Handbook on the use of Wolmanized pressure-treated lumber in light and heavy construction.

Wolman Preservative Dept., Koppers Company, Inc.
1451 Koppers Building, Pittsburgh 19, Pennsylvania

STANLEY *is a name I know*



M. E. WHEELER, A.H.C., Wheeler Hardware Co., St. Paul, Minn.

"I stake my reputation on Stanley ball-bearing hinges."

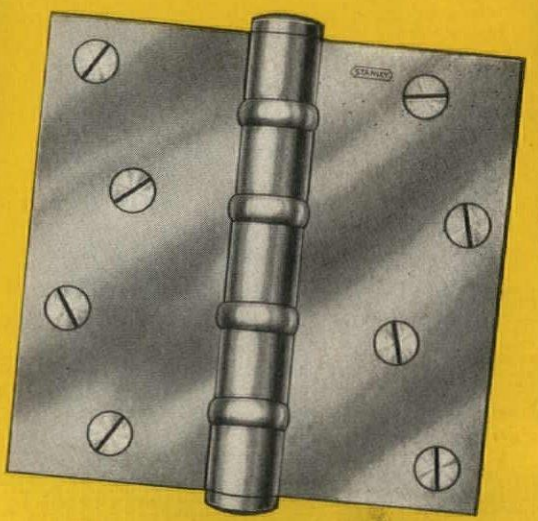
"Take the BB181," writes Mr. Wheeler. "I know it will stand up under the heaviest traffic conditions for as long as the building is in use."

BB181 is an extra-heavy, full-jeweled®, ball bearing hinge made for heavy or high-frequency doors, such as entrances to schools, office buildings, stores or other public buildings. It is also frequently specified for exterior entrance doors to classrooms.

BB181 is a brass or bronze non-template hinge and is also available in steel, polished and plated or bonderized and prime-coated for painting. Sizes range from 4" x 4" to 8" x 8", with narrow-width hinges also available.

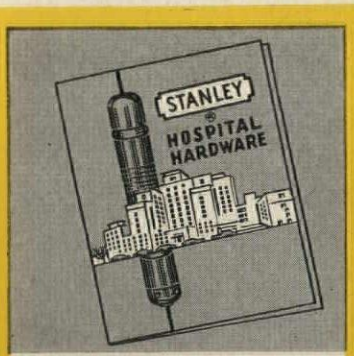
For complete details write Stanley Hardware, Division of The Stanley Works, 162 Elm St., New Britain, Conn.

St. Paul's new Highland Park Junior High School is one of many fine buildings with Stanley hardware specified by Mr. Wheeler. Architects were Hammel & Green, Inc.

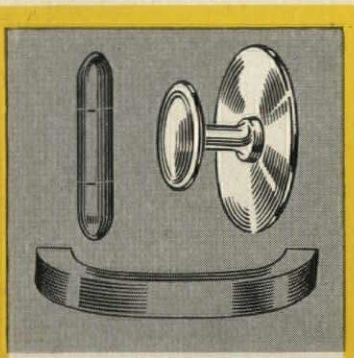


This is Stanley's BB181 full-jeweled, ball bearing non-template hinge. BB199 is its heavy-duty template counterpart.

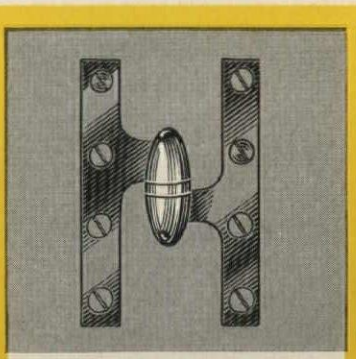
STANLEY IS THE NAME TO LOOK FOR ON QUALITY PRODUCTS LIKE THESE



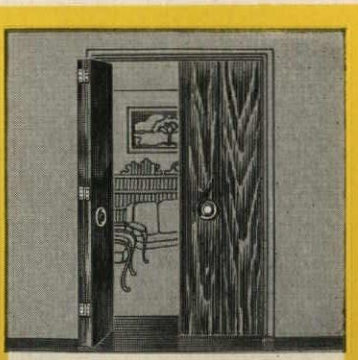
Hospital Hardware Brochure, A.I.A. File No. 27B. A concise folder of special hinges and other hardware for hospitals.



Solid aluminum cabinet hardware (also available in brass) is one of eight smart and practical styles made by Stanley.



Olive knuckle hinges, for interior classroom and office doors. Also for cabinets. Another great hinge by Stanley.



Stanley's new bi-fold hardware is concealed on both sides of door and is used for both closets and passageways.

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

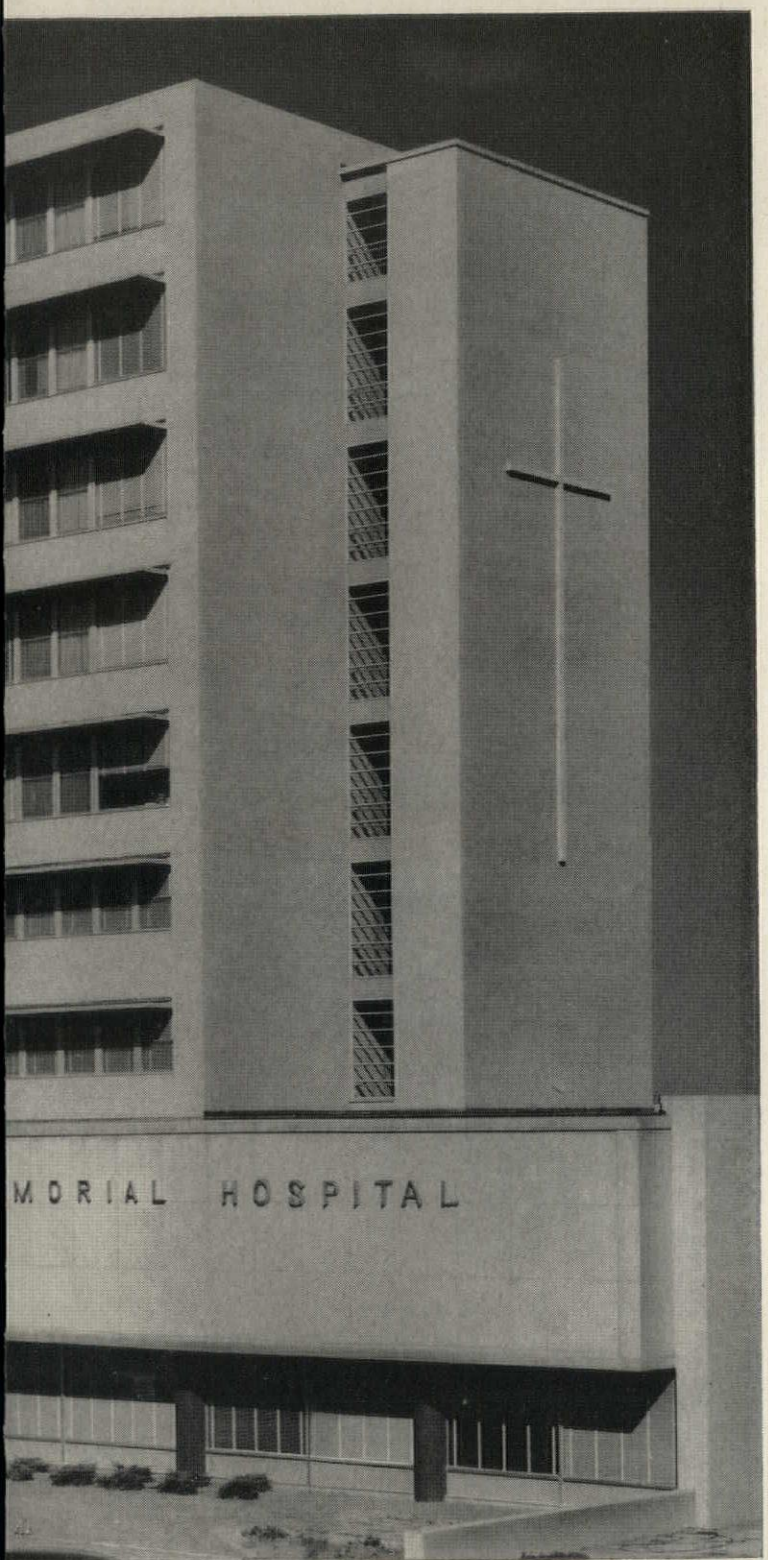
STANLEY

This famous trademark distinguishes over 20,000 quality products of The Stanley Works—hand and electric tools • builders and industrial hardware • drapery hardware • door controls • aluminum windows • stampings • springs • coatings • strip steel • steel strapping—made in 24 plants in the United States, Canada, England and Germany.

The enduring beauty of GLASS enhances of the new BISHOP CLARKSON

Architect: Leo A. Daly, Co., Omaha, Nebraska

the architectural appeal
MEMORIAL HOSPITAL



THE BISHOP CLARKSON MEMORIAL HOSPITAL at Omaha, Nebraska, is an excellent example of the part Pittsburgh Glass plays as a basic material in architectural plans.

In creating this impressive structure, Architect Leo A. Daly selected Pittsburgh Polished Plate Glass for the front of the building. At the back, many openings are equipped with TWINDOW® . . . the windowpane with insulation built in. Through its exceptional insulating properties, TWINDOW keeps interiors cooler in summer, warmer in winter. Patients and staff are thus placed in a more comfortable environment. And, through the use of this insulating glass, other collateral advantages accrue, such as less cold air drafts at windows, reduction of outside noises, elimination of the need for storm windows, and actual savings in heating and air-conditioning costs, as well as in the initial cost of the equipment.

Among the many other Pittsburgh products found in this beautifully designed hospital are TUBELITE® Sliding Doors in the newborn nursery where the entire wall slides. In addition, the coffee shop is equipped with a bay of glass, consisting of PITTCO® Premier Metal Frames with HERCULITE® Tempered Plate Glass Doors. And two banks of HERCULITE Doors form the entrance to the hospital.

May we suggest that, in *your* designs, you give first consideration to *Pittsburgh Glass* . . . the *basic* architectural material?

PITTSBURGH GLASS

...the basic architectural material

75th ANNIVERSARY 1883—1958

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

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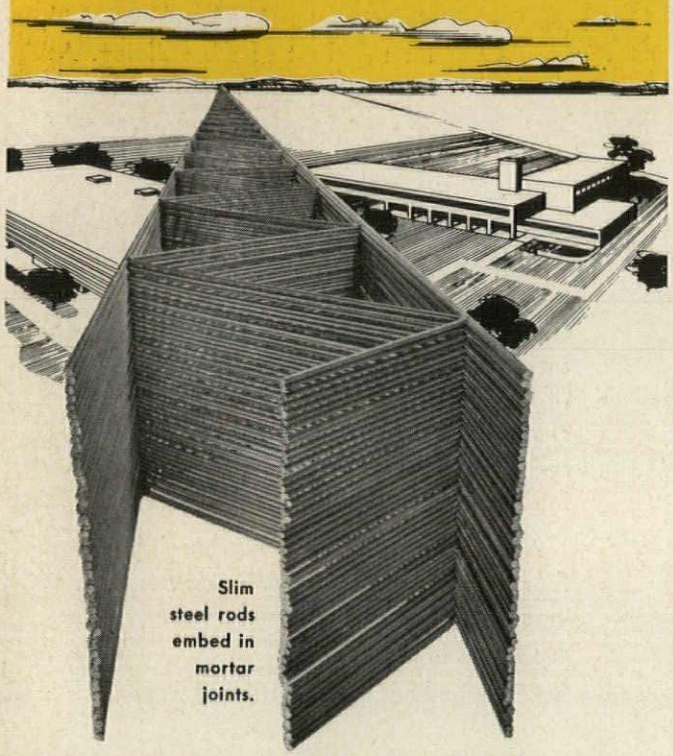
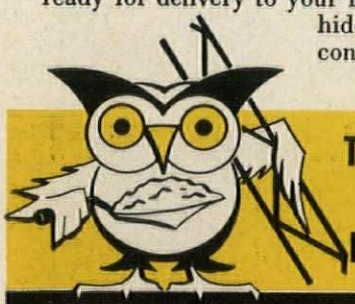
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

the specified masonry reinforcement preferred EVERYWHERE!



Slim steel rods embed in mortar joints.

All segments of the building industry depend on Dur-O-waL masonry wall reinforcement. This fabricated, high tensile steel reinforcing member scores on performance . . . safeguards masonry beauty. Available throughout the continent Dur-O-waL is ready for delivery to your building sites to provide hidden quality for superior construction.



TRUSSED DESIGN
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DUR-O-WAL

Rigid Backbone of Steel For Every Masonry Wall

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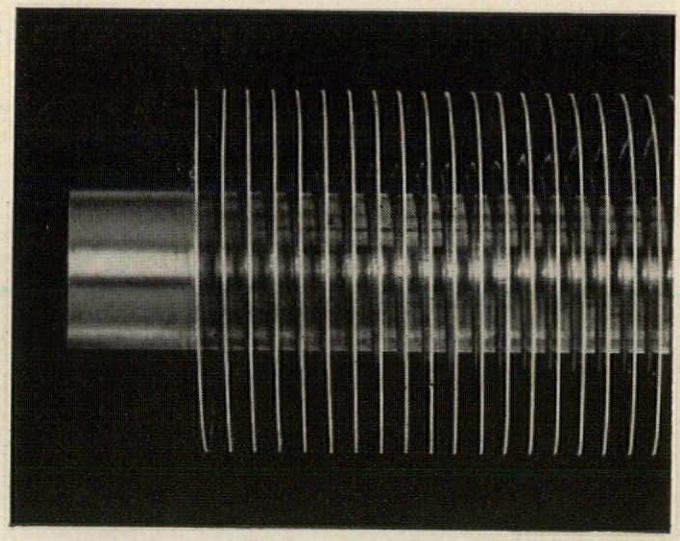

AEROFIN Smooth-Fin Coils offer you

Greater Heat Transfer
per sq. ft. of face area

Lower Airway Resistance
—less power per c.f.m.

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.

Write for Bulletin S-55

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Aerofin is sold only by manufacturers of fan system apparatus. List on request.

INLAND STEEL BUILDING, CHICAGO

Another outstanding building equipped with—

ULTRALITE Duct Insulation and Duct Liner, the long, textile-type glass fiber insulation.

SNAP*ON, the one-piece pipe insulation molded of fine glass fibers that simply snaps over the pipe . . . is *permanent* . . . and possesses the highest thermal efficiency of any pipe insulation for temperatures below 350°. Available plain or jacketed, in 3-foot or 6-foot sections in sizes up to 36".

For information, see Sweet's File, or call your local G-B distributor (listed in the Yellow Pages).

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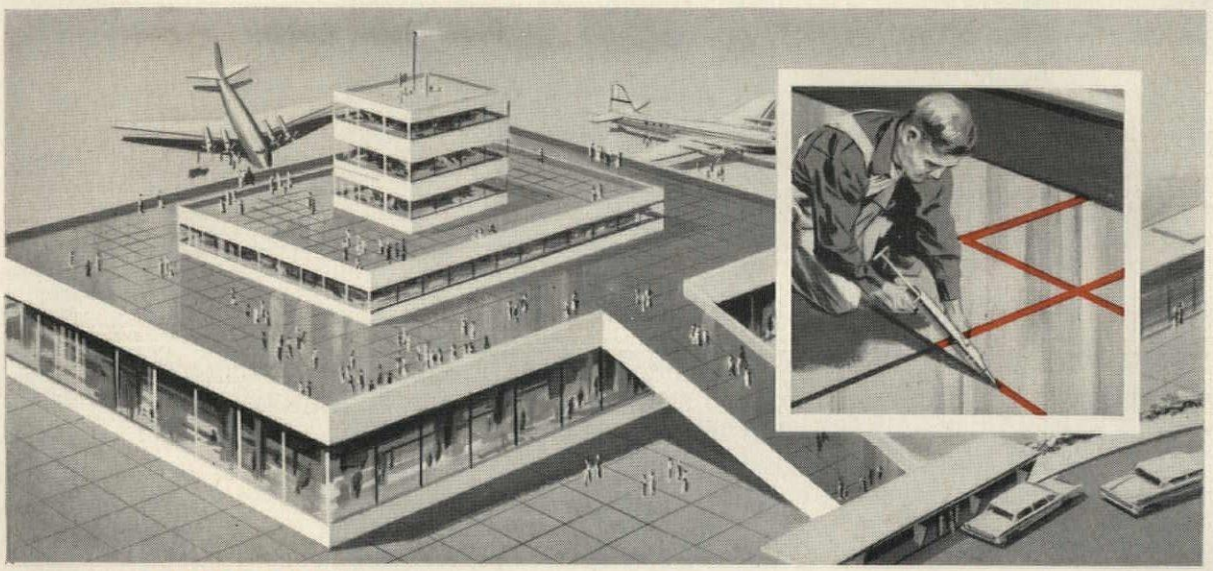
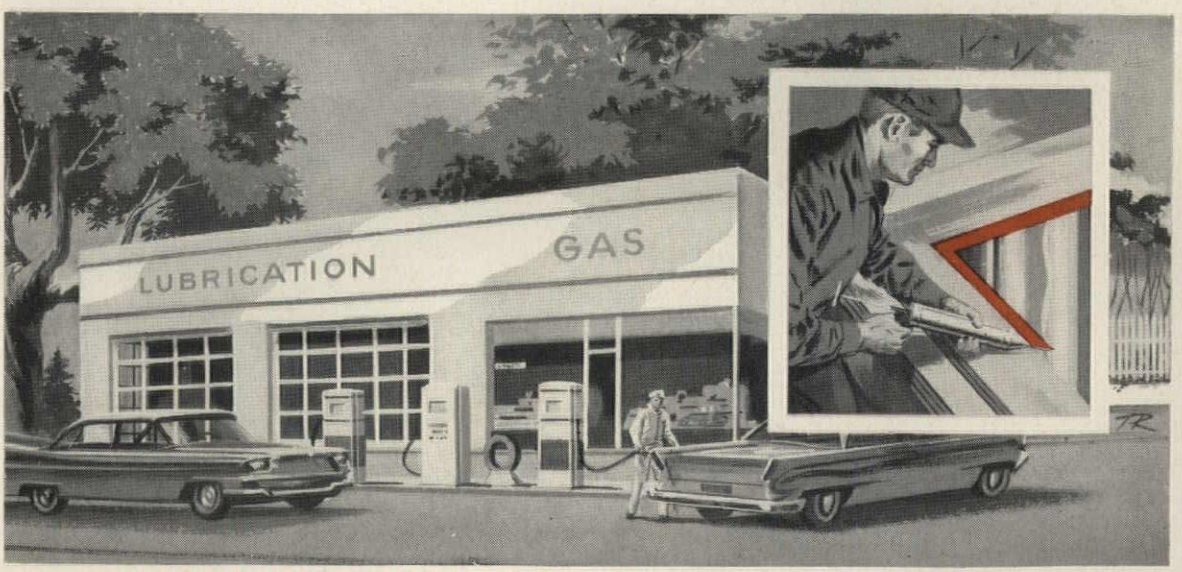
GUSTIN-BACON *Manufacturing Company*

224 W. 10th St. Kansas City, Mo.

CURTAIN WALL... For *sure* sealing protection on curtain wall buildings, specify new elastomeric type sealants based on THIOKOL liquid polymers.



ROOFTOP... If you want *weather-defying* seals on rooftop areas and ramps, specify modern polysulfide type elastomeric sealants—not conventional materials.



PRE-SEALING AT FACTORY... For *long-lasting* seals on prefabricated structures, only THIOKOL liquid polymer based sealants will do an all-around job.

When you want a building sealed... against movement and weathering ... specify

Thiokol polysulfide type elastomeric sealants

ELASTOMERIC-TYPE sealants based on THIOKOL liquid polymers are solving a wide variety of sealing problems in applications where ordinary caulking compounds have proven inadequate.

In curtain wall structures, for instance, the severe stress and strain exerted on expansion joints and copings are too extensive for conventional caulking materials. Polysulfide type elastomeric sealants, however, will withstand these strains with ease—and also provide resistance to wind, rain, weather and ozone.

Not only do they effectively adhere to glass, aluminum, porcelain, enamel, or any other building materials, but they also provide a seal for sure protection against buffeting winds. As a matter of fact, THIOKOL liquid polymer based sealants last so many years longer than conventional compounds, that they bring about reductions in the cost of curtain wall maintenance.

Thiokol®

CHEMICAL CORPORATION

®Registered trademark of the Thiokol Chemical Corporation for its liquid polymers, rocket propellants, plasticizers and other chemical products.

Highly Resistant to Oils and Solvents

Elastomeric sealants are also ideal for sealing joints in masonry and tile and other materials. They are extremely resistant to petroleum oils, solvents and gases. Their flexibility can be adjusted to meet specific applications.

Easily Applied at Ambient Temperatures

Because new thixotropic polysulfide type sealants can be cured at ambient temperatures and applied in a smooth flowing manner, they are especially appealing to manufacturers of prefabricated structures, gas stations, supermarkets, shopping centers, and even complete multi-building units. In fact, modern elastomeric sealants based on THIOKOL liquid polymers are becoming a necessity for *any* building application where exceptionally long-lasting, weather-defying seals are required.

FOR MORE INFORMATION:

Mail coupon to Dept. 31, Thiokol Chemical Corp., 780 N. Clinton Ave., Trenton 7, New Jersey. In Canada: Naugatuck Chemicals Division, Dominion Rubber Co., Elmira, Ontario.

Gentlemen: Please send me further details about elastomeric-type sealants based on THIOKOL liquid polymers.

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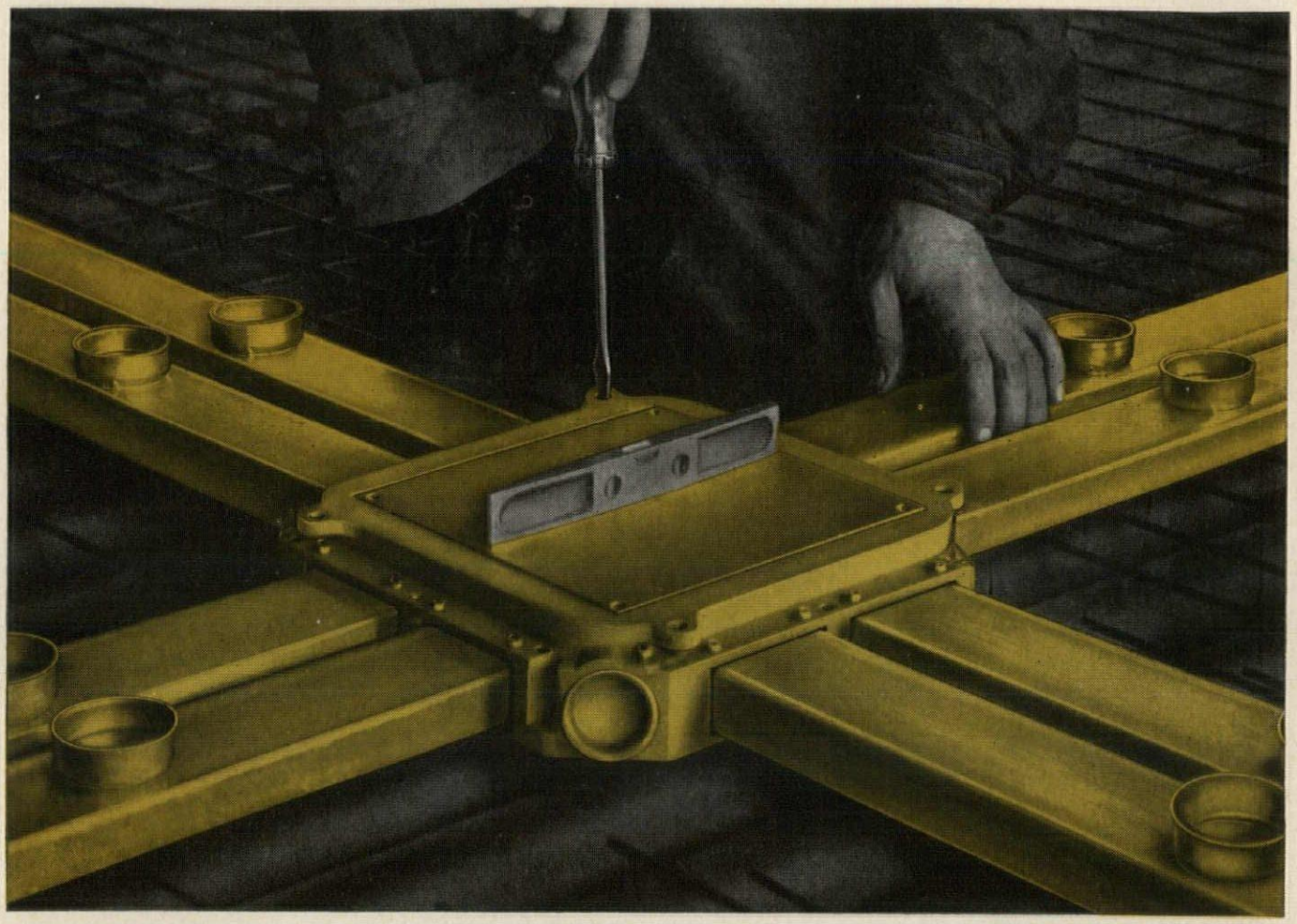
Your Name_____



Spang-Howarduct underfloor raceway for commercial and industrial installations carries wiring for electrical, telephone and signal systems. Outlets every 24 inches give abundant service, permit future office or machinery rearranging without expensive rewiring.

HOWARDUCT UNDERFLOOR RACEWAYS NOW A SPANG ELECTRICAL PRODUCT

Now—Howarduct Underfloor Raceway Systems are a part of the Spang electrical products line. And this means good things for you:

1. AN IMPROVED RACEWAY

Spang's years of diversified manufacturing experience now go into the production of Spang-Howarduct Raceways. Many product improvements have already been made to provide you with the best underfloor raceway on the market.

2. YOUR CHOICE OF 3 SYSTEMS

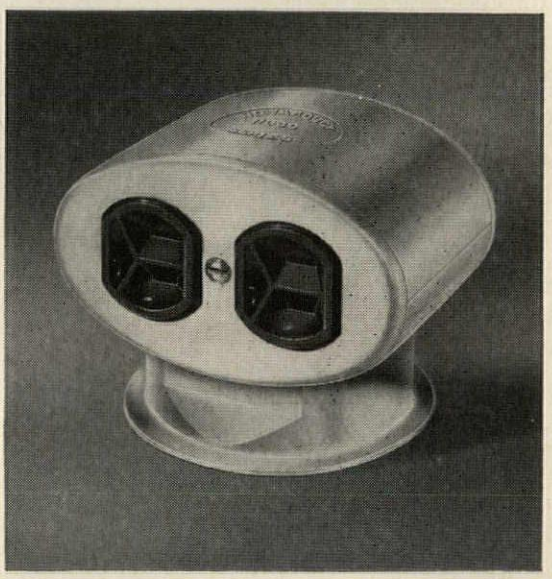
Standard duct for conventional installations . . . industrial duct for manufacturing plants . . . headerduct for use with cellular-type floor construction.

3. TOP-QUALITY FITTINGS

Available in brushed brass or aluminum finish. Recognized by architects, engineers and electrical contractors to be best in design and appearance.

WANT MORE INFORMATION?

For latest information on this new, improved product, write for our new booklet entitled "Spang Underfloor Duct."



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Division of The National Supply Company

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● FIVE YEARS of development plus three years of satisfactory performance in classrooms are proof of the design, construction and efficiency of RITTLING SCHOOLMASTER UNIT VENTILATORS.

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FIVE SIZES with unitized cabinet-convectors, SILVECTOR finned radiation, open shelf and closed cabinets give wide latitude to meet every classroom requirement.

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Write, phone MOhawk 2788, or mail coupon for your personal copy of the RITTLING SCHOOLMASTER UNIT VENTILATOR Catalog UV-1157.

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Please send us ____ copies of latest RITTLING SHOOLMASTER UNIT VENTILATOR Catalog UV-1157.

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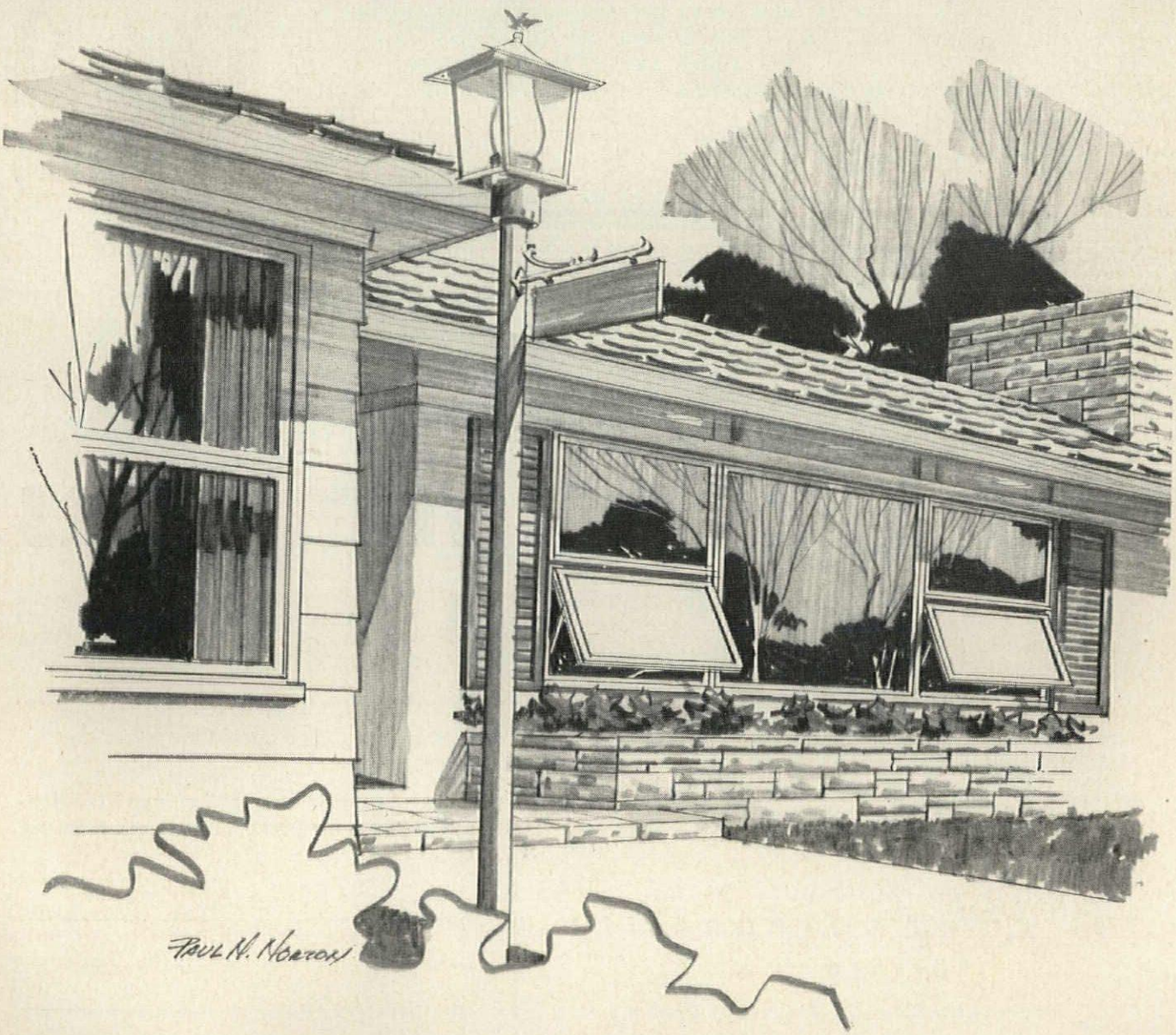
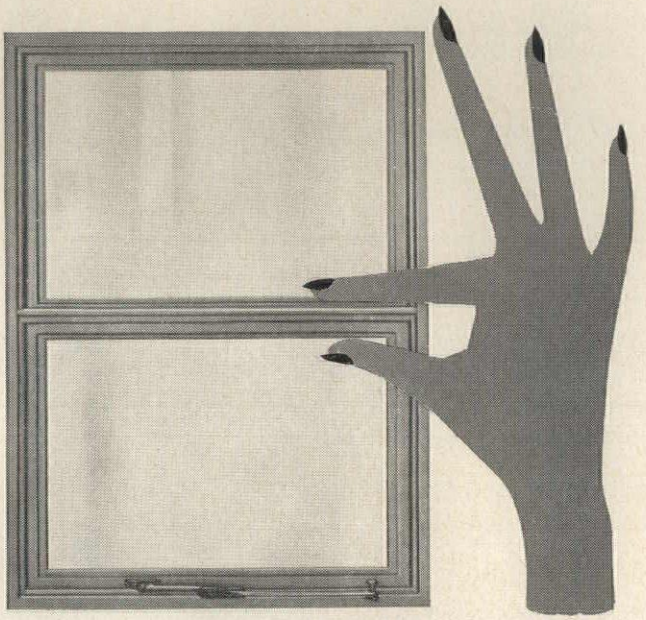


FOR THE ARCHITECT OR DESIGNER: new, slim joining mullion provides the advantage of attractive horizontal lines.

FOR THE BUILDER: Twin lights in Single Frame speed construction.

FOR THE HOME OWNER: The "double-hung" look with all the conveniences of modern awning windows.



Pella® twinlite

the awning window with young ideas

Composed of a fixed window at the top and a ventilating unit of equal size at the bottom, PELLA TWINLITE is available in seven modular sizes, including 32″ x 44″ frame widths. In addition a picture window in combination with a ventilating unit is also available.

Features like these are standard equipment: self-storing screens, in-the-sash storm panels, underscreen operator with exclusive Glide-lock, and complete weatherstripping. And!...they can be installed on their sides to form beautiful casements with narrow mullions.

For complete details, check and mail coupon today.

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Please send detailed literature describing Pella's new TWINLITE combination fixed and ventilating windows.

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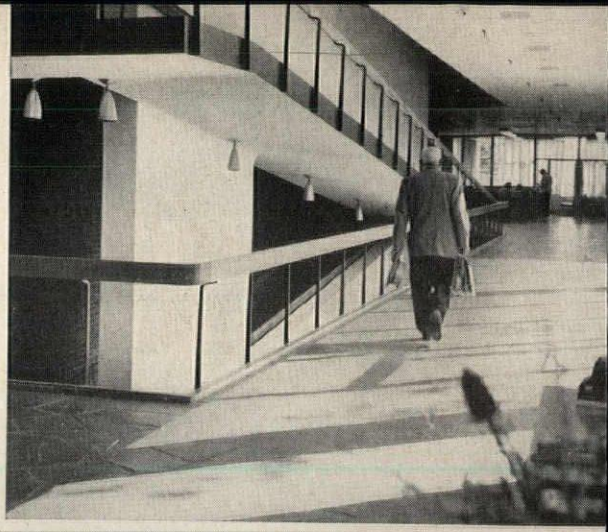
City_____ Zone_____ State_____

OFFICE BUILDING

WALTHAM, MASSACHUSETTS



AWARD WINNER- *1957 Grand Award, New England District, A.I.A.*

Structural steel framing was chosen to suit the light, free quality of space desired in this office building for Boston Manufacturers and Mutual Boiler & Machinery Insurance Companies. A careful analysis of the cost of steel compared with other structural systems, and an anticipated reduction in construction time helped the architects to reach a decision in favor of this material. They were able to give the clients the spans which best answered the space requirements, with a minimum of lost floor area due to columns.

Fireproofing of horizontal members was accomplished economically by the use of a fire-resistant mineral barrier as a mounting surface for the acoustic tile ceiling.

Anderson Beckwith and Haible, Boston, Mass.

General Contractor:
Turner Construction Co.

Structural Engineer:
Cleverdon, Varney & Pike

Steel Fabricator:
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A SIGNIFICANT NEW STRUCTURE . . . FRAMED WITH STEEL

This is the fourth in a series by Bethlehem Steel Company, Bethlehem, Pa.

BETHLEHEM STEEL

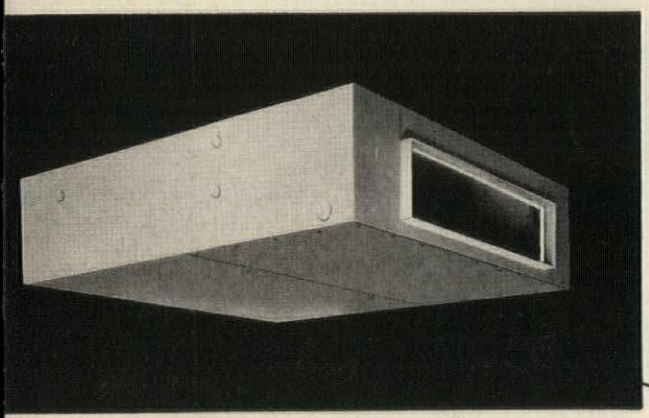
INDIVIDUAL ROOM COMFORT ALL YEAR 'ROUND WITH McQuay SEASONMAKERS

These McQuay Seasonmakers will furnish individual room comfort at any desired temperature level—heated, filtered air in the winter; cooled, dehumidified and filtered air in the summer—when used with a hot or chilled central water supply.

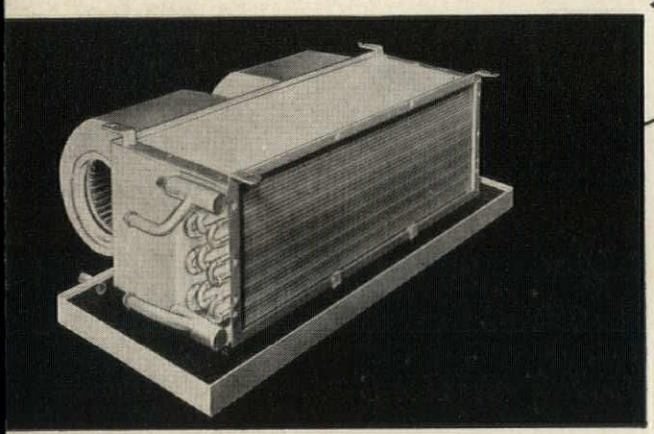
McQuay Seasonmakers are particularly designed for multi-room buildings, such as hotels, apartments, motels, hospitals, schools, offices and residences. All have the famous McQuay Ripple-Fin coils and are exceptionally quiet, handsome and built to last, with life lubricated fan motors having inherent overload protection with automatic reset. There are four types in a wide variety of sizes and capacities, each with 3 speed motor control switch.

Large size Ceiling and Hideaway Seasonmakers having nominal capacities of 2, 3 and 5 tons are also now available for commercial or residential applications where a duct air distribution system is necessary. Units available for Freon applications.

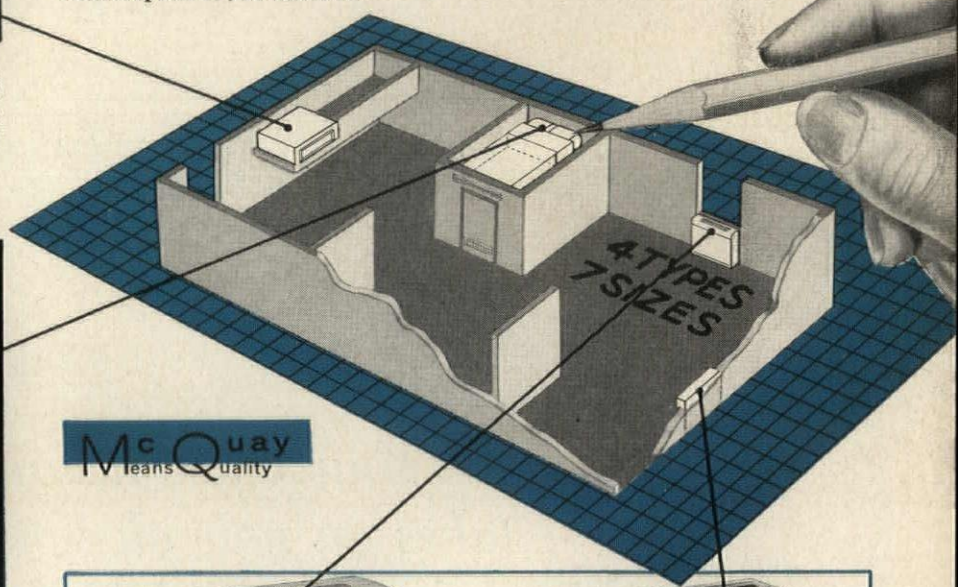
Whatever your requirements may be, you'll find McQuay Seasonmakers will meet them—and do the finest possible job. For complete information and specifications, call in the McQuay representative in or near your city. McQuay, Inc., 1605 Broadway St. N. E., Minneapolis 13, Minnesota.



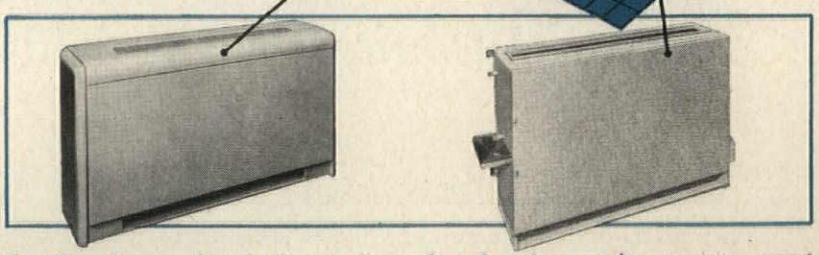
Ceiling Type Seasonmaker—for suspended mounting. 7 sizes, 200 to 2,000 c.f.m., ½ to 5-ton nominal cooling capacity. Thermally and acoustically insulated.



Hideaway Type Seasonmaker — for concealed, suspended mounting in closets, attics, or furred spaces. 7 sizes, 200 to 2,000 c.f.m., ½ to 5-ton nominal cooling capacity. Insulated drain pan.



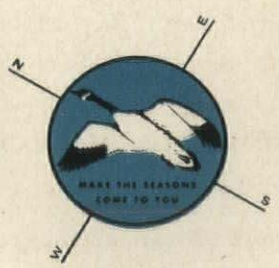
McQuay Means Quality



Floor Type Seasonmaker—for free standing floor mounting. 4 sizes, 200 to 600 c.f.m., ½ to 2-ton nominal cooling capacity. Thermally and acoustically insulated. Choice of 3 air discharge grilles.

Basic Type Seasonmaker—for fully recessed built-in wall installations. 4 sizes, 200 to 600 c.f.m., ½ to 2-ton nominal cooling capacity. Thermally and acoustically insulated.

McQuay INC.



AIR CONDITIONING
HEATING
REFRIGERATION

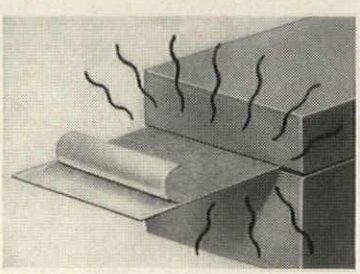
Samsonite Exclusive!

SAMSONITE PLASTISHIELD

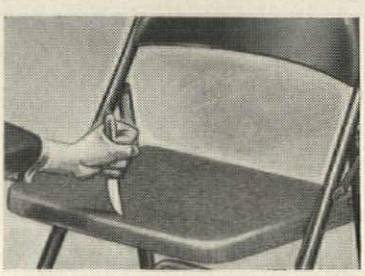
brings the upholstered look to the world's strongest steel chair.

Your office instantly takes on new elegance with Samsonite PlastiShield *folding chairs*

What is the secret of PlastiShield? Samsonite has discovered that vinyl sealed to steel actually is more durable—actually resists damage better. What's more, PlastiShield actually has the look and feel of fabric to go along with its colossal strength. Samsonite PlastiShield is guaranteed by GOOD HOUSEKEEPING to be stain-proof, slash-proof, even burn-proof. Choose from washable tan or grey monk's cloth patterns.



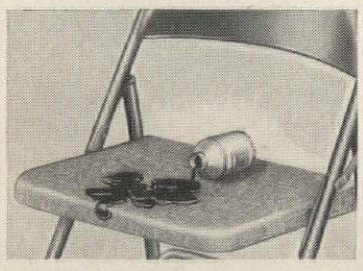
The PlastiShield Process!
Vinyl is laminated to steel through Samsonite's exclusive thermal-pressurized process that renders it virtually indestructible.



Samsonite is Slash-Proof!
Knife blades are ineffectual against PlastiShield's surface. Samsonite PlastiShield chairs won't cut, nick or tear—stay new looking years longer.

Samsonite . . . *also makers of Classroom Furniture*

Samsonite is Burn-Proof!
Cigarettes are no match for Plasti-Shield's surfaces. Let them burn right down to the tip—and take a look! Not a sign of sear or singe.



Samsonite is Stain-Proof!
Why cry over spilled ink? Plasti-Shield's protective surface sponges clean. Even nail polish or polish remover rubs right off.

SHWAYDER BROTHERS, INC., Dept. AR-2,
Institutional Seating Div., Detroit 29, Michigan

Write Today for free informative booklet, PlastiShield sample discs. Make your own tests. Prove that PlastiShield resists damage better.

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ACCEPTED *Allen* ROOF VENTILATION

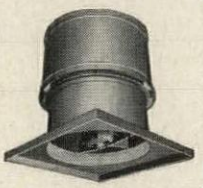
Whatever your ventilating needs, be sure to see how Allen equipment can meet your requirements efficiently and economically.

NEW "I-LINE" for EYE APPEAL

The new "I-Line" provides an attractive low contour, assuring maximum capacity or efficiency with the minimum over-all height.

POWERFUL "VD" for HIGH VELOCITY

By moving a large volume of air at high velocity, this Vertical Discharge fan keeps fumes from sifting back into building.



Allen

. . . is prepared to investigate ventilating problems and plan systems for the efficient removal of heat, fumes, vapor or dust.

WIND-DRIVEN TURBINES

Three types of Allen turbines take full advantage of the economy of natural air movement.

EXHAUST FANS

Remote drive Staxauster is designed to handle corrosive fumes, and/or high temperature air.

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Write today for catalog that gives specifications and performance data on these and other units in the Allen ventilator line.

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ALLEN COOLER & VENTILATOR, INC.
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Roof Ventilators for Every Commercial and Industrial Need
REPRESENTATIVES IN PRINCIPAL CITIES

SPECIFY QUALITY WITHOUT MENTIONING THE WORD

Schieber introduced folding table and bench equipment 26 years ago and today, thousands of schools, plants and institutions are equipped with the company's products. There is a model for each application to meet restricted budgets by making space serve double duty—Each model built to high Schieber standards and fully guaranteed up to 10 years.

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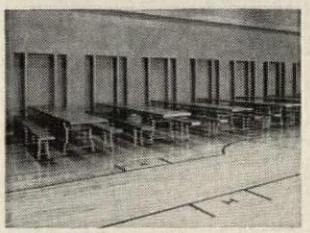
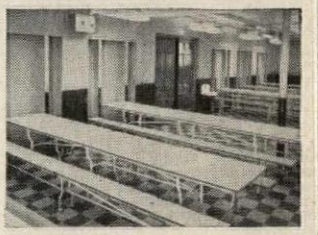
We will furnish on request, complete specifications and detail drawings on all models. Our representatives are completely qualified to consult with you on applications, make recommendations and quote prices.



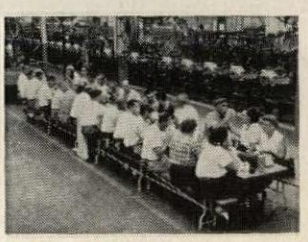
PUBLIC SCHOOL, S. W. Haynes & Assoc., Inc., Architects



PAROCHIAL SCHOOL, J. Gerald Phelan, Architect

COMMUNITY HOUSE, Edward A. Schilling, Architect

FIRE STATION, Jahr-Anderson Assoc., Inc., Architects



LARGE PLANT

SMALL PLANT

Sweet's File 23i Sc

Schieber SALES COMPANY
Detroit 39, Michigan

Representatives in all areas U.S. and Canada

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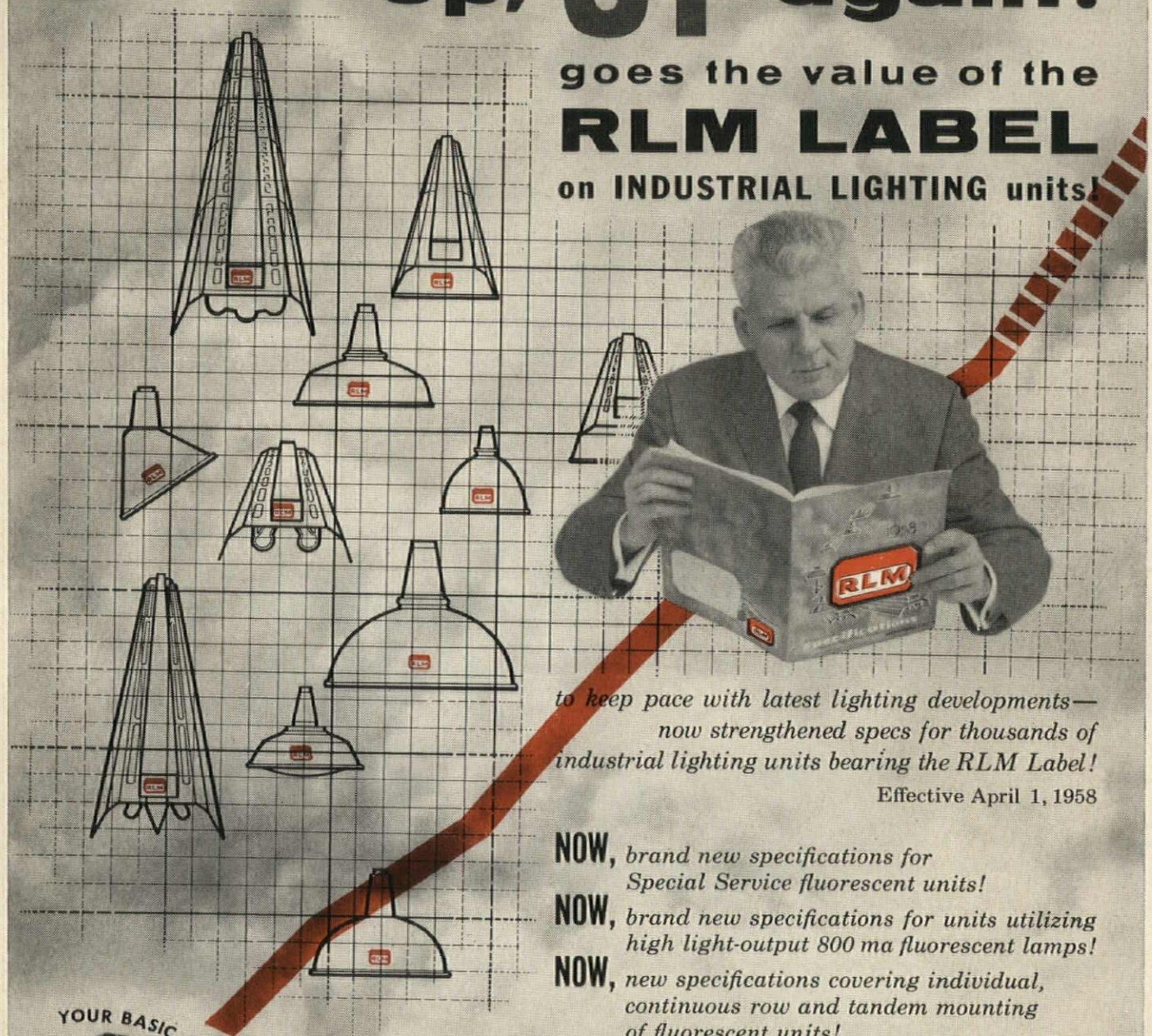
goes the value of the RLM LABEL on INDUSTRIAL LIGHTING units!



to keep pace with latest lighting developments—
now strengthened specs for thousands of
industrial lighting units bearing the RLM Label!

Effective April 1, 1958

NOW, *brand new specifications for Special Service fluorescent units!*

NOW, *brand new specifications for units utilizing high light-output 800 ma fluorescent lamps!*

NOW, *new specifications covering individual, continuous row and tandem mounting of fluorescent units!*

NOW, *new additional specifications for incandescent units!*

YOUR BASIC ASSURANCE OF HIGH QUALITY

This label identifies the RLM-certified lighting equipment of 26 leading manufacturers

RLM again steps up Basic Quality Standards for the thousands of types, sizes and mounting systems of industrial lighting units covered by RLM Specifications. It means that lighting-wise and construction-wise, RLM-labeled units are today an even better Quality Buy!

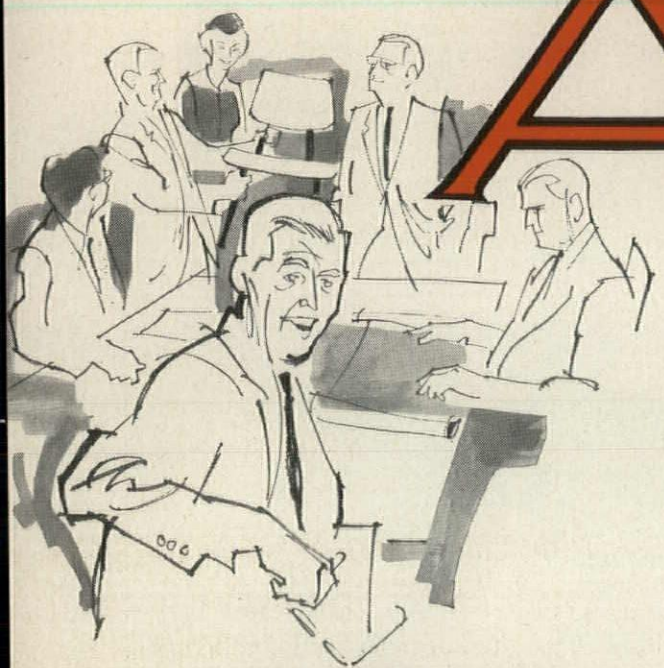
RESERVE NOW YOUR FREE 1958 RLM SPECIFICATIONS BOOK!
Your complimentary copy will be sent as soon as published. In the interim mimeographed copies of the new specification changes will be sent to you with a copy of the present edition.

R-233

RLM Standards Institute, Suite 827, 326 W. Madison St., Chicago, Illinois

Q A

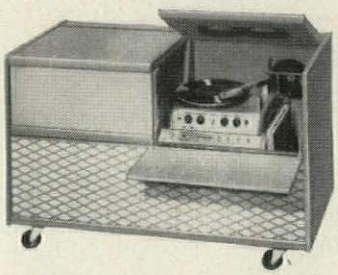
How Can You Tell Which School Furniture To Buy?



Look For Two Things First, it must satisfy the *educational* needs of your teachers and students. Second, it must satisfy the economic requirements of your community. *Brunswick does both.*

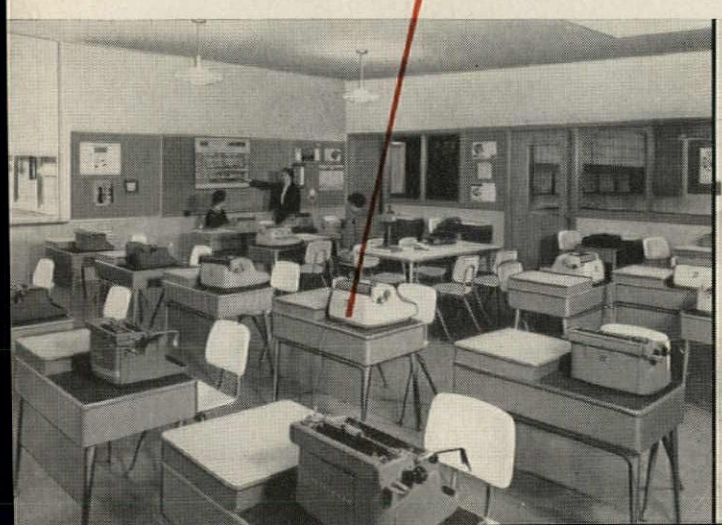
For Brunswick School Furniture of Advanced Design—and *only* Brunswick—measures up to the highest standards of educational function—for comfort . . . for flexibility in use . . . for aesthetic purposefulness. It is the only line designed expressly to answer the researched needs of educators, administrators, teachers . . . designed for *learning.*

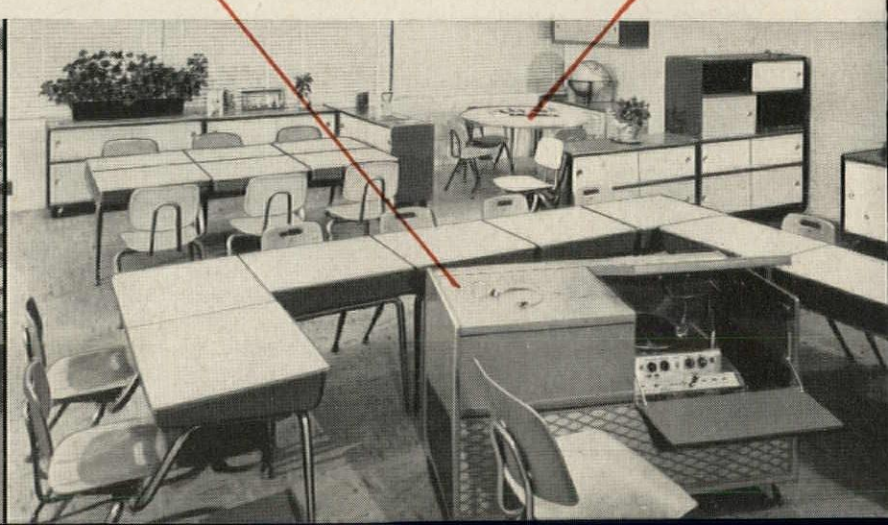
TYPE RIGHT This complex motor skill is learned properly and rapidly on the new exclusive-design Brunswick Adjustable Typing Desk. Instant-adjustment to the proper keyboard level may be made within a 5 inch range. And there it stays! Made to accommodate any typewriter, manual or electric. Companion Bookkeeping and Business Machine Desks will round out your department.



NOW HEAR THIS Flexible Brunswick Furniture is grouped around the versatile, Brunswick Audio Console ready for a productive audio session. Hi-Fidelity unit plays all record speeds; may be moved from room to room for speech, language, folk dancing, music appreciation—literally hundreds of teaching applications. Serves as a public address system for as many as 1,000 persons.

ROUND TABLE CONFERENCE or isolated reading-study project group will work well over this practical 48" Round Brunswick Table. Multi-purpose Brunswick Round, Half-Round, Trapezoidal and Rectangular Tables come in 5 heights for all grade levels. Notice how Cabinets are used as room dividers, lend privacy to the reading corner. Learning is really fun in this fourth grade.





Invest in **Brunswick**

SCHOOL FURNITURE

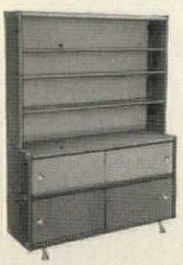
for better learning . . . for lasting service

Secondly—and this is most important today—Brunswick—and *only* Brunswick—satisfies your requirement for maximum dollar value. Each and every piece is constructed to give many *plus* years of rugged in-use service . . . at the absolute lowest maintenance and replacement cost.

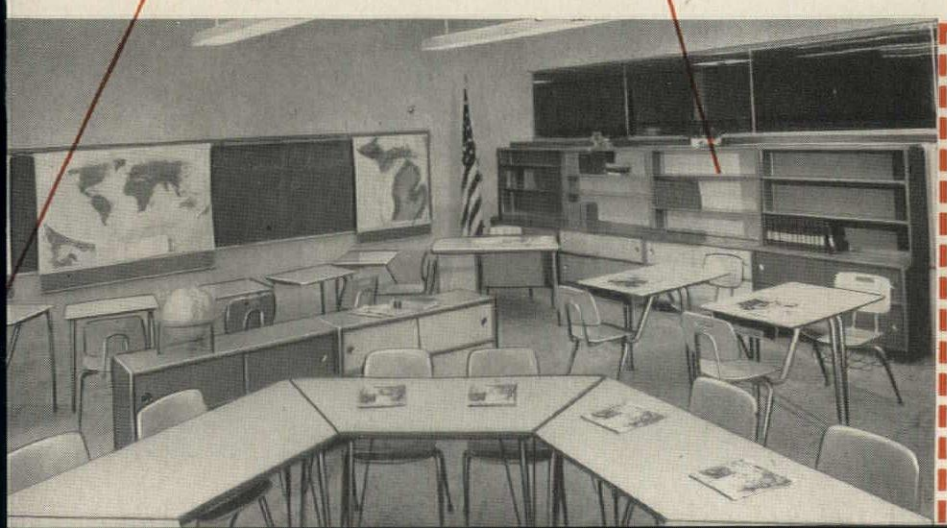
Proof of Brunswick superiority Since its introduction to the field more school districts have switched to Brunswick than to any other line made!

Compare . . . and you will, too.

INDIVIDUALIZED UNITS or GROUPED versatile Brunswick Study Top Combinations in 2 secondary school sizes provides learning-perfect posture. Compound-curved seats and backs, of course. Oversized writing surface. Has no unsightly cross bracing to interfere with the room . . . or slow down the custodian. Under seat or side book rack optional.



FLEXIBLE new Brunswick 10-inch deep Cabinet units atop versatile 2-tier cabinets make a complete reference-storage section. Movable, colorful cabinets may be used along walls, as room dividers—on legs, casters or metal bases. Quality controlled factory-built Brunswick Cabinets can be disassembled and reassembled in minutes—real flexibility.



Come . . . See . . .

ANOTHER BIG INDUSTRY FIRST!

By Brunswick

1958 AASA CONVENTIONS

St. Louis	February 22-25	Space B14-22
San Francisco	March 8-11	Space 545-549
Cleveland	March 29-April 1	Space E12-E20

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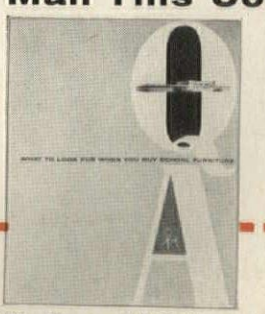

for idea-filled 12-page Free Booklet.

PLEASE TURN PAGE

The Brunswick-Balke-Collender Company
623 South Wabash Avenue, Chicago 5, Department 152

PLEASE SEND_____copies of "What To Look For When You Buy School Furniture" to:

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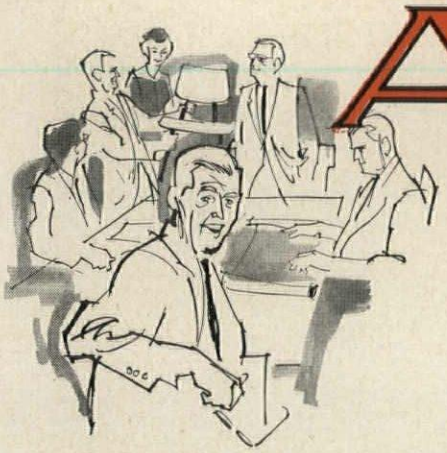
Brunswick

FOLDING PARTITIONS



Q & A

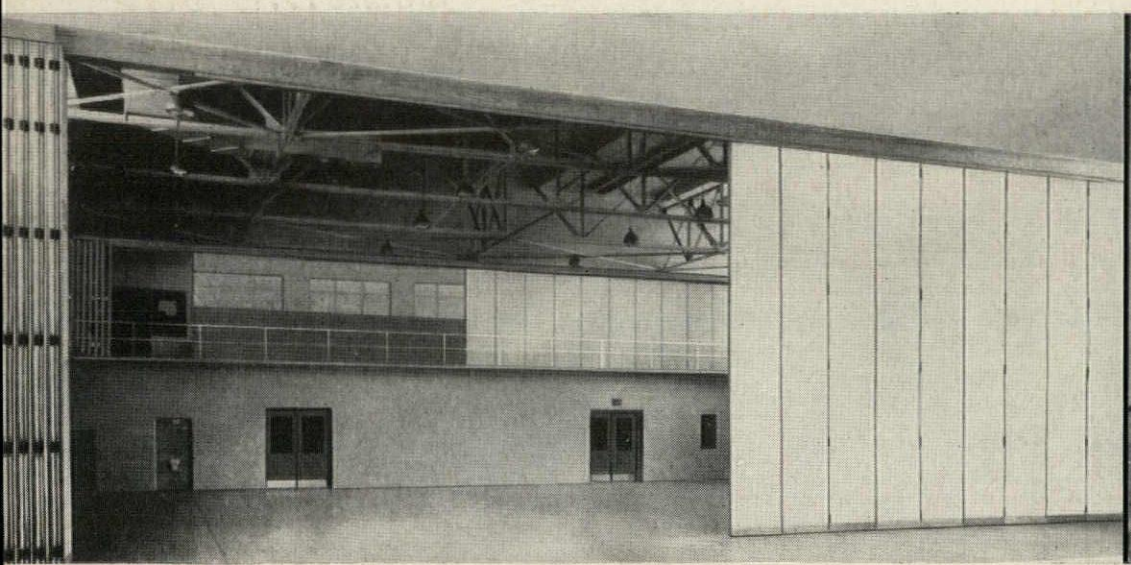
How Can You Stretch Your Limited Space?

Ask Your Architect about Brunswick Folding Partitions.

More students? Limited Space? Why not take a cue from the thousands of schoo now using versatile Brunswick Folding Partitions to gain double . . . triple . . . a more! . . . space utilization. Brunswick Folding Partitions make three gymnasiu out of one . . . transform a large cafeteria, multi-purpose room, assembly ha dormitory into several self-contained areas.

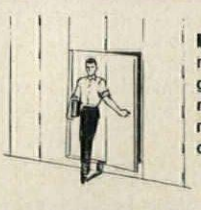
Brunswick Folding Partitions are factory constructed to your specificatio Surfaces may be faced in Aluminum, Plywood (any grain or veneer) or Roll Du for painting after installation.

5 Panels or 50—Brunswick Folding Partitions are Built to Last The Lifetime of Your Buildin



REALLY RUGGED! Aerocore panels—a Brunswick exclusive—give top strength at minimum weight. Less stress on overhead supports. Open smoothly whether electrically or manually operated.

NOT A WHISPER Special honeycomb construction, pre-assembled jams and self-leveling bottom seal assure maximum sound reduction.



IN AND OUT Folding Partitio may be had with pass-doors strat gically placed to meet the passa needs of your areas. Semi-priva may be had by partially opening o or both Folding Partitions.

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- ☐ Brunswick Folding Gym Seats
- ☐ Brunswick Basketball Backstops
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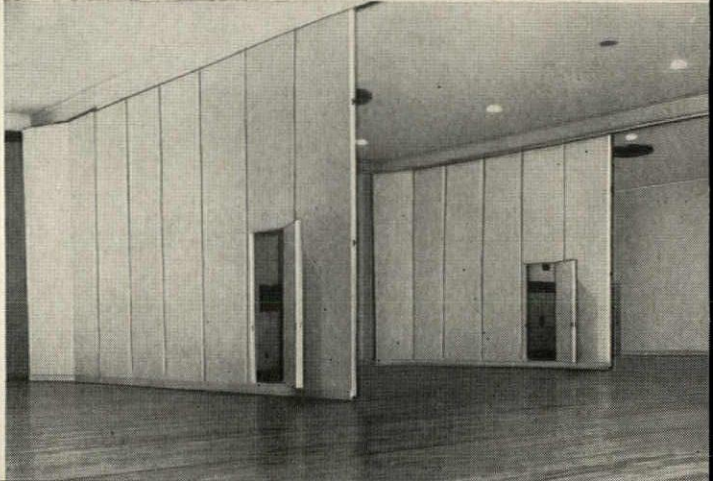
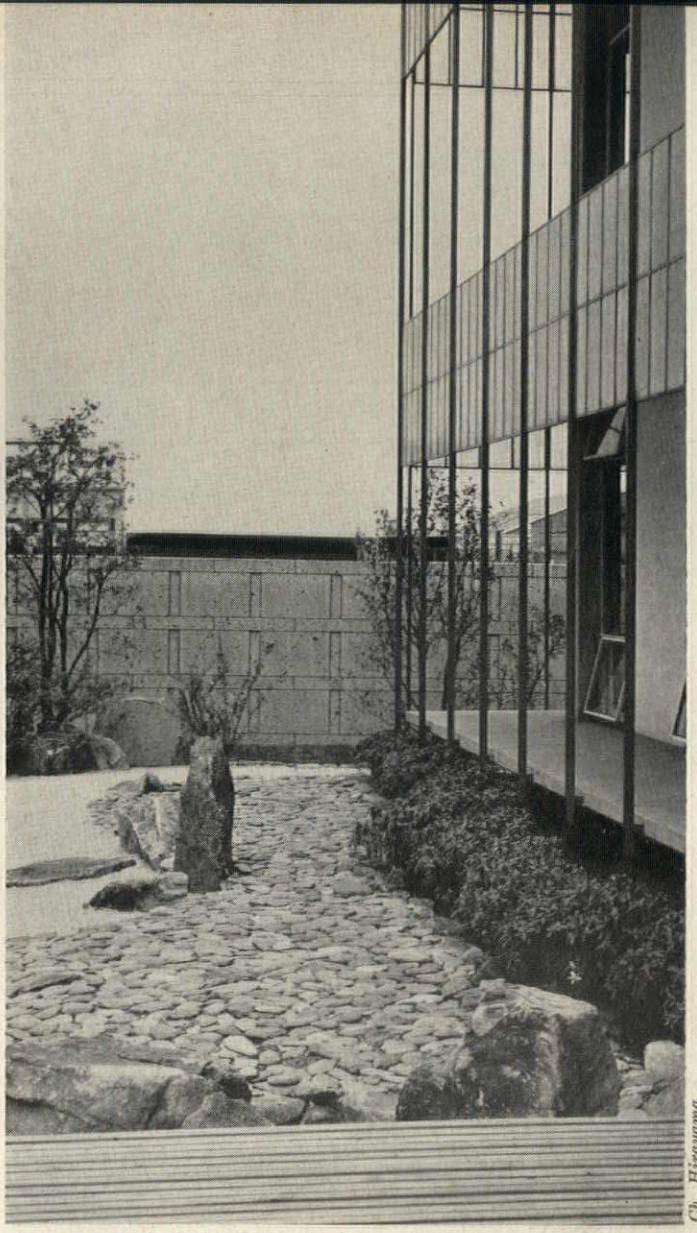
for more information on the many uses, features and advantages of Brunswick Folding Partitions.



ARCHITECTURAL RECORD
FEBRUARY 1958



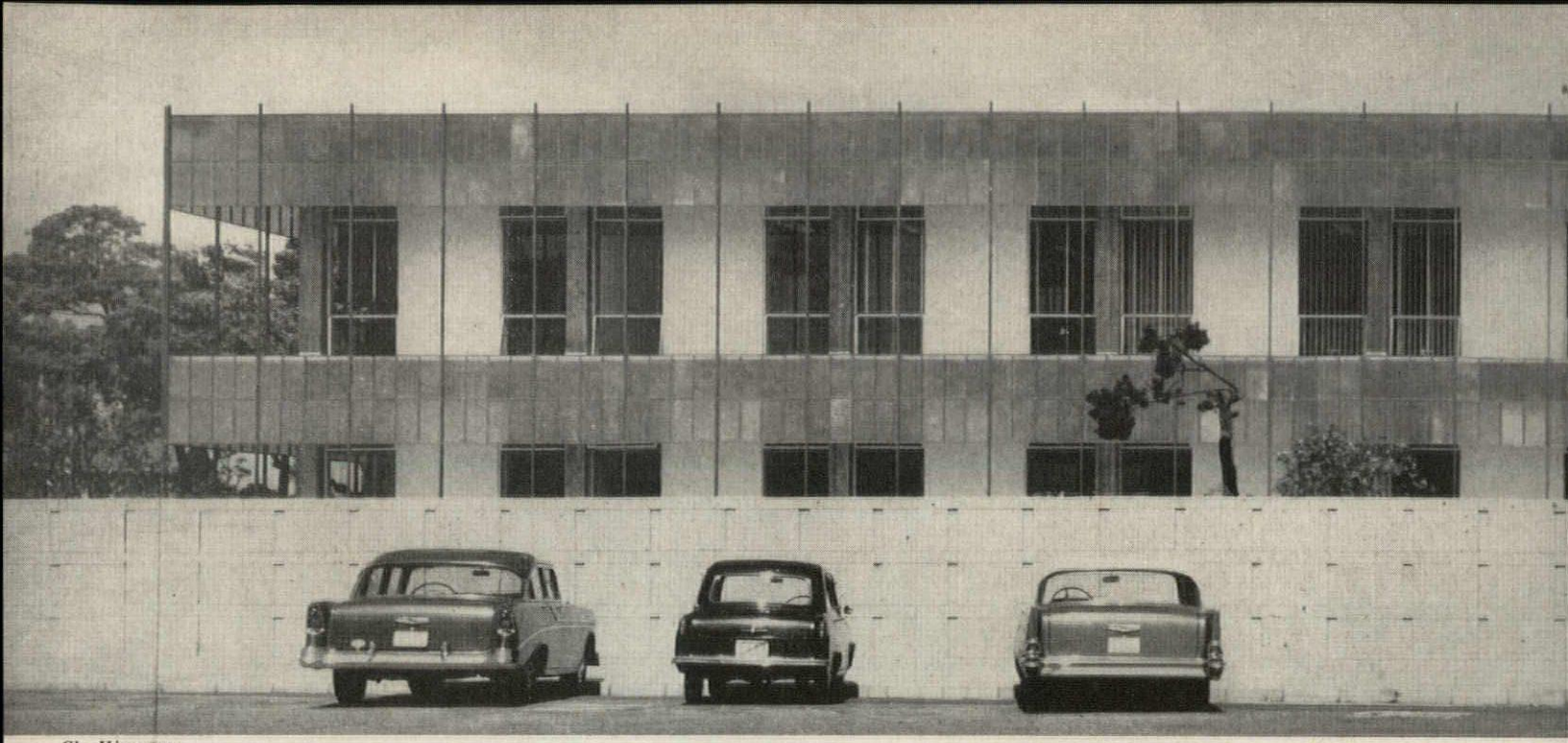
Ch. Hirayama

A Compliment To Traditional Japanese Architecture

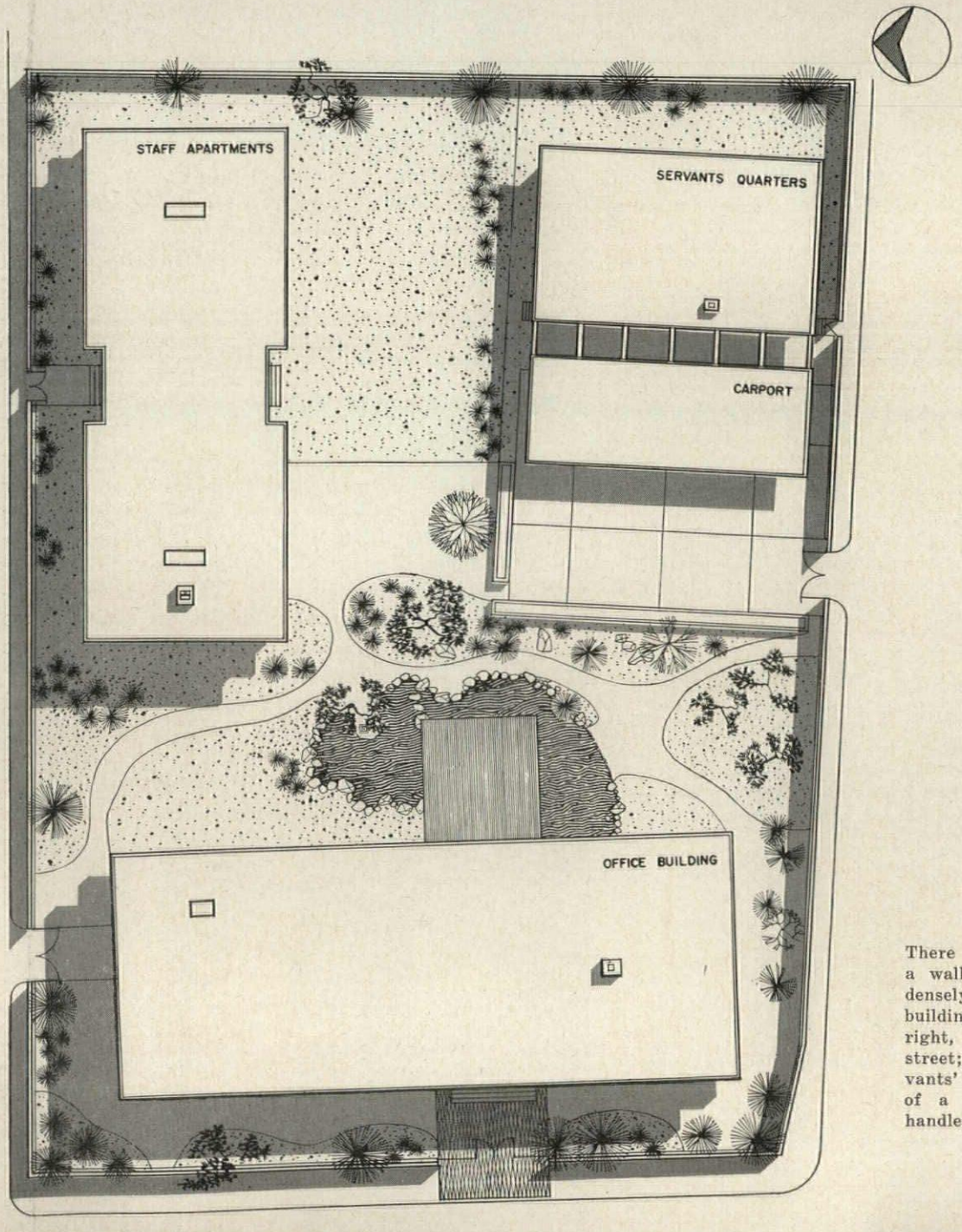
With completion of the new U. S. Consulate General Headquarters in Kobe, the Japanese have been tendered a gracious double compliment. The State Department—through its enlightened Foreign Buildings Operation—selected as architect Minoru Yamaski, a native-born American of direct Japanese descent. Yamaski then gladly acknowledged—and indeed the building itself makes clear—the strong influence traditional Japanese ethos and architecture have played in both his philosophy and design for the project.

An exterior feature is the screen of plastic and white bronze suspended from the overhanging slab edges, designed to reduce sun-glare and air-conditioning load. Its interior effect is reminiscent of shoji; the photo above emphasizes its delicacy.

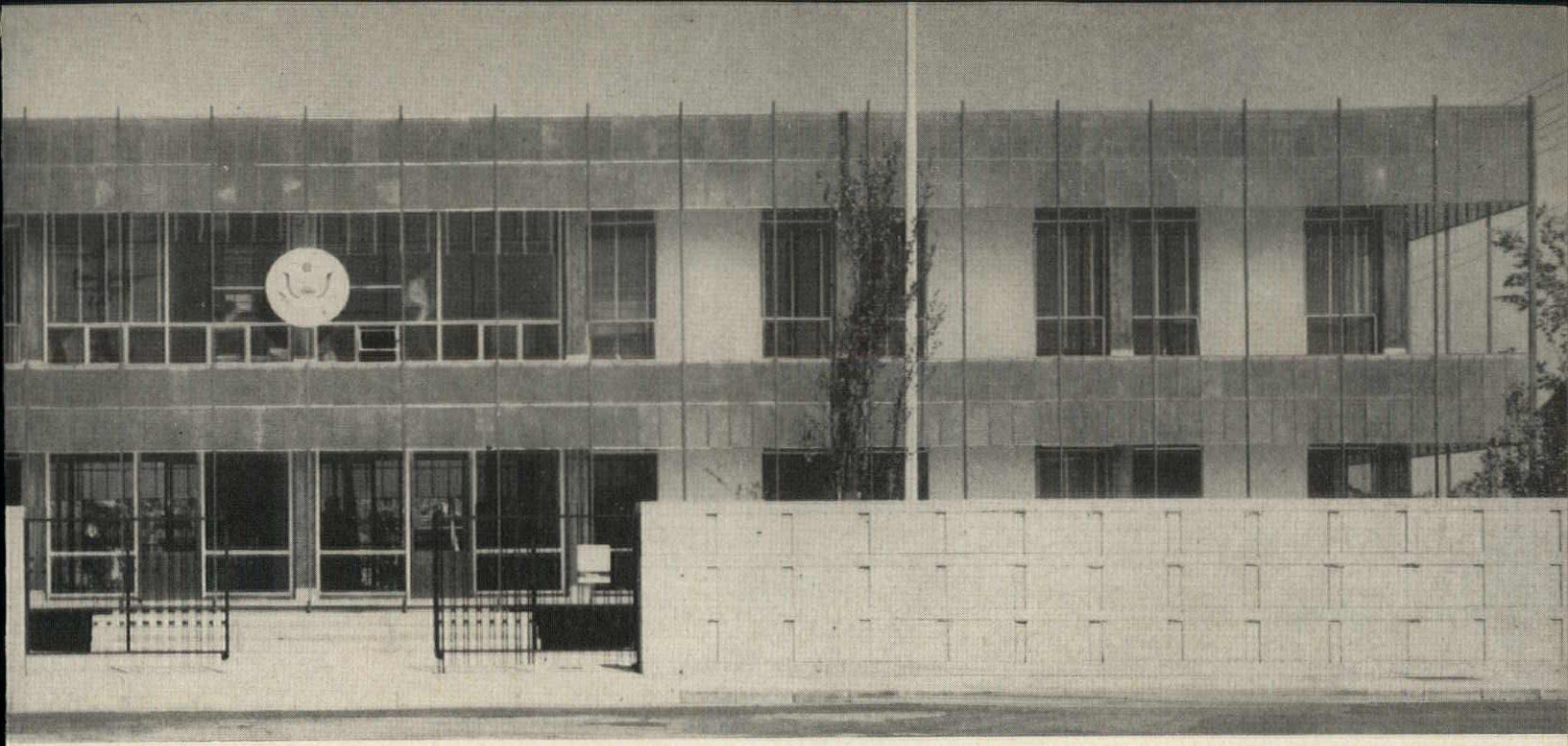
Pattern against pattern: right, entrance gate shadows play tricks with sidewalk pattern; above, delicate sun-screen of plastic and white bronze offers striking contrast to concrete building columns and Oya stone wall



Ch. Hirayama



There are three buildings within a walled compound, located in a densely built-up area. The office building, pictured above and at right, faces west to the principal street; staff apartments and servants' quarters lie north and south of a central garden, beautifully handled in Japanese style



U. S. Consulate, Kobe, Japan

Yamasaki, Leinweber & Associates, Architects

Yoshikatsu Tsuboi, Structural Engineer

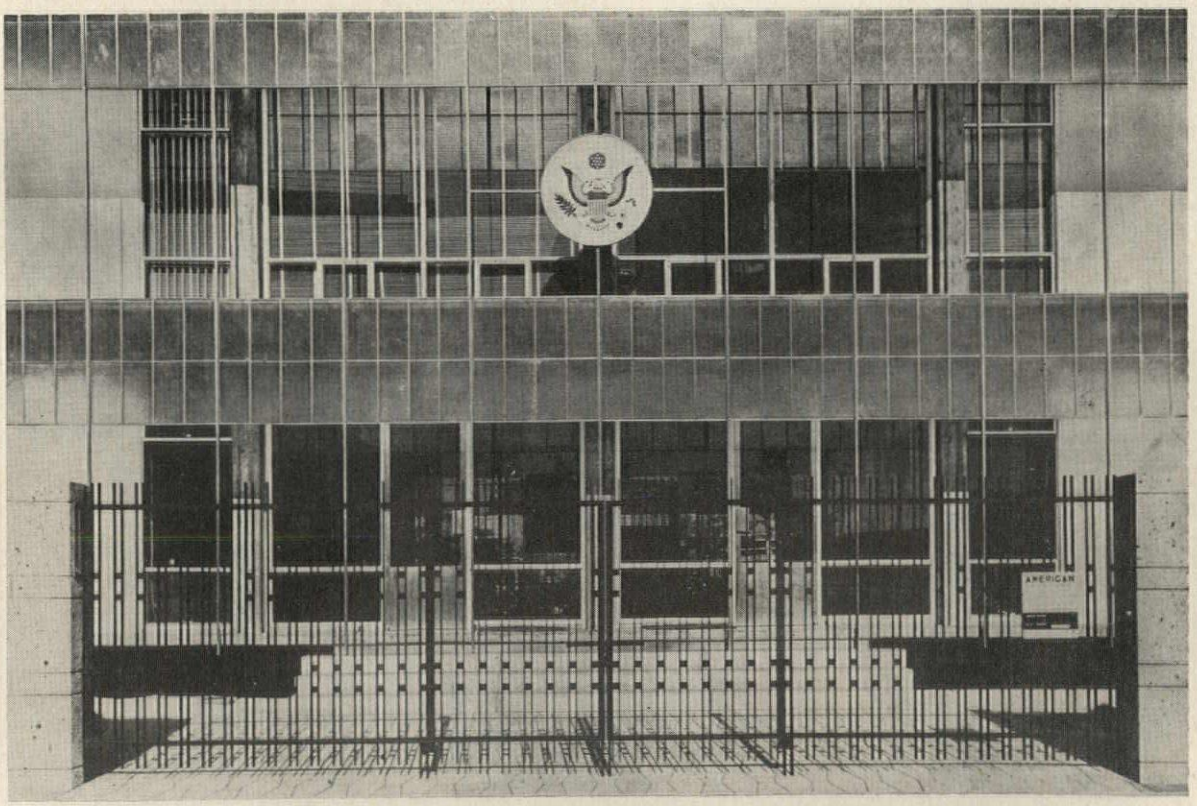
Ichiro Mori, Field Supervisor

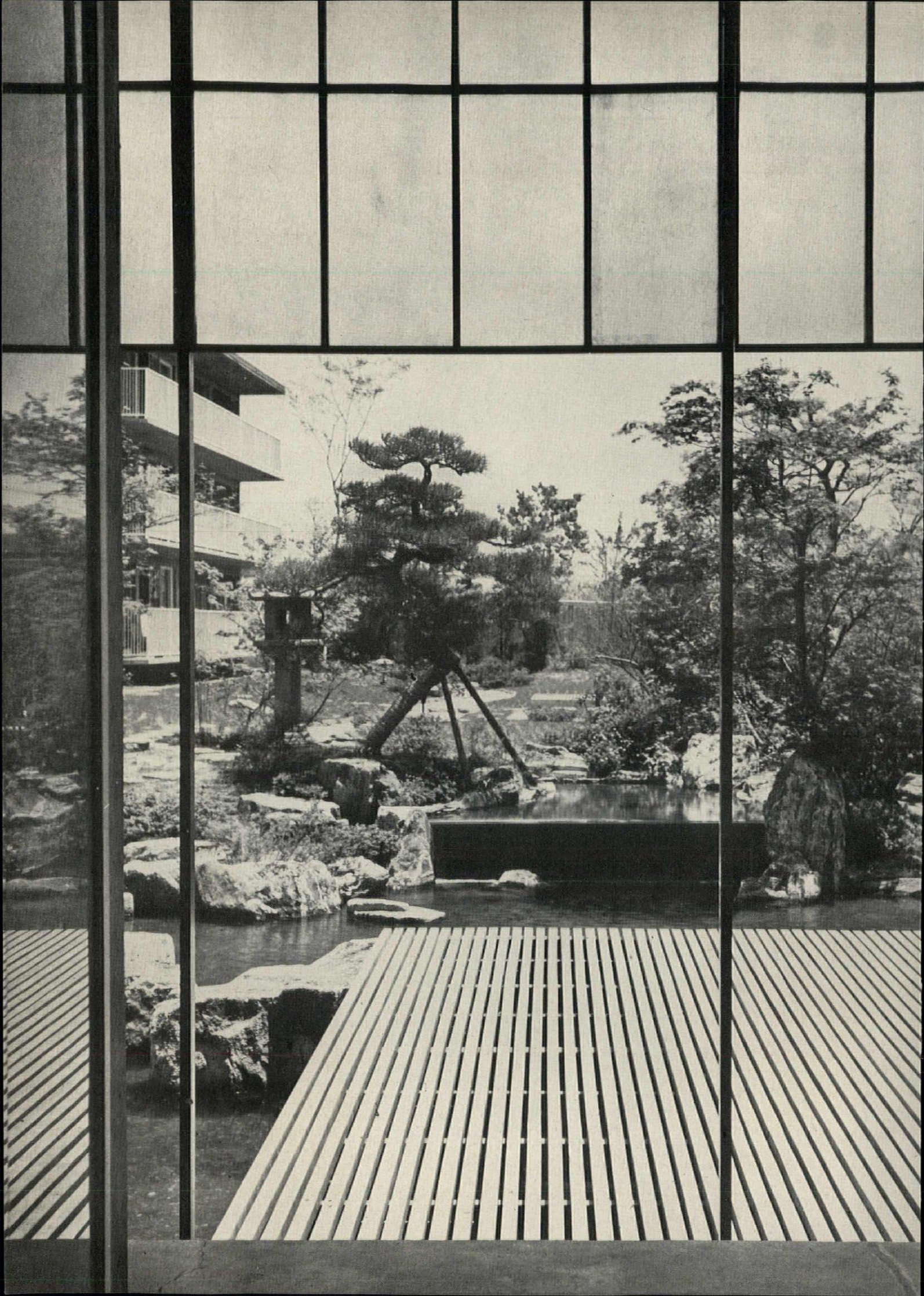
Ken Nakajima, Landscape Architect

Obayashi Gumi, General Contractors

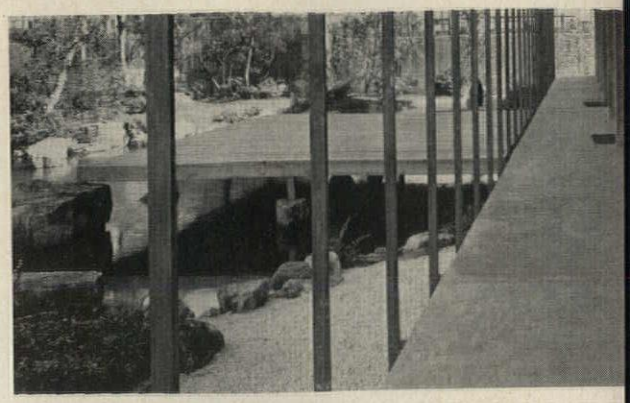
The twin ideas of the walled compound for protection and the platform raised above grade both stem from Japanese history—and both are used here. They serve the practical purpose of needed flood protection (there are wooden flood gates with rubber gaskets for the wall) but more importantly—quoting Yamaski—they result in "a Japanese look."

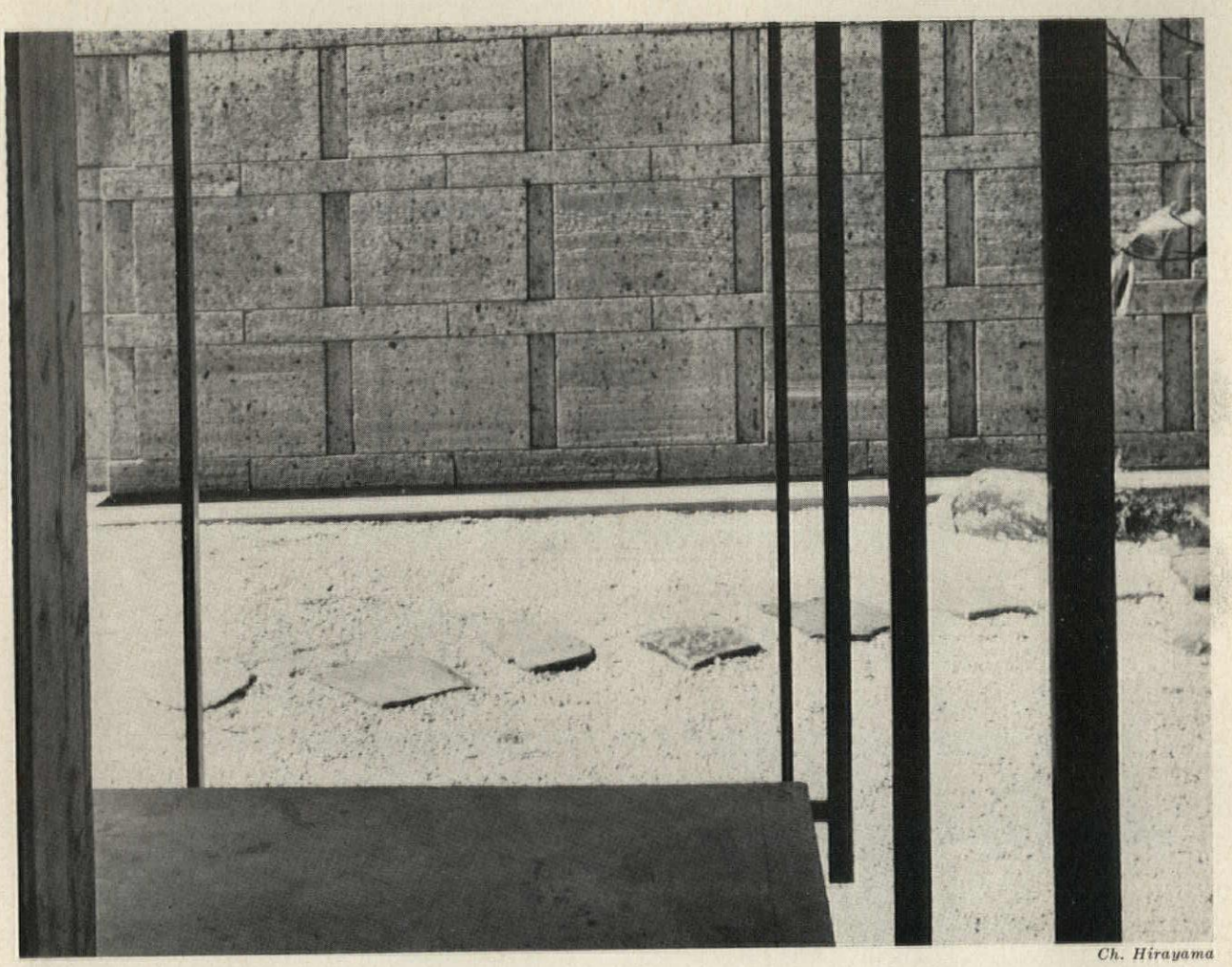
The apparently paradoxical provision of proper earthquake protection and slender columns was achieved by a system of tile-clad, reinforced concrete shear walls between columns for lateral stiffness.





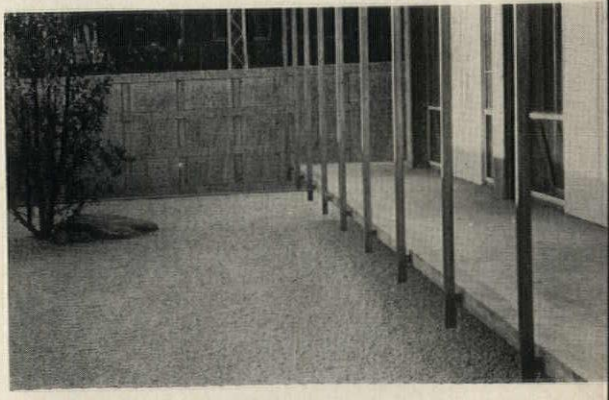
U. S. Consulate, Kobe



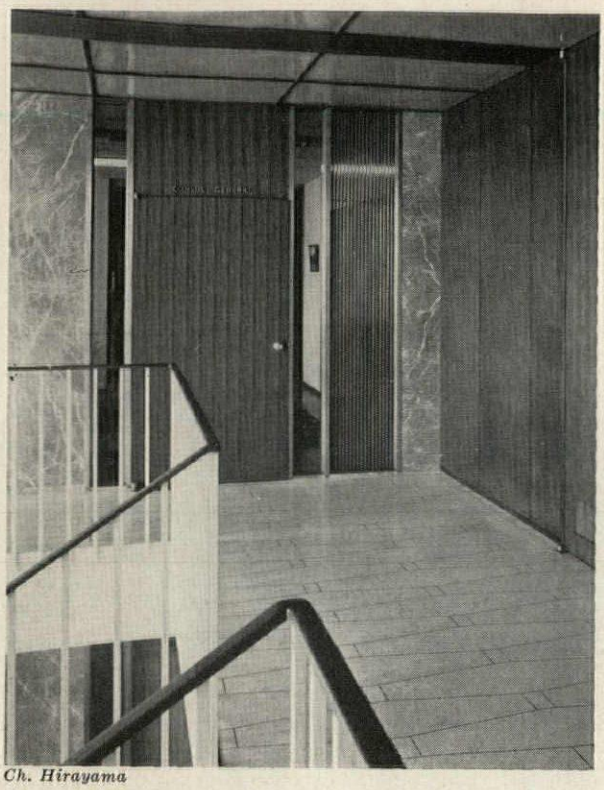


Ch. Hirayama

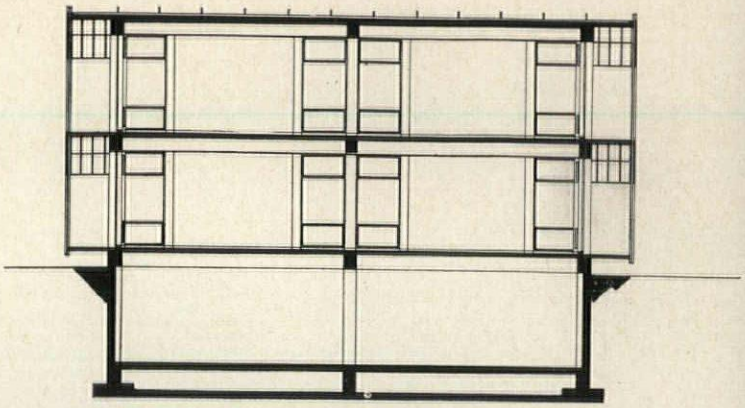
According to Yamasaki, the Japanese feel a garden presents its most favorable aspect when seen from above rather than from ground level, since the loveliest parts of plants and flowers are those reaching upwards to the sun and sky. Thus, the traditional raised platform for viewing the garden. Japanese gardens are often conceived as including the three elements—earth, sky and water; and when water is used, it is usual to make both its source and its outlet visually apparent. The raised platform concept and the Japanese garden have been carried out with distinction here in the Kobe Consulate.



U. S. Consulate, Kobe

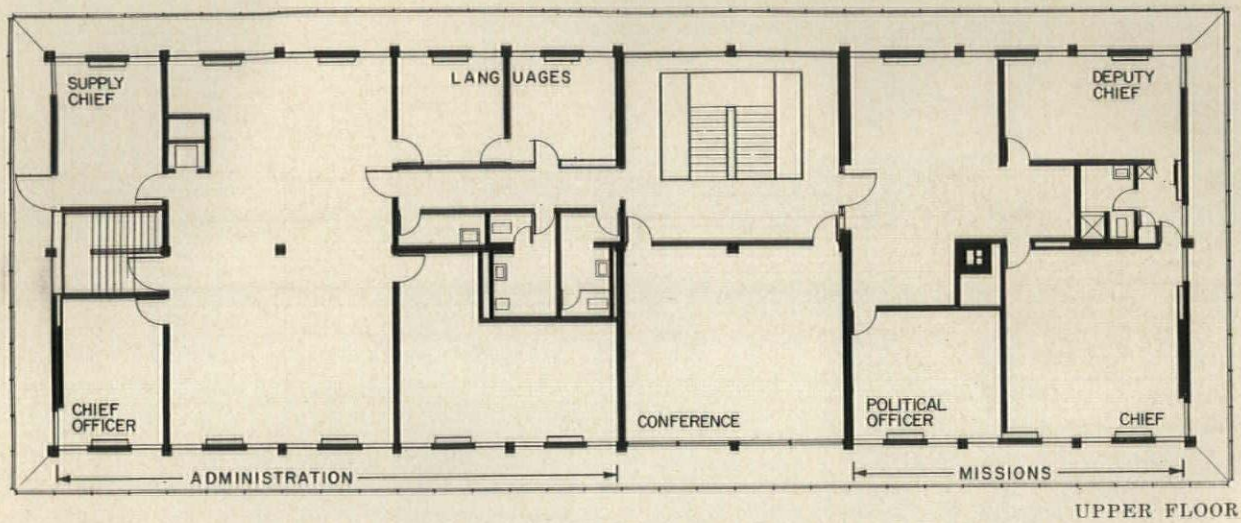


Ch. Hirayama



Office building interiors are characterized by meticulous attention to detail. Patterned beige terrazzo floors; gray-beige Japanese marble walls, stair treads and risers; teakwood; stair baluster of steel painted white with wood handrail; plaster soffits.

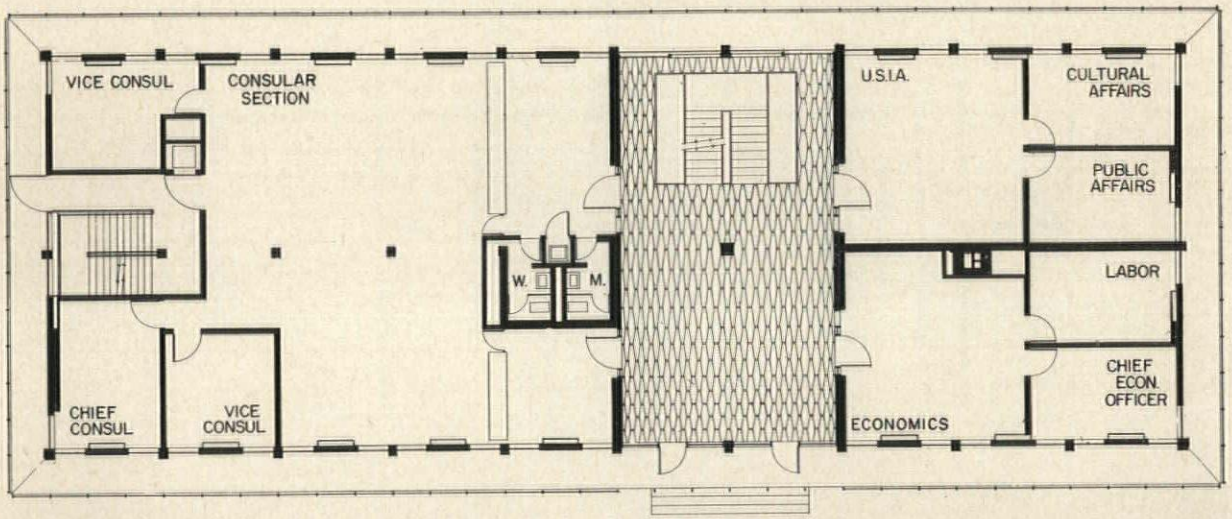
The typical cross section, above, shows the double basement floor, necessitated by sandy soil and a hydrostatic head. Water collected in the shallow subbasement is pumped to the street sewer above.



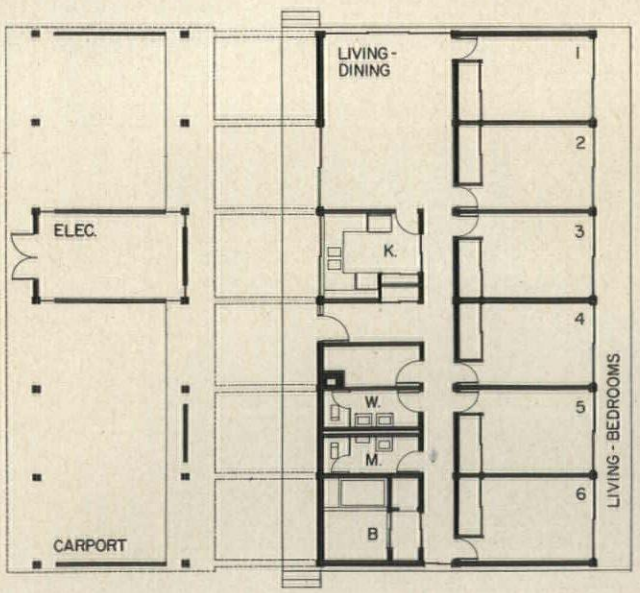
UPPER FLOOR

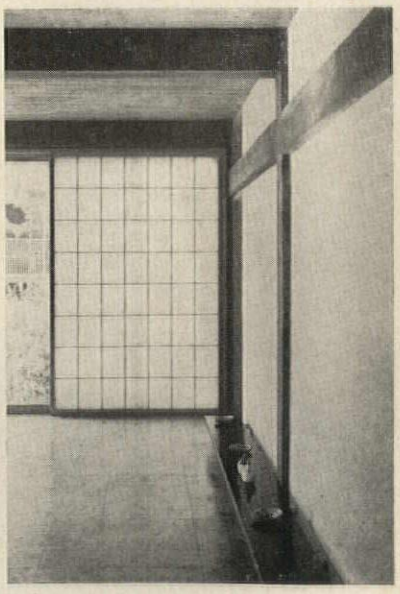
MAIN OFFICE BUILDING

GROUND FLOOR



Ch. Hirayama

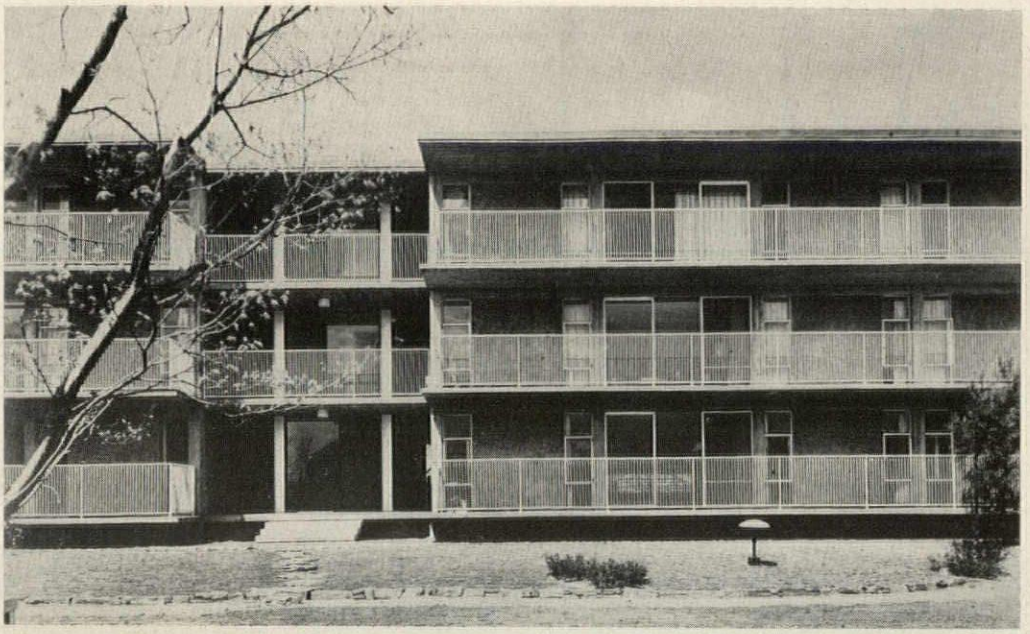


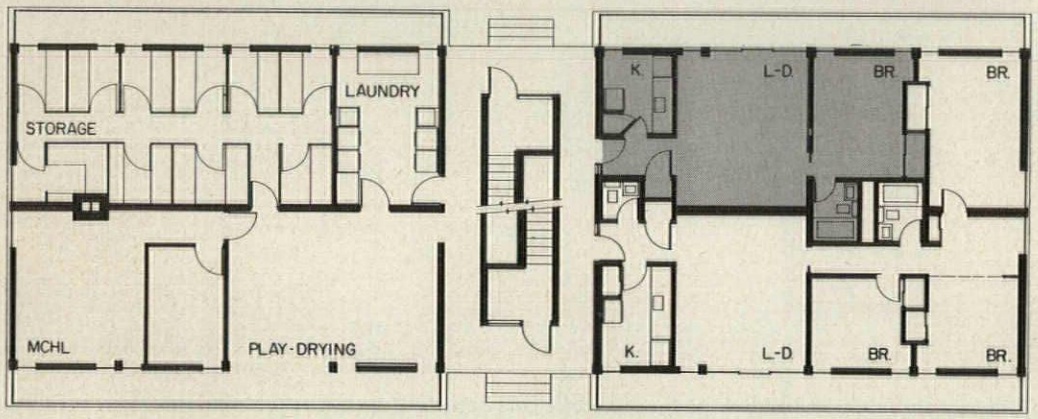


SERVANTS QUARTERS

The servants' quarters are executed in the traditional idiom with sliding rice paper shoji for exterior walls and tatami, or floor mats. The latter permit daytime removal and storage of sleeping covers so rooms can be used for living and study. This could not be done, of course, were beds provided.

Ch. Hirayama



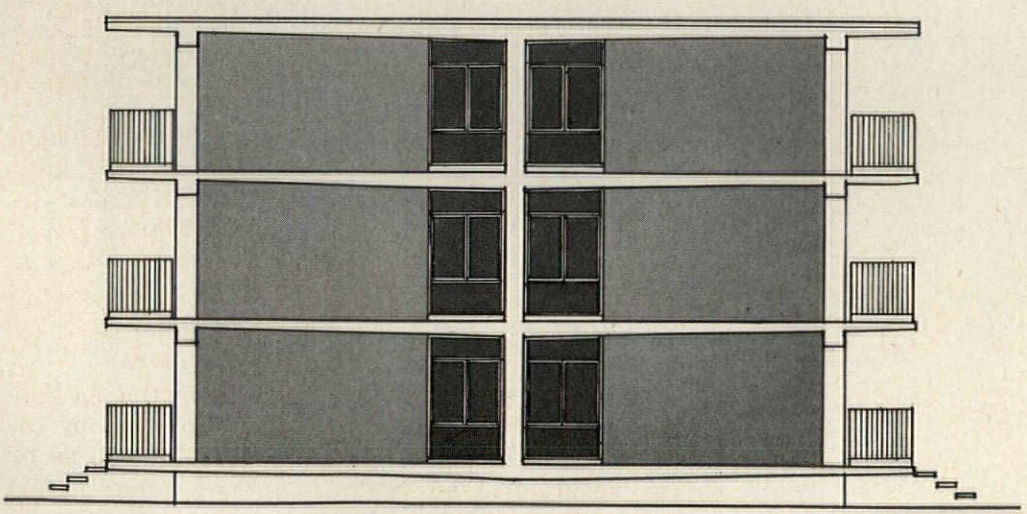


STAFF APARTMENTS

U. S. Consulate, Kobe

For the staff apartment house, ground floor services are shown in left half of plan. Apartment layouts at right are then repeated on all upper floors.

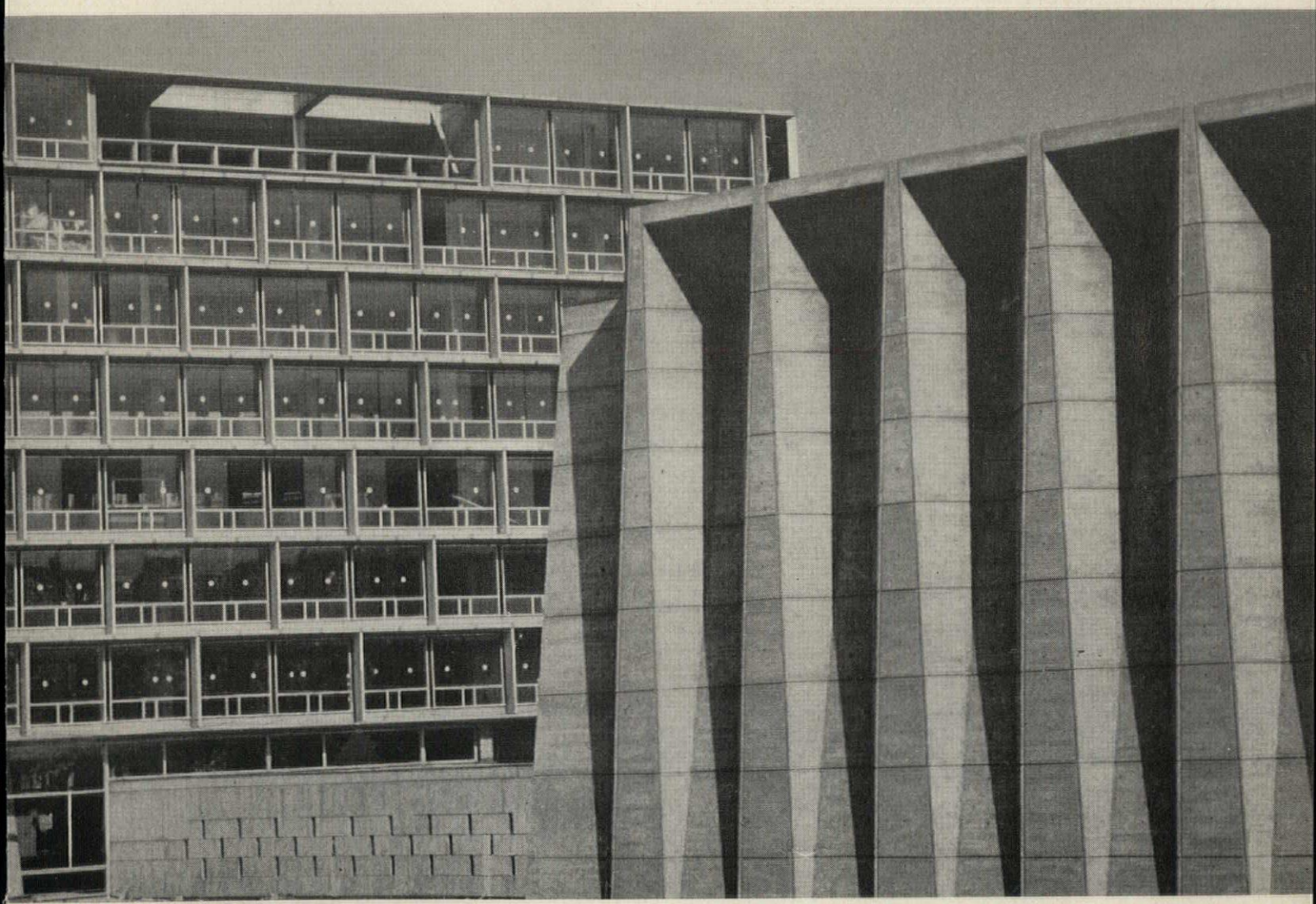
End walls are faced with Araidashi, consisting of selected ⅛ to ¼ in. round black stones set in concrete which is partly brushed away to provide an interesting and attractive textured surface.



Contrasts in Concrete

Unesco Headquarters, Paris
Marcel Breuer, Architect
Bernard Zehrfuss, Architect
Pier Luigi Nervi, Engineer

The architecture of concrete permits the development of new structural forms which become an integral part of a building. It is therefore essential to the achievement of results structurally correct and architecturally pleasing that the engineer and the architect collaborate from the very beginning on the development of the project. It becomes also of the utmost importance to consult with the contractor before any final decisions are made, since a concrete work is not assembled by bits of material prefabricated in a factory [except for precasting which is increasing in popularity], but is molded into a unique structure by methods of construction that may influence its economy and its appearance.



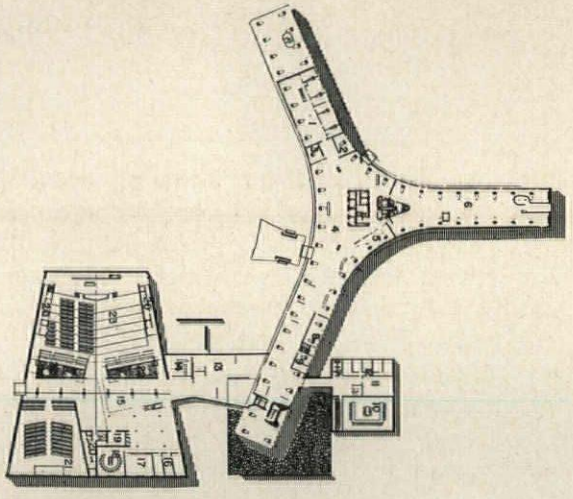
Text by Mario G. Salvadori

Renderings by Orseo Tamburi

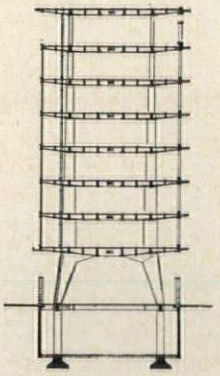
Photos by Marc Riboud — Magnum

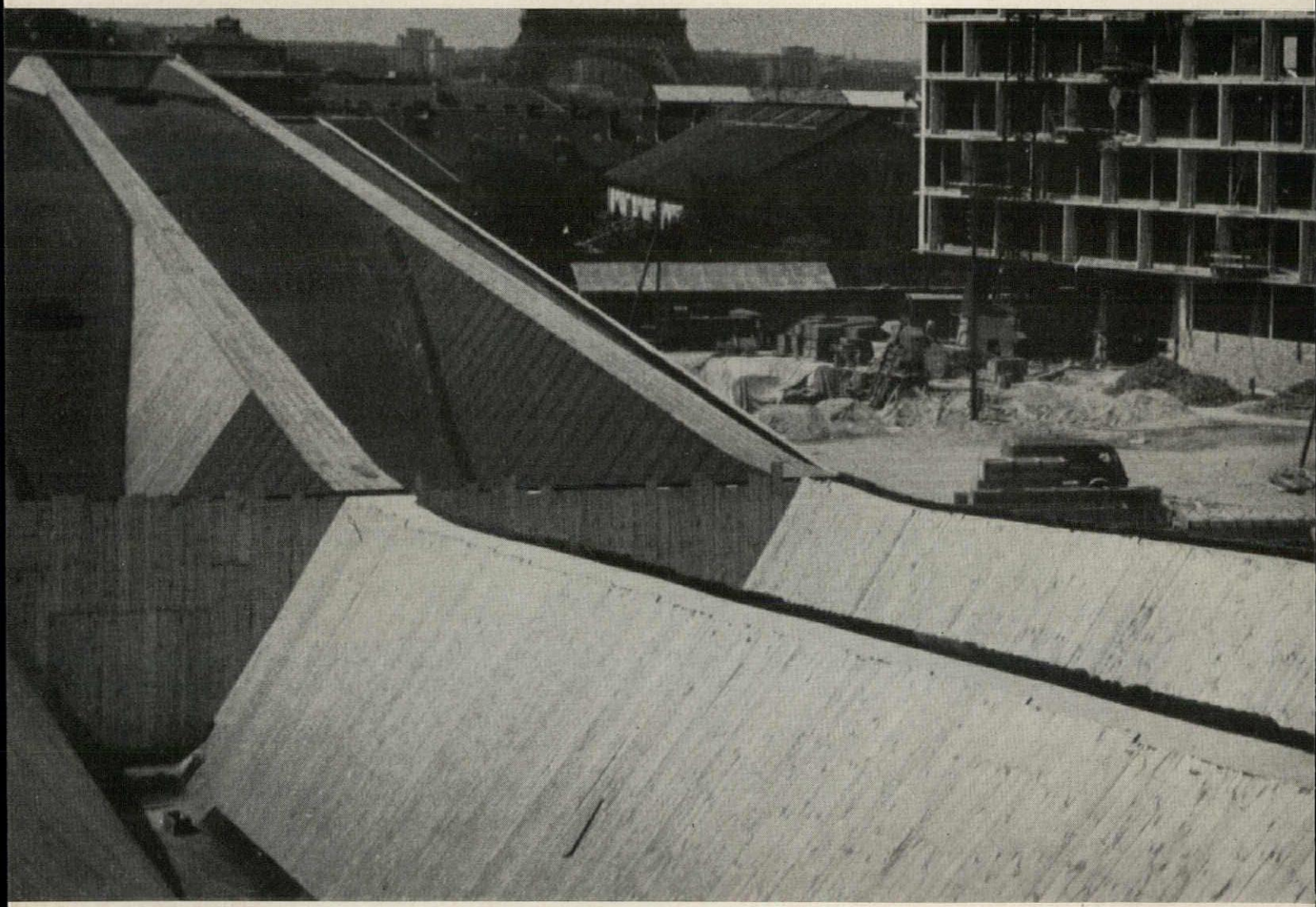
When an outstanding architect like Marcel Breuer gets together with an outstanding engineer like Pier Luigi Nervi on a set of buildings like the ones for UNESCO in Paris, the results are bound to be extraordinary. (*See also AR April 1955, pp. 217-224.*)

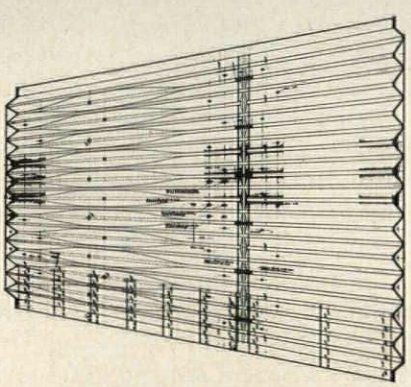
I saw these buildings nearing completion in September of 1957, and I was deeply impressed by the architecture and engineering designs as well as by the execution of the project.

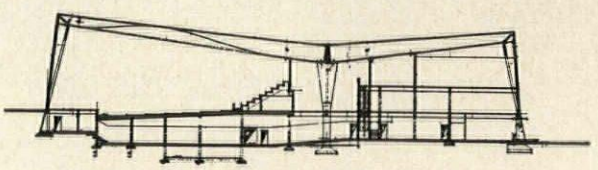


The two main elements of Unesco headquarters are the eight-story, Y-shaped Secretariat, and the folded slab Conference and Assembly building, tied together by a Main Lobby link. Roof of Conference-Assembly building has interior support of columns at point which divides Main Assembly room from smaller committee room and Lounges. Horizontal stiffener between folds of roof over Main Assembly room—a structural design requirement—gives unique and exciting pattern in the ceiling (see drawing below)









The two main buildings for UNESCO are the Y-shaped Secretariat and the Conference-Assembly building. Their characteristics are structurally different: the first is entirely open and shows its structure through its outer glass walls; the second is entirely enclosed with a few openings for some of the smaller offices. The office building is a skeleton of concrete consisting essentially of columns going all the way up to the eighth floor and carrying the horizontal slabs for the floor. The ground floor is entirely open and the columns here take the form of gallows. The building is serviced by elevators, but has also three lovely staircases which unfortunately cannot be too well seen in the finished building.

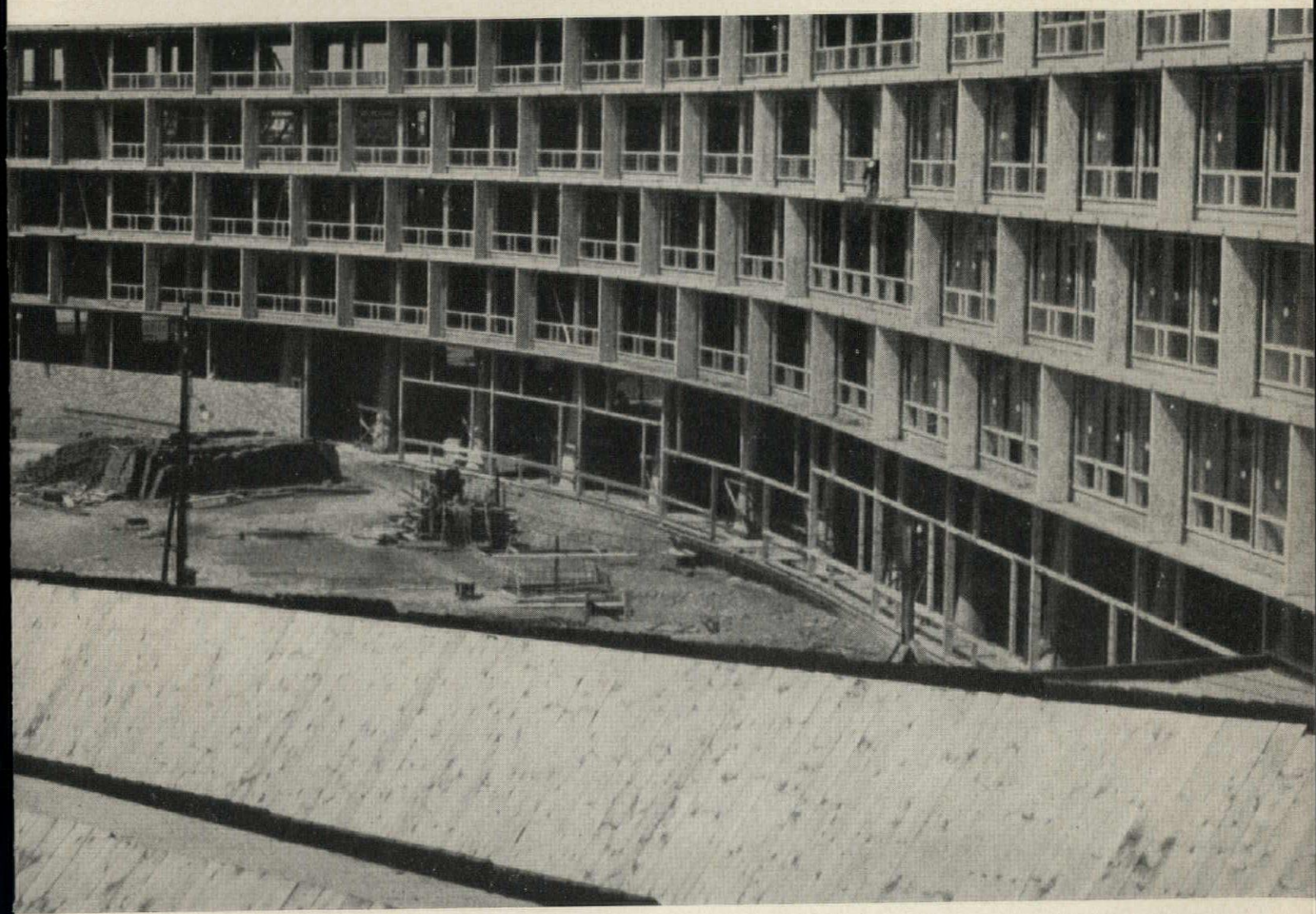
The pattern of concrete frames, while modular, still freely forms the three facades of the building by not presenting continuous vertical lines anywhere. The glass is shaded by concrete eyebrows which jut out of the wall, and give plastic relief to the outer walls in connection with the vertical legs of the frames.

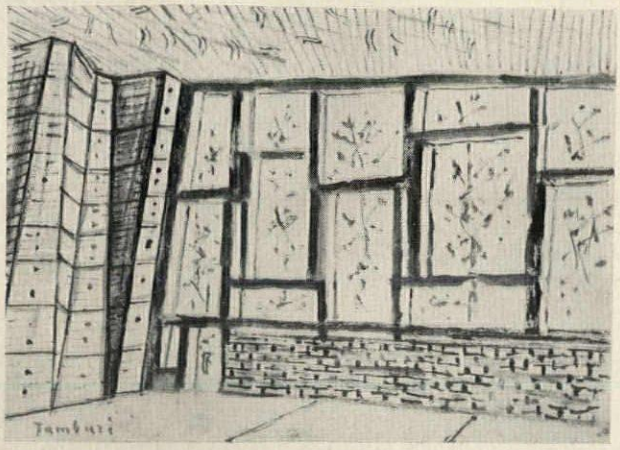
The main canopy consists of two abutting conoids of great elegance and lightness.

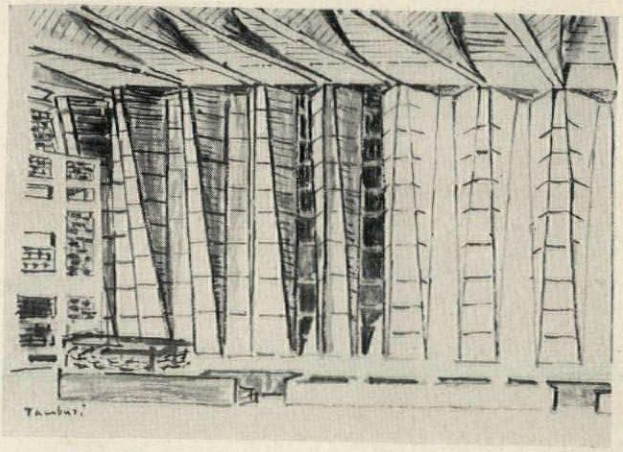
Another canopy on the second leg of the Y is a flat slab supported on three columns with ribs oriented along the lines of principal moments, a well-known design suggested by Arcangeli to Nervi, which does not seem entirely justified in this context.

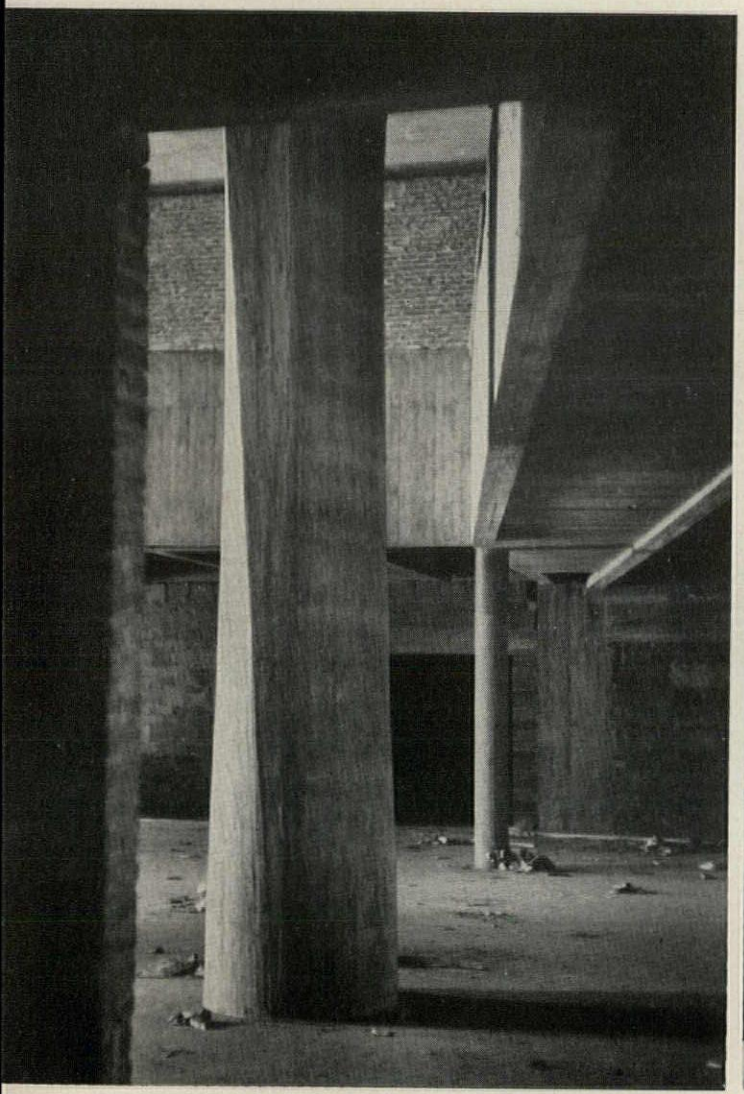
The Conference-Assembly Building is an extraordinary and imposing structure which looms larger than its size would suggest. It consists of a solid corrugated front wall which folds at the top to become a slanting roof. The roof slopes down to a set of columns and rises again to the top of the back wall. The structure is monolithic and gives a feeling of tremendous strength and lightness. I consider this particular structure one of the masterpieces of the concrete age. The folded roof is covered with copper and is strengthened by a slab positioned according to the requirements of strength. The corrugated front wall and roof give a plastic definition of space to the assembly hall which is entirely new in concept, completely correct structurally and extremely exciting visually.

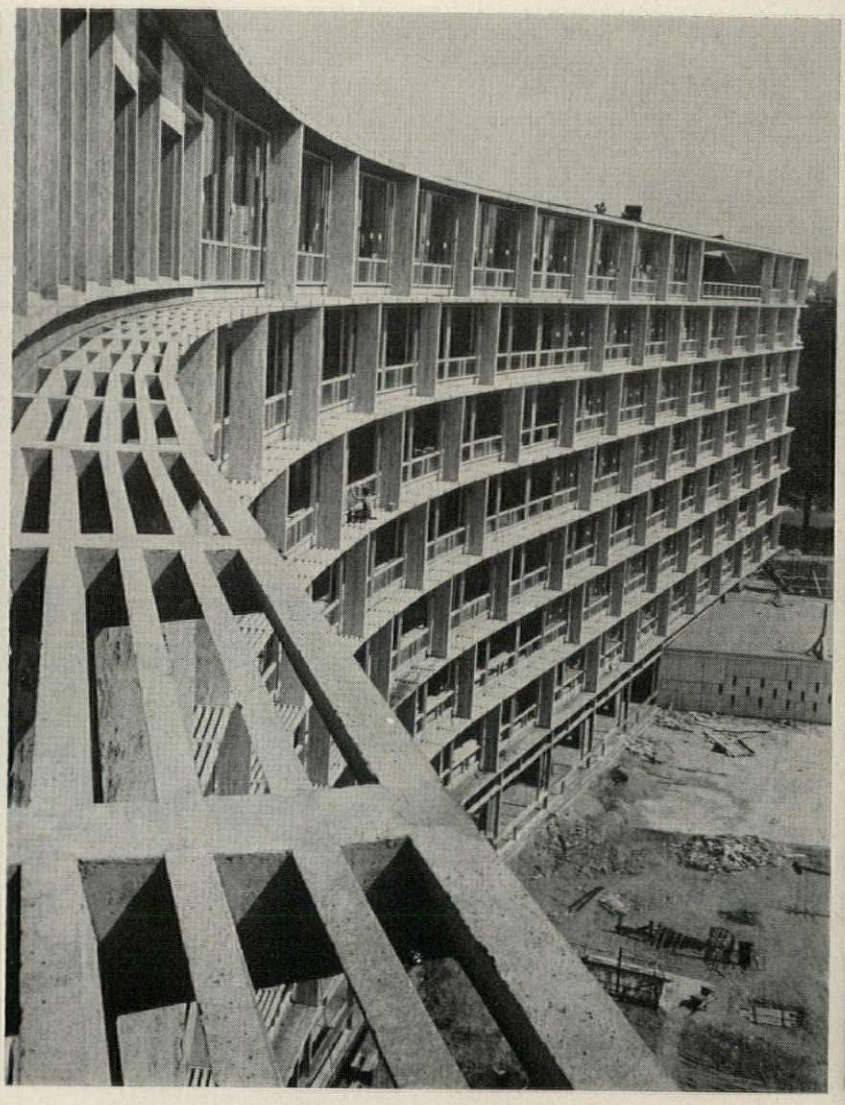
The lowest point of the roof is supported by

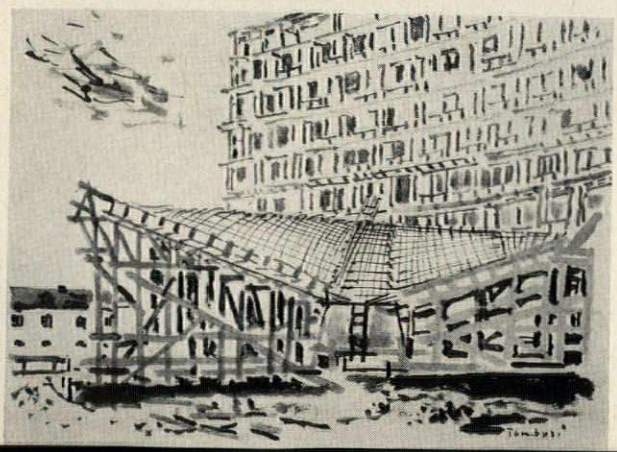






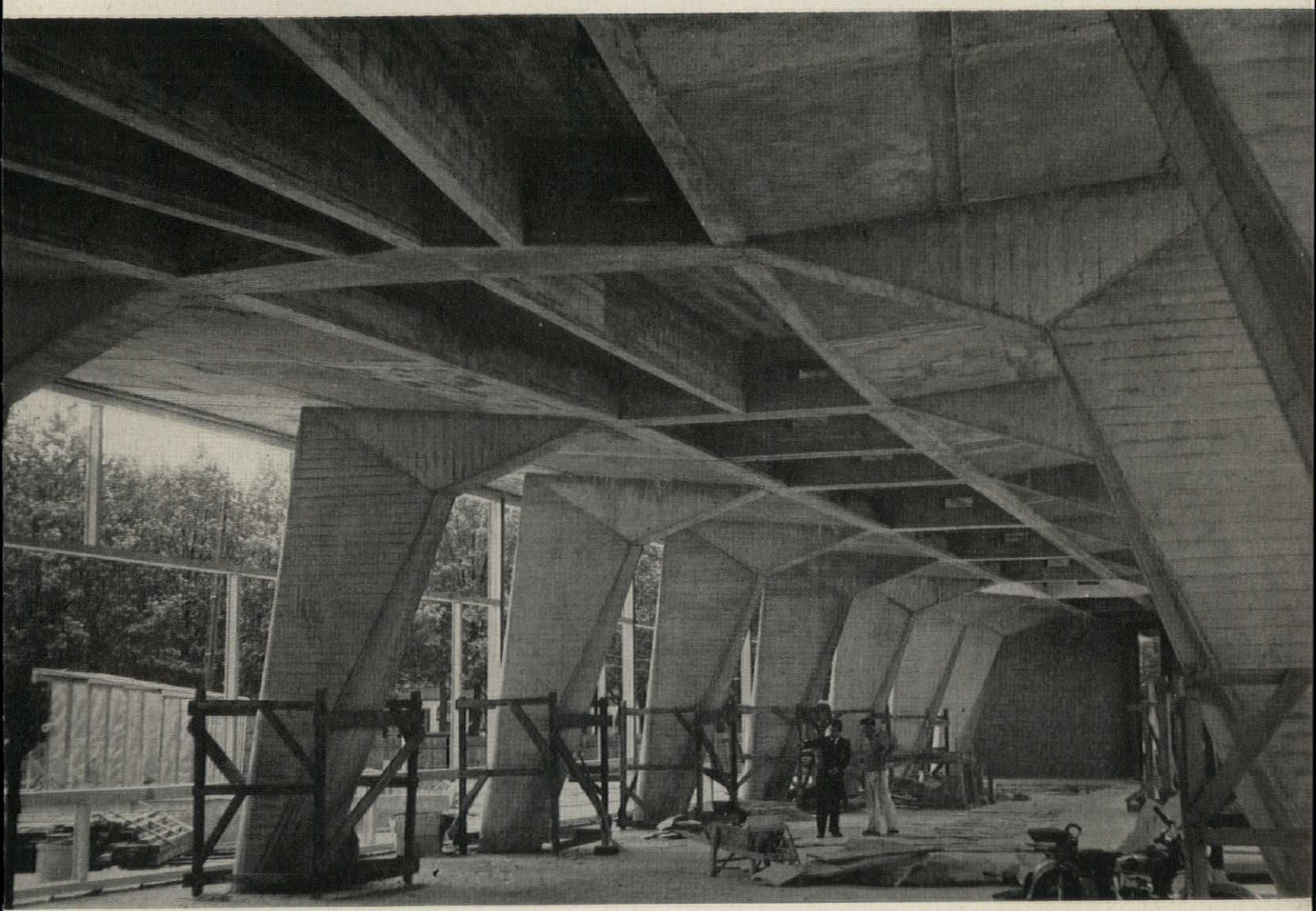






Top: Conference-Assembly building has folded walls to support its folded roof at the ends. Both show visually in the Main Assembly room. One section of a side wall has staggered concrete framing, serving both as structure and fenestration, giving a playful contrast to the more monumental end wall. Left and below: Large canopy to Secretariat is two abutting conoids; small one is flat, ribbed slab

columns which have an elliptic cross-section at the bottom and a rectangular cross-section at the top. This extraordinary shape is enhanced by the wooden forms into which columns were poured. The forms were lined with parket wood and the stripes in the concrete have the marking of the wood. The same visual effect was obtained in the gallows supporting the office building, in which the stripes run vertically on the cantilever, horizontally on the sides and longitudinally on the curved portions of the columns. These naked surfaces are also used on the outer and inner walls of the assembly hall whose horizontal and vertical indentations are sharp and clean, although left untouched as they come out of the forms.

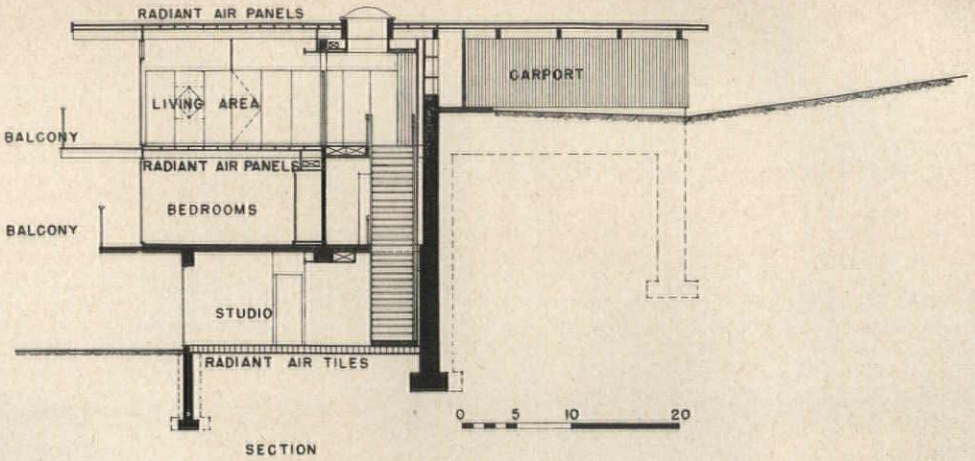


It would be impossible to mention the many careful details which enhance the beauty of the buildings. For example, the imaginative use of concrete framing on the side walls of the assembly hall produces a Mondrian-like effect from the inside, which contrasts sharply with the light massiveness of the front and back walls. The back portion of the Conference-Assembly building is subdivided into smaller halls and offices, and here again entire walls of naked concrete showing imprints of the form wood giving, paradoxically, a feeling of massiveness and lightness at the same time.

In the same area the parapet of the staircase is a solid concrete wall, but it is recessed by two inches at the floor level and seems to be floating in mid-air.

Because of the tremendous concern for detail on the part of the architects Breur and Zehrfuss and of the gradiosity in conception of the entire project, the UNESCO buildings in Paris are one of the landmarks of concrete construction in Europe today. Never before has the human eye looked at these logically shaped structures. But, the theoretical concepts developed by architect and engineer could have been completely ruined by slipshod execution.

While it is nigh impossible to learn a lesson from structural and architectural geniuses, it is always possible to learn a lesson from a built structure. We in the United States should look at the UNESCO as one of the extraordinary achievements of our technical age and should strive hard to obtain wholehearted collaboration of proud contractors to transform our dreams into solid reality.

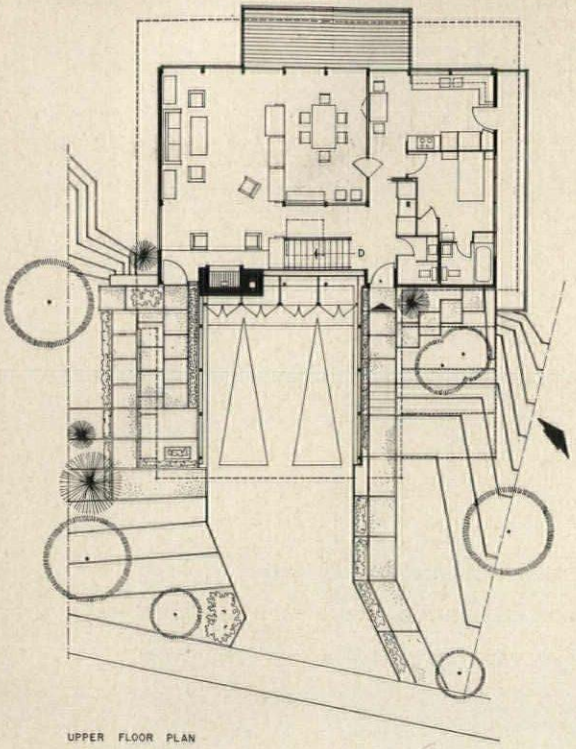


ARCHITECT *Daniel Schwartzman*
STRUCTURAL ENGINEERS *Severud-Elstad-Krueger*
CONSULTANT *John Dillon*

EIGHT ROOMS WITH A VIEW

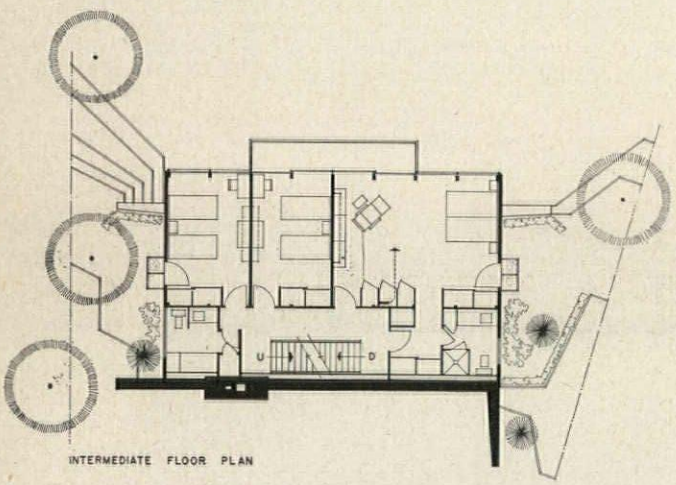
When Architect Daniel Schwartzman decided he wanted to look at sailboats from his own cantilevered balcony, he found a narrow steeply sloping site overlooking the yacht basin at Sea Cliff, Long Island. This plot of land, over 200 ft above the water of Long Island Sound, not only commands a view of the little craft in the harbor below, but overlooks the near shore of Sands Point and the distant shoreline of Westchester County and Connecticut.

The problem of perching a house on this slope was solved by the design of a three-story structure built into the hillside at its lowest level and projecting out over the water at its upper levels. In the section above and in the plans on the following page are shown the reinforced concrete foundation walls which act as retaining walls for the large volume of fill used to bring the entrance of the house to street level. A cantilevered reinforced slab at the intermediate level acts to brace the foundation retaining wall. Exposed concrete and grooved cypress siding in a natural grey finish are used on the exterior in combination with panels of asbestos board.

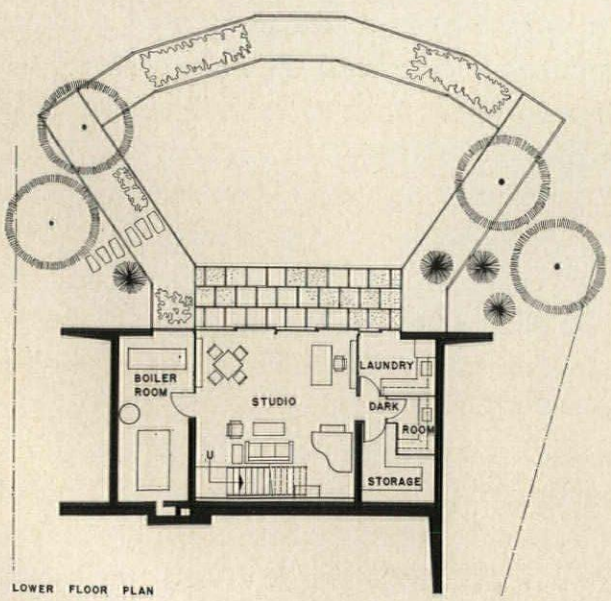


UPPER FLOOR PLAN

Some of these panels are enameled blue, the rest are unpainted. Aluminum sliding doors and sash are set in white pine frames. Natural finish cypress is also used on the walls of the principal rooms in combination with natural gray exposed posts and beams. Interior partitions are of mahogany plywood panels. The roof has a marble chip finish which is also used in the paving of the entrance walks and terraces. The house has been heated by a system of radiant warm air channels in the ceilings and floors, which discharge a curtain of warm air against the large areas of glass. At the lowest level, the radiant warm air is conducted through tiles in the floor. There is provision for future cooling through the same ceiling and floor channels.

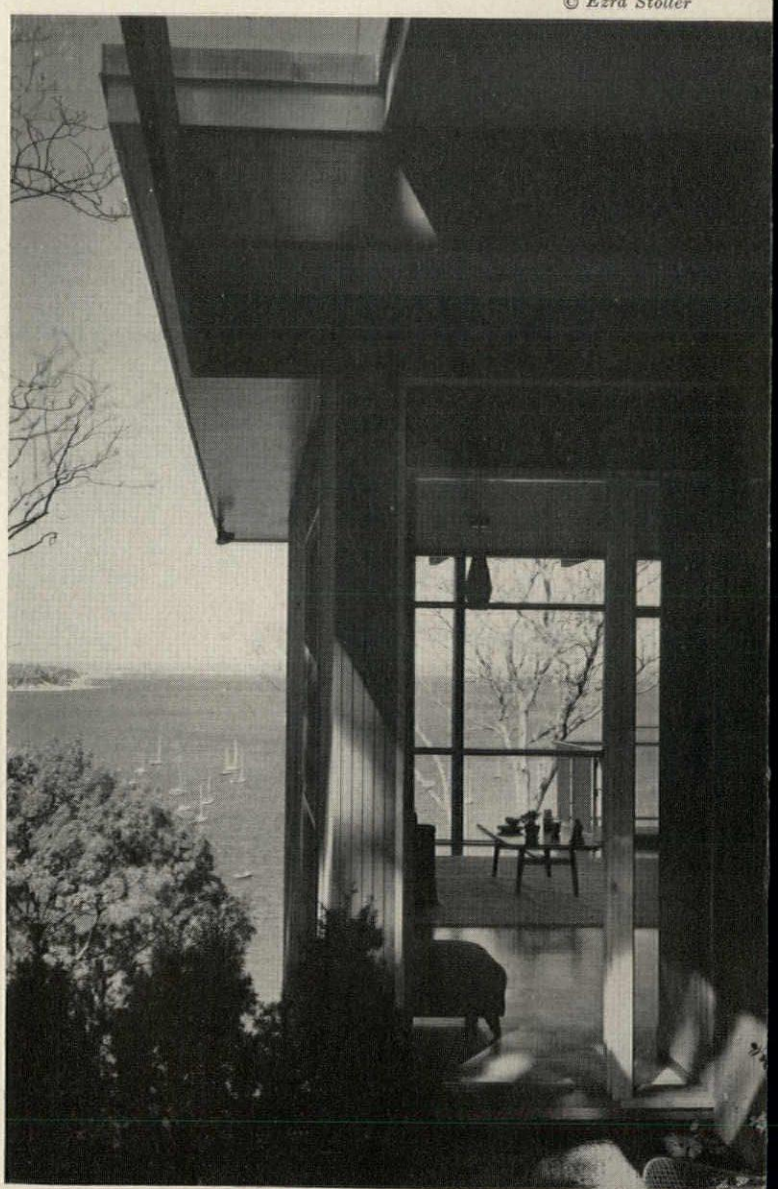


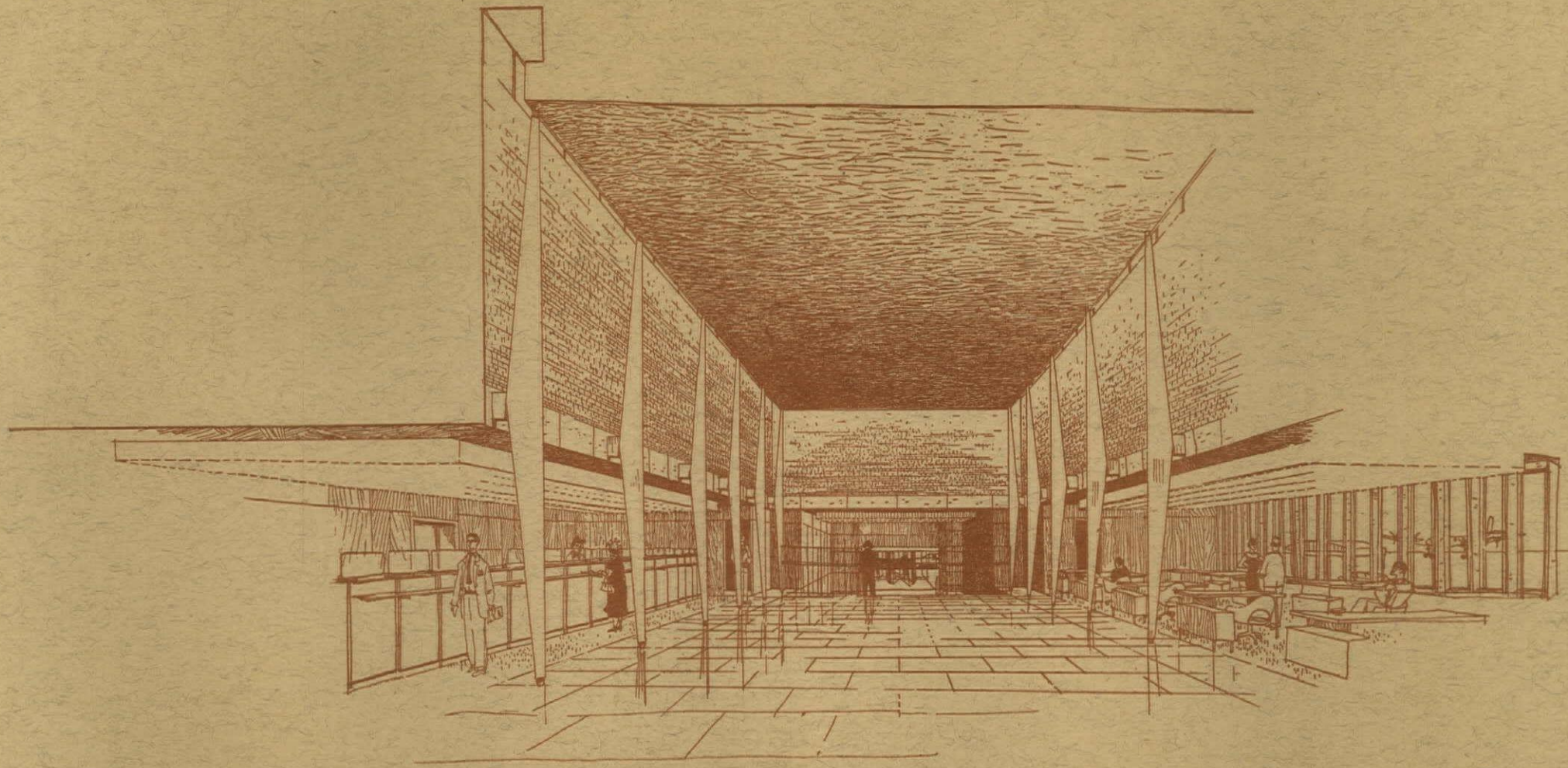
INTERMEDIATE FLOOR PLAN



LOWER FLOOR PLAN

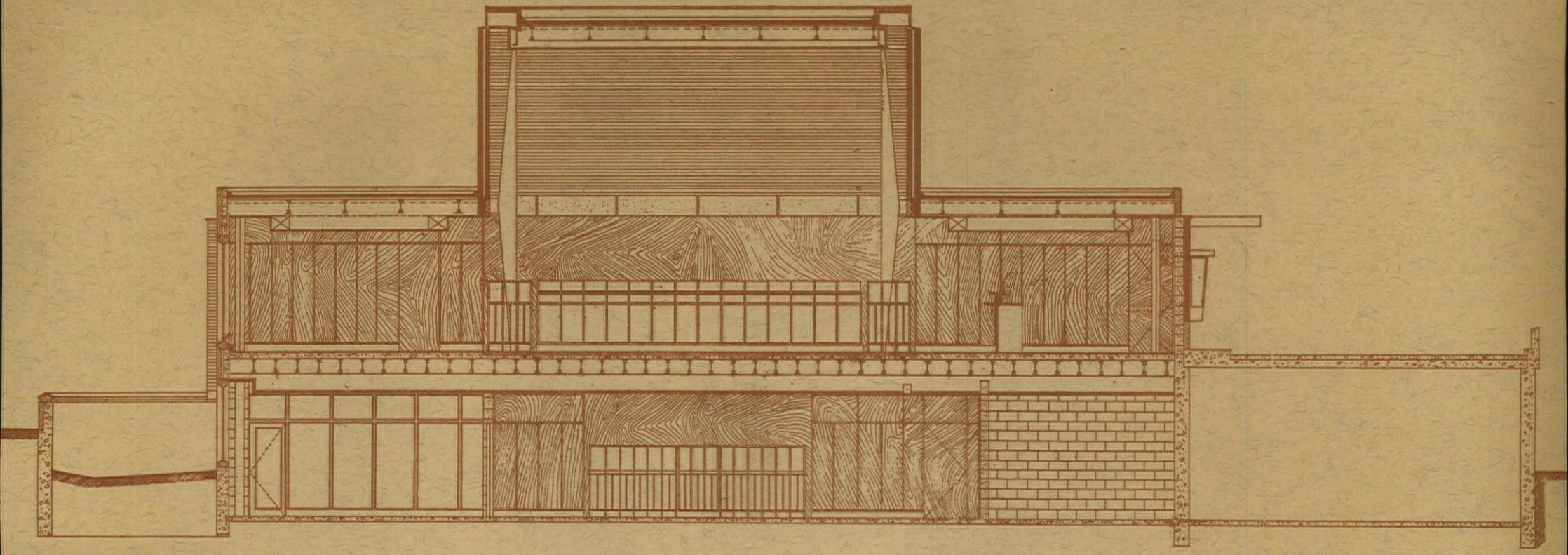
© *Ezra Stoller*

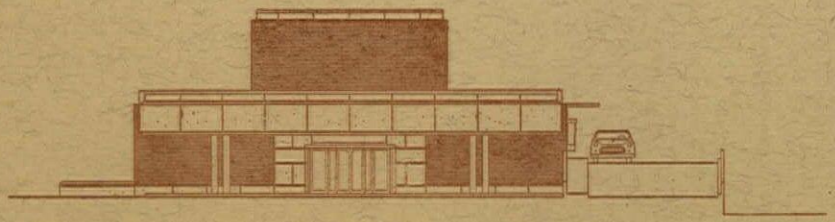


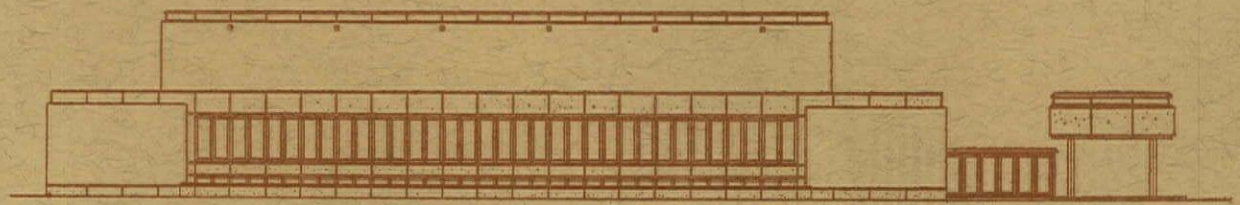


STATE BANK OF CLEARING, CHICAGO, ILLINOIS

Harry Weese & Associates, Architects



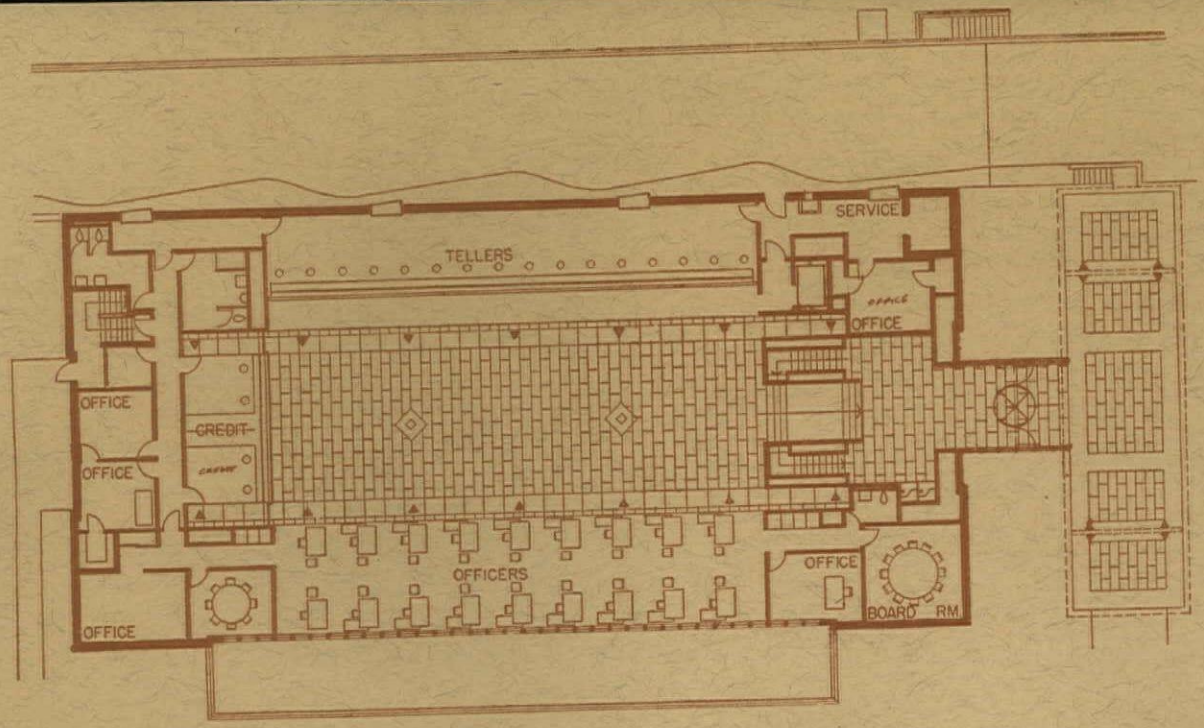


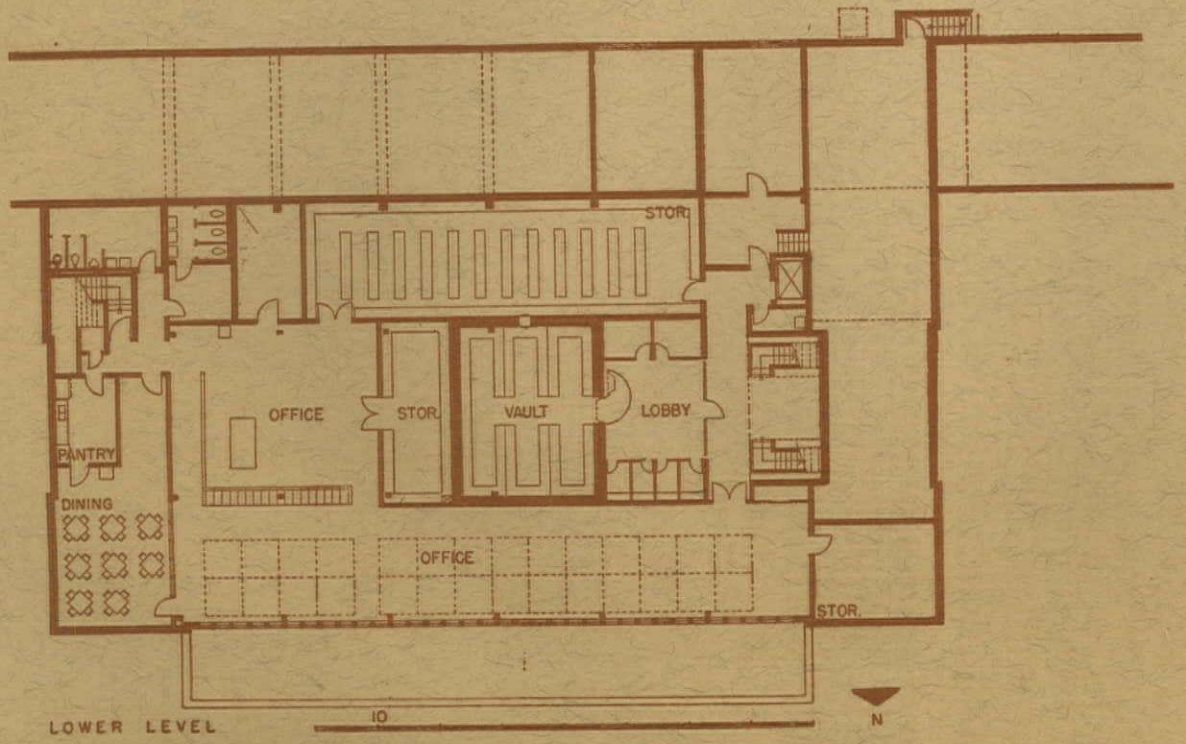


State Bank of Clearing, Chicago

In this bank design the structure—meaningfully and sensitively shaped—becomes the architecture itself. There is more here than simply the business of "expressing the structure"—for indeed the form and nature of the structure stem from the architect's concept of the shape and arrangement and lighting of the banking space itself, as well as its relationship to the immediate environment and the automobile.

The scheme comprises a high main banking room symmetrically flanked along its length by lower spaces for tellers and officers; the whole raised one-





half story above grade to make the basement area usable. Such an arrangement is quite conventional; but in this case, a high degree of imagination was employed in its development. An unusual and efficient structural system was devised, which for each bay will consist of two rigid concrete T's, pin-connected at floor level and discontinuously stabilized by three tension members as shown in the small diagram at right. This system will allow the ceiling to be suspended free of the walls, and will make possible the continuous peripheral clerestory the architect wanted for the high room so its walls of brick can be texture-lighted by a wash of graduated daylight. Brick and stone will be used structurally. Adjacent the officers' platform, the window mullions will carry the wall, serve as a screen to passing traffic, offer a sense of enclosure; yet will enable passers-by to glimpse a view of the interior.

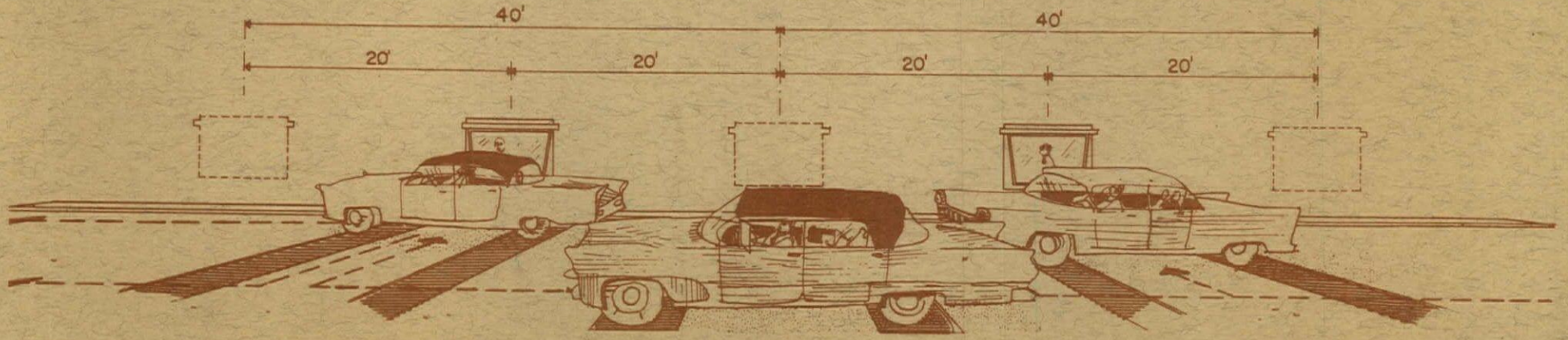
The plan is based upon both banking-room and drive-up operation, with tellers for both duties stationed within a common work area. The free-standing entrance pavilion will serve as a visual marker for access at the end of the building, offering address on that street without disturbing the plan.

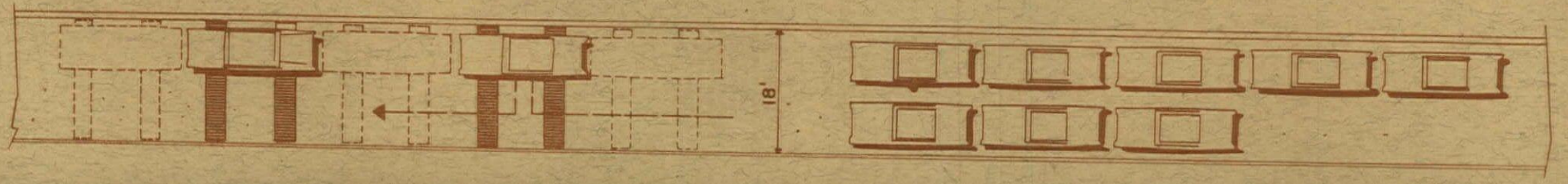
Harry Weese has this to say concerning bank design, "The function of banking is a serious one and the banker's role as adviser and confidant requires a setting that inspires confidence, reflects stability, yet is not formidable. The recent tendency toward 'ranch' banks in the image of the customer's house, together with the great emphasis on consumer credit, has swung the pendulum pretty far from the Greek temple. Stone outcroppings, planting boxes, and Swiss cheese soffits substitute for architecture; and the door has been opened wide for the interior decorator to 'redo' the bank every several years.

"I believe a successful design for banking will avoid this sort of Orwellian rewrite of history. Since the various outlooks for the State Bank are not very attractive, we have tried to create a simple, expressive space that is oriented toward utilizing natural materials which will defy future decoration."

State Bank of Clearing, Chicago

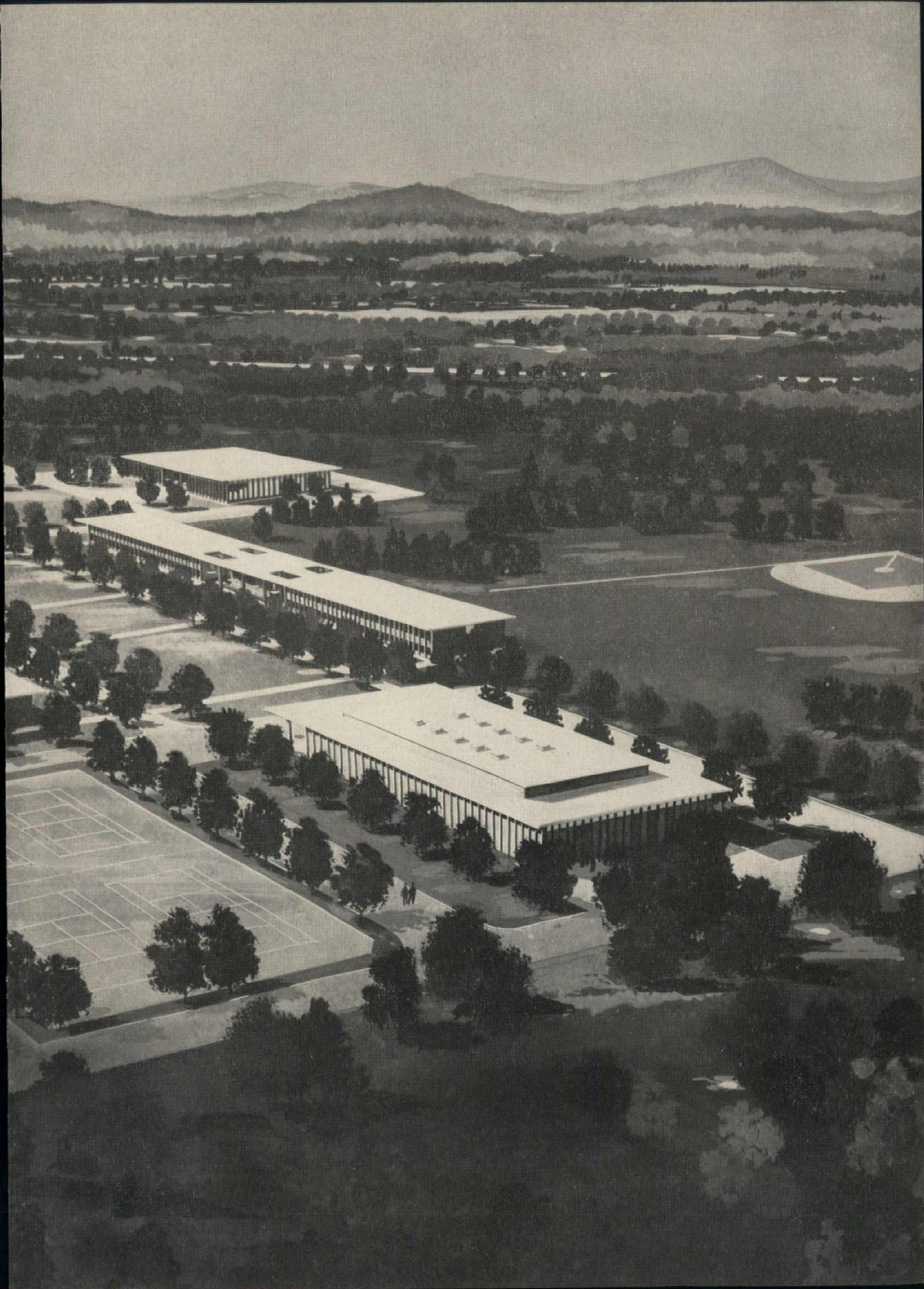
The bank is located in an industrial area it serves; but—over the years—has become a part of a much wider community, hence the emphasis on drive-up operation. Present plans call for four windows spaced at 40 ft, with provision for future additional windows between, resulting finally in a 20-ft spacing. Such a design is possible only by the use of a device the architect invented: a teller-operated moving belt, flush with the pavement, which will move the patron's car laterally to the window and then return it to traffic. There are important implications here for the conversion of existing banks, where space is at a premium due to the necessary proximity of teller stations and where it is desirable to have all tellers within a common work area.





Educational Work of Edward D. Stone

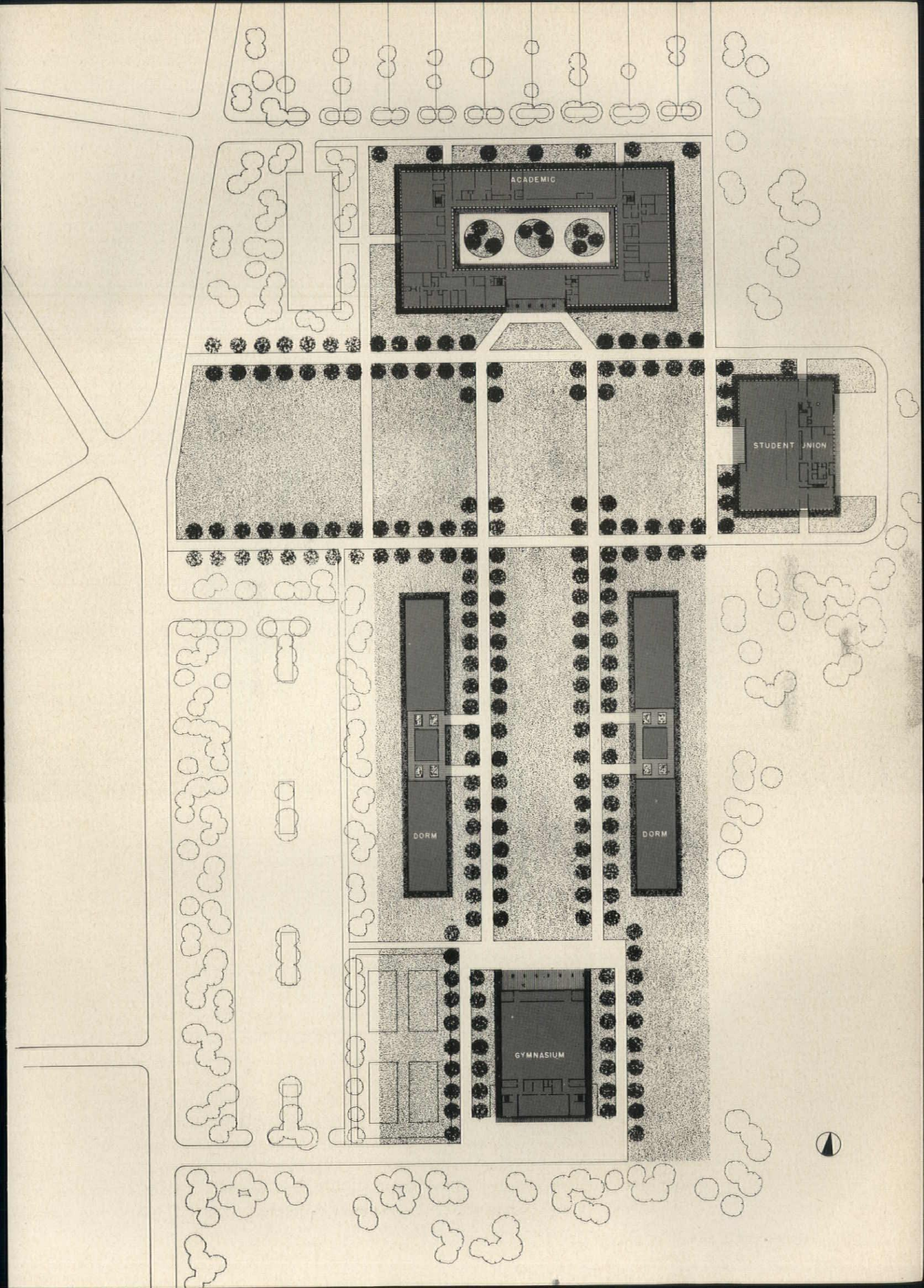
The following buildings represent Stone's latest designs for the general educational field—from college campuses to city libraries. All are now under construction and are carried out in what has become the "traditional style" of Stone's office, with the richness, elegance, formality, and screens characteristic of their work. The buildings have a great simplicity of concept, with direct, straightforward plans. There has been a conscious effort to make them at home in established campuses and localities, and to meet the typically stringent budget and program requirements with permanent buildings of quality. In the case of the two dormitory groups presented, the universities have authorized duplication of the units, as costs of the pilot ones were well below the budgets.



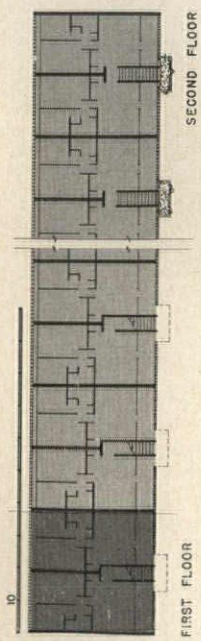
Rendering by Paul Nikon (Rendering pages 178-179 by Corbiletti)

Mohawk Valley Technical Institute

Edward D. Stone, Architect; Bice & Baird, Associate Architects. This new two-year technical school, located on the outskirts of Utica, New York, is planned for 1000-1200 students at the college level, and was developed under the direction of President Albert V. Payne and Otto Teegen of the University of the State of New York. The first stage (under construction) includes a large academic building (above), a Student Union, and a gymnasium with adjoining athletic fields. Dormitories are planned for the future (see preceding page). Simple rectangular buildings with regular column spaces give flexibility and economy; local red brick is used on the exteriors. Parking on the periphery leaves the campus free of automobile traffic. Clarke & Rapuano were Landscape Architects.

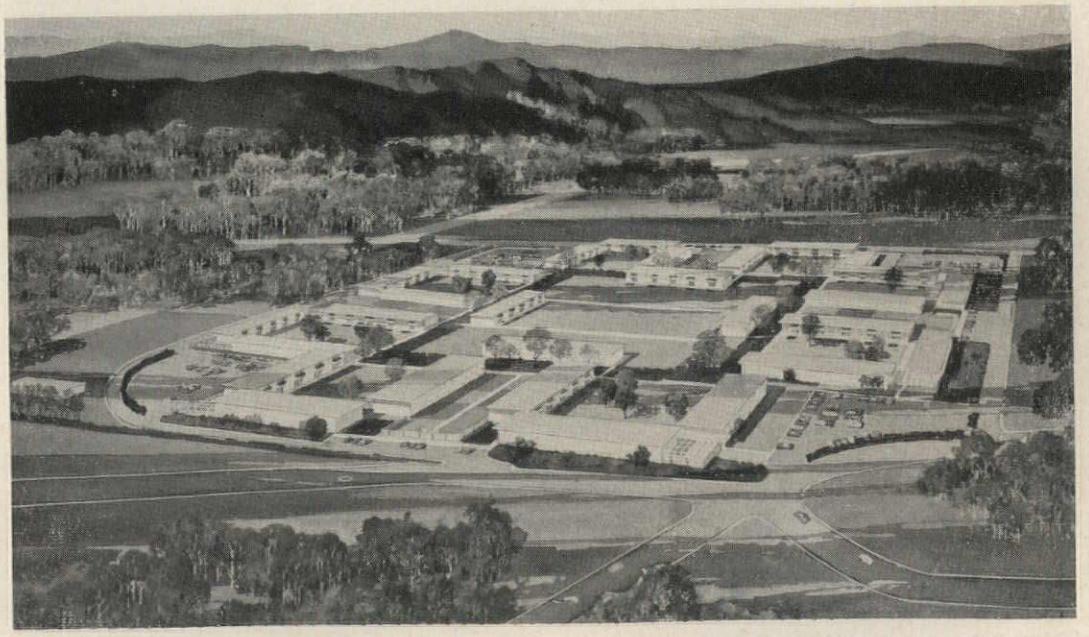

ACADEMIC
STUDENT UNION
DORM
DORM
GYMNASIUM

Renderings by Jack Finnegan



Univ. of Arkansas Married Students' Apartments

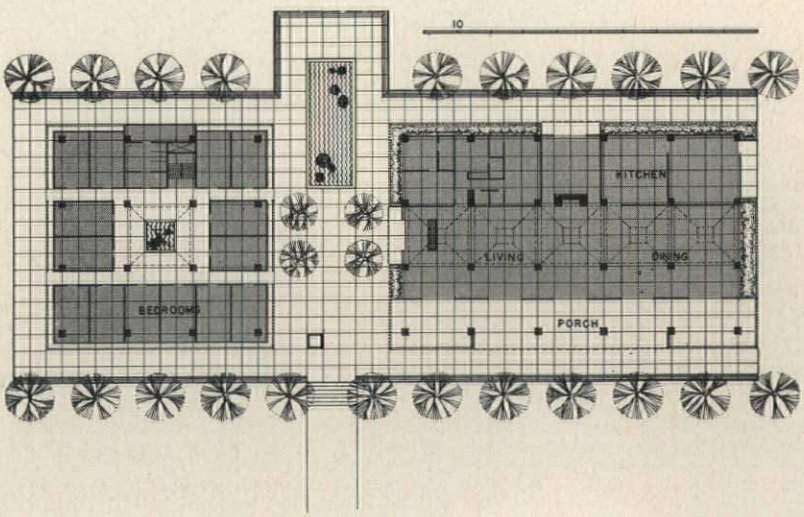
This pleasant, orderly group of buildings gives a carefully studied solution to the problem of housing married students, which has developed since World War II. The design, done under a limited budget, places buildings around the site periphery, with social courts at the inner side (above), utility courts and parking toward the street. Screened and trellised terraces are at building intersections. The group will include 28 buildings (right) ; five are now nearing completion. Buildings are two-storied with ten apartments on each level. Structures are concrete block, reinforced concrete slabs. Each apartment has a living-dining area, kitchen alcove, porch, two bedrooms, bath. A stair serves each two units (left). The project was under the direction of University President Dr. John Caldwell.



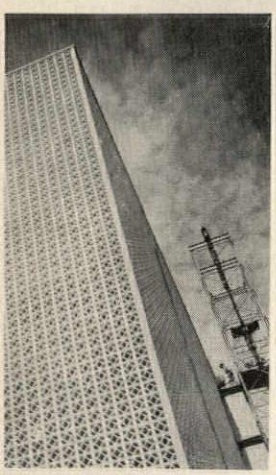
Rendering by Jack Finnegan

University of Arkansas Fraternity House

Stone has developed a bi-nuclear scheme for this new house for the Alpha Gamma Rho Fraternity. The design separates the house according to function: a quiet bedroom-study wing, and a living-dining-entertainment wing. These are placed on a terrace platform overlooking the campus of the University of Arkansas, in Fayetteville. A covered walk will connect the wings. In the dormitory unit, rooms for 56 members are grouped around a two-story, skylighted lounge. A chapter room is in the basement. The living wing includes apartments for the house mother and the house manager, and a guest room. The interior of the main living space is roofed by five pyramidal skylights. A covered porch and the terrace expand entertainment space. A large portion of both wings will be "veiled" by concrete block grilles.

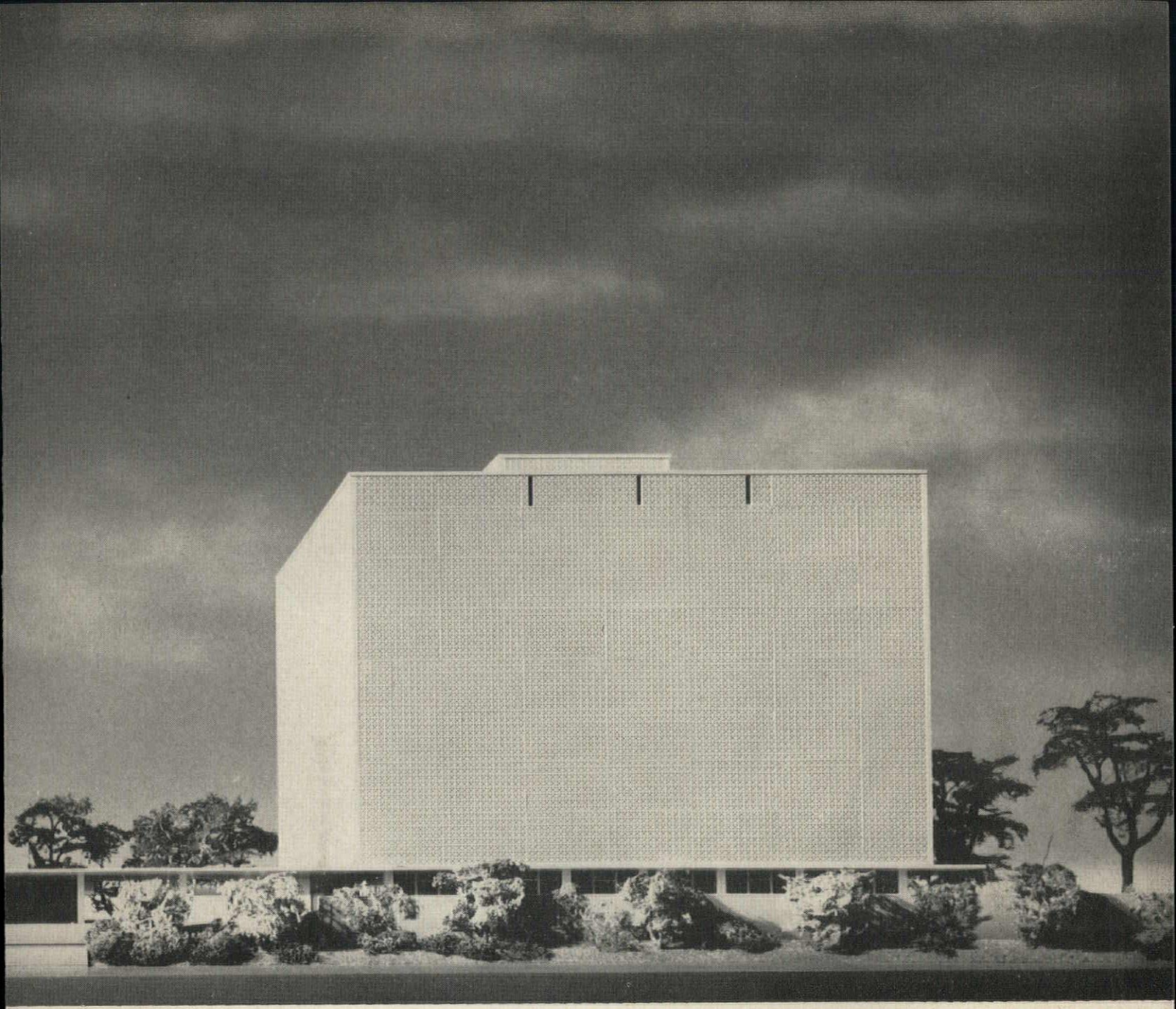

10
KITCHEN
LIVING
DINING
BEDROOMS
PORCH

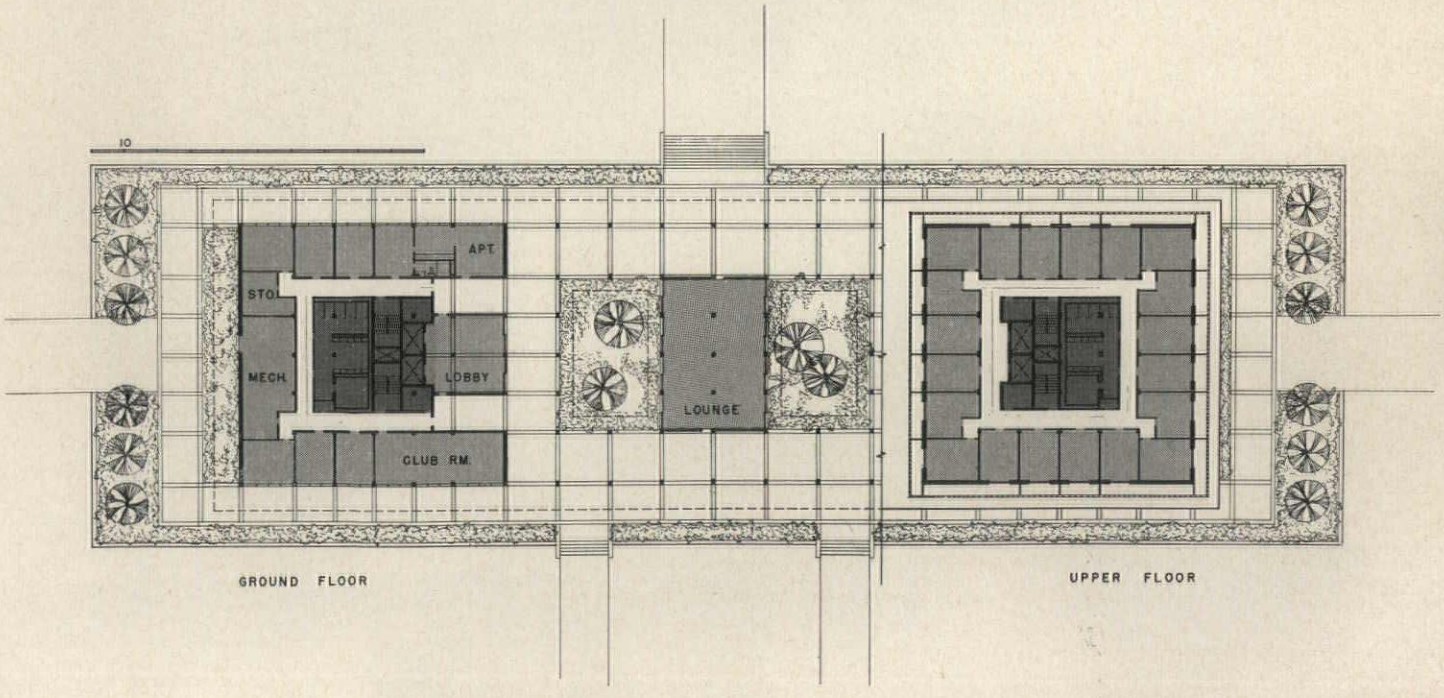
Model by Theodore Conrad

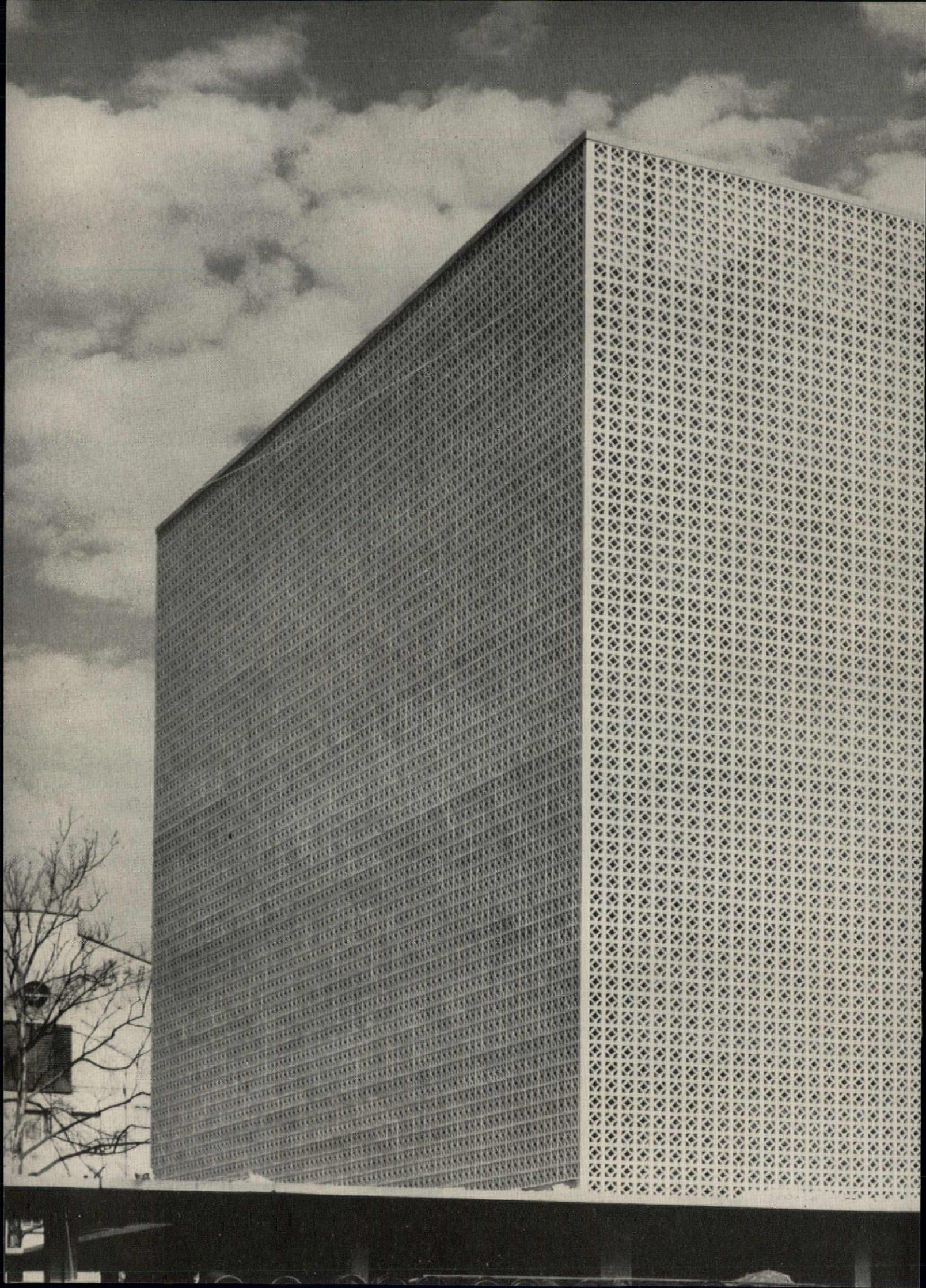


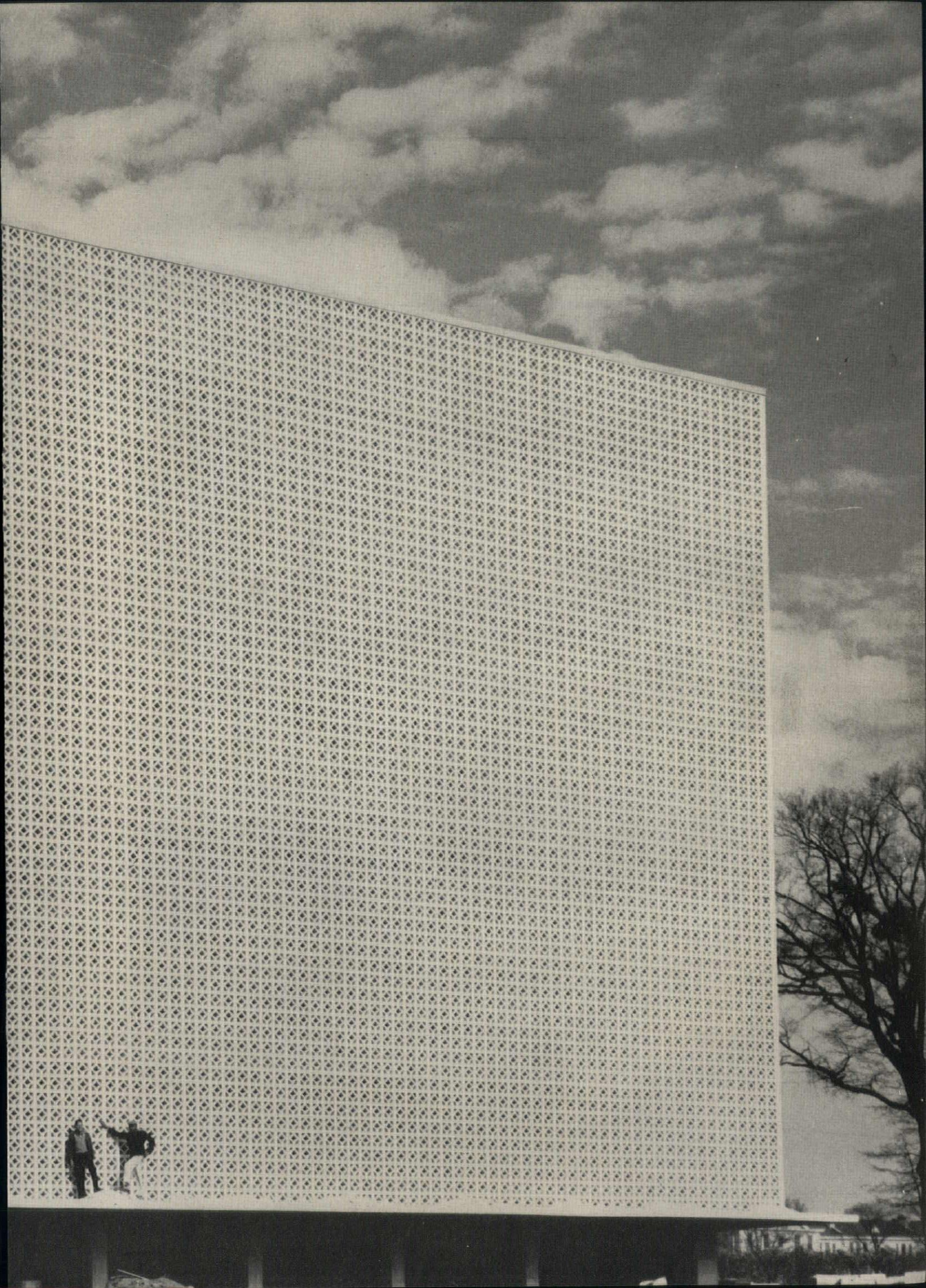
University of South Carolina Dormitories

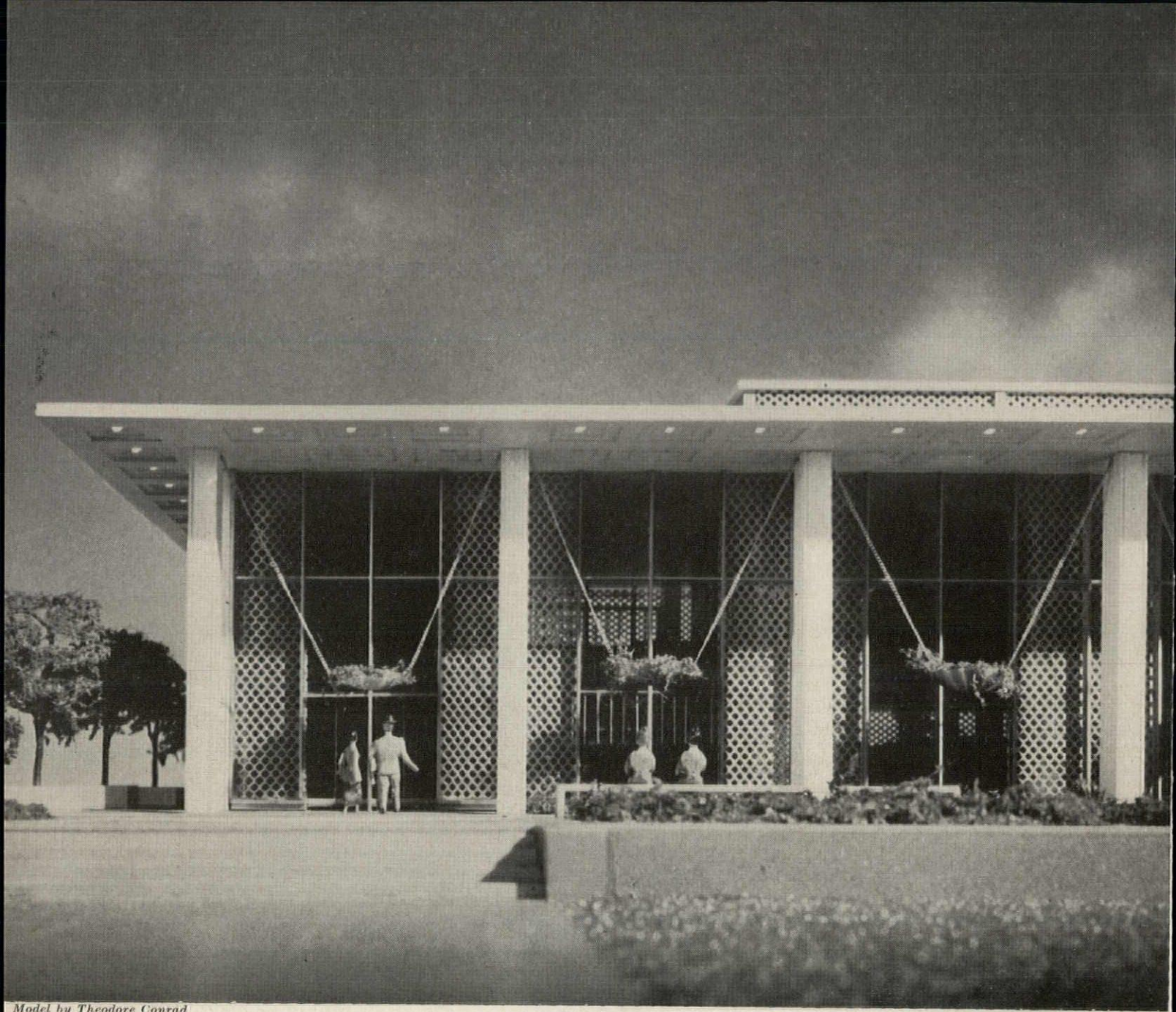
G. Thomas Harmon, Architect; Edward D. Stone, Associate Architect. Twin seven-story dormitory towers, linked by a common ground-level lounge and terrace make a simple, bold scheme for this men's residence hall in Columbia, South Carolina. These two, now under construction (see next page), are the first of a total of six to be built. On the grille exterior, Stone states, "Southern educators have complained of the glassy, contemporary style of dormitories, with the problem of heat, glare and privacy. The concrete veil overcomes these difficulties; its cost was about $1.00 per sq ft in place—about the price of venetian blinds per sq ft. The air conditioning load is reduced by about one third." The plan was developed under University President Russell. Landscape is by Innocenti & Webel.




10
APT.
STOR.
MECH.
LOBBY
CLUB RM.
LOUNGE
GROUND FLOOR
UPPER FLOOR



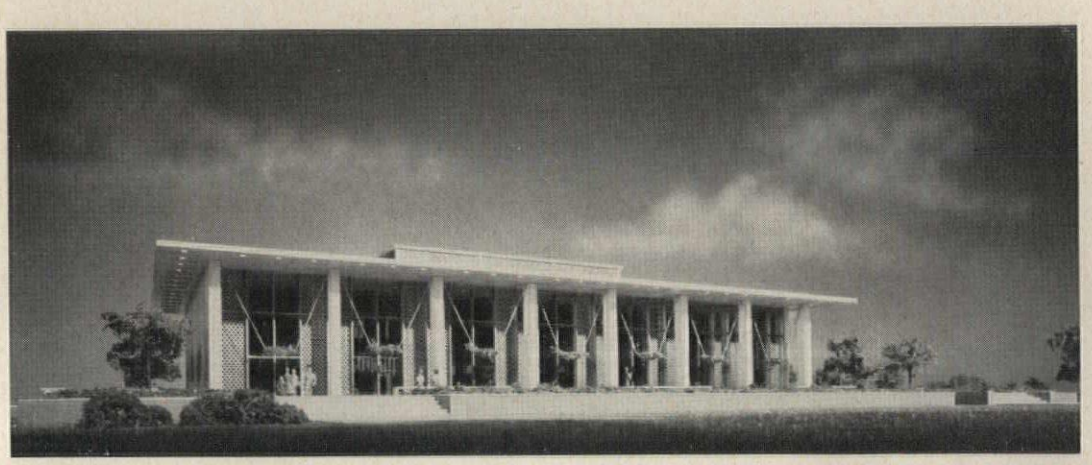


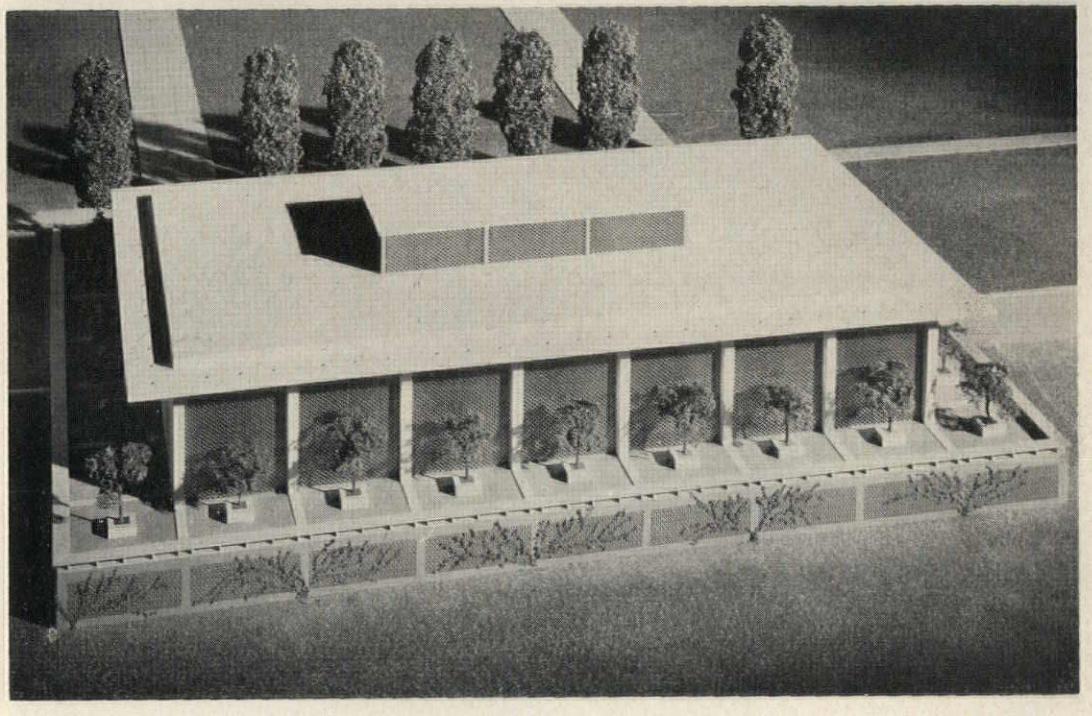


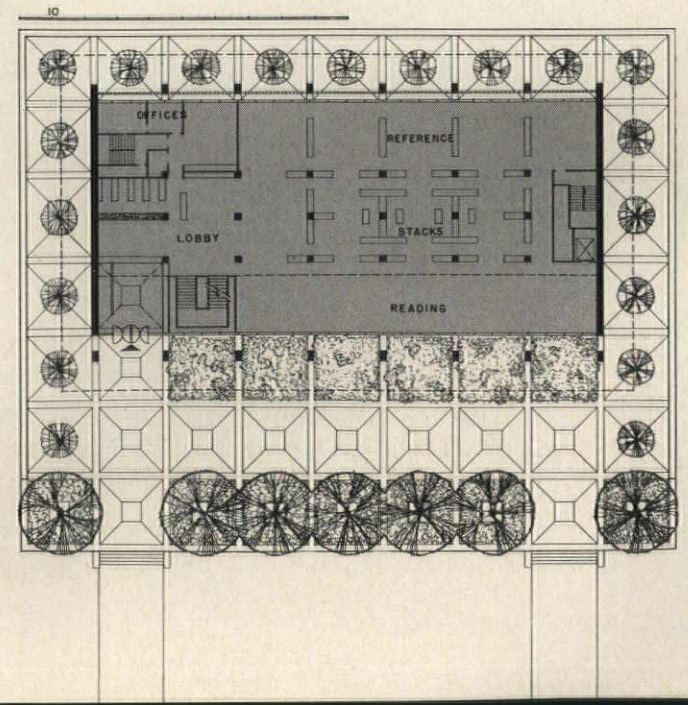
Model by Theodore Conrad

University of South Carolina Library

Lysles, Bissett, Carlisle & Wolff, Architects; Edward D. Stone, Associate Architect. Planned to maintain a classical quality of some of the adjacent buildings, this undergraduate library is of the open-stack, self-service type, with single entrance control to reduce operating costs. Principal rooms, on three levels (one is in the podium), will house 60,000 volumes, seat 600 students. In addition, there will be a double-tier-stack underground for storage of 150,000 volumes. A monumental stair connects the reading room and stack levels, with an elevator for servicing. Large smoking lounges and toilets are on the lower level, with additional toilets on the top floor. The exterior is white marble, gold anodized aluminum screen. Innocenti & Webel are Landscape Architects.

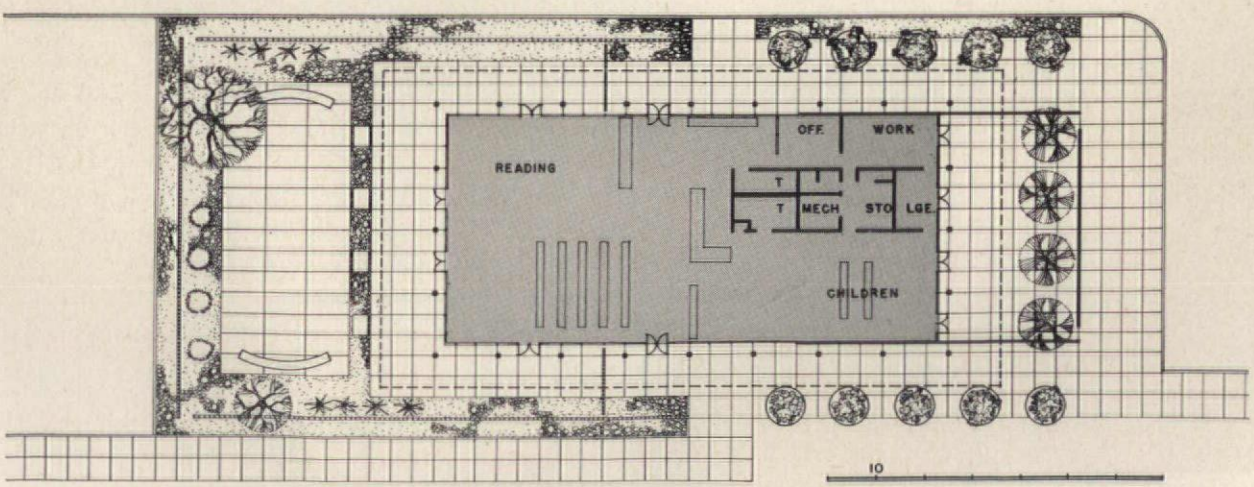





10
OFFICES
REFERENCE
LOBBY
STACKS
READING

Palo Alto's Mitchell Park Branch Library

An especially pleasant, nearly domestic scale, and inviting outdoor reading gardens highlight this branch and the main library (next page) for Palo Alto, California. The libraries were developed under the directions of the City Council and the City Manager, Jerome Keithley. It was stipulated that the buildings be similar, and employ wood shake roofs to harmonize with the City Hall, which the main library adjoins. Emphasis was also to be placed on a minimum of operating personnel. This was solved by one-story schemes, with central control in the manner of supermarket service. Large, open rooms are planned to be easily divided for different uses. The branch is planned initially for 15,000 volumes (120 per cent more ultimately) and seats 50. The exterior is redwood, terra cotta grille.


READING
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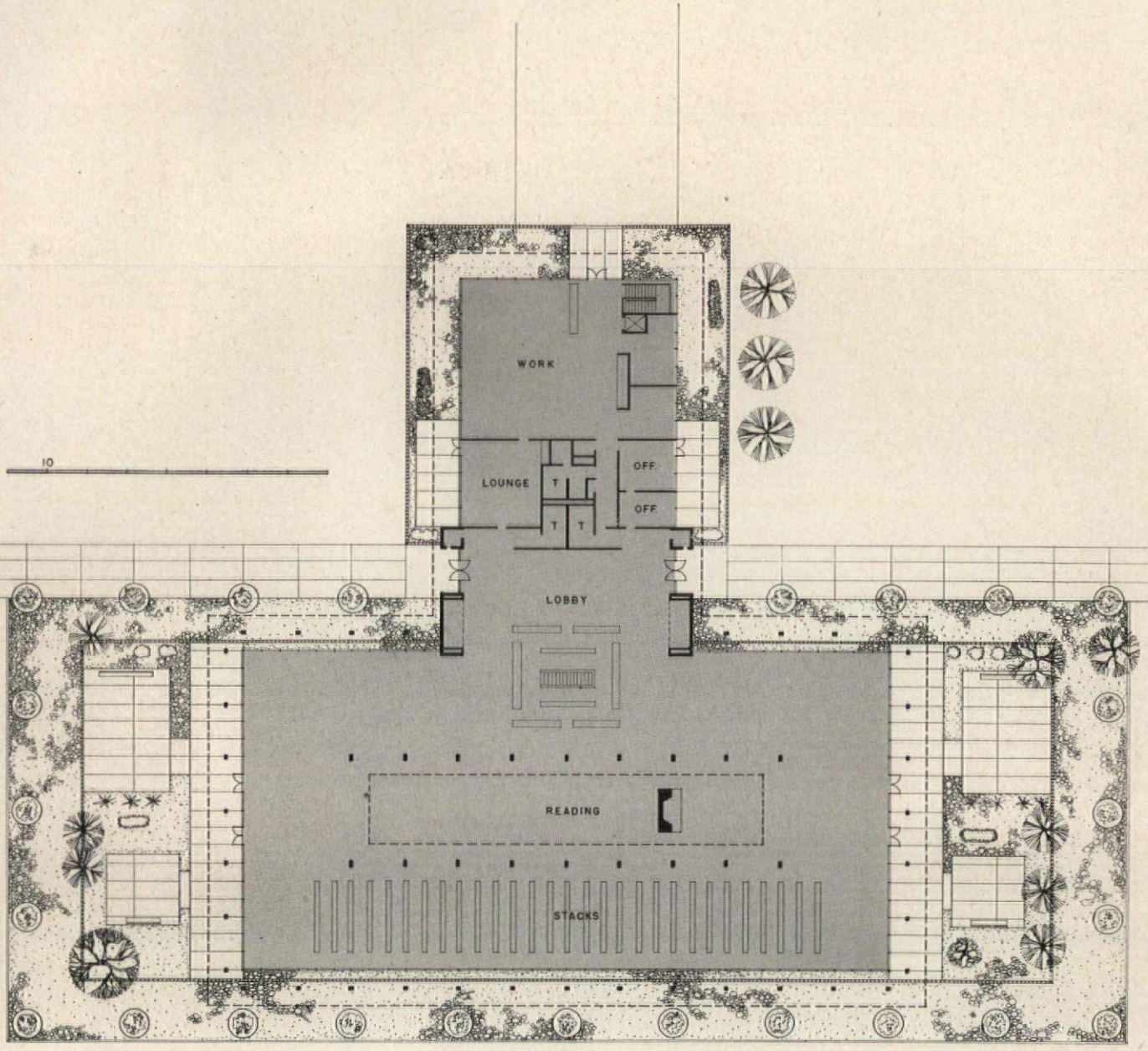
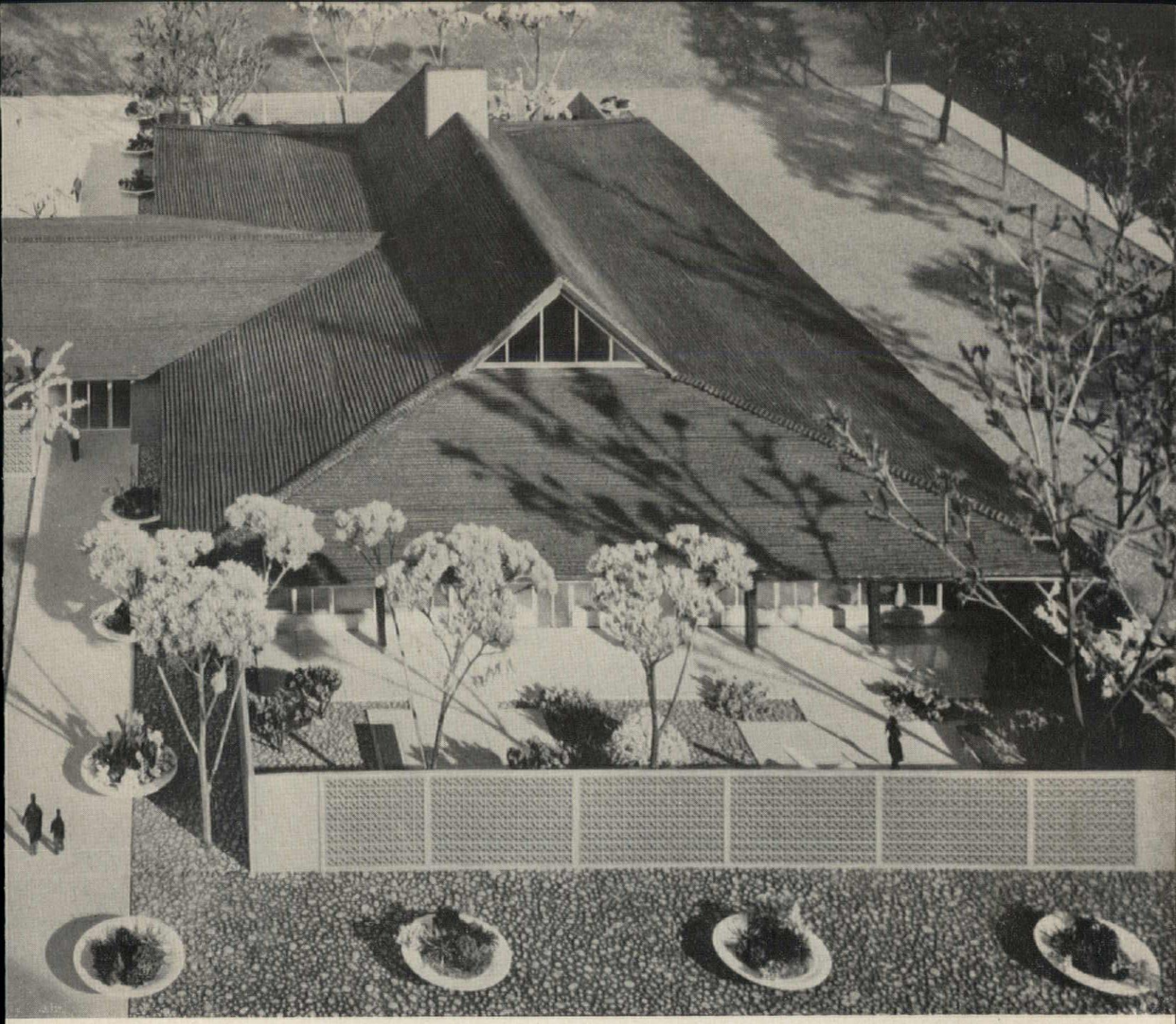
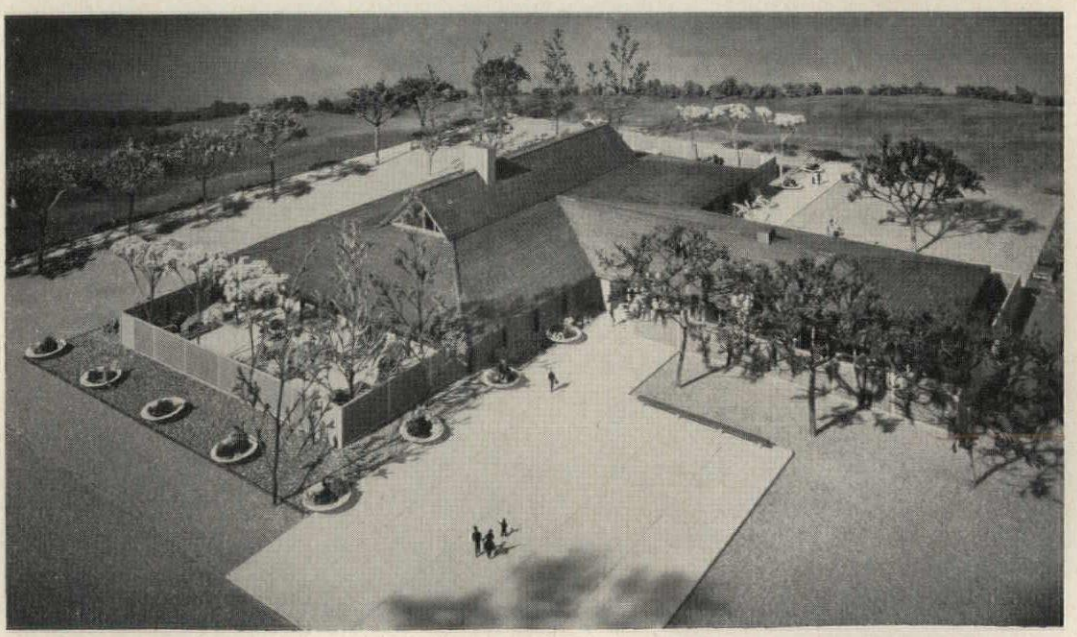
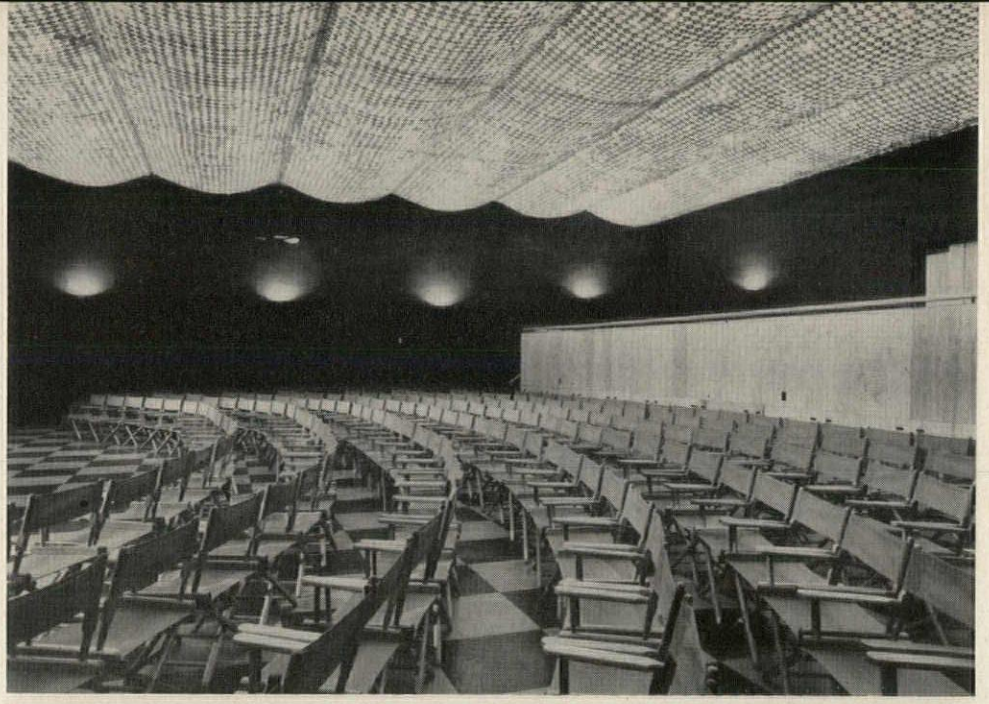


Main Library, Palo Alto, California

Planned as a part of a redeveloped Civic Center for Palo Alto, this library will serve the city library system as headquarters and processing center. It is planned to seat 160, initially house 100,000 volumes (ultimately, 120 per cent more). Closed stacks and general storage are in a basement served by two stairs and a dumbwaiter. The control desk is in the center, with return book alcoves by either door. The large open stack area in the main room places readers and books in close proximity, and study and lounge areas are integrated to avoid a rigid institutional atmosphere. Ceilings are nine feet high except over the reading area, where it follows the high roof line. Landscaping for both libraries and the Civic Center redevelopment scheme are by Eckbo, Royston & Williams.







Lionel Freedman

University of Arkansas Fine Arts Center

The interiors of this Fine Arts Center, built in 1948, indicate the quality and finish that can be expected in the rooms of Edward D. Stone's work now under construction. The concert hall (top) shows one of the earliest uses of a suspended, flexible aluminum mesh ceiling. The ceiling for the dining hall of Mohawk Valley Technical Institute will be similar. The mesh obviates the need for furring and plastering the ceiling, serves as a light baffle, and improves acoustics. The picture gallery (bottom) provides a well lighted, durably surfaced area for student and traveling exhibits, as a lobby for the concert hall and a theater, and as a connecting hall to the academic building. Movable display screens provide the needed flexibility of arrangement for such a multi-use area.

ELEMENTARY SCHOOLS

Art In Swedish Schools. A report by Gunnar Hellman *198*

Fletcher Judson Elementary School
Watertown, Conn. Architect: Warren Ashley *200*

Elementary School for the Church of the New Jerusalem
Bryn Athyn, Pa. Architect: Vincent G. Kling *204*

Elementary School Bradford Woods, Pa. Architects: Mitchell & Ritchey *207*

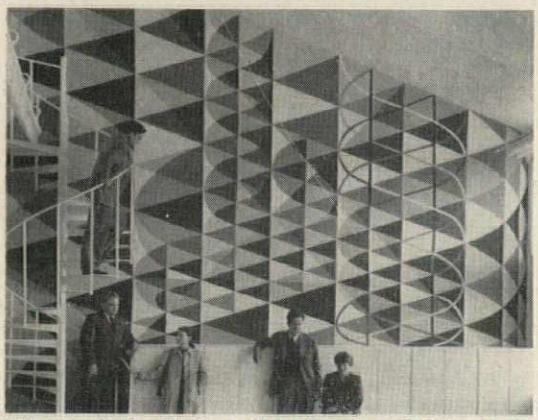
Ashwood Elementary School
Bellevue, Wash. Architects: Naramore, Bain, Brady & Johanson *210*

Webster Elementary School
Webster, Tex. Architects: George Pierce and Abel B. Pierce *214*

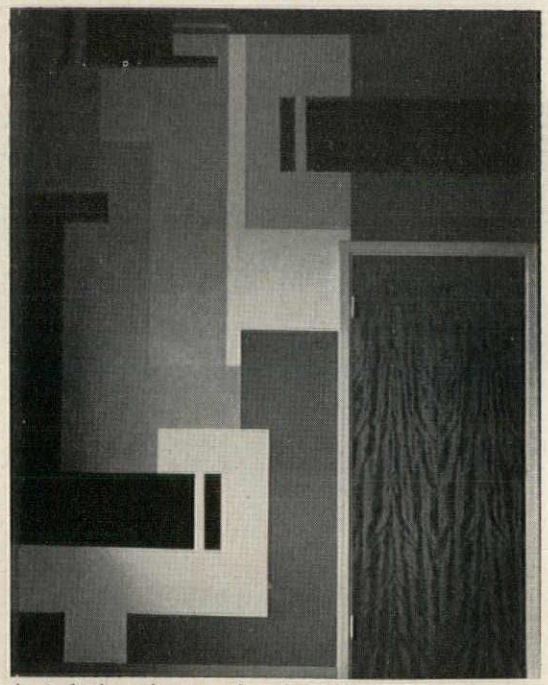
Greenfield Elementary School
Birmingham, Mich. Architects and Engineers: Eberle M. Smith Associates, Inc. *217*

Elementary School
West Bridgewater, Mass. Architects: The Architects Collaborative *220*

ART IN SWEDISH SCHOOLS



"Theme of the Staircase" by Lennart Rohde, Angby



A study in primary colors by Eric H. Olson, Laxa

Previous page: Bronze group by Bengt Amundin, Boros

Gunnar Hellman reports to ARCHITECTURAL RECORD: In Sweden the shaping of both private and public surroundings is the object of lively interest. Artists and architects are collaborating in the creation of milieus; and municipal authorities and private builders are investing increasing sums in the enhancement of hospitals, schools, town halls, and other public building types. Since the State Art Council was formed in 1937 over eighty institutions have received murals, mosaics, sculptures, and paintings through this agency alone.

A large number of schools have been built recently or are building all over Sweden. Funds for their embellishment are seldom niggardly. The City of Stockholm has in recent years spent $800,000 and today is furnishing to the new schools of the area $600 per classroom for decorative art. Provincial municipalities have assumed similar obligations. Among the most stimulating examples of "school art" are those found in the satellite towns around Stockholm.

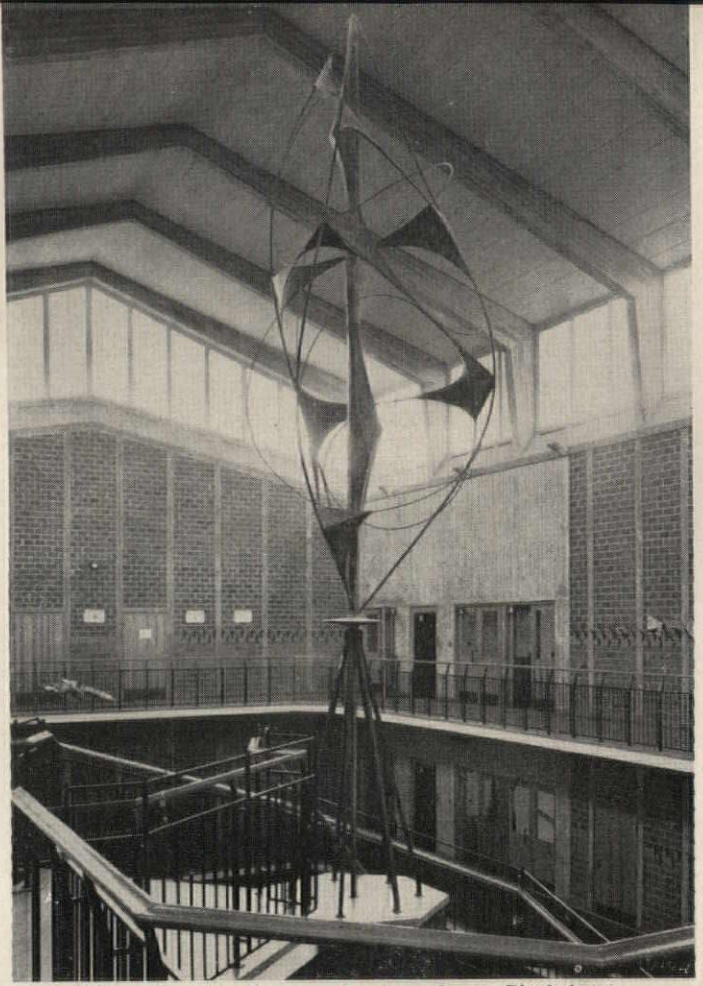
At the Blackeberg High School the great abstract sculptor, Arne Jones, has topped a spiral staircase with an eighteen-foot piece in copper. At Vallingby —a new suburb which has attracted international attention (ARCHITECTURAL RECORD, April 1957)—one of the schools owns Sweden's longest work of art: a 360 ft by 8 ft mosaic relief in brick. Here the architect with two sculptors and a ceramic artist used only unglazed, standard units in yellow, red, brown, gray-green, and gray-black to form clown, bird, and Indian motifs. The colorful, expressionistic frescoes by Vera Nilsson at Vatertorp and Tor Horlin at Stureby (*opposite page*) are in greatest contrast to the painting (*left*) of Lennart Rohde at the Angby High School and the architectonic composition of Eric H. Olson, whose bright colors foreshorten a 180-ft corridor in the Central School at Laxa. Together with the 46-ft enamel frieze by Endre Nemes and the granite sculpture by Ivar Johnsson (*opposite page*) this selection of examples indicates the wide stylistic range which is being brought to school children in a country which believes in an esthetic environment for education.

At Vasteros the income from a fund of over a million and a half dollars is used to adorn the city with public art, and the schools are at the top of the list. The public schools in Stockholm have formed a committee to purchase studio paintings for the schools. A society known as Art in the School arranges traveling exhibitions for distant communities; and a national organization is sponsored by unions, employers, farmers, and cooperatives to make available color lithographs.

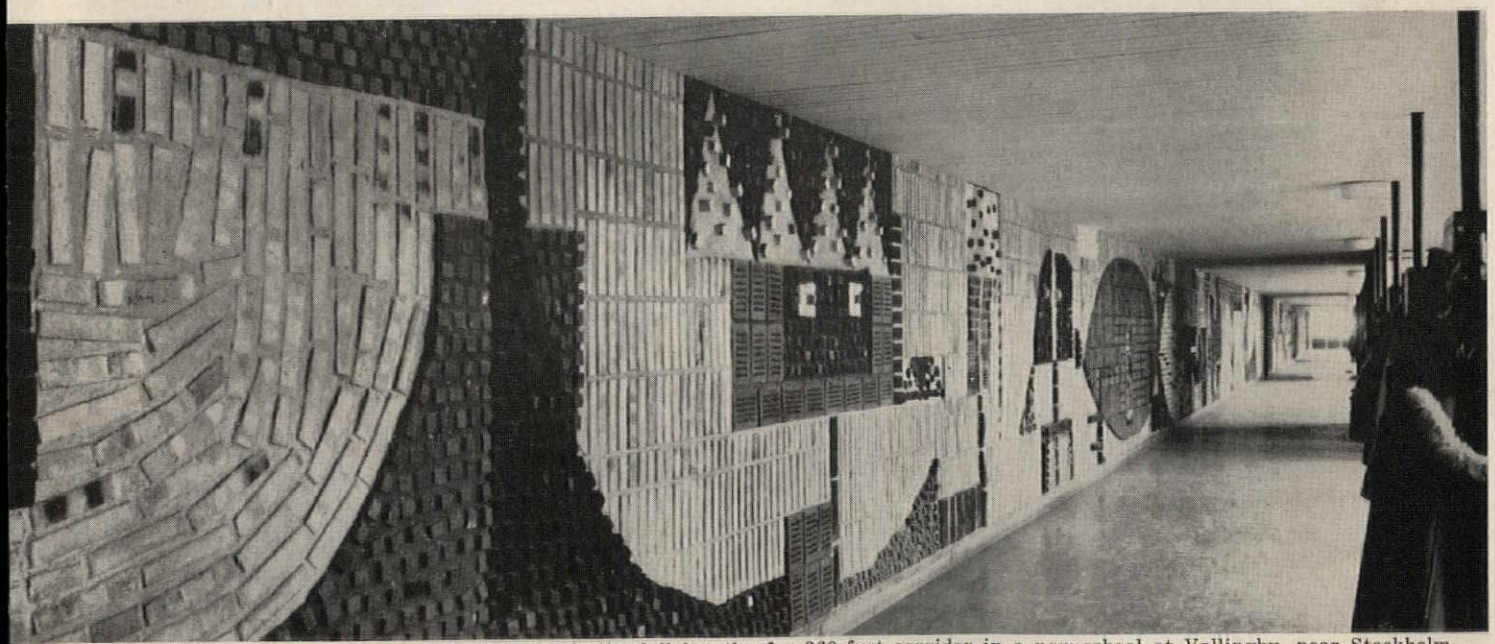
While Sweden feels that it has only made a beginning it has in fact taken a position of positive leadership among nations concerned with anything more than a routine program in education.

"The Tale of Wind and Sunshine," fresco by Vera Nilsson, Vatertorp

"The Travels of Marco Polo," fresco by Tor Horlin, Stureby



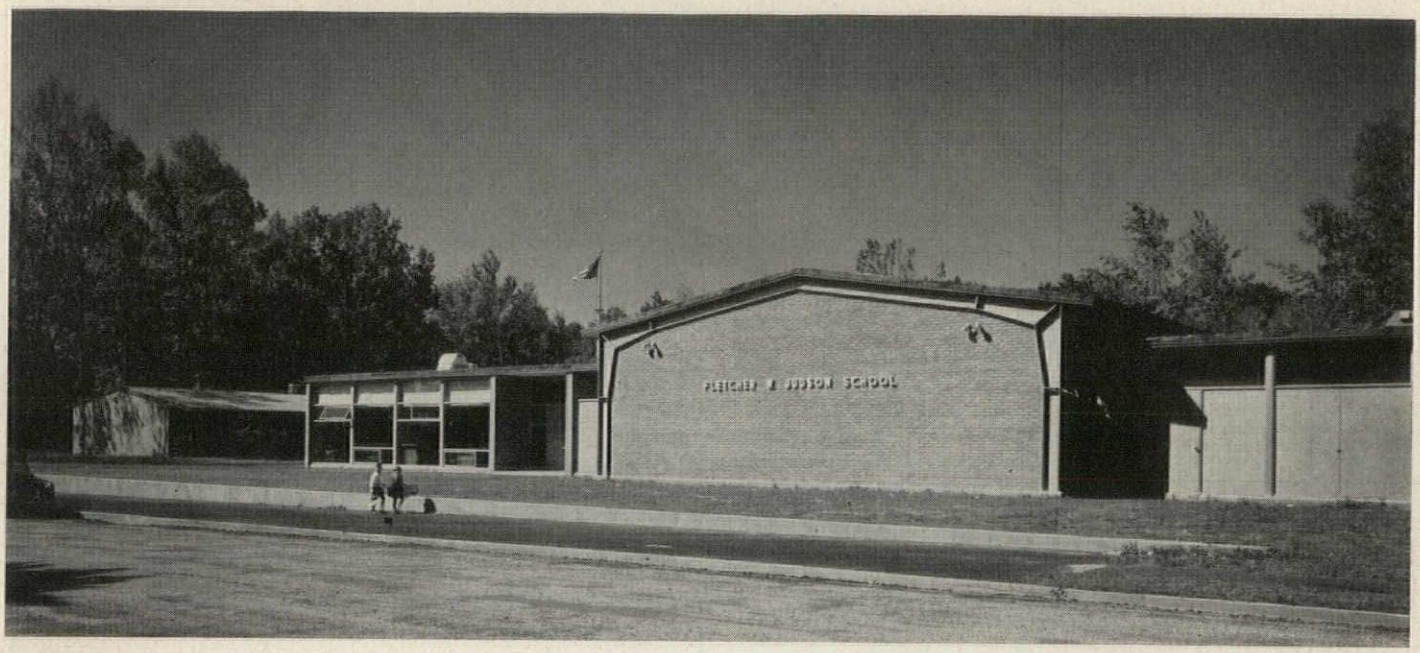
"Spiral Space," enchased copper by Arne Jones, Blackeberg



Mosaic relief in varieties of common brick extends the full length of a 360-foot corridor in a new school at Vallingby, near Stockholm

Granite horse and rider by Ivar Johnsson, Stockholm's Old City

Exterior enamel frieze by Endre Nemes, Eriksdal School, Skovde



Elementary School Stresses Campus Plan

Many of the nice features of this very nice school spring from thoughtful handling of site conditions. The site, while very pleasant, was rocky as well as having rolling contours. Perhaps the major dividend that resulted was the campus scheme; the dispersion of the various buildings was desired in any case, but it did seem more natural on this site.

This particular campus scheme seems especially nicely developed, with changes in levels and large trees enhancing the outlooks from each unit and also adding to the feeling of separation of buildings and play areas. The kindergarten takes one end of the first unit (moving away from the administrative building) and has its own play yard. First and second grades take the rest of this unit, these having a separate play area. Two more grades are similarly situated in the second building; two more in the third.

The architect stresses economy in his use of this campus scheme; there is a great saving in corridor space, and a much lessened risk of fire loss. In this connection heating is by individual gas-fired heaters, each serving two classrooms. This was an economy measure both in first cost and in maintenance, since the gas utility company handles maintenance of the heaters.

But basically the desiderata lie in the direction of environmental matters. Teachers and pupils have liked the environment so well that any doubts about the campus scheme have already been forgotten. Building units are kept to child scale, and children seem to develop a sense of identification with their own buildings.

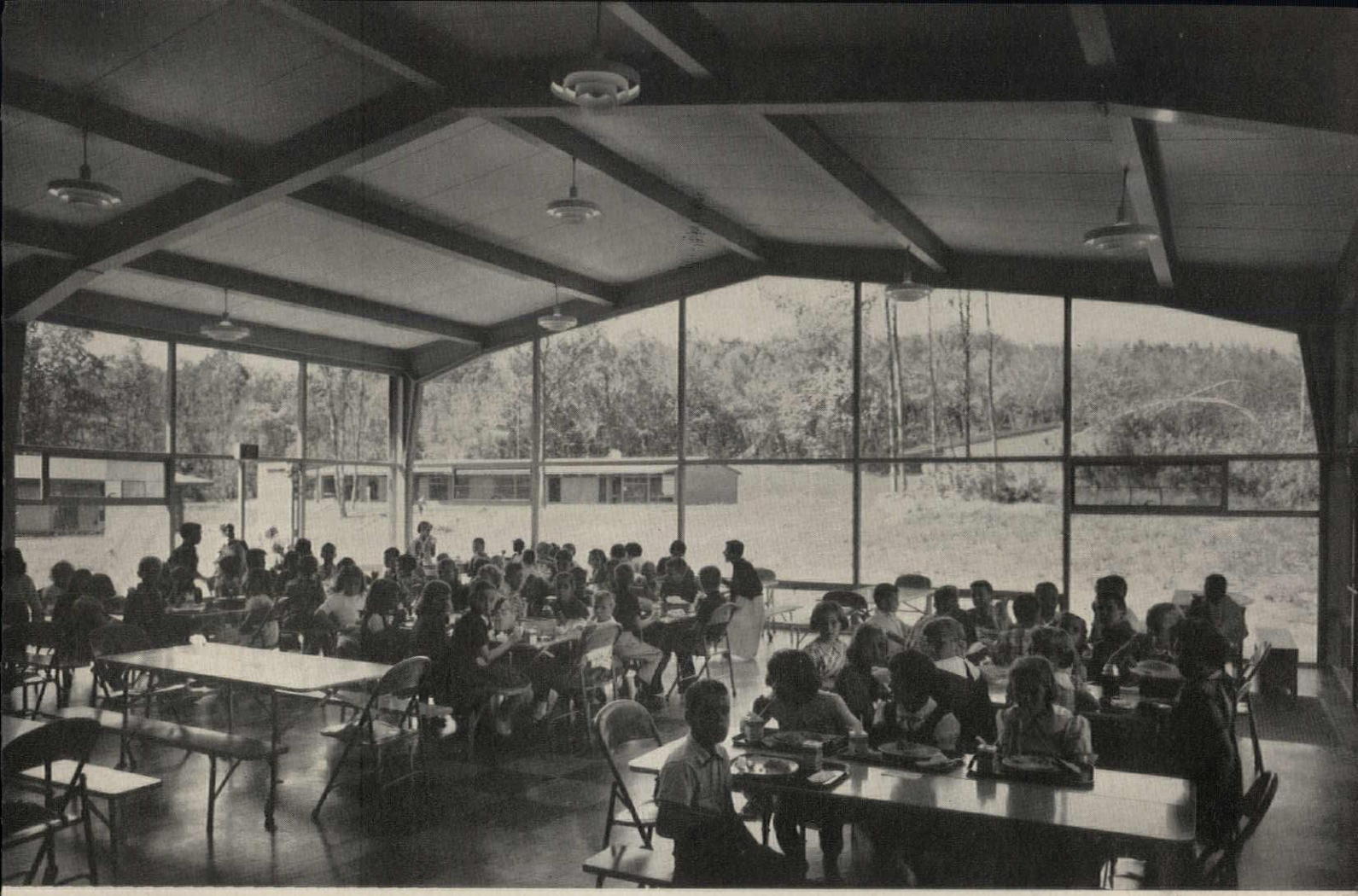
The site conditions also tended to narrow the classrooms somewhat, to keep building units from getting too long. The narrower classrooms, while basically an economy measure, do give good lighting conditions. With overhangs it has not been necessary to install venetian blinds, especially since the daylight from either side is essentially side lighting.

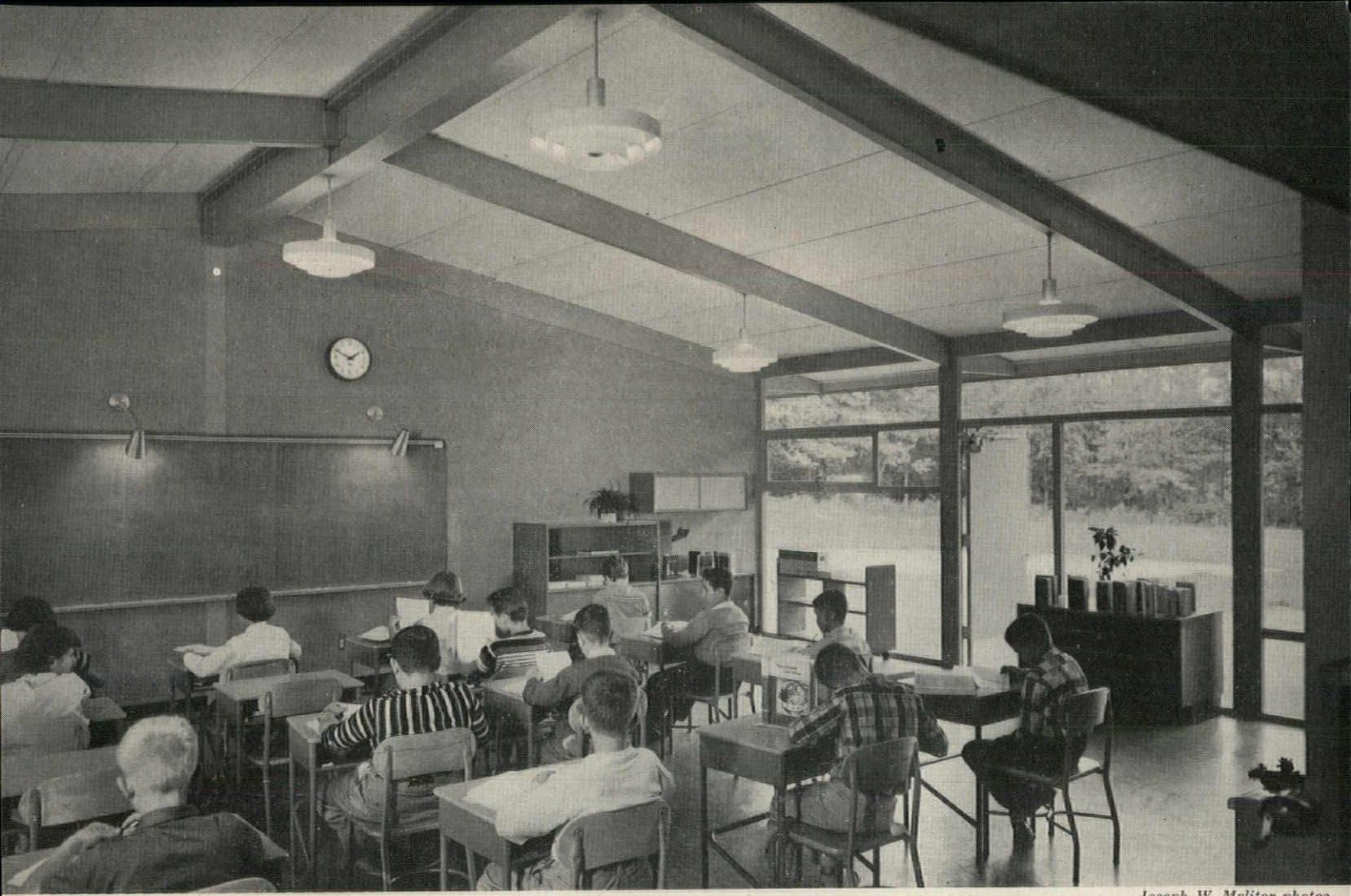
Construction is of steel frame with exterior walls of glass, brick and porcelain enamel panels.

Fletcher Judson Elementary School, Watertown, Conn.; Architect: Warren H. Ashley; Structural and Mechanical Engineers: Marchant and Mineges; Site Planners: Charles A. Currier and Associates.

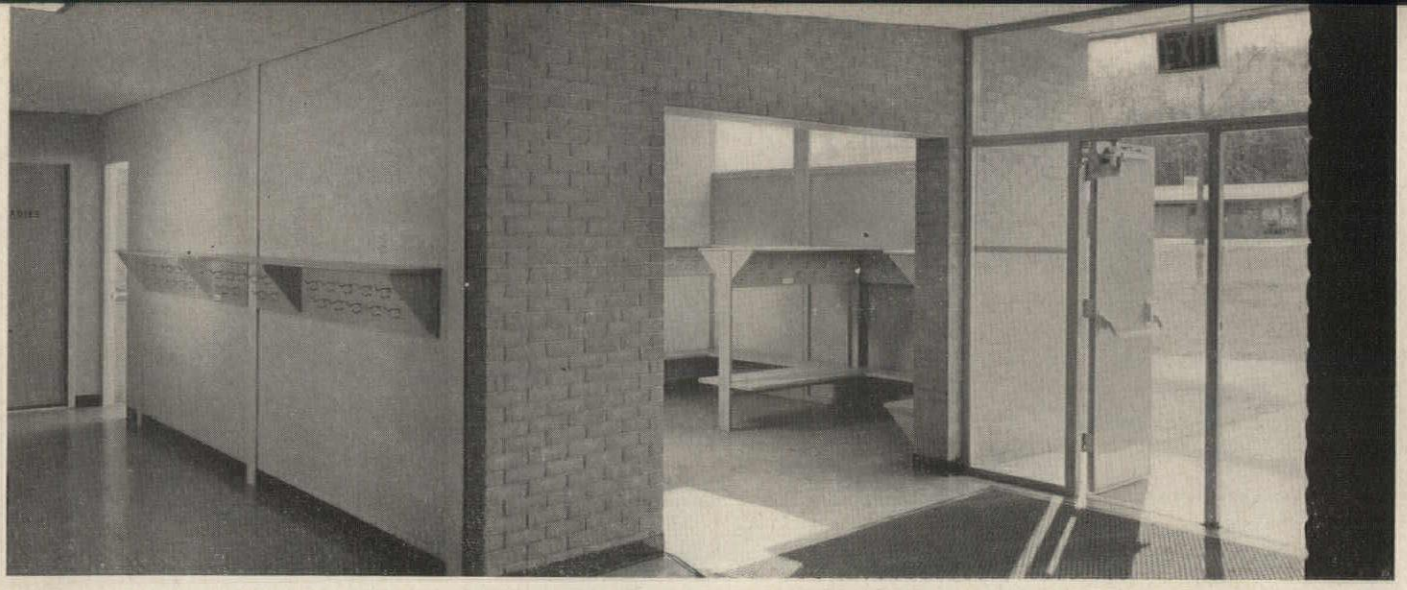
COST OUTLINE: FLETCHER JUDSON SCHOOL

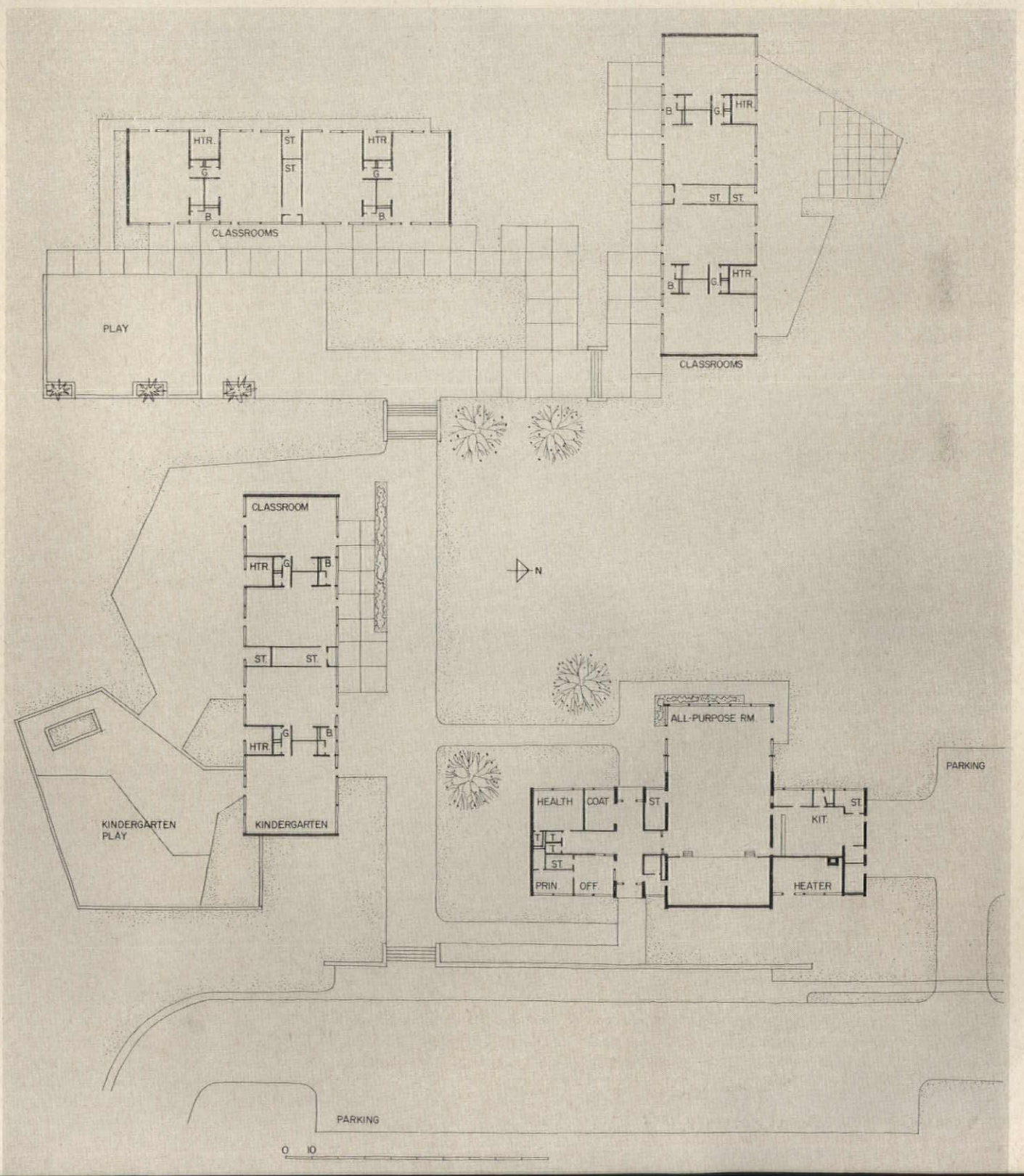
BUILDING CONSTRUCTION	
General construction	$233,530
Plumbing	39,500
Heating and ventilating	26,000
Electrical	27,750
Carpentry and millwork	18,720
Painting and finishing	6,000
	351,500
EQUIPMENT	
Kitchen	13,000
SITE DEVELOPMENT	
Clearing and grading, drainage, water supply, roads and driveways, parking areas, walks—uncovered, paved play areas, fencing and walls, planting	68,320
LAND	—
FEES	
Architectural, landscape architect, structural, mechanical and electrical, supervision and tests	51,341
ADMINISTRATION	—
TOTAL	$484,161
GROSS AREA (SQ FT)	21,000





Joseph W. Molitor photos


EXIT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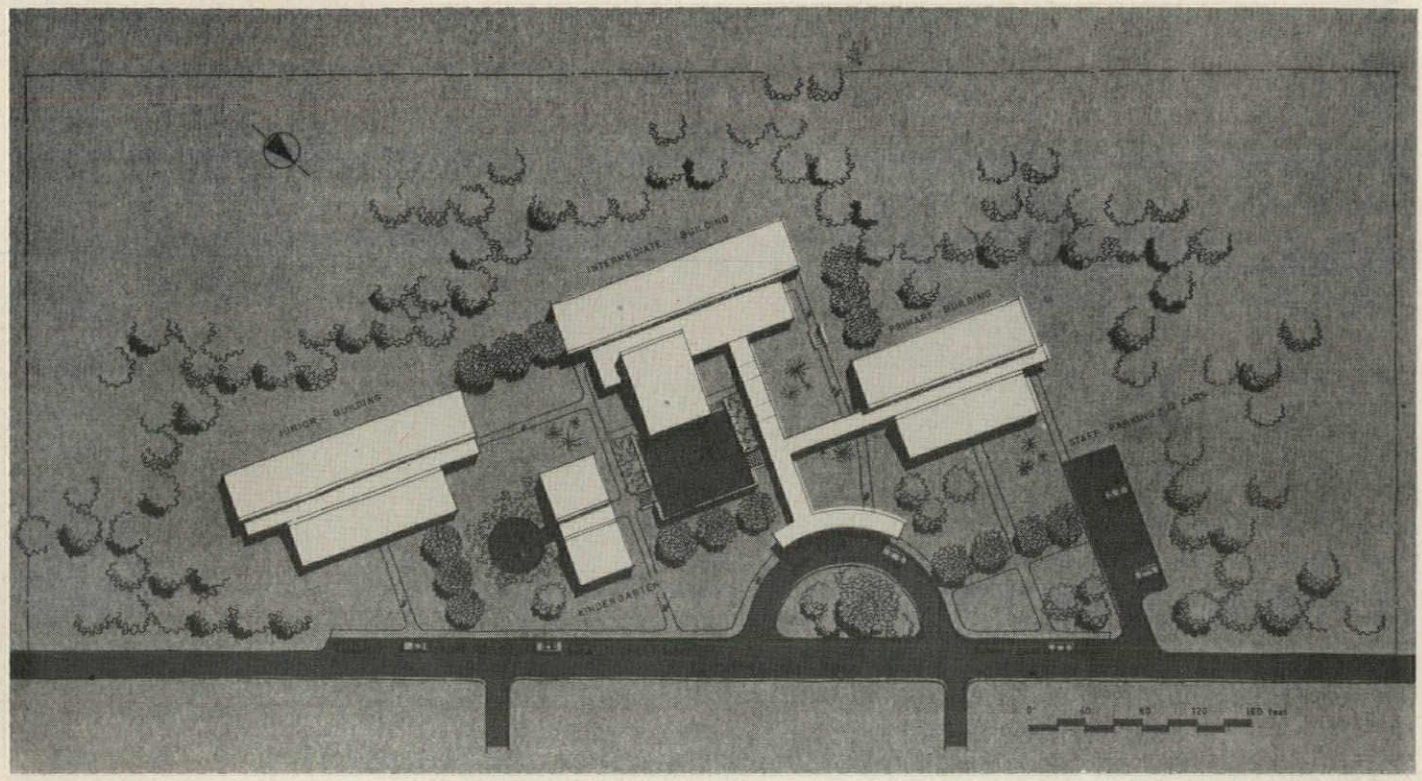


Small Three-Grade Unit for a Church School

This 150-pupil school, first unit of a private elementary group comprising a K-9 school, establishes a concept, and a style, for the full development. A campus scheme is used, with separate classroom buildings for the various age groups, "not only because it offers an ideal solution to the expanding program but because it offers fine educational rewards in relating each child to his own small integrated group." Architectural scale of the buildings is lowered to meet the scale of the child, and outdoor educational areas are better defined through the relative disposition of the buildings.

The design emphasizes structure, and classrooms have bilateral lighting. Like the barns indigenous to the area, the buildings have pitched roofs, and are rendered primarily in fieldstone and natural-finish wood. Roof lines rise and fall gently with the terrain.

The building facilities and outdoor areas are considered as one comprehensive educational plant. No sharp line is drawn between educational and play activities. Landscaping tends to define spaces and create partial separation according to separate buildings. Paved areas will be developed for court games and for play in muddy weather. Each classroom will have its own grassed areas as an outdoor classroom. Buildings occupy the highest part of the site, which slopes gently downward through an apple orchard to a lower, flatter portion reserved for athletic fields.

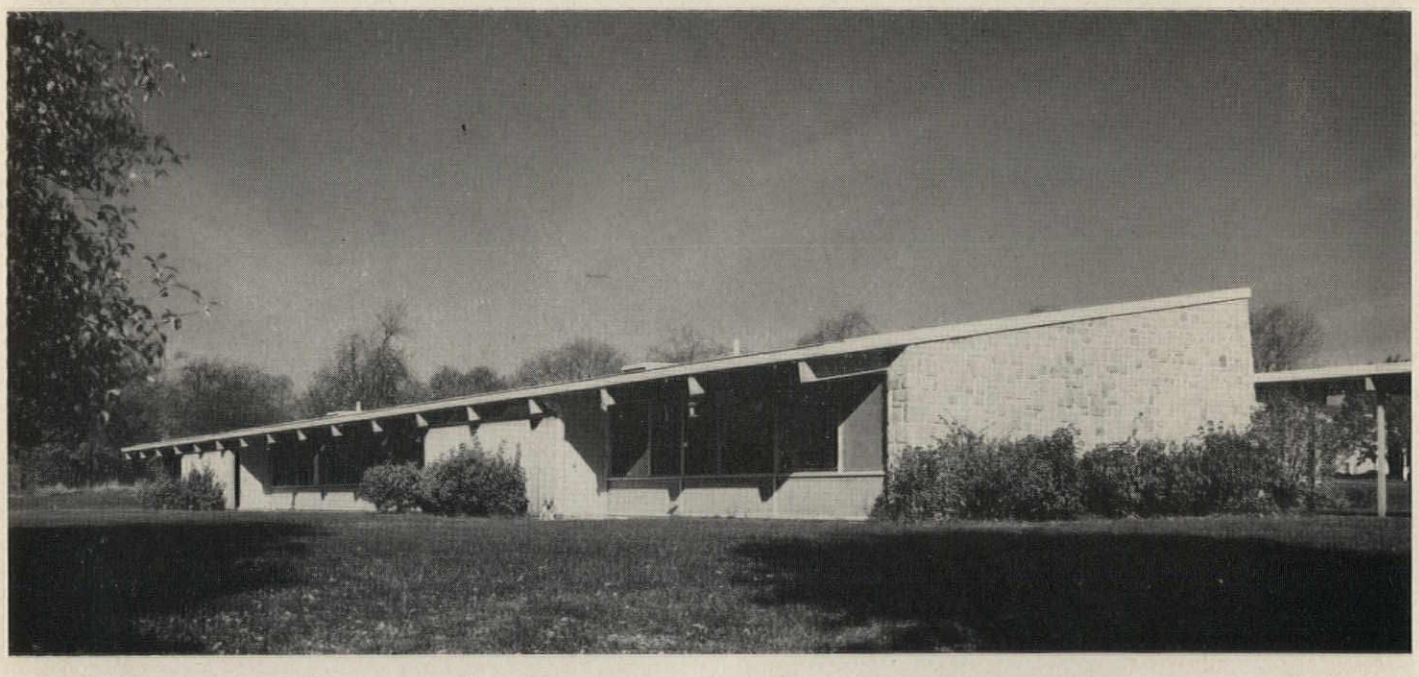
Classrooms have bilateral lighting from waist-to-ceiling glass walls on one side and clerestory windows above the corridor on the other. Some of the amenities featured in the classrooms include: two toilet rooms per classroom, movable storage cabinets for flexibility, library and work spaces in classrooms, soundproof partitions between rooms.

Construction is laminated wood frames and wood deck; concrete slab on grade, concrete panels below windows, redwood siding, exposed wood ceilings.

Elementary School for the Church of the New Jerusalem, Bryn Athyn, Pa.; Architect: Vincent G. Kling; Educational Consultants: Engelhardt, Engelhardt and Leggett; Structural Engineers: Stevens and Bruder; Mechanical Engineers: Pennell and Wiltberger.

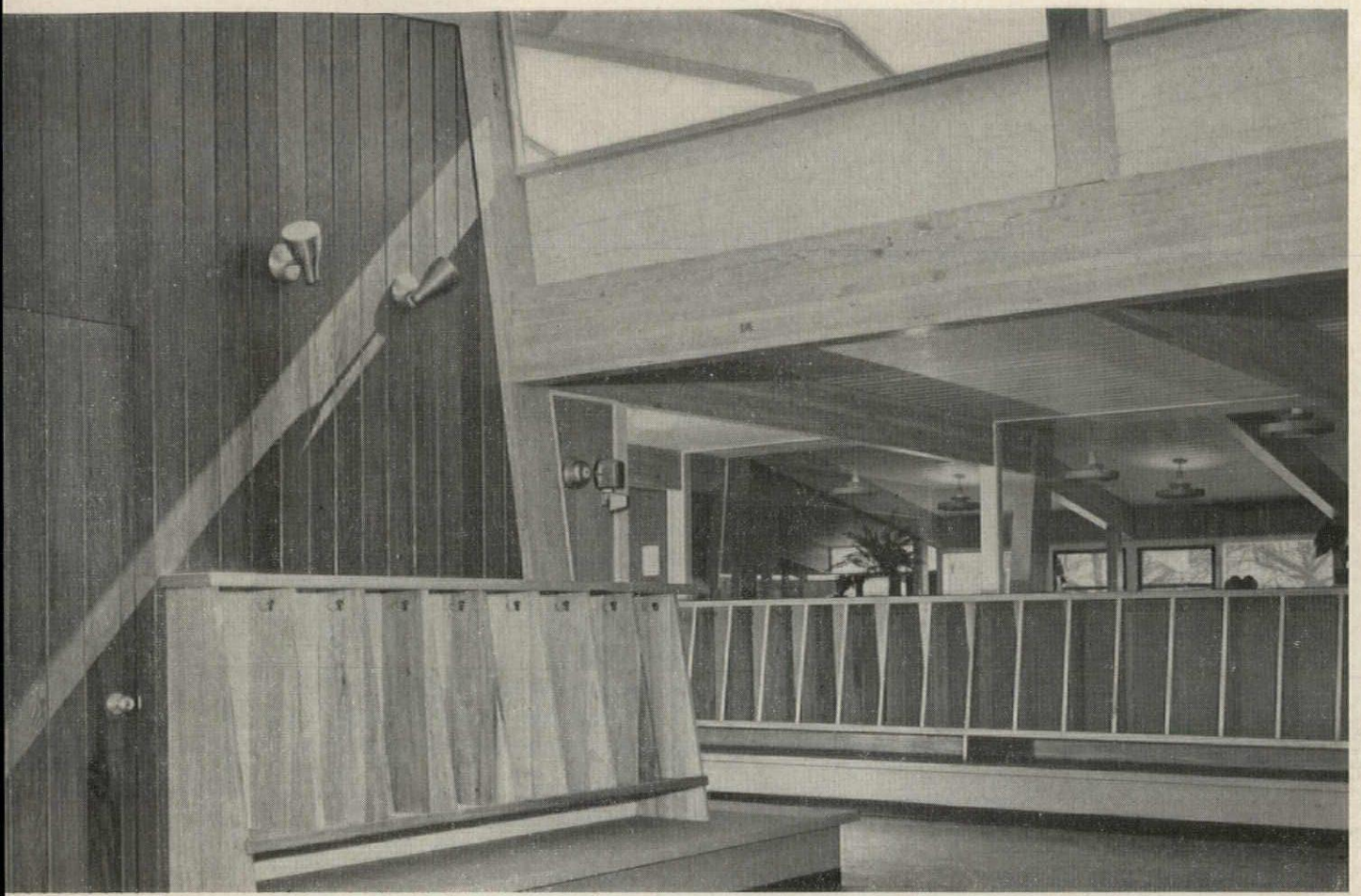
COST OUTLINE: BRYN ATHYN SCHOOL

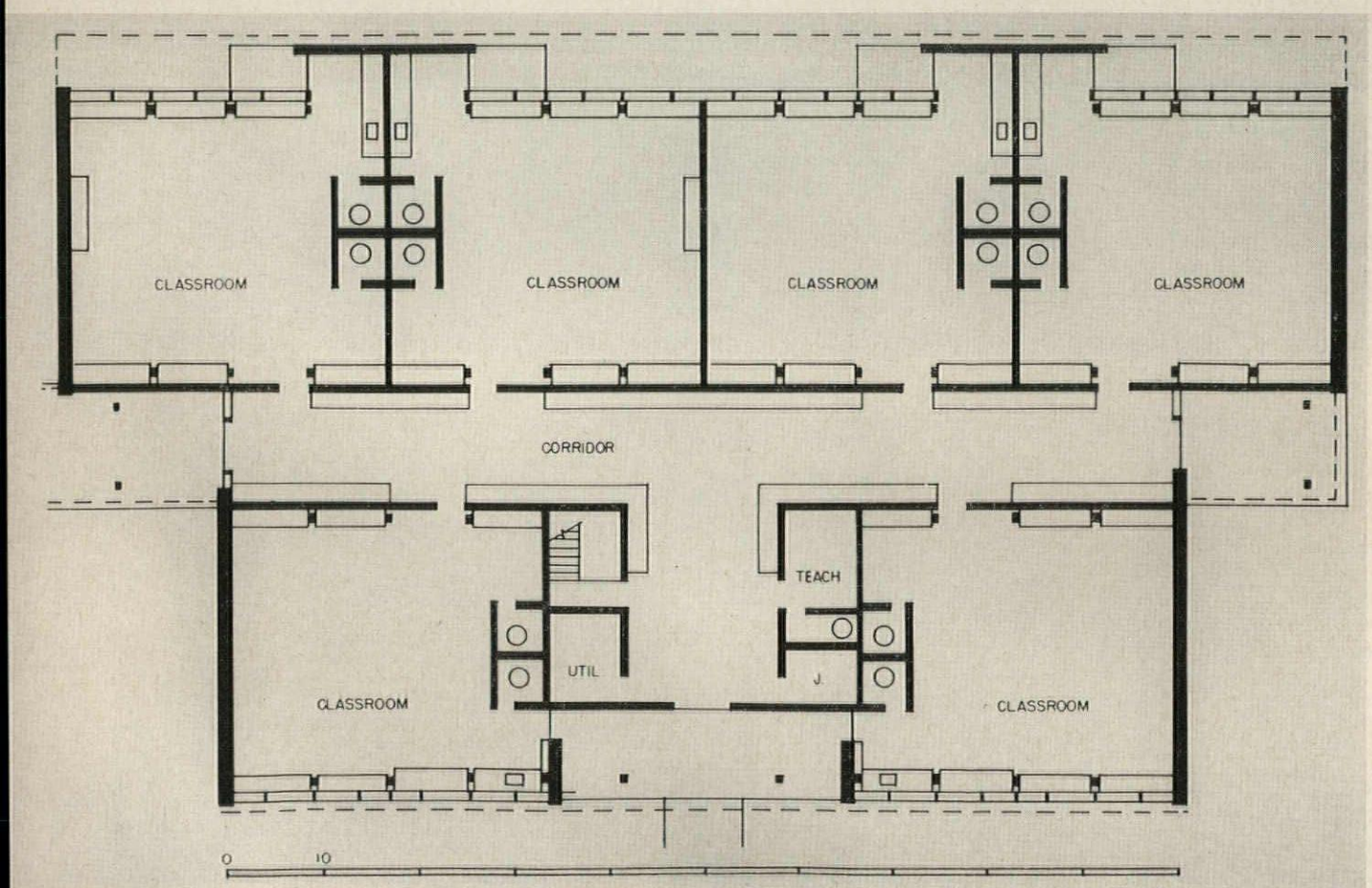
BUILDING CONSTRUCTION	
General construction (including fixed cabinet work and painting and finishing)	$122,500
Plumbing	13,000
Heating and ventilating	16,000
Electrical	6,500
	158,000
EQUIPMENT	—
SITE DEVELOPMENT	
Clearing and grading, drainage, sewage, water supply, electric and gas service, roads and driveways, parking areas, walks—uncovered	8,000
LAND	—
FEES	
Architectural, educational consultant, structural, mechanical and electrical, master plan of future development	20,500
ADMINISTRATION	—
TOTAL	$186,500
GROSS AREA (SQ FT)	10,020

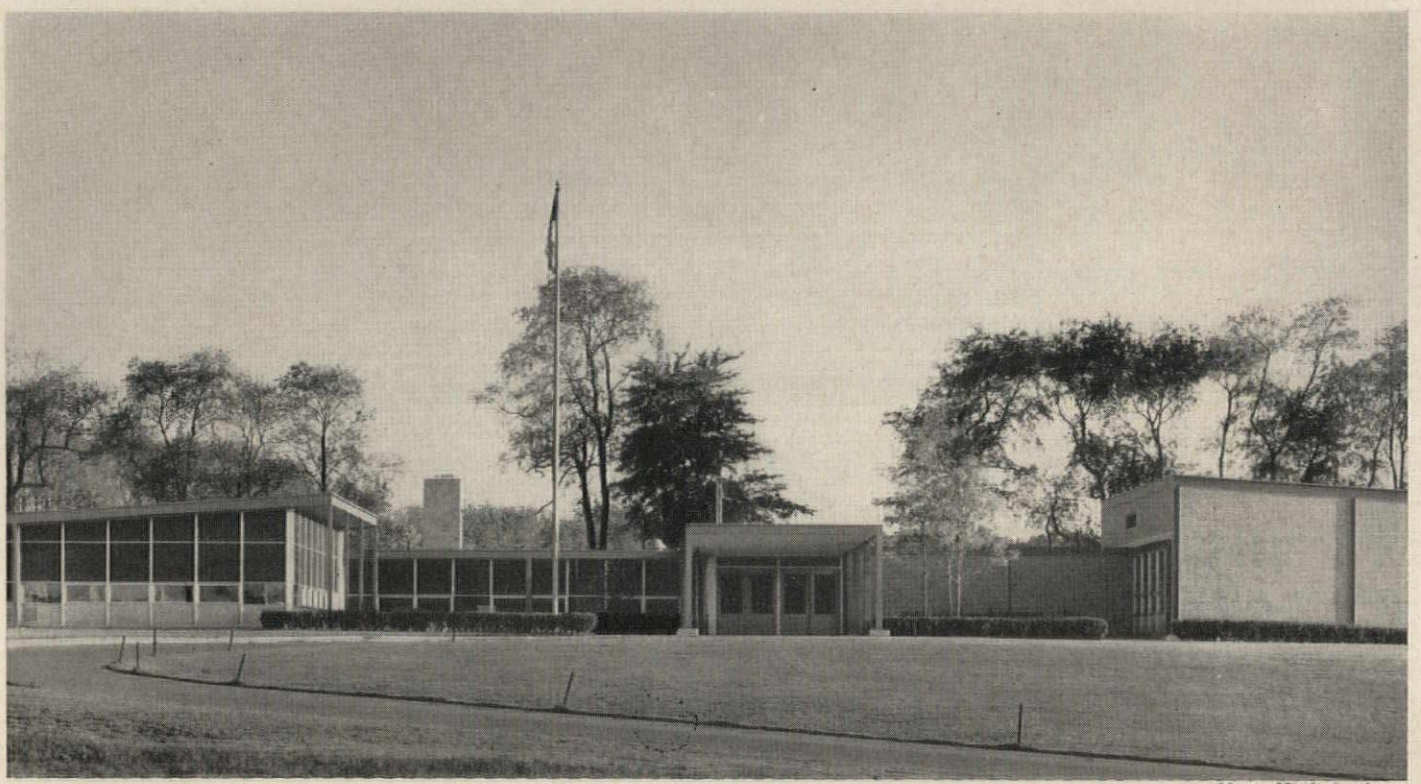


Lawrence S. Williams, photos

Elementary School, Bryn Athyn, Pa.







Marc Neuhof photos

Modern Version of the One-Room School

Here is the modern version of the traditional one-room schoolhouse. In actuality it replaces a two-room school. It is located some twenty miles north of Pittsburgh, Pa., and takes care of the school needs of a borough of approximately 300 families. Following another modern development which displaces the one-room school, this North Allegheny Joint Authority, formed in 1950, represents a school consolidation of three townships and Bradford Woods Borough; this is one of seven schools serving the jointure. The present school serves grades one to six, with 138 pupils, and is designed for the addition of six more classrooms.

Though small the school organizes like a larger plant intended for considerable community use. The classrooms are disposed according to the finger plan, even though the fingers are a little stubby. A small administrative section separates the classroom wings from the auditorium or all-purpose room. This room does get a great deal of night use for community affairs.

The finger plan gives good separation of the different grades. The architect comments that the play areas immediately adjoining and accessible to each classroom for controlled outdoor activities are extensively used, and have worked out well.

The architect was quite conscious of the glare problem in glass-walled rooms. He says: "Blue glass successfully cuts down sunlight penetration and at the same time gives a pleasant glow to the rooms. Window walls used for tack-up transparencies give rooms an inside-a-fishbowl-looking-out effect."

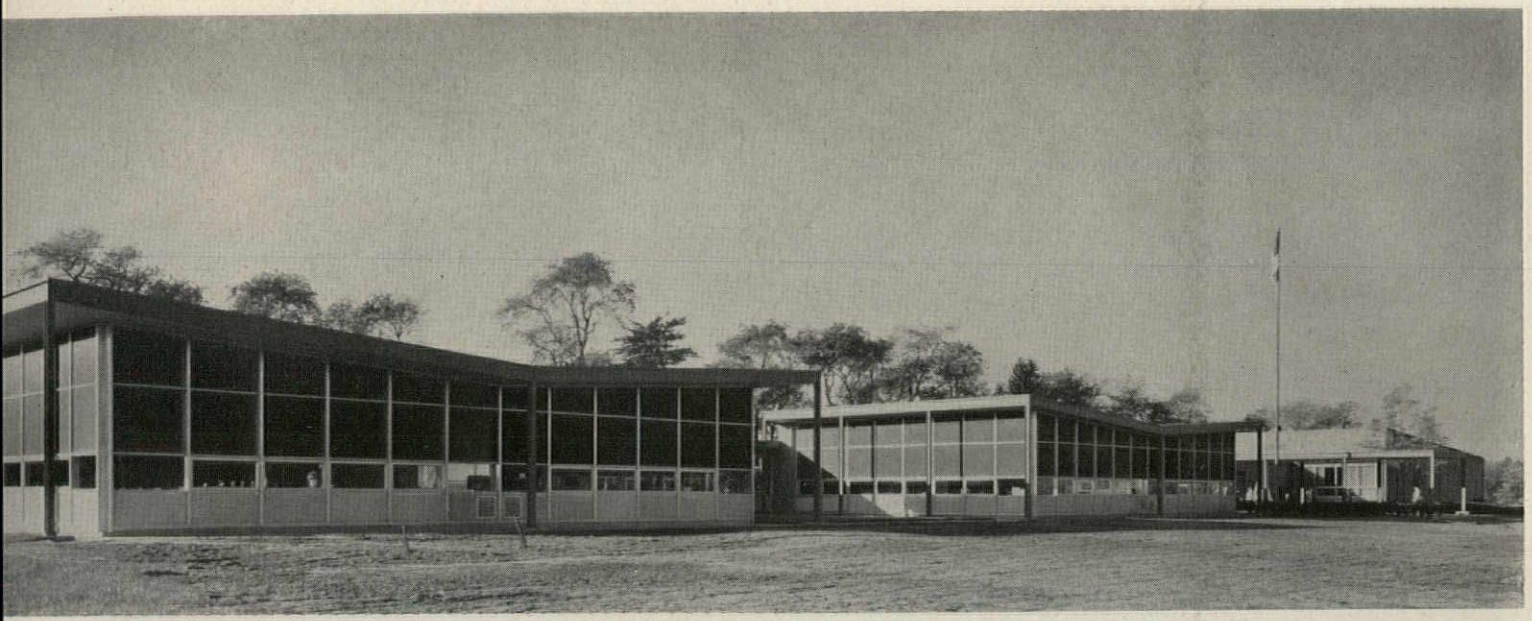
Construction is steel frame with steel roof deck and rigid roof insulation. Window walls have aluminum sash and cement enamel panels. Other exterior walls are of brick. Interior walls are painted concrete block.

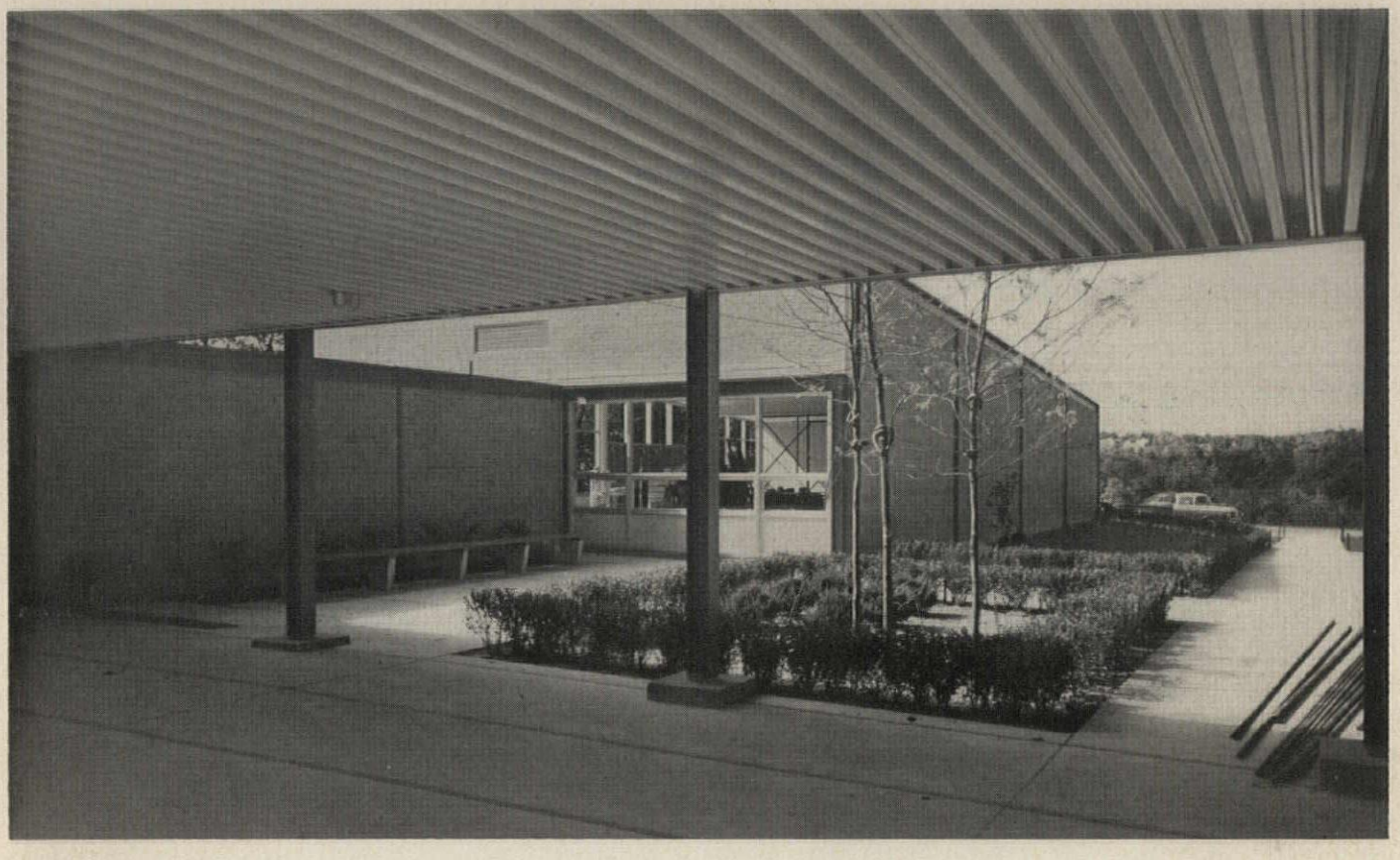
Elementary School, Bradford Woods, Pa.; Architects: Mitchell & Ritchey; Associate Architect: Louis Shulman; Landscape Architects: Simonds & Simonds.

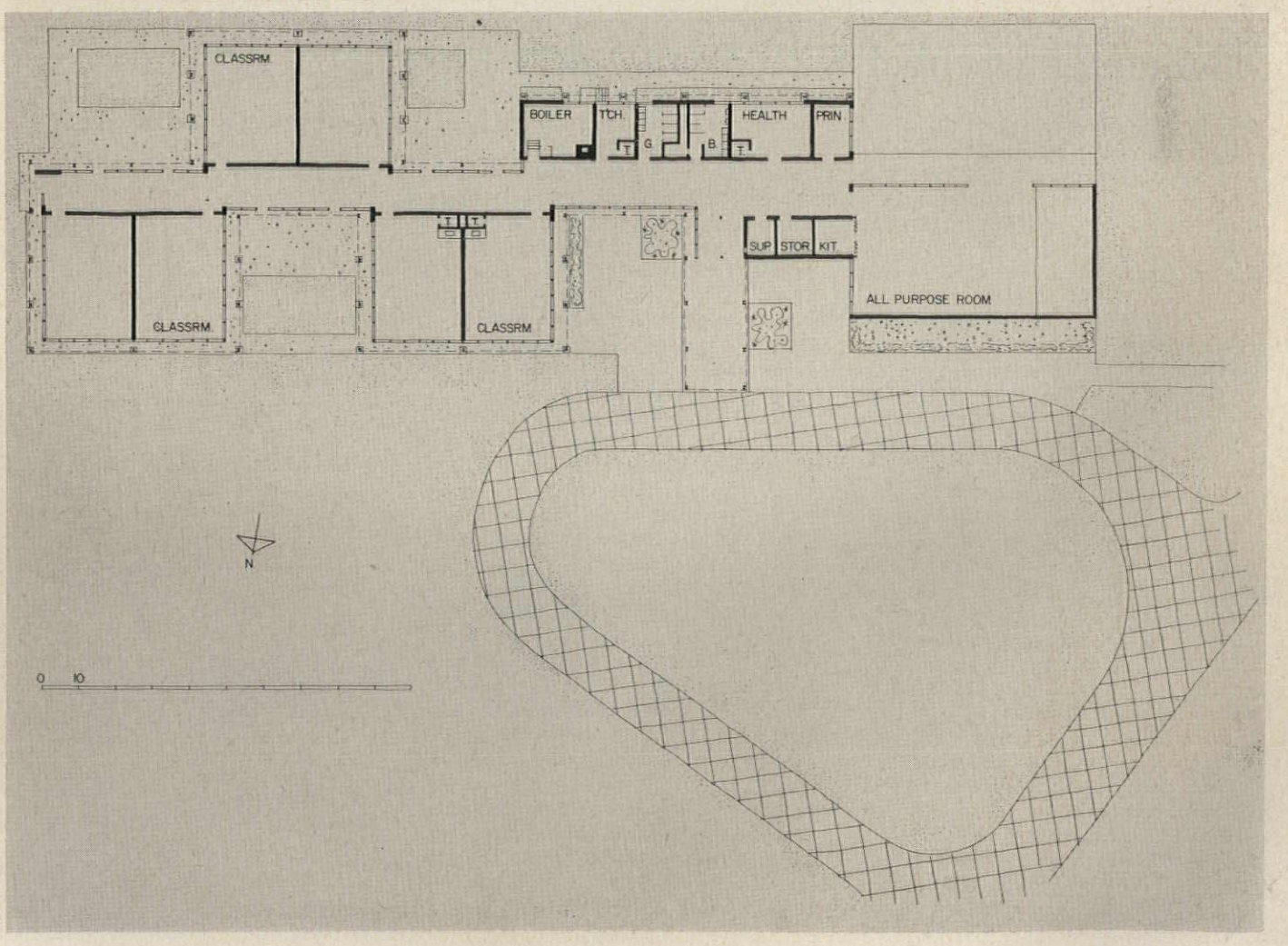
COST OUTLINE: BRADFORD WOODS SCHOOL

BUILDING CONSTRUCTION	
General construction	$206,712
Plumbing	34,548
Heating and ventilating	23,796
Electrical	20,863
	285,919
EQUIPMENT	
Chairs and desks, casework	12,466
SITE DEVELOPMENT	
Drilling well	541
LAND	7,000
FEES	
Architectural, landscape, structural, mechanical and electrical, supervision and tests	18,000
ADMINISTRATION	
Legal, advertising, insurance	3,322
TOTAL	$327,248
GROSS AREA (SQ FT)	16,828

Elementary School, Bradford Woods, Pa.



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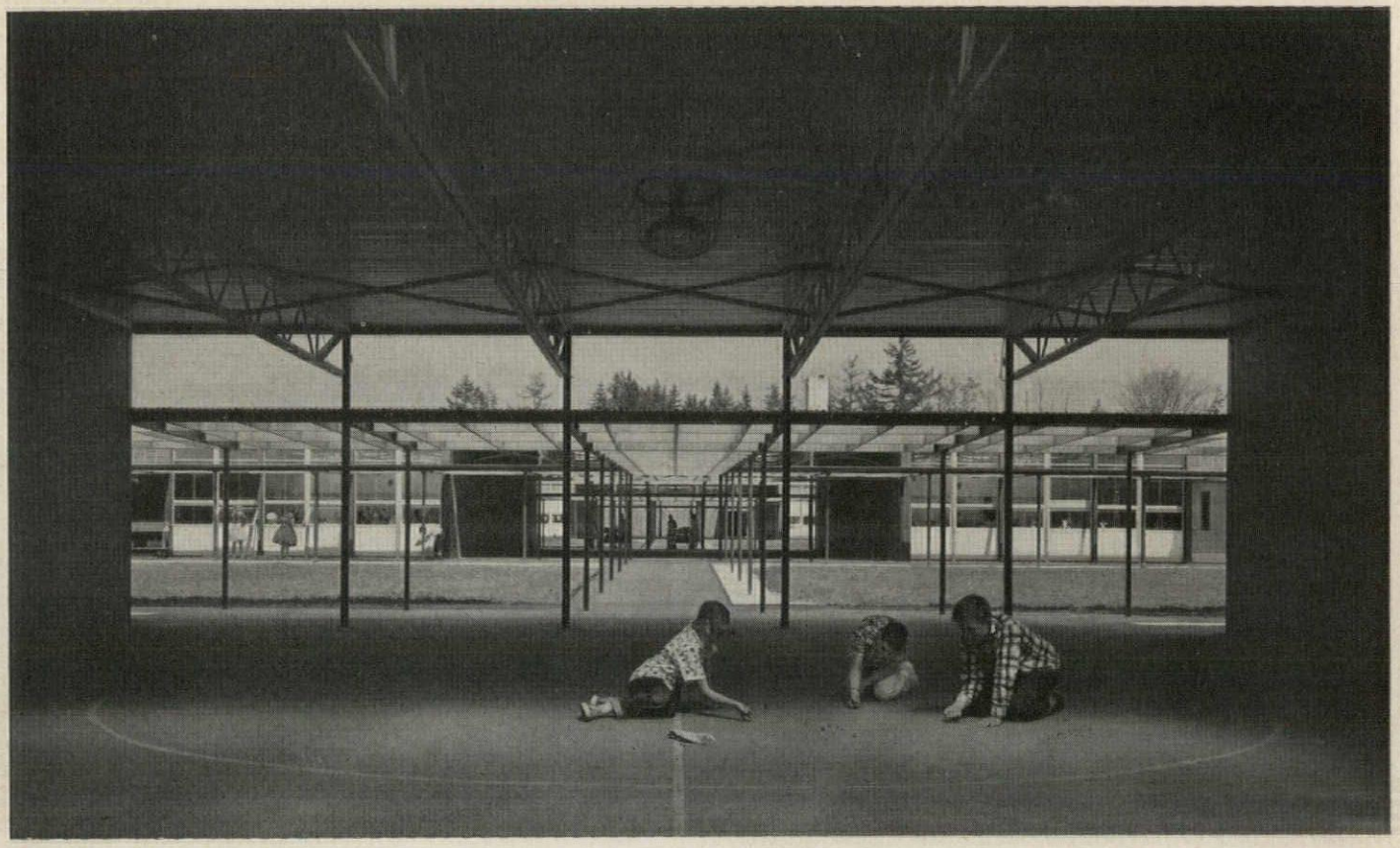


Elementary School with Economical Plan

The ingenious scheme for this school (plan, page 213) resulted from some fairly specific program requirements, largely focusing on economy of both construction and maintenance. The Bellevue School District asked for an elementary school to house 600 youngsters from kindergarten age through sixth grade. The plan, selection of materials and general characteristics of the school were left almost entirely to the judgment of the architect. The District did, however, specify: 1. low fire insurance costs; 2. low maintenance costs; 3, low floor area per pupil; 4. large classrooms; 5. bilateral lighting; 6. generous covered outdoor play areas. The scheme developed by the architects places classrooms in groups of four, two such groups being roofed in together with a covered play space separating them. Thus there are open outdoor spaces and covered ones, these latter necessary in a country with a long rainy season. There is still good separation of age groups, which results automatically from the disposition of the classroom groups.

Insurance costs were studied with the insurance agent; by using 6-inch brick exterior walls and metal window panel walls, the cost of insurance was cut to an uncommonly low figure.

Exposed brick walls, aluminum sash and corrugated plastic almost completely eliminated exterior painting. Area per pupil was lowered from an average of 85 to 110 square feet to only 63. The cluster arrangement of classrooms obviated interior corridors. The classroom area was kept up to 960 to insure a good teaching situation and to allow for the crowding that seems inevitable where population growth is so large.

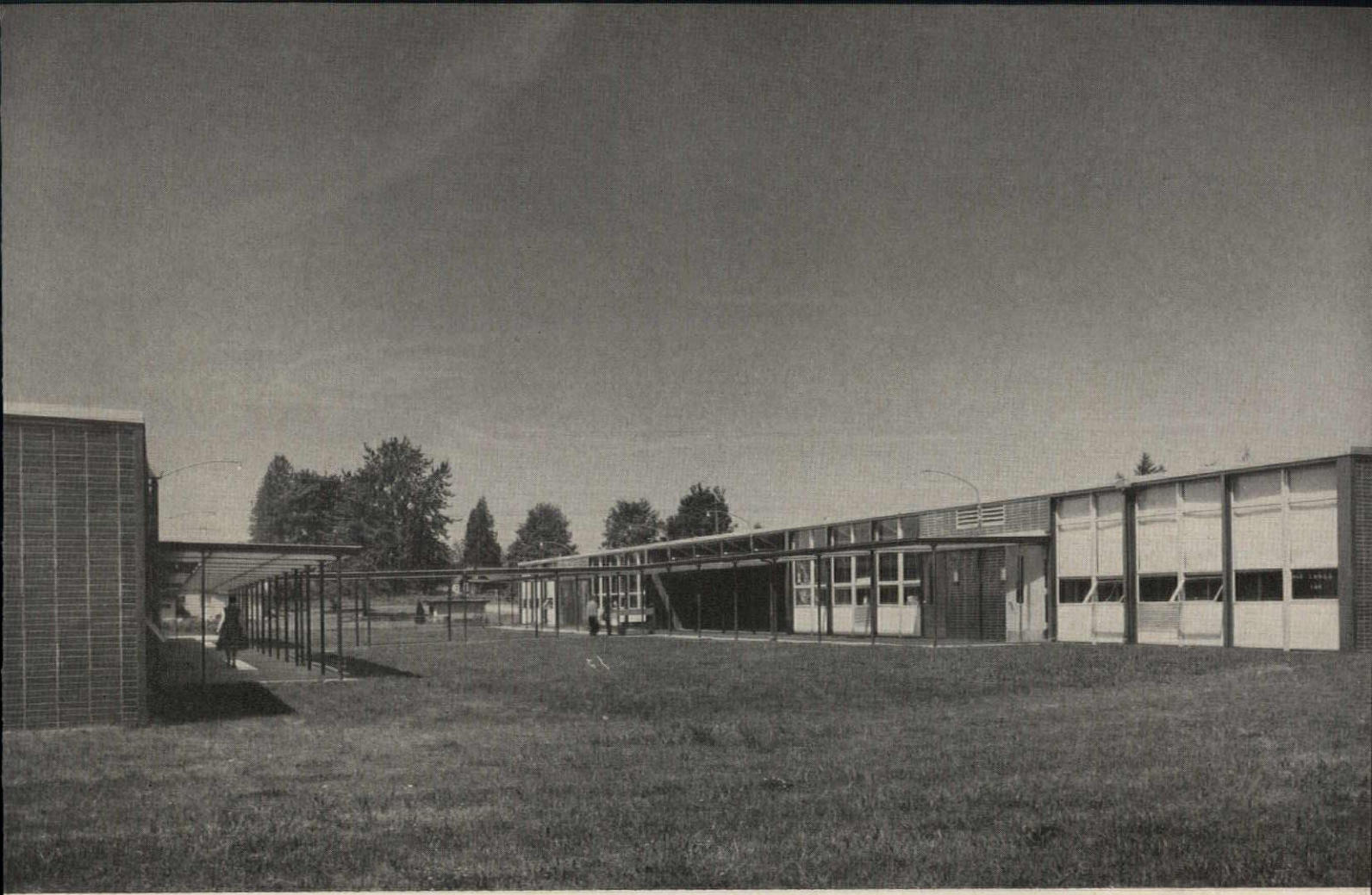
Bilateral lighting was accomplished by using corrugated plastic over a large portion of each classroom. No effort was spared to capture as much natural light as possible, because the weather is continually cloudy during the school year.

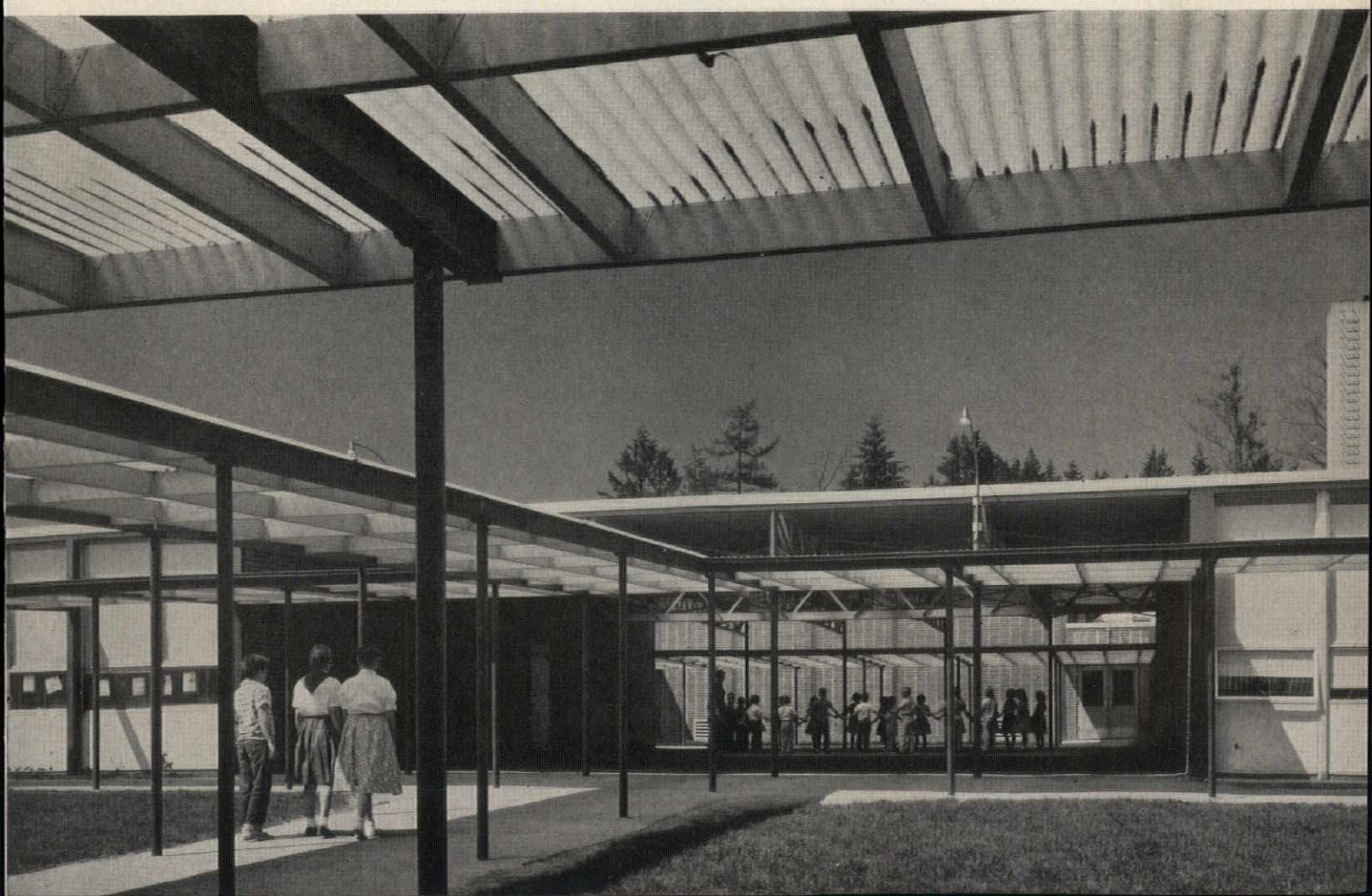
Construction is steel frame with masonry, aluminum and glass walls. Interior walls are plaster and ashwood veneer. The bricks used are dark red, with exposed steel painted charcoal gray. Covered walks are yellow plastic with charcoal gray columns.

Ashwood Elementary School, Bellevue, Wash.; Architects: Naramore, Bain, Brady & Johanson; Associate Architects: Worthington & Skilling and Bouillon & Griffith.

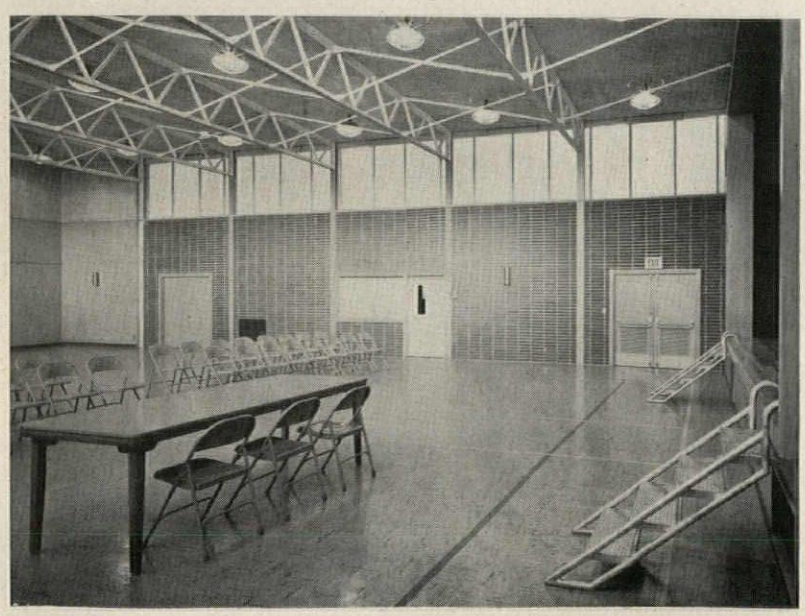
COST OUTLINE: ASHWOOD SCHOOL

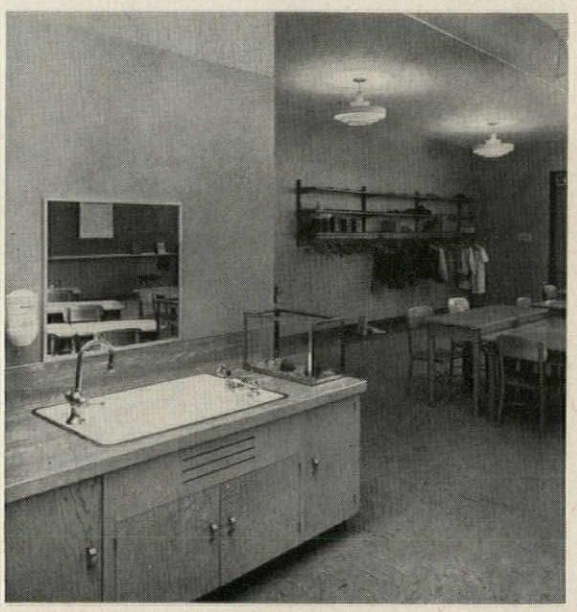
BUILDING CONSTRUCTION	
General construction	$290,818
Plumbing and heating and ventilating	83,014
Electrical	25,299
Fixed cabinet work	11,600
Painting and finishing	9,500
	420,231
EQUIPMENT	
Chairs and desks, cafeteria seats and tables, kitchen, administration, library	25,183
SITE DEVELOPMENT	
Clearing and grading, drainage, sewage, water supply, roads and driveways, parking areas, walks—uncovered, paved play areas, athletic fields, fencing and walls, planting	31,594
LAND	44,453
FEES	
Architectural, educational consultant, structural, mechanical and electrical, civil, acoustical, color consultant, supervision and tests	28,140
ADMINISTRATION	
Legal, advertising	1,450
TOTAL	$551,051
GROSS AREA (SQ FT)	39,438

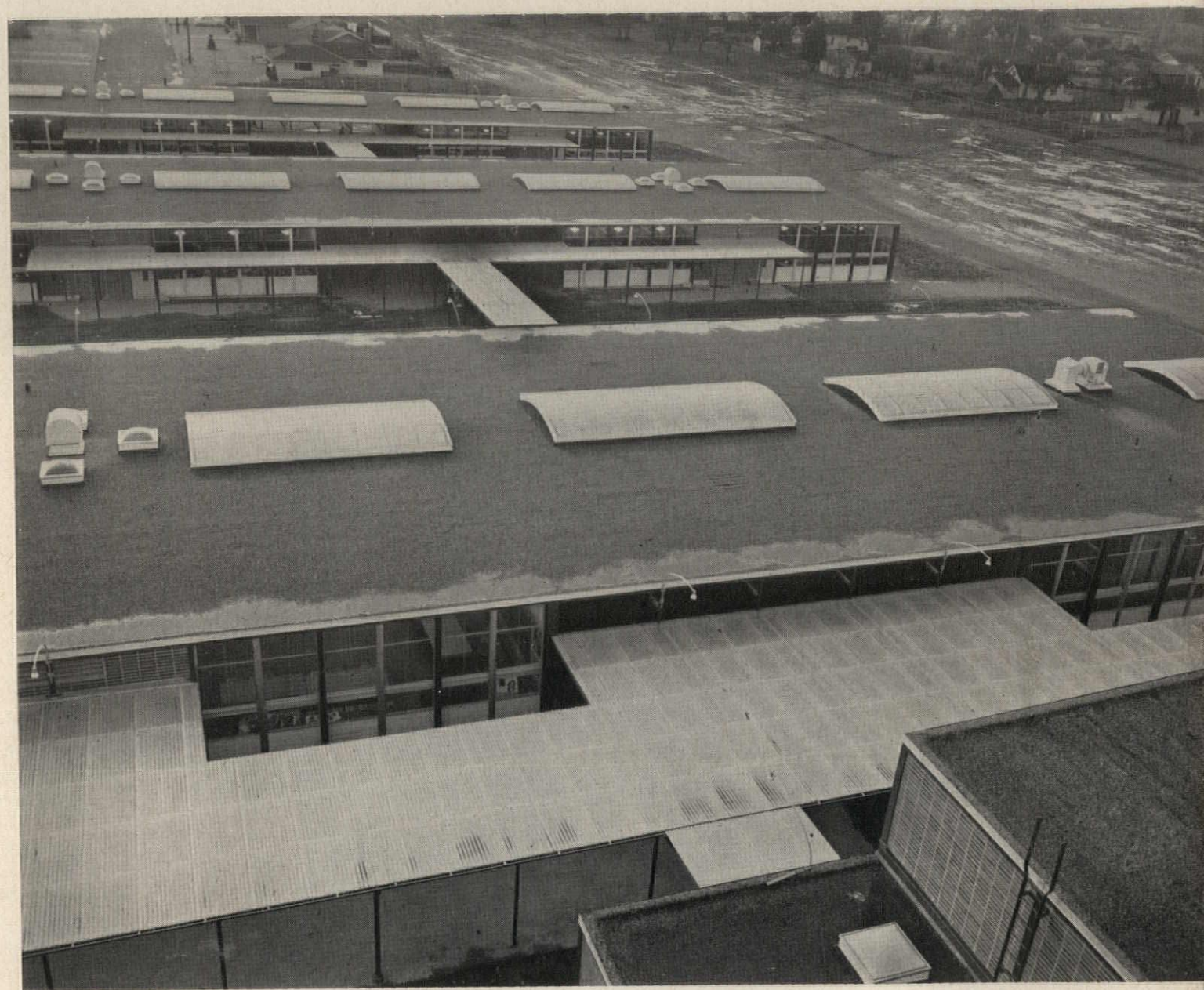




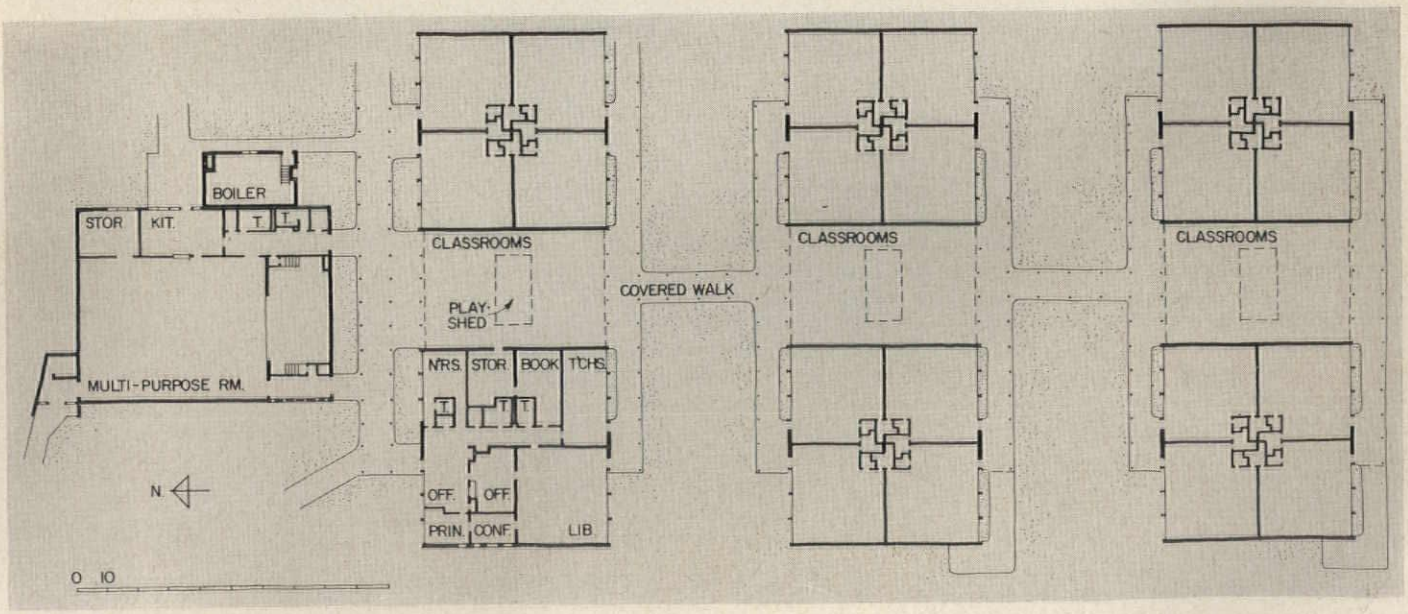
Ashwood School, Bellevue, Wash.

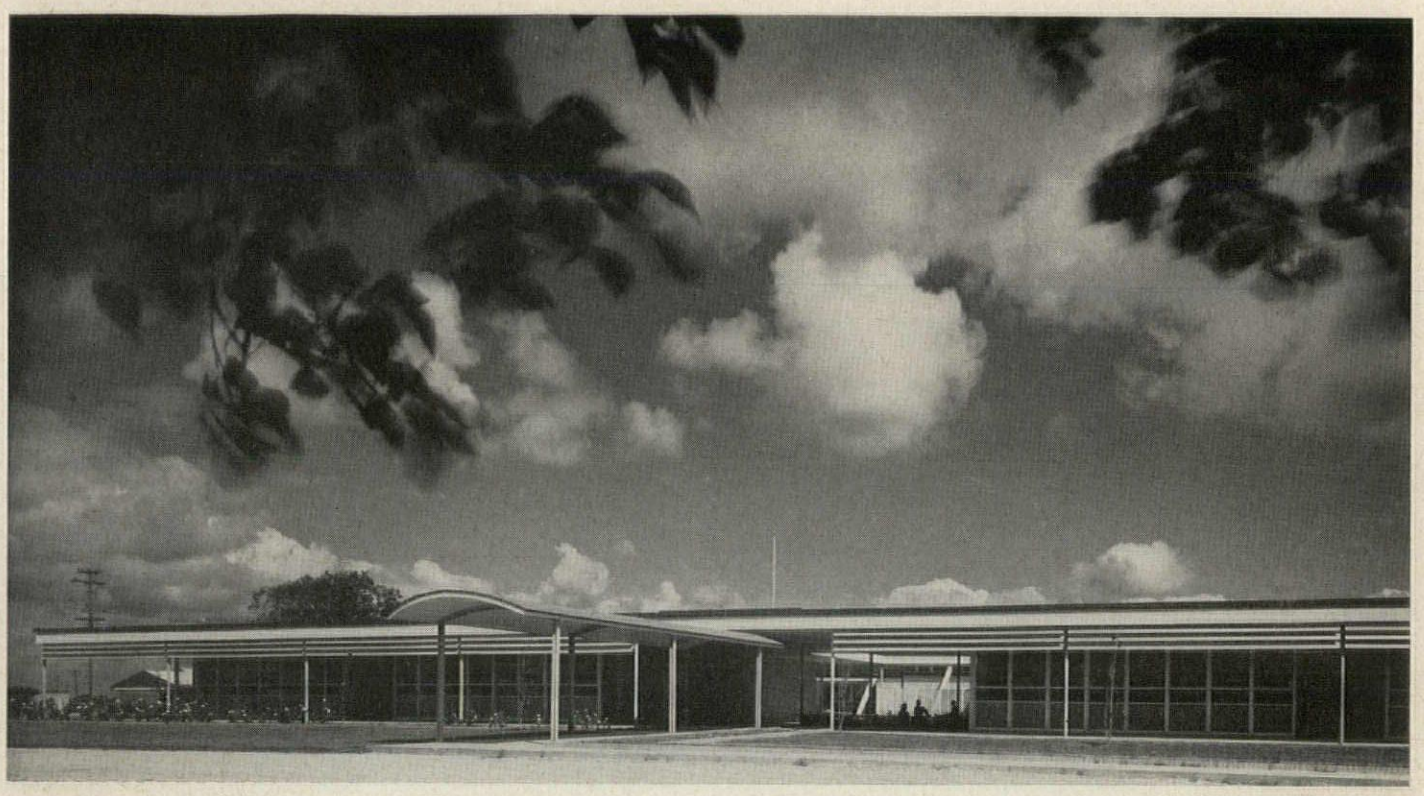






Dearborn-Massar photos





Budget School with Amenity Values

While this was distinctly a budget school and the architects understood that full well, nobody, architects or clients alike, wanted to adopt a bare-bones attitude. They all wanted "as many useful, climatically comfortable and esthetically desirable features for teaching, learning and community use as possible. . . ." Surely the resulting school would rate high from the standpoint of what good design can contribute at virtually no added cost.

The matter of community use suggested the separation of the administrative-physical education-community use areas from the classroom group. The solution is a disposition of the two main groups on opposite sides of an enclosed patio-courtyard. The two groups are connected by covered walkways screened by masonry walls which complete the enclosure of the court spaces. The courtyard serves firstly as a controlled outdoor activity area for the first and second grades; it is also planned for outdoor assemblies and programs. Near the gym-auditorium the yard level is somewhat higher, and serves as an outdoor stage; it has convenient access, moreover, to the dressing rooms.

Community use also suggested the small kitchen off the gym floor; this is strictly for community functions, not for school use. The children are fed from heated food carts from a junior high school nearby.

The classrooms have a little separation of their own: they cluster in two groups of four on either side of a minor patio which serves to open the main courtyard to the school entrance. Thus the already small scale of the school is further reduced at the child's working areas.

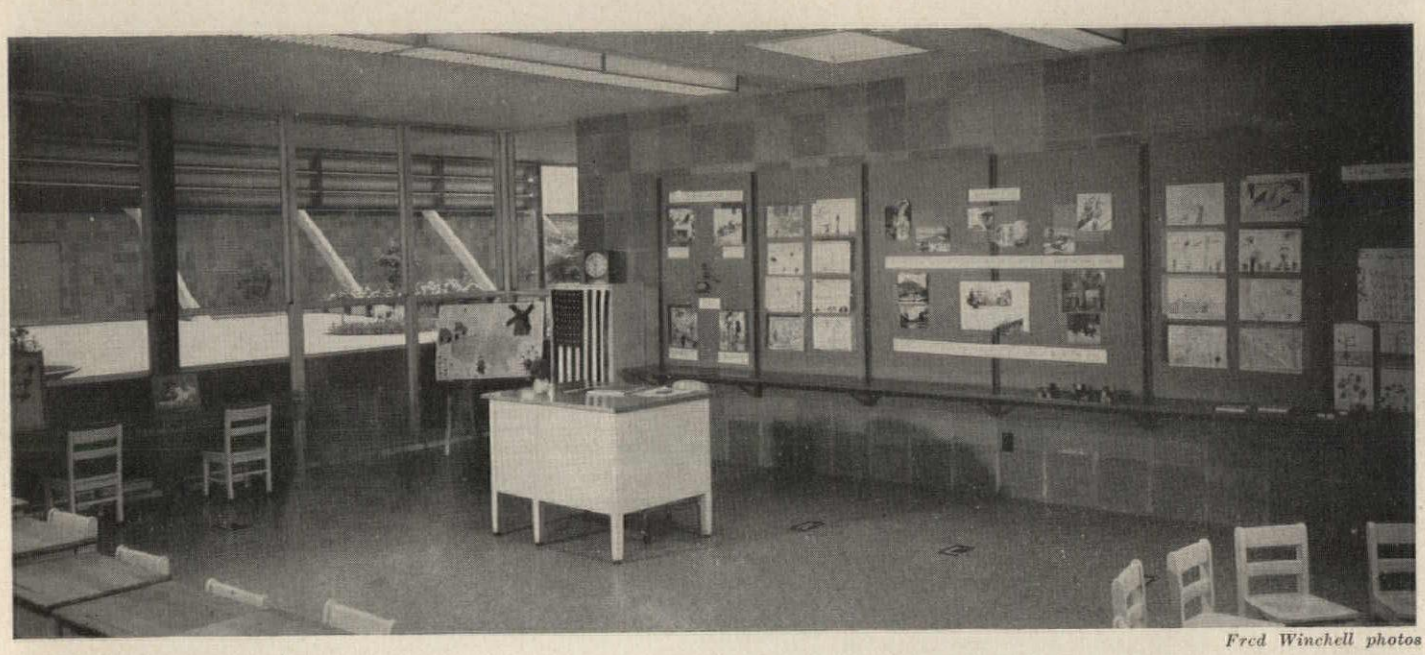
Some of the other amenity values pushed into the small budget include: large amount of counter and cabinet storage space; skylights with metal jalousie light control in classrooms and library; aluminum double-hung floor-to-ceiling window walls to keep down maintenance costs while giving good light and ventilation.

Construction is light steel and bar joist flat roof framing with gypsum deck, laminated wood arches on four-inch wood roof deck over gym.

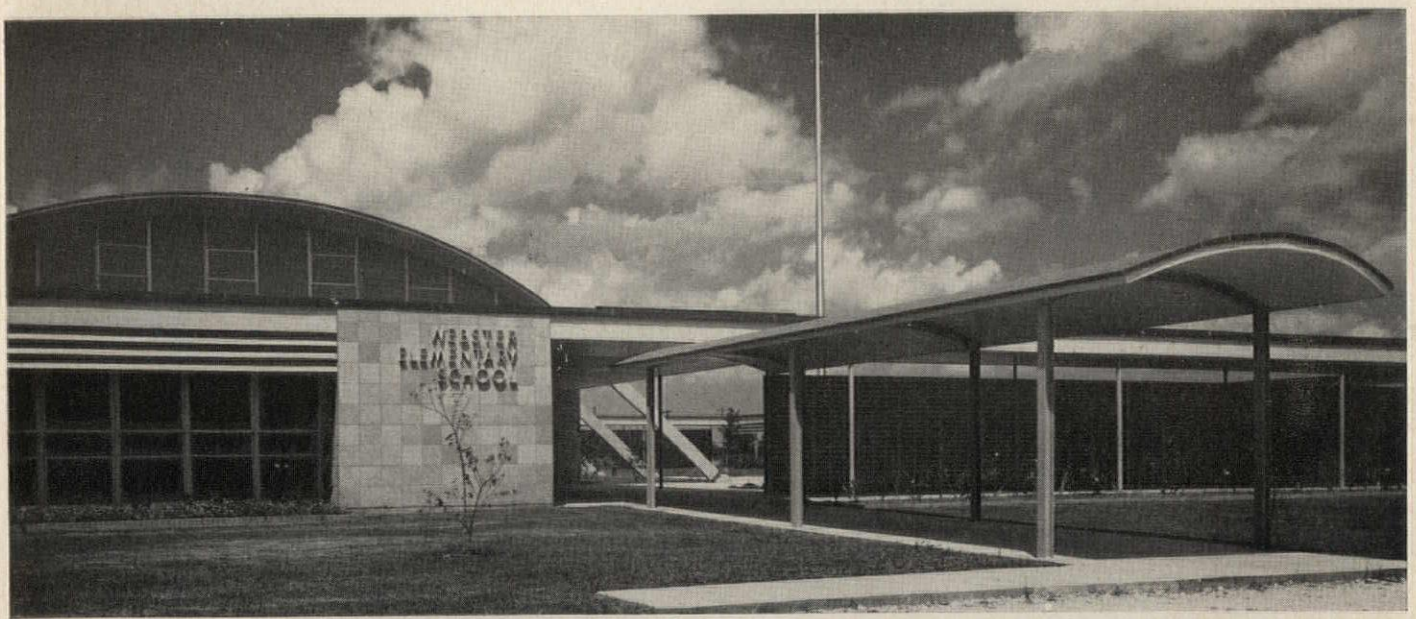
Webster Elementary School, Webster, Tex.; Architectss George Pierce and Abel B. Pierce; Associate Architect: E. J. Goodwin; Structural Engineer: H. E. Bovay; Landscape Architects: Bishop & Walker.

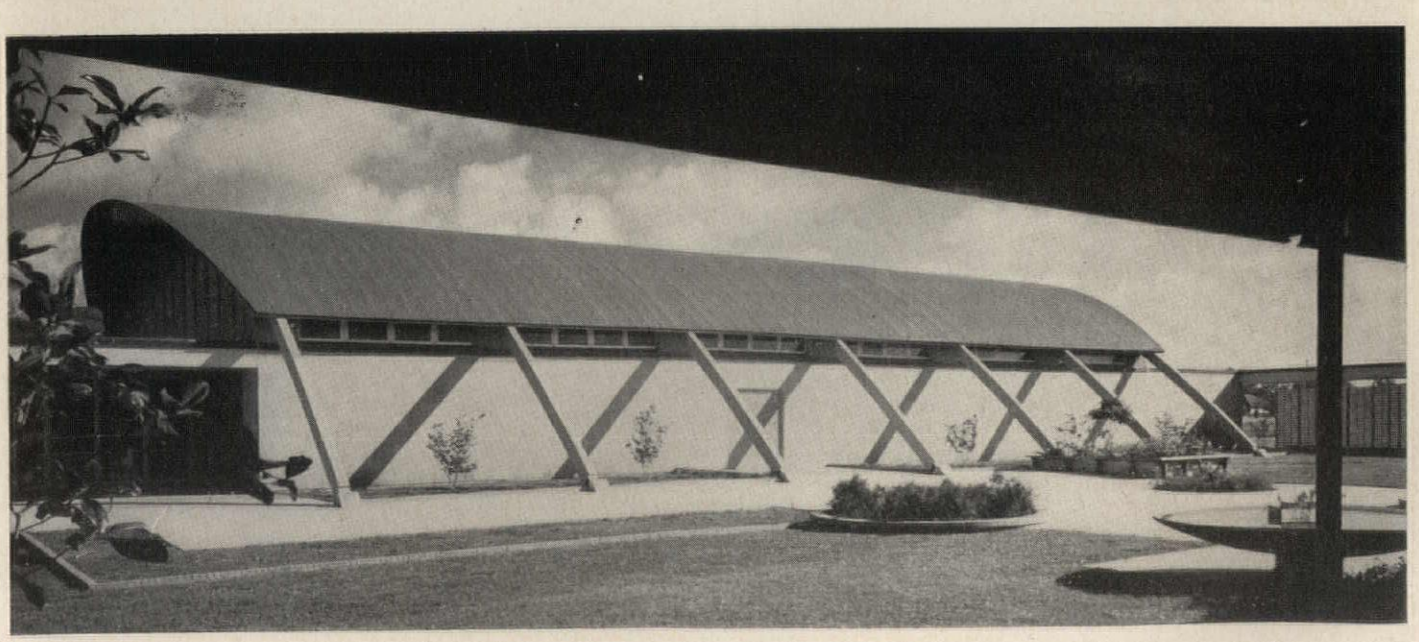
COST OUTLINE: WEBSTER SCHOOL

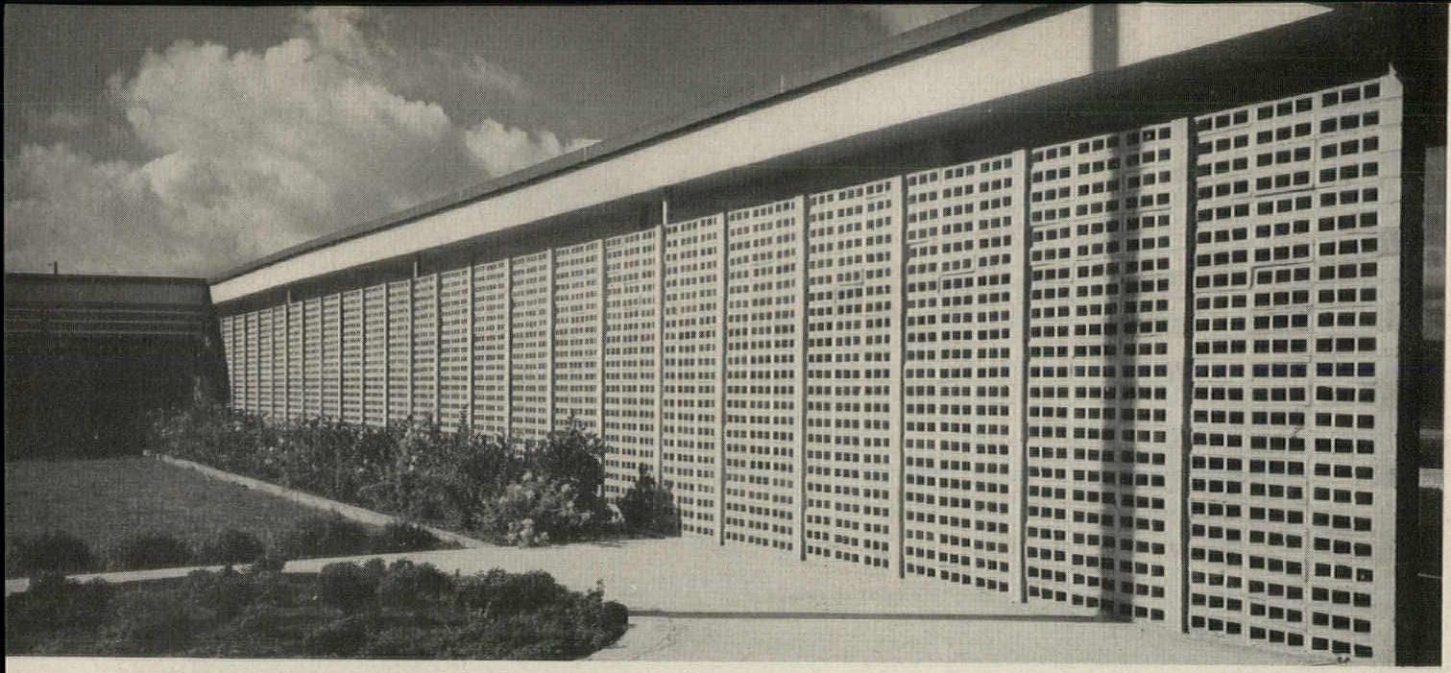
BUILDING CONSTRUCTION	
General construction (including fixed cabinet work)	$181,935
Plumbing, heating and ventilating	38,270
Electrical	15,400
Painting and decorating	4,970
	239,675
EQUIPMENT	
Stage and darkening curtains	797
SITE DEVELOPMENT	
Excavation, grading, sodding	14,200
LAND	
Owned since 1910; present value:	10,000
FEES	
Architectural, structural, mechanical and electrical	15,094
ADMINISTRATION	
Miscellaneous expenses	900
TOTAL	$280,666
GROSS AREA (SQ FT)	23,700

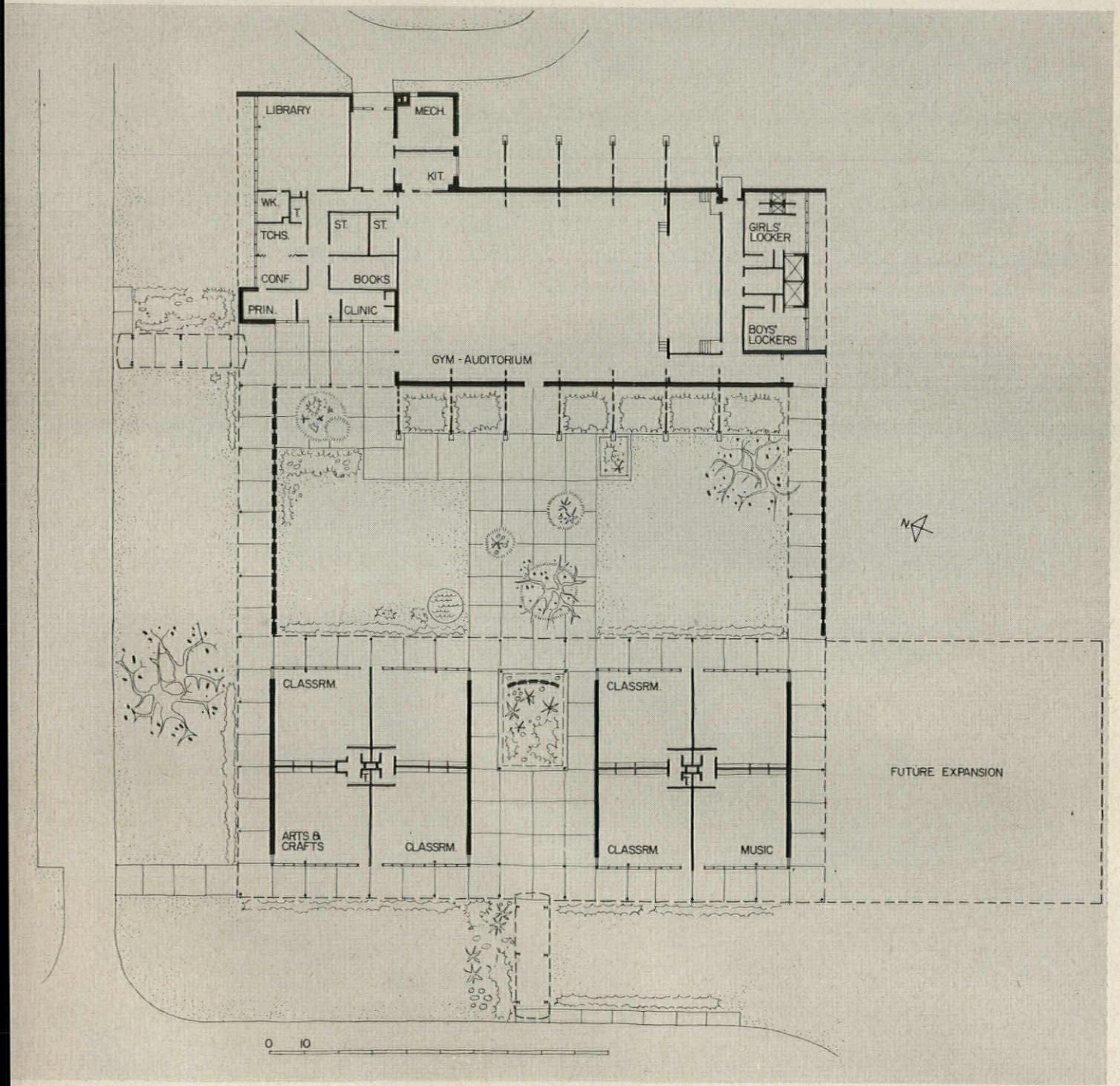


Fred Winchell photos





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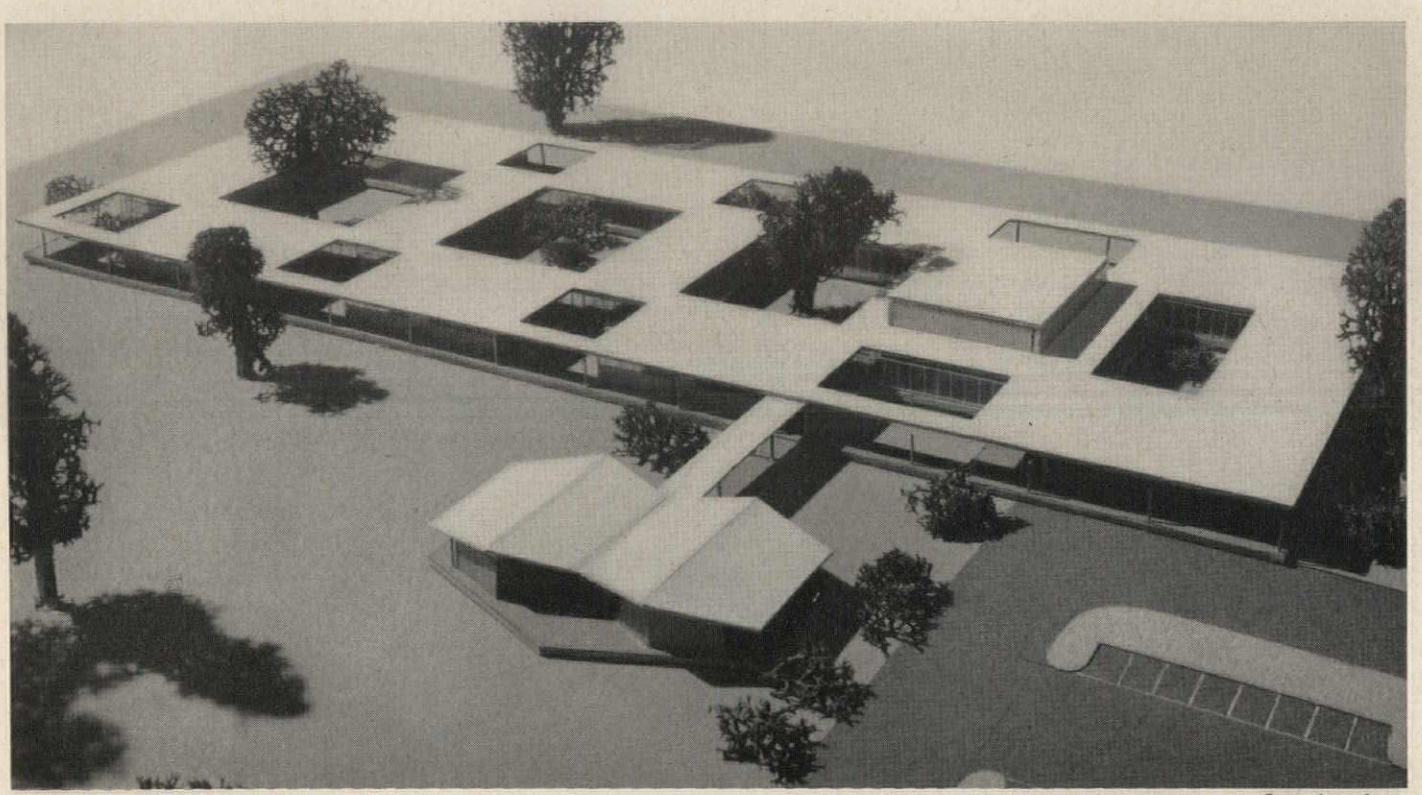


Lens-Art photos

A K-6 Big-City School on a Limited Site

An architect might normally have been pleased at the prospect of designing a school with an introverted sort of plan and an orderly series of interior courts. In this case the pleasure was somewhat thinned by a difficulty with the number three; the program for the school called for two kindergartens and 18 classrooms for the first six grades, plus, of course, library, multi-purpose room, art and music rooms, clinic, and administrative offices. The 18 classrooms for the six grades introduced the difficulty: the architect was almost of necessity thinking of a rectangular plan, and doing such a scheme in units of three seems to violate some immutable law of nature. The solution finally appeared, on the basis of an imaginary line lengthwise down the center of the plan. Thus the classrooms do divide into groups of three, the younger children being housed on one long side, older on the other. The inward turning of the plan arises from the fact that the site is flat, viewless, treeless, and not too large. It seemed possible to create some attractiveness in interior garden spaces, leaving the rest of the site to be divided into play fields according to age groups.

The program definitely ruled out expansion, incidentally, the school board taking the position that a primary school should not be thought of as expanding beyond its design size. The program also specified the separated play areas, and an isolation of some sort for the kindergartens, with ease of access for mothers driving kindergarten children to school. Thus the kindergarten rooms are in a separate unit connected to the main building only by covered passage.

The kindergartens use a hexagonal plan and double-ridged roof, offering a pleasant contrast to the low rectilinear form of the main building.

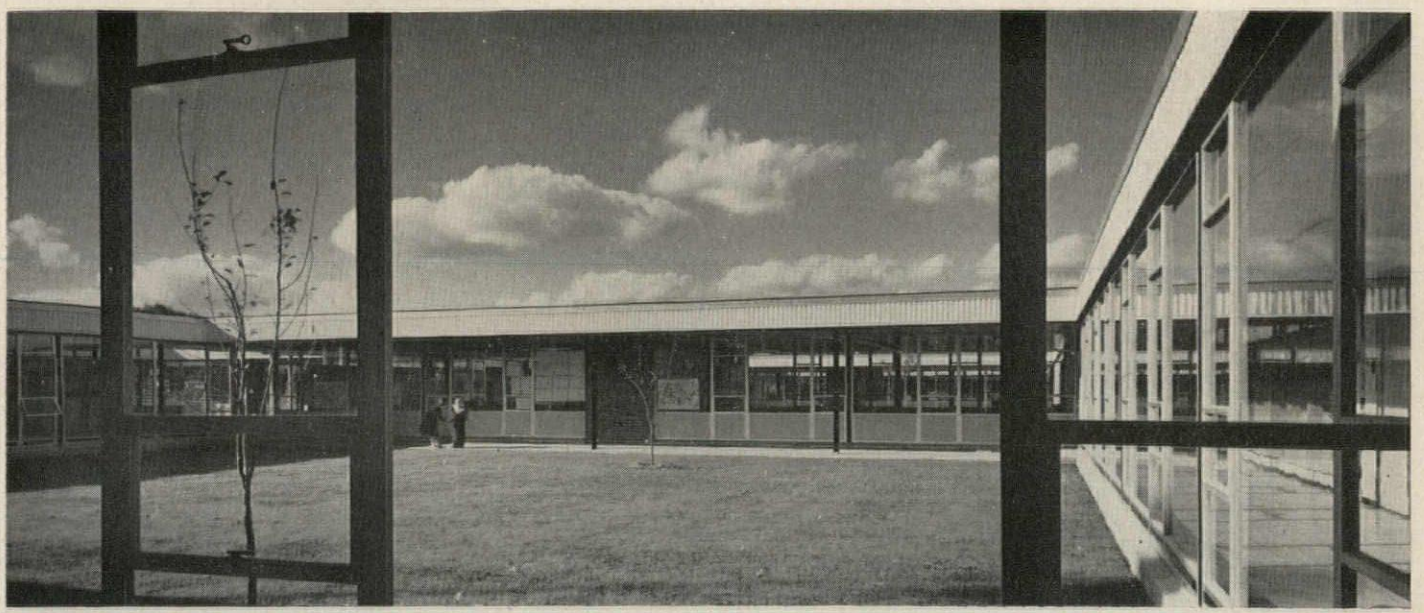
Principal glass areas in all classrooms face either north or south toward the courts, the southerly exposures in all instances being sheltered by an 8-foot roof overhang. Only glass strips face the east and west, and these are sheltered by 8-foot-wide covered passages. Thus all rooms enjoy plenty of light but are screened from direct sun's rays.

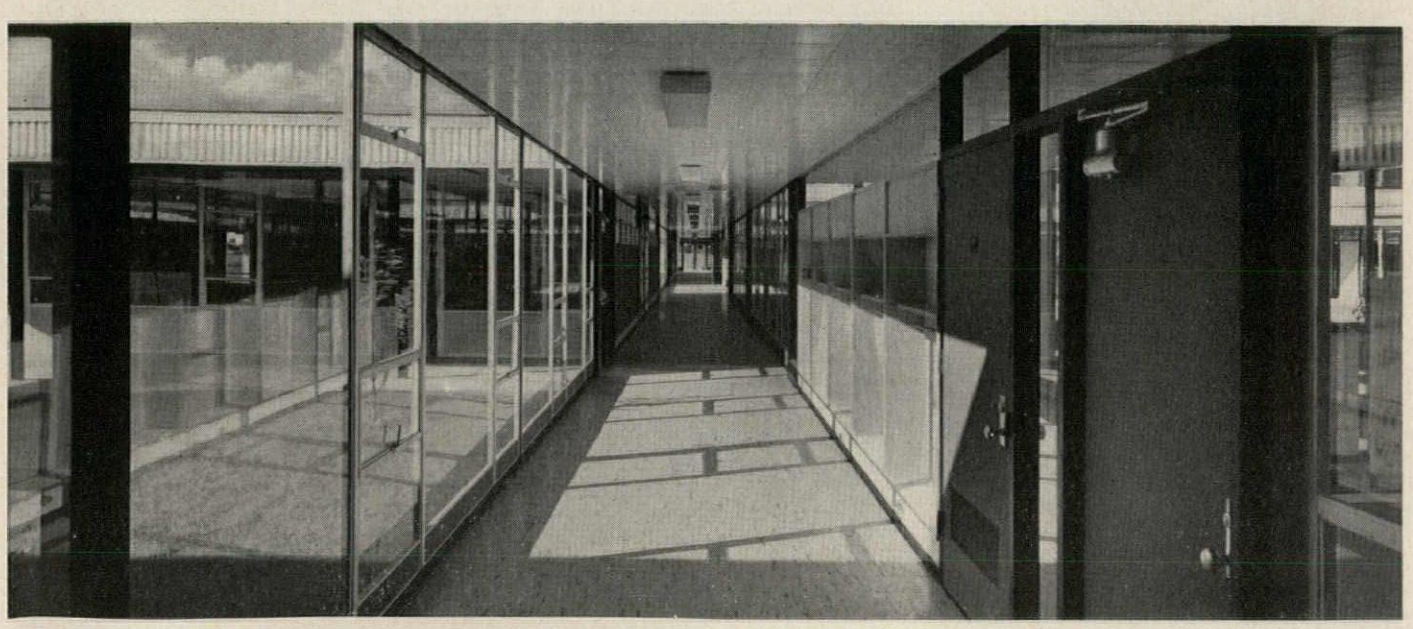
Greenfield Elementary School, Birmingham, Mich.; Architects and Engineers: Eberle M. Smith Associates, Inc.

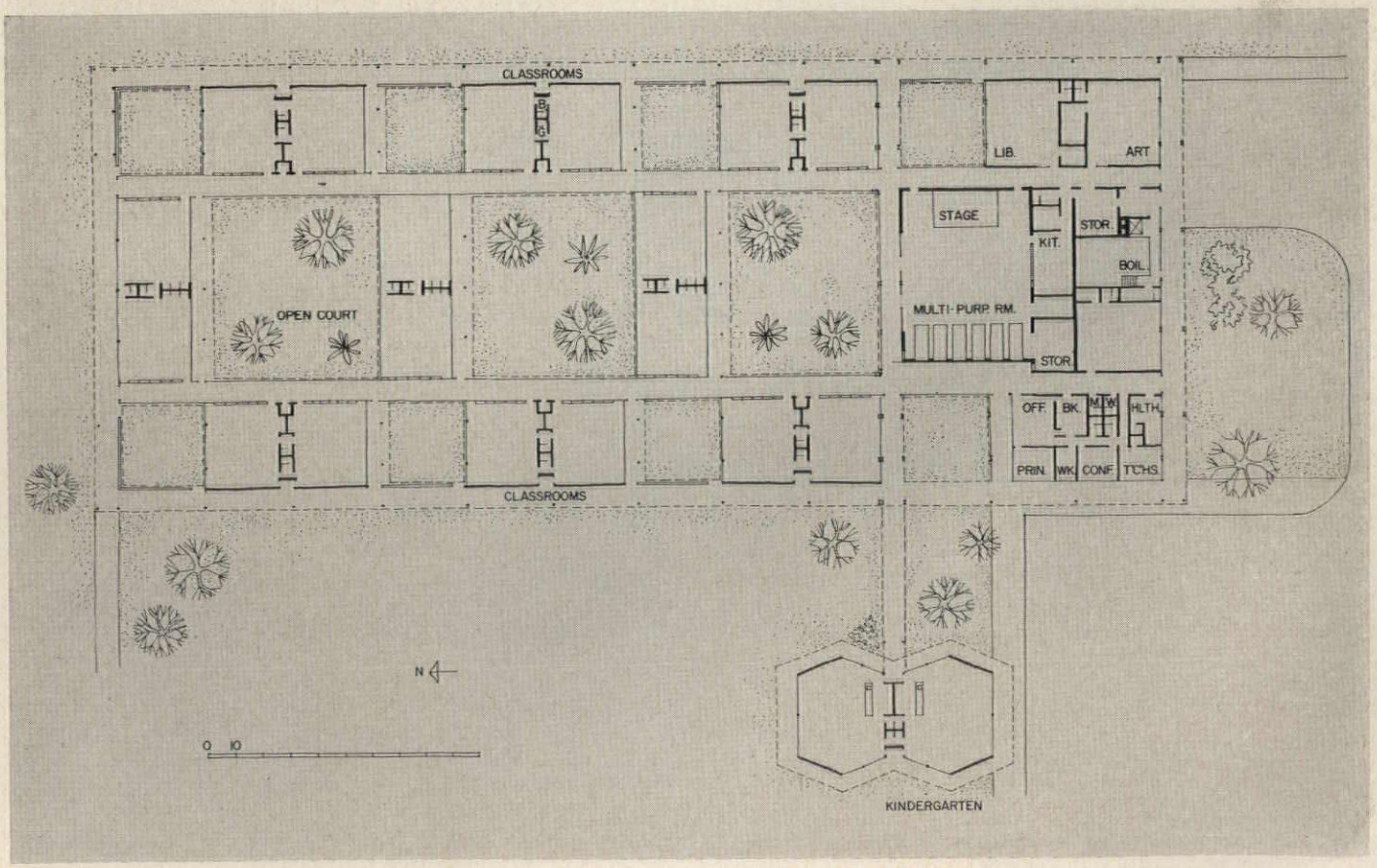
COST OUTLINE: GREENFIELD SCHOOL

BUILDING CONSTRUCTION	
General construction (including cabinet work, painting, Cafeteria seats and tables, stage)	$577,228
Plumbing and heating and ventilating	130,969
Electrical	48,488
	756,685
EQUIPMENT	
Kitchen	9,084
SITE DEVELOPMENT	
(Included in three prime contracts)	
LAND	—
FEES	
(All services included in office)	41,785
ADMINISTRATION	
TOTAL	$807,554
GROSS AREA (SQ FT)	45,474

Greenfield School, Birmingham, Mich.



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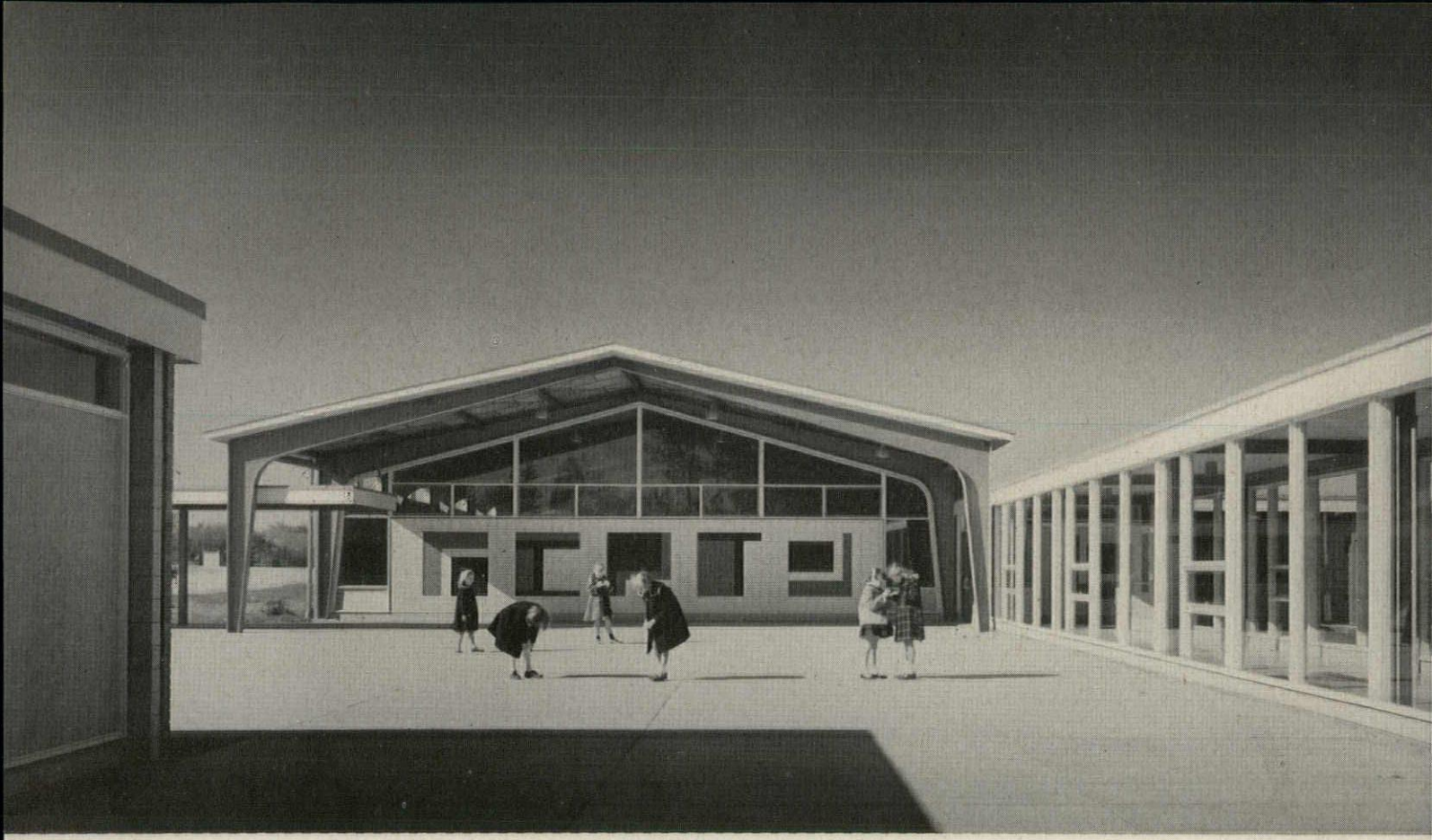


Individual Units for Use in Cluster Plans

Seriously tackling the problem of repetitive use of standard units in school design, TAC three years ago developed this scheme of the self-contained square classroom as a basic unit to be used in cluster arrangements. Each classroom is an individual building, with four steel columns and steel-framed hip roof, so that walls are non-load-bearing and thus can be any prefabricated panel system that might seem indicated. Here (West Bridgewater) they are brick. Basic structures can be clustered in many different arrangements, with party walls, or with no walls (a bus station, for example). Each hip roof is capped by a plastic skylight.

In the first publicized scheme, done for *Collier's* magazine, the unit classrooms were shown in groups of five in cruciform arrangement, the center being a "cluster common" room. In a later proposal for a Boston suburb, four units were shown in a square cluster in back-to-back fashion, eliminating all corridors.

Here at West Bridgewater the cluster includes seven classroom units, with a central space for heater room and for toilets. There are two clusters connected by covered passages to a small building containing multi-purpose room and a few necessary offices.

Basic design calls for four steel columns at the corners of a 24-foot square, with overhanging roof to cover a room as much as 36 feet square. Walls could be put at any point, perhaps leaving a covered corridor along one side, or snipping off something for a heater room, toilets or what not. At West Bridgewater both dimensions have been shortened a bit.

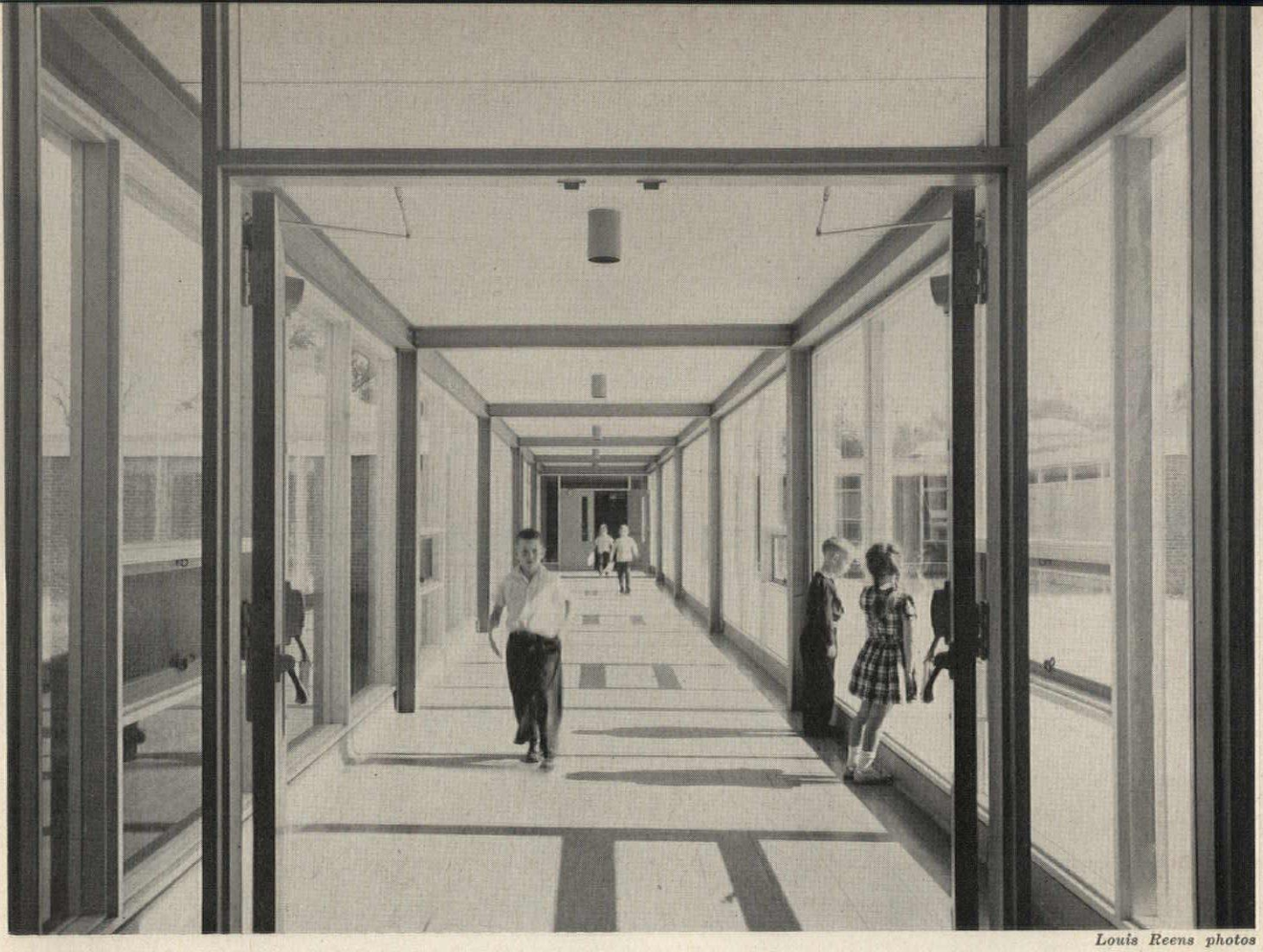
It is clear that many arrangements are possible, depending on program, site conditions, possibility of additions and so on. Expansion is particularly easy, by simply adding another suitable cluster.

Flexibility of wall systems gives great freedom as to fenestration and lighting, as well as to placement. West Bridgewater illustrates several possibilities, including glass walls at the roof edge, or recessed to the column line to leave an overhang, solid walls, or nearly solid walls with high strip windows.

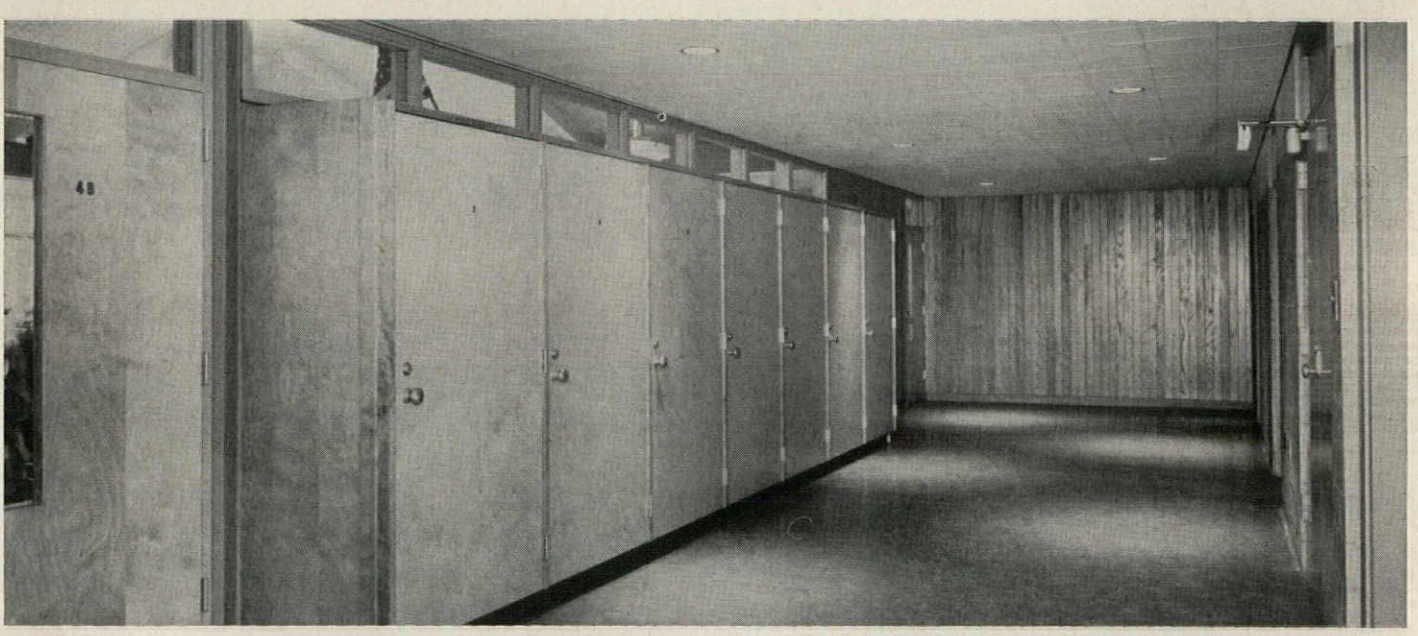
Elementary School, West Bridgewater, Mass.; Architects: The Architects Collaborative; Engineers: Goldberg, Lemessurier & Associates, and Fred S. Dubin Associates.

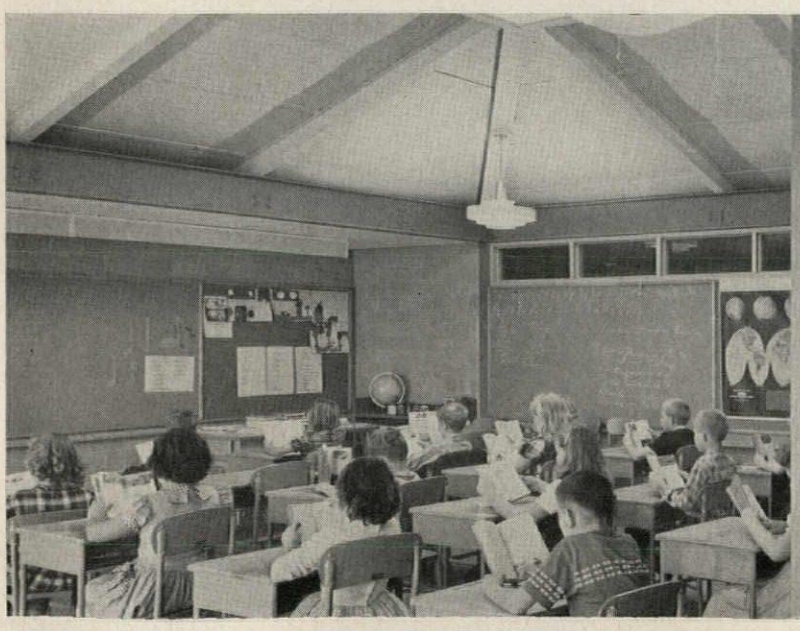
COST OUTLINE: WEST BRIDGEWATER

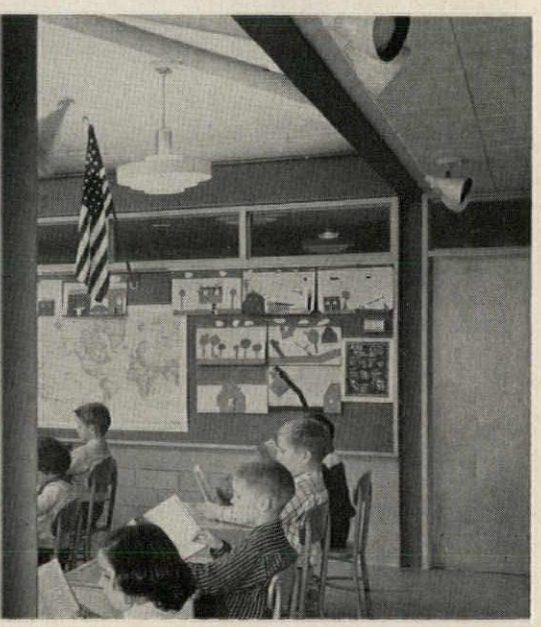
BUILDING CONSTRUCTION	
General construction	$268,400
Plumbing	16,890
Heating and ventilating	38,150
Electrical	26,250
Painting	6,030
Roofing and sheet metal	16,610
	372,330
EQUIPMENT	
Chairs and desks, cafeteria seats and tables, kitchen, administration	21,700
SITE DEVELOPMENT	
Clearing and grading, drainage, roads and driveways, parking areas, walks—uncovered, paved play areas, planting	32,800
LAND	
(Part of previously owned school land)	—
FEES	
Architectural, structural, mechanical and electrical, supervision and tests	33,500
ADMINISTRATION	
Legal, advertising, clerk of works, etc.	10,070
TOTAL	$470,400
GROSS AREA (SQ FT)	28,500

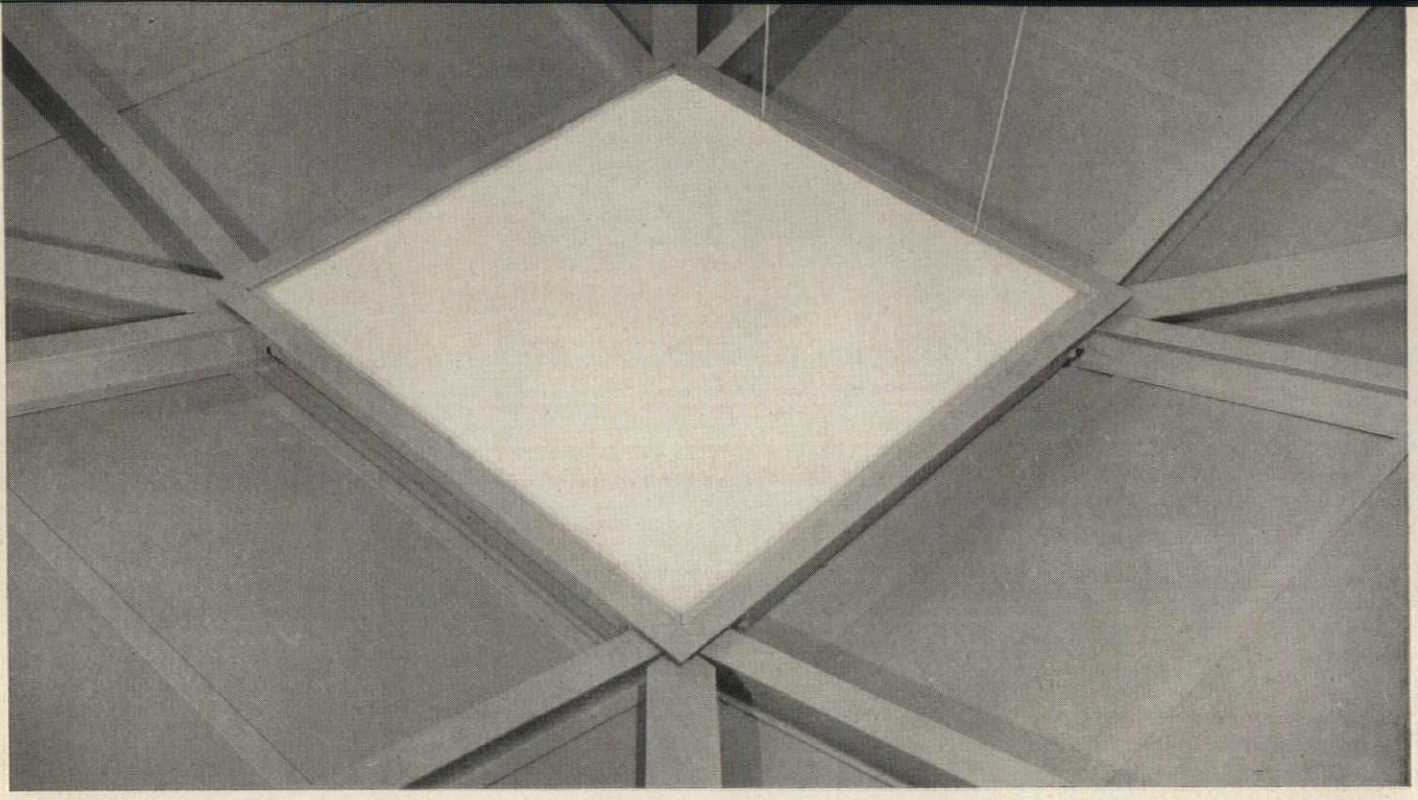


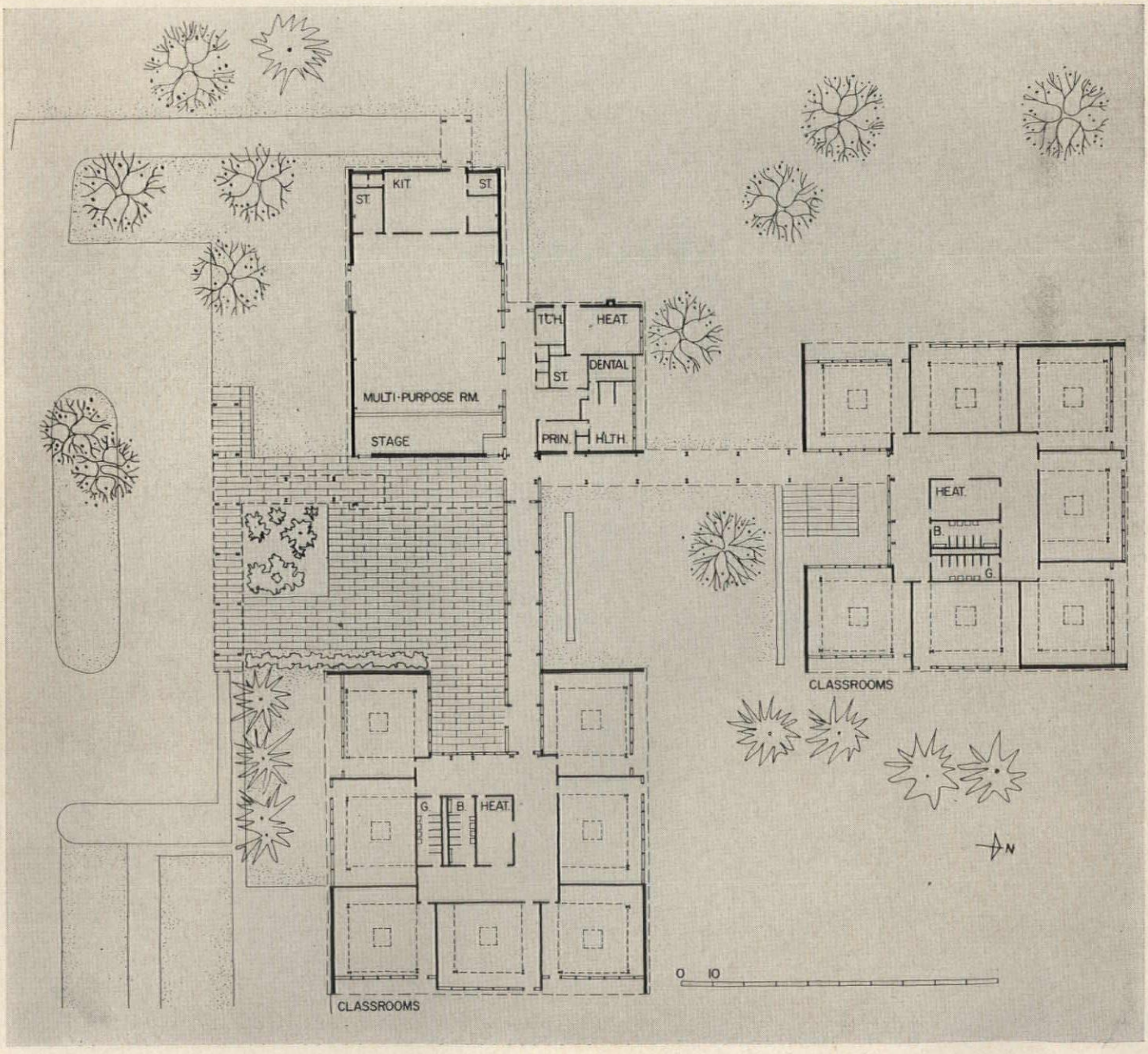
Louis Reens photos







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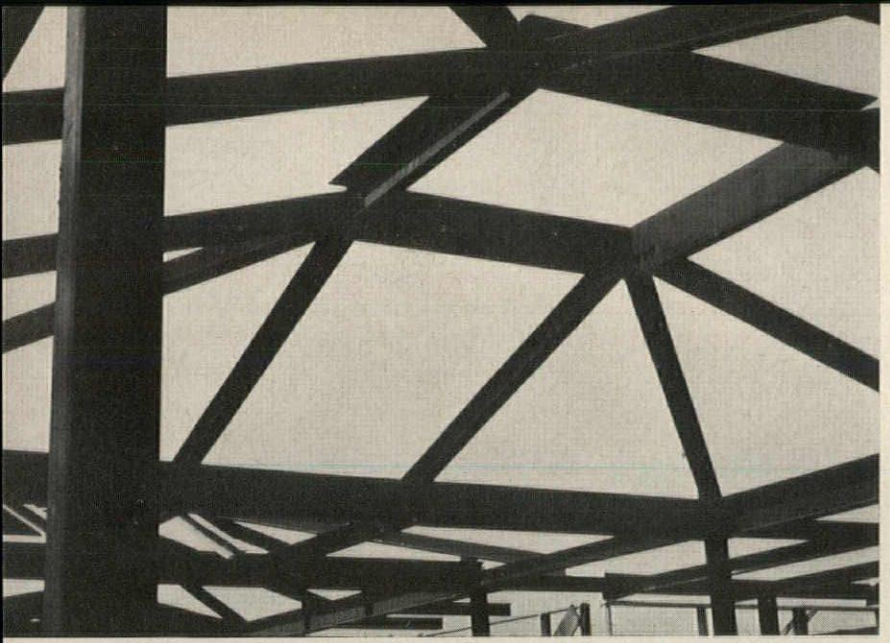
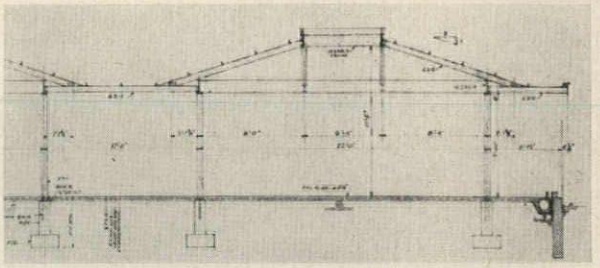


Goldberg, LeMessurier & Assoc., Structural Engineers



Accent:Engineering

West Bridgewater School

Structure

In theory, the roof structure of each classroom unit represents a little "dome" in steel. But inherent efficiency of the dome frame could not be realized in standard rolled steel sections because of the relatively small size of classrooms. The controlling factor in the selection of steel members was connection details rather than an "absolute" size required by engineering calculations. The sloping roof did, however, yield substantial savings in wall height.

Choice between steel and concrete on a cost basis for this kind of structure changes as steel prices fluctuate. At the time this school was designed steel was cheapest, and since steel prices are down now, it would probably be used again.

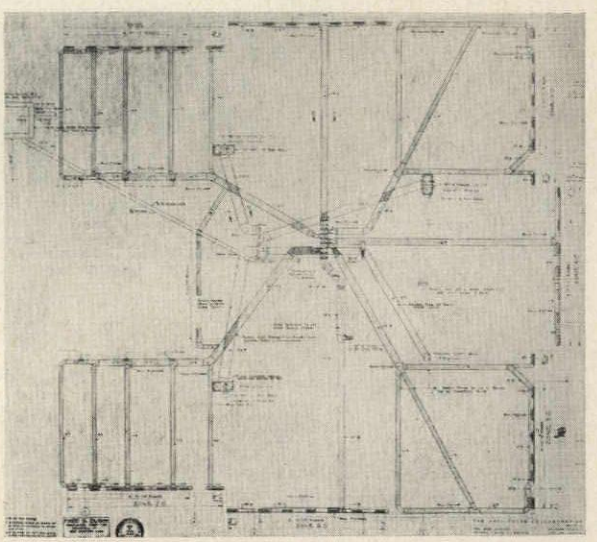
The structure has 6 in. steel members supported by 12 in. steel ring girders. The ring girders which act primarily in bending also function as tension ties to resist dome thrust.

Roof deck is 2 in. poured gypsum over ½ in. formboard.

Heating and Ventilation

The cluster plan provided a natural arrangement for economical service systems, particularly warm air heating, because it allows short runs. Separate, direct-fired heaters supply warm air to galvanized ducts buried 2 in. below the concrete slabs. Each classroom has individual control, with a constant supply of air during occupancy (15 cfm of outdoor air and 15 cfm recirculated air per pupil). There are supply ducts along all exterior walls, and those classrooms with the more serious exposure conditions have extra lateral ducts under the floor slabs. Supply outlets extend the full length of each classroom under the glass at outside walls. Part of the return air is exhausted to outdoors through the wardrobes, the rest is returned via radial ducts to the furnace. A separate blower pulls air from each pair of back-to-back wardrobes. During unoccupied times all air is recirculated. The duct system and fan can also distribute cool outside air when it is required due to internal heat from the sun and occupants.

Fred S. Dubin, Assoc., Mechanical Engineers



A survey and comparative analysis of the new materials and techniques which let the skin "breathe" but keep it weathertight

JOINTS FOR CURTAIN WALLS

Of all the problems encountered in curtain wall design, the one that can either "make" or "break" the wall is that of joints. Metal and glass curtain walls necessarily come and go as the temperature rises and falls. Early innovators in curtain wall construction ran into many troubles such as leaks and oil-canning because it was a natural approach to use existing sealing materials in traditional ways. New methods eliminating caulking were developed, and even as late as 1955, the use of such compounds was not recommended. In the past three years, however, new plastics and other synthetics have been introduced to overcome the shortcomings of older materials. Research in this area is one of the most active in the curtain wall field at the moment. Because of the new products available now and on the horizon, a new philosophy in the design of curtain wall joints is emerging.—R.F.

Three elements constitute any joint assembly, each contributing in varying degree to the overall performance:

(a) the joint shape
(b) the joint seal, and
(c) the fasteners.

Functions of the Joint

Limiting the discussion to "fixed", as opposed to operable joints, there are certain requirements which apply in all cases, while there are others which may be obscure, or are of variable significance:

1. Protection and Durability

The most important functions are to exclude water, dust and air and to insure durability of the curtain wall components. Though protection of the building interior is the ultimate objective, it is also essential to protect the construction itself. If panel edges are invulnerable to moisture, the penetration of water into the joint may not be harmful provided electrolytic action is prevented and prompt drainage is insured. If contained water freezes, however, movement or stress results, and this must be accommodated without damage either in the joints or in the panels themselves. Poor design of either the joint section, the sealing device or the fasteners may allow damaging exposure to the elements, causing early deterioration.

2. Structural Value

Whether the joining wall panels lie in the same plane or meet at an angle, the joint assembly must be able to resist the forces acting on or across the joint. These forces, due principally to the wind or to temperature changes, may impose upon the joint any of the usual structural stresses of tension, compression, shear or flexure.

Non-rigid seals usually contribute little to the structural value of the joint. With such seals, it is the fasteners and the joint section which combine to provide strength in the assembly.

3. Thermal Insulation

In cold climates particularly, and even in temporate zones, the use of through metal or other heat-conductive elements should be avoided in the joint assembly. Such elements not only contribute to heat loss, but are frequently also the reason for moisture condensing and even freezing, either within the joint, within the panel, or in the interior face of the building wall. Through-conductivity also lowers the resistance of the construction to fire. Thermal "shorts" are usually due either to the joint shape or the fasteners.

4. Few Parts and Types

Joint assembly should require a minimum number of loose parts, such as battens, gaskets, splines and stops, as well as a minimum number of different materials. Even fasteners should be as few in number as will serve to provide adequate strength and tightness.

It is always desirable, too, to keep to a minimum the number of types of joints used, and to employ the same section and fastening methods as widely as possible.

5. Tolerance

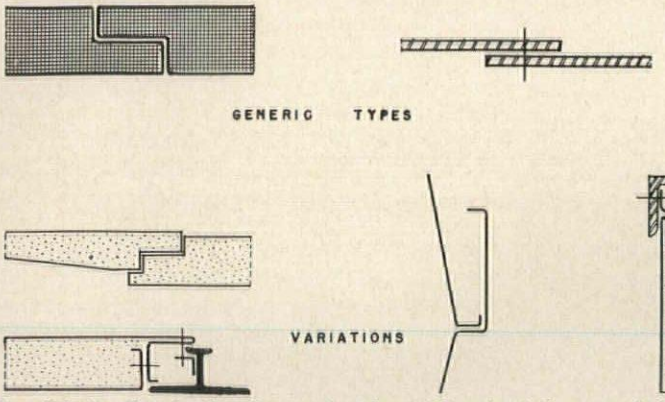
If both the cost of manufacture and the cost of installation are to be kept within reasonable limits, the necessity of close dimensional tolerances must be avoided. Metal curtain wall construction involves applying factory-made units to a field-built frame, relating to widely differing concepts of precision.

6. Facility of Installation and Replacement

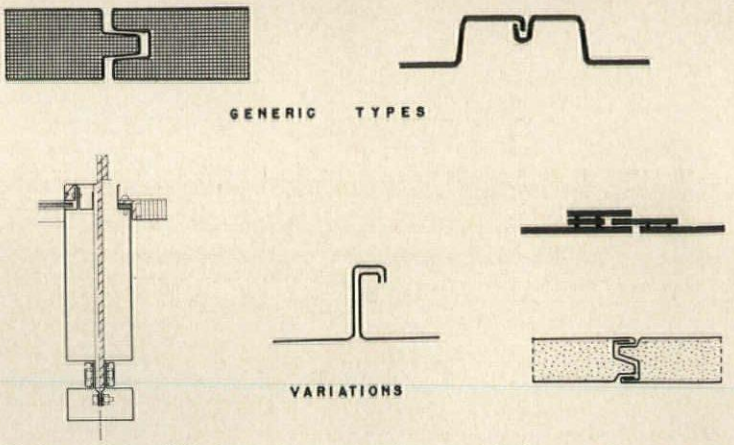
It is highly desirable that the joining techniques involve a minimum of parts to be handled and require the use of few and simple tools. Alignment of parts should be essentially automatic, and the necessity of tedious positioning or force fitting should always be avoided. It is always preferable, except, perhaps, in low buildings, that installation be accomplished without the use of exterior scaffolding.

The joint shape used may require

This article is a condensation of "Joints in Metal Curtain Walls," Study No. 2 in a new series of investigations in the Curtain Wall Research Project at the School of Architecture of Princeton University. It was sponsored by the Committee of Stainless Steel Producers of American Iron and Steel Institute, and was prepared by Wayne F. Koppes, Research Consultant, John Hancock Callender, Research Consultant and Robert W. McLaughlin, Director of the School.



Lap Joints: Panel edges lap each other, either in full or partial thickness (called respectively, "plain" or "offset" joints)



Mating Joints: This type joins edgewise (restricting panel movement normal to faces) or facewise (presents panel movement parallel to faces)

installation to be progressive, or in some definite sequence. It is preferable that the shape should not impose such limitations.

It is desirable that the joint assembly allow for easy replacement of any panel or unit.

Function of the Joint Seal

There are many types of materials used for sealing the joint, and since they differ both in physical form and method of functioning, they necessarily differ also in essential characteristics. Regardless of type, however, each sealant should meet certain basic criteria:

1. Maintain continuous watertight contact with the joining materials regardless of dimensional changes in joint size.
2. Maintain durability and integrity under all weather effects.
3. Be easy to handle.
4. Have low cost.

Generally it is the seal which is most critically affected by dimensional changes in the joint. While it is relatively easy to design the joint shape and fasteners to permit movement, it is far more difficult for a seal to maintain continuously a completely tight closure.

Another function of the seal, not to be overlooked, is that of withstanding the differentials of thermal and vapor pressures existing on the two sides of the wall.

Types of Sealing Material

Broadly speaking, joint seals may be considered under two basic classifications: rigid and non-rigid. The rigid seal, however, has only minor importance as a field method. In the form of welding or soldering the rigid joint finds frequent use in the shop, and non-metallic rigid sealing methods are receiving serious attention as a means of field joining. Field use of rigid seals will, however, require a new philosophy of joint design, providing by other means for large movements at widely-spaced intervals, as with expansion joints in concrete.

The non-rigid types of seal include the following varieties:

a) mastic fillers and tapes
b) resilient gaskets
c) metallic strips
d) cover tapes

Of these, the first two account for probably 95 per cent of all typical uses.

Sometimes there is confusion in distinguishing clearly between the mastic fillers, the mastic type of gasket, and tapes.

The term "fillers" as used here implys that a pre-formed joint space is filled by inserting a bulk material, using a gun or knife. "Mastic fillers" include all materials handled this way.

When a mastic is pre-formed in the shape of a tape or bead, it usually serves as a gasket, being placed in the joint as the joining parts are assembled, rather than after they are brought together. Any material used in this way is classified as a gasket of the *mastic type*. These gaskets have relatively poor qualities of quick recovery when deformed.

Other gaskets, which have high recovery value, or elasticity, are referred to here as the *resilient type*, and include not only the extruded elastomers but also the less common wool felt and wool pile items.

The term *cover tapes* refers to those tapes which are coated on one side only with adhesive and are used to cover the joint opening. This is a relatively rare method of joint sealing, not to be confused with the very common extrusions of various mastics in tape form previously mentioned, for use as gaskets.

Mastic Fillers and Tapes

Generically this type of seal is the oldest, dating back centuries, and is still identified by many people, simply as caulking. As used here, however, it includes not only these conventional caulking compounds, but also some of the newest and most improved synthetic compounds, as well as others still in the process of development. All of these are bulk materials, and are referred to as mastic fillers.

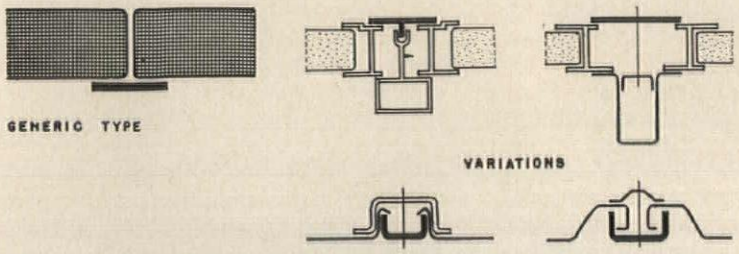
The mastic filler materials depend for their sealing action upon high ad-

RATINGS OF TYPE JOINTS

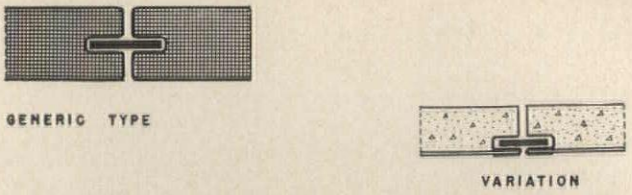
JOINT	Protection		Structural Value				Number of Parts	Number of Types	Tolerance	Facility of Installation and Removal
	Horiz. Joints	Vert. Joints	Tension	Compression	Trans. Shear	Long. Shear				
1a-Lap Plain	G	P	X	X	X*	X	G	G	G	F
Offset	G	F	X	G	X*	X	G	F	F	F
1b-Mating Edge-	F	F	X	G	G	P	G	P	F	P
Face-	F	F	G	G	X*	P	G	P	F	F
2a-Batten	P	G	X	G	P	X	P	G	G	G
2b-Spline	P	F	X	G	G	P	F	G	F	P
2c-Frame-and-stops	P	G	X	G	G	X	P	G	G	G

G = Good F = Fair P = Poor X = No Value

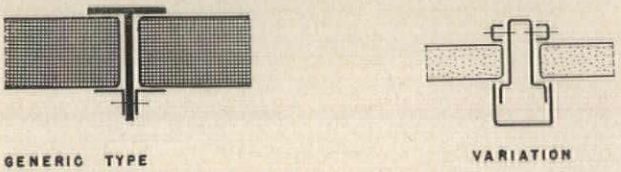
* No Value in one direction; in opposite direction Good



Batten Joints: Opening is covered on one or both panel faces with a non-structural cover strip. May be fastened to panel edges, to a back-up frame, to intermittent clips or to another batten



Spline Joints: Piece bridges joint by fitting into grooves in panel edges or by providing back-to-back grooves to receive panels. Splines can be inserted either before or after panels are in place



Frame-and-Stop Joints: Panels are installed in surrounding frame by attachment to a frame of retaining "stop moulds"

hesion and cohesion, as well as great extensibility and elasticity. To be wholly acceptable they must of course retain these characteristics over a long period of years. Having been in actual use in buildings only a few years, it is impossible to predict accurately what the useful life of the newer "high-grade" compounds will be. Some of them are conservatively predicted (though not guaranteed) to have a service of at least 20 years. While this is a great improvement in durability over the life expectancy of the conventional compounds, it is still less than an ideal goal of 50 years. (*Sheet 1 in Time-Saver Standards, p. 235 list the common forms of mastic filler and tape seals in present use.*)

Conventional caulking and glazing compounds, as compared with the polysulphide (liquid polymer Thiokol base) compounds, have inferior adhesion, and elongate much less after ten years' service. These deficiencies explain unsatisfactory service after a short time on some large early metal wall installations. The unsuitability of the oleo-resinous compounds for high-quality multistoried installations should not necessarily eliminate them from consideration. Where joint movement is small, where the sealing material is protected from direct exposure to sun, and particularly where periodic maintenance is not an expensive item, conventional caulking may be the best choice because of its low cost and easy handling.

It is generally agreed that, as a class, Thiokol compounds far surpass conventional caulking where superior qualities of adhesion, elasticity and long service are essential. Compounds based on the Thiokol liquid polymer are usually formulated and supplied by the manufacturer in two-package mixes. One package contains the liquid polymer, fillers and other additives mixed together in the form of a viscous paste; the other contains the curing agent, usually a paste-like suspension of lead dioxide in a small quantity of plasticizer. Dependably uniform viscosity is often difficult to achieve and application of the compound, customarily with automatic guns at 100-pound pressure, is consequently not wholly predictable. Hence many applicators take the precaution of protecting adjacent surfaces with masking tape. Some applicators prefer to do the mixing at the shop, preparing a day's supply in advance and storing it at low temperatures in polyethylene cartridges, then delivering it in a cold box to the job. In other cases, depending on the extent of work, mixing may be done on the job.

It is reported that in some areas suppliers are furnishing the compound to applicators pre-mixed and frozen. In any case, however, both the proper equipment for, and careful control of the mixing operation, are highly essential to satisfactory results.

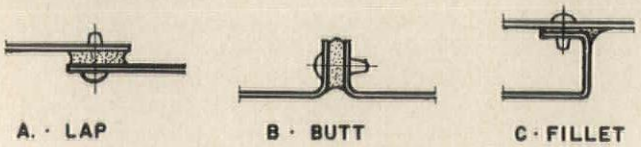
There is considerable current activity in the plastics industry aimed at the development of other new products. Figuring prominently in these experiments, some of which are already in the field test stage, are the urethane compounds, the neoprene rubbers, polybutenes, and even the silicones.

Butyl Base Tapes

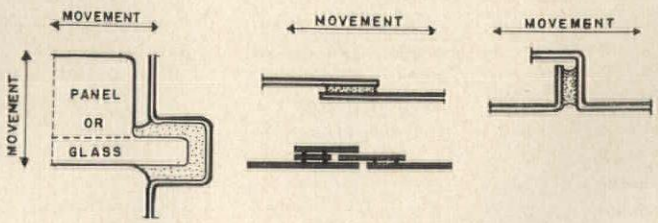
Mastic tape sealers include two general types, both using butyl as a base material—"non-vulcanized" and "partially vulcanized" types. These two variations have many properties in common, but also differ in significant respects. Neither type is adaptable to "insert application" into a joint recess, but must be applied to one of the joining parts before the parts are brought together. Both types are non-skin-forming, remaining permanently tacky, and both require compressive confinement for effective sealing.

There is a wide variety of the non-vulcanized tapes available, in a range of colors, some reinforced with various fibers and others plain. As far as is known, there is presently only one brand of the partially vulcanized tape offered. It is made only in black and contains no fibrous filler or reinforcement. It should be noted that this

SEALS



Restrained Seals: Panels are joined by fasteners, so sealant has no structural action



Elastic Seals: Designed to anticipate movement

type possesses far greater adhesion and elongation than the non-vulcanized type, and that its cost also is much higher.

Resilient Gaskets

As a class, this type of seal may be said to be as old as the use of weatherstripping in doors and windows. And as in the case of the mastics, new requirements have resulted in new products and a greatly increased variety of applications. Most significant in this expansion have been the contributions of the post-war plastics and synthetic rubber industries to the variety of low-cost elastomers suitable for building applications.

The resilient gaskets depend on flexibility and elasticity rather than adhesion, for their sealing action. Consequently their effectiveness may be largely predetermined within prescribed limits, and proper function depends to a great extent on meticulous design. As contrasted with a bulk material, the resilient gaskets are designed on a custom basis for specific applications with performance characteristics patterned to suit the conditions imposed. This does not, however, mean that higher costs are involved—quite the contrary. The materials are generally low cost, and even on a custom basis can be produced at very favorable prices.

Vinyl and neoprene probably account for most of the present-day gasket applications in curtain wall construction. Some of the others find occasional use while still others, notably silicone rubber and Hypalon, either have only highly specialized usefulness in this field or are still in the experimental stage.

(*The more common gasket materials are listed along with their significant properties and comparative costs, in Sheet 2, Time-Saver Standards, p. 237.*)

Because the resilient gaskets are not adhesive they are also suitable for operable seals, where sliding movements or intermittent opening of the joining parts is required, as with many window and door applications. It is here that they find most common application, but their use need by no means be limited to these locations. Many inoperable and relatively static metal-to-metal joints in curtain wall systems are designed to accommodate some sliding movement of overlapping parts, and in such details also a non-adhesive seal is often preferred. Resilient extrusions are finding increased use too in the "dry glazing" and "puttyless glazing" techniques being adopted by metal window manufacturers, and in some of the recent important curtain wall jobs extruded neoprene channel frames have been extensively used as the edge surround seal for both glass and metal panels.

One of the chief distinctions within the elastomeric group of materials concerns the effect of heat on plasticity. Of all the materials listed in this group only vinyl is a thermoplastic. This results in disadvantages as well as advantages, both, perhaps, of secondary importance. Because of their thermoplasticity the vinyls are more affected by heat and cold, tending to become stiffer at low temperatures and susceptible to plastic flow at high temperatures. On the other hand, being "heat sealable," they are customarily supplied to the job in continuous rolls and can be cut to length and easily "welded" at corner joints with a hot blade.

The wool felt materials have thus far found only limited use as inoperable seals in metal curtain wall construction. Impregnated felt in tape form, because of its durability and good resistance to abrasion and vibration, has long been used in industrial applications where a durable seal is required between positively interconnected surfaces.

Wool pile is familiar as a sealing material used in automobile windows and in sliding doors and windows for buildings. Its potential as a metal wall joint sealer has apparently not yet received much attention, though some work has been done.

Metallic Strips

In the form of weatherstripping for doors and windows, metallic strips have been used in various forms for many years, and for operable joints of this type they are an excellent form of seal. Though more expensive than the resilient elastomers, stainless steel spring gaskets are widely used in metal window designs where positive action and durability under frequent repetitive compression is an essential requirement. The chief limitations of such seals are the difficulty of providing continuity at corners or intersections, and the inability to provide continuous contact with rough surfaces.

Because of the inherent durability, maintenance-free long life and highly elastic spring action obtainable with thin metallic sections, they offer potential advantages as a sealing method which are being exploited in certain joint systems currently under development.

Cover Tapes

The use of adhesive cover tapes for sealing certain types of joints has often been considered, but tapes specifically intended for such use have only recently become available. Consequently experience is very limited to date, being confined for the most part to small buildings of a special or temporary character. Certain manufacturers, however, predict great potential for tape sealing methods now under development, involving the use of new products and application techniques. These tapes are said to have good qualities of elongation and to be applicable over as wide a temperature range as any other sealant, with very low cost. It is indicated that successful use, however, depends on proper design of the joint, and that life expectancy is still to be determined.

Forms of Seals

There has already been a distinction made between the rigid and non-rigid joint seals. It was suggested that the term "rigid" be used when the joining parts are continuously and firmly bonded, so as to permit no relative movement of the joining parts. None of the sealing materials under discussion are used in this type of joint.

The non-rigid seals are much more common in metal curtain wall construction and include both those which are "operable," such as the seals along the contact edges of operating sash, and those which are nominally static or "inoperable,"—the seals between "fixed" panels of metal or glass.

These inoperable and non-rigid joints, however, vary somewhat in their basic function, and it may clarify appropriate application if this category is further sub-divided into two types. One of these, "restrained" joints, is often used in joining metal to metal when accommodating relative movement is not important, but a continuous tight weather seal with intermittent positive fastening is desired. Spaced mechanical fasteners, such as screws, bolts or rivets, are necessary and the sealing material performs no structural function. The other type, by contrast, is the "elastic" seal, where accommodation of movement is a prime essential and rigid mechanical fastening is, for this reason, unacceptable. In some of these joints the sealing material itself contributes to the joining action.

This distinction becomes important when considering the type of application for which the various sealing materials are best suited. Mastic fillers may be used as the seal in any of these cases, but the superior properties of the two-part compounds are significant only when used as elastic seals. Butyl base tapes find their wid-

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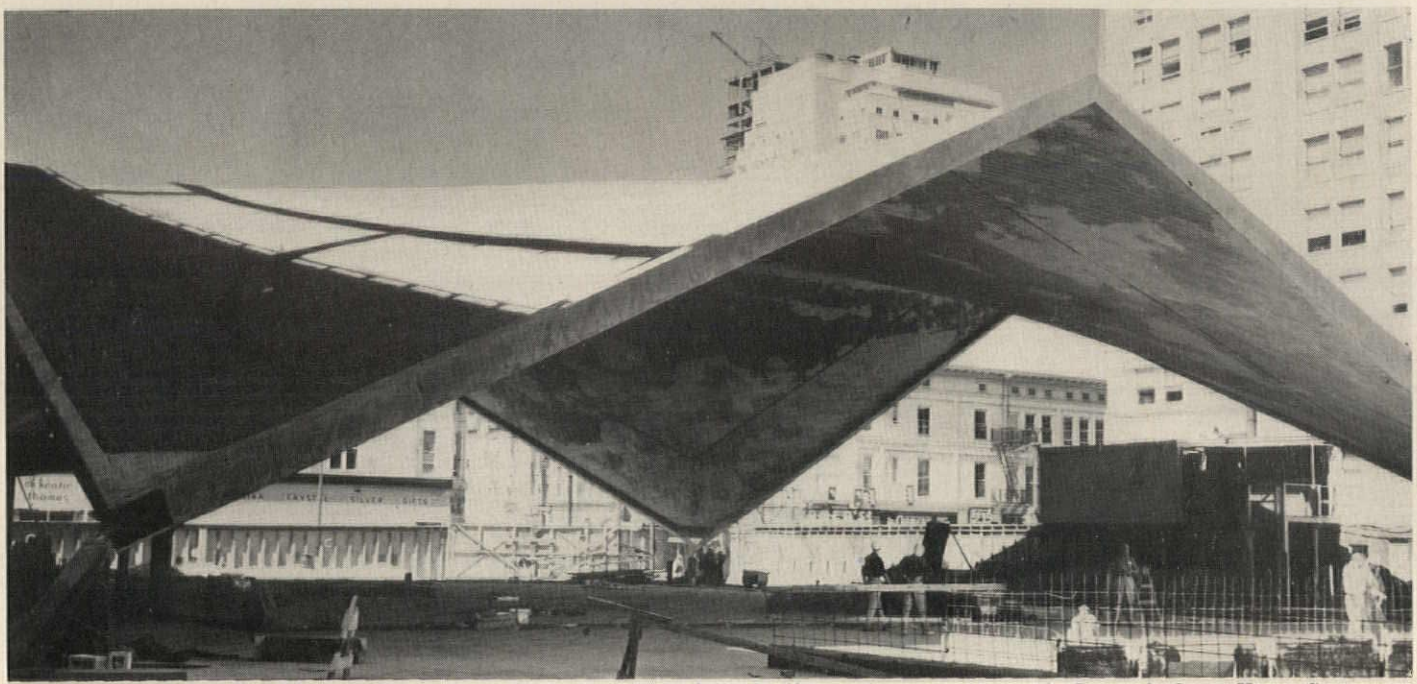


Mammoth (112 by 131½ ft) hyperbolic paraboloid houses specialty shop of adjacent department store in Denver's Court House Square

Wire-reinforced shell is poured in place

King-Size Thin Shell Roofs Denver Shop

One of the largest hyperbolic paraboloids yet constructed in this country hovers at the base of a seven-story department store in Denver, Colorado's $35 million Court House Square development. Designed to house the store's specialty shop, the structure spans an area of approximately 112 by 131½ ft without interior supports, and rises to an elevation of 32½ ft. Its four supporting steel buttresses are hinged to the shell with stainless steel pins, and tied diagonally with 1 by 12 in. tension plates made up of three or four sections bolted together.

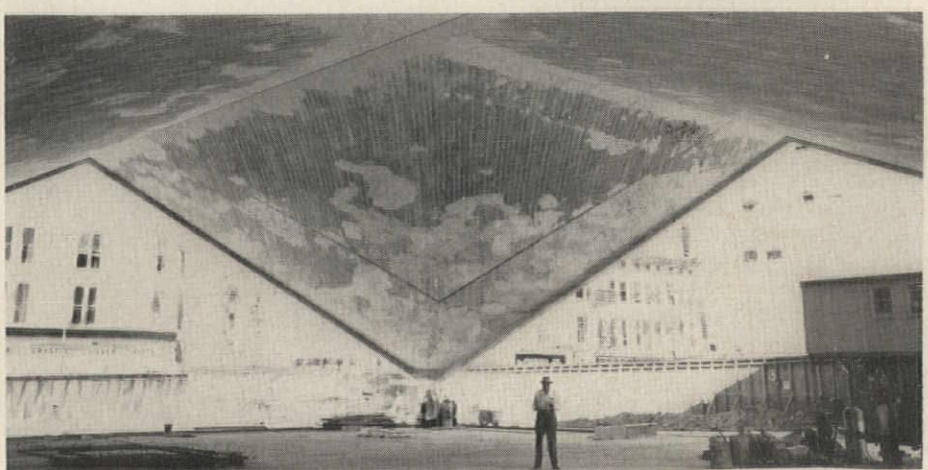
Ranging in thickness from 3 in. for the skin proper to 6 in. at the ridges, the concrete shell is reinforced with 6 by 6 in., 4/4 welded wire fabric, augmented by strips of 4 by 4 in. mesh in the center of the slab and by No. 3 bars placed diagonally on 8 in. centers. It is surfaced with a built up roofing over a layer of fiberglass insulation.

The formwork, which was constructed of 1 by 8 in. tongue and groove hemlock, was supported on 290 jacks, each capable of being lowered 4 in. Upon completion of the shell, the roof was "de-centered" by lowering these jacks a turn or two at a time, starting at the center and working outward concentrically.

The shell was built by Webb & Knapp Construction Company, with Ketchum, Gina & Sharp, associate architects; William B. Tabler, consulting architect. Roberts & Schaefer Company were consulting engineers.

more roundup on page 230

Edge beams (forms above) meet at supports



Soaring to a height of 32½ ft without interior supports, giant shell dwarfs man at center

Students Test Corrugated Precast Beams

Presented with the sizable challenge of designing a new structural system, fifth year architectural students at the University of Utah came up with a roof framing scheme which combines basic precast building units into poststressed beams that are adaptable to clear spans in the range of 100 to 200 ft. Laurence G. Farrant, Salt Lake City consulting engineer who, with department head Roger Bailey, directed the student project, foresees potential application of the new roof assembly—with refinements—to a wide variety of buildings in which large uninterrupted spaces are required. He also believes that vertical use of the beams could substantially reduce the cost of such structures as retaining walls.

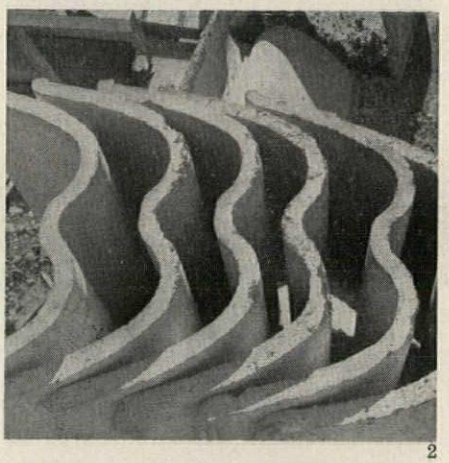
Following a review of major contemporary structural systems, the students examined several concrete beam shapes from the standpoints of cost, appearance and efficiency. The shape finally arrived at was a doubly corrugated curved shell 3 ft 4 in. wide by 3 ft long and 1 ft 7 in. high. The 2 in. thick shells, each reinforced with 6 by 6 in. 10 gage wire mesh, were cast of high strength concrete in forms built by the students. After the units had been cast and the forms stripped, seven of the corrugated shells and two solid end sections were assembled end-to-end to form a beam with an overall length of just over 27 ft. A high strength steel rod threaded through pipe imbedded in the solid end sections was then stressed to 60,000 psi. (The bottom rod shown in the photographs at far right was found unnecessary for the relatively short span built and was removed without being stressed.)

When the prototype assembly had been completed, it was hoisted onto sawhorses for testing. The 2 in. thick beam supported a test load consisting of eight 400 lb. shells—the equivalent of a uniformly distributed live load of 35 psf.

The project was financed by the University of Utah's research fund; the Utah Sand and Gravel Company and the Stressteel Corporation contributed the necessary materials and equipment.

more roundup on page 242

1



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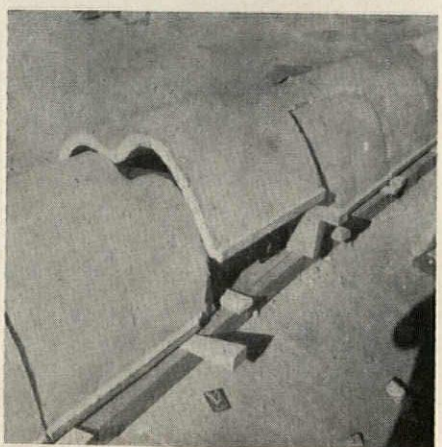

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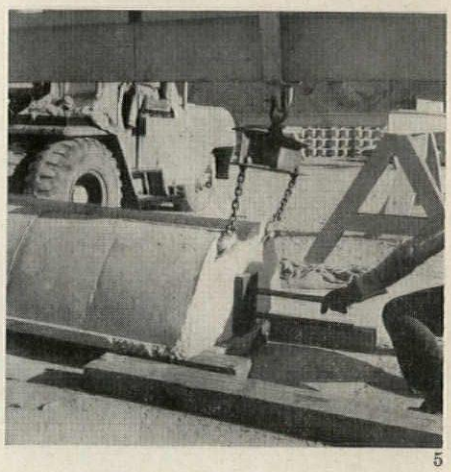

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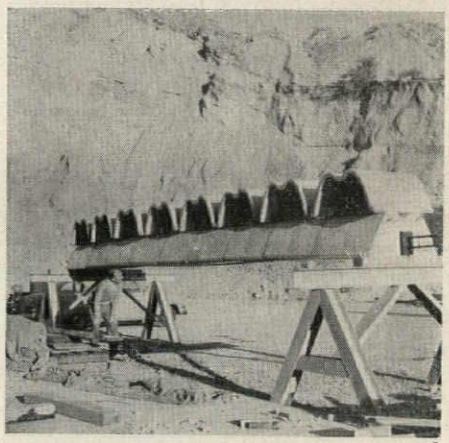


6

New structural system designed and tested by fifth year architectural students at the University of Utah is expected to find wide use in roofing warehouses, markets, hangars, auditoriums and other structures requiring clear spans in the 100 to 200 ft range. Student-built forms (1) were used to cast corrugated sections (2), each 3 ft 4 in. wide by 1 ft 7 in. high and 3 ft long, which were then laid end-to-end (3) and assembled with cast-in-place joints. The resulting 27 ft beam assembly was stressed to 60,000 psi (4) and lifted onto sawhorses for testing (5). As shown above, the 2 in. thick corrugated section supported a test load (6) of eight shells weighing 400 lb each, the equivalent of a 35 psf uniformly distributed live load

Floor Lath Forms "Utility Floor" System

With a little imagination, even floor lath can be taught new tricks. Once only a support between trusses for concrete pours, it is now being stamped into self-supporting B-shaped forms with two 6 in. radius arches that serve as forced air ducts and passageways for piping and electrical conduit. According to its developer, Donald H. Butler of the Mecon Company in Pittsburgh, the *Spanform* system provides a finished slab with "built-in" utilities, as well as the required structural strength, at a cost less than that of conventionally formed concrete and competitive with that of frame construction.

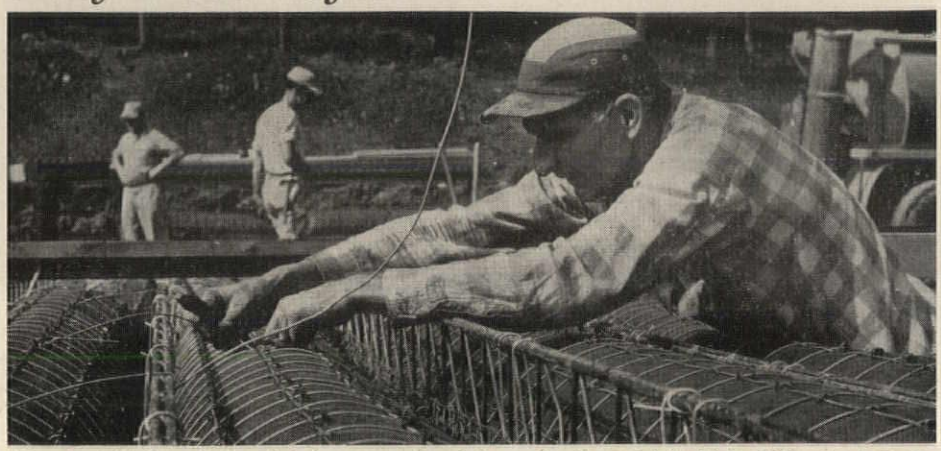
The "B-forms" are fabricated by cutting *Steeltex*, a wire-reinforced, paper-backed floor lath made by the Pittsburgh Steel Products Division of the Pittsburgh Steel Company, into sections up to 16 ft long and stamping them into the double arched form. (Sections longer than 16 ft can be made, but they are single arched because of the greater depth required for longer spans.)

Special high-yield wire trusses are wire-laced between the arches at the site. After the *Spanforms* have been placed on the foundations and interlocked, these are joined by wire ties which run from the top of one arch, around the intervening truss, to the next arch. An initial one inch layer of concrete is then pumped over the *Spanforms*, followed by a manually placed second pour which brings the slab thickness to a total of 8 in. For ordinary installations, a structural grade insulating concrete is used for the entire slab; for heavy duty floors and radiant floor installations, the second pour is a high density, heat-resisting concrete.

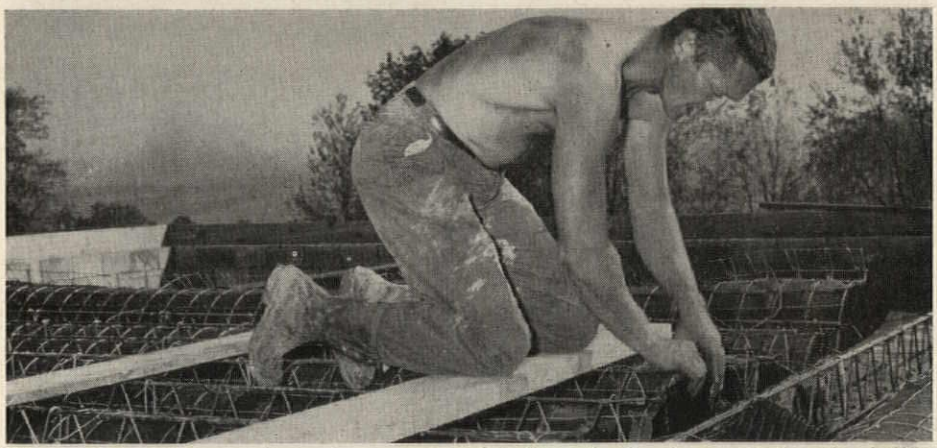
All utilities are incorporated in the slab: the arches serve as ducts for forced air distribution, the plumbing is hung from the trusses, and wood plugs inserted in the slab during construction leave holes through which conduit, piping and air diffusers may be installed later.

Although the *Spanform* system has been used most extensively in residences with basements or crawl spaces, it can also be used for multi-story or on-grade construction. Users, who place economy and ease of installation high on the list of advantages of the "utility floor" system, point out the slabs can be installed twice as fast as wooden floors, require no temporary forms or supports and offer high strength with low weight. *Mecon Co., 924 Bidwell St., Pittsburgh, Pa.*

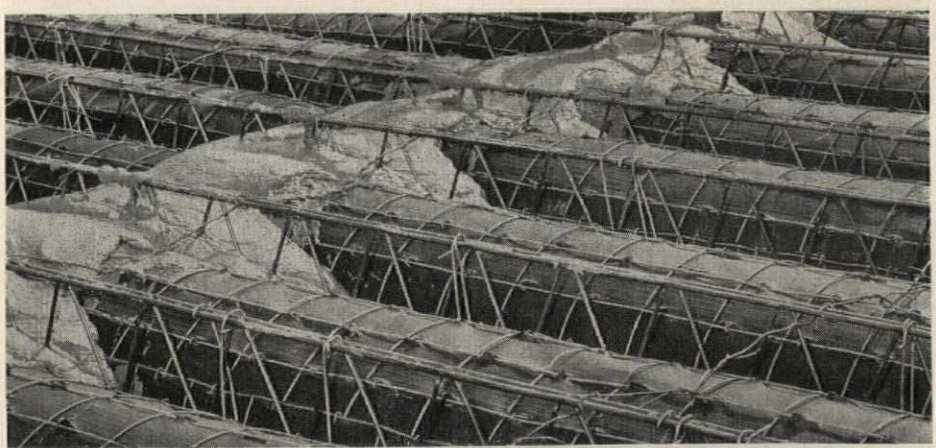
more products on page 250



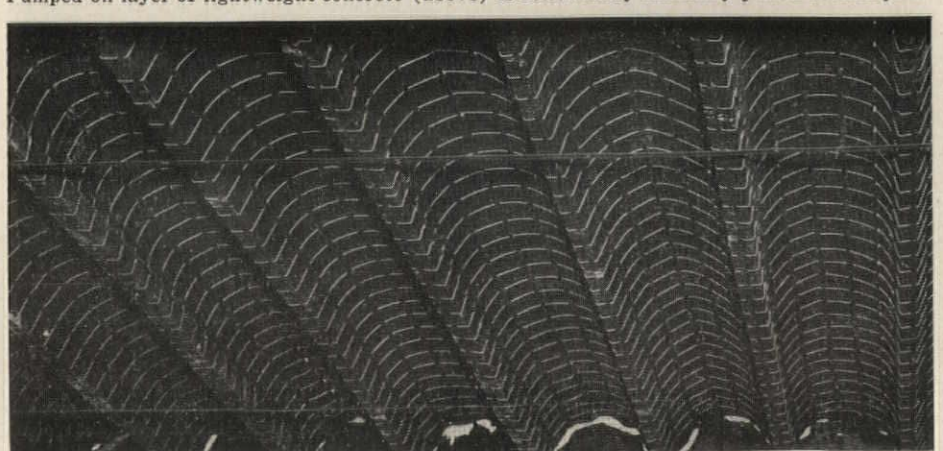
After installation at the site, forms are laced to each other and to high-yield wire trusses



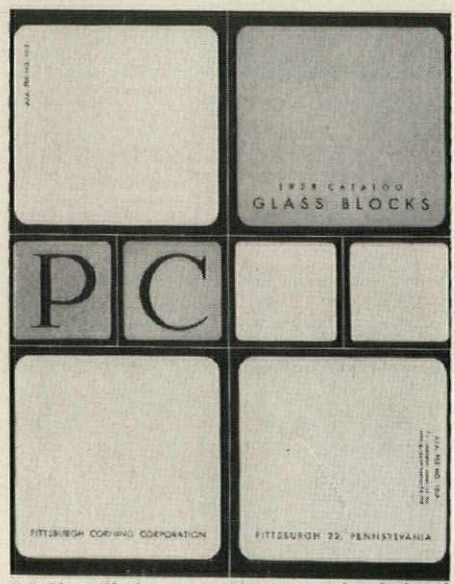
Wire mesh installed at arch openings prevents drip-through of wet concrete to cellar below



Pumped-on layer of lightweight concrete (above) is followed by manually-placed second pour



Underside of forms can be left exposed as above, painted, or used to support hung ceiling



PC Glass Blocks, a new 32 page catalog designed by architects Kelly and Kress and Associates, incorporates reference material on the recently introduced ***Color Glass Blocks*** and the new concept of glass block curtain walls. In addition to giving background information on these new uses of glass block, it contains complete physical performance data and a guide to selecting the proper type of block. Seven pages of detail drawings of typical glass block panels are followed by information on installation procedures and accessory materials, and by suggested specifications. Booklet GB-108. *Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa.**

Report on Design Criteria

. . . *for Stacks and Breechings* covers definitions, basic principles, sizing, connections, height, stack caps and rain hoods, horizontal breeching, elbows, shape, material, insulation, draft and fixed barometric dampers. Each section contains complete information and is illustrated with line drawings. 23 pp. *Orr & Sembower, Inc., Reading, Pa.*

Alumiline Entrances (A.I.A. 16-E)

Illustrates and gives framing details and specifications for aluminum entrances and doors. Also available is a brochure detailing the *Alumiline* line of store fronts. *The Alumiline Corp., Dunnell Lane, Pawtucket, R. I.**

Thermal Resistance of Airspaces

. . . *and Fibrous Insulations Bounded by Reflective Surfaces*, Building Materials and Structures Report 151 by H. E. Robinson, L. A. Cosgrove and F. J. Powell, presents results of an investigation to determine the effects of reflective surfaces on the insulating value of air spaces of fibrous materials in buildings. Test procedure and equipment used are covered in the report; and an appendix contains the method of calculating airspace conductances, and lists the range of experimental conditions at which convection-conduction coefficients were determined. 24 pp. 20¢. *Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.*

Door-and-Frame Packages

Shows 16 basic door types available in the *AetnaPak* line of in-stock door-and-frame "packages" complete with hardware. 12 pp. *Aetna Steel Products Corp., 730 Fifth Ave., New York 19, N. Y.**

Sound Absorption Coefficients

. . . *of Architectural Acoustical Materials* (A.I.A. 39-B) presents complete technical data on sound absorbing materials and their uses. Summary Tables classify materials according to appearance and composition; Producers' Tables contain detailed data on listed acoustical materials of each member company. 34 pp. 50¢. *Acoustical Materials Association, 335 East 45th St., New York 17, N. Y.*

Industrial Heaters

Bulletin 750A describes the construction, application and performance features of the *Herman Nelson* industrial heater. 24 pp. *Dept. PD, American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.*

Movable Interior Wall System

(A.I.A. 35-H-6) Six-page brochure describes and illustrates *Horizon* movable interior wall system. *E. F. Hauserman Co., 7516 Grant Ave., Cleveland 5, Ohio.**

Prefabricated Curtain Wall Units

(A.I.A. 17-A) File folder contains complete reference material, including product information, construction details and specifications, for Kawneer's *Unit Wall* prefabricated curtain wall system. *Kawneer Co., 1105 North Front St., Niles, Mich.**

Paint Specifications Manual

(A.I.A. 25) Features a comprehensive selection chart which describes various painting systems and matches them with materials, surfaces and types of finishes. Suggested specifications are supplemented by sections devoted to an evaluation of painting systems and to a full description of all paint products mentioned. 28 pp. *The Glidden Co., 11001 Madison Ave., Cleveland 2, Ohio*

"Dress Up" Bathroom Styling

(A.I.A. 29) Presents pictures and specifications for complete line of bathroom cabinets and accesories. 16 pp. *Dept. HH, Grote Mfg. Co., Bellevue, Ky.*

Expanded Metal and Grating

Technical bulletin 20-4 gives sizes, air flow tables and load capacities for complete line of expanded metal gratings, including four new patterns. 8 pp. *Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill.*

Teco Trussed Rafters (A.I.A. 19-B)

Discusses design and use of *Teco* engineered timber trussed rafters and illustrates twelve typical designs, with specifications and material tables. Data on recommended methods of fabrication, assembly, shipping and erecting is also included. 24 pp. *Timber Engineering Co., 1319 18th St., N. W., Washington 6, D. C.**

Unitary Heat Pump Equipment

ARI Standard 240-57, issued "to establish minimum industry standards of performance of unitary heat pumps and to provide means for establishing reliable ratings," sets up standard rating procedures for factory-made heat pumps or matched assemblies as defined in the standard. 35¢. *Air-Conditioning and Refrigeration Institute, 1346 Connecticut Ave., N. W., Washington 6, D. C.*

** Additional product information in Sweet's Architectural File, 1958*

more literature on page 288

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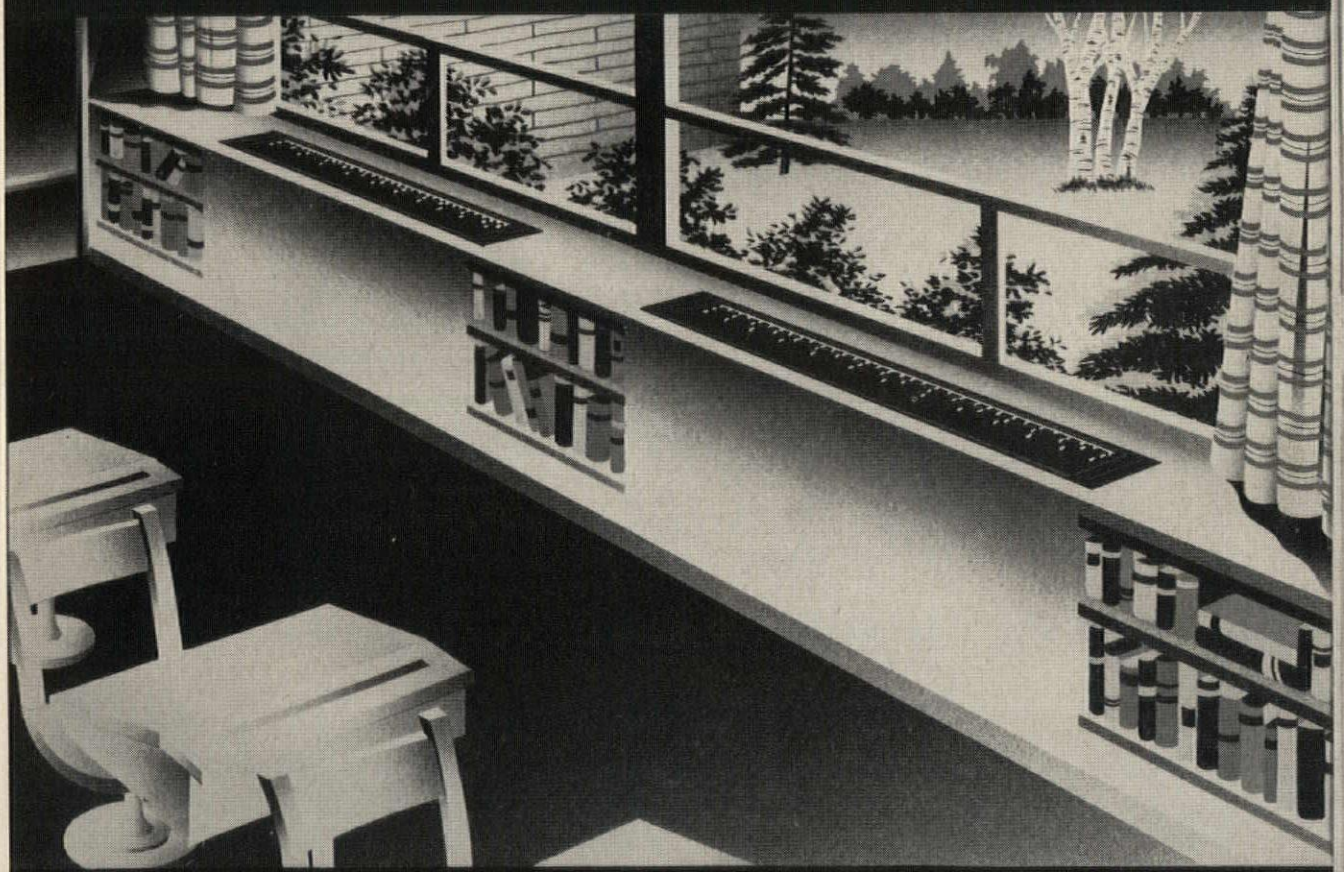

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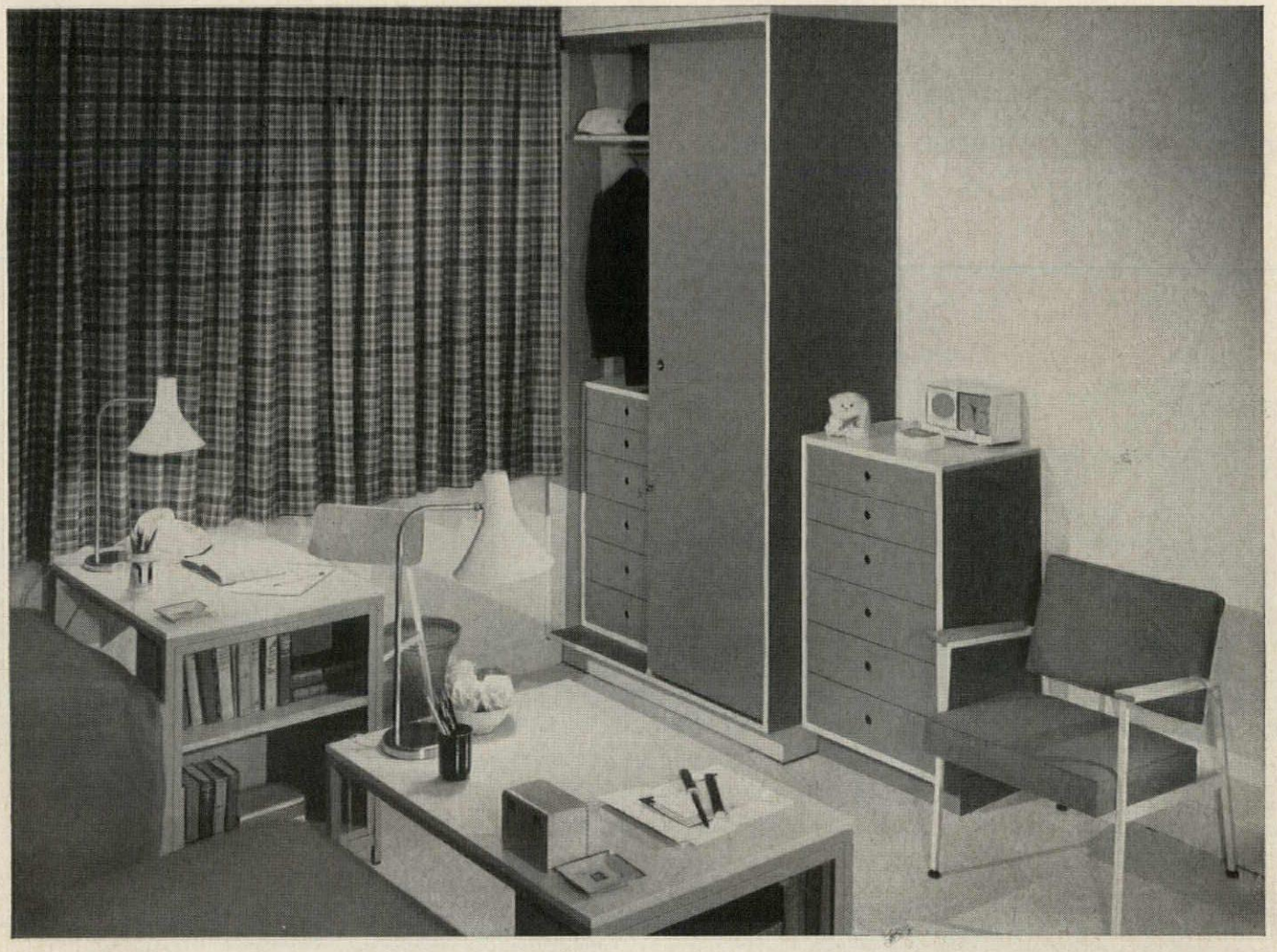

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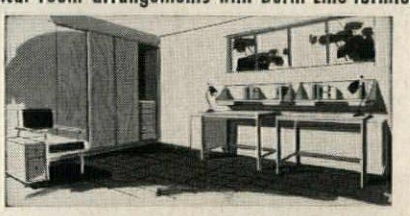
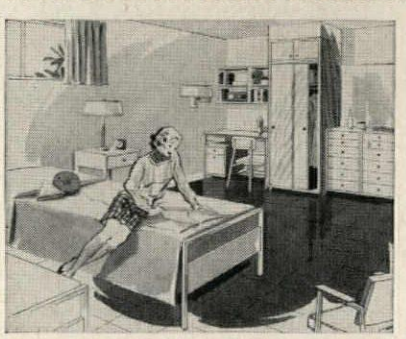
Dorm Line furniture, designed by Raymond Spilman, A.S.I.D., is as beautiful as it is practical—available in a wide range of harmonizing colors. Additional information and specifications are yours for the asking.

Typical room arrangements with Dorm Line furniture





SIMMONS COMPANY

CONTRACT DEPARTMENT, Merchandise Mart, Chicago 54

See our Catalog in Sweet's (23-1). Write for catalog A.I.A. File 17-D—28-A.

JOINT SEALS FOR CURTAIN WALLS—1: Mastic types

From "Joints in Metal Curtain Wall Construction," conducted by Princeton University School of Architecture for Committee of Stainless Steel Producers, American Iron and Steel Institute

	ONE-PART FILLER COMPOUNDS			TWO-PART FILLER COMPOUNDS			EXTRUDED BUTYL-BASE	
	NATURAL OLEO-RESINOUS CAULKING	GLAZING COMPOUNDS	EXPERIMENTAL SYNTHETIC COMPOUNDS	POLYSULPHIDE COMPOUNDS	NEOPRENE PUTTY	EXPERIMENTAL SYNTHETIC COMPOUNDS	NON VULCANIZED	PARTIALLY VULCANIZED
CHIEF INGREDIENTS	Vegetable oils, hydro-carbon oils, synthetic drying oils, asbestos fibers and other inert fillers.		Urethane, acrylic, polybutene, polysulphide elastomers, asbestos fibers & other inert fillers	Polysulphide polymers, carbon black, resins		Urethane, acrylic, polybutene, polysulphide elastomers, asbestos fibers & other inert fillers	Liquid polybutene, asbestos & other inert fillers; some types blended w/ asphalt. Various reinforcing mtls.	Butyl rubber, polyisobutylene and carbon black
PACKAGED FORMS	Drums, pails, cans, cartridges	Drums, pails, cans	Drums, pails, cans	Pint, quart, gallon cans (base & accelerator separate)			Tapes & beads, in rolls or cut lengths	
CONSISTENCY	Heavy paste, gun consistency	Soft putty	Heavy paste, gun or knife consistency	Heavy paste, gun consistency	Soft putty	Heavy paste, gun consistency	Stiff putty	Rubbery, tacky putty
PERCENT SOLIDS	75 to 95	95 to 100	70 to 95	95 to 100	95 to 100	95 to 100	99 to 100	100
APPLICATION	For good results, with all materials, surfaces must be free of oil, grease, water, dust or frost. Any previously-applied primer must adhere permanently or be entirely removed.							
Cleaning of Surfaces				Careful cleaning is of utmost importance				
Method of Application	Gun	Usually knife	Knife or gun	Gun	Knife or gun	Gun	By hand	
Handling Characteristics	Easily handled by experienced caulkers	Easily handled by experienced glaziers	Goal: easy handling by experienced caulkers or glaziers	Highly adhesive; requires careful protective measures and skillful application		Goal: easy handling by experienced caulkers or glaziers	Easily handled by inexperienced labor	
ADHESION	Generally good	Good	Goal: excellent	Metal: excellent Glass: good	Fair; requires use of primer & tie cement	Goal: excellent	Fair to good	Excellent
COLORS AVAILABLE	Wide variety: black to white, plus aluminum			Black, tan & aluminum	Cream	Wide variety: black to white, plus aluminum	Black, white, gray, green. Others on special order.	Black only
ELONGATION (%)								
At break, 75°F, 24-hr. cure	25 to 200	Estimated: 25±	Goal: 100 to 400	200 to 600		300 to 600	30 to 60	500 minimum
* *At rupture, weathered seal*	0 to 125	Estimated: 0 to 5	Goal: 150 to 350	100 to 350		Goal: 150 to 300	Estimated: 10 to 50	500 minimum
Max. usable as effective seal	10	Estimated: 2	Goal: 100	100		Goal: 100	Estimated: 10	500
MAXIMUM WIDTH CHANNEL FILLED ½" DEEP WITHOUT SAG	1" (1)	1"	Goal: ⅜" min	⅜"		Goal: ⅜" min.	———	———
HARDNESS (SHORE "A") *72-hr. cure* *	0 to 10	0		10 to 60			0	0
10-yr. cure	65±	80±		Initial plus 20±			Estimated: 30	Estimated: 0
NORMAL STORAGE LIFE	Minimum of 1 year			6 to 9 months, at temp. under 90°F	9 mo. @ ordinary temp. longer, in cool dry place	1 year minimum	2 years minimum, to indefinite	
POT LIFE, MIXED COMP.	———	———	———	3-4 hrs @ 100°F; 3-6 hrs. @ 70°F; 3-4 days @ 40°F		Goal: 12 to 24 hours	———	———
CURING REQUIREMENTS	Skins over night at 75°F; becomes firm to stiff over period of 1 to 5 years	Becomes firm in 1 to 6 weeks at 75°F. Becomes stiff to hard in 5 years	Dependent on temp'ture and humidity. Generally tack-free in 4 to 16 hrs., initial cure in 7 to 28 days.	Dependent on stiffness and humidity; Initial Cure: 6 days @ 40°F; 10-15 hrs. @ 70°F; 1½-6 hrs. @ 100°F. Final ~3 to 8 times longer	Initial cure in 24 hrs. at 60° to 75°F. Final cure - 30 to 60 days	Goal: Initial cure in 2 to 6 days	No curing action involved	
TEMPERATURE RANGE, °F								
For application	40 to 100	40 to 100	50 to 100	50 to 80		50 to 80	40 to 100	40 to 100
In service (intermittent)	-40 to 200	-40 to 175	-60 to 250	-60 to 250	-40 to 250	-60 to 250	-40 to 200	-40 to 200
EFFECT OF WEATHERING	Hardening of surface, gradual loss of plasticity			Hardness increases with age; loss of adhesion as hardness reaches 80-90			Hardness increases with age; loss of adhesion as hardness reaches 80-90	Accelerated weathering tests indicate no adverse effects.
LIFE EXPECTANCY (2) (Good mtl., properly used)	5 to 10 years	5 to 10 years	Goal: 20 yrs. minimum	Minimum of 20 years		Goal: 20 yrs. minimum	Minimum of 20 years	
AVERAGE COST								
¢ per gallon	2 - 3	2 - 3	?	20±		?	———	———
¢ per foot, ¼" bead	½ - ¾	½ - ¾	?	5		?		
¢ per foot, ⅛" x ½" tape	———	———	———	———	———	———	1½ - 5	12 - 15
CHIEF LIMITATIONS	Should be used only where expected elongation is not over 10%	Should be used only where expected elongation is not over 2%.	New products, still under development; not yet proven.	Requires thorough mixing. Applicator must learn and use recommended methods. Accelerator may be toxic; caution advised. Smears hard to remove. Cost is high	New products, still in development; not yet proven		Non-skin-forming; permanently tacky exposed surfaces collect dirt. Compressive confinement required for effective sealing	Relatively new product

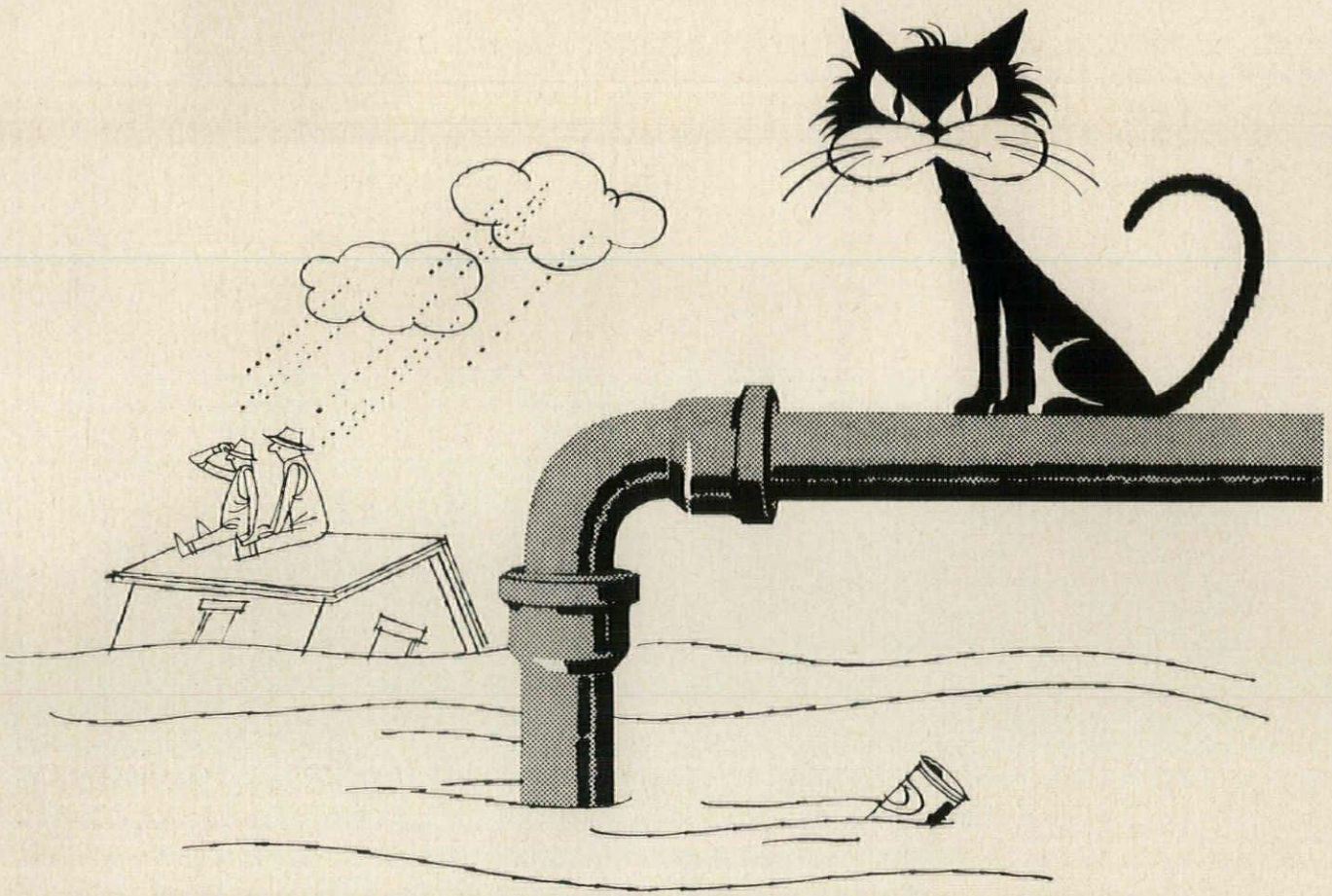
EXPLANATORY NOTES

* See "Specifications for Elastomeric Sealers for Curtain Wall and Glazing Application."

(1) Most compounds sag at about ½".

(2) Use of such materials should contemplate economical replacement periodically

SOURCES OF INFORMATION: Survey of manufacturers' literature, review of technical papers. Special acknowledgement is made of the assistance provided by representatives of: Armstrong Cork Co., E. I. du Pont de Nemours & Co., Gates Engrg. Co., Goodall Rubber Co., Minnesota Ming & Mfg. Co., Pittsburgh Pl. Glass Co., and Tremco Mfg. Co.



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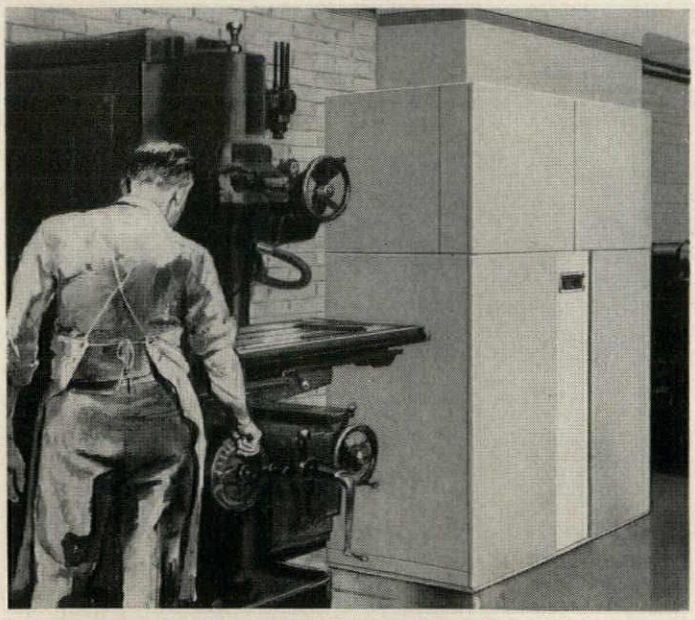
LOOK FOR THE NAME ON EVERY PIECE

	ELASTOMERIC							FIBROUS	
	MOST COMMONLY USED								
	VINYL	NEOPRENE (1)	GR-S RUBBER	BUTYL RUBBER	NATURAL RUBBER	SILICONE RUBBER	HYPALON (1)	IMPREGNATED WOOL FELT	WOOL PILE
CHEMICAL DESCRIPTION	Vinyl-chloride polymers	Polychloroprene	Butadiene-styrene copolymers	Isobutylene-isoprene copolymers	Cis-isoprene polymers	———	Chlorosulfonated polyethylene	Not chemical polymers	
TYPE OF POLYMER	Thermo-plastic	← Thermo-setting →							
MFR. OF RAW MATERIAL	many	E. I. du Pont de Nemours & Co.	many	Std. Oil Co. of N. J. Firestone Rubber Co.	natural material	Dow-Corning Corp. General Electric Co. Union Carb. & Ch. Corp.	E. I. du Pont de Nemours & Co.	Basic raw mtl. not a natural product	
GASKET FORMS AVAILABLE									
Extruded Sections	yes	yes	yes	yes	yes	yes	yes	Cut tapes	Variety of brush-like sections mounted in metal or plastic
Cellular Sponge, sheet	yes	yes	yes	yes	yes	yes			
Cellular Sponge, extruded	yes	yes	yes	yes	yes	yes			
EXTRUSION CHARACTERISTICS	Excellent workability permits accurate forming of complex shapes	Good workability in black color; smooth extrusions more difficult in the light colors.		Similar to GR-S rubber, but more difficult to control size	Generally good workability, in both black and colors. Smooth extrusions.			Not extruded	
COLORS AVAILABLE	← Black, white, and wide variety of colors →					White, red, gray, green tan, yellow & clear	Wide variety	Dark brown	Gray or black
COLOR RETENTION EXPOSED TO WEATHER	Good	Fair Only black recommended for outdoor use.	Poor to Fair Chalking common with light colors	Fair	Poor Chalking common	Very Good	Good	Not intended for exposed uses	
WATER IMPERMEABILITY	Fair	Fair to Very Good	Good	Very Good	Excellent	Good	Fair to Very Good		
RESISTANCE TO-									
Sunlight	Good	Excellent	Poor	Good	Poor	Excellent	Good	Excellent, except color fading	
Ozone	Good	Excellent	Fair	Good	Fair	Excellent	Excellent	Excellent	Excellent
Oil	Excellent	Good	Poor	Poor	Poor	Good	Fair		
LIFE EXPECTANCY	Very Good 20-year service indicated	Very Good 20-year exposure with good results	Fair	Good	Fair	Excellent	Relatively new mtl. 3-yr. Florida exposure with no deterioration	Excellent	Excellent
PHYSICAL PROPERTIES									
Specific Gravity	1.2 – 2.6	1.2 – 1.8	1.2 – 1.6	1.2 – 1.8	1.2 – 1.8	1.2 – 1.5	1.1 – 1.5	.75	
Tensile Strength, psi	1400 – 3500	400 – 4000	500 – 3000	800 – 2500	800 – 4000	200 – 900	500 – 3000	225 – 325	
Elongation %	250 – 350	250 – 500	150 – 600	200 – 800	100 – 800	40 –	200 – 350	———	———
** *Recovery from compression*	Poor to Fair	Good	Good	Fair	Very Good	Poor to Very Good	Good	Fair	Good
TEMPERATURE RANGE, °F RECOMMENDED IN USE	-20 to 150	-40 to 225	-60 to 200	-30 to 300	-70 to 200	-100 to 500	-40 to 275	Not affected by temperature (below ignition temperature of wool)	
FIELD JOINING METHOD	Heat sealing	← Special adhesives (factory vulcanizing usually is preferred method) →						Normally used as strips Joining not feasible	
AVERAGE COST									
Compounded Material $/lb.	.20 – .45	.20 – .45	.15 – .30	.15 – 30	.15 – .45	2.85 – 4.00	.75 – 1.25	———	———
Typical Extrusion $/lb.	.75 – 1.00	.60 – 1.05	.35 – .90	.35 – .90	.35 – .90	6.00 – 10.00	1.00 – 1.50	———	———
* *¼" ϕ Solid Bead $/lin. ft.*	2	2	1¼	1¼	1½	18	3	¼" × ½" tape: 5 – 6	¼" 5 – 8
* *¼" × ½" Sponge Tape $/lin. ft.*		2½ – 6	2	2¼	3½ – 6	35 – 50			
CHIEF LIMITATIONS	Adverse effects of high and low temperatures	Inferior color retention Not field-weldable	Inferior resistance to weather; poor resistance to oil; poor color retention; Not field-weldable	Color retention only fair; poor resistance to oil. Not field-weldable	Same as for GR-S Rubber	Very high cost Not field-weldable	Premium cost Fair resistance to oil Not field-weldable	High cost; Corner intersections not sealable	High cost; Corner intersections not sealable
EXPLANATORY NOTES	(1) Trade names * Costs in quantity of 1000 feet or more. ** These ratings are based on a composite of characteristics including; time, rate of recovery, and life expectancy								

SOURCES OF INFORMATION: Modern Plastics Encyclopedia, 1956; Manufacturers' literature; review of technical papers.
Special acknowledgement is made of the assistance provided by representatives of: E. I. du Pont de Nemours & Co., B. F. Goodrich Co.; Goodyear Tire & Rubber Co.; Industrial Rubber Co.; Inland Mfg. Divn., G.M. Corp.; Fawling Rubber Co.; Products Research Co.; Rubatex Div'n, Gt. Am. Ind.; Schlegel Mfg. Co.

GENERAL ELECTRIC TAKES A GIANT STEP

Simplifies Air Conditioning for Big Projects . . . with New G-E Factory-Assembled Central Station Units . . . Water-Cooled and Air-Cooled



New General Electric 30-Ton Unit. Note smooth lines—no outside fan motors, filters, controls or other protruding parts. This unit is up to 2000 lbs. lighter than competitive 30-ton units. Features two G-E hermetic compressors.

Installation after installation has proved convincingly that large projects can be air conditioned *more efficiently*, at *less cost* with General Electric Factory-Assembled Central Station Units—*now available in 20, 25 and 30-ton capacities.*

Efficiency and low cost are only the beginning. Planning is greatly simplified—minimum need for fittings and piping—no elaborate equipment rooms—more free floor space. Air-cooled units (up to full 20 tons) eliminate cooling towers, water lines. Hermetic compressors minimize service problems. Installation in existing buildings requires no major alteration to premises, no serious interruption to business—and you get all the advantages of real Zone-by-Zone air conditioning.

Why not prove to yourself that it makes more sense to use General Electric Factory-Assembled Central Station Units for the big jobs. For complete data and specifications on all General Electric Commercial and Industrial Air Conditioners, write to: Mr. E. R. Pierce, General Electric Co., Commercial and Industrial Air Conditioning Dept., 5 Lawrence St., Bloomfield, N. J.

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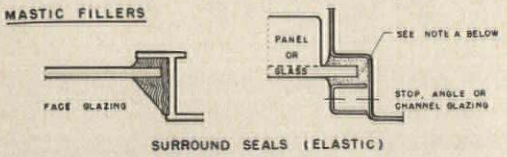
GENERAL ELECTRIC

In Canada: Canadian General Electric Co., Ltd., Montreal

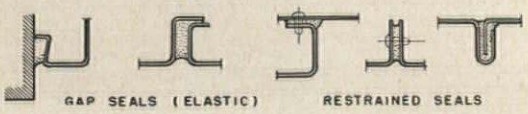
JOINT SEALS FOR CURTAIN WALLS—3: Typical details

TYPICAL INOPERABLE SEALS USING MASTICS

MASTIC FILLERS

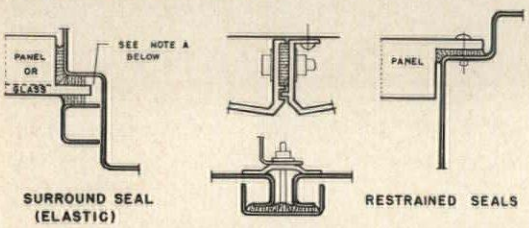


SURROUND SEALS (ELASTIC)



GAP SEALS (ELASTIC) RESTRAINED SEALS

MASTIC (BUTYL BASE) TAPES

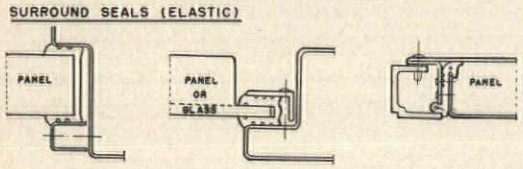


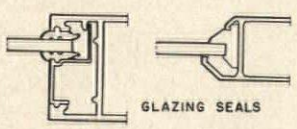
SURROUND SEAL (ELASTIC) RESTRAINED SEALS

TYPICAL INOPERABLE SEALS USING GASKETS

EXTRUDED ELASTOMERS

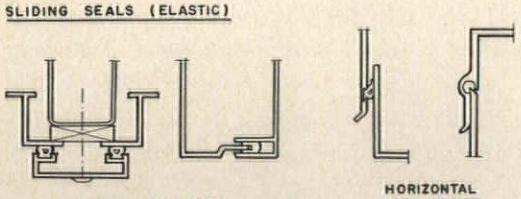
SURROUND SEALS (ELASTIC)





GLAZING SEALS

SLIDING SEALS (ELASTIC)

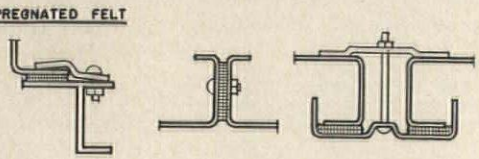


SPLIT MULLIONS HORIZONTAL LAP JOINTS

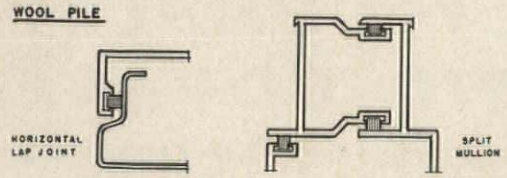
MISCELLANEOUS INOPERABLE SEALS

USING FIBROUS RESILIENT GASKETS

IMPREGNATED FELT



WOOL PILE

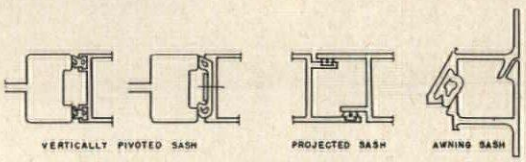


MISCELLANEOUS INOPERABLE SEALS

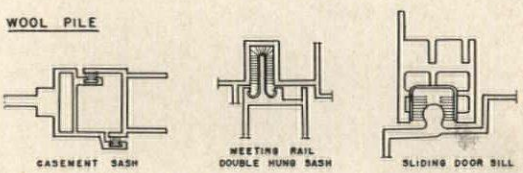
USING METALLIC STRIPS

TYPICAL OPERABLE SEALS

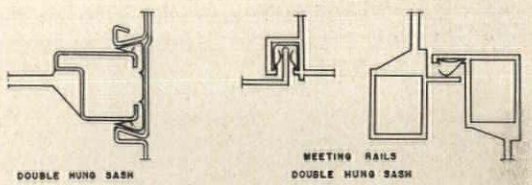
EXTRUDED ELASTOMERS USING RESILIENT GASKETS



WOOL PILE



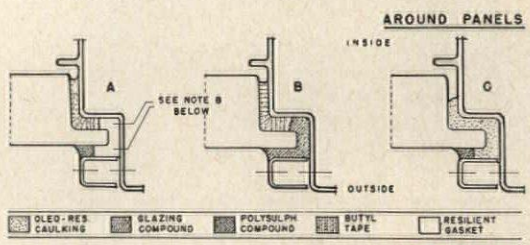
USING METALLIC STRIPS



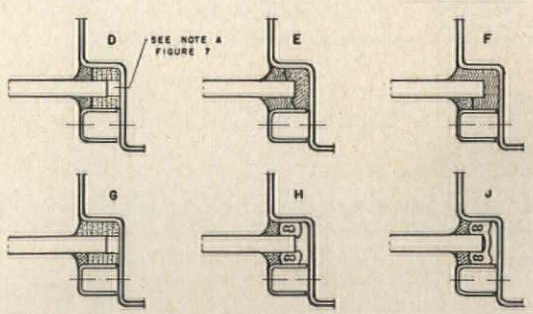
TYPICAL COMPOSITE (SURROUND) SEALS

USING A COMBINATION OF SEALING MATERIALS

AROUND PANELS



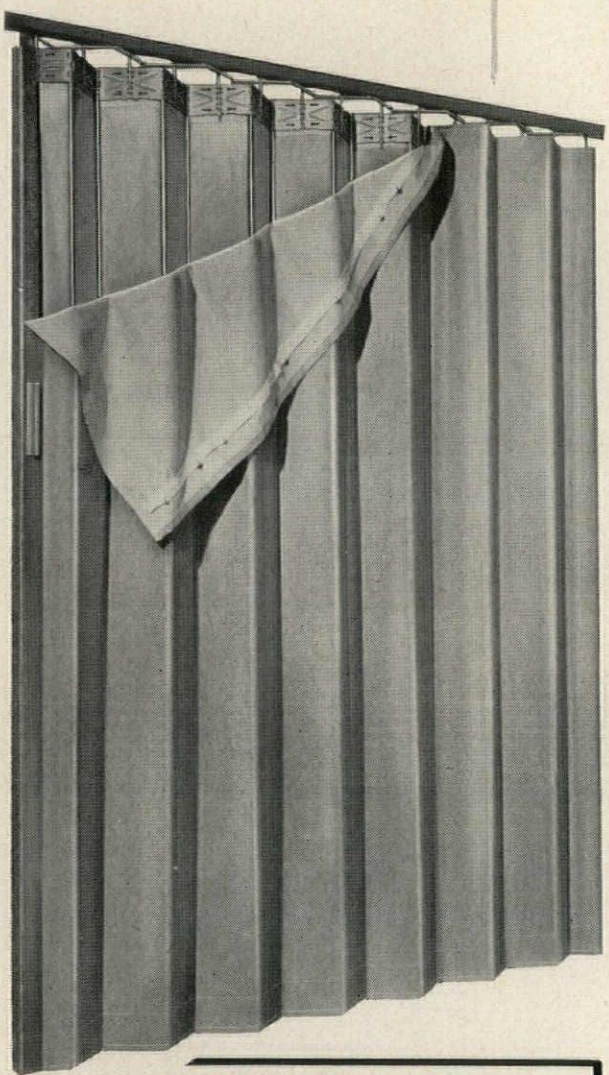
AROUND GLASS



NOTE A: Whenever glass is set in mastic, by stop, angle or channel glazing, it must be supported at its lower edge by setting blocks and centered in the recess by resilient spacer shims around its edges, all in accord with the recommendations of glass manufacturers. These details are not shown. Note B: When mastic fillers or tape are used as the surround for a metal panel, the panel should be centered in the recess by use of resilient spacer shims around its edges. These shims are not shown.

Only Foldoor can give

Pick the type that's *right* for you—



Fabric-covered folding doors are modern, exciting, beautiful! And they're economical, too. They save space, they cut down installation costs and they're easy to maintain. Whether for giant room dividers or inconspicuous closet doors, they're the perfect way to increase usable floor space.

These basic advantages of all folding doors tend to be-

DO YOU WANT—

NARROW PROFILE—A desirable feature on many installations, particularly for smaller openings and thin-wall construction. This slim contour is inherent in the design of the Multi-V Type FOLDOOR.

CONCEALED TRACK—often is a critical factor in low ceiling installations or for existing wood-trim doorways. The track never shows on Multi-V Type FOLDOOR installations.

DECORATOR CORNICE—provides a dressy, finishing touch if a recessed track is not desirable. Matching fabric-covered cornices are supplied at no extra charge for all Multi-V Type FOLDOORS.

MINIMUM STACK SPACE—can be an important consideration, both on extremely narrow doorways and for exceptionally wide room dividers. The Multi-V Type FOLDOOR offers the smallest stack space of any folding door on the market.

Multi-V Foldoor

Then you want Multi-V Foldoor

Exclusive with Holcomb & Hoke, proved in use by thousands of satisfied customers. For more information check "Multi-V" on the handy coupon, on the opposite page.

HOLCOMB & HOKE FOLDOOR FOLDING PARTITIONS AND DOORS ®

THE ONLY COMPLETE OF FABRIC-COVERED

HOLCOMB & HOKE MANUFACTURING CO., INC.
1545 VAN BUREN STREET, INDIANAPOLIS, INDIANA

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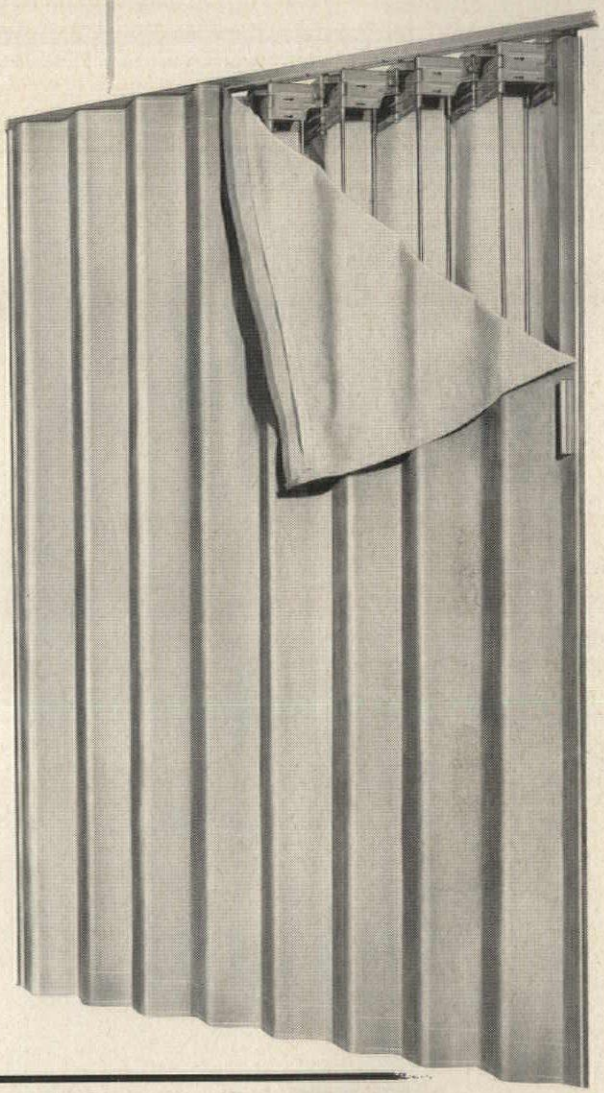
Foldoor makes both at same price

come obscured in the competitive discussions of the relative merits of different manufacturers' designs. *But not when it's a* FOLDOOR. Holcomb & Hoke is *the only manufacturer offering a complete line* in both the two principal design types. So we say, "pick the type that's right for you"—There's a FOLDOOR to fit every need and size.



DO YOU WANT—

BROAD PROFILE—frequently is desirable, to provide a more substantial look on extremely high-ceiling installations or for thick-walled doorways. This broader profile is inherent in the design of the Multi-X Type FOLDOOR.

COMPACT RECESSED TRACK—reduces installation expense and space requirements on those applications where an exposed track or cornice would not be desirable. The Multi-X Type FOLDOOR requires a smaller recess space than the Multi-V Type.

FLUSH MOUNTING WITHOUT CORNICE—presents a pleasing appearance on broad expanses of existing ceiling. The construction of the Multi-X Type FOLDOOR permits such flush mounting without a cornice.

MAXIMUM RIGIDITY—becomes a consideration for large folding doors, especially in schools, churches and other institutions where hard usage is expected. The design of the Multi-X Type FOLDOOR incorporates extra frame rigidity.

Then you want Multi-X Foldoor

Multi-X Foldoor

The latest edition to the FOLDOOR line, permitting us to offer you unbiased assistance in selecting the *right* door for your needs. For more information check "Multi-X" on the handy coupon below.

LINE FOLDING DOORS

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Yes—please send me more information on

- ☐ Multi-V Type Foldoors
- ☐ Multi-X Type Foldoors

Name ..... Title .....

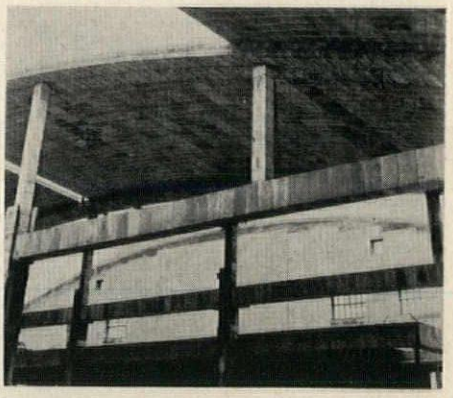
Company .....

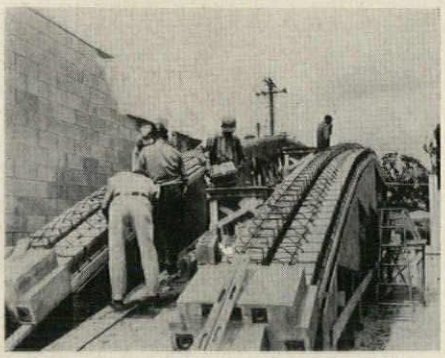
Street Address .....

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

Prestressed Concrete Block Arches Roof Michigan Supermarket

Concrete block, always versatile, has now been prestressed to form eight bow string roof trusses, said to be the first of their kind, for an Alpena, Michigan, supermarket designed by architect A. Charles Jones. The bow, or top chord, was assembled of two rows of 8 in. high hollow soffit blocks laid side by side on light scaffolding with a single row of 6 in. high units placed atop them. The prestressing wires were threaded through cast channels. The bottom chord, a straight tension tie, was made up of grout-filled, U-shaped lintel blocks with flexible tubes to hold the wires. After prestressing and grouting, both chords were anchored to precast end blocks and hoisted into place. Their developers claim that the arched trusses are fifty per cent lighter than conventional solid prestressed girders, and comparable to both wood and steel systems in cost. They are also fireproof, and will not collapse under high temperatures.



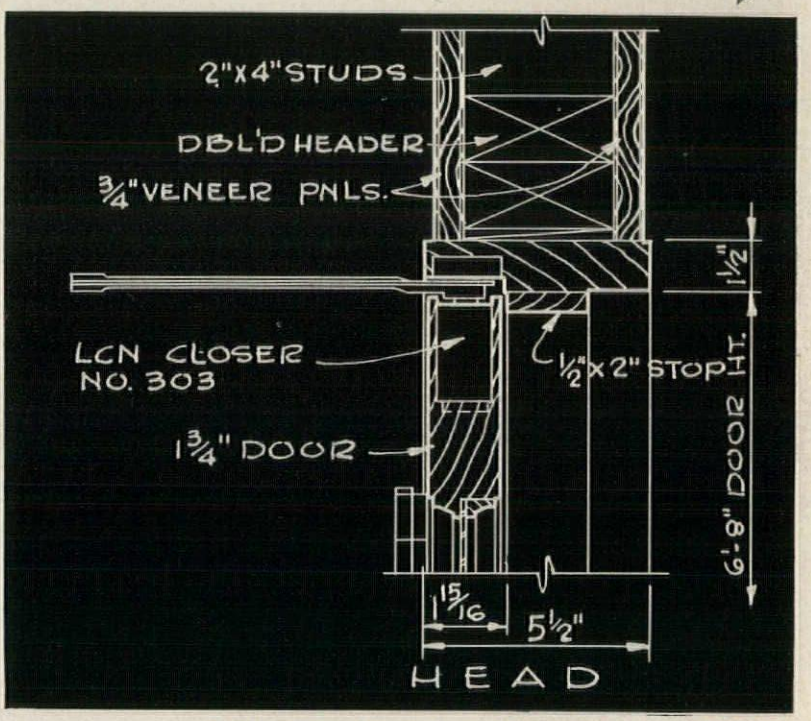


Designed by Prestressing Research and Development Corp. of San Antonio, trusses are site-assembled of specially-shaped soffit blocks with cast channels through which prestressing wires are threaded

Hundred-foot trusses are lowered onto pilasters spaced 18 ft, 8 in. apart. Four have an arch of 13 ft; four arch 11 ft, giving appearance of folded shell. Each supports a live load of 40 psf

Vertical hanger posts made up of grout-filled 8 by 8 in. units and mild steel bars support bottom chord. Roof is of 6 in. pretensioned soffit block planks

more roundup on page 246



CONSTRUCTION DETAILS

for LCN Closer Concealed-in-Door Shown on Opposite Page

The LCN Series 302-303 Closer's Main Points:

1. An ideal closer for many interior doors
2. Mechanism concealed within door; flat arm not prominent, and provides high closing power
3. Door is hung on regular butts
4. Closer is simple to install and to adjust
5. Hydraulic back-check protects walls, etc. on opening
6. Practically concealed control at little more than exposed closer cost

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*

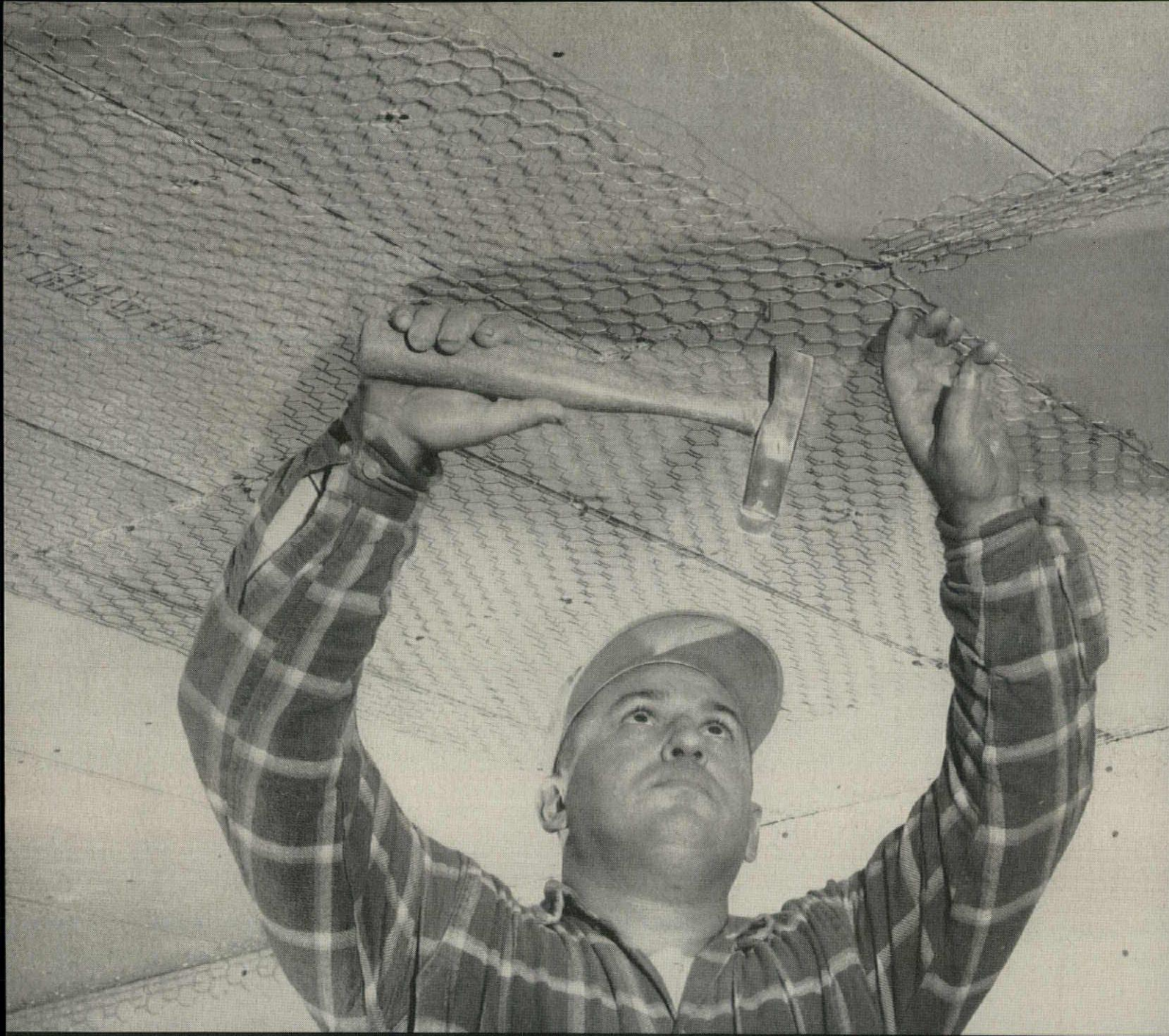
CLOSER CONCEALED IN DOOR

WALT DISNEY ELEMENTARY SCHOOL
TULLYTOWN, PENNSYLVANIA

John S. Carver, *Architect*

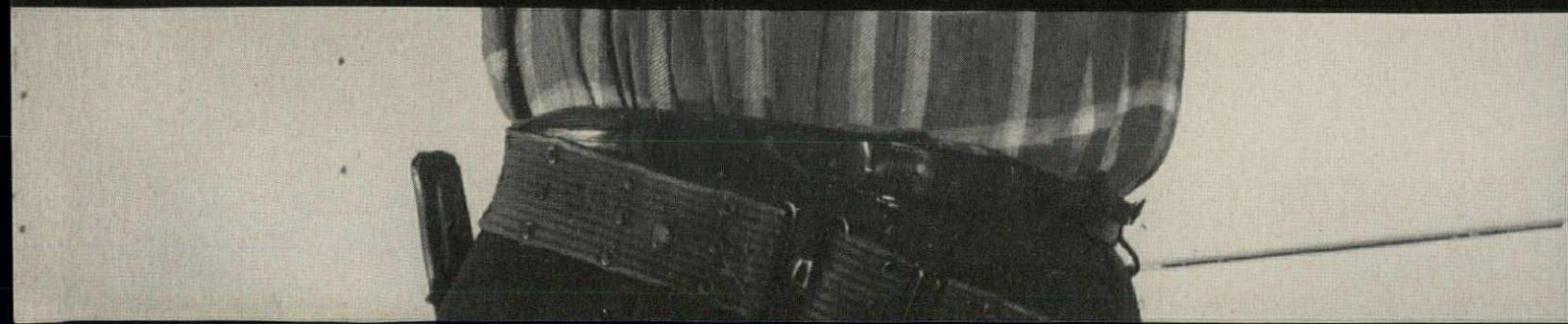
LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page



NOW... YOUR ANSWER TO CEILING CRACKS

THE EBY SYSTEM OF LATHING. Instead of staggering end joints of gypsum lath, longitudinal joints are staggered. Keycorner lath is applied to the continuous joints at 4 ft. intervals. Then, through the center of the room, one strip of 1″ x 20 ga. Keymesh, 36″ wide, is applied. This adds extra reinforcement where it's needed and assures full thickness of plaster.



"I guarantee NO PLASTER CRACKS in ceilings lathed with KEYMESH and KEYCORNER"

PROMISES WILLIAM E. EBY, CHICAGO LATHING CONTRACTOR

Everybody wants crack-free ceilings. That's why Bill Eby's guarantee is so important to you. "Believe me, I wouldn't make such a guarantee unless I'm sure," emphasizes Eby. "This lathing system will give you crack-free ceilings every time. And anybody can use this system. It's no Eby patent.

"I searched for years for a better lathing system. I tested and rejected any number of systems and reinforcements," Eby points out. "Now after three years of using this new lathing system with Keymesh and Keycorner, I know I'm right.

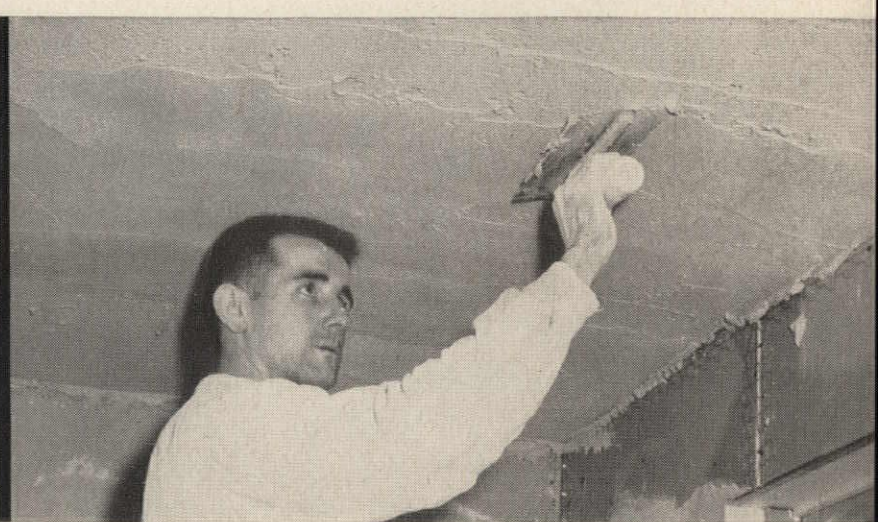
"Here's another fact that may surprise you. Builders are switching back to lath and plaster for one big reason—savings. New application systems and modern colored plaster add up to a low-cost buy. You save the costs of paint and painting. Above this, lower maintenance costs and increased fire safety make lath and plaster a top value.

"Absolutely no ceiling cracks with this lathing system. You get added life from plaster. Upkeep costs are slashed. Yet Keymesh and Keycorner let me hold costs in line."

* * *

It will pay you to learn all the facts about the Eby system of lathing with Keymesh and Keycorner and why he can make this guarantee of a crack-free ceiling.

Eby (left) inspects application of Keycorner, used to reinforce joints. Keycorner is also used at all wall and corner junctures.



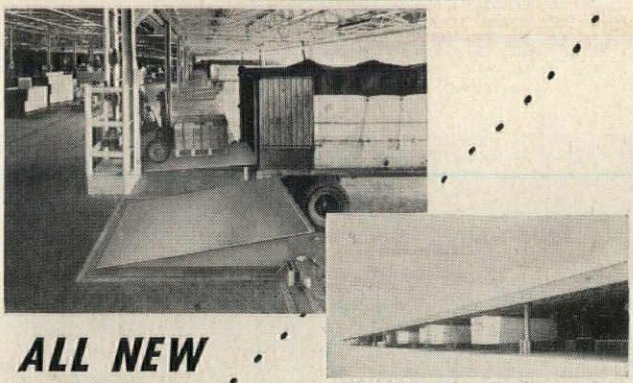
Plaster is applied over reinforced ceiling. The open mesh of both Keymesh and Keycorner assures imbedment in plaster. The open mesh also insures full bond of plaster with gypsum lath.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

Keywall • Keymesh • Keycorner • Keybead • Nails • Welded Wire Fabric

Your **MATERIALS HANDLING SYSTEM** *is* **COMPLETE** *with*



ALL NEW

HI-LO Automatic DOCKBOARDS

48 HI-LO Automatic Dockboards at Ford Motor Co. Pool Car Terminal, Detroit, Michigan.

FULLY AUTOMATIC DOCKBOARDS

COMPLETELY AUTOMATIC
The truck supplies the power . . . no dock attendant needed, no buttons, valves, or controls.

FIRST COST IS LAST COST
Simple counterweight system . . . no air, electric, or hydraulic power . . . built to outlive the dock.

RECESSED AND PACKAGED MODELS
In lengths to solve all loading problems . . . for new or existing docks.

Send for Bulletins and Factual Information TODAY!

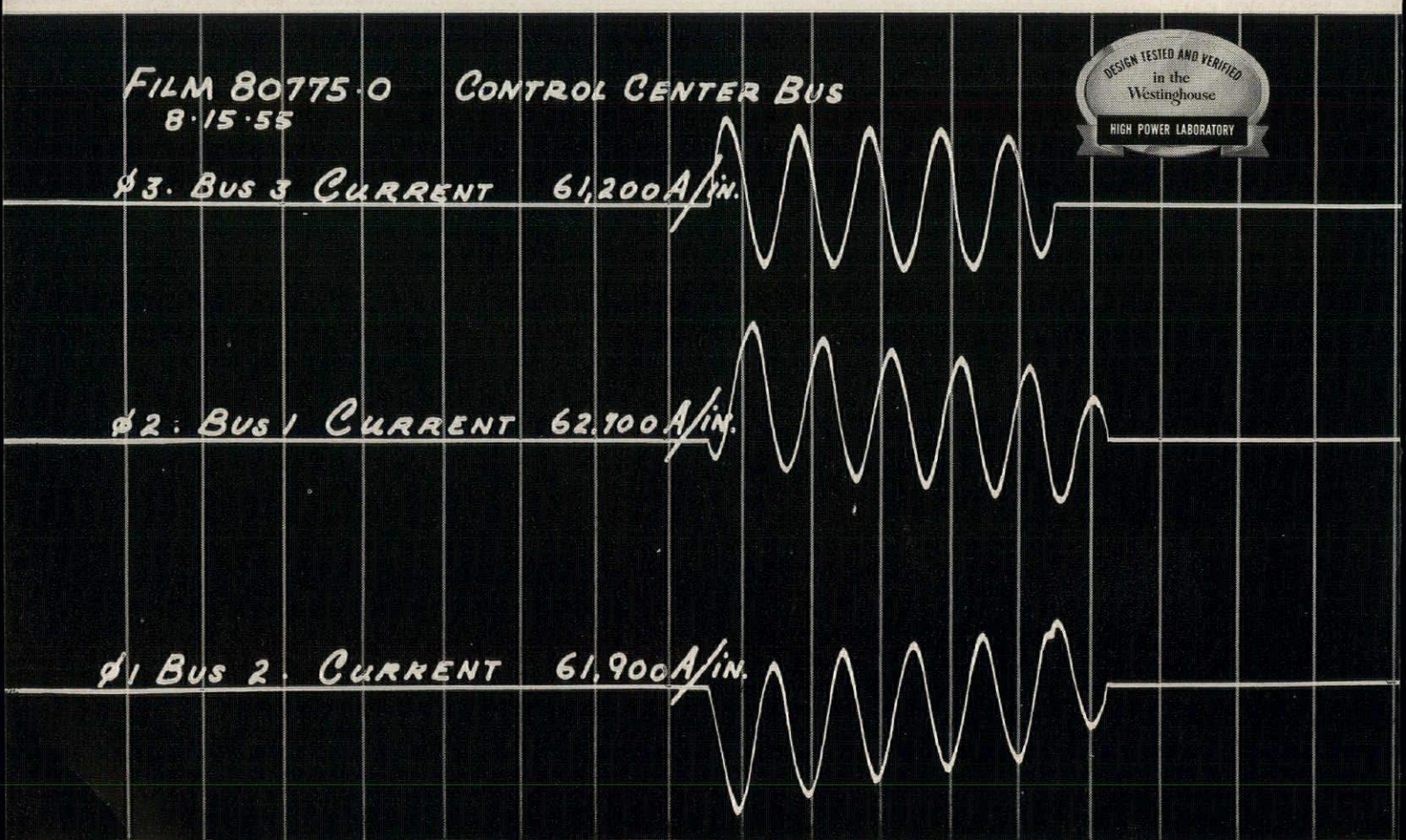
KELLEY COMPANY, INC.
2123 W. Mill Road • Milwaukee 9, Wis.

Technical Roundup

LONDON AIR TERMINAL BUILT IN RECORD TIME

The new West London Air Terminal, a two-story structure which rests on a 2-acre steel and concrete deck over a network of railroad tracks, was built in 108 days—seven weeks ahead of the scheduled completion date. According to the contractors, Richard Costain, Ltd., the record construction time was made possible by their participation in the contract from the original planning stage, and by the choice of materials which could be stocked well in advance of actual construction and erected in their turn.

The principal problems to be faced were the 4½ month time limit on construction; the shape of the building, which necessitated modification of standard prefabrication systems; the relation of structural loads from the building to the structural grid of the concrete raft over the



railway; the storage—and consequent double handling—of as many components as possible; and the assignation of the manufacture and erection of each component to a clearly defined building trade.

With the exception of brick-enclosed concrete staircases, the building was constructed of light, often natural-finished materials readily accepted by the traditional building trades. While the steel and concrete platform was being prepared, the main component parts of the building were detailed and manufactured, and stored in a warehouse approximately one mile from the site.

As part of the pre-site organization, trial erections of a section of the steel frame and floor were carried out, and a prototype panel hoisted to test the proposed method of construction. The first operation directly concerned with the building of the Terminal was the laying of a 6 in. concrete sub-floor over the concrete platform. Recesses were left for stanchion bases, and bolts and small plates were inserted at predetermined levels so that minimum leveling was necessary after erection of the steelwork. When the first phase of the steelwork was completed, the mahogany exterior panels for the upper floor were hoisted on to a steel angle support and fixed in position by wood screws. Interior finishes of colored or glazed hardboard were manufactured as an integral part of the panels, and protected by building paper during construction.

While the panels were being erected, the floor and roof were constructed. The floor is of 5 by 2 in. wood joists with a chipboard sub-floor surfaced in linoleum; the roof consists of channel reinforced wood wool slabs covered with cement slurry, two layers of roofing felt and a finishing layer of white spar chippings. A fire-resistant asbestos board ceiling is suspended under the lattice beams on both the first floor and the roof.

Westinghouse CONTROL CENTER design tested at 25,000 amperes to insure safety for personnel and equipment

At the Westinghouse High Power Laboratory, the new Westinghouse Control Center design has been thoroughly tested under maximum fault conditions with no damage to equipment . . . conclusively proving it industry's safest control center.

With complete interchangeability between 9⅛-and 14-inch modular units, simplified installation and increased safety, Westinghouse Control Centers make possible the most compact, economical, centralized control systems.

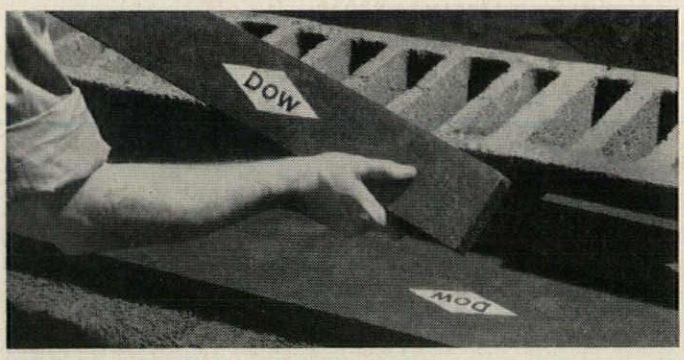
For complete information on the Westinghouse Control Center, call your Westinghouse sales engineer, or write Westinghouse Electric Corporation, P.O. Box 868, 3 Gateway Center, Pittsburgh 30, Pa.

J-22102

POWER-UP starts with CONTROL

YOU CAN BE SURE...IF IT'S Westinghouse

NEW member of the STYROFOAM® family. . .

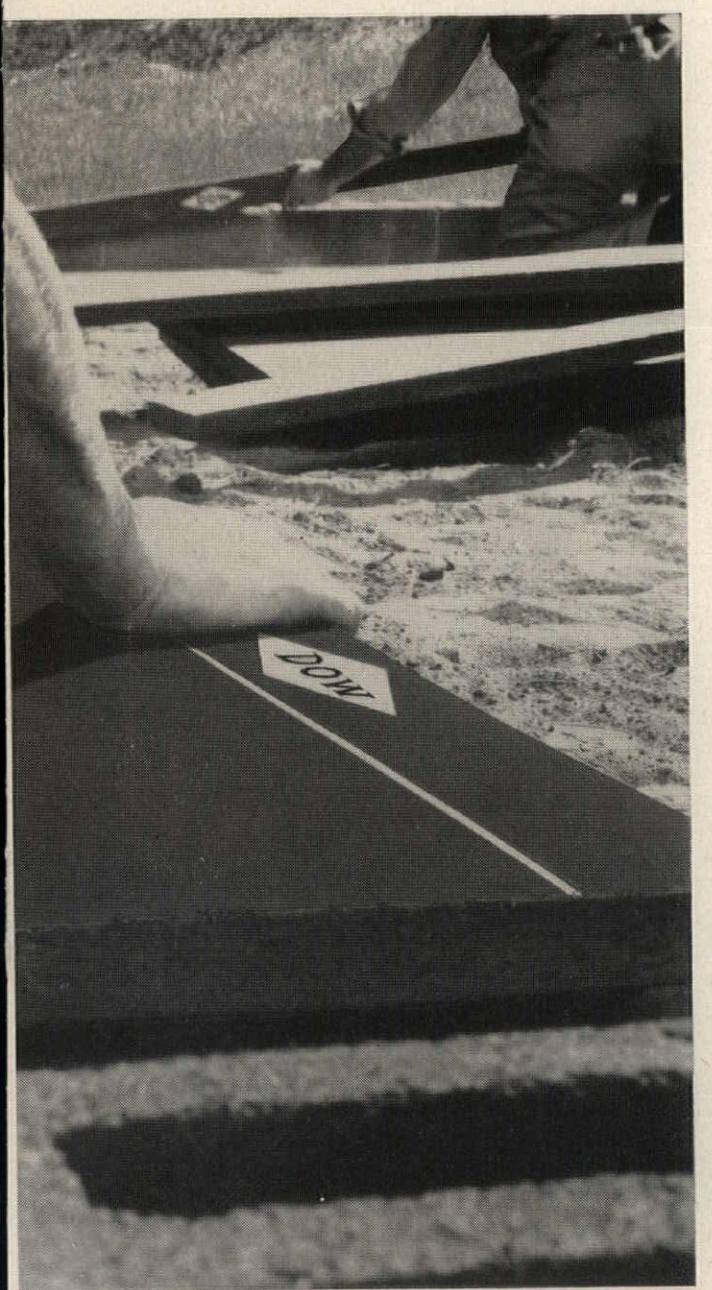


SCOR

A snap to use! Only Scorbord offers this exclusive "snap-off" feature: No saws, knives or other cutting tools are needed. Simply snap to required width.

BORD

TRADEMARK



Cuts fitting time as much as 80% in foundation perimeters and cavity walls

There's a brand spanking new member in the Dow family of plastic foam insulations. Its name is Scorbord* and it offers all the advantages of the very best insulations on the market—plus some exclusive features of its own!

SCORBORD is designed to speed construction and cut labor costs. Big 2-foot x 8-foot boards make the work go faster—and they're light weight, easy to handle. Clearly marked pre-scorings at strategically located intervals make it possible to snap off a piece to almost any desired width. This exclusive feature reduces sawing and cutting to a bare minimum. Saves time and effort in any installation. And Scorbord is approved by the F.H.A. for perimeter insulation.

Here are some other important facts about Scorbord: It provides *permanent* insulating efficiency. It effectively resists water, water vapor, rot and deterioration. It has no food value to attract rodents and other vermin. Scorbord has an unusually high compressive strength (over 2,000 lbs. per sq. ft.), although it weighs less (3.3 oz. per sq. ft.) than any other commonly used rigid insulating material.

This unique insulation is designed specifically for use along the edges of concrete slabs or foundations and in cavity walls. These are the areas where the advantages of Scorbord, such as imperviousness to moisture and permanent insulating efficiency, are most needed.

Scorbord was developed by the manufacturers of Styrofoam*, the insulation that has had outstanding success in both the low temperature and the comfort insulation fields. All the experience gained by Dow in more than a decade of working with Styrofoam is represented in every board foot of Scorbord!

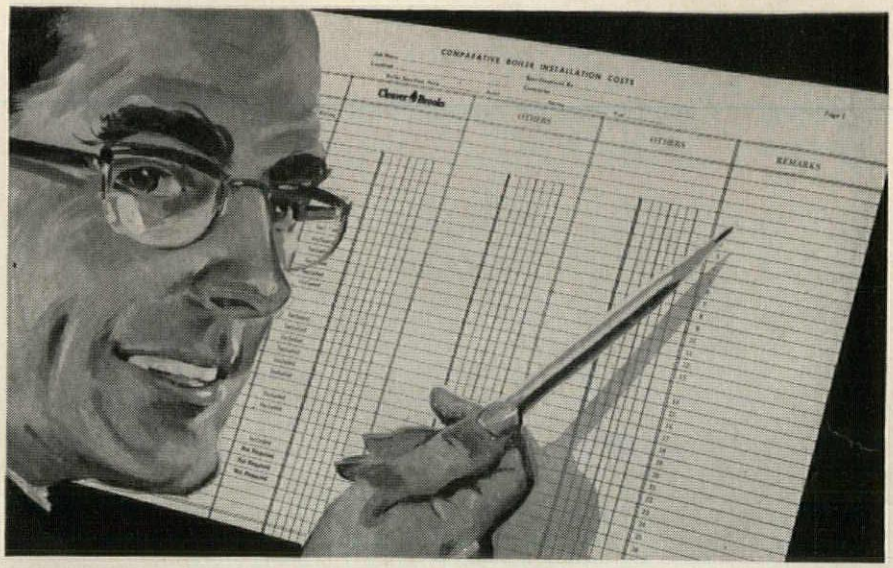
*SCORBORD and STYROFOAM are trademarks of The Dow Chemical Company.

Architects and Builders—For more information about Scorbord or for copies of this informative descriptive booklet, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. 1928G.

YOU CAN DEPEND ON DOW

Before you buy any boiler

compare quoted prices with REAL COSTS



New Cleaver-Brooks cost analyzer clears "quotation" confusion — reveals ALL costs

Get *all* the costs . . . the *real* costs . . . down on paper before you recommend or specify a boiler to your clients. On many boiler installations "quoted prices" seldom agree with the total costs, as you may have learned. This is frequently the case with so-called "built-up" boilers assembled on the site.

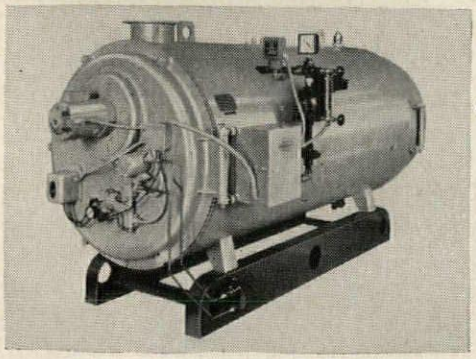
Cleaver-Brooks' cost analysis enables you to compare all material costs (boiler, steam trim, burner, refractory, controls and other equipment) and installation labor costs. You'll know the "real costs" on the complete installation before you start.

Real eye-opener

The figures you'll see may be startling. In most cases the cost analysis proves a Cleaver-Brooks costs *less*. On-job time is drastically reduced because Cleaver-Brooks packaged units are fully assembled, ready to install. Cleaver-Brooks boilers give you more in performance, too . . . each boiler is fully fire-tested at the factory under load, tuned to peak economy. Starting service and on-the-job operator training by authorized field engineers further decreases your over-all costs.

Contact your Cleaver-Brooks agent

Once you add up all the benefits of a Cleaver-Brooks "one-cost" package . . . the proved trouble-free economy of exclusive four-pass, forced-draft design, you'll find it pays over and over to analyze costs carefully before you buy. See your Cleaver-Brooks agent for details or write Cleaver-Brooks Company, 362 East Keefe Avenue, Milwaukee 12, Wisconsin, Dept. B.



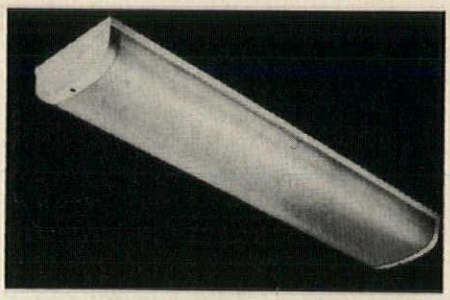
Choose from 19 sizes, 130 models, 15 to 600 hp. Oil, gas and combination oil/gas fired — steam or hot water for heating or processing.

Cleaver Brooks

ORIGINATORS OF SELF-CONTAINED BOILERS

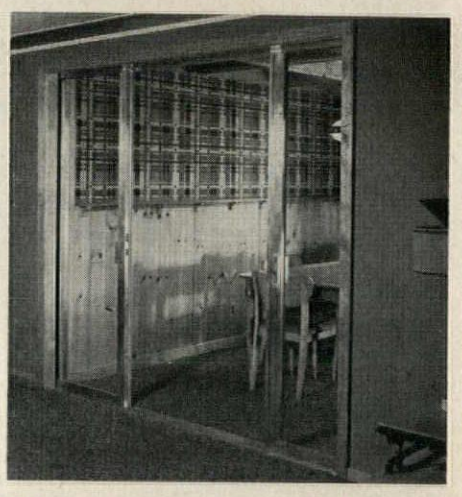
Product Reports

continued from page 231



Unbreakable Light Fixtures

Especially designed to be unbreakable even when submitted to rough usage, the new Ruby *Security* fluorescent light fixture fits flush against ceiling or wall and can be opened for re-lamping only with a special tool. When closed, it is so water-tight that it can be cleaned with a hose—an important feature for shower room, toilet or swimming pool installations; and its sturdy plexiglas lens makes it a logical choice for fieldhouses and gymnasiums. The *Security* unit is available in two, three or four-lamp models, with an optional, independently-operated 8 watt "night lamp" for night safety lighting. *Ruby Lighting Corp., 802 West Whittier Blvd., Whittier, Calif.*



Interior Sliding Glass Doors

When used for room dividers or partitions, the *Fleetlite* sliding glass doors retain a feeling of openness between rooms and assure maximum light and visibility while reducing noise. The interior doors are available in ten styles and a wide range of sizes; the pocket doors (above) with sliding panels that recess into the walls are made with single or double sliding vents. Both feature overhead suspension and a floor level flat sill. *Dept. AR-124, Fleet of America, Inc., Buffalo, N. Y.*

more products on page 254

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.

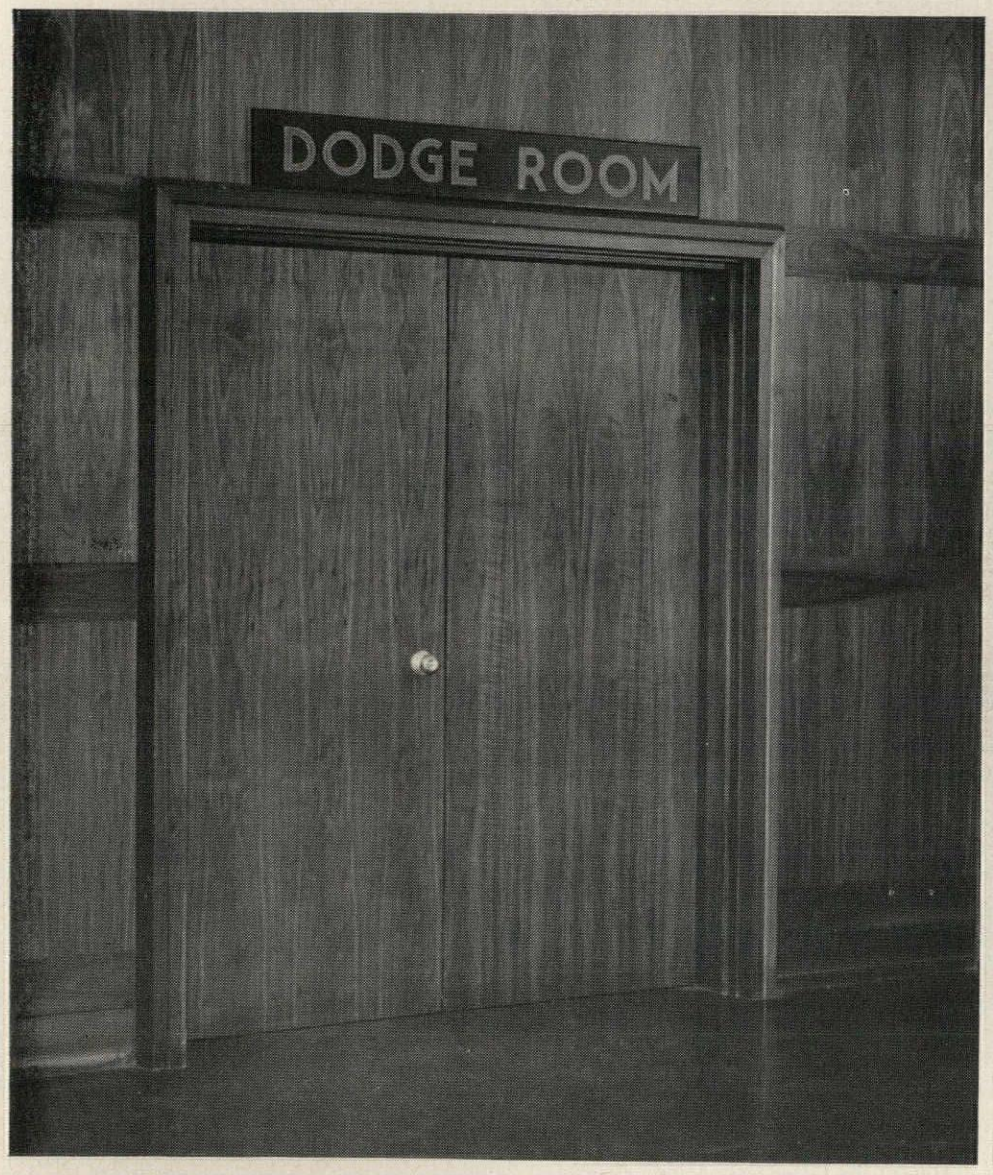
In addition to this highly desirable feature, Kreolite Floors resist wear, stay new longer and require only a minimum of maintenance.

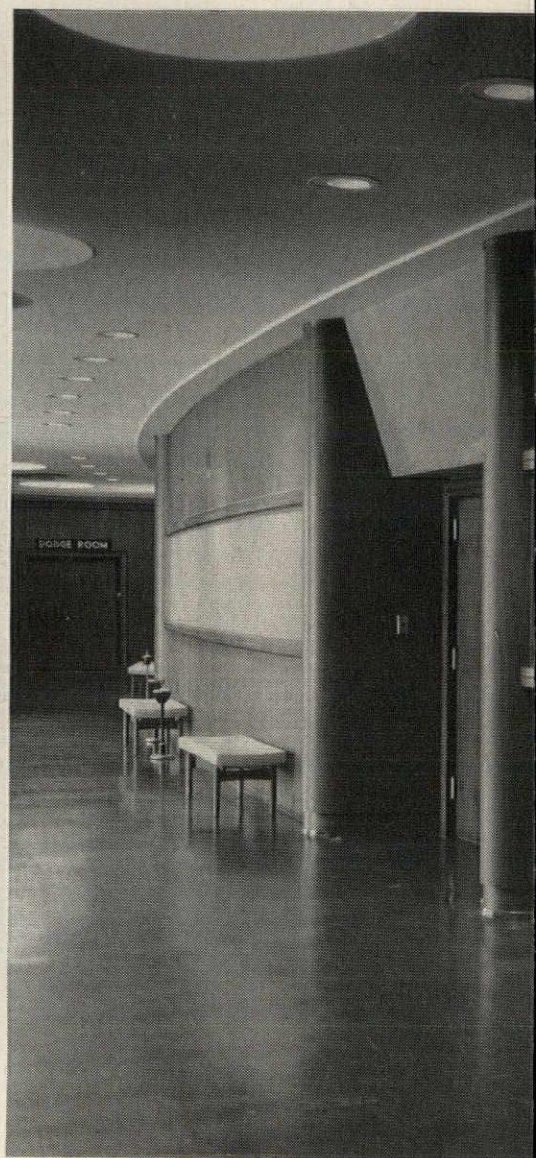
For long lasting floor beauty and *resilience*, get all the facts on Kreolite . . . the better floor for gyms, multi-purpose rooms and school shops. Write today for installation data and specifications.

KREOLITE FLEXIBLE STRIP **END GRAIN FLOORING**

THE JENNISON-WRIGHT CORPORATION
TOLEDO 9, OHIO

to make the most of your design call on the



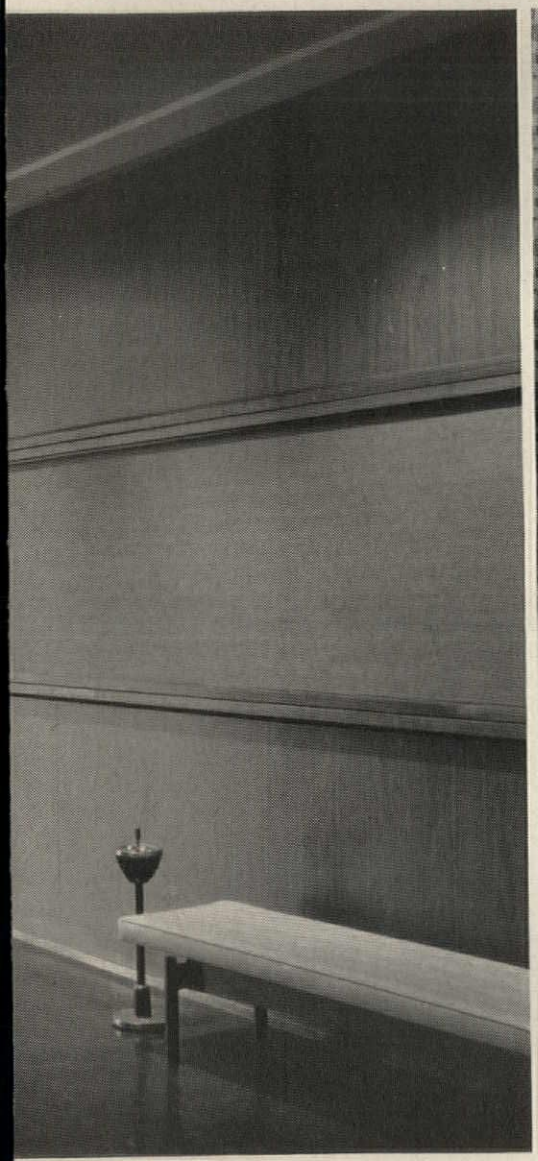


RODDIS DOORS at the College of William and Mary enhance the beauty of the Phi Beta Kappa Memorial Hall (Walford and Wright, Architects). An unlimited choice of domestic and imported woods enables Roddis Doors to fit any design effect you have in mind. You can have these doors without finish . . . *primed and sealed* for finer on-the-job finishing . . . or *completely prefinished* to your sample. Roddis offers a single source for all your wood door requirements—solid and B-label fire doors, guaranteed for life; hollow core doors and X-ray doors.

RODDIS HARDWOOD PANELING was specially chosen to create the striking foyer walls of the Phi Beta Kappa Memorial Hall. Beautiful walnut veneers, hand-selected and matched by Roddis experts, give the rich, dramatic pattern desired. Roddis offers stand-

Doors . . . hardwood paneling . . . Craftwall . . . fine woods for every application. May we help? Roddis consultants are at the service of America's architects.

ideas craftsmanship of Roddis

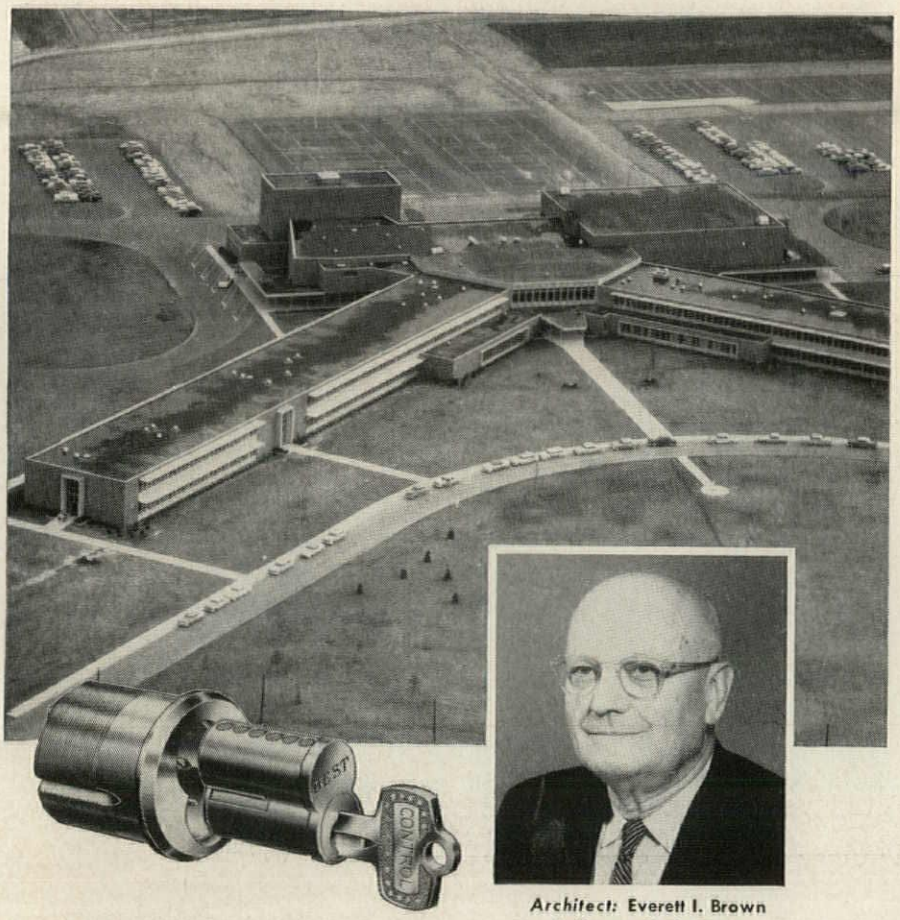


ard panels in a wide variety of woods to achieve any design idea. And Roddis is famous in the field of *custom* hardwood paneling, too. From your specifications Roddis craftsmen will create beautifully matched panels, in any size, to meet your special needs.

RODDIS CRAFTWALL walnut paneling in offices of Slenderella International gives a feeling of efficiency and warmth. Craftwall is ideal for any installation, commercial, institutional or home. Nine handsome woods make design ideas "come to life": maple, cherry, elm, birch (2 tones), oak, mahogany, walnut, knotty pine. Each has an exclusive finish that resists dirt, scuffs and stains. The ¼" panels come in standard or special sizes—fire-retardant if desired. And Craftwall wood paneling is guaranteed by Roddis, in writing, for the life of the installation.

FOR FURTHER INFORMATION SEE *SWEET'S ARCHITECTURAL FILE*, OR WRITE TO

RODDIS PLYWOOD CORPORATION, MARSHFIELD, WISCONSIN



Architect: Everett I. Brown
Indianapolis, Indiana

SPECIFIED

In Indiana's New North Central High School— BEST® Locks with the *interchangeable core**

Handsome, new North Central High School, in Washington Township near Indianapolis, harmoniously blends design beauty with functional service. In planning the school's locking system, attention was focused not only on physical security and appearance, but also upon future maintenance ease and economy.

An all-BEST locking system was decided upon because it minimizes cost and time required for lock changes . . . also provides *one* simplified masterkey system throughout the school and *entire Township school system.* Future buildings can easily be added to this single masterkey system. The BEST system reduces total number of keys needed, allows instant, economical lock changes and assures maximum physical security.

*The *interchangeable* core is a patented, key-removable pin-tumbler lock which can be locked or unlocked with a regular operating key. This core may be removed with a special "Control Key" (used only to remove and replace cores), effecting instant change of locks. For complete details, see Sweet's Architectural File 18e/Be or write

BEST®

Dept. A-3

Best Universal Lock Co., Inc.
10 N. Senate Ave., Indianapolis 4, Indiana

Product Reports

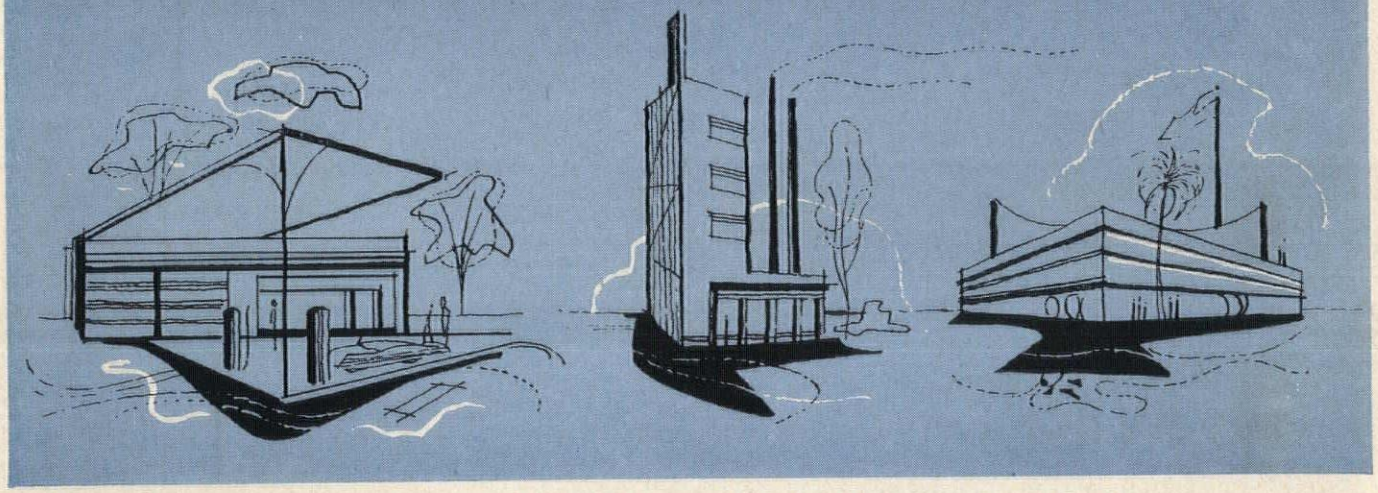
Laminated Stained Glass Windows
A 24-panel window wall in the University of New Hampshire's Memorial Union Building introduces an economical replacement for the centuries-old process of manufacturing stained glass. By sealing artist John W. Hatch's abstract design into laminated safety glass, the 14-step operation required to produce its counterpart in conventional stained glass was cut to just two—painting and laminating—and costs were reduced accordingly. The paint was applied directly to the glass surface, after which the panels were laminated by sandwiching three layers of plastic sheeting between the painted glass and a sheet of unpainted glass and bonding the five layers under heat and pressure. According to Hatch, the new technique eliminates many of the conventional processing steps which have limited stained glass design, thus allowing the artist greater freedom of expression. The special paints and plastic used, and the technique itself, were developed by the *Plastics Div., Monsanto Chemical Co., Springfield, Mass.*

Deeper Lightweight Beam
A new 14 in. *Light Beam* weighing only 17.2 lb per ft extends the range of lightweight shapes available for industrial, commercial and institutional construction. Because its depth permits longer spans with less deflection than other sections of equivalent strength, the new structural member is expected to find wide use as roof purlins, floor joists and spandrel beams. Its 4 in. flange is wide enough for bolts or rivets, and will provide ample bearing for precast slab construction. *Jones & Laughlin Steel Co., 3 Gateway Center, Pittsburgh 30, Pa.*

more products on page 258

Avoncraft
PORCELAIN ENAMEL

ARCHITECTURAL USES UNLIMITED



There's a remarkable architectural product on the market today, and the name is AVONCRAFT. AVONCRAFT Porcelain Enamel . . . with the strength of steel, the beauty, cleanliness and durability of porcelain. The architect can mold this amazing maintenance-free product to fit the modern design of schools, motels & cabanas, service stations, and to industrial and commercial applications of many types. Entire buildings can be designed of this material . . . or, it can be used as a liner in industrial applications where its tough beauty (impervious to fumes, chemicals and dirt) is of paramount importance . . .

architectural products
Avoncraft
a division of
AVONDALE MARINE WAYS, INC.
P. O. Box 1030 · New Orleans 8, U.S.A.

Catalina High School, Tucson, Arizona
Architects: Scholer, Sakellar & Fuller, Tucson, Arizona
Contractors: L. C. Anderson & J. J. Craviolini, Tucson, Arizona

ARCHED CEILING RAISES THE ROOF . . . LOWERS THE COST

Creative design and functional efficiency need not be hamstrung by budgeted dollars. Nor must structural and enduring qualities be compromised for economical construction.

This new school is an excellent example. Here, Fenestra* Acoustical "D" Building Panels form a combination structural roof and finished acoustical ceiling, replacing *five* different materials. They are erected in *one* operation, by *one* trade.

For curved structures like this, these lightweight, high-strength, cellular steel panels require minimum supports, and brace the steel arches at the same time. Notice the clean, uncluttered ceiling lines.

And *inside the panels*, just above the perforations, is a pre-formed, arched, sound-absorbing batt† which effects noise reduction coefficients up to 80%. The ceiling can be washed or painted without affecting acoustical qualities.

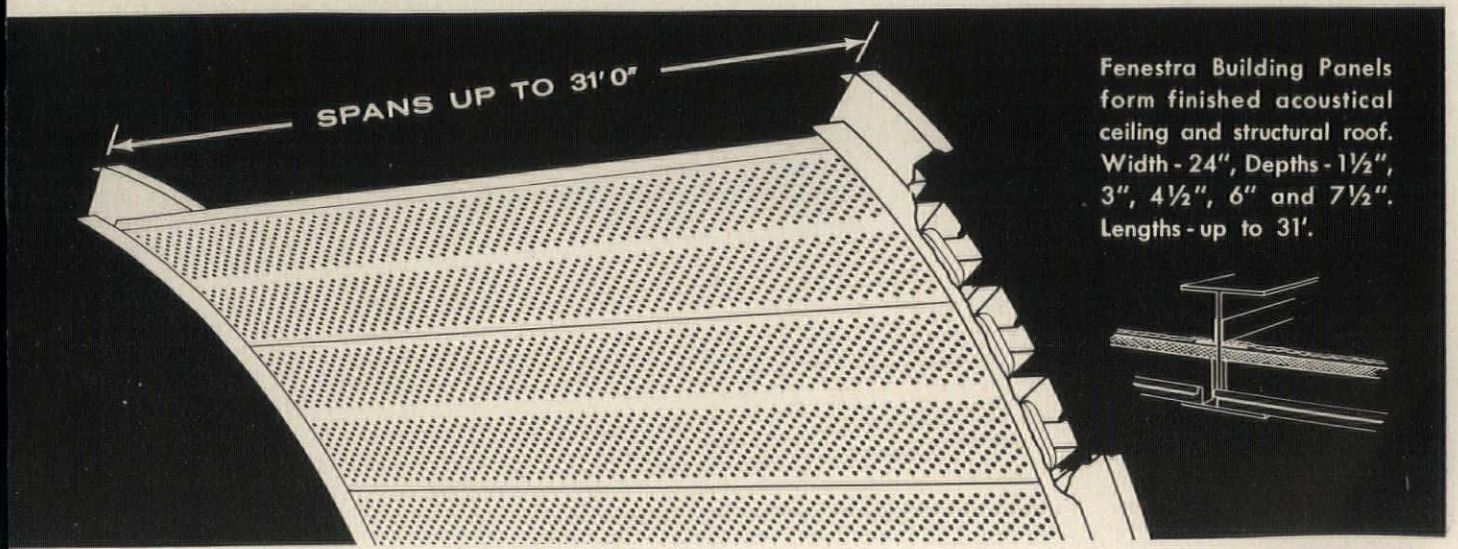
Write for FREE Fenestra Building Panel Catalog, or call your Fenestra representative. Fenestra Incorporated, Department AR-2, 2252 East Grand Boulevard, Detroit 11, Michigan.

*Trademark
†Patent Pending

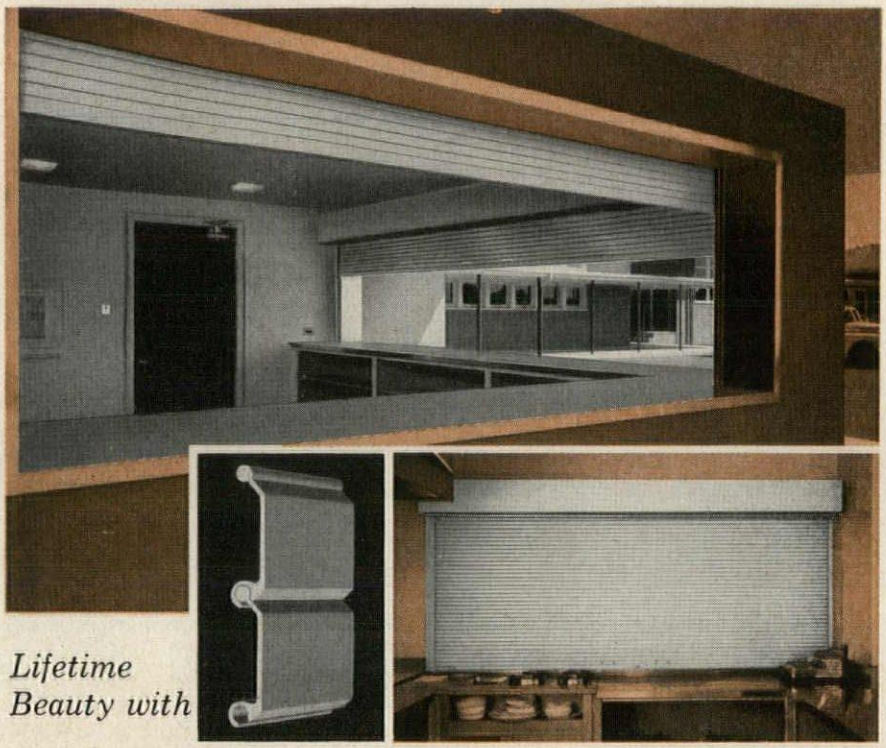
Fenestra
INCORPORATED

SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY 2F FE

Your single source of supply for building panels • curtain walls • doors • windows



SPECIFIED MORE THAN ANY OTHER COUNTER DOOR



Lifetime Beauty with

COOKSON

"ALUMILITED" COUNTER DOORS

Cookson Counter Doors provide the most practical and attractive answer to all counter closure applications, including schools, cafeterias, offices and ticket windows. Durable "alumilited" extruded aluminum slats and guides keep their sparkling luster indefinitely, requiring little or no upkeep. Peeling and chipping, so often associated with painted steel curtains, are entirely eliminated. Nor will you run into the many other costly problems encountered with ordinary lightweight "mill finish" aluminum. And now, Cookson introduces another "first" in counter door design: sturdy wool-pile guide stripping for smooth, noise-free, weather-proofed operation. Cookson Counter Doors are custom built for openings of 20' wide, clear opening below coil box up to 5'6". Request Bulletin No. 702.

An exclusive combination of features

- Locked-in wool-pile guide stripping* provides for easier operation, eliminates noisy metal-to-metal sliding contact, seals against dust, drafts, weather.
  *Pat. applied for
- Sturdy, smartly styled "Alumilited" slats of extruded aluminum have a permanent luster, are resistant to scratching, denting, cannot rust or corrode.
- Designed to roll up and out of sight for full, unobstructed opening. Lifetime lubricated ball bearings provide effortless operation.

COOKSON ®

SEE SWEET'S

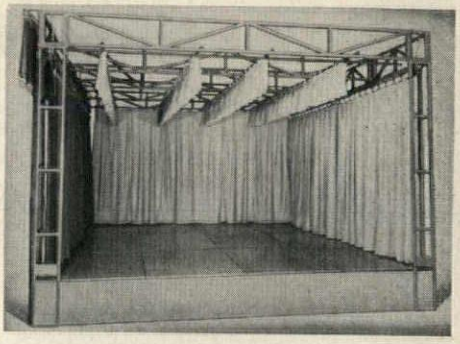
THE COOKSON COMPANY

1527 Cortland Ave., San Francisco, Calif.

"Alumilited" Counter Doors
Rolling Service Doors, "Servire" Fire Doors, and Grilles
Side Coiling Wood Partitions • Specialty Doors

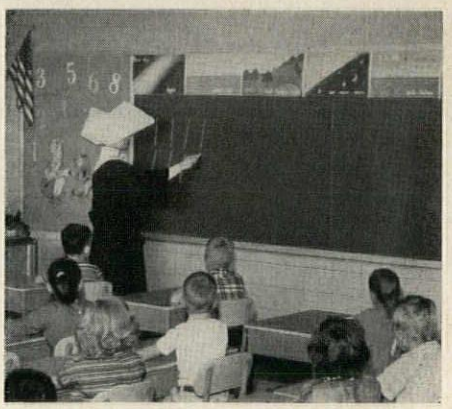
COUNT ON **COOKSON** DOORS . . . *"The Best Way to Close an Opening"*

Product Reports



Portable Stage Units

Architects who have been faced with the problem of equipping a single assembly room in schools, churches and similar buildings for a wide variety of functions will welcome the introduction of a portable stage made in compact units which can easily be stowed away when not in use. Designed to serve as a temporary, movable or folding stage, the units are also adaptable for economical use in fixed installations. They can be had complete with front curtain valance, concert tracks, border lights, dimmer controls and curtain machinery, or may be ordered in parts and added to later. *Hubert Mitchell Industries, Hartselle, Ala.*



Low-Cost Plastic Chalkboards

Made of Reichold Chemical Co.'s fibrous glass-reinforced *Polylite* polyester plastic, lightweight, glare-free *Staylite* chalkboards are said to resist cracking, shattering or peeling. Easily handled and installed, they can be sawed or drilled on the job, and require only simple trimming materials. Their low cost—about half that of other high-quality chalkboards—is combined with good writing and erasing quality and durability. Light green, white, gray and dark green *Staylite* chalkboards are available in panels 4 ft high by 8 ft wide. *Stahl Industries, 130 Linden Ave., Youngstown, Ohio*

more products on page 262

Seamless sheets of VISQUEEN Trade Mark film protect 1500 Woodcrest homes from moisture for life

Precut one-piece vapor barriers of VISQUEEN film are a major economy factor in construction of 1500 split-level homes at Woodcrest, Haddonfield, New Jersey. After excavation and trenching for heat ducts, the VISQUEEN film is placed in a matter of minutes, heat ducts installed and concrete poured.

Bernie Alterman, job superintendent for 20th Century Construction Company, says, "From every standpoint this is the most satisfactory vapor barrier I have worked with."

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

Only VISQUEEN film is made in *seamless* widths to 32 feet—further indication of VISKING Company's leadership in everything relating to polyethylene film. For detailed information, please use the request tag.

information request tag

VisQueen Trade Mark

clip this tag—#AB1

attach to letterhead, mail.

VISQUEEN *film is all polyethylene, but not all polyethylene film is* VISQUEEN. *Only* VISQUEEN *film has the benefit of research and resources of* VISKING COMPANY.

PLASTICS DIVISION
VISKING COMPANY *Division of* UNION CARBIDE *Corporation*
P.O. Box 1410, TERRE HAUTE, INDIANA
IN CANADA: Visking Limited, Lindsay, Ontario.

Prestige Photographers—One of a series. At the right, Jim Brown, whose name has graced many of the superb photographic illustrations of the day, brings the photographer's discerning eye to mellow, tan Butternut veneer by Stem in this self-portrait.

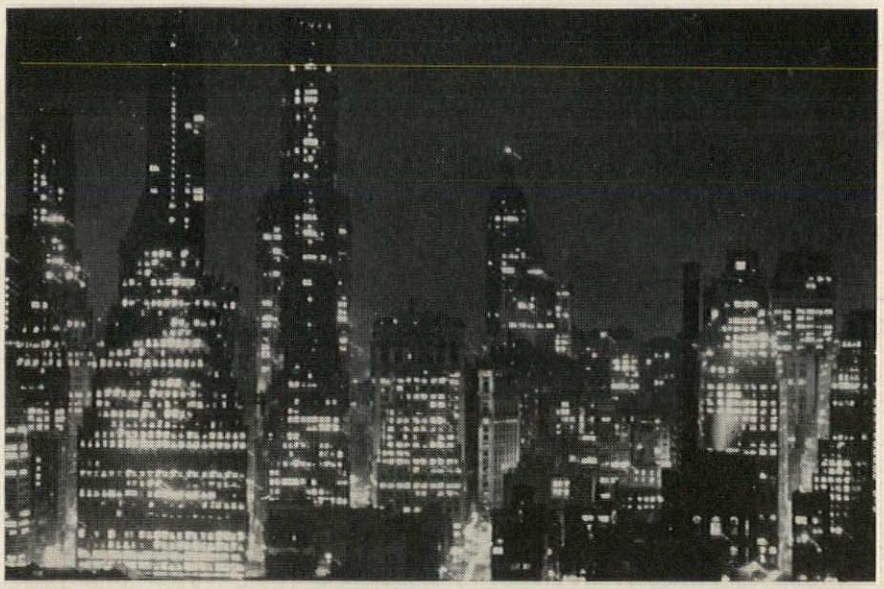
PRESTIGE VENEER ...BUTTERNUT, AN AMERICAN HERITAGE

Capture Teak's royal elegance by specifying STEM veneer from log samples

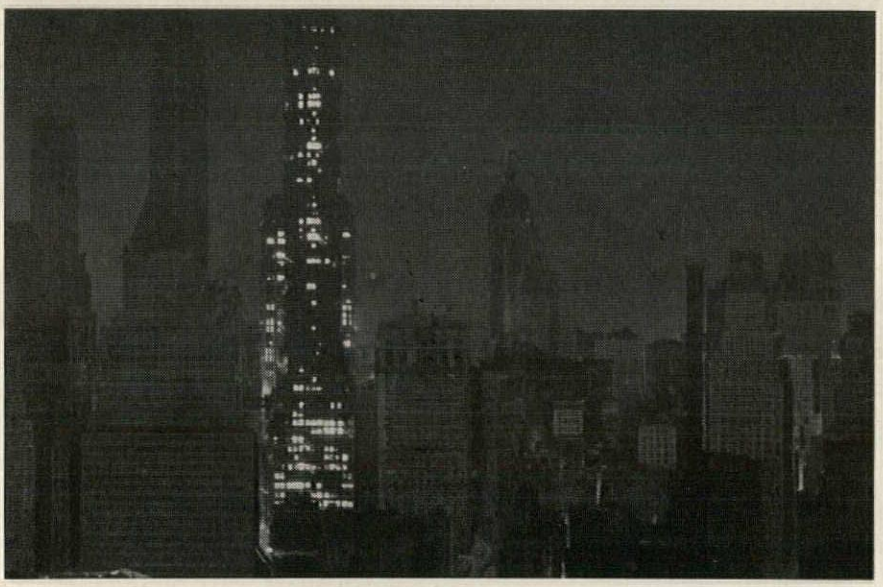
Our Early American ancestors dyed homespun cloth with the juice from the husks of butternuts. Butternut, often called White Walnut, grows in many sections of the U.S. A soft-textured, satiny wood, it has a quiet, dignified character that has always made it a favorite with architects who specialize in fine interiors. Stem veneers bring out the best in Butternut. 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 the calm, plain dignity of Butternut by specifying from actual log samples the veneer of your choice. You can be sure then 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 (logs or parts of logs cut into veneers) from which you can choose Butternut 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 subdued elegance to which you are entitled when you select a decorative background with an historic, heroic tradition. Don't compromise for less.

CHESTER B. STEM, INC., NEW ALBANY, INDIANA.

RARE WOODS FROM STEM



This is a city . . .



. . . after a power failure

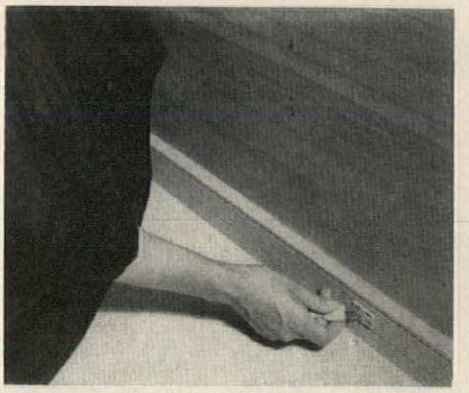
Exide emergency lighting system keeps lights on

See what a difference an Exide Emergency Lighting System can make in a building. If regular electric power fails, it takes over the lighting load automatically and instantaneously. No loss of light, even momentarily. Prevents accidents, panic, damage, theft. Low-cost protection for modern buildings. Get full details. Write Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®

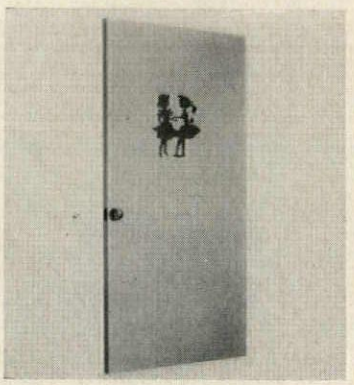
Emergency power source. Powerful Exide Batteries can handle lighting loads for entire buildings. Long lasting—as much as 25 years in many installations.

Product Reports



All-Steel Electrical Baseboard

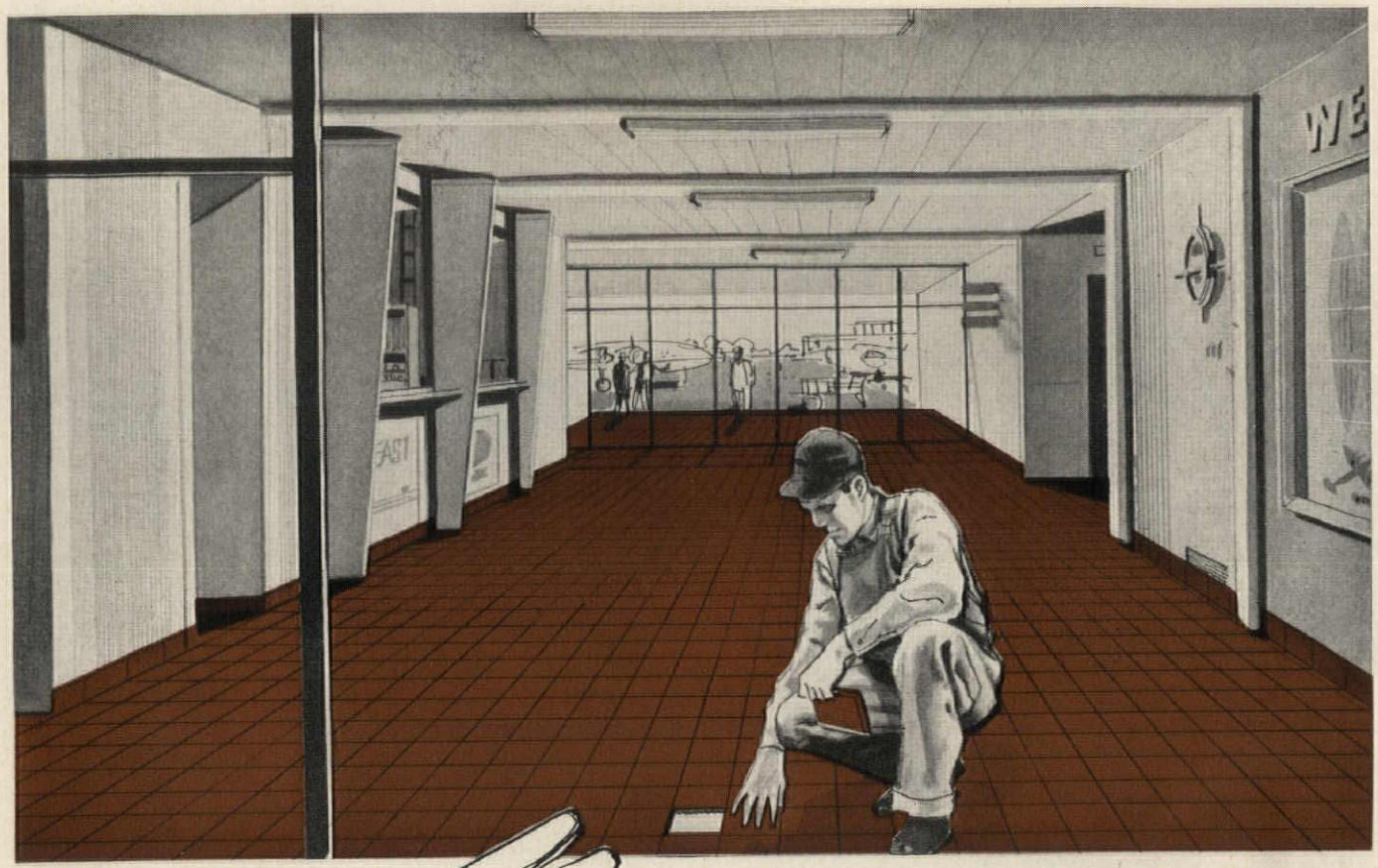
Baseduct, a new all-steel baseboard wiring system, houses wiring for all normal branch circuit requirements in a compact (3 by ¾ in.) baseboard which can be set directly on the floor and requires no footers, trim or capping of any kind. Duplex receptacles, conveniently spaced at 30 to 60 in. intervals, are pre-assembled to a wiring harness and contained within the duct, eliminating the need for conventional wall outlets. *National Electric Products Corp., Gateway Center, Pittsburgh 30, Pa.*



Plastic Laminate Faced Doors

Architects' designs for silhouettes to designate special rooms in schools, hospitals or clubs may be incorporated in *Chemclad* plastic laminate faced doors and partitions at the time of their manufacture. The silhouettes, which are in contrasting colors, are inlaid flush with the doors and have no seams. If desired, different colors and patterns can be used on opposite sides of the door. The doors themselves are of stressed skin construction, with durable plastic laminate faces bonded to the core and frames under heat and pressure, and can be had with openings of any size for glazing or installation of louvers. *Bourne Mfg. Co., 1573 East Larned St., Detroit 7, Mich.*

more products on page 268



FITS LIKE A GLOVE...

Yes the last piece of Murray Tile fits into place as easily as the first, because Murray Quarry Tile is *uniform-sized*, which eliminates costly sorting even for minimum grout lines. For economical installations *always* specify Murray Quarry Tile. Murray Tile is guaranteed for the life of the job. Write for the latest color catalog, Department A.

murray tile company **inc.**

MANUFACTURERS OF QUARRY TILE **CLOVERPORT, KENTUCKY**

TRADE FRICK MARK

AT THE

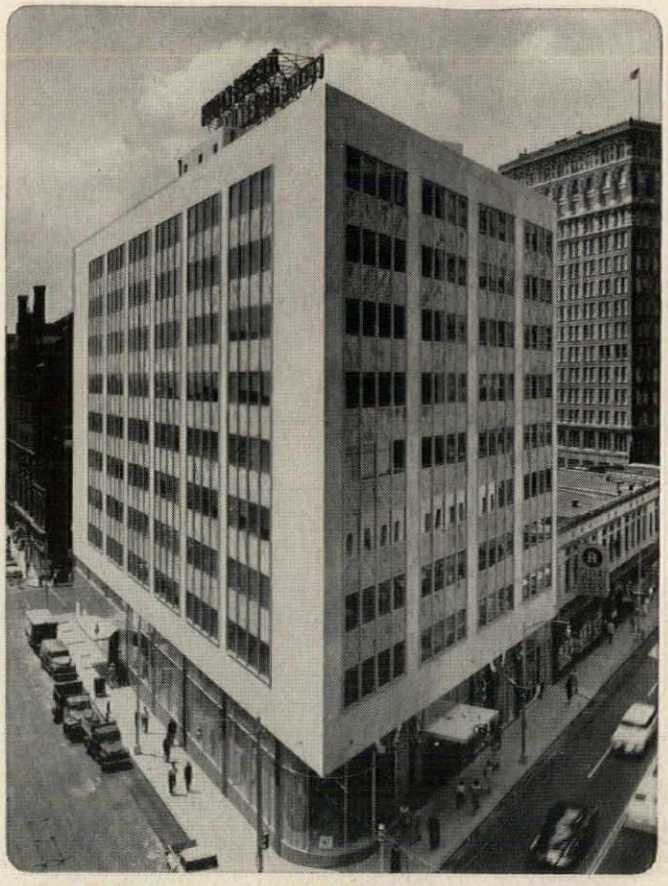
"CROSSROADS OF THE SOUTH"

New Fulton Federal Building in Atlanta uses Frick Air Conditioning throughout.

Half a block from the famous intersection of Peachtree St. at Five Points, in historic Atlanta, is the new home of the Fulton County Federal Savings & Loan Association.

All planning was directed toward achieving the most modern and distinctive bank-office building in the South. Eight different types of domestic and foreign marble were used in the construction. The entire building is equipped with zoned year-around air conditioning.

Five Frick "ECLIPSE" compressors supply the refrigeration for chilling the water for air conditioning. Four of the compressors in a penthouse handle the cooling of the eight top floors, while the other machine, located in the basement, serves the remaining floors. The entire system is fully automatic. Mr. William M. Scurry, President, states, "Since this Frick system has been installed, it has proved highly satisfactory in every respect."



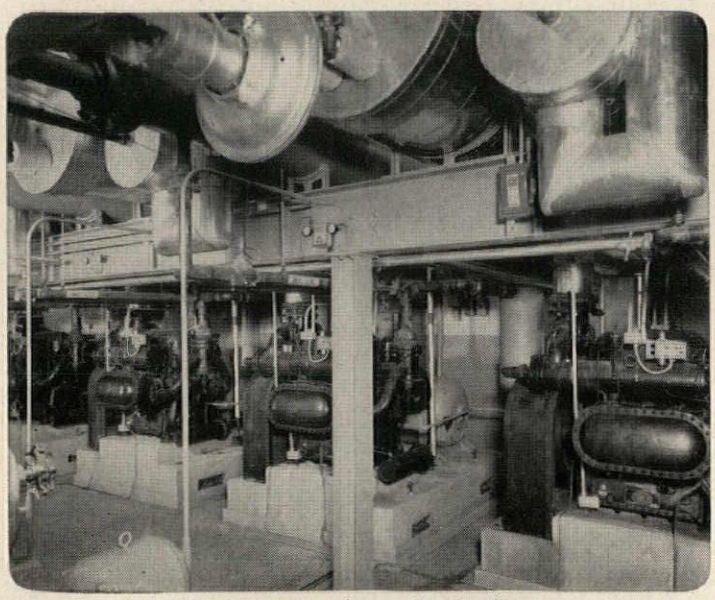
Architects: Abreau and Robeson, Inc., Atlanta, Georgia.

For that all-important air conditioning, ice making, quick freezing or any other refrigeration work of yours, call the nearest Frick representative. Branch Offices and Distributors are located in principal cities the world over. They have the knowledge and equipment to solve all of your cooling problems.

DEPENDABLE REFRIGERATION SINCE 1882

FRICK CO.

WAYNESBORO, PENNA., U. S. A.



Four Compressors Located in Penthouse

Air Conditioned Banking Room in Fulton Federal Savings

HOW YOUR PROJECT BENEFITS FROM

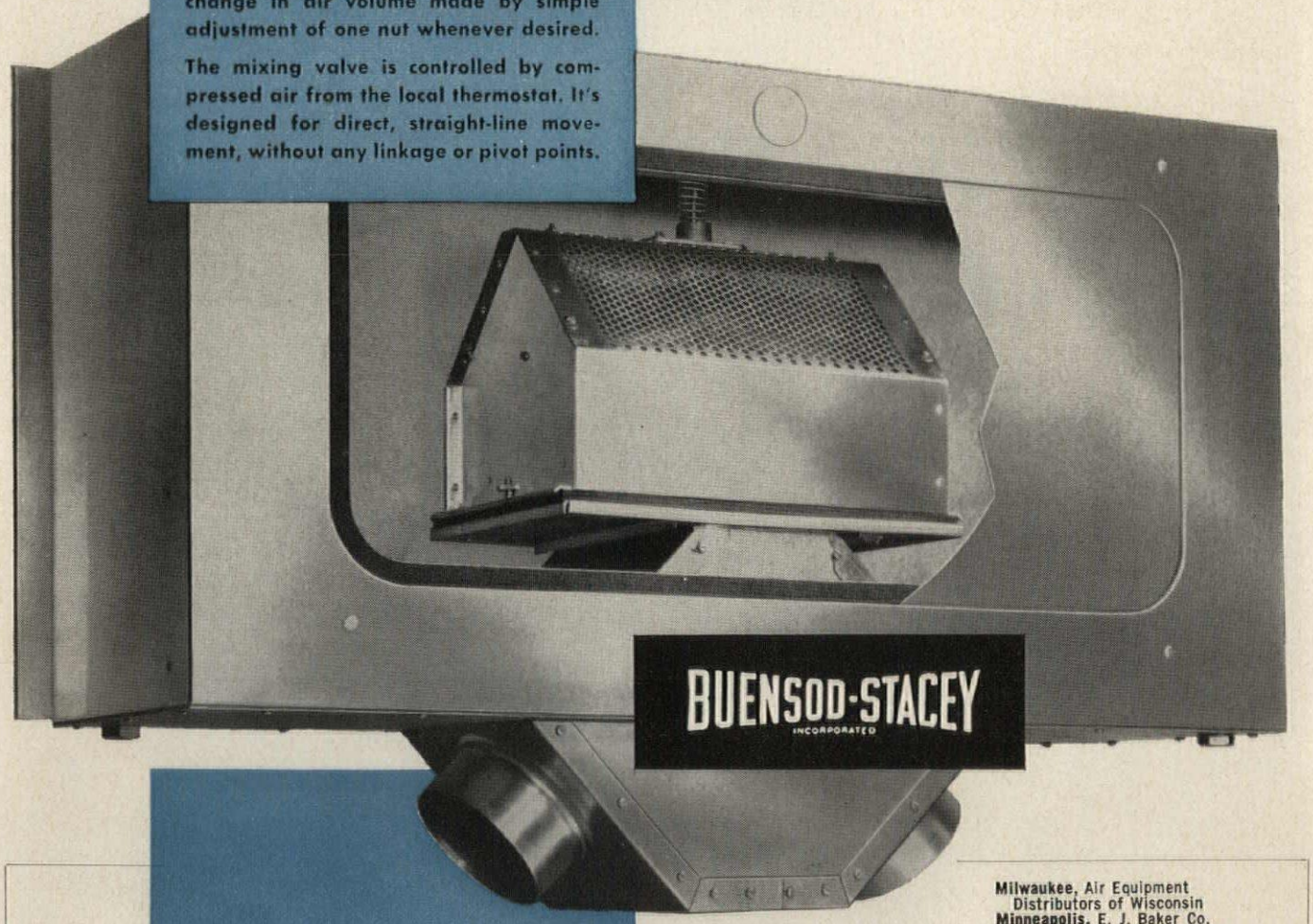
DIRECT, AUTOMATIC, VOLUME CONTROL

***Direct* volume control without the use of a sensing instrument is exclusive in Buensod Dual-Duct air mixing units.**

Buensod volume regulators maintain constant air quantity through each unit, regardless of variance of static pressures on either inlet or outlet of mixing valve.

Also: Independent of outside source of power such as compressed air or electricity . . . no control instrument to calibrate; nothing but a screw adjustment of spring tension . . . can be factory-set for desired volume and guaranteed within 5%, plus or minus that amount, when installed . . . change in air volume made by simple adjustment of one nut whenever desired.

The mixing valve is controlled by compressed air from the local thermostat. It's designed for direct, straight-line movement, without any linkage or pivot points.



Buensod units are being installed in more and more structures — new and renovated. Consider them for your next project!

BUENSOD-STACEY, Inc.
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Baltimore, Lancaster May & Co.
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Boston, Leonard F. Luchner
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New
In Extruded Aluminum

by TITUS

A COMPLETE LINE OF DISTINCTIVE

Linear Type

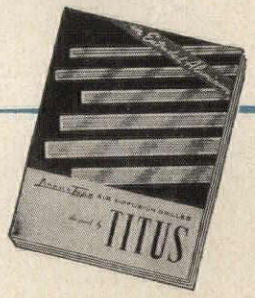
AIR DIFFUSING GRILLES

These new grilles have all the characteristics necessary to open a vast new field of design opportunity—TRUE ARCHITECTURAL BEAUTY—OUTSTANDING PERFORMANCE—REAL VERSATILITY.

Titus new linear type diffusers are *perfect for continuous line use in sidewalls—window sills—floors* ... IN BANKS, SCHOOLS, HOSPITALS AND OTHER PUBLIC BUILDINGS.

Now available in *1½, 2, 2½, 3, 3½ and 4-inch widths*—with rear set of individually adjustable Airfoil louvers, multi-shutter and opposed blade dampers. *Furnished in any width or length on special order.*

WRITE FOR NEW FREE 16-PAGE CATALOG



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Rush me new FREE Catalog that gives complete information (including engineering data) on Titus Linear Type Grilles.

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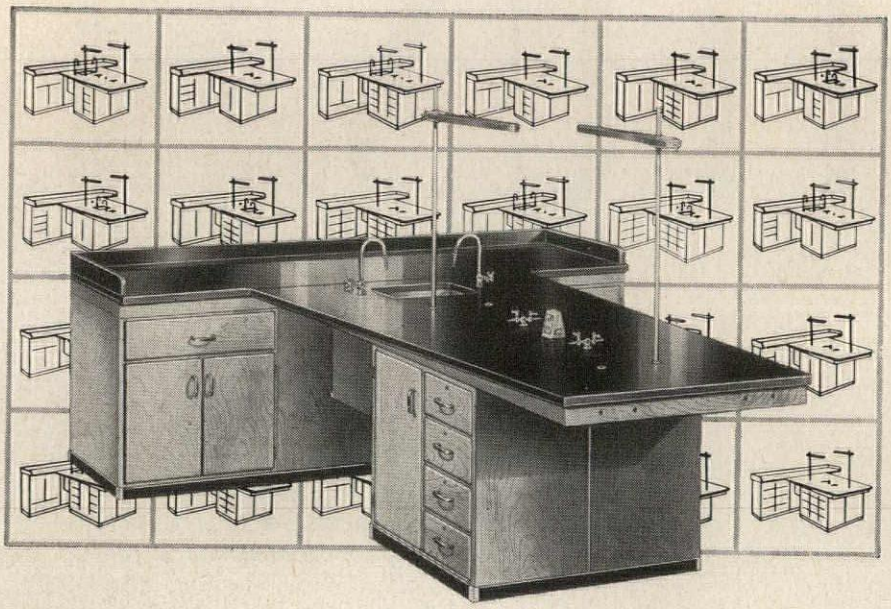
Company

Address

City State

Hamilton Activity-Centered science tables
. . . with 90 work-and-storage combinations . . .
solve tomorrow's classroom problems, today!



Before today's freshmen are seniors, classroom requirements will be critical. You can start to meet this problem now with Hamilton Activity-Centered tables, which permit science rooms to be used *every period* of *every day*, for laboratory, academic or home room activities.

These new Hamilton units offer so many advantages—largest available work surface . . . up to 40 locked drawers . . . unique, tapered "traffic-flow" design . . . low-cost roughing-in option . . . Northern Hard Maple construction in 6 distinctive finishes . . . 90 different work-and-storage combinations!

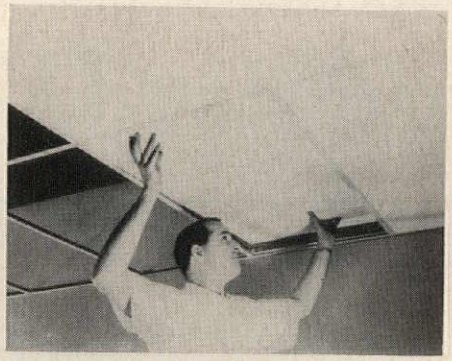
There's a lot more we'd like you to know about Hamilton Activity-Centered science tables—please write today.

Hamilton

LABORATORY EQUIPMENT

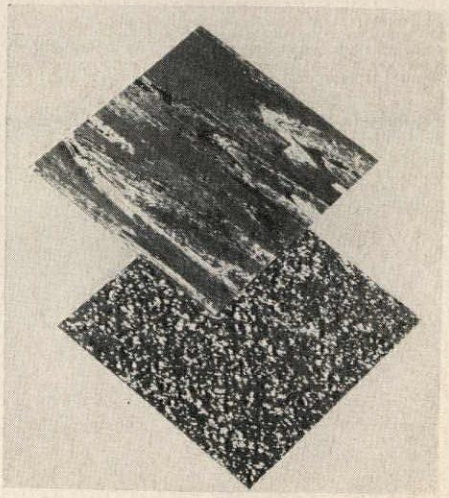
HAMILTON MANUFACTURING COMPANY TWO RIVERS, WISCONSIN

Product Reports



High Density Acoustical Board

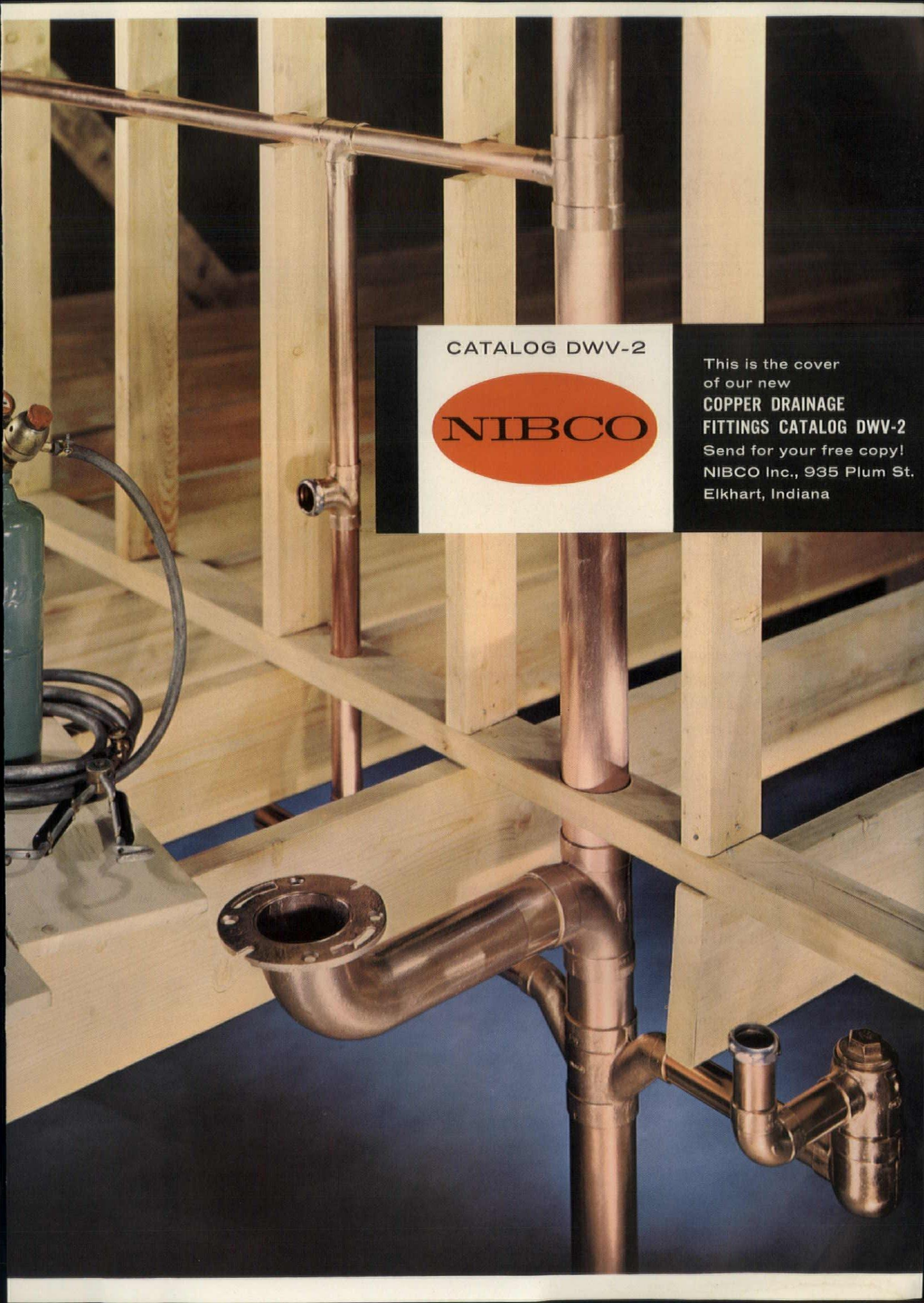
The high (19 lb per cu. ft) density of Armstrong's *Custom Minaboard*, a new type of acoustical ceiling material for lay-in installation in exposed grid systems, retards the flow of air through the ceiling, prevents a build-up of dust and reduces maintenance requirements. The random-perforated mineral fiber panels have sound absorption properties within an NRC range of .70-.80, and, because of their high density, offer good resistance to sound transmission. They come in a $\frac{5}{8}$ by $23\frac{3}{4}$ by $47\frac{3}{4}$ in. size, with the interior surface finished in white latex paint. *Armstrong Cork Co., Lancaster, Pa.*



Vinyl Industrial Tile

Duraco, a new industrial floor tile composed of asbestos fiber, inert filler and coloring pigment in a vinyl binder, is designed to meet the problems common to factory floor areas. The line includes ten numbers coordinated with accepted industrial color standards. The colors—gray, light gray, beige, tan and green—are each available in either marble pattern or terrazzo pattern. Tiles come in the standard 9 by 9 in. size, $\frac{3}{32}$ or $\frac{1}{8}$ in. thick. *Azrock Products Div., Uvalde Rock Asphalt Co., Box 531, San Antonio, Tex.*

more products on page 272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Certified Kiln Dried redwood, with a k factor of 0.76, helps lower maintenance costs for this Lincoln, Maine, school.

Photo: Joseph Molitor

Cold facts on redwood

The high insulation value of California redwood means schools, homes and commercial buildings that are warmer in winter, cooler in summer, more pleasant the year around. Specify grade-marked, trade-marked "Certified Kiln Dried" CRA redwood for uniform quality on every job.

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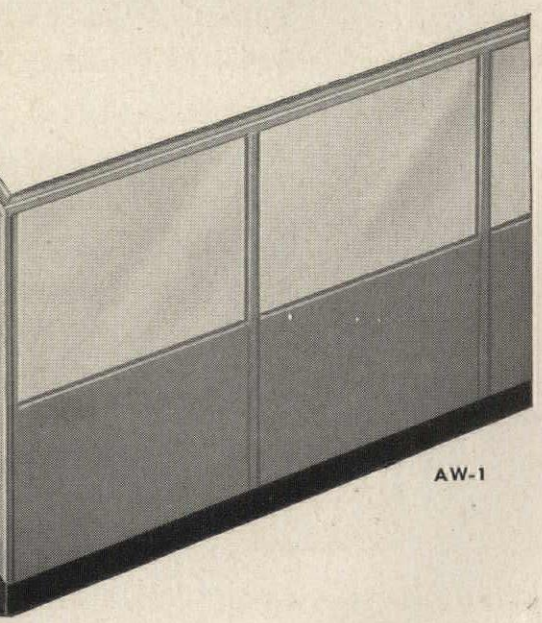
ANNOUNCING

Ainswall

THE NEW, **LOW COST** FLUSH-WALL PARTITIONING

Ainswall movable partitions have been designed with features never before available at such a low cost per foot. Available in either flush-wall or panel type, Ainswall partitions are movable by sections, need not be dismantled. Ainswall panels and framing members are factory pre-finished in baked enamel to virtually eliminate maintenance. Ainswall partitions are available in a modular range of panel sizes.



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Write today on your letterhead for this illustrated booklet that provides details, sizes, and specification information.

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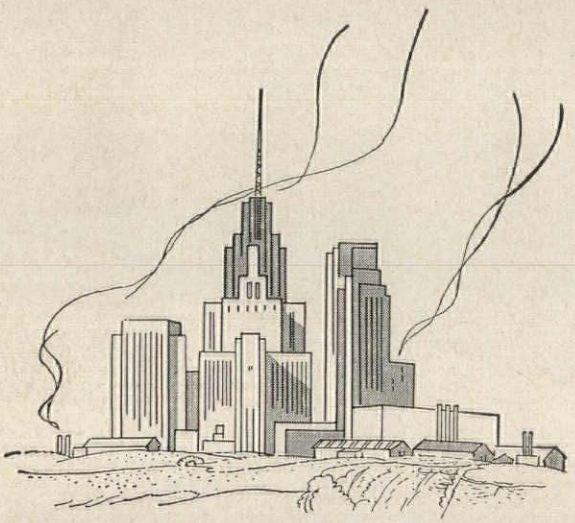
AW-1

Induction Air Conditioning

An induction air conditioning system which features a high capacity, double coil room unit said to have higher secondary coil capacity than any other filter unit on the market promises substantial savings in first costs, installation and operation. Differing from conventional induction systems in that secondary chilled water is normally carried to the room units all year round, it eliminates the need for a changeover from chilled to hot water when outside temperatures require peripheral heating rather than cooling. During the summer cycle, the *Hi-I* system operates like a conventional induction system except that it uses smaller primary air equipment, lower central fan horsepower and smaller air supply ducts. During the winter cycle, operational savings are increased by the use of heat from the condensing water to reheat primary air. When outside temperatures fall below a specified level, the condenser water bypasses the cooling tower and is diverted to the primary air heater where it supplements normal steam heating of the primary air. At the same time, return water on its way back to the refrigeration equipment is circulated through the dehumidifier coils where it is precooled by entering outside air. The outside air is preheated in turn. Thus the air reheat and water chilling requirements of the system are reduced simultaneously, and significant operating economies result.

According to the manufacturer, the system is particularly suitable for multistory buildings with a high proportion of peripheral space and maximum window area. The room units come in floor mounted models 12 in. high or wall hung models 20 in. high, with coil lengths of 20, 28, 36 or 48 in., and may be housed either in decorative casings or in furred-in enclosures. *York Corp., York, Pa.*



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INDIANA LIMESTONE lends its beauty and permanence to buildings throughout America.

Every architectural style has its outstanding examples of the use of Indiana Limestone. The Pentagon, Empire State Building and Prudential's Mid-America Building serve to illustrate the ever-new versatility of this material so highly valued for its distinctive appearance and almost complete freedom from maintenance.

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INDIANA LIMESTONE INSTITUTE

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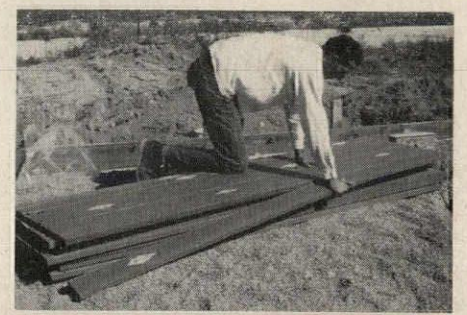
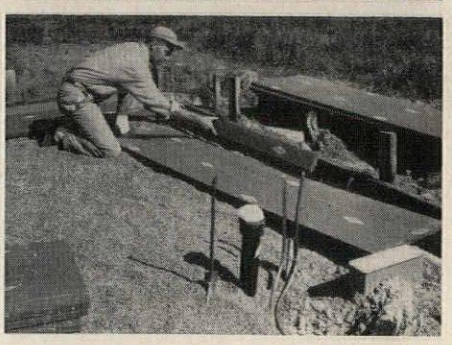
Founded 1932 as a service organization for the architect and contractor





Labor Saving Perimeter Insulation

Scorbord, a new perimeter and cavity wall insulation which can be hand-fabricated on the job, is said to allow up to a 50 per cent reduction in the time required for installation. Itself a black smooth-surfaced board of expanded polystyrene measuring 1 in. thick by 2 ft wide and 8 ft long, the new material is scored at the three, twelve and twenty inch marks across its width. This lets the installer snap off widths of 3, 4, 8, 9, 12, 17, 20 and 21 inches as well as utilize the original 24 in. board. According to the manufacturer, this selection of sizes is ample for most standard foundation perimeters and cavity wall uses. *Dow Chemical Co., Midland, Mich.*

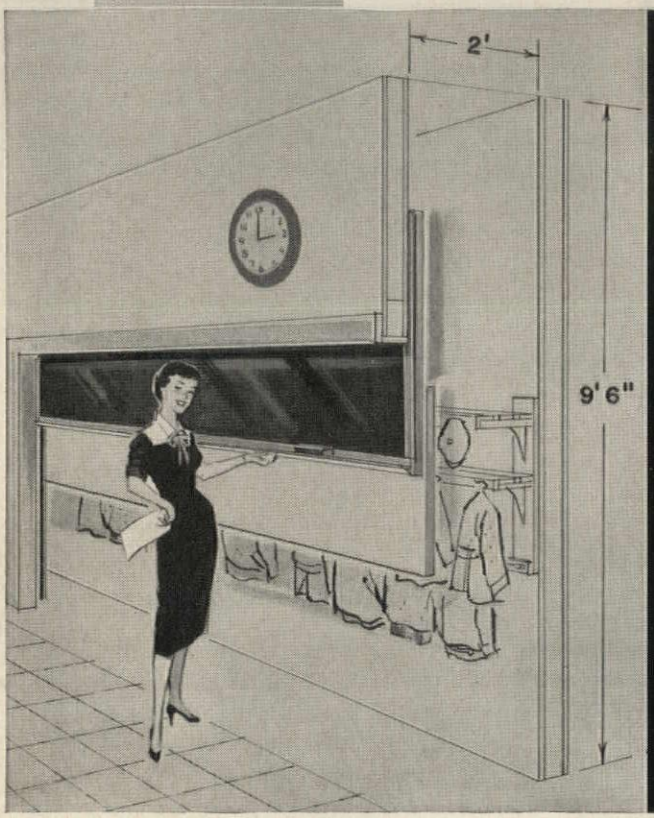
more products on page 276

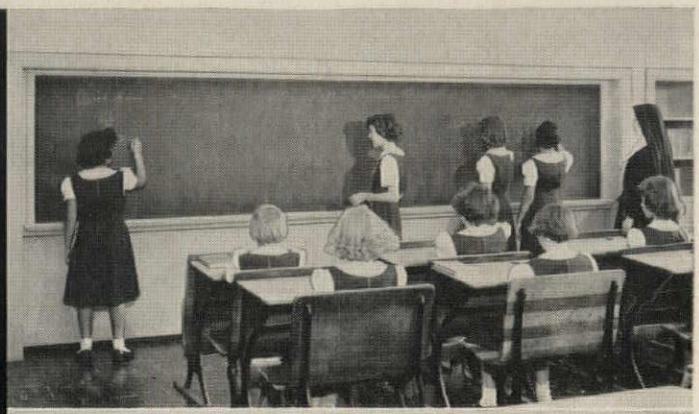
THE MARK OF QUALITY

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. P82, Rockford, Illinois

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Firm_____

Address_____

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THE MARK OF QUALITY

BARBER COLMAN

Electronic Control APPLICATIONS

NEW CONTROL PACKAGE

for face and bypass unit ventilators

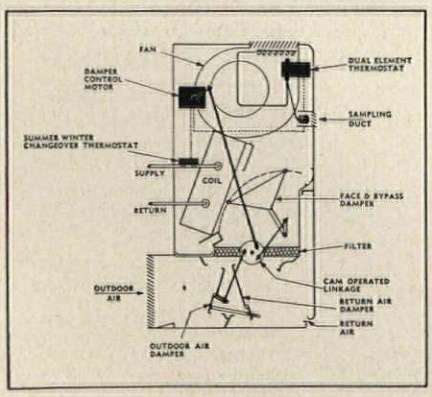
First again from Barber-Colman — a new *Automatic Control Package* specifically designed for controlling combination hot and chilled water unit ventilators. This is a control package, combining a dual-element, unit-mounted room and discharge controller with an oil-submerged spring return motor operator and a change-over thermostat to provide a precise control system for both room and discharge temperatures, in today's modern classrooms, that cannot be equaled by any other control system.

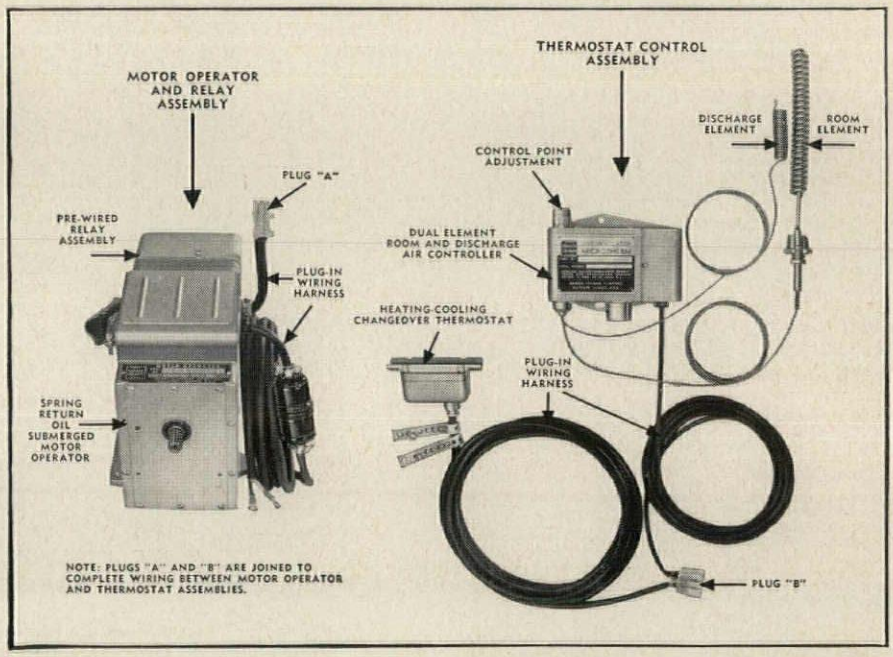
CONTROL PACKAGE

The Control Package, shown at the right, consists of two separate assemblies: (1) the control motor with change-over relay, (2) dual-element, unit-mounted controller, and strap-on thermostat. Both assemblies are prewired and equipped with plug-in cables to facilitate easy installation of the complete control system.

FEATURES AUTOMATIC CHANGE-OVER

Control change-over from heating to cooling is automatic. The strap-on thermostat, mounted in each unit and set to change over at 65° F., senses whether the supply medium is hot or chilled water and activates the unit ventilator control system accordingly. The spring return motor operator insures positive closing of the outdoor air damper on fan shutdown and assures maximum convection during night cycle when fans are stopped.





DUAL-ELEMENT THERMOSTAT

The single dual-element, unit-mounted room thermostat gives precise control of both room and discharge temperatures under all conditions that cannot be equaled at the same cost by any other type of system. Note also that the dual-element thermostat, being mounted within the unit, is immune to tampering by unauthorized personnel, chalk-dust and dirt problems, difficulty in finding wall space for mounting thermostat, etc., thus eliminating all the thermostat problems usually associated with school classroom control.

Either ASH&AE cycle "X" or "Y" can be achieved through a single control motor operating the standard cam-operated linkage to sequence the OA, RA, and face and bypass dampers. Standard linkage is available for fixed minimums of 0%, 20%, 24%, 33⅓%, 50%, and 100%.

ENTIRE PACKAGE FACTORY-MOUNTED

The entire control package is installed on the unit ventilator by the manufacturer at his factory prior to shipment, but the local Barber-Colman comfort engineer assumes complete responsibility for the controls and their proper operation. If service should ever become necessary, the replacement of a defective component is fundamentally simplified as the plug-in cable wiring harness allows field removal and replacement of any component in a matter of minutes.

Advantages of the face and bypass-type unit ventilator are many. The possibility of installing the face and bypass unit at relatively the same cost as the older standard units should appeal to everyone who recognizes the many advantages of face and bypass control. To get the complete unit ventilator control story, including all data and specifications, call your local Barber-Colman comfort engineer or write direct for Data Sheet F 8527.

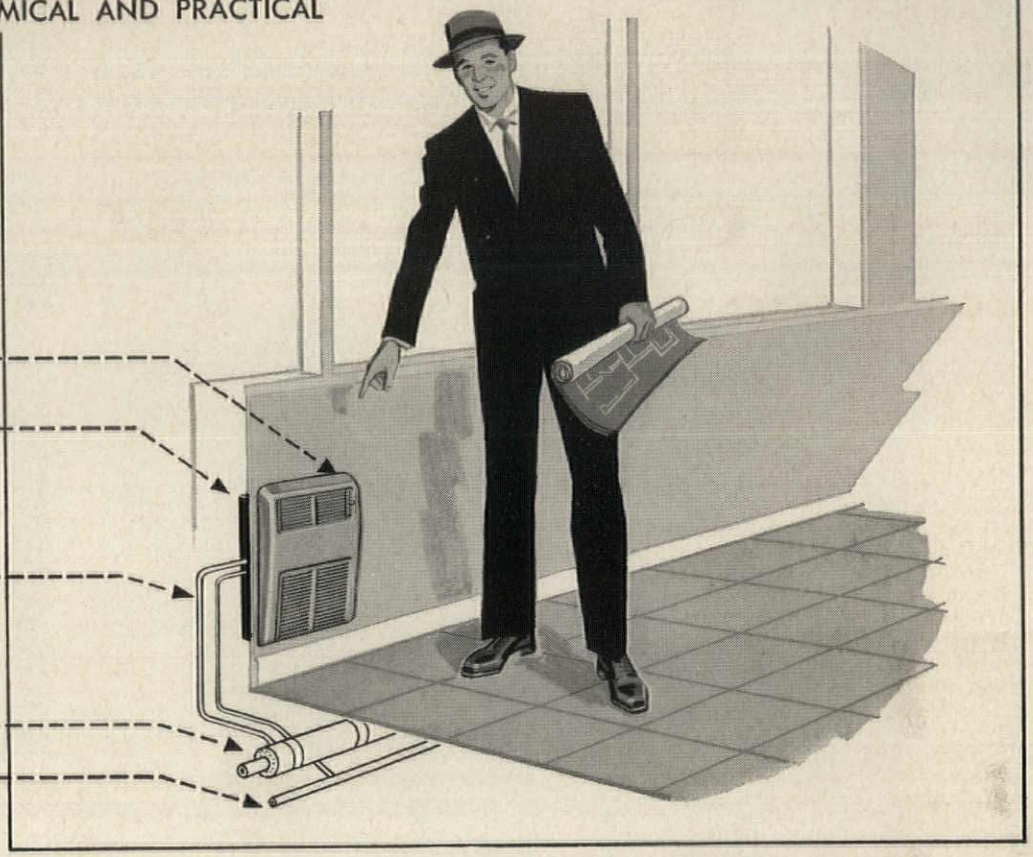
BARBER-COLMAN COMPANY

Dept. B, 1304 Rock Street, Rockford, Illinois • Field Offices in principal cities

Automatic Controls • Air Distribution Products • Small Motors • Industrial Instruments • Aircraft Controls • Electrical Components • Overdoors and Operators • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

ACCURATE ROOM-BY-ROOM TEMPERATURE CONTROL
NOW ECONOMICAL AND PRACTICAL

IRON FIREMAN
SelecTemp®
HEATING



New answer to old heating problems

The problem of room temperature control. SelecTemp heating is a new application of steam heat in which heat from a central source (low pressure boiler or district steam) is automatically regulated in each individual room. Temperature control is very accurate.

The problem of balanced heat. The warm and cool sides of a building are uniformly heated. A thermostat in each room automatically regulates heat according to room needs, compensating for any exterior or interior heat loss or gain resulting from wind, sun, fireplace, or a varying number of occupants.

The problem of varied temperatures for varied activities. In a school, for example, SelecTemp meets the different needs of classrooms, gymnasium, library or shop.

The problem of space. SelecTemp uses no floor space; compact room units, only 18" high, are recessed into walls. Steam supply and return lines of small copper tubing are concealed in walls and under floors. Extra space is not required for ducts or rigid pipes, permitting unusual design freedom, and in most cases, savings in construction costs.

The problem of modulated heat. Air circulation is steady. Temperature is controlled by regulating the amount of warmth delivered—not by stop-and-go cycling. Temperature is remarkably uniform from floor to ceiling and from corner to corner.

The problem of economy. With all its advantages, SelecTemp costs no more than many conventional systems not providing this unique automatic temperature control of each room. Fuel is saved because unoccupied rooms can be kept cool and reheated in a few minutes. Occupants do not waste heat through open windows. SelecTemp heating is equally suited for use in both new and existing construction.

SELECTEMP ROOM HEATER SPECIFICATIONS

	Model H-6	Model H-12	Model H-18
Output, Btu/hr at 10 PSI	6,000	12,000	18,000
Wall opening	17"x 6¾"	17"x 11"	17"x 15½"
Air Vol. CFM	60	120	180
Room heater supply line from main		⅜" O.D. Copper Tube	
Room heater return line to main		¼" O.D. Copper Tube	
Thermostat Range		40° to 90°	

See catalog in Sweet's Architectural and Light Construction Files

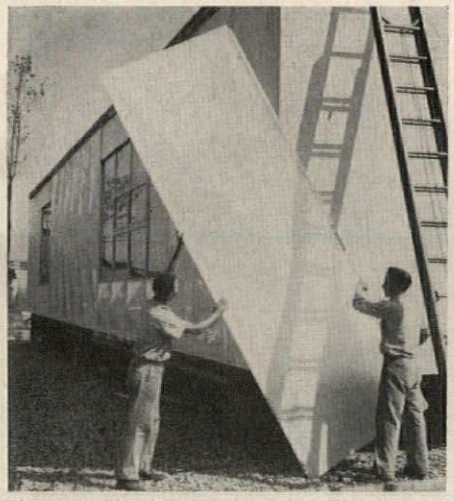
IRON FIREMAN®
Engineered HEATING AND COOLING

IRON FIREMAN MANUFACTURING COMPANY
3050 West 106th Street, Cleveland 11, Ohio
(In Canada write 80 Ward Street, Toronto)

☐ Send SelecTemp specifications and full information.
☐ Arrange for brief demonstration of SelecTemp room unit, in actual operation, in our office.

Name.....
Firm.....
Address.....
City.....Zone.....State.....

Product Reports



Twelve-Foot Cast Acrylic Sheets

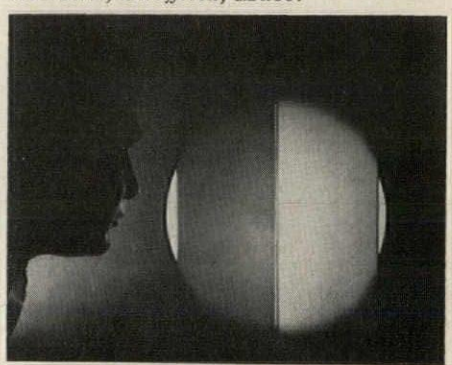
Cast acrylic sheets for use in exterior curtain walls, skylights and outdoor signs are now being offered in a 144 in. length—the longest available to date. A 4 by 12 ft sheet is currently being made as a standard item, but the 144 in. sheets can also be made in widths up to 100 in. on special quotation. They are cast of clear colorless or white translucent plastic in $\frac{1}{8}$, $\frac{3}{16}$ or $\frac{1}{4}$ in. thicknesses. *Wasco Products, Inc., Cambridge, Mass.*

Gray Double-Glazed Glass

Pittsburgh Plate's new *Solargray* glare-reducing plate glass is now available in double-glazed insulating units made up of $\frac{1}{4}$ in. *Solargray* plate glass and $\frac{1}{4}$ in. regular plate glass with either a $\frac{1}{2}$ or $\frac{1}{4}$ in. air space. Designed for use where thermal insulation plus glare reduction and solar heat exclusion are desired, the new *Twindow* product comes in sizes up to 50 sq. ft, in metal edge only. *Pittsburgh Plate Glass Co., 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.*

Polystyrene Plastic Light Shields

A new grade of polystyrene promises to offer significant advantages over the regular styrenes used for light shields and pans. Called *Frost-White-X*, the plastic is said to be the first of its kind to combine flexibility, impact strength and a non-reflecting surface finish with a high degree of light stability. The manufacturer attributes the latter characteristic to a special material incorporated into the plastic during its extrusion. This material absorbs the ultraviolet light emitted from fluorescent lamps, thus eliminating the premature discoloration that usually results from the action of ultra violet light upon polystyrene diffusers. In spite of their unusual properties, extruded shields and formed pans made from *Frost-White-X* sheets are said to show no sacrifice of cold flow properties or dimensional stability. *Sheffield Plastics Inc., Sheffield, Mass.*



more products on page 280

ASBESTOCITE CHALKBOARD
GRAPHOLITE CHALKBOARD
ALUMINUM MAP RAIL
CORK BULLETIN BOARDS
ALUMINUM CHALKBOARD TRIM
FRAMED CABINET BULLETINS
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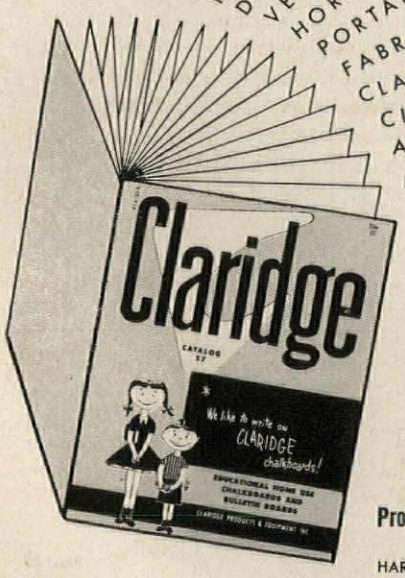
PORTABLE CHALKBOARDS and BULLETIN BOARDS
FABRICORK BULLETIN BOARD in SEVEN COLORS
CLARIDGE FACTORY BUILT CHALKBOARDS and BULLETIN BOARDS
CLARIDGE SWING LEAF DISPLAY BOARDS
ALUMINUM DISPLAY and TROPHY CASES
DUAL PURPOSE REVERSIBLE CHALKBOARDS

PERMANENCY
at low cost!
***in* SCHOOL CHALKBOARDS**
and Cork Bulletins

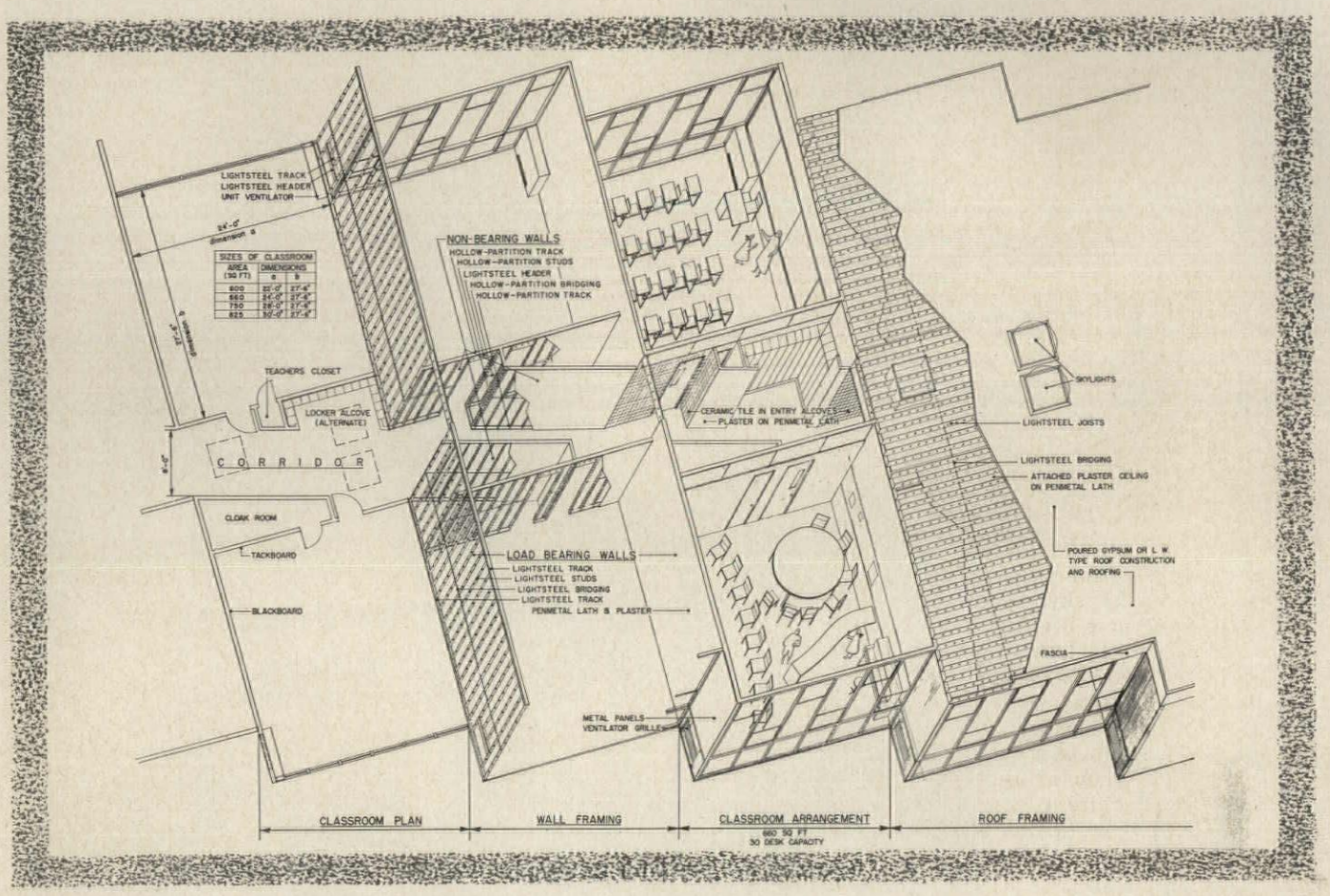
Catalogs, samples, shop drawings or engineering assistance to help you prepare plans and specifications will be furnished promptly on request . . . no obligation.

For immediate information refer to SWEET'S 23e–C1

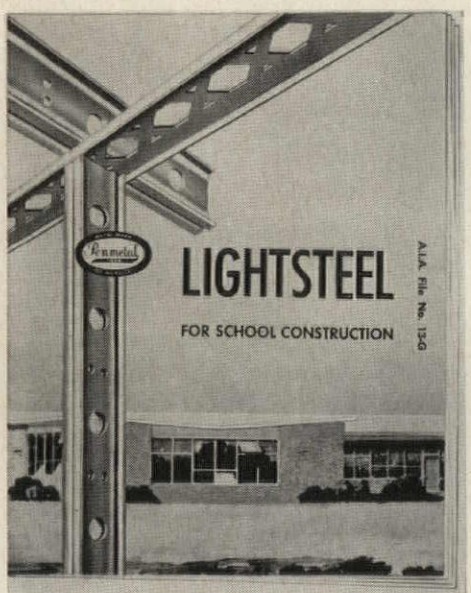


CLARIDGE has made great strides in modernizing and improving chalkboards and bulletin boards to keep pace with the demands of present day education. Over 35 years experience enables us to approach the problem on a know-how basis. Our one ultimate purpose: *the finest chalkboards and bulletin boards with greatest educational value.* Thousands of schools the world over . . . and many leading architects use CLARIDGE as their standard of quality.

Claridge
Products and Equipment
Incorporated
HARRISON, ARKANSAS Dept. 528



A realistic way to build... low-cost, high-quality schools



Write for new folder SS-18 which includes plans illustrating the versatility of LIGHTSTEEL for school construction. Describes three actual cases where architects used LIGHTSTEEL to solve individual problems. Details the various components of the LIGHTSTEEL system.

Also send for catalog SS-22 which gives complete loading tables and physical and structural properties of LIGHTSTEEL structural sections.

The plan, though hypothetical, embodies a method for "ideal" school construction within practical considerations—through the use of Penmetal LIGHTSTEEL.

This low-cost framing system, with its full range of lightweight components (refer to plan), combines high quality with economy of construction. LIGHTSTEEL imposes no design restrictions. It is readily available, easy to erect, and firesafe. Equipped with these advantages, the architect is free to provide a means for later expansion which does not drain too heavily on tomorrow's funds. Similarly, designs featuring low annual maintenance can be achieved.

Here then, is a complete framing system whose economy and versatility is particularly suited to school budgets. LIGHTSTEEL is also widely used for shopping centers, motels, and buildings of many other types.

PENN METAL COMPANY, INC.

General Sales Office: **40 Central Street, Boston 9, Mass.**

Plant: Parkersburg, W. Va.

District Sales Offices: **Boston, New York, Philadelphia, Pittsburgh, Chicago, Detroit, St. Louis, Dallas, Little Rock, Seattle, San Francisco, Los Angeles, Parkersburg**

METAL MARK Penmetal 1869 OF QUALITY

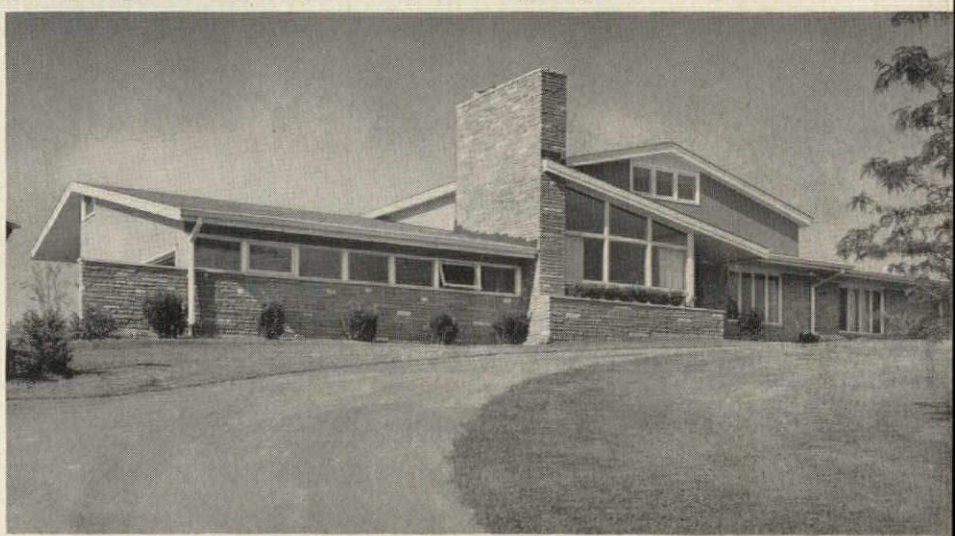
a name to remember

PM-165

Window detail like this can make a room... or a home!

← *Andersen Casement Windows combined with transom, fixed glazing. Carl Graffunder, architect, Fred Wolf, designer.*

The natural beauty of wood window units blends with this wood paneled interior. Robert McMahon, A. I. A. is the architect.



Architect F. C. Sternberg, A.I.A. has used Andersen WINDOWALLS *to help create an interesting exterior for this Missouri home.*

In design—and in finish—Andersen Wood Window Units make important contributions to the modern home. Their clean lines blend with traditional or contemporary architecture . . . enhance exterior and interior appearance alike.

And the natural wood finish of Andersen Windows blends gracefully with other building materials—especially with the fine wood paneling now so popular for interior treatment.

The Andersen Casement Units illustrated at left are easy to open . . . easy to close. Yet they are exceptionally weathertight because of careful design and manufacture by the skilled window craftsmen of Andersen. And all wood parts are Penta-treated for permanence.

For full specification data on Andersen WINDOWALLS, see Sweet's Files—or write Andersen for Detail Catalog and Tracing Detail Files. WINDOWALLS are sold by lumber dealers throughout the country, including the Pacific Coast.

Andersen *Windowalls*

TRADEMARK OF ANDERSEN CORPORATION

AW

ANDERSEN CORPORATION • BAYPORT, MINNESOTA

Part of the Hussey Roll-Out installation at Teaneck, N. J. High School

LOOK

At the Advantages of Hussey "All-closed" Deck Construction

Hussey "Closed Deck" Roll-Outs are safer. There are no openings through which spectators can fall or drop things. Fire hazards are reduced because litter cannot collect under the stands. Special construction prevents end and side sway. Hussey "closed deck" extra safety features justify lower over-all public liability insurance rates.

Hussey "Closed Deck" Roll-Outs are more comfortable. Leg room is scientifically designed for maximum relaxation within the limits of sitting positions possible. Women, especially, feel more at ease in "closed deck" seats.

Hussey's full 16¼" footboard insures that every size foot rests entirely on a solid base with room to spare. "Open Deck" 9½" footboards are so narrow any shoe larger than a woman's size 5 dangles in space. This is uncomfortable and an accident hazard, particularly with high heeled shoes.

Hussey "Closed Deck" Roll-Outs cut janitorial costs. By actual test Hussey "closed deck" seats can be swept 25% faster. Time consuming cleaning under the stand is eliminated. Seats can be closed immediately because there is no trash on the floor to jam the wheels. The floor remains clean for dancing.

"ALL CLOSED DECKS" ARE A HUSSEY EXCLUSIVE

For extra value "Specify" Hussey Closed Deck Roll-Out Gym Seats

Write or Phone Collect for Further Information

SEE SWEET'S CATALOG 23J/HU FOR "SPECS"

IRON WORKERS HUSSEY SAFE SEATING SINCE 1835

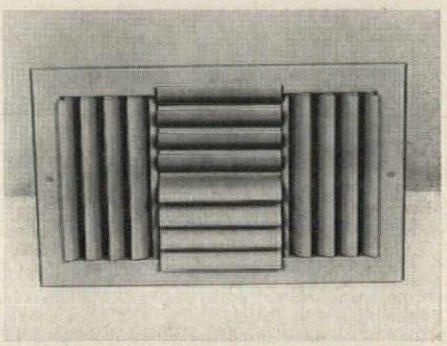
HUSSEY MFG. CO., INC. • 587 RAILROAD AVE. • NORTH BERWICK, ME.

Other Hussey Products: Portable and Permanent Steel Grandstands and Stadiums - Steel Landing Piers - Swimming Floats - Diving Boards

Product Reports

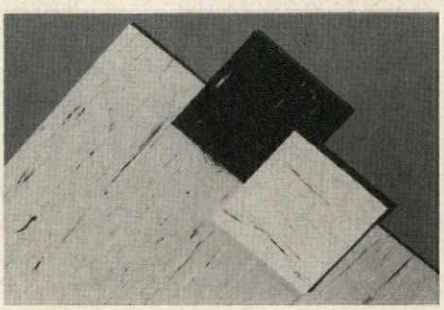
Fire-Resistant Vapor Barrier

By replacing heat-applied pitch or asphalt vapor barriers with a thin vinyl plastic film, the *Reflecto-Barrier* vapor barrier system eliminates inflammable materials between insulation and roof deck, and increases the fire-resistance of built-up roof installations. The film, which comes in easily-handled rolls, is applied to the structural roof decking with a nontoxic, fire-retardant rubber base adhesive. According to the manufacturer, the speed and convenience of application contributes to a significant reduction in costs. *Reflecto-Barrier Sales Co., Inc., P. O. Box 1452, Hartford, Conn.*



Four-Way Grilles and Registers

Waterloo's new line of grilles and registers features adjustable curved louvers of extruded aluminum which can be arranged to provide four-way flow of air from a single register. The complete line also includes models for one-way, two-way and three-way flow; and control can be increased by mounting straight adjustable louvers behind the curved louvers. *Waterloo Register Co., Inc., Waterloo, Iowa*



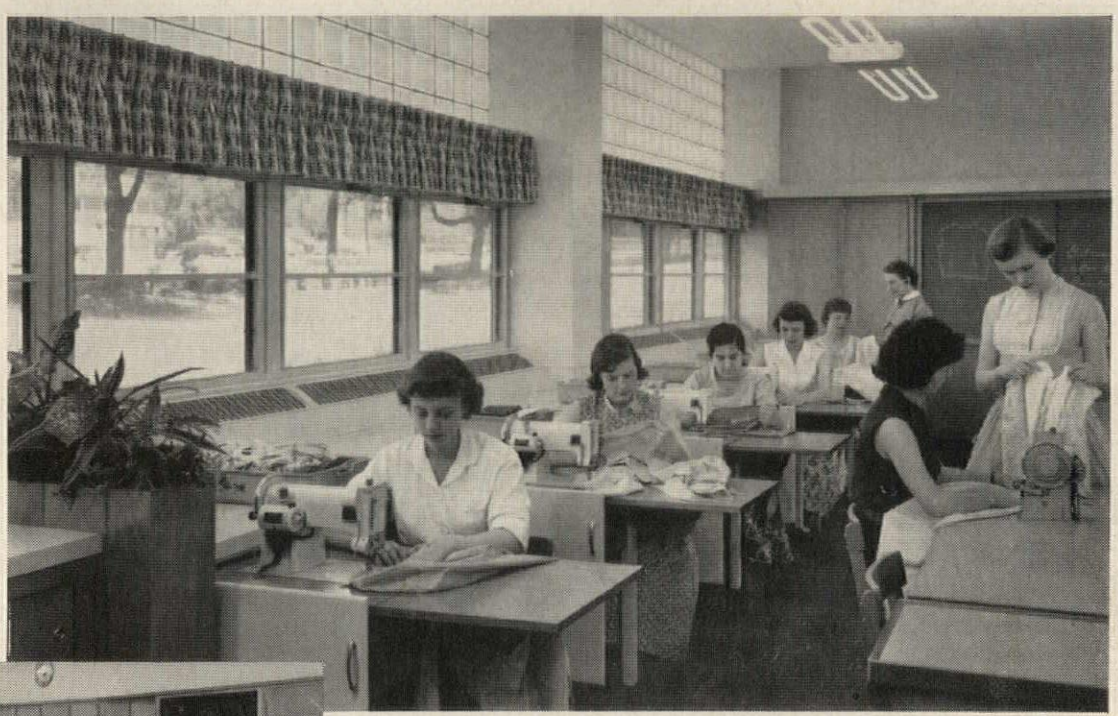
Vinyl Flooring in Tiles and Rolls

Vynl-Flor, a new vinyl flooring product, is available in either .080 gage tiles or ⅛ in. thick rolls. Both are said to incorporate dimensional stability and resilience, and come in a selection of twelve pretested colors. *R. C. A. Rubber Co., Akron 5, Ohio*

more products on page 284

MUTSCHLER
MEANS HOMEMAKING... AT ITS FINEST!

Facts prove Mutschler the elite of school homemaking equipment. Northern maple cabinetwork is sturdily built to take the rigors of everyday school usage. Catalytic finishes in decorator colors and natural grain are practically impossible to scratch, are impervious to household solvents and cleaners. Special-purpose cases for all homemaking needs. New classrooms or remodeling project, inquire about Mutschler. Complete information and specifications are available for your approval... without obligation.



Model Clothing Center
Campus Building
Community High School
Blue Island, Illinois

ARCHITECT:
Nicol & Nicol
Chicago, Illinois

MUTSCHLER SALES OFFICE:
I. P. Rieger Co.
Bellwood, Illinois

SEWING MACHINES:
White Sewing Machine Corp.
Cleveland, Ohio

FOR...
Foods Laboratory
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Clothing Laboratory
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Mutschler
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Please send address of our nearest Mutschler sales engineers.

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school or firm

address

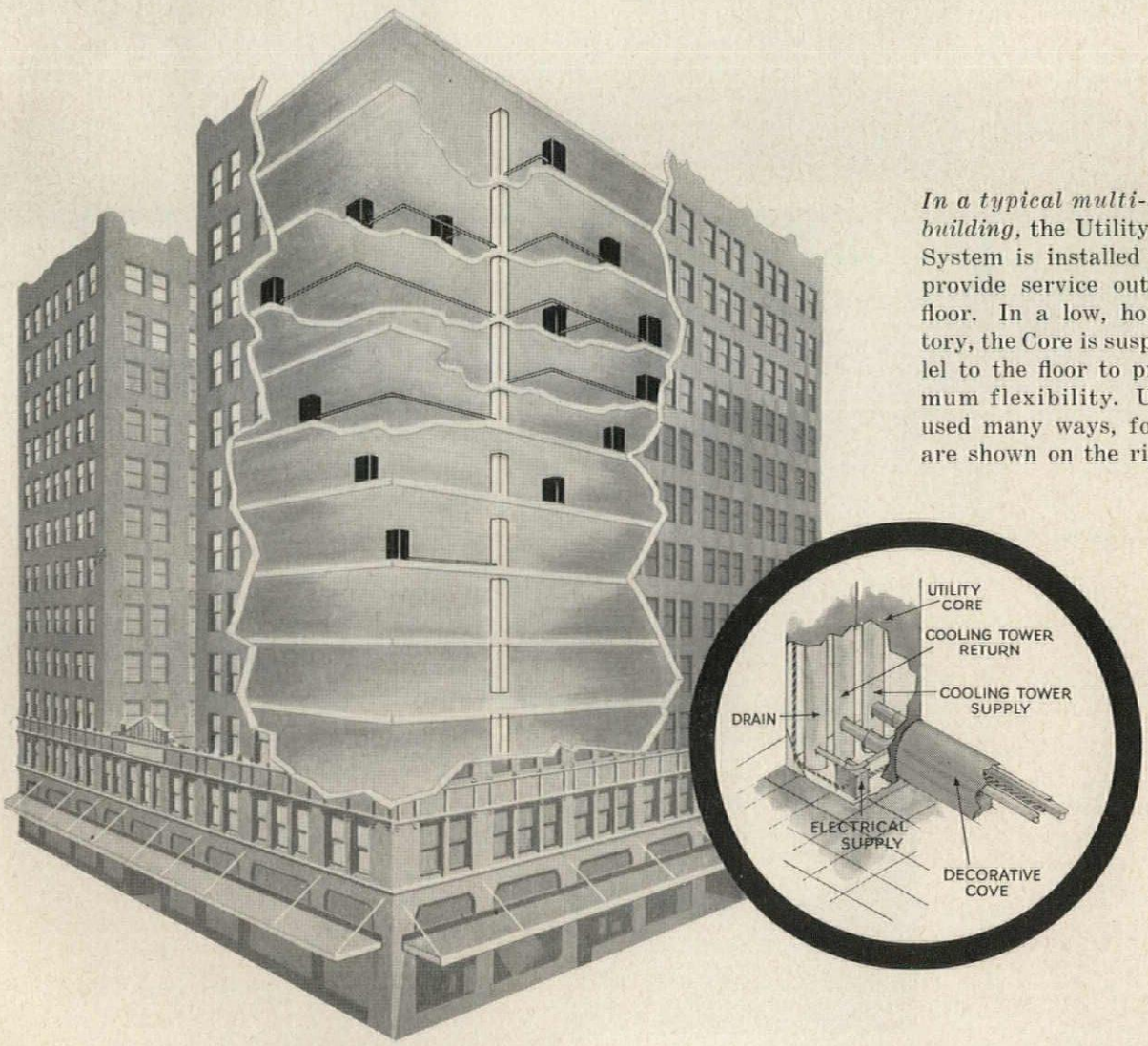
city, state

We are interested in:
new department____; remodeled department____

The Carrier Multi-Weathermaker System...

A NEW LOW-COST WAY TO

The Carrier Multi-Weathermaker* System is a unique, new concept of air conditioning so flexible it can be adapted to any commercial or industrial building. Three main factors contribute to its flexibility—a Master Plan, Utility Core and self-contained Weathermaker units. Where funds are limited, the System can be installed in critical areas first, then expanded to include other areas later. Or the entire System can be installed at one time. Either way, there's no disruption of normal routine. The questions and answers here describe the System's advantages in some detail. For complete details, call your Carrier dealer, listed in the Classified Directory. Or write for the booklet, "Carrier Multi-Weathermaker System." Carrier Corporation, Syracuse, New York.



In a typical multi-story office building, the Utility Core of the System is installed vertically to provide service outlets to each floor. In a low, horizontal factory, the Core is suspended parallel to the floor to provide maximum flexibility. Units can be used many ways, four of which are shown on the right.

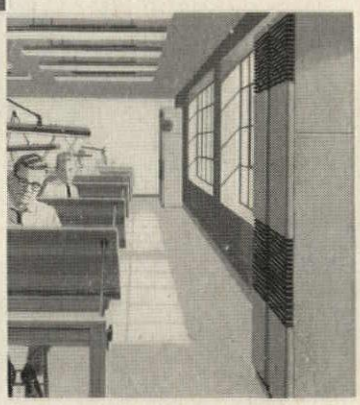
AIR CONDITION A BUILDING!

For individual offices, the Carrier Multi-Weathermaker System can economically air condition each office. Individual Weathermaker units, connected to inexpensive ducts, do the job. Units can be recessed in a wall or storage area.

For a whole floor of a building, a Carrier Multi-Weathermaker System can air condition the entire space with a number of units. Each individual Weathermaker has all the components necessary to cool, dehumidify, filter and circulate the air.

For an open production area of a plant, a high-capacity Carrier Commercial Weathermaker using special ductwork can spot-cool an assembly line. In the System, you can air condition other plant areas with smaller air or water cooled Weathermakers.

For an engineering-drafting room, quiet Carrier Weathermakers can discharge draft-free air without any ductwork. The Multi-Weathermaker System permits air conditioning in one area while the System is shut off elsewhere.



Q. What makes this System new and unique?

A. The Master Plan, which co-ordinates installation of individual Weathermaker units in one integrated System — not a hodgepodge of unrelated "packaged installations."

Q. How is the Master Plan applied to an average office building?

A. First, a survey determines the cooling capacity required to air condition the building. Then, zone by zone, the Plan pinpoints the location of individual Weathermaker units required to handle the load. In addition, to simplify the installation of utilities from cooling tower to Weathermakers, the Plan provides a unique central Utility Core that houses the cooling tower supply and return piping, drain piping and electrical service. These utilities are sized to service all of the Weathermakers that will ultimately become part of the Multi-Weathermaker System.

Q. How many Utility Cores are required in a building?

A. In an average building, usually one. In larger buildings, several are required.

Q. How does the System's flexibility apply to installation and financing?

A. If financing is available, the System can be installed all at once. Otherwise, it can be installed in predetermined sections step-by-step — an area, a floor or several offices at a time. In this way, financing can be conveniently spread over a period of years.

Q. Does "low-cost" apply both to installation and operation?

A. Yes. Here's why: Weathermaker units are relatively low in cost and inexpensive to install. They operate only when needed, so operating costs are strictly controlled. They're as easy to turn on and off as an electric light, so the expense of hiring an operating engineer is usually eliminated. Because of Carrier quality, service expense is minimum. And the System offers substantial tax advantages.

Q. How quickly can a System be installed?

A. That depends on the building. And whether you want to install it all at once or step by step. In general, it's fast. All work can be done during regular hours without interrupting routine. And once the Utility Core is installed, individual units may be moved about and connected wherever they are needed to meet a temporarily increased heat load.

Q. What does a Weathermaker unit look like?

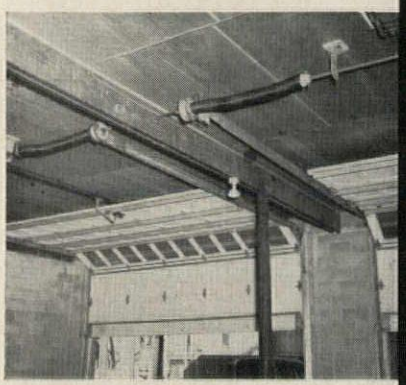
A. We've shown four here in commercial and industrial installations. More are shown in the 24-page booklet on the System. We'll be glad to send you this on request. We think you'll find it interesting and helpful.

Carrier AIR CONDITIONING · REFRIGERATION · INDUSTRIAL HEATING **Reg. U. S. Pat. Off.*

Problem: installing an overhead garage door on a flat-roofed building where false ceiling prevented normal installation

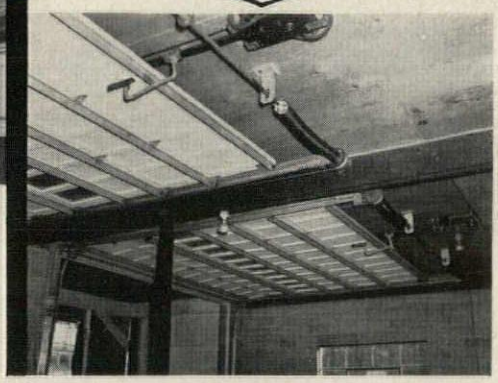
THE MARK OF QUALITY

RAYNOR
Overhead Type
DOORS
solve your most difficult Installation Problems



Only the top section's rollers travel this track on a low headroom installation.

Another view of the low headroom design — notice the minimum distance from track to ceiling.



RAYNOR Low Headroom DESIGN REDUCES HEADROOM TO 6½ INCHES

The machinery repair shop housed in this flat-roofed building added a ceiling to create insulation space. This reduced the headroom to less than a foot. A Raynor Low Headroom installation was made, using only 6½ inches for headroom! This modification not only eliminated costly alterations, but also retained the original door opening. If your job presents an installation problem, contact Raynor's Engineering Department for the most economical solution... shop drawings furnished free on request.

SEE OUR CATALOG IN SWEET'S

See our complete catalog in Sweet's File

Find Your RAYNOR DISTRIBUTOR In The Yellow Pages

RAYNOR MFG. COMPANY

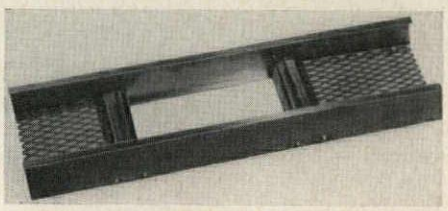
DEPT. AR-1 DIXON, ILLINOIS

Builders of a Complete Line of Wood Sectional Overhead Doors

Product Reports

Electric Power Door Operator

A pedestrian door operator, the first all-electric unit to be introduced to the power door field, is said to do away with many of the maintenance problems common to the air or hydraulic pressure-actuated systems now widely used. For new construction, the unit can be mounted in a floor case which is completely concealed beneath the threshold; in converting manually-operated doors to electric operation, it is mounted above the door. The operator can be plugged into any 110v electric outlet, and comes with a built-in automatic check which permits manual operation of the door in case of electric power failure. Control devices include completely automatic all-weather floor mat and electric eye types, as well as a variety of semi-automatic switches. *Electric Power Door Co., 2127 E. Lake St., Minneapolis, Minn.*



Lower Cost Cable Support System

A new material that combines the surface properties of aluminum with the strength of steel is now being used to manufacture cable support systems which are less expensive, support heavier cable loads and require less maintenance than similar systems made from conventional materials. The material used is *Armco* aluminized steel, Type 2, a steel that is protected against corrosion with a special aluminum coating. In addition to its advantages in performance and maintenance, it is said to withstand corrosion over three times longer than commercial zinc-coated galvanized steel under normal industrial conditions. *Chalfant Products Co., Inc., 11525 Madison Ave., Cleveland 2, Ohio*

OMAHA DEPARTMENT STORE* SELLS BY DAYLIGHT with NEO-RAY LOUVRED CEILING

*Neo-Ray Louvred Ceiling was chosen for good even lighting and a minimum of maintenance. The 3" x 3" opening is architecturally good in scale for large rooms.

The louvred ceiling in this store gives daylight effect by even, overall illumination and low brightness.

***GRAYSON STORE**
OMAHA, NEBRASKA

Architect:
HERMAN NEUMANN
New York, N. Y.

See our catalog in Sweet's Architectural File sec. 32a
NE

SPECIAL LOUVRE DESIGNS?

Neo-Ray is recognized as the pioneer in the development and manufacture of louvred ceilings . . . with years of louvred ceiling experience. Let the "know-how" of our engineering department assist you. No obligation, of course.

Send for LOUVRED CEILING catalog No. 544
and
ACOUSTI-LITE catalog No. 557

IN THE SOUTH
See Our Permanent Display At
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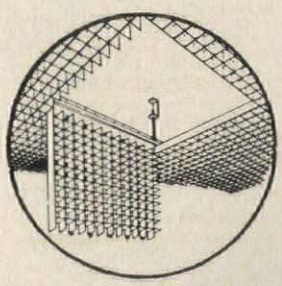
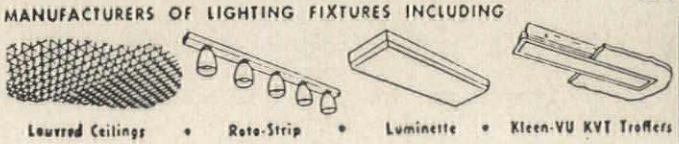
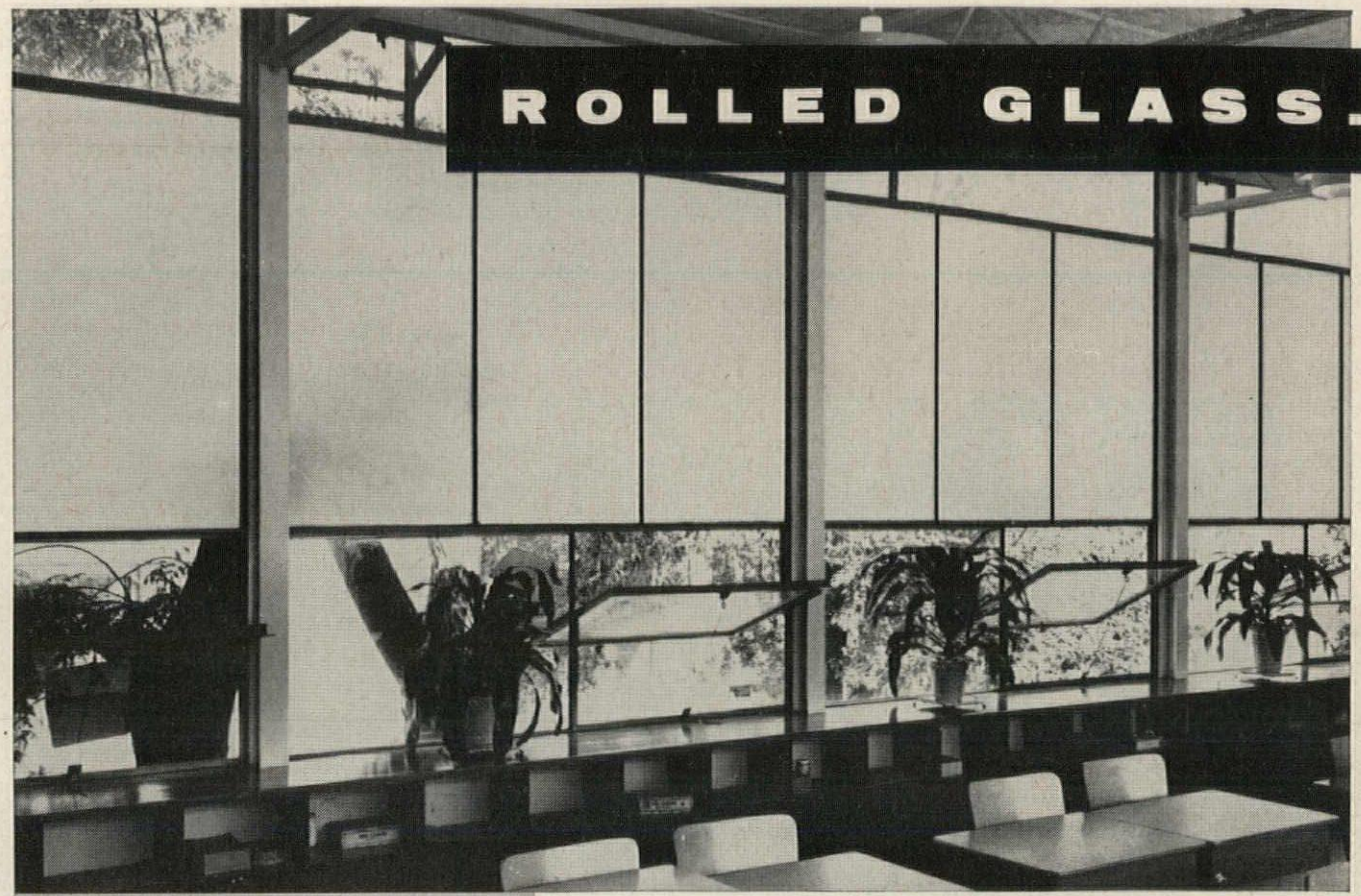


MANUFACTURERS OF LIGHTING FIXTURES INCLUDING



Louvred Ceilings • Roto-Strip • Luminette • Kleen-VU KVT Troffers

NEO-RAY PRODUCTS, Inc.
315 East 22nd St. • New York 10, N. Y.



ROLLED GLASS.

MODERN DESIGN CALLS FOR COOLITE

Extensive use of Coolite glass in sidewall sash in the Thomy Lafon Elementary School, New Orleans, fits the aims of architects, Curtis & Davis, to obtain "the ultimate in scientific achievement for natural lighting . . . a truly functional architecture adapted to human values and physical needs." Coolite, glare reduced, floods classrooms with softened, glare-free light . . . absorbs up to 50% of solar heat . . . makes rooms appear larger, friendlier.

GLASS MAKES A GRACEFUL ENTRANCE

In a distinctively different doorway, made possible by the handsome Broadlite pattern, the reception hall is flooded with flattering, diffused daylighting. A rythmic pattern, translucent Broadlite glass offers a new, dramatic decorating texture that creates a feeling of leisurely living and gracious hospitality, in either modern or traditional settings.

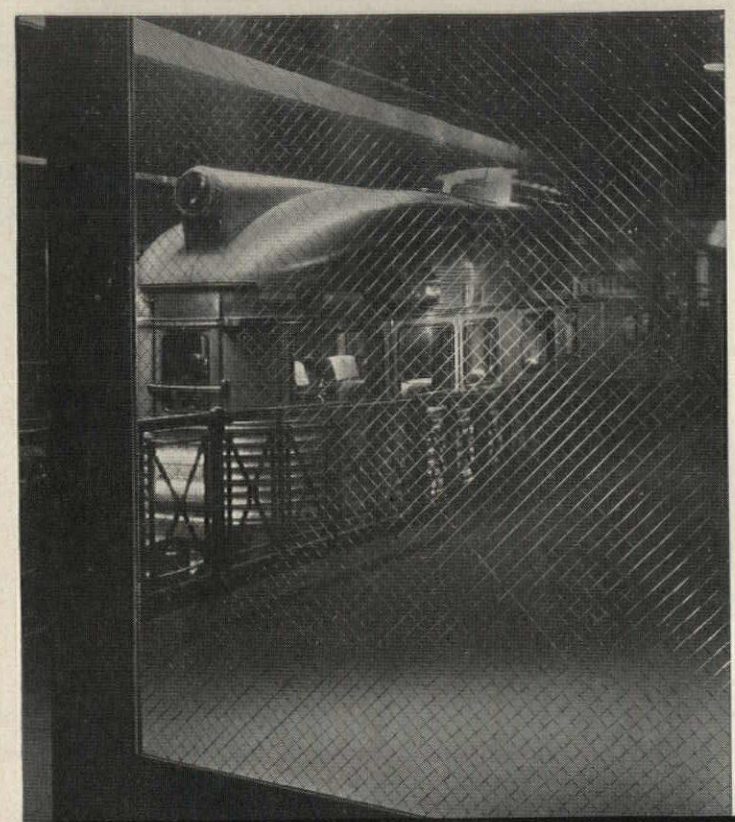
SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY

M I S S I S S I P P I

NEW YORK • CHICAGO • FULLERTON, CALIF.

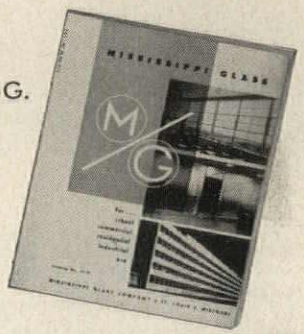
WORLD'S LARGEST MANUFACTURER OF

PACE SETTER IN BUILDING PROGRESS



Combining beauty and utility in an exciting variety of residential, commercial and industrial applications, rolled glass by Mississippi offers an extensive selection of patterns with surface finishes and light transmission characteristics that fulfill the requirements of any design or specification.

Send for new free catalog 58-G.
Address Dept. 7.



MODERN VISTAS ARE CREATED WITH GLASS

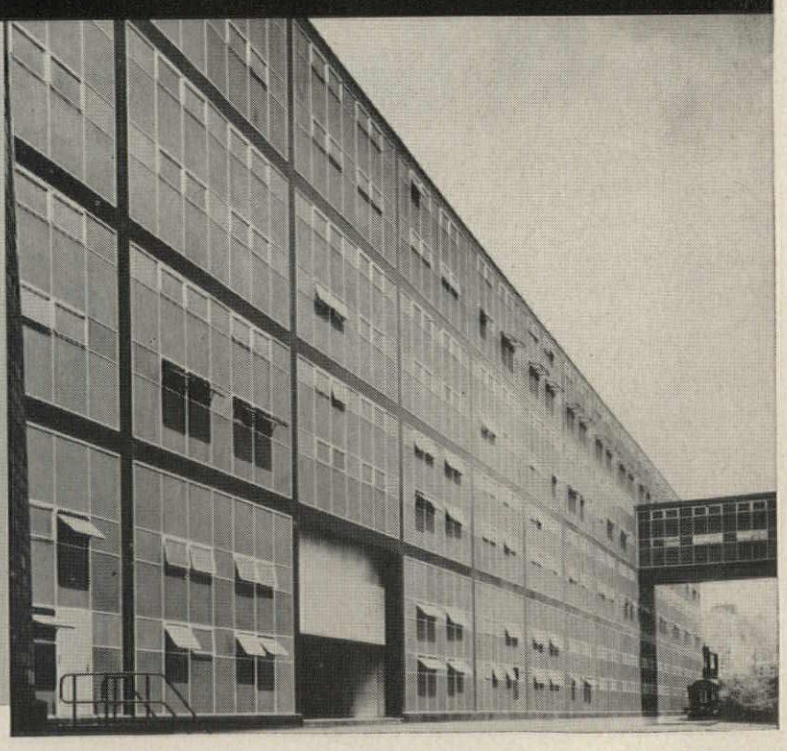
As advanced in design as the sleek California Zephyr seen through it, Polished Misco (Approved Fire Retardant No. 32) is used extensively in Chicago's Union Station to help protect its thousands of travelers. This rugged glass offers effective but inconspicuous protection at minimum cost in windows, doors, transoms, skylights, partitions . . . wherever fire and breakage protection is required.

●

COOLITE GLASS IS RIGHT VARIETY FOR HEINZ

Executed in a shimmering sweep of Coolite, Heat Absorbing, Glare Reducing glass, the Heinz Vinegar Plant, Pittsburgh, has been acclaimed "a brilliantly incisive piece of architecture." Here, employees see better, feel better, work better—for Coolite filters out unwanted factors in "raw" daylight . . . helps keep interiors cooler, more comfortable.

Architects and Engineers: Skidmore, Owings & Merrill
Photo: Ezra Stoller



GLASS COMPANY

88 Angelica St. • St. Louis 7, Mo.

ROLLED, FIGURED AND WIRED GLASS

ELECTRIC PLANT
NEWS

When power's off . . .

this electrical "appliance" protects home and family

Engine-driven Onan Electric Plant takes over automatically within seconds after power is interrupted

When highline power is off . . . for any reason . . . an Onan Emergency Plant supplies regular A.C. electricity for lights, refrigerator, freezer, furnace, water pump, electric stove . . . all other appliances and equipment. To protect the home even when occupants are not there, the plant can be equipped to start automatically when power is interrupted and stop when restored.

Install in garage or basement

An Onan Plant needs very little space. Vacu-Flo cooling assures a safe installation. The cost of an Onan Plant for the average home is about the same as a major appliance. Requires little attention; always ready to run.

In industry . . .

Mobile electric plants cut operating costs

Provide plug-in power for electric tools and lights anywhere! Save time and money. Models available which provide A.C. power for tools and lights and D.C. output to charge batteries for radio use. Eliminate high cost of running truck engine for battery charging.

500 to 75,000 watts A.C. Also D.C. and Battery Charging models

See our catalog in Sweet's or write for literature.

D. W. ONAN & SONS INC.

2646A Univ. Ave. S.E., Minneapolis 14, Minnesota • PHONE: FE 2-1155

ELECTRIC PLANTS • AIR-COOLED ENGINES • GENERATORS • KAB KOOLER

Office Literature

continued from page 232

Movable Partitions and Paneling

Catalog 405 describes and gives selection and installation information on the *Workwall* system of movable office partitions and paneling. Construction details and guide specifications are also included. 12 pp. *Workwall Div., L. A. Darling Co., Bronson, Mich.**

Metal Lath (A.I.A. 20-B-1)

Includes illustrations, descriptions and specifications for full line of metal lath and plastering accessories. Details for various types of partition systems and six pages of erection specifications are also given. 28 pp. *Penn Metal Co., Inc., 40 Central St., Boston 9, Mass.**

Laboratory Drainage Systems

(A.I.A. 35-E-1) Four page folder supplements specifications for lead chemical laboratory drainage systems with photographs and detail drawings of typical installations. *Lead Industries Association, 60 East 42nd St., New York 17, N. Y.*

Underground Hot Pipe Insulation

(A.I.A. 37-D-2) Brochure Z-1 contains sequence photographs and diagrammatic drawings of the *Z-Crete* cast-in-place monolithic conduit system. 12 pp. *Z-Crete Div., Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.**

Schoolmaster Unit Ventilators

(A.I.A. 30-F-1) Catalog UV 1157 covers application, design and construction of Rittling *Schoolmaster* unit ventilators, with dimensional data and steam and hot water capacity ratings under typical conditions given for the five sizes. 12 pp. *The Rittling Corp., Buffalo 5, N. Y.*

Structural Insulations Catalog

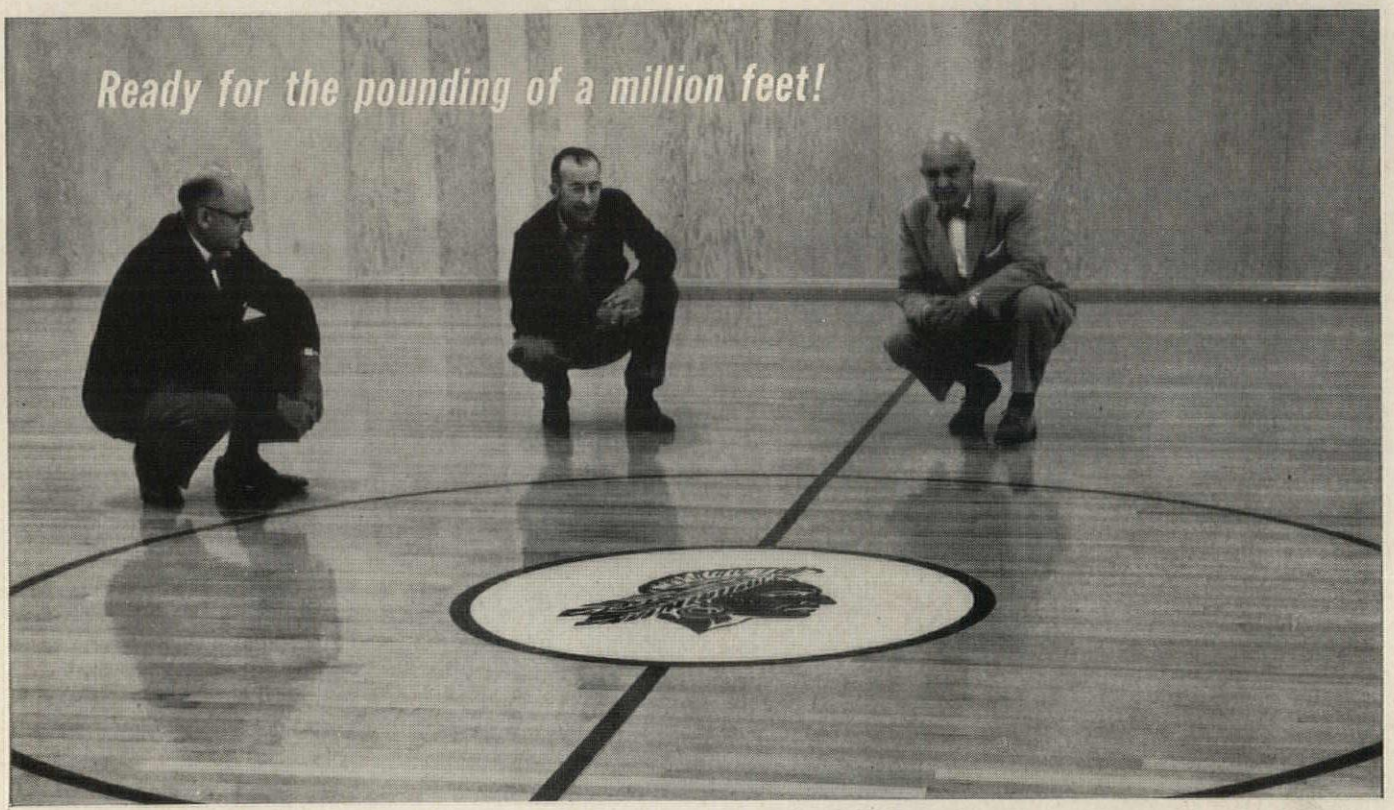
(A.I.A. 37-C-1) Provides technical descriptions of complete line of spun mineral wool structural and perimeter insulations, with installation instructions and sample specifications. 4 pp. *Building Materials Div., Baldwin-Hill Co., 500 Breunig Ave., Trenton 2, N. J.**

Plaster and Acoustical Systems

(A.I.A. 21-A-5, A.I.A. 39-B) Eight page folder contains specifications, fire test data and general technical information on several applications of plaster and acoustical systems. *Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.**

** Additional product information in Sweet's Architectural File, 1958*

more literature on page 292



Left to right: Mr. Huff; Mr. Cliff Gates, Superintendent of Maintenance; and Mr. Goff, the Huntington representative, inspecting the newly lined and finished gym floor at the Siletz school.

"Just one of 30 floors we regularly finish with SEAL-O-SAN.® Isn't it a beauty?"

Huntolene Antiseptic keeps floors sanitary and dust free at the Siletz school and other Lincoln County schools. It's a part of the maintenance program which the Huntington representative, Mr. B. N. Goff, has installed. *Your* Huntington representative will work closely with you in setting up a maintenance program.

says Mr. M.C. Huff, Superintendent of Lincoln County Schools, Newport, Oregon

If you want to preserve all the natural beauty of hardwood and still have a gym floor that will take abuse without showing it, specify Crystal Seal-O-San gym floor finish. You get a durable, non-skid, glare-free surface that's resistant to scuffing and rubber burns . . . perfect for all kinds of indoor sports yet easy to keep up even when the floor is used for other activities.

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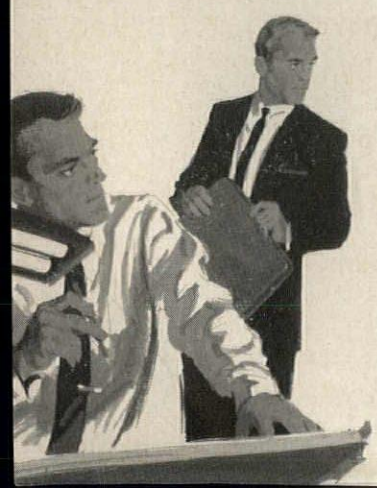

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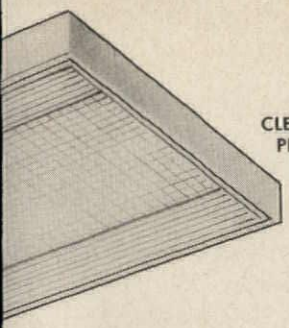
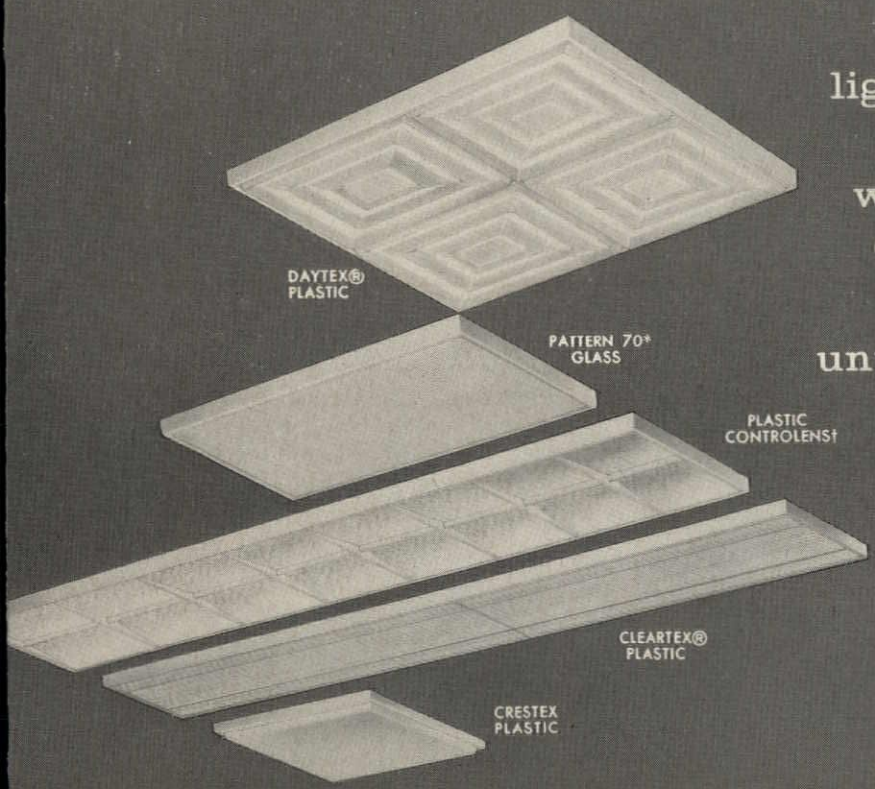


DAYLUME®

Surface Lighting Elements



Open new opportunities in lighting effects and effectiveness. Combine recessed appearance with surface-mounted flexibility. Only 3¼ inches thin for today's lower ceilings. Available in an unusual variety of enclosures and sizes for extraordinary light control and layout possibilities. All this plus Day-Brite quality—the standard of the industry!

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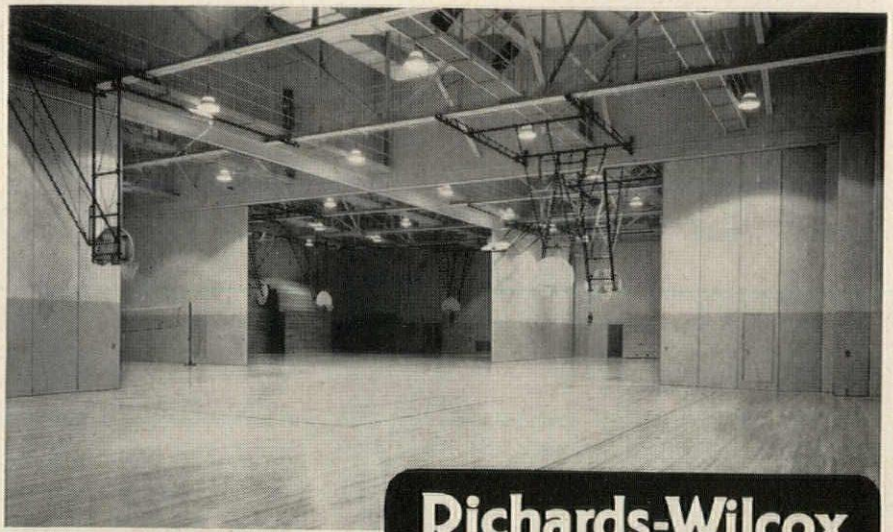

4-way R-W "FoldeR-Way" Partition
Janesville, Wisconsin Senior High School
Law, Law, Porter and Nystrom, Architects

Richards-Wilcox
FoldeR-Way®
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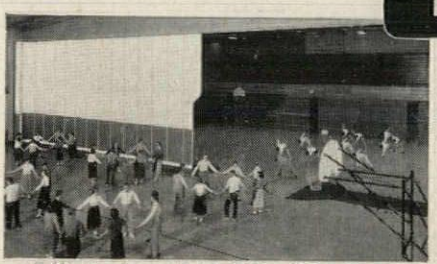

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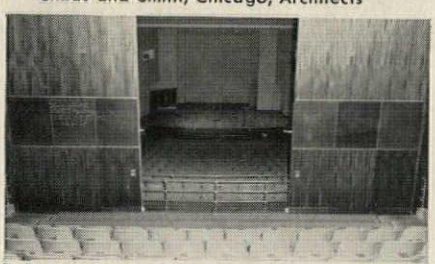

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Office Literature

Steel Age Office Partitions

(A.I.A. 35-H-6) Describes and illustrates *Steel Age* line of fiberglass office partitions, with details and specifications. 16 pp. *Corry-Jamestown Mfg. Co., Corry, Pa.*

The Modern Stone Age is Here

Colorful brochure reviews the use of stone from the time of the cave man to the present and depicts all types of quarried stone in natural color. *Building Stone Institute, 420 Lexington Ave., New York 17, N. Y.**

Specification Check List

(A.I.A. 20-B-1) Technical Bulletin 19 provides a check list for accurately specifying principal metal lath assemblies, including partitions. 4 pp. *Metal Lath Manufacturers Association, Engineers Bldg., Cleveland 14, Ohio**

Watertight Floor Boxes

Bulletin 4-A illustrates all types of *R & S* floor boxes, and presents technical cross-sections and detailed catalog pages. 24 pp. *Russell & Stoll Co., Inc., 125 Barclay St., New York 7, N. Y.*

Positive Fire Protection

Catalog P-40 describes and illustrates complete line of fire detecting-extinguishing equipment for commercial, institutional or industrial fire hazard applications. 12 pp. *Dept. A, Walter Kidde & Co., Inc., Main St., Belleville 9, N. J.*

Dodge Cork Tile (A.I.A. 23-G)

1958 Catalog gives design data, specifications, installation procedure and maintenance information for three types of cork floor tile, and includes basic data on cork wall materials. 8 pp. *Dodge Cork Co., Inc., Lancaster, Pa.**

Ceramic Veneer (A.I.A. 9-A)

Covers adhesion, anchored, mold pressed, *CV Panelwall*, screen decorative and sculptured types of ceramic veneer, with construction details, installation information and specifications. 8 pp. *Architectural Div., Gladding, McBean & Co., 2901 Los Feliz Blvd., Los Angeles 39, Calif.*

Low-Voltage Power Switchgear

Reviews complete line of low-voltage power circuit breakers and switchboards, with application and selection data and guide-form specifications. 20 pp. *Switchgear Div., I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Philadelphia 30, Pa.**

** Additional product information in Sweet's Architectural File, 1958*

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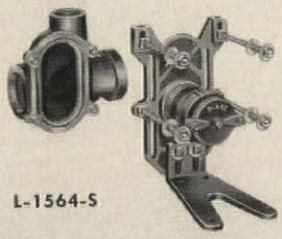

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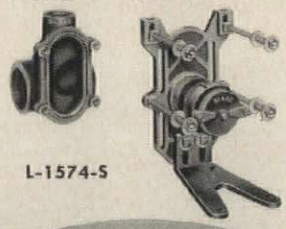

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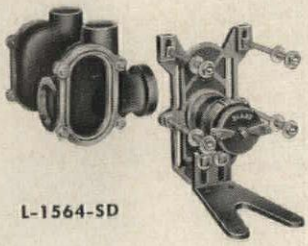

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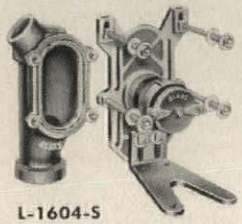

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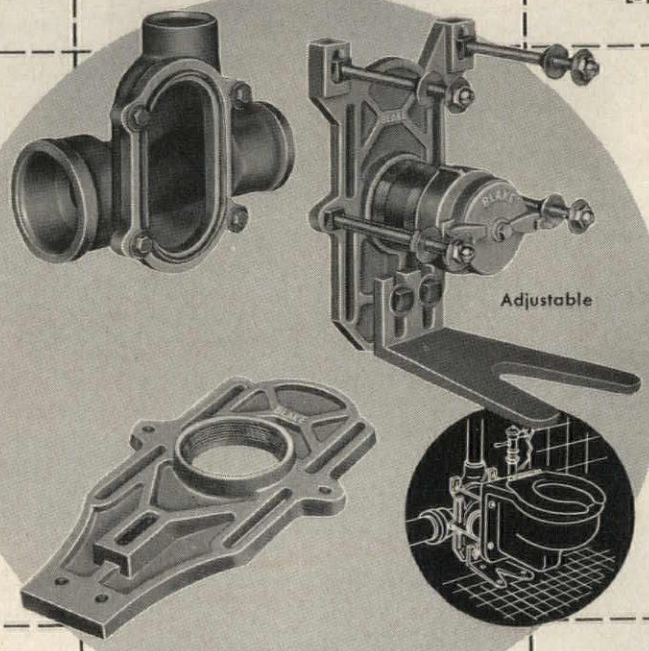
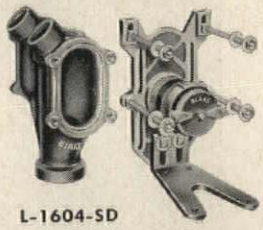


Adjustable



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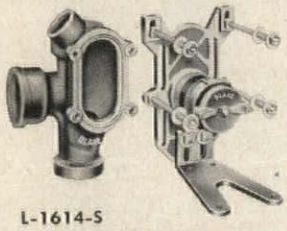

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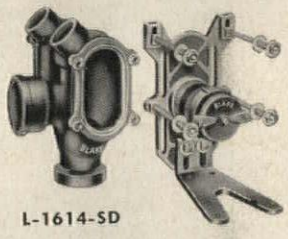

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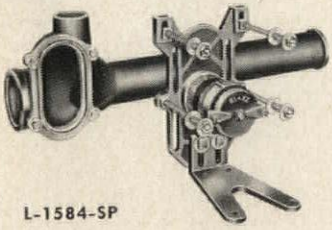

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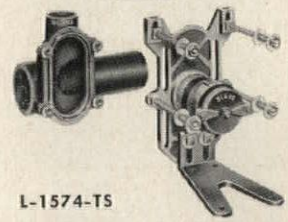

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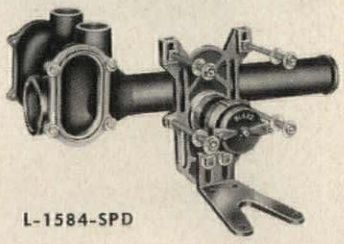

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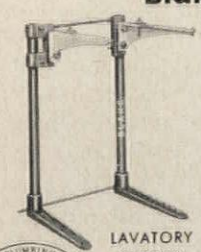

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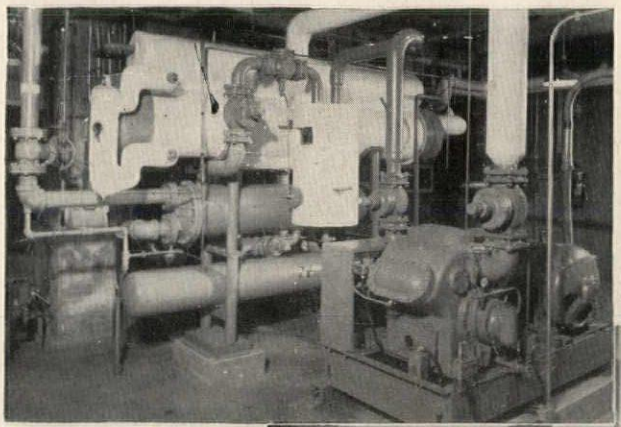
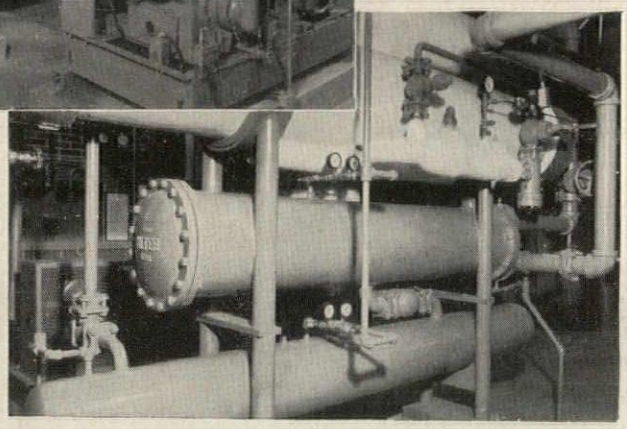


This Vilter air conditioning plant consists of a Freon shell and tube water chiller, shell and tube condenser, liquid receiver and a six-cylinder Freon VMC compressor, all installed in the Southwestern Bell Telephone Co., Olathe, Kansas.

Close-up view of Vilter condenser. Chiller is above. Receiver is below.



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Accent:Engineering

continued from page 228

est usage in the restrained joints, but are commonly used also in the "surround" type of elastic seal, where compressive confinement is provided.

The resilient elastomer gaskets are usually used only as elastic seals, where the property of elasticity is a prime essential. Their use under permanent restraint is, in fact, to be avoided, since they eventually lose their effectiveness under constant load. Impregnated wool felt gaskets are suitable only as a restrained seal, while wool pile and metal strips are usually found only in sliding joints. The cover tapes might be used either in butt or gap joints, but their most effective use will likely involve the development of new joint types.

Of all the typical seal conditions, the "surround" type is the most critical. Wherever metal or glass panels are "fixed" within a periphery frame, some variation of this detail applies. Several factors normally contributed to the difficulties of achieving a successful surround seal—the three-dimensional differential movement, the usual requirement of replacement of the panel, and oftentimes more critical exposure to weathering effects than with other types of seal. When the panel framed is a sizeable area of glass, not only may these factors be accentuated, but there is the added problem of dealing with ultra violet exposure on the interface of the glass.

Comparative Characteristics of Sealing Materials

When dimensional tolerances are a problem, the mastic fillers by their very nature have an obvious advantage. Neither the surface regularity of joining parts nor the distance between parts is critical to the success of their sealing performance, as long as the latter is large enough to permit proper installation and not so wide as to permit flowing and sagging, the ideal width being about $\frac{3}{16}$ in. Resilient gasket sections, on the other hand, are necessarily designed to function properly over a range of joint width dimensions which is comparatively limited. Polybutene tapes, as a rule, have a still narrower range in which they are effective, but the butyl rubber tape, with its greater elongation and adhesion, can accommodate considerable tolerance.

Mastic fillers also have the inherent advantage of adaptability to any form of joint recess, and the inter-

continued on page 300

A. G. ODELL, JR.
Architect
J. A. JONES
Contractor
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AS MODERN AS TOMORROW WITH VAMPCO ALUMINUM CURTAIN WALLS . . .

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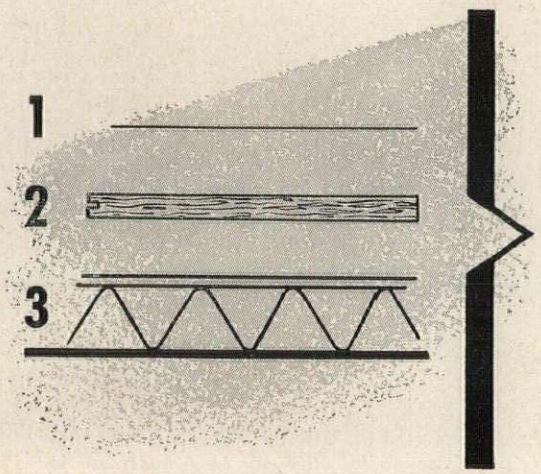
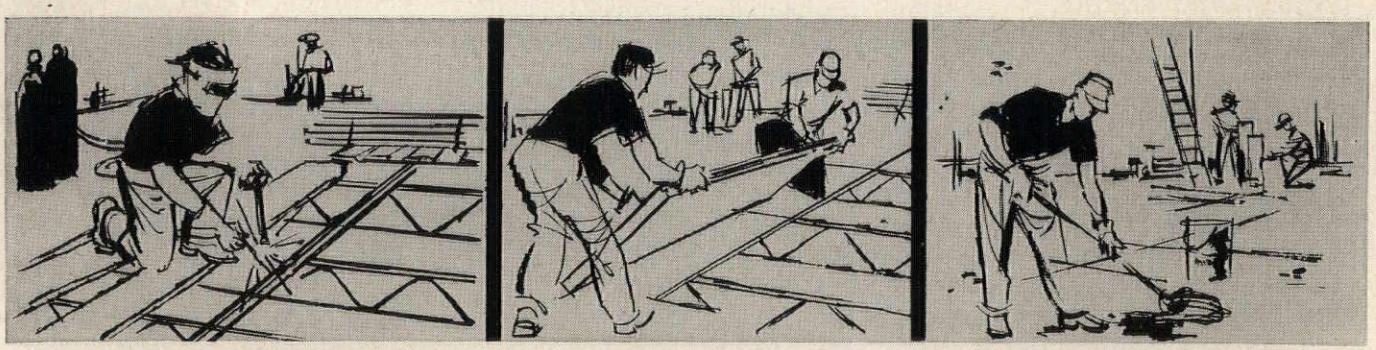


In three relatively simple steps, deck and interior ceiling are completed when Tectum decks are specified. Exposed beam construction—the open concept—makes real savings possible for all types of building construction. And it makes sense: Tectum insulates, is acoustical, structural and noncombustible. Here in one operation, deck insulation and acoustical sound control system are installed, and the finished underside eliminates painting in the majority of cases. The beautifully textured surface created by the compressed wood fibers lends an attractive note to both private and public buildings.

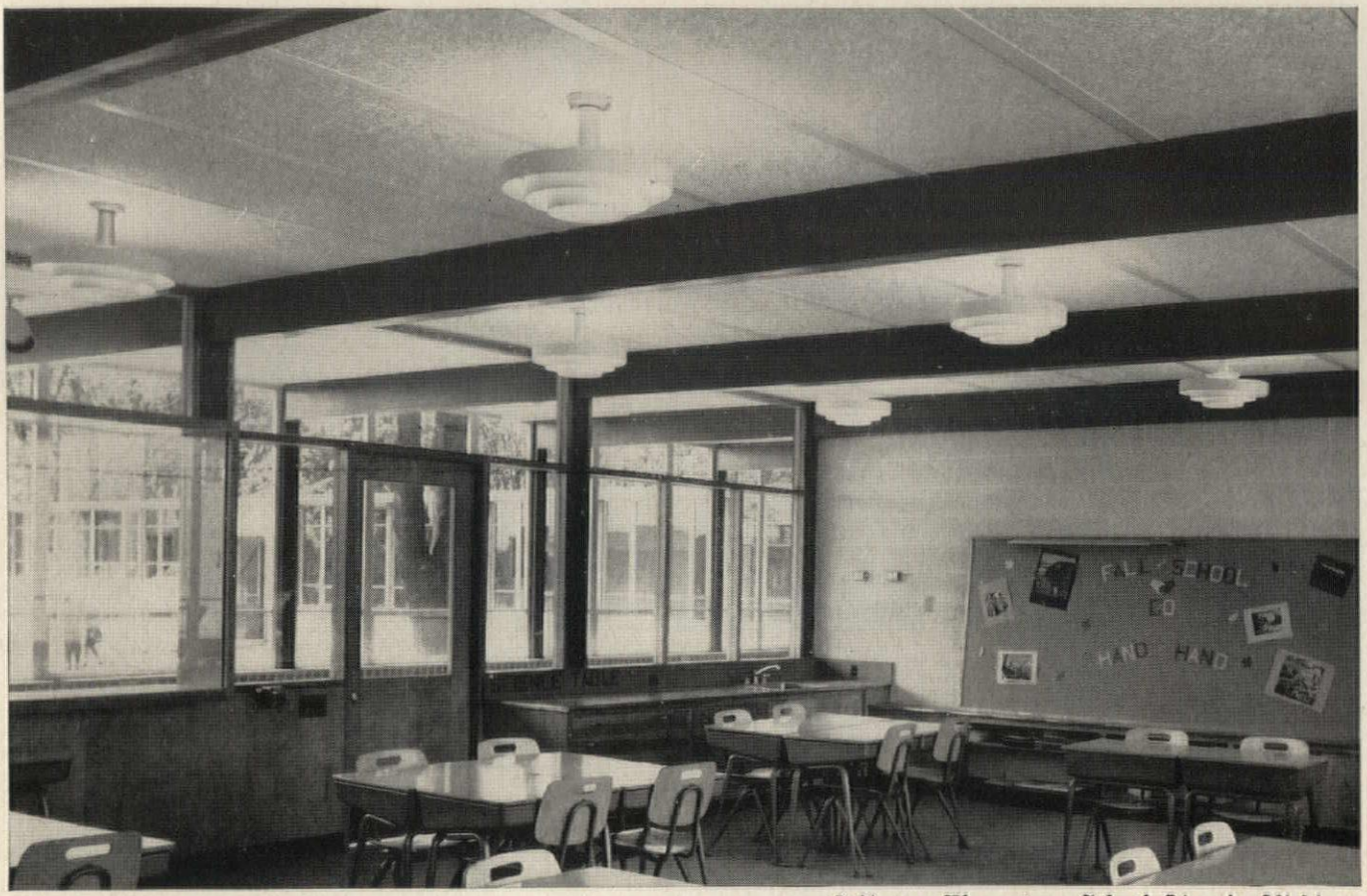
Now, when rising costs are often causing the postponement of vital expansion plans, savings like this can mean the difference of continuing plans or shelving the project. The examples on the opposite page are typical case studies from our files. Making the most of the multiple advantages Tectum offers can cut costs for you, too. Ask your Tectum distributor for an estimate on the job you are planning and see how costs can be kept in line without sacrificing quality in any way.



First, structural system is installed which may be wood, prestressed concrete or steel. (Lightweight Tectum makes economical spans practical.)

Next Tectum is laid, quickly and economically over spans that are normally lighter due to Tectum's light weight composition.

Roofing felt is mopped into position. Built up roofing completes the deck and ceiling construction. Three operations and the job's completed.

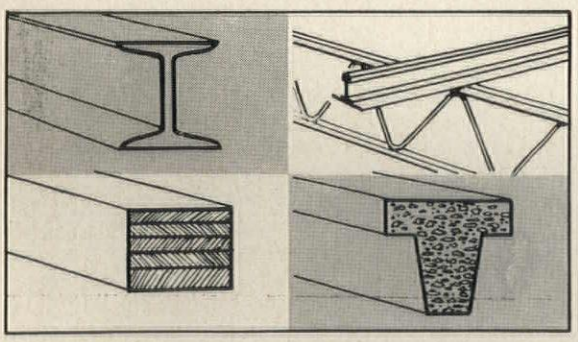


Jefferson Elementary School, Livonia, Michigan
Architects and Engineers: Jahr-Anderson Assoc. Inc.

TYPICAL COST REDUCTION REPORTS FROM TECTUM USERS

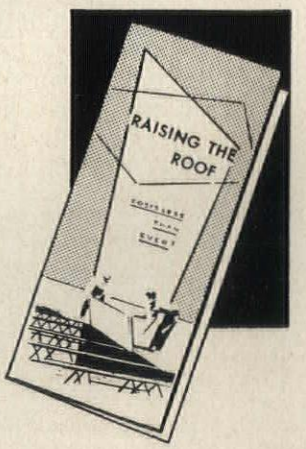
Example 1 "The use of Tectum in lieu of the base specifications and having the same insulating and acoustical properties, resulted in savings of $6694.00 on the new Grandview High School Gymnasium. This is a savings of 38c per square foot."

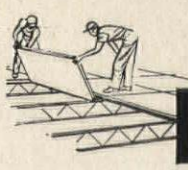
Example 2 "In order to assure our client an economical design, we asked for alternate bids. Through use of Tectum, the savings to the Board of Education was $7400.00 or a unit savings of 34c per square foot."



More and more architects are finding that the exclusive advantages of Tectum on prestressed concrete, steel joists, I beam, laminated wood or bulb-tee sub-purlin results in greater satisfaction, lower costs, less weight in the structural system and a general improvement in time, cost and appearance.

Send today for this informative booklet, "Raising The Roof Costs Less Than Ever" and see how hundreds of plants, schools, churches and other types of buildings have incorporated Tectum type decks and sidewall construction. Write today for the complete facts.





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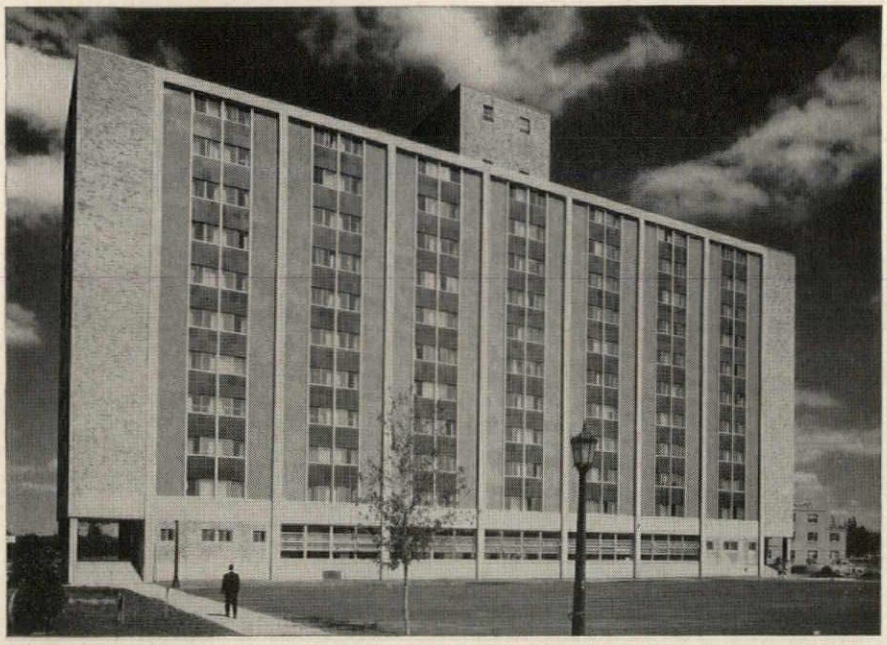


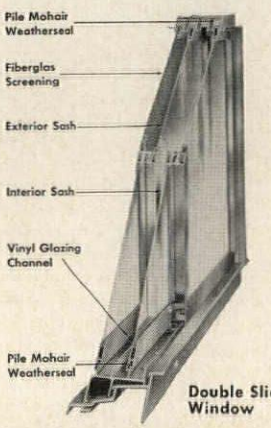
Architect: James, Meadows and Howard, Buffalo, N. Y.

Modern Fleetlite Sliding Windows Chosen for Tower Dormitory on the University of Buffalo Campus

Rising eleven floors above the University of Buffalo campus is the new Tower Dormitory... a masterpiece in concrete, brick and colorful terra cotta with row upon row of Fleetlite Aluminum Double Windows.

In planning this campus home for over 400 student residents, University authorities selected Fleetlite double windows for reasons of both comfort and economy. By a simple adjustment of the interior and exterior sliding sash, students may enjoy indirect ventilation regardless of the weather. No stuffy rooms, no drafts, no possibility that rain or snow will damage furnishings.

Fleetlite double windows also mean double economy. A "blanket of air" insulation between the sash results in more efficient heating and subsequent fuel savings. At the same time, there is economy in maintenance. Durable aluminum requires no painting; vinyl plastic replaces putty; and, since all sash may be removed from the inside for cleaning, costly and dangerous outside window washing is eliminated.



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Accent:Engineering

continued from page 296

sections of joints raise no special problem. These locations are usually fairly easy to seal with the mastic tapes also, but nearly always introduce problems in the use of resilient gaskets. For complete weather tightness, seals must be continuous at corners and joint crossings; consequently gaskets must likewise be continuous at these points. With vinyl gaskets, corner sealing may be accomplished in the field, but with the thermosetting plastics corner joints are vulcanized in the factory, and each gasket is supplied in the form of a surround frame of carefully predetermined dimensions. As far as known, there is no practical method of forming continuous corners with the fibrous gaskets or metal strips. When these are used provisions should therefore be made to drain off anticipated leakage at these points.

With respect to application procedures and field labor costs, the advantages are reversed; here the gaskets and mastic tapes are far superior to the mastic fillers. Since adhesion is a critical function of both fillers and tapes, thorough cleaning is of utmost importance for successful use of these materials. Such cleaning is less essential when a gasket seal is used, since the seal depends on compression without adhesion.

Resilient gaskets, whether of a plastic compound, wool or metal, are "clean" to handle, and quickly installed. To a little less degree the mastic tapes usually have similar advantages of handling. The success of the mastic filler seals, on the other hand, depends on the skill of the applicator, and close supervision and inspection are recommended. As already indicated, the polysulphide mastics, which are the only present filler type suitable for many installations, involve great care in mixing, protection of surfaces and skillful handling, making this the most difficult of all seal materials to install.

This relatively new field of building technology is still largely an area of pioneering and many of the techniques used are essentially experimental. Consequently there are few established practices, and knowledge is growing with experience. Even though progress has been significant, many unanswered questions plague the industry. Some of these questions can perhaps be answered only by the test of time, many can be solved by continued research; and others will be eliminated as new materials and methods are developed.

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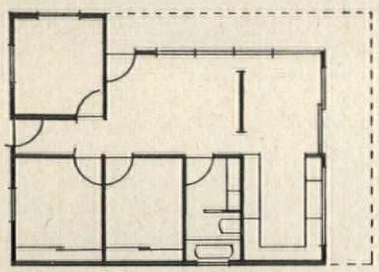
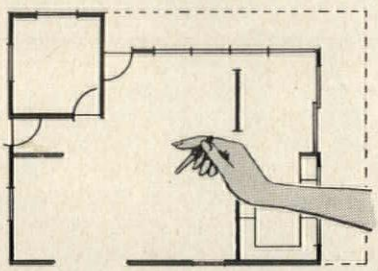
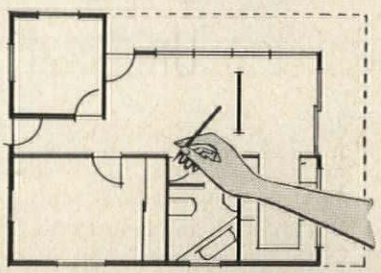


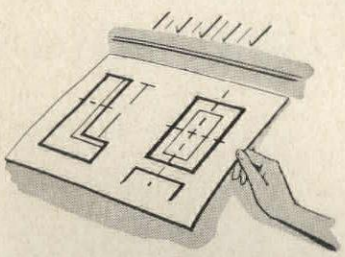
1. This is an Ozalid intermediate (translucent) print of the original drawing.



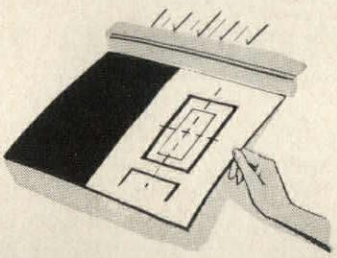
2. Draftsman eradicates obsolete lines with Ozalid Corrector Fluid.



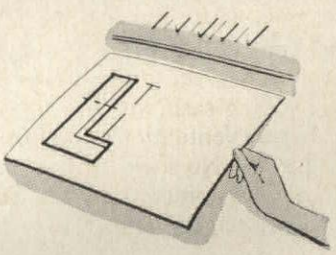
3. New design is drawn in. Prints can now be run from this intermediate "master."



1. Expose original drawing in the usual manner on Ozalid intermediate paper, cloth, or foil. But do not develop!



2. Cover all printed yellow lines which are to be retained on the intermediate with a mask of black opaque paper—re-expose in Ozalid machine. The light will remove all obsolete details left uncovered.



3. Develop the intermediate...and you have a clear, up-to-date "framework" to which you add the new design. Use this intermediate master to produce prints.

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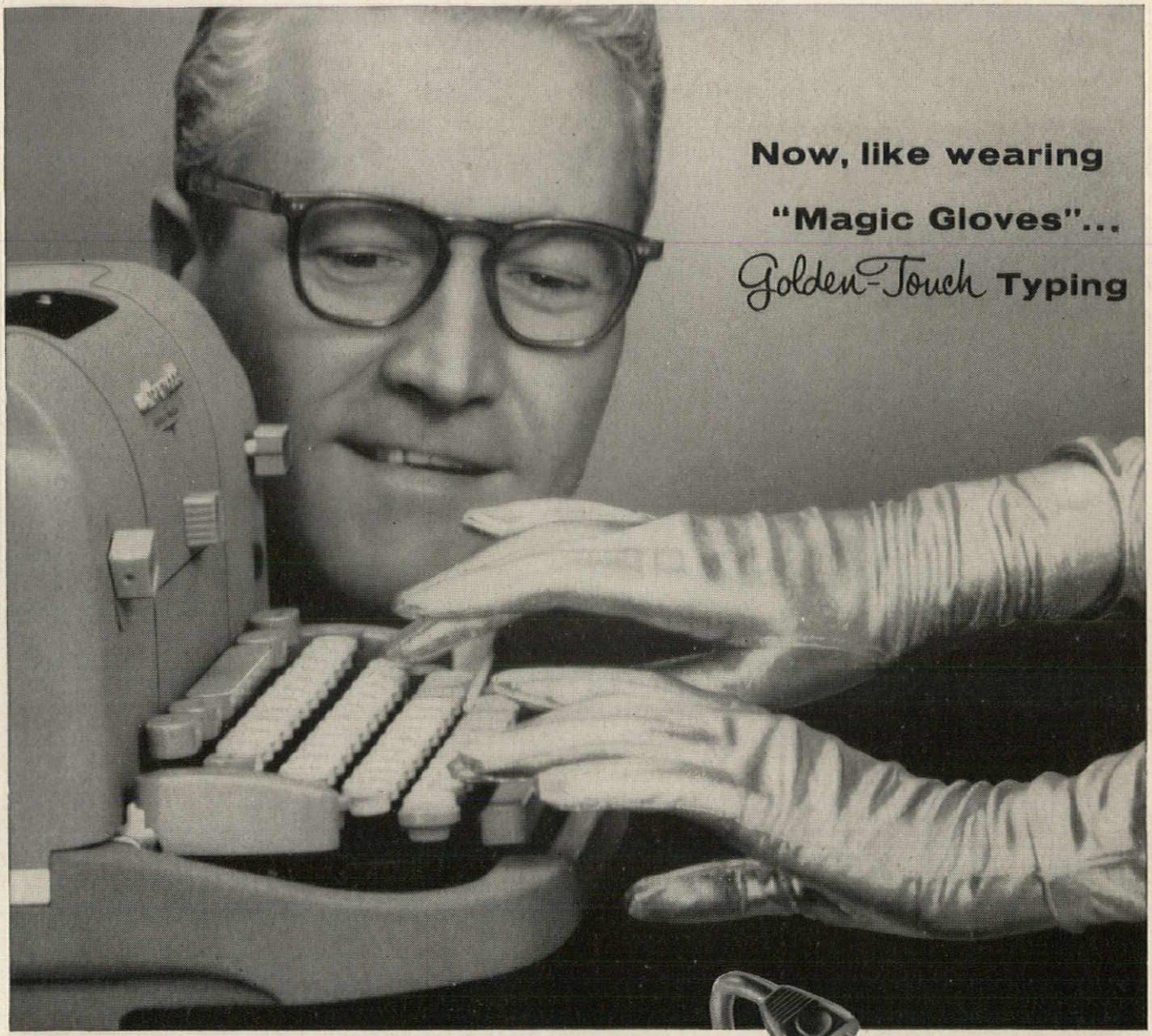

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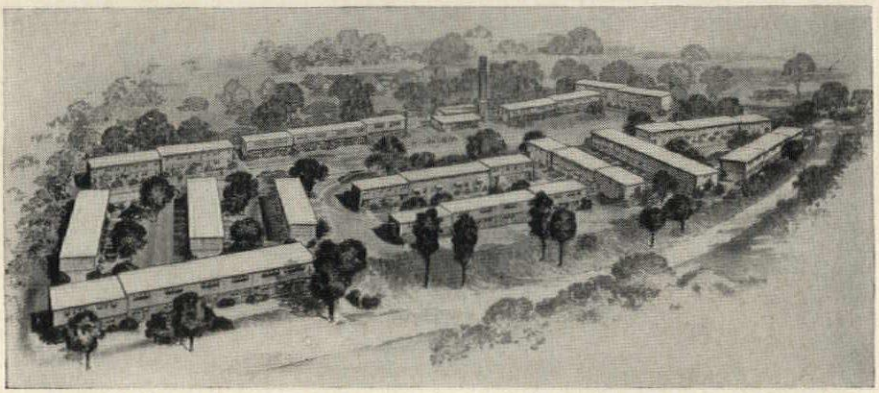

Maywood Terrace Housing Project, Watertown, N.Y.

Equipped with Sarcotherm Weather-Compensated Control Systems for hot water heating. **Built by** – Watertown Housing Authority. **Architect** – Sargent-Webster-Crenshaw & Folley, Watertown, N. Y. **Consulting Mechanical Engineer** – Galson and Galson, Syracuse, N. Y. **Heating Prime Contractors**—Burns Bros., Syracuse, N.Y.

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FOR TECHNICAL BULLETIN NO. 2 on Apartment and Institutional Control Systems write . . . Sarcotherm Controls, Inc., 635 Madison Ave., New York 22, N. Y.

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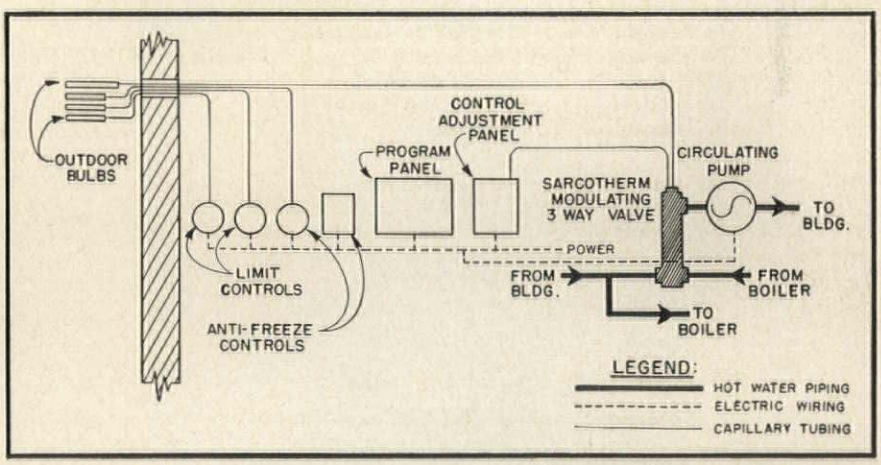

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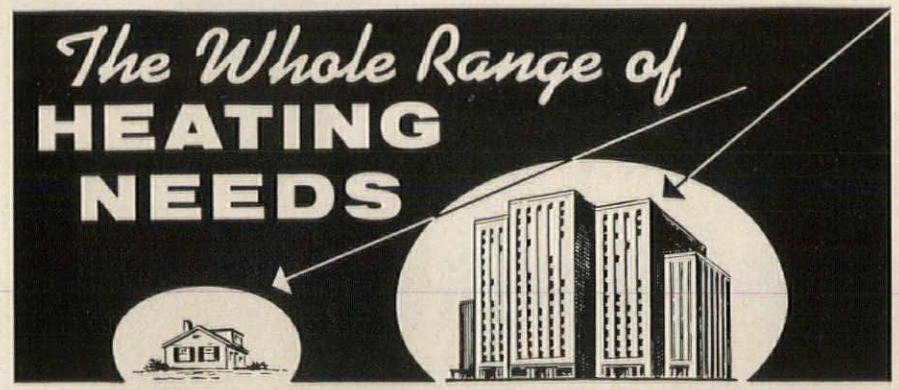

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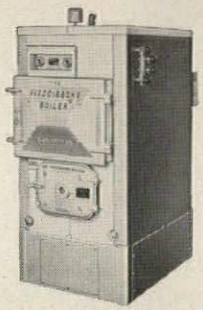

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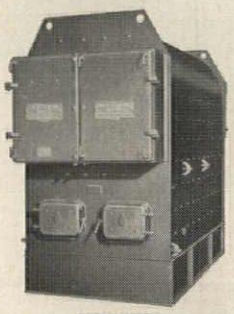

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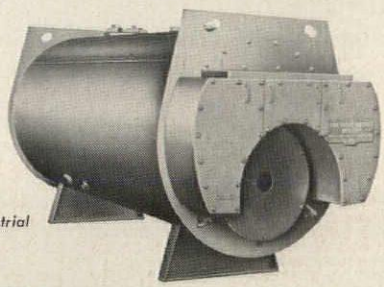

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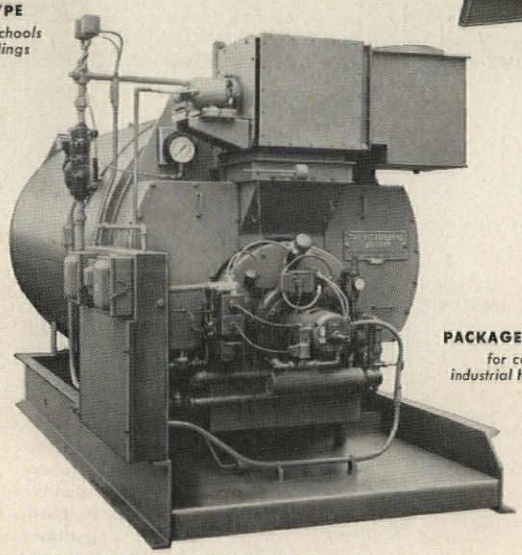

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Meetings and Miscellany

continued from page 28

ment. We have magazines too indiscriminate in their praise of new forms. Architects are human and want praise, so they search for new forms. They have jumped on the new-form bandwagon without thoughtful discrimination simply to gain recognition."

Polychrone: "An architect needn't be a structural engineer nor a stress analyst to conceive new structural forms, but what he must possess is structural comprehension. The insight into structural behavior takes discipline and effort, and in such insight resides invention."

Ketcham: "Architects ought to learn to use the forms they have. Certain shell forms such as the barrel vault and folded plate have already become classical and the architects ought to learn to use such form tools appropriately."

Other branches of engineering affecting design include the mechanical plant of buildings, a subject of growing importance in contemporary architecture. This was dealt with by a consulting engineer, Donald Kroeker, of Portland, Oregon, and a teacher of professional practice, Henry Burge, of the University of Southern California.

Professional Practice, as a separate heading, was the next to last topic of the agenda. Two architects, James Hunter and Karel Yasko, and two teachers, Walter Bogner, as a member of the panel, and Elliot Whitaker, as moderator, were on the program. It gave the practicing architects a chance to express an opinion on the work of the schools and what they had to say was anything but complimentary. As to how one achieves, in actual practice, the results in design one is striving for nothing was mentioned, and what one should teach in a course in professional practice was, except for Bogner, hardly touched upon. But we did have an explosive session. Unfortunately, on account of an overcrowded second week, there was no opportunity for general discussion. This subject deserves a special recording and report which it is hoped will be forthcoming elsewhere.

One day was given up to the meeting of the A.I.A. Committee on Education. This gave those enrolled in the teaching seminar (participants) a free day to work on their report which they presented at the end of the week.

Another day was given over to a

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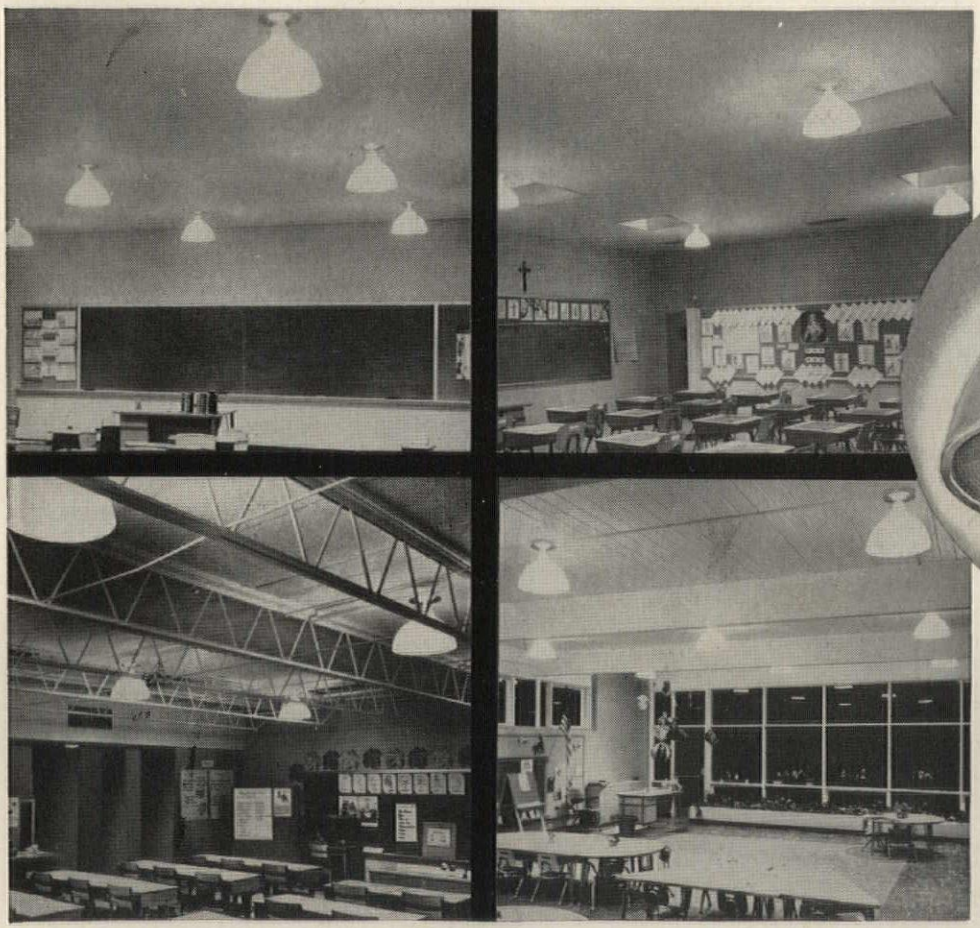

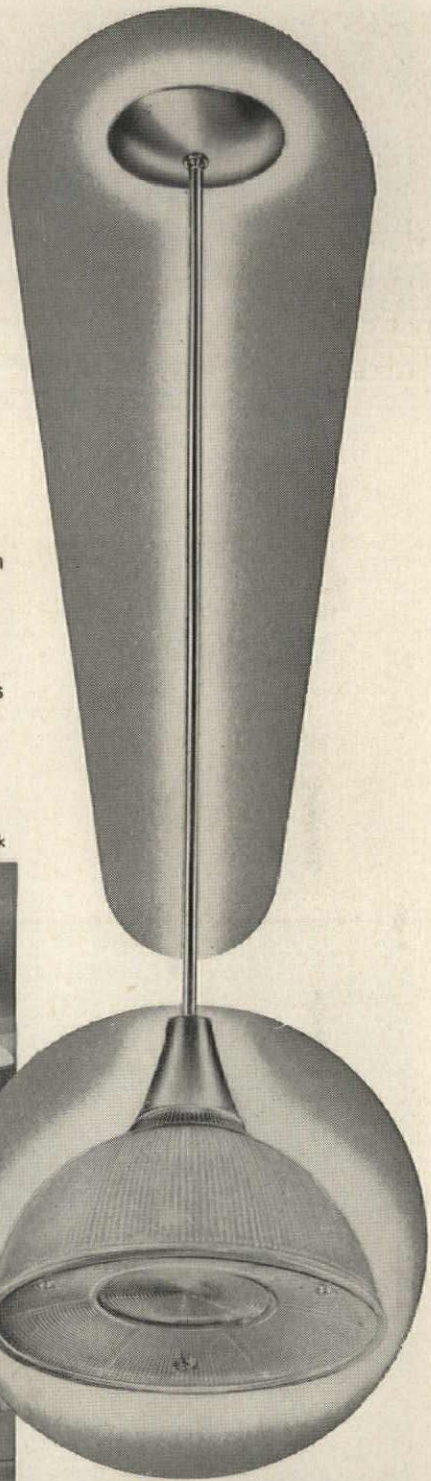

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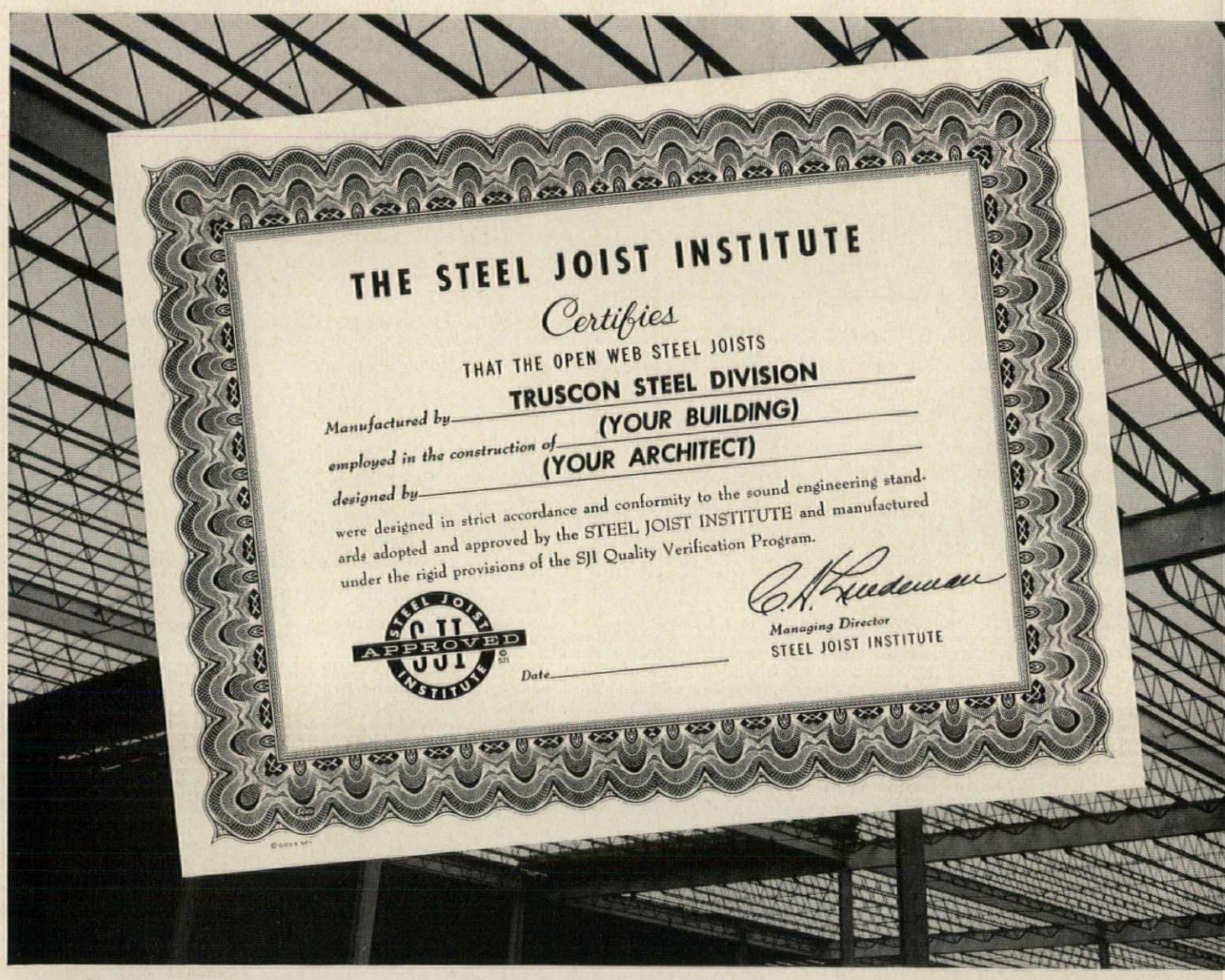

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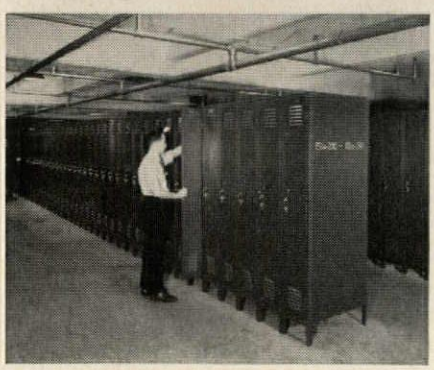

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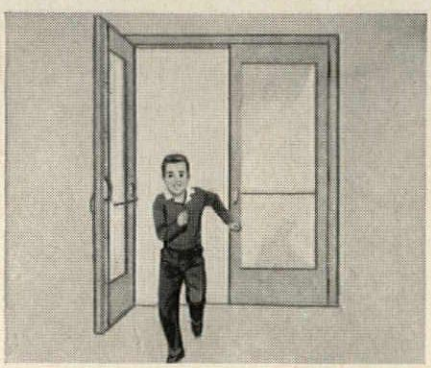

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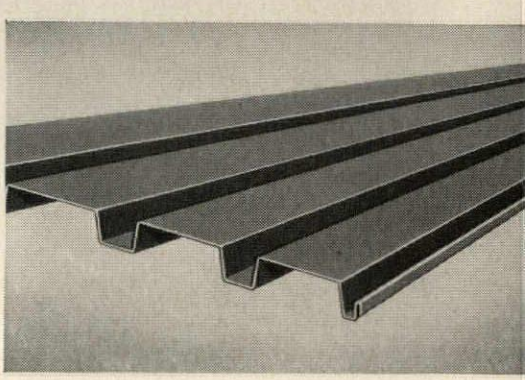

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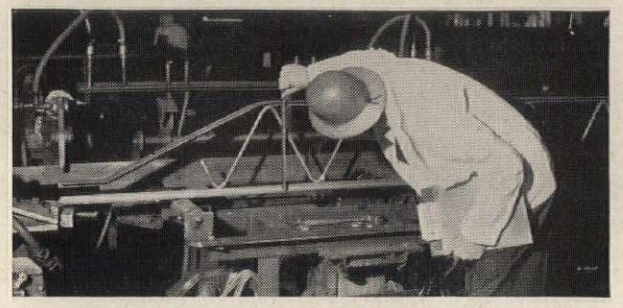
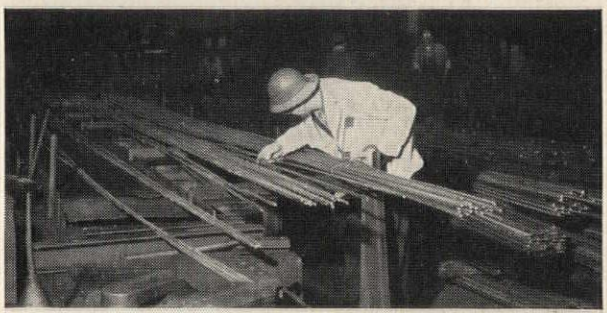
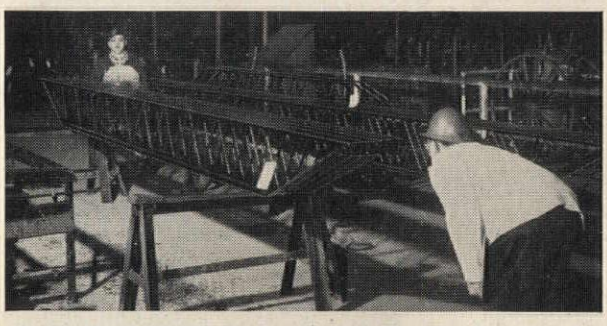


The Quality Verification Program conducted by "this man in the white coat" is a continuing program of checking and inspecting of member company joist manufacturing processes and materials.



This thorough inspection on an unscheduled basis protects the integrity of the Steel Joist Institute Seal of Approval. This voluntary program gives the Seal of Approval real meaning.



The Quality Verification Program is administered for the institute by a nationally known testing laboratory. Every fabricating step is checked for adherence to standards. And, Truscon certifies it!

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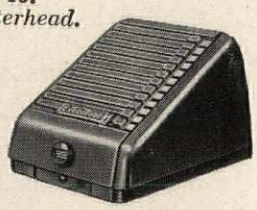

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consideration of the design of education buildings at all levels. This was a concession in grateful recognition of the financial help given us by the Fund for the Advancement of Education (Ford Foundation). We were granted the privilege of hearing from John K. Weiss, an executive of the Fund, on the need for improving the serviceability of school buildings, from Lawrence B. Perkins of Perkins and Will on their experience in designing schools, and from Wilson Cahell on the operations of a Maryland school board in making use of television as a new technique on teaching affecting future requirements.

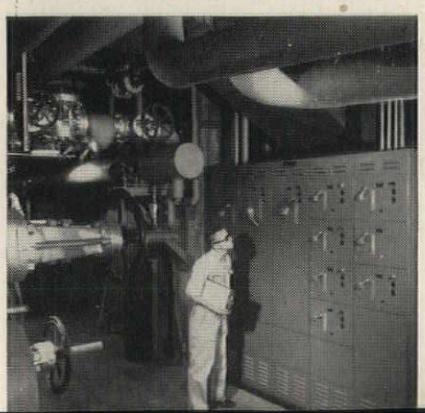
The second week was directed by Sidney Little who introduced and guided the principal speakers and moderators on structure, the mechanical plant, educational buildings and the report of the participants on what they thought of the program. This report, unlike the findings of those who attended the meeting at Cambridge, recommended that the 1958 seminar be another discussion-type program, and that the location for this and future seminars be in a relatively isolated resort environment; in other words, as much like Aspen as possible.

The words on a page and the reading of these words representing the presentation of events and ideas, no matter how thought-provoking, are a pale reflection of impressions when one is in the presence of live personalities exuding purpose and conviction. And when all this takes place in a setting such as Aspen, the impact is heightened many times.

The meetings were held in a hexagonal room built somewhat on the principle of a theater-in-the-round. Outside across the Aspen meadows, one sees nearby the red walls of the Saarinen big tent, and, to one side and further away, a group of modern structures, including a Bucky Fuller geodesic dome, which make up the health center. The eye does not rest for long on these foreground objects, intriguing as they are, but is drawn upward to the mountains rising abruptly from the flat valley to the heights above, patterned by the shades and shadows of undulating forms and by great patches of thickly growing Aspen trees reaching upward to snowcapped summits. Aspen itself is 8300 feet above sea level; the ski chair lift takes one 3000 feet higher into a silent world of snow.

Cardinal Glennon Memorial Hospital for Children, St. Louis, Mo.

Children's hospital is designed for a century of service



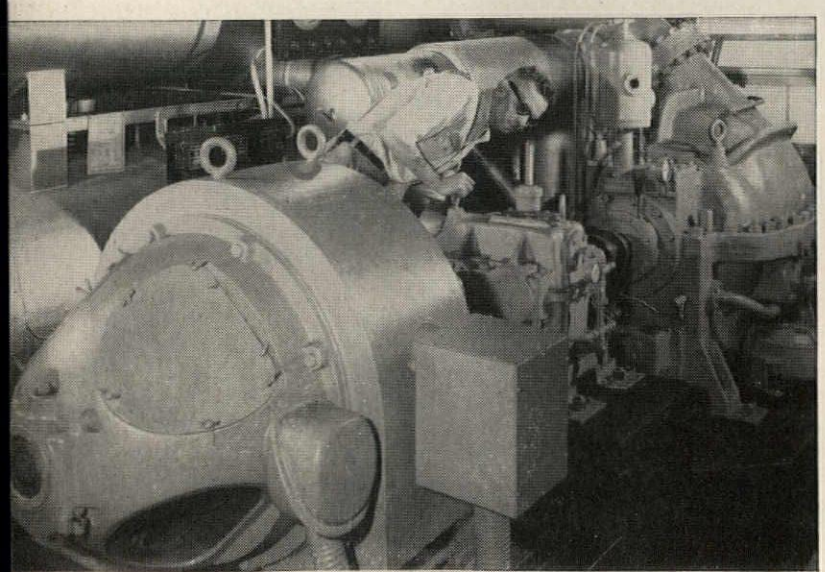
One of the two motor control centers with Type B wiring installed in hospital by Westinghouse. Each starter has 480-to 110-volt individual control transformer.

U CAN BE SURE...IF IT'S Westinghouse

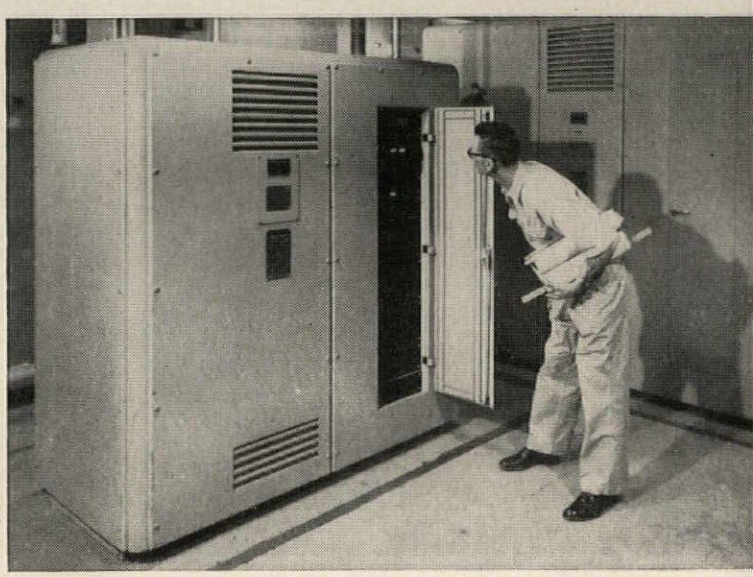
094-1

Contractor and engineers discuss metal-clad switchgear employing preferred-emergency incoming line transfer arrangement.

J-94094-2



Close-up shows components in air conditioning compressor hook-up. In the foreground is a Westinghouse 250-hp wound-rotor induction motor with Type SU double-helical-type speed increaser—1760 to 6750 rpm.



Transformer room view shows three of hospital's five Westinghouse dry-type self-contained power centers. 75-kva 208-volt wye to 120-volt delta ungrounded isolating power center is in the foreground, and two 225-kva power centers are in the rear.

Scene in hospital conference room includes Norman H. Maas, Electrical Engineer for Maguolo and Quick, Architects; Joseph F. Dwyer, Manager of Hospital's Central Office and Coordinator of Building Committee; Sister Mary Vivian, S.S.M., Director of Occupational Therapy; Louis S. Sachs, S. C. Sachs Co., Inc., Electrical Contractors; (standing) W. L. Phiffer, Westinghouse Construction Sales Engineer; Walter R. Riechman, Westinghouse Electric Supply Co.; and Paul Olschner, Westinghouse Area Sales Manager.

New hospital covers 4½ acres —required 4,000,000 man-hours of labor during 3-year construction period

The Cardinal Glennon Memorial Hospital for Children, now in its second year of operation, is an example of architectural planning which looks beyond the immediate demands of hospital form and function to anticipate future hospital requirements. The man-hours of labor which went into the actual construction of the hospital reflect the many other hours which were devoted to careful design and engineering of the institution.

The design criteria for the building was established at 100 years, and all material and equipment was specified on that basis. Important in this long-range planning was the electrical distribution system which was required to provide failure-free service for the hospital and also required to be capable of expansion as needed.

Westinghouse equipment, including elevators, was selected for the entire hospital electrical distribution system, and after exhaustive studies by the architect's electrical engineers, in cooperation with Westinghouse engineers, it was determined that duplicate primary service system was best suited to the hospital's present and future requirements. Details of the Westinghouse equipment used in the hospital are illustrated here. Additional information about how Westinghouse helped meet the demands of this exacting hospital requirement and can help you in solving your electrical needs is available. See the Westinghouse Electrical Construction Engineer nearest you or write Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pennsylvania.

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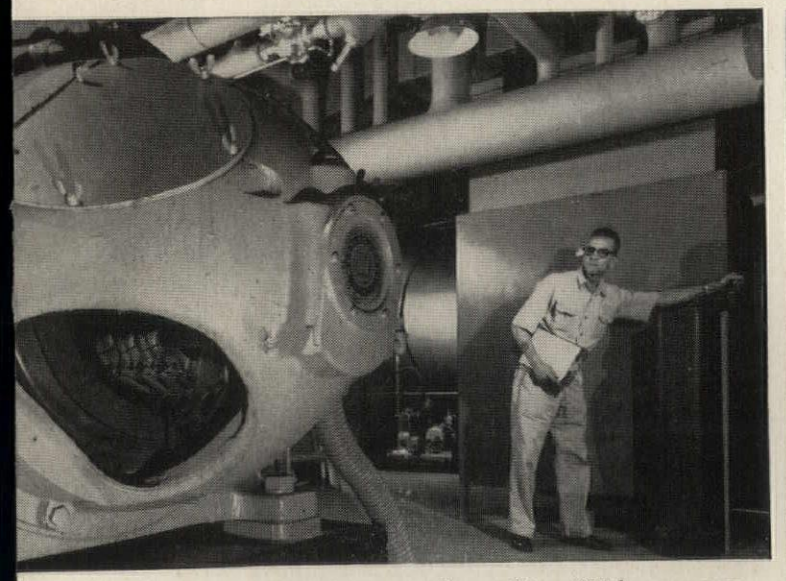
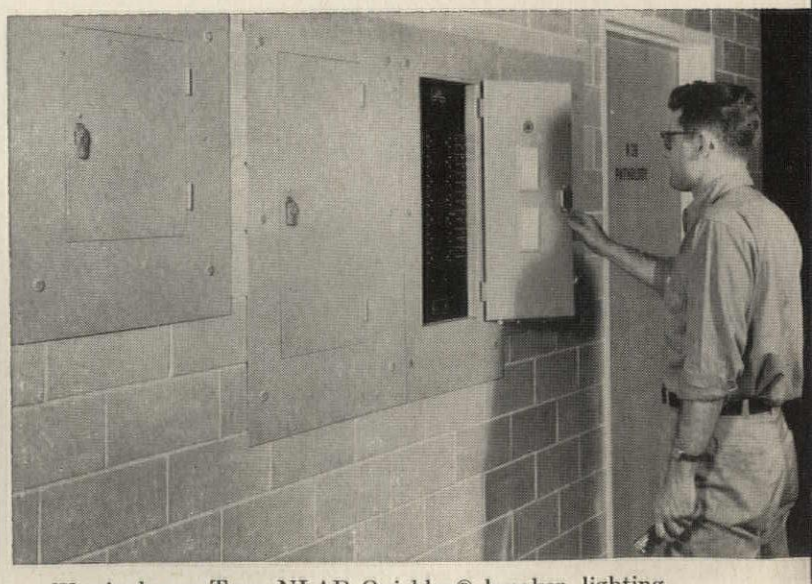


Operator is adjusting rpm of one of two 250-hp compressor motors. On-off switch is on column at right and motor control components are in large enclosed cabinet.



Westinghouse Type NLAB Quicklag® breaker lighting panelboards. A total of 42 lighting distribution panelboards and 10 power distribution panelboards are installed in the hospital.

Illustration shows the utilization of individual Westinghouse motor controls. The four vacuum pumps in the foreground are individually controlled by the motor controls being operated in the background.

The Cardinal Glennon Memorial Hospital cares for children between the ages of one to twelve, regardless of race, color or creed.

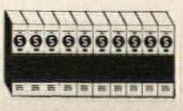
All-Westinghouse electrical system was unanimous choice for long-term service

The architect, electrical engineer, electrical contractor and building manager for the hospital all agreed on Westinghouse electrical equipment as first choice for continuous, failure-free performance, minimum maintenance and for the ease with which necessary future expansions can be accomplished.

Cardinal Glennon Memorial Hospital for Children
Architect-Engineer: Maguolo and Quick
Electrical Contractor: S. C. Sachs Co., Inc.
General Contractor: John B. Gutman Construction Co.
Westinghouse Distributor: Westinghouse Electric Supply Co.

J-94094-4

YOU CAN BE SURE...IF IT'S **Westinghouse** (W)



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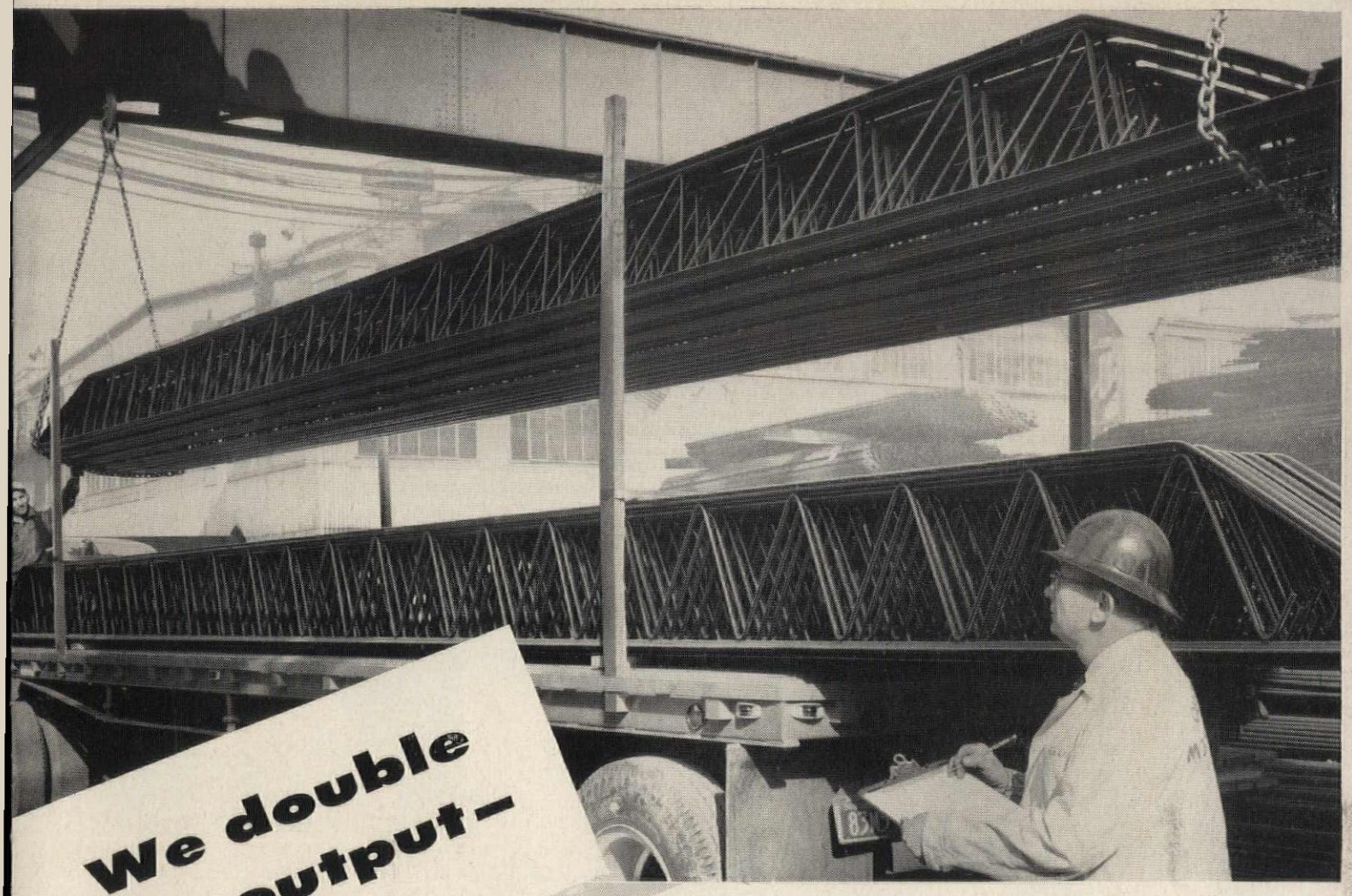

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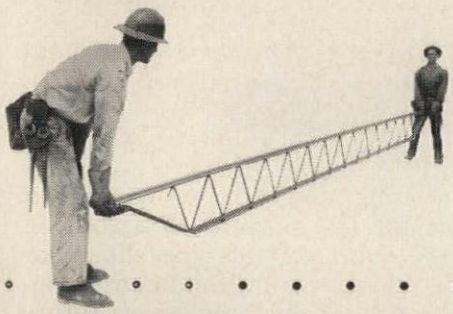

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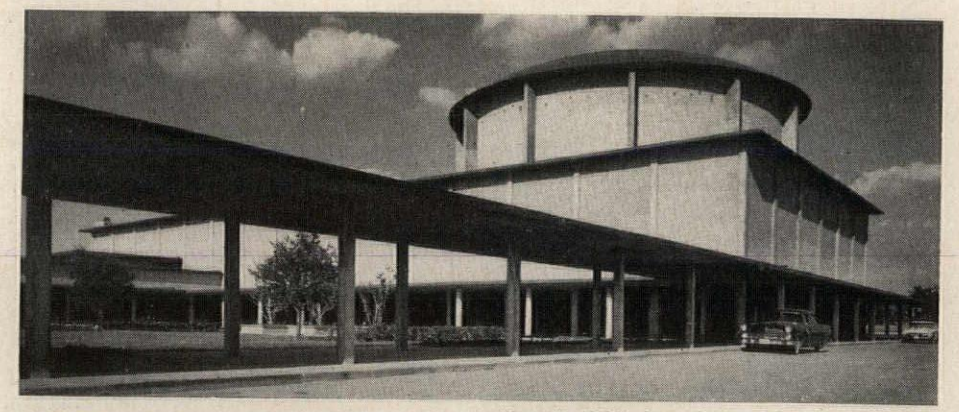
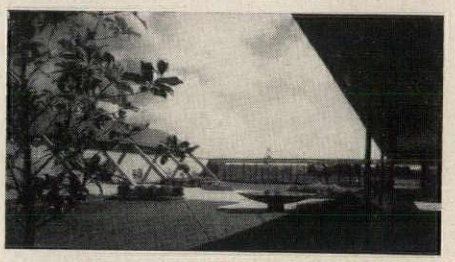
 continued from page 12

evident. As architecture must be viewed in the round, the character of the building as finally understood and evaluated by the general public is based upon this character without knowledge of the programming problems. In some occasions the jury felt there were some very fine solutions which neglected to capitalize on the full three dimensional possibilities. They also felt, while color is an integral part of the regional architecture, the judicious use of color leads to a more distinguished solution."



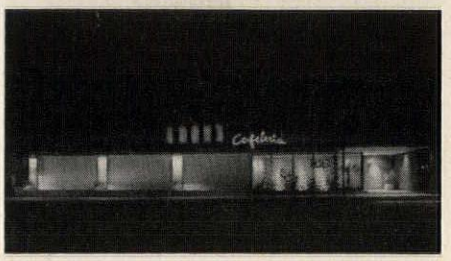
Award of Merit and Special Commendation —Temple Emanu-El, Dallas. Howard R. Meyer and Max M. Sandfield, Dallas, Architects; William W. Wurster, Consulting Architect



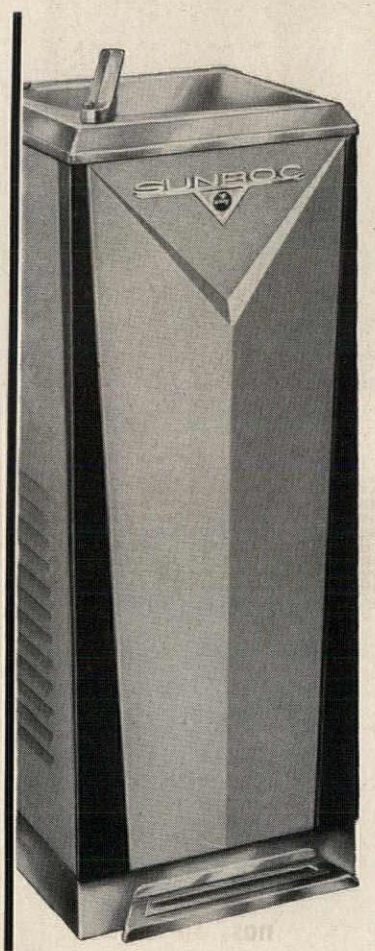
Elementary school, Webster. George Pierce and Abel B. Pierce, Houston, Architects

School #1 of five primary schools, Andrews, Tex. Caudill, Rowlett, Scott and Associates, Bryan, Architects

Tennwood Employes' Club, Hockley, Tex. Cowell & Neuhaus, Houston, Architects



Luby's Cafeteria, San Antonio. Noonan & Thompson & Krocker, San Antonio, Architects



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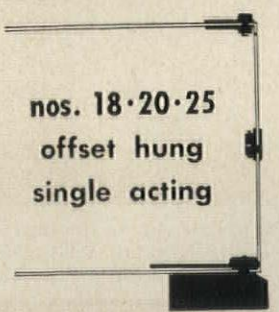

nos. 18·20·25
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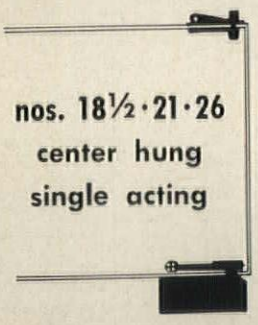
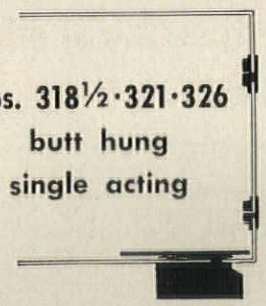
single acting

Allow full unobstructed door opening space and wide door swing to 180°. Has arm locking device for vertical adjustment of door.



nos. 18½·21·26
center hung
single acting

Hanging hardware completely concealed. Ideal for batteries of doors. Require no mullions allowing greatest open entrance area.



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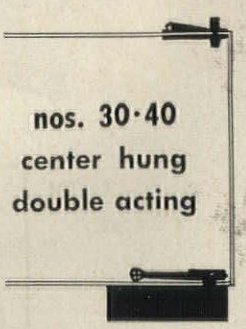

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London Guarantee Building was completed in 1923, air conditioned with TRANE equipment in 1957. Leslie H. Klawans and Company, Management Agent. Architects and engineers for the remodeling job were Robert E. Hattis Engineers, Inc. Heating and refrigeration contractor was Advance Heating and Air Conditioning Corporation. Ventilation contractor was Narowetz Heating and Ventilating Company, all of Chicago.

Trane equipment rental-income space

Year-around air conditioning system installed with almost no disturbance of tenants

The building: London Guarantee Building, 360 North Michigan Avenue, Chicago, Ill.—with 200,000 square feet of rentable office space.

The problem: *Ten* exterior exposures gave this building a large percentage of exterior space. Each floor is divided about 80% exterior offices and suites; 20% interior office areas. Problem was to install complete, year-around air conditioning in as short a time as possible . . . with a minimum of disturbance to tenants . . . and as economically as possible with respect to both space and dollars.

The solution: TRANE equipment met all the above requirements and the building owners didn't lose any income due to space loss. 918 TRANE Fan-coil Uni-Trane units—each with outside air intakes to meet Chicago code—were installed in all exterior spaces to provide individual climate control. Installation was made on a module basis for maximum flexibility in meeting future remodeling requirements.

The twenty interior zones (one for each floor) were conditioned with TRANE Climate Changers. These units were installed in an abandoned elevator shaft, so required no rentable space. The main refrigeration equipment (two TRANE CenTraVacs) was installed in the existing boiler room.

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In planning air conditioning for new or existing buildings, more and more architects and engineers are turning to TRANE equipment. There are TRANE units for any kind of building, any type of system. And TRANE *matched* equipment works together to save space, cut costs, speed installation. Have your architect or consulting engineer call your nearby TRANE Sales Office or write TRANE, La Crosse, Wisconsin.

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918 Fan-coil UniTrane units provide individual climate control for London Guarantee Building. Units are installed on a module basis to permit flexibility for future tenant remodeling. TRANE Fan-coil units were chosen for their ease in converting existing steam heating system to hot water for heating, chilled water for cooling.

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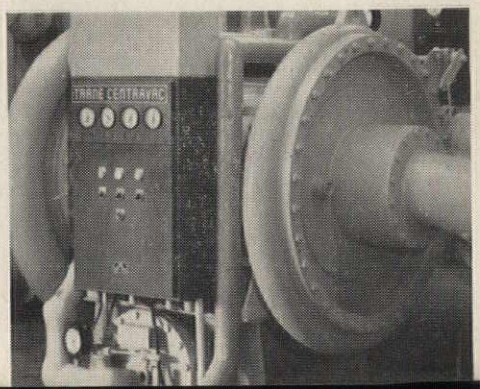
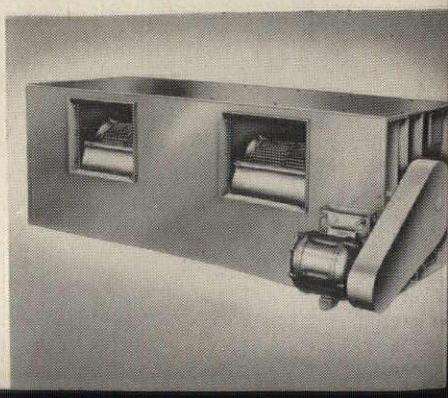


Twenty TRANE Climate Changers condition the air for open office areas in London Guarantee Building. Installed in an unused elevator shaft, Climate Changers required no rentable space. Available in single zone or multi-zone models, Climate Changers heat, cool, ventilate . . . meet a variety of air conditioning requirements.



Where to get

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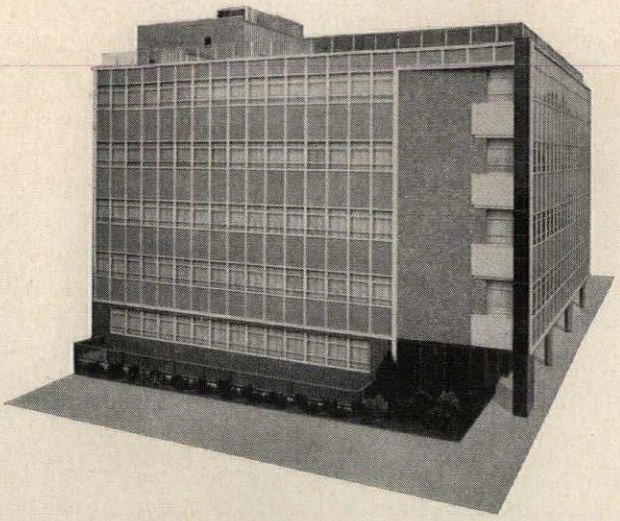

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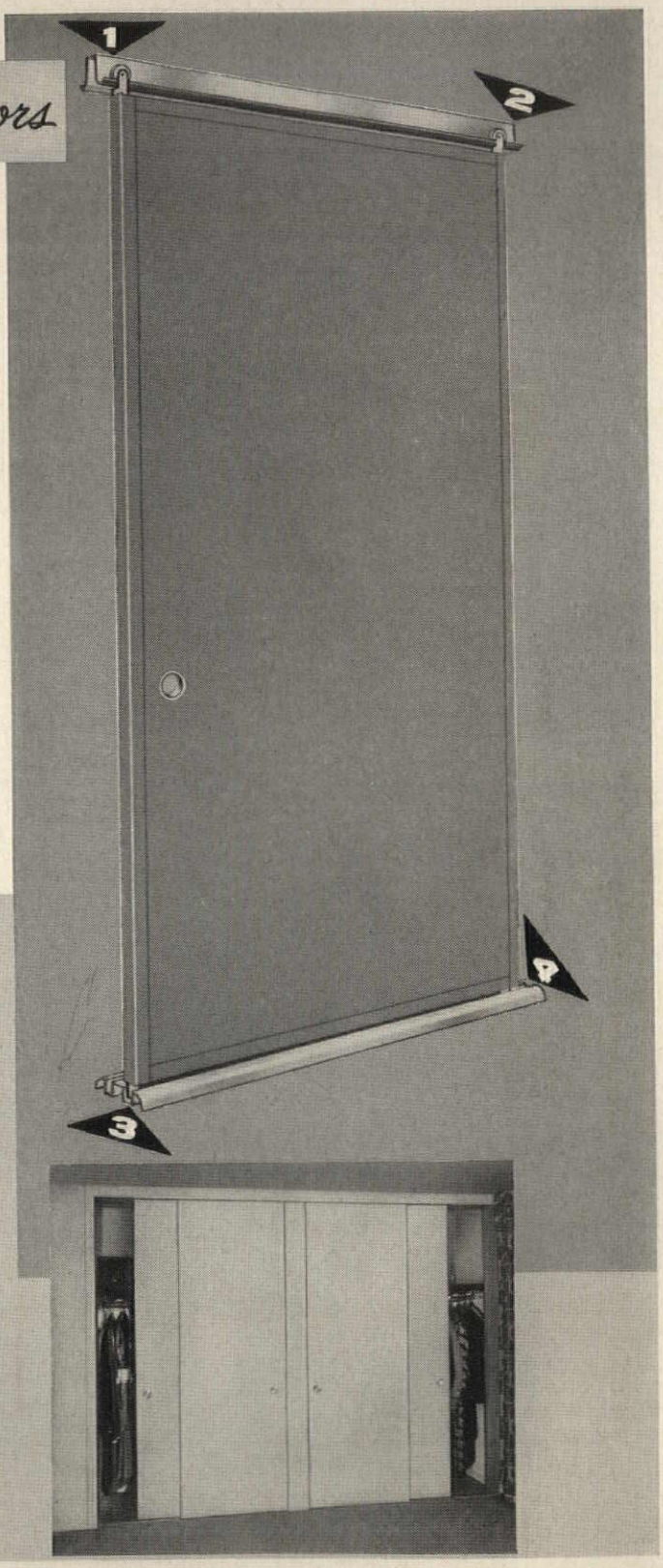

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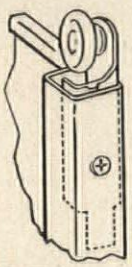
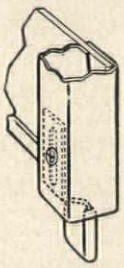


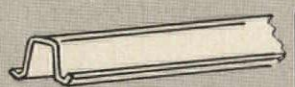
ROLLER ASSEMBLY Smooth-rolling nylon wheel assembly permits quick, simple installation and adjustment that is permanent.



LOWER GUIDES Specially designed steel bracket with polyethylene sleeve—adjusting screw allows ¾" movement up or down . . locks in permanent position.

OTHER FEATURES that make Glide-All Sliding Doors outstanding are shown below.

Glide-All Doors are available for 8′ floor-to-ceiling and 6′ 8″ high installations—in a variety of standard opening widths. For complete details, specifications and prices see Sweets or write the nearest Woodall plant.



HEAVY STEEL TRACK is easily installed, and formed to prevent rollers from "run off." Notched for quick panel installation.

ALUMINUM THRESHOLD Decorative and sturdy, it is simply attached to floor. Grooves receive bottom guides to assure panel stability.

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RIGID STEEL TUBES Used for stiles and rails, they give panel stiffness but allow it to "float" to compensate for expansion, contraction and prevent warpage.

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News of Architecture Abroad

continued from page 16

—of Perret, Gaudi, Mendelsohn and Gropius, taking in Sant' Elia's prophetic City of the Future, Burnham and Root's Monadnock block, Chicago, and the first of Maillart's bridges.

At most of the exhibits of the 30's one peered through a darkness more reminiscent of a Ghost Train tunnel than an exhibition hall, but the Italians have gone seriously into this question of "museology", so presumably they were only trying out some of their theories. (They appeared to greater advantage in the really admirable "Museology" section in another part of the building.) A little more light shone briefly on work of the '40s and '50s, illuminating well-known photographs and models—Nervi's lovely ferro-cement roofs, the UNESCO building, the General Motors Technical Center, Detroit; Le Corbusier's work at Chandigarh; Lever House, New York; the Pirelli skyscraper, Milan; Neutra's Desert House; the Brynmawr factory in Wales. . . . But not for long; darkness fell again on models and photographs of Candela's Mexican factories, of Mies van der Rohe's Chicago convention hall project, of another skyscraper for Milan. . . . Could it be an intimation of an approaching Dark Age in architecture?

A view of the German section—"bright, hard precision, with a complementary streak of a rather dull heaviness cropping up in colors and shapes of pottery"

The "planning" section traced the development of the "Neighborhood", from a Roman Legion's camp in Algeria, through a 13th century English cathedral close, "Campi" in Venice, medieval neighborhoods in Germany, and the Georgian squares of London, to the early 20th century Garden Cities of Welwyn and Hampstead in England, suburbs in Berlin, Brussels, and Rotterdam, Le Corbusier's Pessac center, and so to the present day—the Pedregulho neighborhood outside Rio, recent work in England and Scandinavia, SHAPE Village, Paris, and the vast number of attractive estates built in Italy by the "INA Casa" organization. Frank Lloyd Wright's 1934 Broadacre project was there, Greenbelt, Maryland, and Gropius's designs for New Kensington, Pennsylvania. The survey culminated in an immense model of a reconstructed area for Rotterdam designed by a Dutch group from CIAM for a population of 35,000. It provided one large residential unit and two smaller, with blocks of flats of from four to twenty stories and houses both grouped and terraced, an industrial district, a civic center with domes and shell roofs, a stadium, sports grounds and park.

A section of the Triennale was given over to Italian regional arts and

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Ease of Installation counted heavily with the architect and builder who used Steeltex for concrete slabs on the Travis Junior High School in McAllen, Texas. Architect: Zeb Rike of McAllen. Contractor: W. E. Crawford Co. also of McAllen. Steeltex was chosen because of its "low cost, ample supply, ease of installation and low labor costs."

No wonder Steeltex is used everywhere when . . .

Steeltex saves 55 working days on one job

Elimination of forms was cited as a distinct Steeltex advantage by the architect for this job, the Riviera Hotel in Las Vegas, Nevada. When a 200-room addition was planned, Steeltex was specified for that, too. Architect: Roy F. France & Son, Miami Beach, Florida. Consulting Architect: J. Maher Weller, Las Vegas. Contractor: Taylor Construction Co., Miami, Florida.

On big jobs or small . . . in the East, West, North and South, you'll find Steeltex. Architects and contractors like the way it speeds work, cuts costs and makes better concrete slabs.

Steeltex, the Pittsburgh Steel wire mesh reinforcing that carries its own waterproofed form right on its back, is the answer to a big question that designers and builders face constantly:

"How can we maintain or improve quality on our tight budget and move in quicker?"

In California, Designer Robert Sherman, C.S.D., credits Steeltex with pulling him out of a jam when heavy rains and windstorms delayed construction of the $2,800,000 Villa Hotel in San Mateo.

For a while, Mr. Sherman said, it appeared that bad weather would hold up the opening past the start of the 1956 Republican National Convention in nearby San Francisco.

"When weather conditions finally let us go back to work, Steeltex saved us 55 working days or 20 percent of the total construction time," he related.

Speedy construction possible with Steeltex pulled the builders out of jam in construction of the luxurious Villa Hotel in San Mateo, California. This is the job where Steeltex saved 55 working days. Designer: Robert Sherman of San Mateo. Contractor: Pacific Development Co.

Low cost of changing plans when Steeltex is used made a hit with the builders of WSFA Radio and TV Center in Montgomery. Architects: John Shaffer and A. L. Williams Jr. Structural Engineer: Cecil Williams. Contractor: Bear Brothers Construction Co.

"We completed the hotel in time for the Texas delegation to occupy their reserved rooms."

Mr. Sherman, who has used Steeltex on everything from a closet-size used car lot headquarters to a big office building, said, "Builders who overlook using Steeltex on small jobs are missing a good bet."

Now, jump north to Erie, Pa., where E. E. Austin & Son, Inc., built a new Airport Terminal at the Erie Airport which was designed by Nelson, Goldberg & Heidt, registered engineers and architects. Construction Superintendent John McKinnon said:

"We've laid acres and acres of Steeltex. You can't beat it on costs. Why, Steeltex installed costs less than the lumber alone if we had to build forms."

A similar commendation came from Texas where the $380,000 Travis Junior High School is the pride of McAllen, Texas. For that job, Architect Zeb Rike chose Steeltex for 43,698 square feet of second floor and roof deck because of its "low cost, ample supply, ease of installation and low labor costs for installation."

On the same job, Contractor W. E. Crawford declared he had always gotten "fine results with Steeltex."

"All you do is unroll it, tighten it, clip it and pour concrete. I'd recommend Steeltex any place a fine masonry deck is needed."

In Las Vegas, Nevada, where there's no gambling in building construction, Steeltex was specified by Architect Roy F. France Sr. for 108,000 square feet on nine floors of the Riviera Hotel and a new 200-room addition. Mr. France said:

"Steeltex eliminated extra work because it did away with forms. It permitted quick installation and made for a less expensive job."

On a new office and studio building for Station WSFA in Montgomery, Alabama—the $145,470 WSFA Radio and TV Center—the building schedule was tight because of commitments made to the FCC.

Here Architects John P. Shaffer and Albert L. Williams Jr. found:

"Steeltex let us get the building closed in quicker and also allowed us to change our minds on the layout of the floor conduits required by a modern TV and radio station. We were grateful that Steeltex permitted us to make changes with a minimum of loss and delay."

Steeltex can provide savings in time and money for you, too, while giving you better, higher quality slabs.

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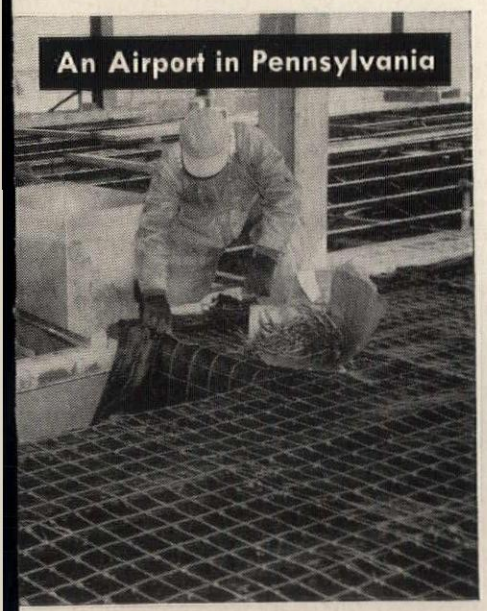

The low cost of Steeltex compared to lumber for forms was cited during work on the new terminal at Port Erie, the airport at Erie, Pennsylvania. Architect: Nelson, Goldberg and Heidt of Erie. Contractor: E. E. Austin & Son, Inc., of Erie.

▶ **See Sweets Catalog Section 2-B**

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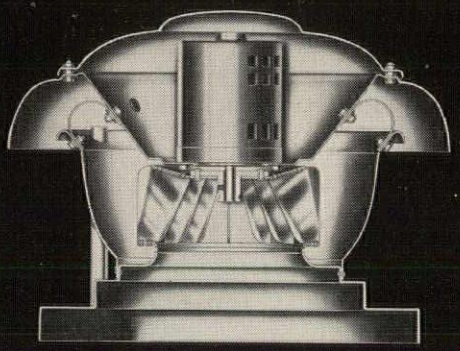

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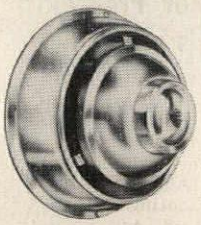

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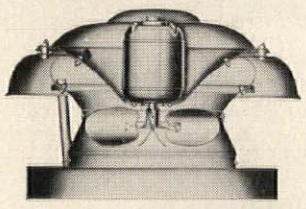

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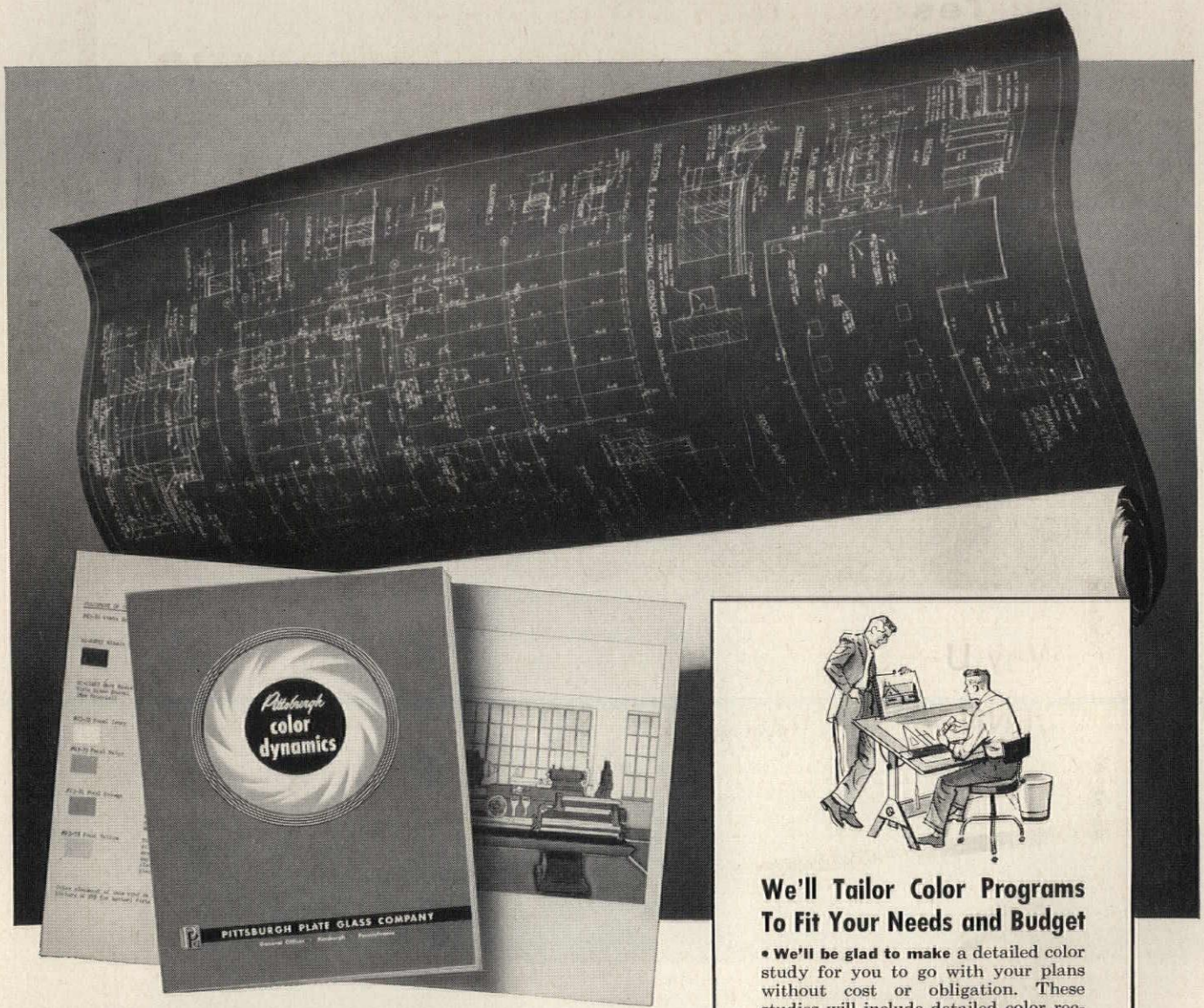

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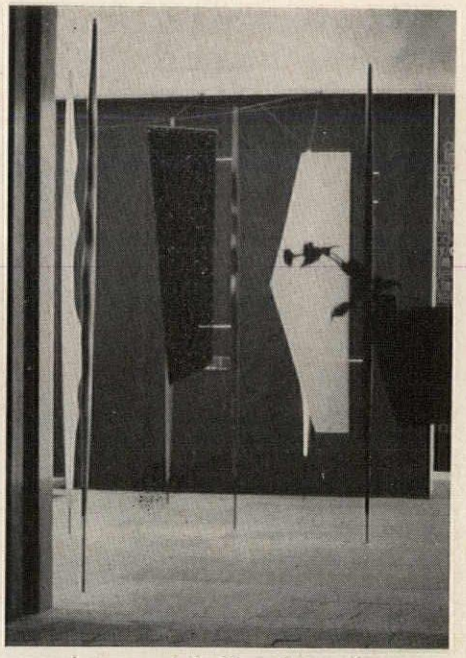
crafts—a colorful display, mainly of textiles and ceramics, some of which showed a rich, Picassoesque quality.

Other sections were "Art Production" (mainly Italian), "Industrial Design", and the national exhibits of different countries.

From an overall survey of the national exhibits it is strange to see how nationalism and internationalism merge and part. There is, of course, the general climate of design—inevitable, and completely international. And there are, within it, clearly marked national characteristics. But more remarkable were the similarities of *detail* between the work of one artist and another, and still more, of one country and another. For instance, it was sufficiently surprising to see the similarity between the work of different artists in the Italian jewelry display; the ubiquitous thin spidery tendrils, combined with simple plate-forms, all in plain gold. But it was even more so to see, in the German section, exactly the same spidery tendrils, set against the same gold plate-form. And to note the prevalence of the "contemporary" form of table cutlery. These short broad prongs, these short broad blades and leaf-like shapes, this all-metal—dull, smooth metal—approach, are international. Evidently the sophisticated craftsman, of whatever country, is more susceptible to the international mood—or mode?—than to national influences.



A corner of the Yugoslav section

The national characteristics were most evident (and indeed, immediately recognizable) in a general "feel", and presentation of the display. The whole of the German display, for instance, largely devoted to precision instruments, had the same bright, hard precision, with a complementary streak of a rather dull heaviness cropping up in colors and shapes of pottery (pottery shapes, basically very similar to those from other countries, but just lacking the final refinement).

The Danes, with their smooth woods and silver, had an equally recognizable air—of fresh, outdoor simplicity; the Swedes, as would be expected, presented a more polished and sophisticated version of the same thing; the Norwegians a more practical version. The Finnish approach, again, dominated by timber, and with a curiously Japanese flavor, was both characteristic and expected. The Italian contribution, largely in the "Art Production" section, where they showed jewelry, metalwork, textiles, enamels, ceramics, and glass, as well as decorated and furnished rooms, had all its expected elegance.

The "Industrial Design" section highlighted the practical quality of American designers. In the cubicles devoted to individual exhibitors the Walter Dorwin Teague Associates

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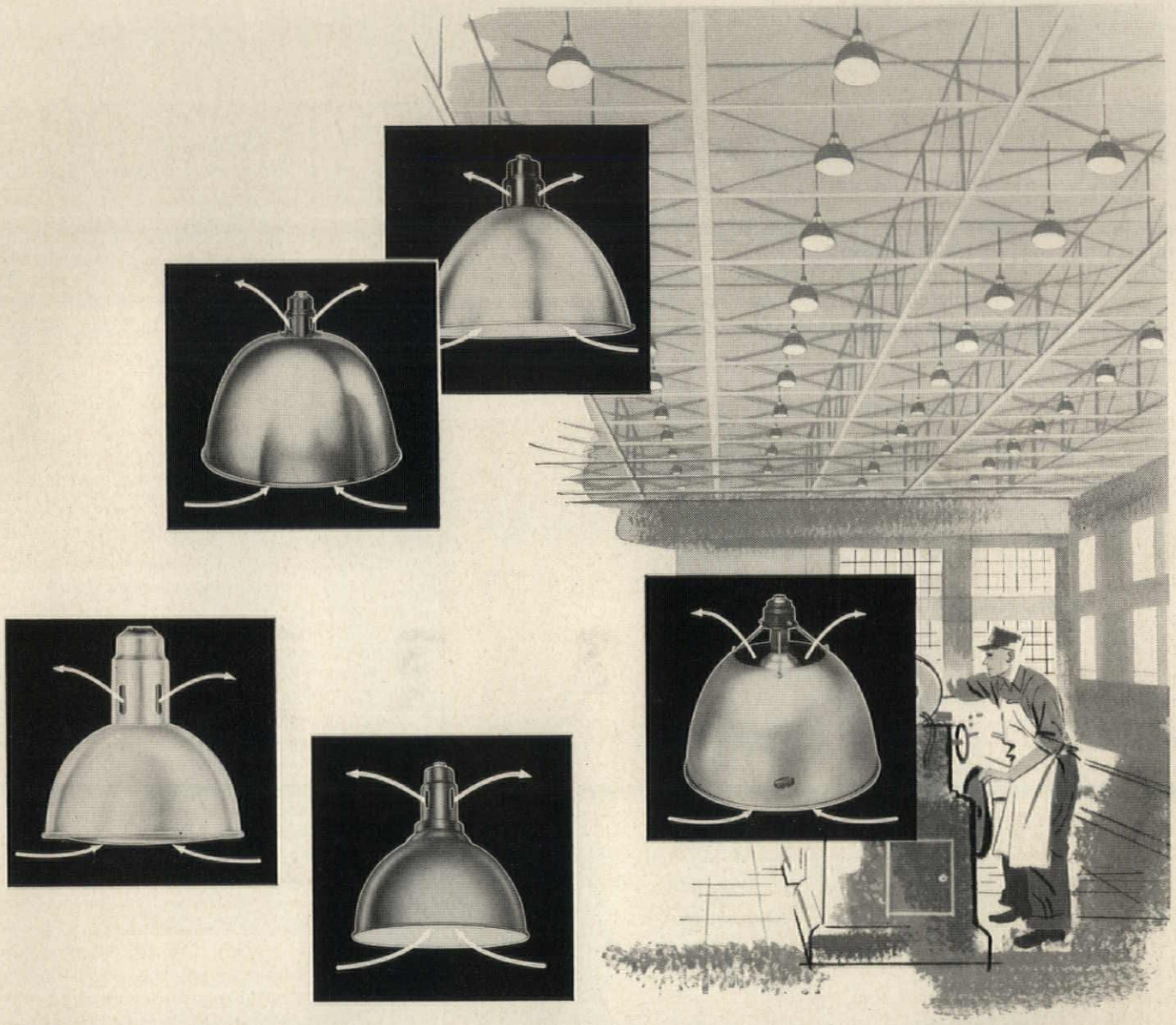

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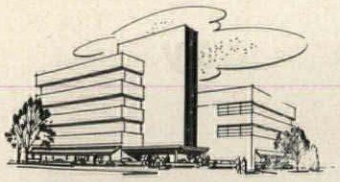

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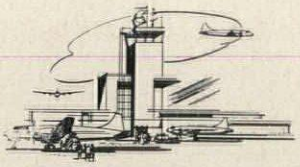

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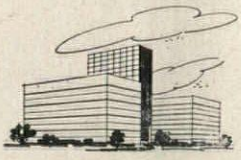

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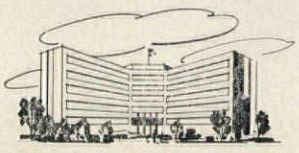

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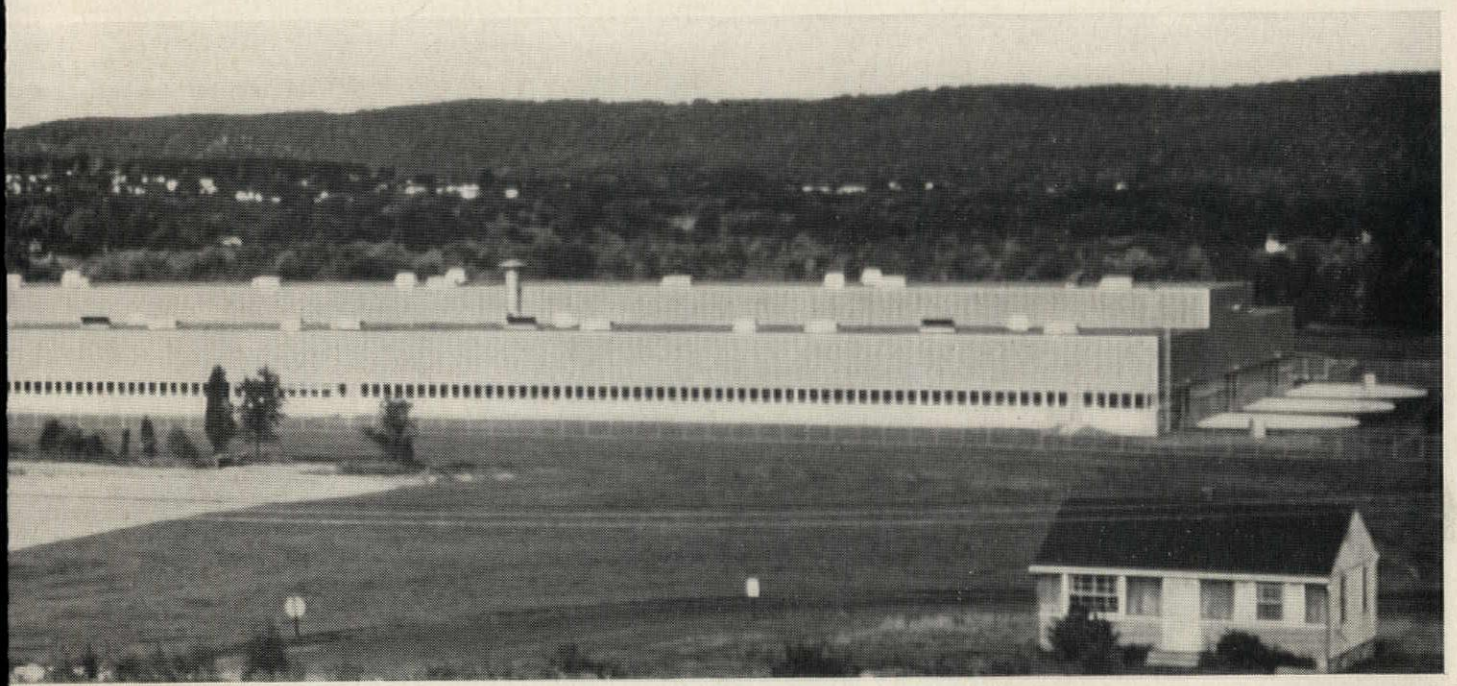

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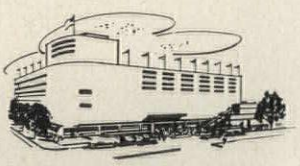

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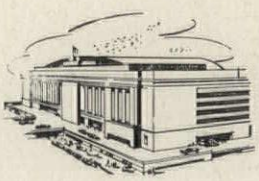
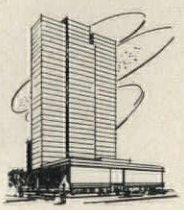


RAILROAD TERMINALS



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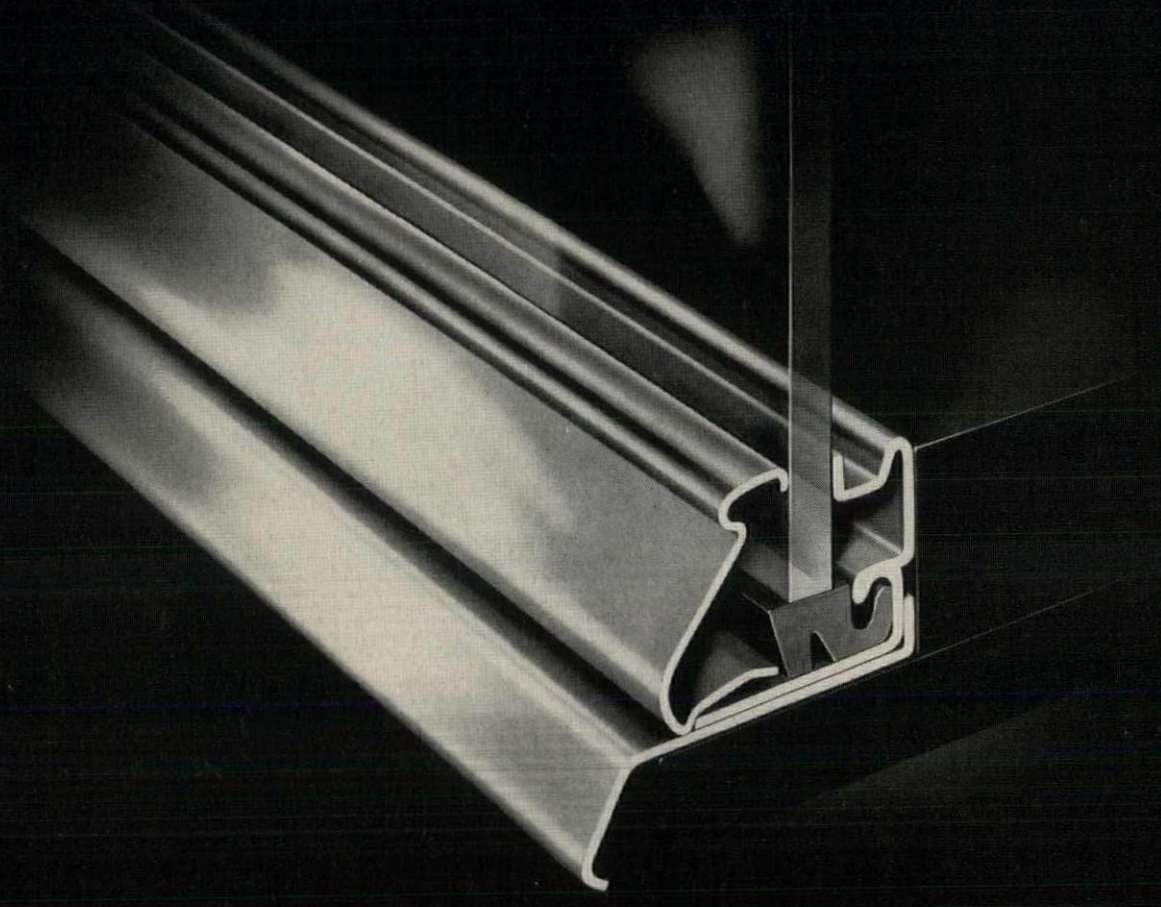
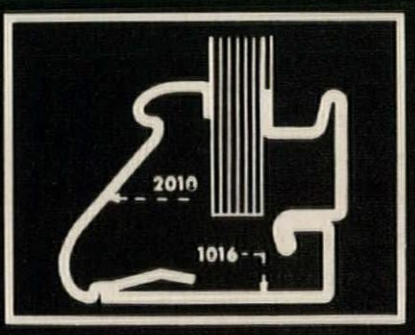


. . . illustrates the clean profile and sleek surface you'll find on all PITTCO members. For information about the complete line of rugged, versatile PITTCO Metal Products, see your PITTCO Store Front Metal Representative or refer to Sweet's Architectural File—Section 21.



75th ANNIVERSARY 1883—1958

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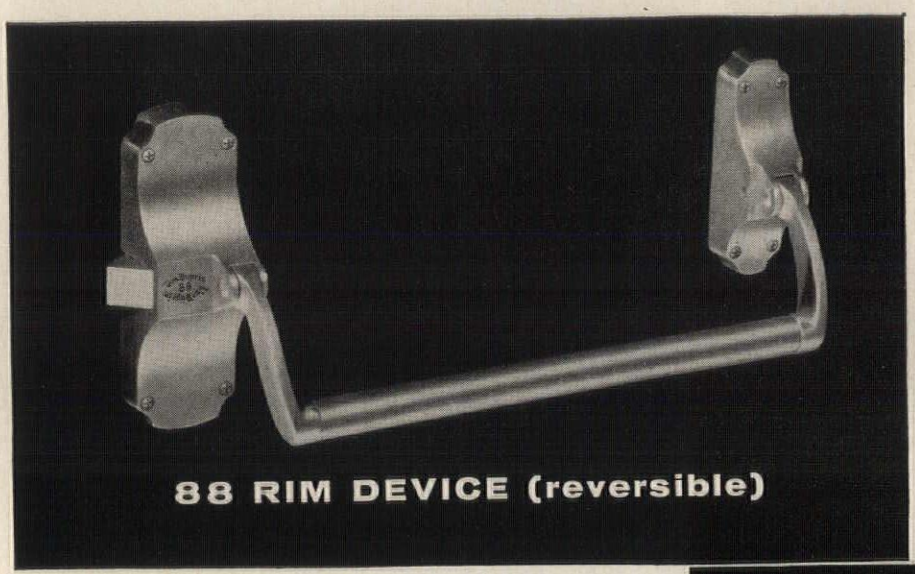
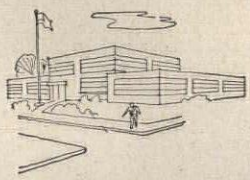


88 RIM DEVICE (reversible)

Von Duprin
EXIT DEVICES

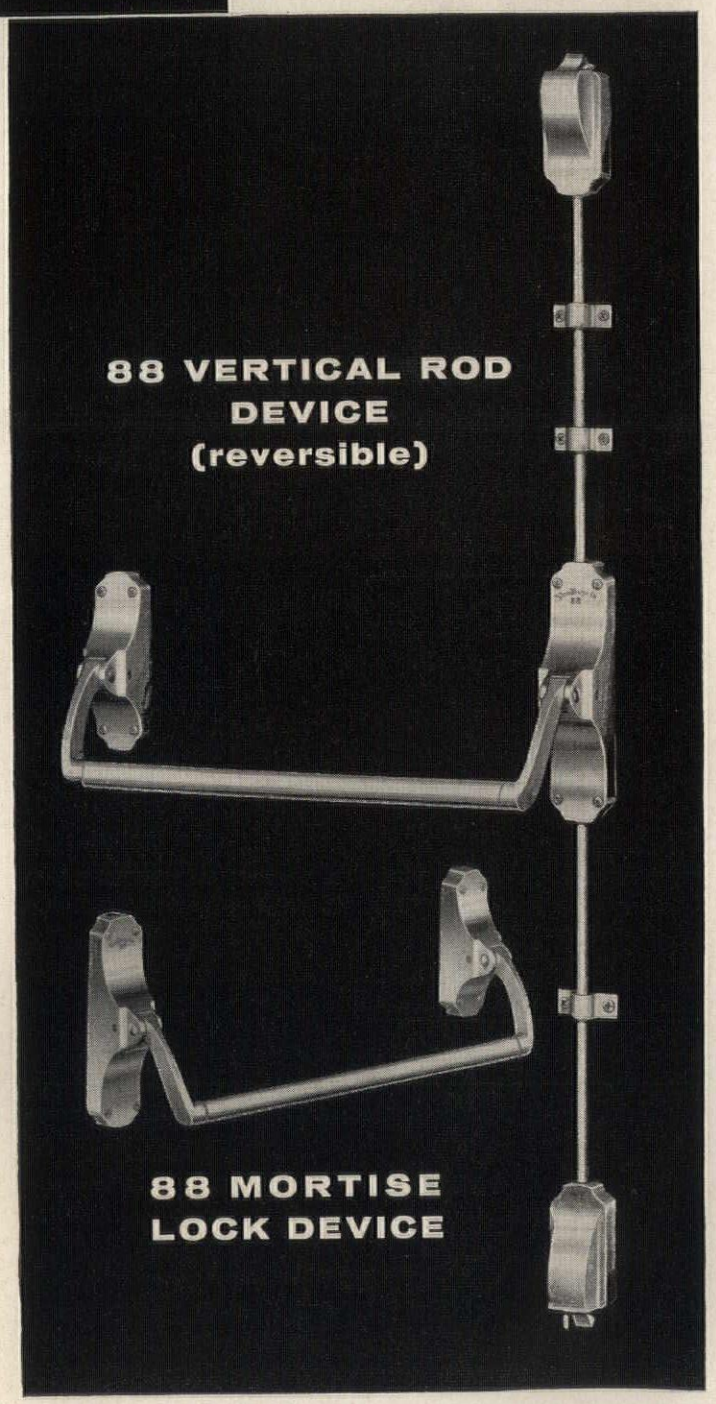
. . . the specification for "the safe way out"



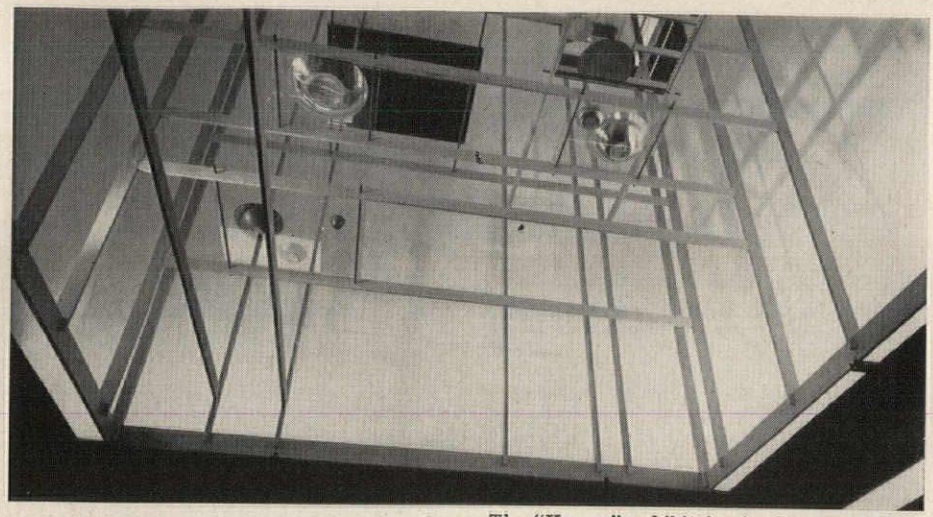
Day after day, year after year of service . . . standby safety in case of emergency: that's the story of Von Duprin exit hardware for schools. With over forty-five years of durable low-maintenance service, Von Duprin quality devices have earned the reputation of preferred exit hardware.

The 88 series, latest addition to the Von Duprin line, is a low-cost, high-quality device. The 88 meets today's demand for fine exit hardware on budget school plans. Lever arms, mortise locks and strikes and standard outside trims are drop-forged bronze or aluminum. All other formed members are pressure or precision castings, or stampings of brass or stainless steel.

VON DUPRIN DIVISION
Vonnegut Hardware Co. • Indianapolis, Indiana



showed a smoothly complex X-ray mechanism, Bell and Howell; and Burroughs a microfilm recorder-reader; Louis Becver of the General Electric Company a wall refrigerator; the Container Corporation of America a design laboratory. Exhibits from the United Kindom, France, Italy, Switzerland, Finland and Japan ranged from a Diesel locomotive (Great Britain) and an all-plastic and nylon Citroen car body (France) to an amethyst ring (Sweden), by way of furniture, bathroom fittings, kitchen- and tableware and cutlery.



The "Kosme" exhibit in the Swedish section

The United States' main exhibit was a pavilion in the grounds: one of R. Buckminster Fuller's geodetic frames of tubular aluminum sustaining its now familiar plastic canvas tent. It was perhaps unfortunate that the exhibit itself was so limited in appeal: methods of communication was the theme—radio and television, inter-office communication, factory communication, speaking equipment of all kinds, in large handsome cabinets and consoles. The only exhibits of a more general nature came from a few individual designers—in the "Industrial" section, and in the international furnishing section, where Charles Eames, George Nelson and Herman Miller showed office furniture, armchairs and tables.

A covered way led from the main hall to the grounds—useful on the day of pouring rain on which we visited the exhibition. Like several of the pavilions themselves, it was constructed with light pierced aluminum angle pieces, cut to modular dimensions, which proved both adaptable and effective.

A specimen bungalow designed on the "FEAL" system developed by Ing. Giovanni Varlonga for rapid construction to one- or two-story height was the only contribution to new building methods. It has a frame of steel-pipe columns filled *in situ* with concrete and a floor or roof slab formed with light steel joists. Wall infillings are hollow pumice concrete blocks, faced externally with aluminum; window frames and other fittings are aluminum; there are suspended acoustic ceilings. The house was used as a display of furnishings and equipment designed by Professor Ponti and others, which showed once again the "mood"—or mode—of the moment. But perhaps, at this stage, one should cease to seek in today's objects of "art decoratif"—of industrial design—the expression of an individual artist, and accept the fact that this fashion has become a *style*, to be accepted as such.

Complete Specifications for Lasting Floor Beauty

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Then use these complete, modern specifications for initial treatment and future maintenance, prepared by America's largest manufacturer of a complete line of floor maintenance materials and equipment.

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See 8-page Multi-Clean insert at end of Section 13 of Sweet's Architectural File. Also advertised in Producers Council Technical Bulletin.

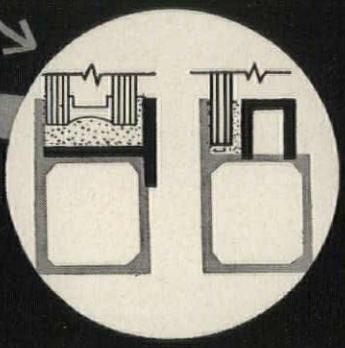
WHAT YOU SHOULD KNOW

about America's leading quality aluminum sliding glass doors

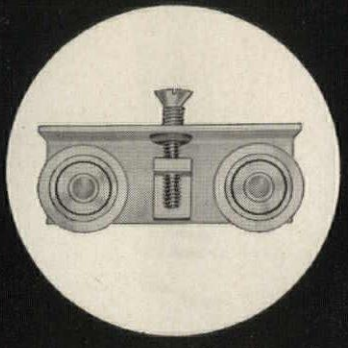
NUDOR offers 3 exclusive features

Three of Nudor's many stand-out features are found in no other door in Nudor's price range...

The unique bottom rail shield for weatherseal adjusts vertically allowing proper compression of Schlegel wool pile as well as providing a metal shield to divert weather elements.



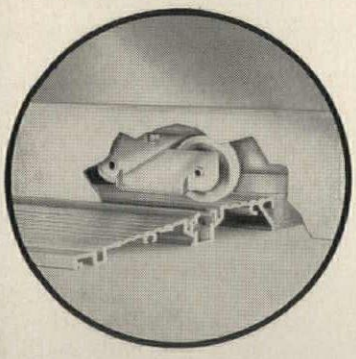
Adjustable screw fastened glass stops allow use of four different glass thicknesses: One inch insulation glass, three sixteenth's and seven thirty-second's crystal and one quarter inch plate. Glazing time is cut to the minimum.



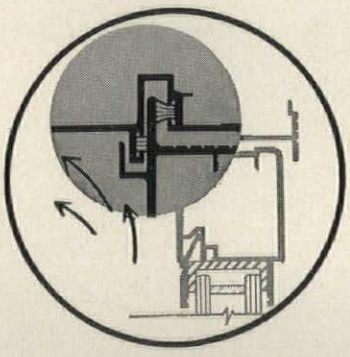
Tandem radial ball bearing nylon rollers that roll flush in line contact on a flat trackless threshold are fully adjustable, an important feature allowing a full true alignment of door with jamb.

The d'COR offers 3 exclusive features

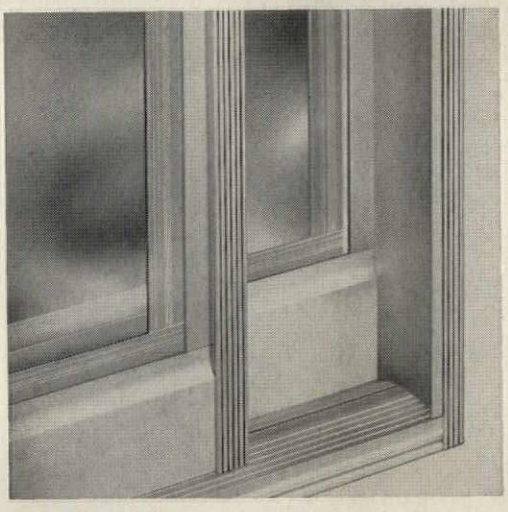
Three exclusive features, found in **no** other door, at any price, help make d'Cor America's finest door...



Absolutely flat trackless threshold has nothing over which to trip, offers flat surface for wide nylon-tired ball bearing rollers to roll on. This insures silent sliding action and greater roller wear resistance.



Solid barrier protected weathersealing, in a complete uniplaner system regardless of door adjustment, makes d'Cor absolutely draftproof. All wool pile is shielded against direct weather contact.



The stunning, classic beauty of d'Cor's styling is unmatched in sliding door design. Note that fasteners and top and bottom shock bumpers are concealed from view...truly, America's most beautiful sliding glass door.

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and economy, you can't beat

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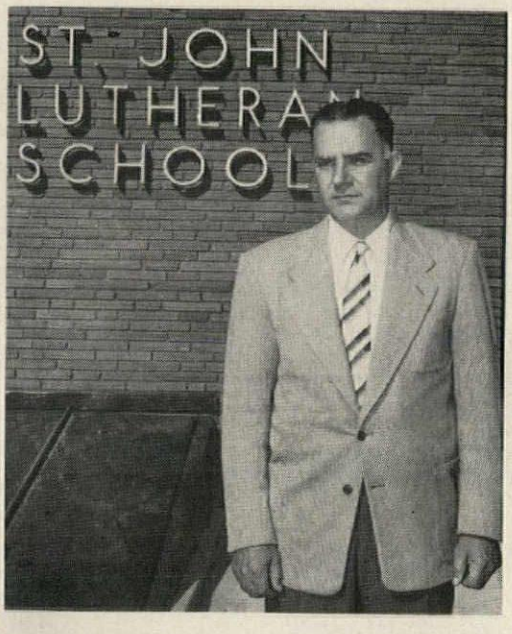
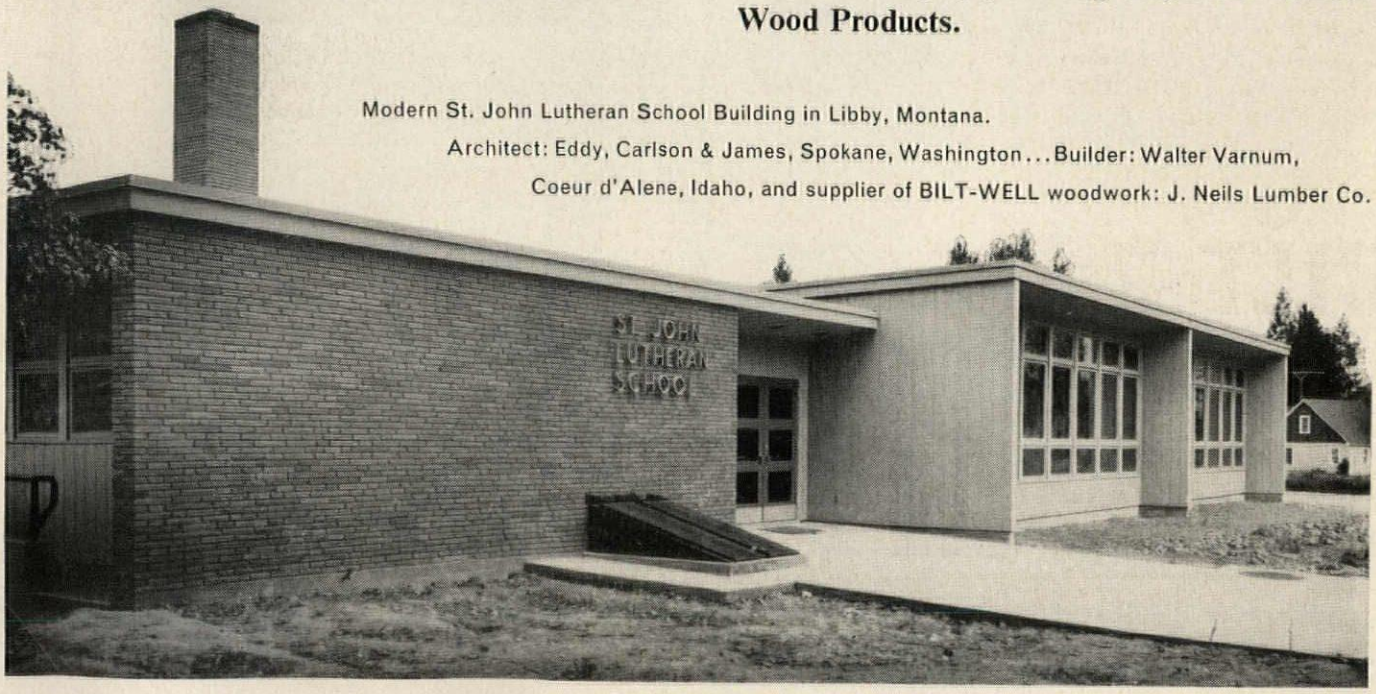


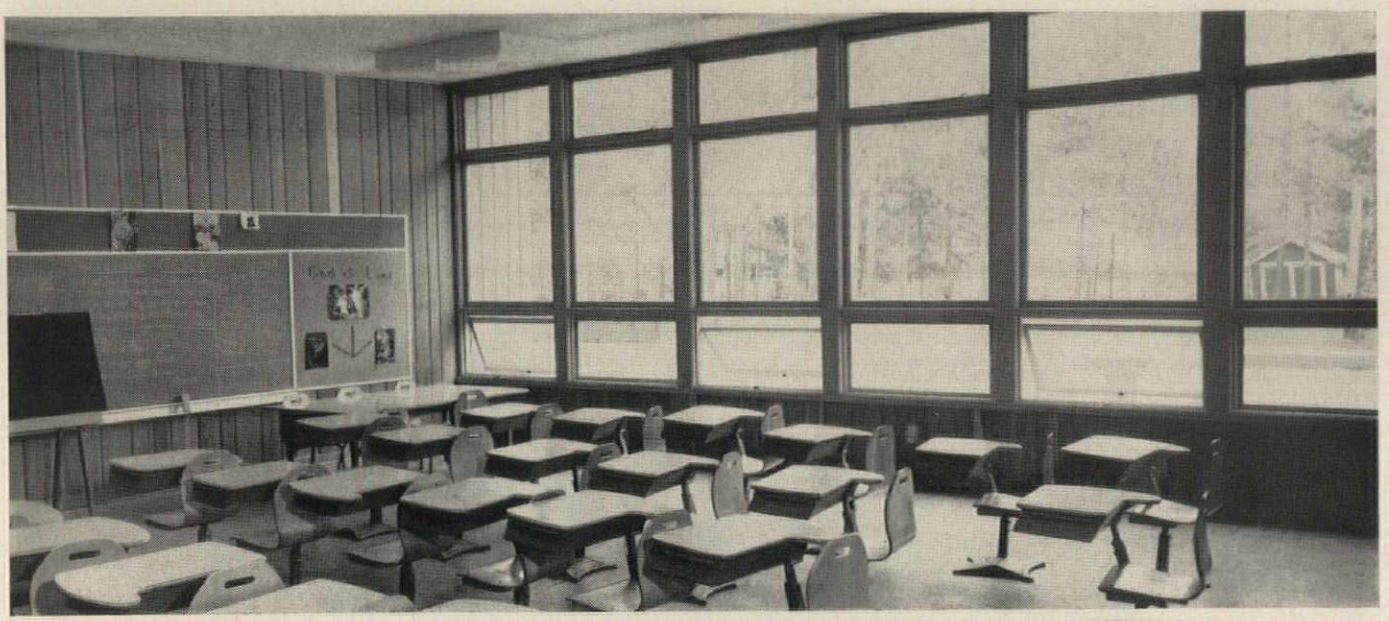
. . . says Howard E. Ahlskog, Building Committee Chairman of St. John Lutheran School, Libby, Montana

"Weatherproofness, appearance and economy were uppermost in our minds when we selected the design and materials for our new building. In using BILT-WELL Windows, we achieved our desire for a weathertight window made of wood which would match the modern architecture of the school. We gained economy in that we have well-fitting windows, that keep heat loss to a minimum...no condensation problems, either."

Whether you're designing a school, hospital or other institutional building, or a private residence, it will pay you to specify BILT-WELL Wood Products.



Modern St. John Lutheran School Building in Libby, Montana.
Architect: Eddy, Carlson & James, Spokane, Washington... Builder: Walter Varnum, Coeur d'Alene, Idaho, and supplier of BILT-WELL woodwork: J. Neils Lumber Co.



Natural light and controlled ventilation are provided for classrooms in Libby, Montana, school with BILT-WELL picture windows and BILT-WELL multiple-use awning windows.

Mr. Ahlskog is just one of many school building officials throughout the country who, working with the architect, found BILT-WELL Windows "right" in every respect for their requirements. Look into BILT-WELL's complete line of windows for *your* next school job.

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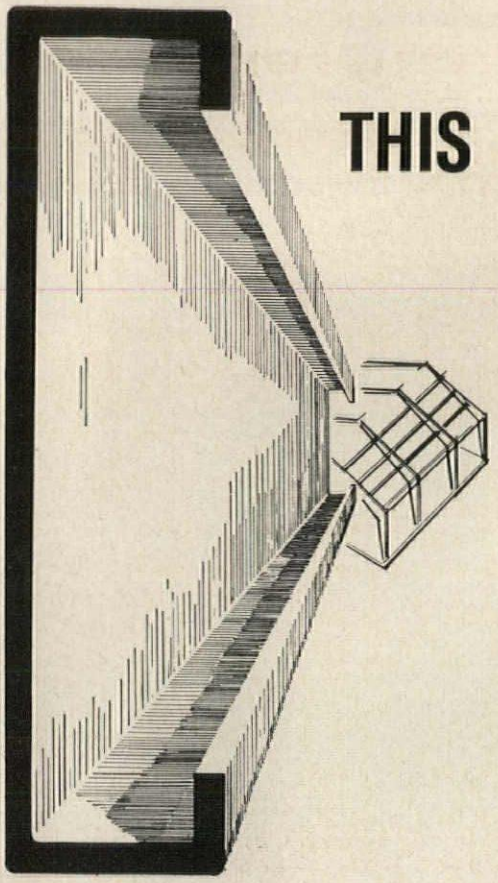

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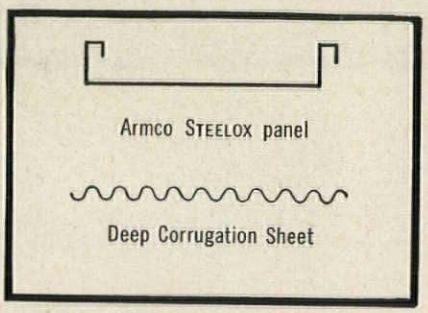
The concept of high strength/weight ratio of Armco Steel Buildings is also demonstrated in the roof covering materials. The sketches show the sections of Armco STEELOX®



Panels and Armco Deep Corrugation Sheets. Note how they are designed to provide high strength with light weight. The result is dollar savings when you design with these precision-fabricated buildings.

Consider, too, the flexibility of expression you gain through the more than 5,000 standard size units. You can integrate Armco STEELOX construction with plastic, masonry, wood, glass and other materials. Your client will appreciate advantages like noncombustibility, fast erection, simplicity of maintenance.

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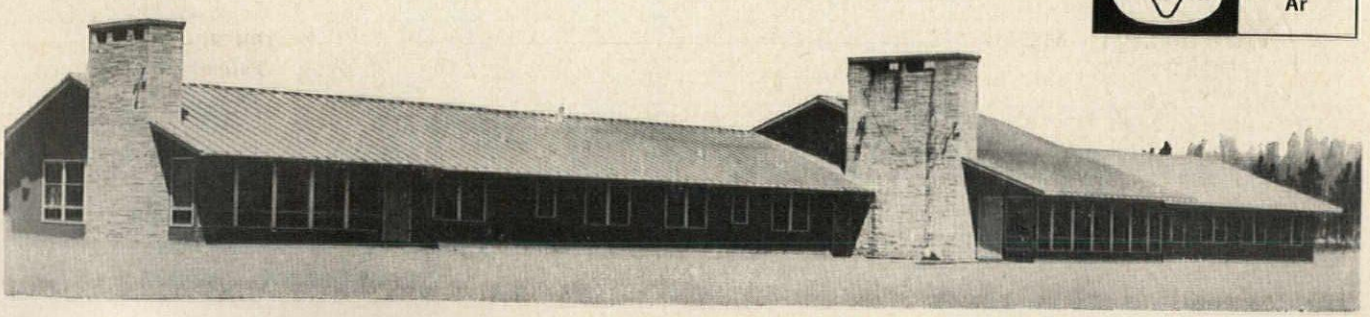

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continued from page 18

chitect can become a very important ingredient of the home building field if he packages design services.

Architects and homebuilders jointly—

What has to be known by both? The extent of services, pre-construction programming and planning details, design procedures, construction procedures, sales appeal and its procedures, and methods of cooperation.

The means of adding dignity and prestige to architects designing development housing was discussed in some detail. The new cooperative effort, it was decided, should be promoted through publications and public relations programs of both the A.I.A. and the N.A.H.B. Local A.I.A. and N.A.H.B. chapters are being urged to join the effort by extending invitations to each other's meetings. And perhaps the most significant decision to date is that joint meetings between the A.I.A. and N.A.H.B. should be held frequently.

One specific result of the meetings has been the N.A.H.B. decision to have the Institute assist in the planning of the second N.A.H.B. research house (the first was N.A.H.B.-staff-designed). This will be planned during 1958 and constructed in 1959 according to present scheduling. And N.A.H.B.'s past president, Thomas P. Coogan, has suggested that an annual distinguished service award be given by builders to "the architect who contributes most to the home building industry."

There appears to be mutual satisfaction with the progress made to date in this program of cooperation. Said Mr. Chatelain, when asked to comment on the effort:

"We have had several meetings with the home builders and we've come to some conclusions, working out certain things. But there are lots of points left for the future. Both sides seem satisfied with progress so far.

"All the builders present at the meetings are those already hiring architects, so a problem arises in how to get the message out to those *not* using architects. We will try to do this through our journals and the local associations and chapters.

"Shortly after the first of the year we will meet again to attack zoning, building regulations and other things in an effort to secure better cooperation and get a better housing package to the buyer."

Speaking for the homebuilders, John M. Dickerman, N.A.H.B.'s executive director, told ARCHITECTURAL RECORD: "The movement to develop broader areas of cooperation and understanding between home builders and architects has been given real momentum by the combined efforts of N.A.H.B. and A.I.A. We are confident that these efforts will be intensified by both organizations during 1958 and that the progress already achieved will be carried forward with consequent benefits to the home buying public in the form of greater value for the housing dollar. We have high hopes that the homebuilder and the architect will be working more closely in the months ahead to the benefit not only of themselves but of the buying public as well."

N.A.H.B. planned a design symposium in connection with its annual convention in Chicago in January. The panel emphasized methods of accomplishing "curb appeal," making the first big impression with a new house, and interior color and texture. Featured panelists were architects S. Robert Anshen of Anshen & Allen, San Francisco; Robert Alexander of Neutra & Alexander, Los Angeles; and Karel Yasko of Foster & Yasko, Wausau, Wis., chairman of A.I.A.'s committee on color treatment.

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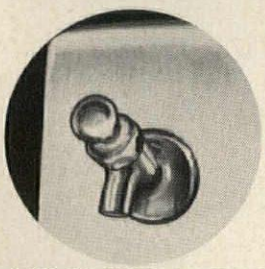

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Centered in a vast area of gleaming Terrazzo in a busy lobby, this Mosaic insignia turns a meaningful symbol into a handsome focal point—evidence again of the versatility of Terrazzo and Mosaic. No design is too difficult. The range of colors is virtually unlimited. And regardless of the amount of traffic, any design makes a lasting, shining example of ageless material at work in modern times.

Because of this durability, Terrazzo is specified time and again by architects who build for permanence. The smooth jointless surface is inexpensive to maintain, easy to clean, hard to stain. It requires no refinishing, no painting. Terrazzo is also less slippery than waxed surfaces, easier to walk on.

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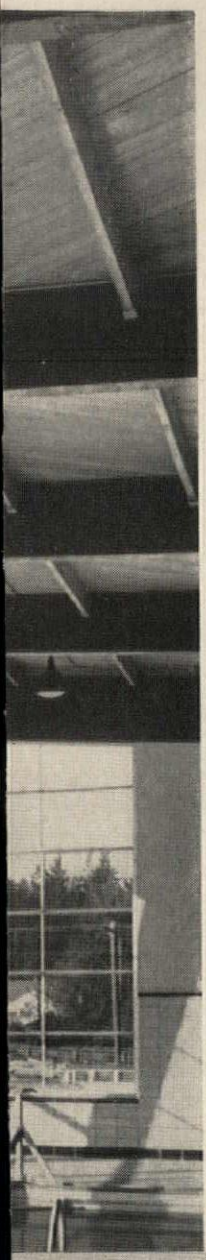
$350,000 INDOOR-OUTDOOR POOL

in OREGON CREATED with



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PANORAMIC Aluminum Door

Eight sets of upward-acting Panoramic aluminum doors —plus sixteen sets of matching aluminum-and-glass panels —are combined to make the West's newest pool!

Utilizing the unique design and construction advantages of The "OVERHEAD DOOR" Panoramic Aluminum Door to the fullest extent, Stevenson and Thompson have produced this outstanding swimming pool with the protection of an *indoor* pool . . . the free-and-easy aspects of an *outdoor* pool. At a flick of the wrist, each of The "OVERHEAD DOOR" Panoramic Aluminum Doors can be raised to let in the out-of-doors . . . or lowered to guard against weather!

The construction of The "OVERHEAD DOOR" Panoramic permits stiles and rails to be narrower yet far stronger than ever before. The clean, modern lines—and the clear glass panels—make the Panoramic suitable for the smartest installations. Little wonder, then, that The "OVERHEAD DOOR" Panoramic is being specified by more and more architects throughout the nation.

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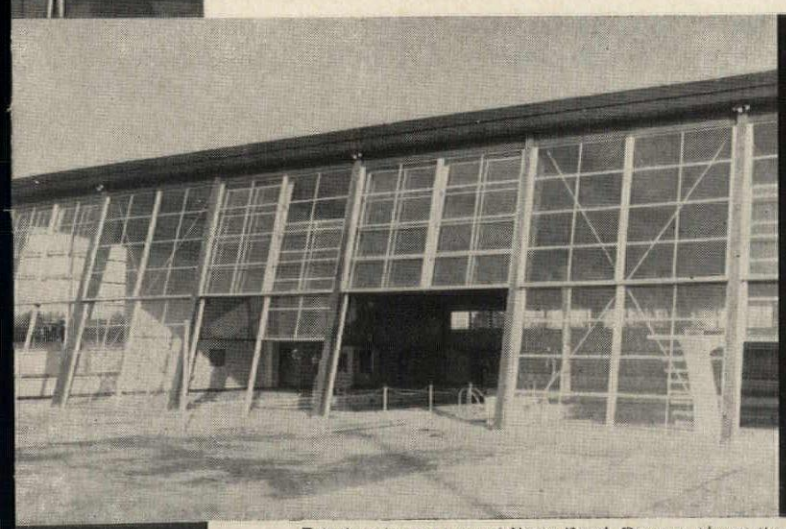


Exterior view of pool at North Bend, Oregon, shows the smart, modern lines created with The "OVERHEAD DOOR" Panoramic. Architect—Gordon Trapp; Engineers—Stevenson and Thompson; Contractor—A. T. Fox.

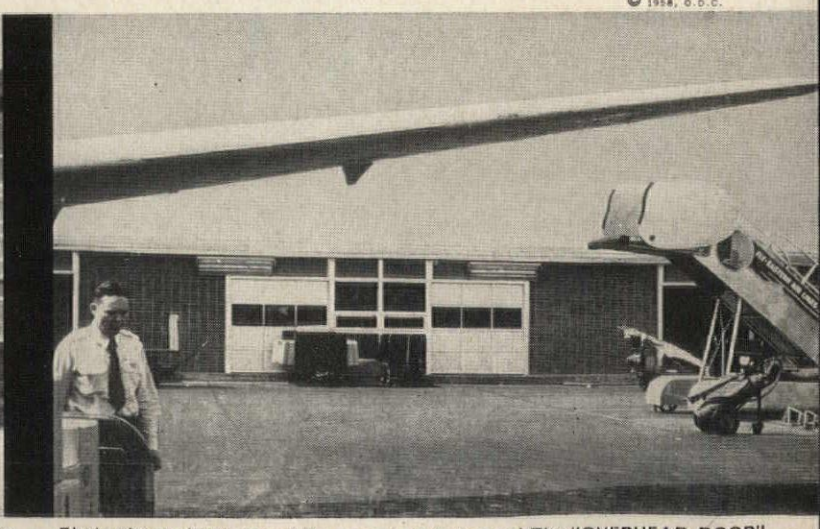


Photo above shows one of the many installations of The "OVERHEAD DOOR" Panoramic Aluminum Doors at Lee Terminal, Standiford Field, Louisville, Ky. Architects Arrasmith and Tyler utilized the attractive, lightweight Panoramic Aluminum Doors to combine modern beauty with fast, easy operation throughout the terminal.

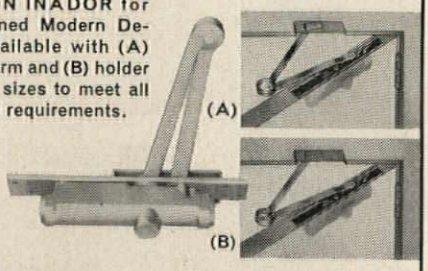
A continuing series of outstanding office buildings, schools, churches, hospitals, and industrial structures using NORTON DOOR CLOSERS.

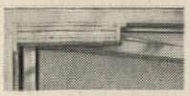
JOHN E. BRINK, A.I.A.—STATE ARCHITECT

New Kansas State Office Building Joins the Distinguished Roster of Norton Inador® Users

Complete Norton Line Meets Every Door Closer Need

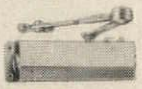
NORTON INADOR for Streamlined Modern Design Available with (A) regular arm and (B) holder arm...4 sizes to meet all standard requirements.





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

Norton Surface-type Closers are available for all installations where concealment is not essential.



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

An interior to match the dramatic simplicity of this imposing exterior called for painstaking attention to every detail, including door closers. The *Norton Inador* Closer was selected because it is so nearly invisible. Its compact mechanism being entirely concealed in a mortise in the top rail of the door, there is nothing to detract from the beauty of the door itself.

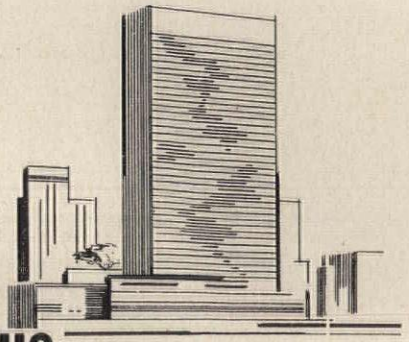
There is also no sacrifice of efficiency. Every *Norton Inador* is designed and built to last longer...require less maintenance and provide the long-range economies imperative in all public buildings. If, therefore, you now have such a building "on the boards," investigate *Norton Inador* while door closer specifications are still undecided. Write today for FREE copy of the new catalog on Norton's full line of concealed and surface door closers including important new models.

FOR ADDITIONAL MODELS, CONSULT NEW #57 CATALOG

NORTON DOOR CLOSERS

Dept. AR28 • Berrien Springs, Michigan

indoors



SHERRON STEEL MULTIPLE TELEPHONE BOOTHS SERVE BETTER, BLEND PERFECTLY WITH ANY DECOR

THIS SHERRON MULTIPLE BOOTH INSTALLATION IS ONE OF THE MANY IN THE UNITED NATIONS BUILDING . . . 60 BOOTHS IN ALL.

All over the country, architects are writing Sherron multiple booth installations into their specifications. The reasons for this choice are evident in the many advantages these booths offer. . . .

STAINLESS STEEL OR IN COLORS . . . they harmonize or contrast with any interior decor.

FIREPROOF . . . they eliminate all risks and hazards.

ACOUSTICALLY TREATED . . . they keep noises out and telephone conversations private.

ILLUMINATED AND VENTILATED . . . they make for easy vision and all-around comfort.

FREE STANDING OR RECESSED* . . . they fit readily into any architectural scheme.

EASILY CLEANED . . . they require a minimum of maintenance.

** Electrical installations in recessed booths present no problem ever. All servicing is done from within the booth itself — thanks to a convenient, hinged ceiling.*

Consult your telephone company . . . or write us for technical data.

SEE OUR CATALOG IN SWEET'S — INDEPENDENT

SHERRON METALLIC CORP., 1201 FLUSHING AVE., BROOKLYN 37, N.Y.

IN CANADA: W. S. GERRIE & ASSOCIATES, LTD., 66 RACINE ROAD, REXDALE (TORONTO)

On the Calendar

February

2-7 Winter General Meeting, American Institute of Electrical Engineers—Hotels Statler and Sheraton-McAlpin, New York City

4-6 13th annual technical and management conference, Reinforced Plastics Division, Society of the Plastics Industry Inc.—Edgewater Beach Hotel, Chicago

9-12 Eighth annual convention, Mason Contractors Association of America—Sheraton Park Hotel, Washington, D. C.

11-12 Meeting of Building Research Advisory Board; "think" session to focus on building industry problems and long range solutions—National Academy of Sciences—National Research Council Buildings, Washington, D. C.

13-15 Spring meeting, National Society of Professional Engineers —Michigan State University, East Lansing, Mich.

18-20 Conference on Church Building, sponsored by the Department of Church Building, National Council of Churches, and the Church Architectural Guild of America, in cooperation with the Detroit Council of Churches—Veterans Memorial Building, Detroit

22-26 Regional convention of the American Association of School Administrators—St. Louis

24-27 Annual convention, American Concrete Institute—Morrison Hotel, Chicago

26-28 National convention (first of three in 1958), American Society of Civil Engineers—New York City

March

5-6 Plastics in Building Illumination, Daylight and Electric Sources: Building Research Institute conference—University of Houston, Texas

8-12 Regional convention of the American Association of School Administrators—San Francisco

9-12 First National Lighting Exposition, sponsored by Lighting Lamps and Electrical Manufacturers Salesmen's Association—The Coliseum, New York

17-18 The Building Industry's Role in Urban Renewal; a joint national conference sponsored by ACTION and the National Housing Center—National Housing Center, Washington, D. C.

16-22 Nuclear Congress, sponsored by more than 30 organizations and coordinated by the Engineer's Joint Council, with management directed by the American Institute of Chemical Engineers—International Amphitheater, Chicago

17-21 Annual conference and exposition, National Association of Corrosion Engineers—San Francisco

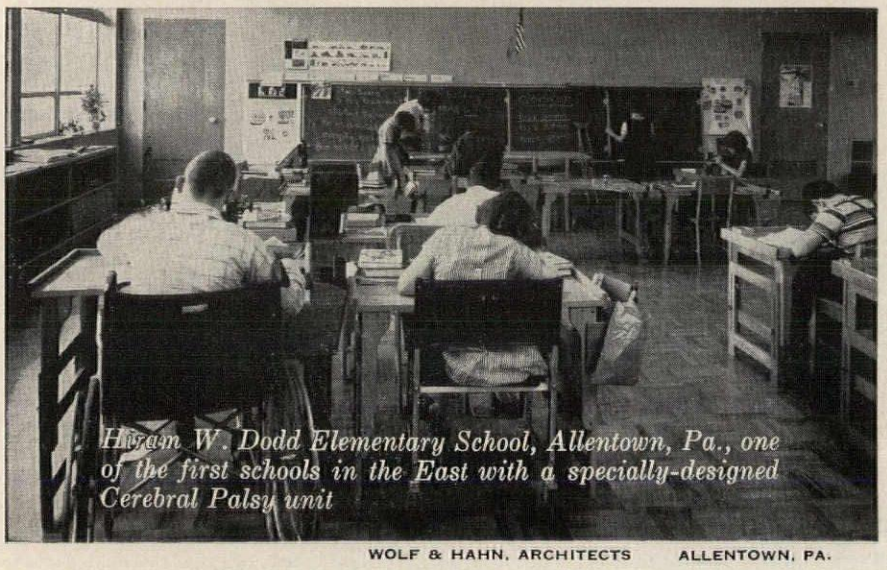
29ff Regional convention of the American Association of School Administrators—Cleveland; through April 2

April

15-17 Sixth annual welding show sponsored by the American Welding Society—Kiel Auditorium, St. Louis

17-19 South Atlantic A.I.A. Regional Conference—Municipal Auditorium, Sarasota, Fla.

21-22 Seventh annual meeting, Build-

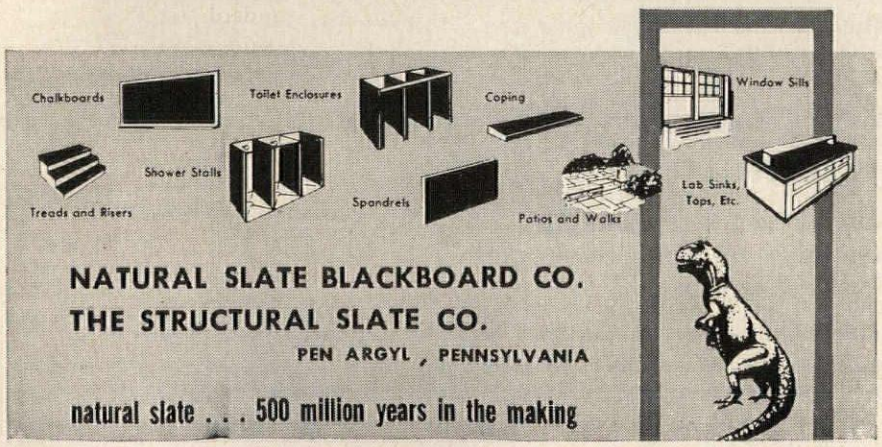


WOLF & HAHN, ARCHITECTS ALLENTOWN, PA.

NATURAL SLATE CHALKBOARDS

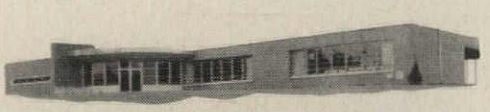
. . because young eyes deserve the best!

The Hiram Dodd School is truly a step forward in education for the handicapped. Besides regular classroom space, it contains a complete, specially-equipped wing for its group of Cerebral Palsy students. And as forward-looking as the thinking behind this new school is the choice of natural slate chalkboards for every classroom, because of all chalkboards, slate communicates best. Only white chalk on slate produces the desired high contrast necessary to permit young eyes to see and grasp the written message instantly. Easy to clean . . . virtually indestructible . . . slate has the lowest annual cost of any other chalkboard. For timeless beauty, durability, readability, *specify slate quarried in Pennsylvania.* Inquiries welcomed on specific properties of slate.



TOPS IN SCHOOL HEATING . . .

Comfort

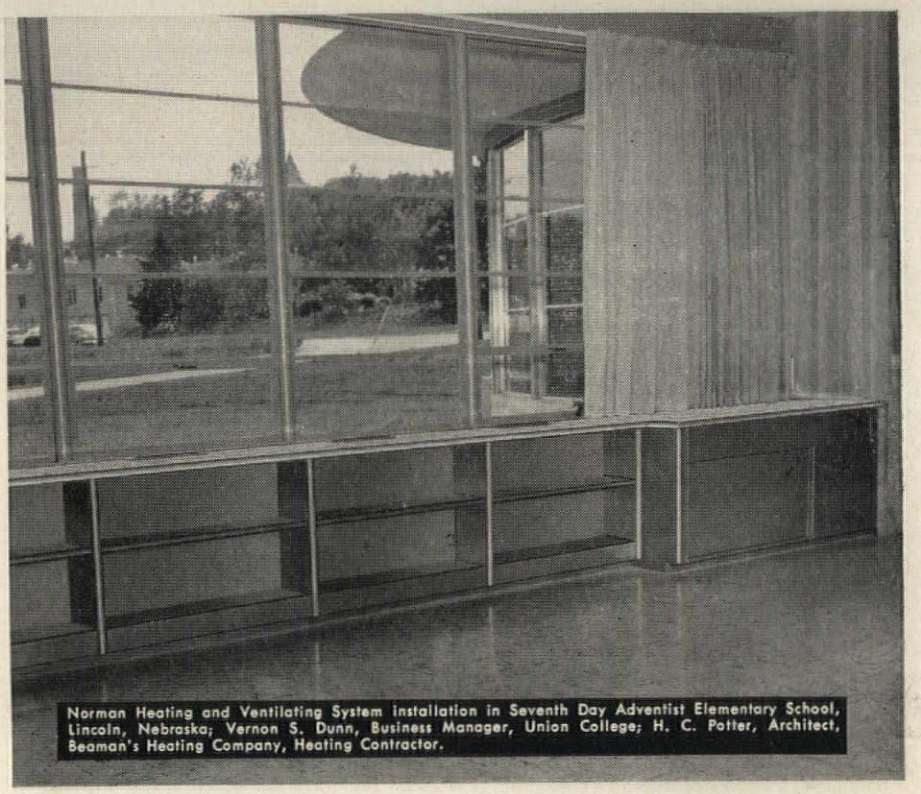


THROUGHOUT THE SCHOOL

Norman Three-Sixty®

Gas-fired Unit Heaters Radial-Flo models circulate warm air outward through full 360° circle to form an umbrella of comfort. Ideal for corridors, vestibules, large rooms with normal ceiling heights. Down-Blo models provide quick, direct heating for gyms, auditoriums and other high-ceiling rooms.

Norman Three-Sixty Unit Heaters feature *patented sealed combustion system* — 100% outside air is used for combustion and all flue and combustion products are removed outside under positive pressure.



Norman Heating and Ventilating System installation in Seventh Day Adventist Elementary School, Lincoln, Nebraska; Vernon S. Dunn, Business Manager, Union College; H. C. Potter, Architect, Beaman's Heating Company, Heating Contractor.

Norman Three-Sixty overhead heating unit in Seventh Day Adventist Elementary School, Lincoln, Nebraska; Vernon S. Dunn, Bus. Mgr., Union College; H. C. Potter, Architect, Beaman's Heating Co., Heating Contractor.

Norman Heating and Ventilating Systems

Norman Heating and Ventilating Systems for the classrooms: Norman Three-Sixty Unit Heaters for corridors, lobbies, vestibules, cafeterias and multi-purpose rooms; and Norman Southerner horizontal furnaces for school offices, restrooms, gymnasiums and auditoriums can be combined for Comfort . . . Throughout the School. Norman Heating and Ventilating Systems Offer Triple Economy:

Economy of Installation . . . Prewired and partially assembled, this complete classroom package saves installation time . . . cuts costs of expensive boiler rooms, chimneys, tunnels, revamping of central systems.

Economy of Use . . . Supplies heat evenly, when it's needed, and maintains uniform temperature without wasting heat. No need to heat entire school when only a few rooms are being used for evening meetings.

Economy of Maintenance . . . sturdy construction, finest materials, and the latest A. G. A. approved controls — standard to the heating industry — assure extra years of trouble-free performance.

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We want to learn more about Norman Products for School Comfort. Please send complete information to:

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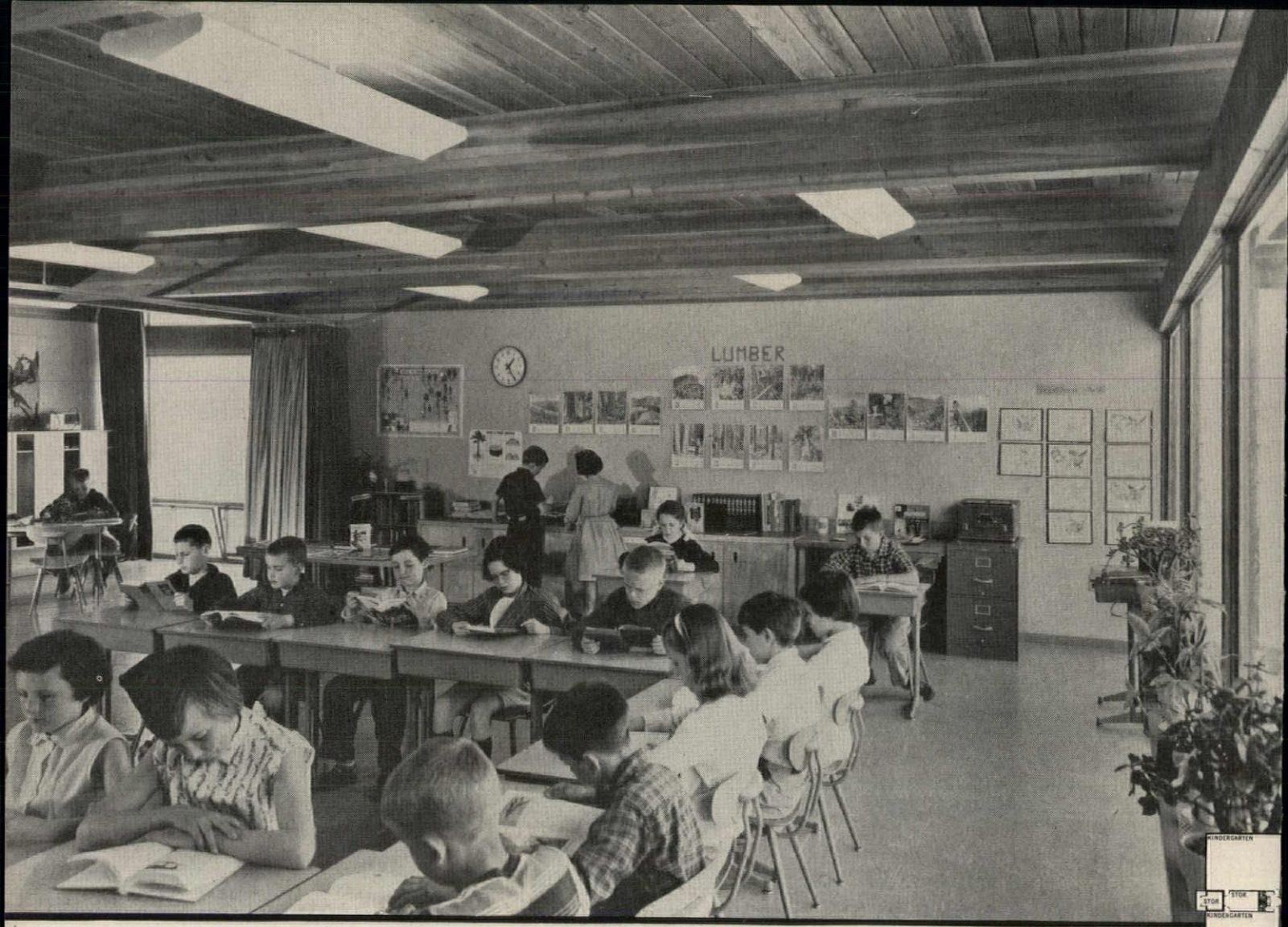
See Sweet's Arch. File 29F, American Sch. and Univ. Annual C-1/no

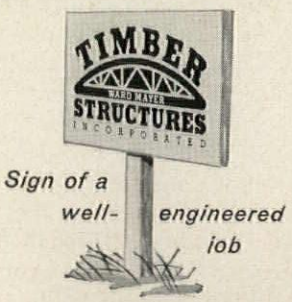


Left: Play area shelters students while waiting to board buses.

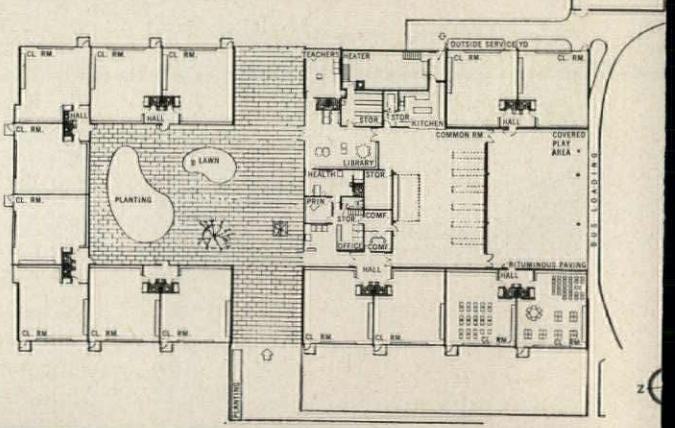
Above: Typical classroom of 938 square feet. Each classroom has its own outside entrance.

Right: School is built around a paved courtyard, with U-shaped covered walkways joining the two wings. Kindergarten has its own separate wing at the top.

Below: Common Room serves as both auditorium and cafeteria. Kitchen is adjoining at the far end.



Sign of a well-engineered job



JOB DATA

Exterior Walls: Brick, with concrete block in service area, cypress siding for playroom.

Interior Walls: Plastic coated coverings in classrooms, Common Room and halls.

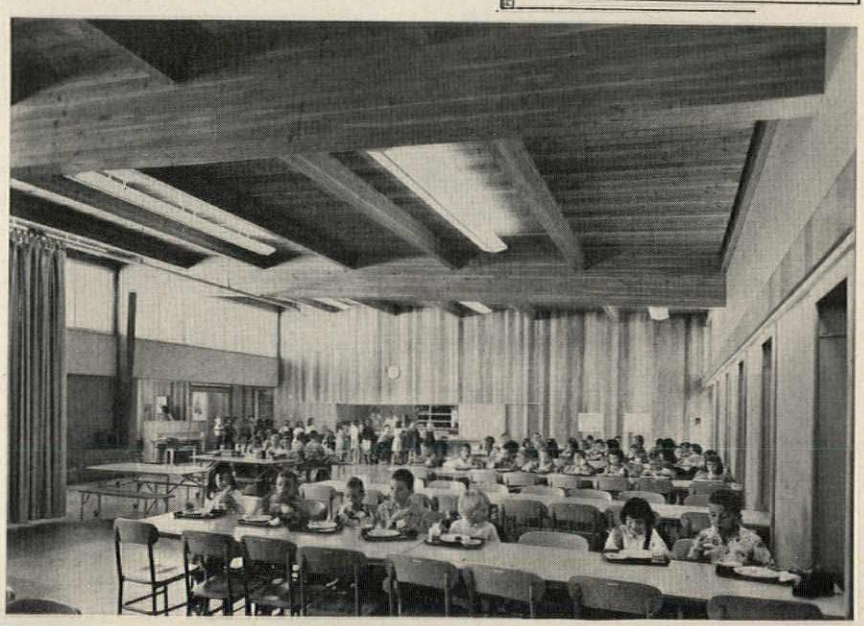
Heating: Hot water radiant panel system, zoned and thermostatically controlled.

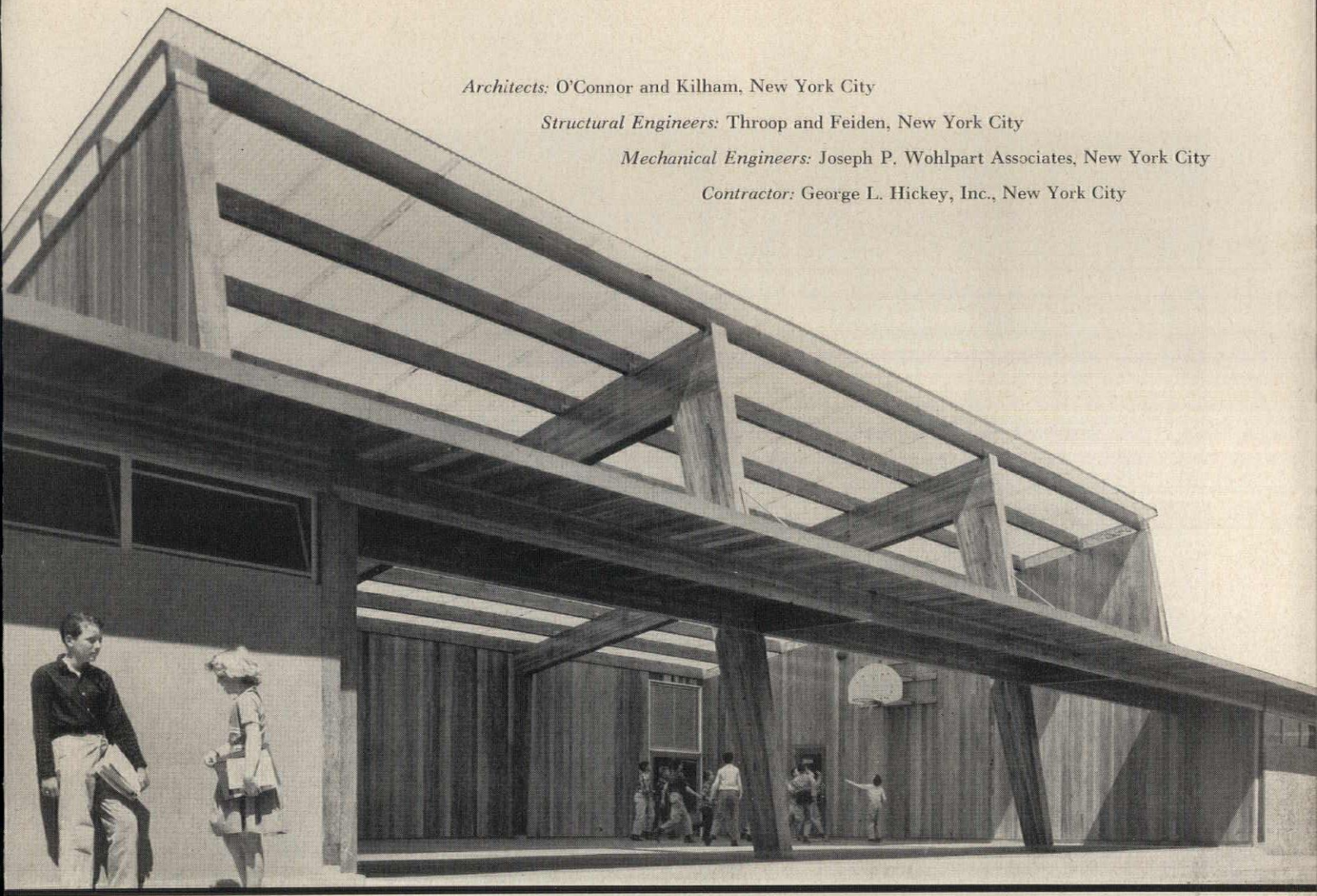
Ventilation: Exhaust fans in classrooms, toilet rooms and kitchen. Tempered air supply units in Common Room.

Lighting: Semi-indirect fluorescent fixtures.

Floors: Vinyl asbestos tiles on concrete slab over insulated concrete fill and moisture barrier.

Roof Surface: Translucent corrugated panels over playroom and covered walks. Built-up tar and felt with white graveled surface over remainder of building.





Architects: O'Connor and Kilham, New York City

Structural Engineers: Throop and Feiden, New York City

Mechanical Engineers: Joseph P. Wohlpart Associates, New York City

Contractor: George L. Hickey, Inc., New York City

BEAUTY BY THE ROOM...

AND 31% LESS COST PER PUPIL

at Tokeneke Elementary School, Darien, Connecticut

With a growing crop of young America clamoring for learning and taxpayers demanding the greatest value from their outlays, this school is worthy of serious study.

It is a typical case history in engineered timber construction in which the natural beauty of the glulam timber structural framing adds obvious charm to each room. Less apparent but equally important is the economy of construction which resulted in a per-pupil cost 31% less than the state average. This saving was made without sacrifice of permanence, mechanical equipment or facilities for teaching.

Glulam beams were spaced at 7'-9" over classroom sections, and covered with heavy timber decking which is exposed in natural finish as ceilings. The Common Room, which serves as auditorium and cafeteria, and the play area are framed with glulam beam-and-column bents spaced at 21 feet.

All timber members were produced under rigid quality controls, precision fabricated to full size pattern, and delivered ready for fast assembly and erection.

Average cost per square foot is $14.40. Per-pupil cost is $760, compared to a state average of $1105.

A new brochure, "Timber Framing for Modern Schools", illustrates outstanding school applications of engineered timbers and gives preliminary design data. Get your copy from the nearest Timber Structures representative, or write us directly.

TIMBER STRUCTURES, INC.

P. O. BOX 3782-A, PORTLAND 8, OREGON

Offices in Ramsey, N. J.; New York City; Boston; Philadelphia; West Hartford; Cleveland; Charlotte; Chicago; Centerline, Mich.; Kansas City; St. Louis; Minneapolis; Des Moines; Wichita; Memphis; Dallas; Houston; Birmingham; Seattle; Spokane; Denver.

Local Representatives throughout the United States and Canada

TIMBER STRUCTURES, INC. OF CALIFORNIA

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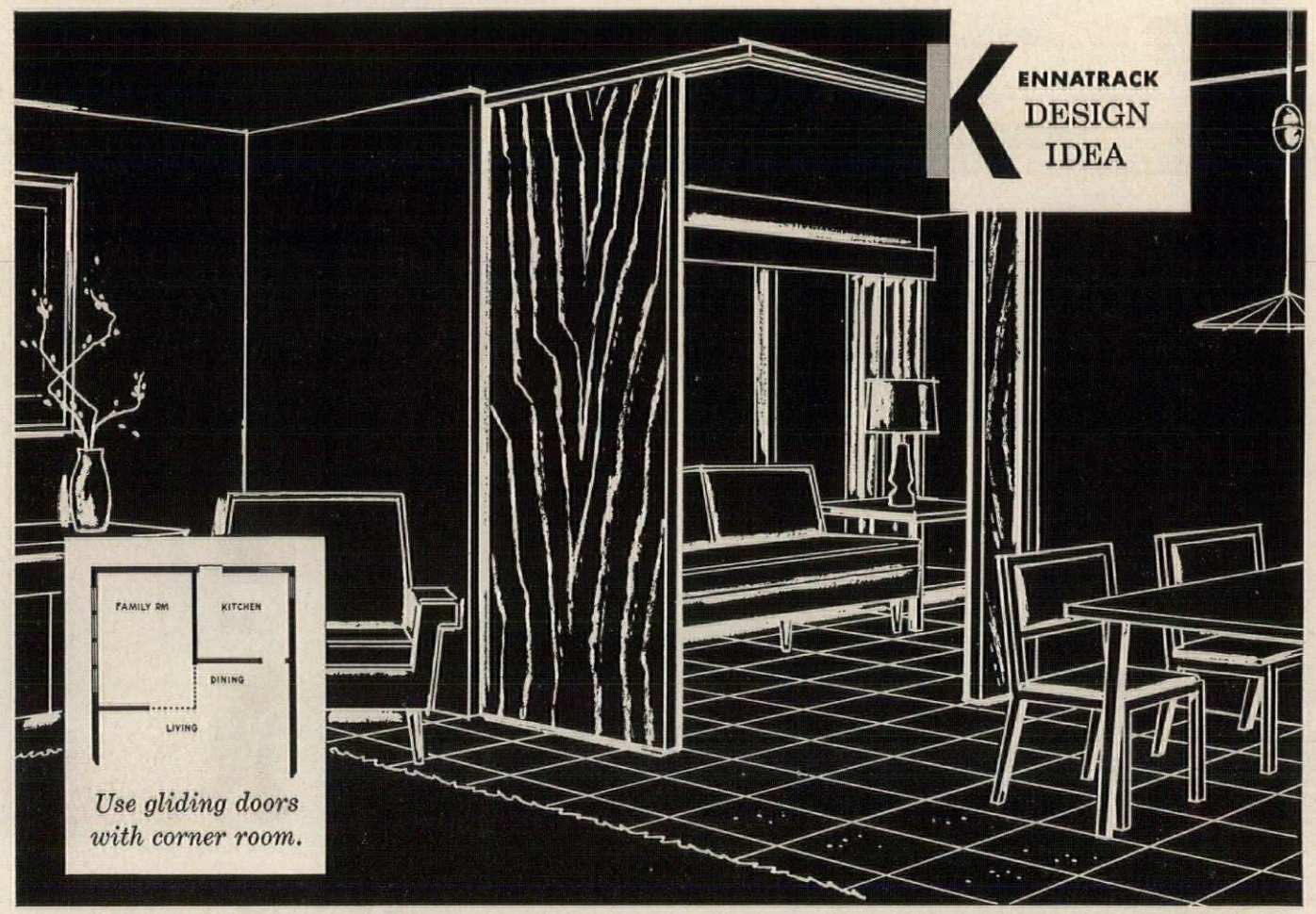


FLEXIBLE FLOOR PLAN AND EXTRA SPACE

with gliding door hardware by Kennatrack

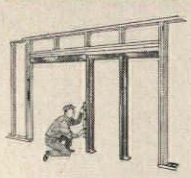
Kennaframe pocket door installations provide added useful living area

Here's a new space-making design idea that helps provide the flexibility needed in today's homes. Gliding doors close off this corner room for privacy, and—at the touch of a finger—glide quietly into the wall on Kennatrack hardware, giving the living room a brand new dimension of roominess.

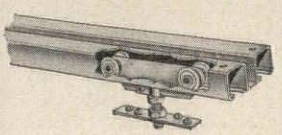
This gliding door installation provides valuable extra floor space near the door opening for furniture placement, or other family living requirements.

Gliding doors can be used in a variety of ways—for wardrobes, stair well closets, or as room-dividers—to save premium space all over the home. Space-making ideas are continually being developed by a full-time staff of designers and engineers at Kennatrack, the world's largest exclusive manufacturer of hardware for gliding and folding doors.

For quiet, free-moving hardware, always specify Kennatrack Gliding Door Hardware—the complete line that is guaranteed to give trouble-free performance for a housetime. For complete information see Sweet's catalog (18d/Ke), or write for free Kennatrack catalog of gliding and folding door hardware.



KENNAFRAME. Original, patented all-steel frame with aluminum track, for fast, easy pocket door installations.



KENNATRACK is sound-conditioned; only Kennatrack offers hangers with eight floating nylon wheels.

For quiet and for quality

KENNATRACK®

SOUND-CONDITIONED GLIDING DOOR HARDWARE

Kennatrack Corporation, Elkhart, Indiana

A subsidiary of Ekco Products Company

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Weldwood birch paneling for walls and built-ins and Weldwood Chalkboard. Westover Elementary School, Stamford, Conn. Arch: William F. R. Ballard.

How wood paneling makes schools brighter –keeps the tax load lighter

In schools like Stamford's Westover Elementary (above) learning comes a little more pleasantly for the youngsters these days. Yet the taxpayers will save money. Here's why:

The school's planners used Weldwood real wood paneling on walls and built-ins. The reasons: 1. Weldwood Paneling cheers up any room. 2. It keeps maintenance costs low. Smudges and stains are easily removed and there's no need for periodic repainting and repapering.

Weldwood Paneling, in types and finishes to meet virtually every decorating plan, is guaranteed for the life of the building. Like Weldwood Fire Doors and Kalistron wall covering (below) it can help you include long-range savings as an important feature of your school building or remodeling designs.

FREE WELDWOOD SCHOOL PLANNING BOOKLET. "Weldwood Products for School Construction and Remodeling," has 16 pages of photographs showing low-maintenance Weldwood Products installations in schools. Write for your copy and see Weldwood Products at any of our 111 branches. We will be glad to have a Weldwood Architects' Service Representative consult with you—no obligation. United States Plywood Corporation, Dept. AR 2-58, 55 W. 44th St., N. Y. 36, N. Y.

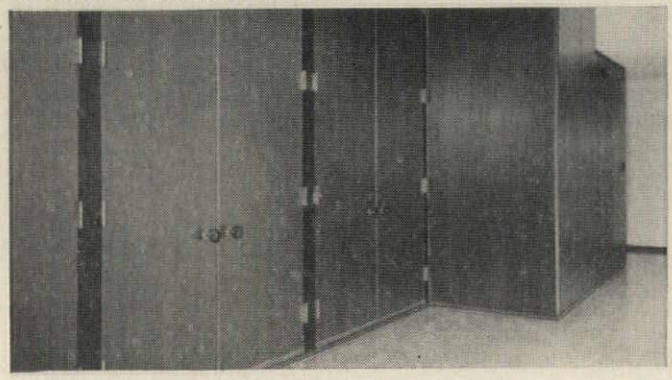
Weldwood®

PANELING • CHALKBOARD • KALISTRON • DOORS

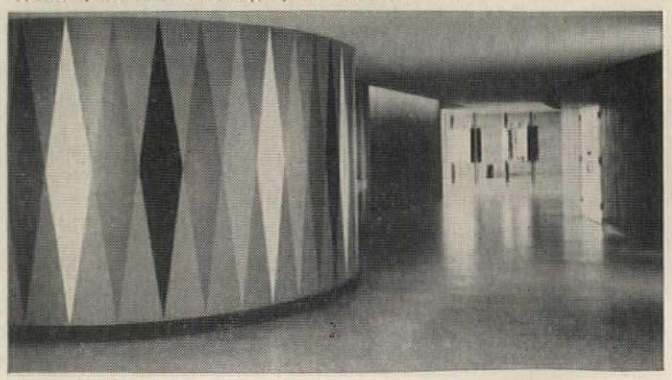
UNITED STATES PLYWOOD CORPORATION

In Canada: Weldwood Plywood, Ltd.

Weldwood Fire Doors with African mahogany faces in the Slosberg Music Center, Brandeis University, Waltham, Mass., stop transmission of destructive, suffocating heat as well as fire itself. Doors are guaranteed never to warp, twist, or get out of line, thanks to inert, incombustible Weldrok® mineral core. Architects: Harrison & Abramovitz.



These Colorful walls of scuffproof Weldwood Kalistron® in the Central School, Hudson Falls, N. Y., never need painting. Color fused to the *underside* of a transparent vinyl sheet is protected from scratches and smudges. Cleans easily. Comes in 35 colors and different textures. Architects: Sargent, Webster, Crenshaw & Folley, Syracuse, N. Y.



ing Research Institute—Shoreham Hotel, Washington, D. C.

28ff Annual meeting, A.I.A. Board of Directors—Washington D. C.

Office Notes

Offices Opened

Jeffrey Ellis Aronin announces the opening of a new office for the practice of architecture at 101 Park Avenue, New York 17, New York.

Richard S. Morehouse and John O. Chesley Jr. announce their partnership for the practice of architecture, with offices in the Professional Building, 114 Waltham Street, Lexington, Mass.

Harold E. Noelker and John M. Hull III announce the opening of an office for the practice of architecture at 754 Lincoln Way East, Chambersburg, Pa.

D. K. Ritchey Associates Architects announce the opening of architectural offices in 2007 Clark Building, Pittsburgh 22, Pa.

Albert Sigal Jr. and Milton F. Johnson have formed a partnership for the practice of architecture, with offices at the Stanford Professional Center, Palo Alto, Cal.

Willard Thorsen, Architect, has announced the opening of his new firm at 124 South Fourth Street, Minneapolis.

Firm Changes

Adolph R. Scrimenti, James A. Swackhamer and J. Frank Perantoni announce the formation of a new partnership to continue the practice of architecture, succeeding the former firm of Jay C. Van Nuys Associates, as Scrimenti, Swackhamer and Perantoni, Architects, successors to Jay C. Van Nuys, Architect, 205 West Main Street, Somerville, N. J.

New Addresses

D'Earcy P. Davis Jr., Architect and Engineer, 111 Newman Avenue, Harrisonburg, Va.

Philip Johnson Associates, 375 Park Avenue, New York 22, New York.

Adrian Wilson and Associates, Architects and Engineers, 816 West Fifth Street, Los Angeles (Las Vegas, Ankara, Manila, Nagoya, Tokyo and San Francisco offices continue).

Basic Research in Architecture A.I.A. Conference Subject

A conference to identify neglected areas of basic research in architecture will be sponsored by the American Institute of Architects in Washington next fall. Funds for such a conference have been granted to the A.I.A. by the National Science Foundation.

Walter E. Campbell of Boston, chairman of the A.I.A. Research Committee, heads a steering committee composed of "authorities in fields most directly related to architectural requirements": Dr. Robert King Merton, Columbia University sociologist; Dr. Albert H. Hastorf, Dartmouth College psychologist; Dr. C. P. Yaglou, Harvard University School of Public Health; and Professor Myle Holley, M.I.T. structural engineer.

The A.I.A.'s three-day workshop conference is reported by Mr. Campbell to be the result of initial investigation by the A.I.A. Department of Education and Research, which will also coordinate the program with the forthcoming meeting on building science research to be conducted by the Building Research Institute.

A.I.A. effort will be "to determine the relationships of the physical, biological and social sciences in the problems of optimum created environment for human activities."

What...an industrial idea from a barbecue pit?

In designing this barbecue pit and others like it at Dade Battlefield Memorial, Bushnell, Florida, the architect faced many of the problems found in industrial design.

For example, the building material for the roof had to be tough, durable, low-cost, practically maintenance-free—and, at the same time, present an attractive appearance.

The solution? "K&M" Corrugated Asbestos. It gives each pit a roof that won't burn, rust, or rot, or need protective painting. In fact, it requires practically no upkeep. It stands up under weather and other conditions where ordinary building materials fail. And—it goes up quickly and inexpensively with ordinary carpenter's tools. There may be an idea here for you.

"K&M" Corrugated Asbestos fits 101 industrial applications. Makes sturdy roof and curtain walls. In addition, it's often approved for minimum fire insurance rates.

Write to us today for more information on "K&M" Corrugated Asbestos.

KEASBEY & MATTISON
COMPANY • AMBLER • PENNA.

K·M
BEST IN ASBESTOS

Florida Southern College, Lakeland, Florida • Architect: Frank Lloyd Wright •

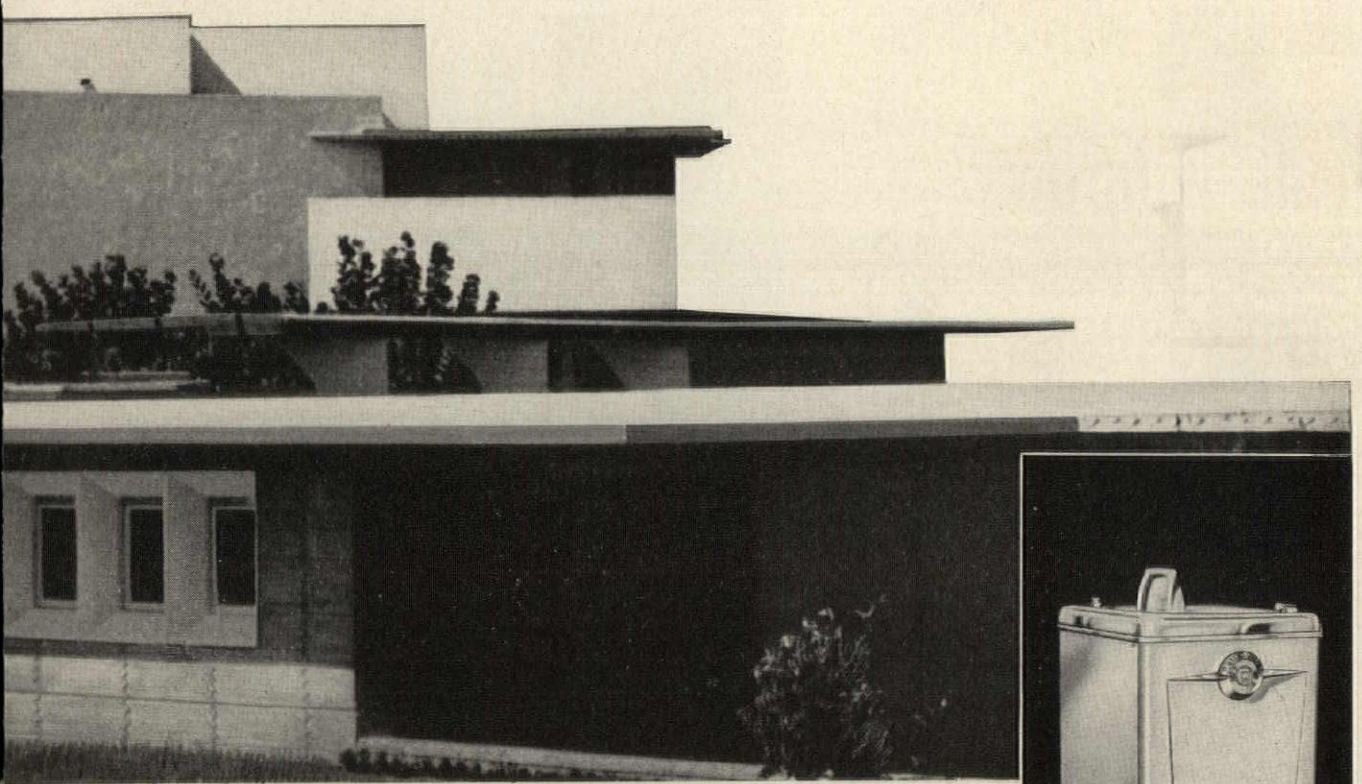
TOMORROW

The largest concentration of Frank Lloyd Wright architecture is here at Florida Southern College . . . rightly called the "College of Tomorrow." Mr. Wright at his drawing board has turned sand, cement, steel and glass into one jewel-like building after another—nestled in an orange grove setting of unbelievable beauty. Units include a striking circular library, a huge water dome stocked with black bass and a theatre-in-the-round. At a cost of $20 million, the campus will be completed in the early 1960's. Surrounded by comforts and conveniences borrowed lavishly from "tomorrow," students enjoy an environment unmatched for learning how to live in "the world of tomorrow."

WESTINGHOUSE WATER COOLERS were specified for this remarkable college because they, too, are advanced by design . . .

The clean, crisp, cool-gray cabinet blends in perfectly anywhere, requires a minimum of floor space. Sanitary,

20 models to choose from . . . exactly the right type and size for every need.



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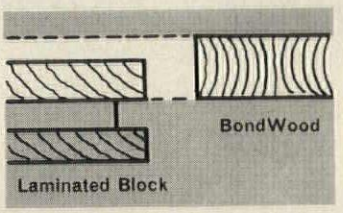

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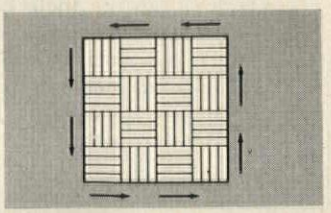

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backed by the N.E.A. were those of its Legislative Commission, which said a massive program of Federal financial support for education at all levels had become a national necessity.

"There can be no doubt that present world conditions require bold answers, especially in education, where the challenge of the USSR has renewed public interest in the welfare of our schools and colleges," the Commission report read.

The Association referred to its new recommendations as pertaining to "long-range" Federal support rather than "emergency" Federal aid and called this new emphasis the most significant change in its new legislative program.

U. S. Court Decision Affects Architect-Engineer Staffs

Architect and engineer firms hiring large staffs can be affected by a U. S. Fourth Circuit Court of Appeals decision affirming a lower court ruling that employes in the Lublin, McGaughy & Associates office at Norfolk, Va., are not subject to provisions of the wage-hour law. The U. S. Department of Labor, which originally brought the suit in the lower court, can be expected to appeal the decision to the Supreme Court, it was said.

The Federal government claimed the Norfolk firm had not paid proper overtime to its employes, had not kept proper records, and was covered by the wage-hour statute.

The lower court decision, handed down in the Lublin case about a year ago, had concluded that "none of the defendants' employes involved in this controversy are engaged in the production of 'goods' for commerce within the meaning of the Act. . . ."

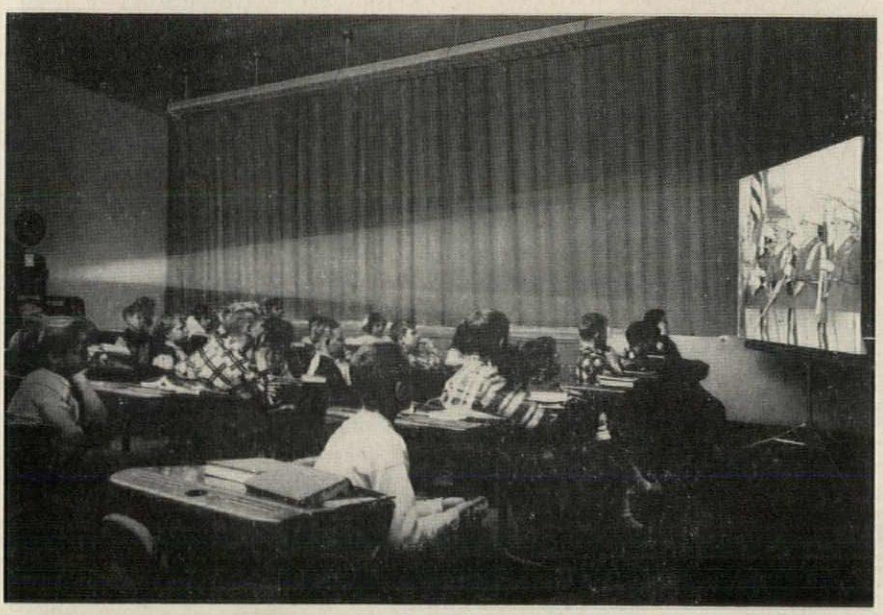
What are "Goods"?

Congress was asked last year by the National Society of Professional Engineers and others to clear up confusion regarding the coverage of architect-engineer office employes. The existing uncertainty regarding this application is already costing architects and engineers, and the Federal government, money, N.S.P.E. pointed out. To settle the question by litigation, the Society noted, may take many years.

In the latest decision, Circuit Judge Soper wrote:

"There is, however, no clear-cut holding that the work of employes of independent architects, such as are before us in this case, is 'commerce' under the Act. . . . It may be that the activities of the employes in question constitute an indispensable link in the chain of causation whereby instrumentalities of commerce are extended or improved; but it does not follow that their work is so closely connected with interstate commerce as to be a part of it. In determining the question, the character of the work of the employes rather than the occupation of the employer is the controlling factor, but the occupation of the employer must nevertheless be taken into consideration, for the Act does not attempt to regulate local activity."

The Federal government has contended that drawings, plans and specifications prepared by firm employes are goods and that their preparation constitutes production of goods for commerce within the meaning of the present law. It recognizes that employes hired as professionals are exempted, but it is still attempting to bring the non-professional members of the staff within the coverage of the statute.



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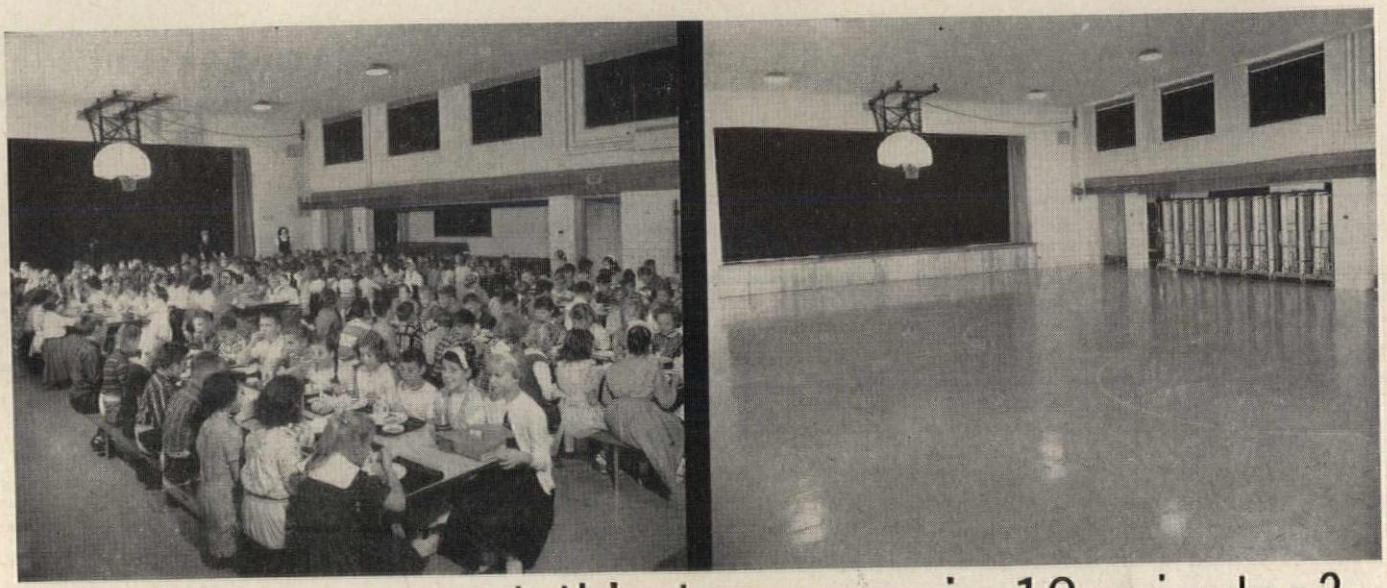

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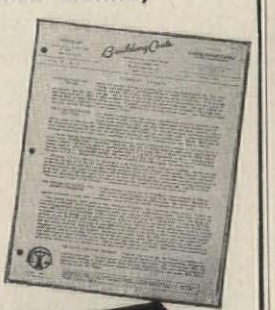

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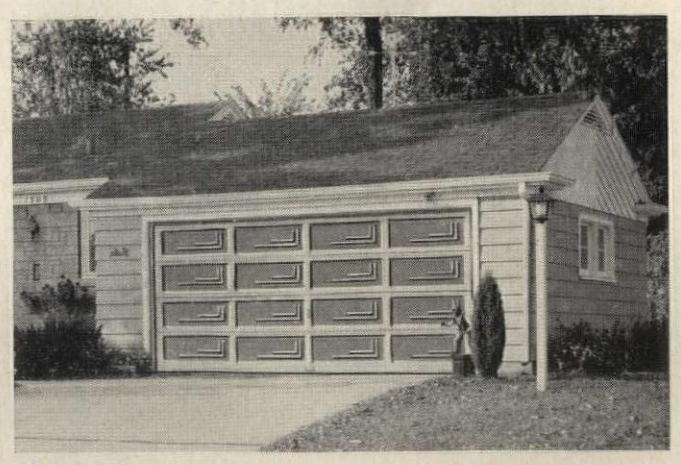

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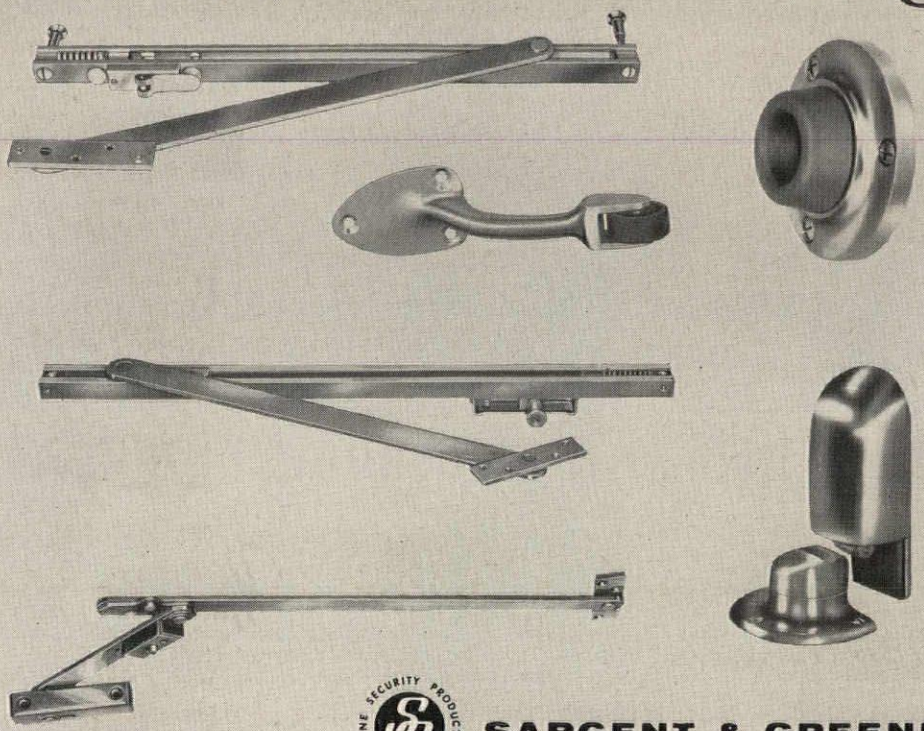

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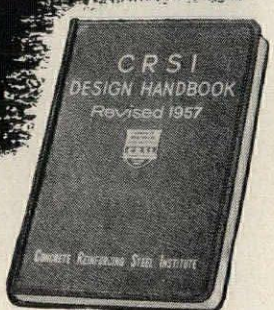

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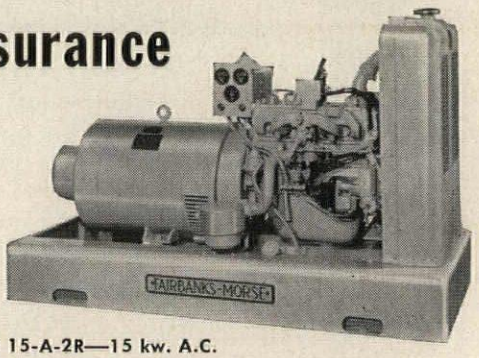

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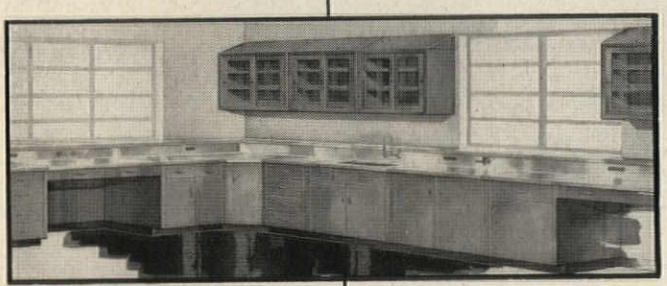

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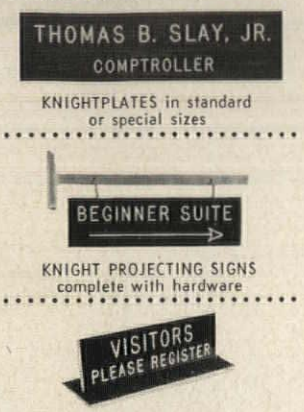

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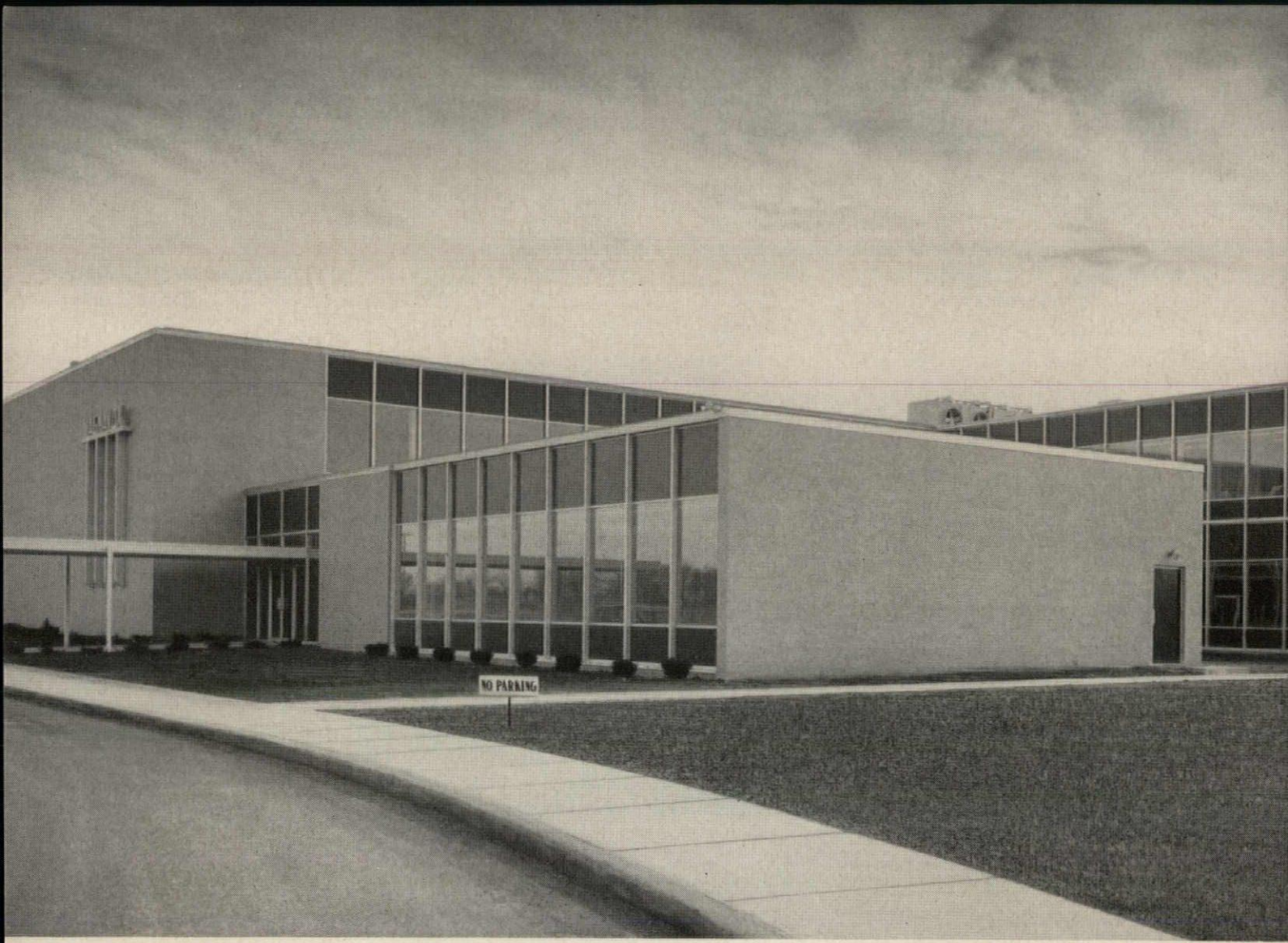

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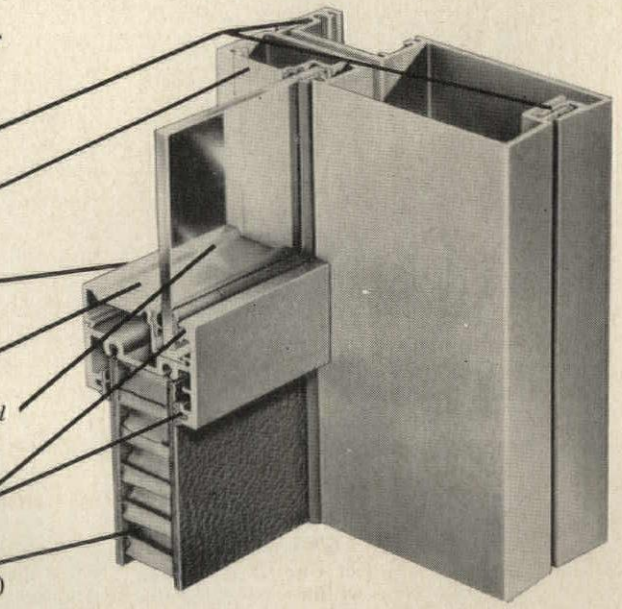

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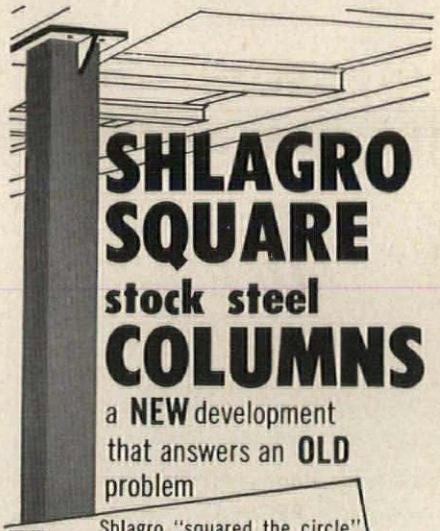

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Washington Topics

Six Million College Students By 1960 Is U. S. Forecast

The U. S. Office of Education renewed its prediction of a college student population of 3.5 million by 1960 in announcing new enrollment figures for 1957. With a larger proportion of young people planning for college, it said, preparations must be made now for the heavier demand on facilities that is inevitable. The influx of World War II and post-war babies will be felt in the years ahead and a student population of six million in another 10 years is a likely possibility.

The colleges and universities themselves are making plans for the physical accommodation of these future enrollees as evidenced by their long-range building plans. Actually, the Office of Education reported college-age population at its lowest level in 25 years, but the number of students enrolled, at 745,000, was up three per cent over 1956.

Fall enrollments were estimated by tabulating the first 65 per cent of the returns to requests for data sent to 1891 colleges and universities. The 1956 estimates proved to be accurate within three tenths of one per cent for full enrollment and 1.6 per cent for first-time students.

PBS Accepts All Five Bids in Lease-Purchase Financing

The Public Buildings Service of General Services Administration moved its lease-purchase program of building acquisition ahead a very important step by accepting financial bids on five projects and readying construction plans.

With the four per cent interest limitation on financing removed, PBS received five financing bids on the first 10 projects offered under the new system and promptly accepted all of them.

The offers ranged from 4.74 to five per cent. There were two bidders for the five jobs: Bankers Life Insurance Co., Des Moines, Ia., and Equitable Life Insurance Company, also of Iowa.

This action marked the emergence of the lease-purchase program from financial fetters that had held it motionless for many months. Only one project has ever started construction.

Bidding terms required the investors to commit their offers for acceptance for 90 days after bidding opened. Construction bids were invited following acceptance of the financing offers and separate contracts were to be awarded.

(Americana Hotel, Miami Beach, Florida)

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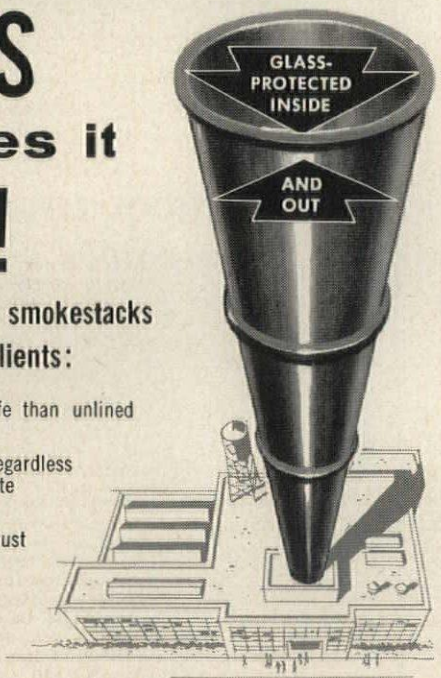

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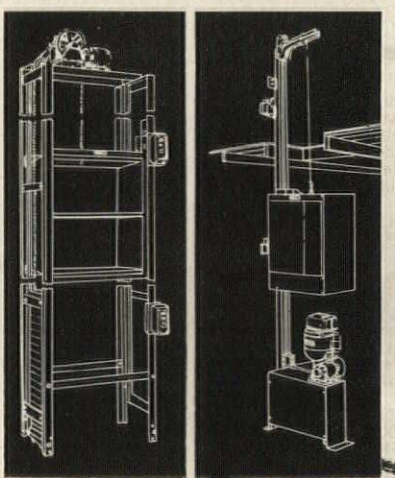

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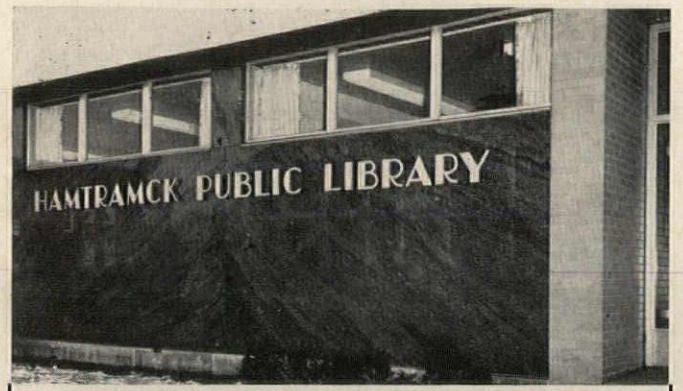

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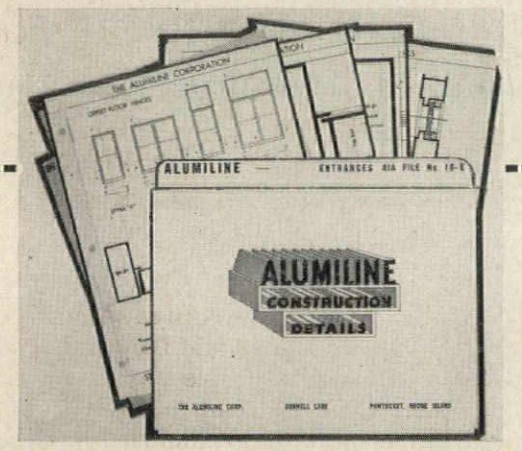

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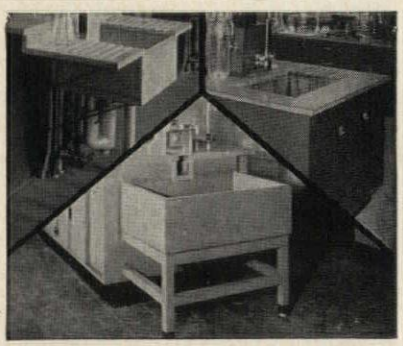

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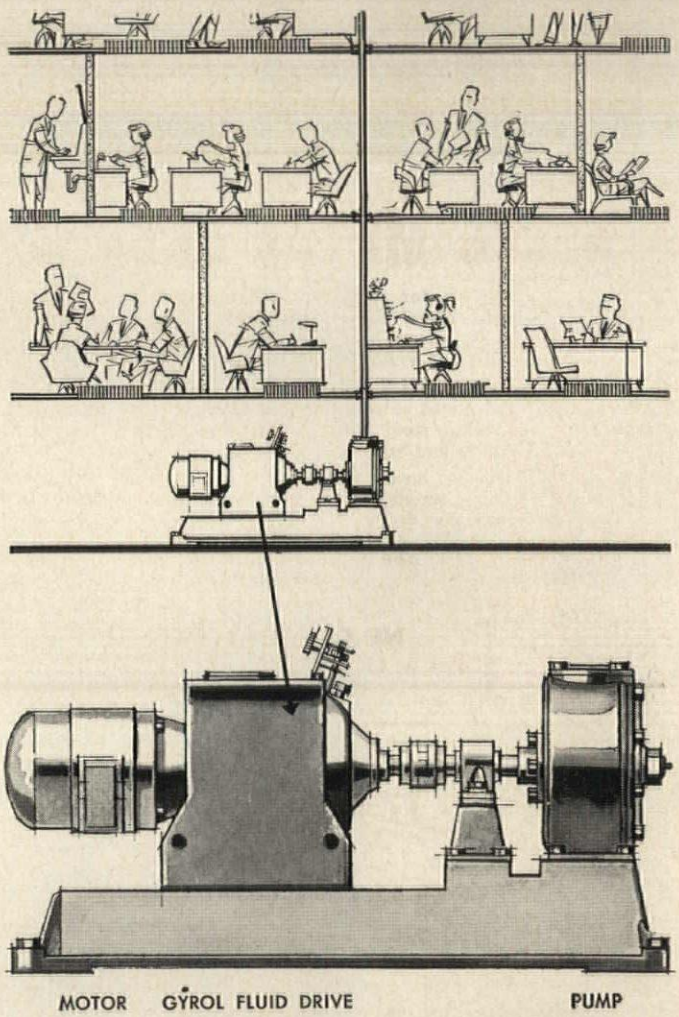

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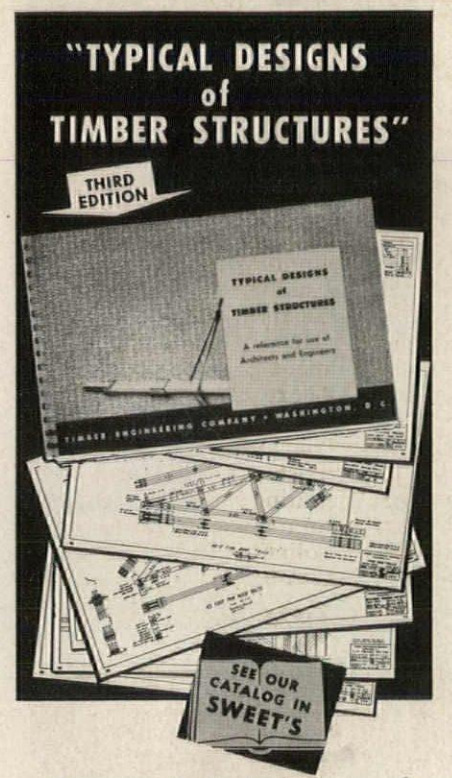

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AR-581

Washington Topics

In December, PBS moved forward another step by offering investors a chance to bid on 13 additional lease-purchase projects with estimated value of $22.8 million. Some of these picked up projects on which no financial bids had been received the month before.

There were more than 30 buildings in the program on which bids could be taken. Congress failed to renew the lease-purchase plan last year, but committee approval of these projects permitted PBS to proceed with their bidding and construction under terms of the original law.

Congress Begins Long Look At Nation's Housing Program

The Nation's housing activity in all its aspects was set to undergo close scrutiny at the hands of Congressional subcommittees. The legislators did not, in fact, wait for the second session of the 85th Congress to open before they began probing residential construction in widely scattered parts of the country, laying groundwork for the more intensive investigations scheduled this spring.

Quite a bit of attention focused on a report from Rep. Albert Rains' subcommittee staff based on reports from FHA and VA field offices and replies to its queries sent in by Federal Home Loan Bank Board, the Comptroller of Currency, the Federal Reserve Board and the Federal Deposit Insurance Corporation.

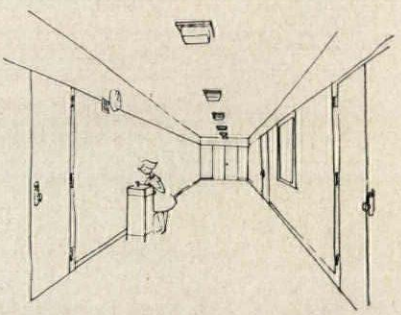
This report held that a substantial segment of the new housing constructed in 1957 was financed in an "unwholesome manner." This, it added, was bad for the consumer and bad for the general economy. Reference was to the increased use of second mortgages, land contracts, and other practices veering away from the traditional FHA single-mortgage practice.

"Unhealthy," Says Rains

Commenting on his subcommittee's report the Alabama Congressman said:

"A careful reading of these reports shows clearly that second mortgage practices and other unwholesome financing schemes such as land sale contracts financing have mushroomed dangerously in many parts of the country over the past several years. While these practices happily are not in general use nationwide, the reports clearly show that throughout most of the southern and western

lighting design by mc Philben



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mcPhilben's 32-88 square ceiling unit is UL-approved for two 100 watt lamps. Its clean, modern lines, combined with maintenance-free operation, make it the ideal choice for institutions and industry: corridors, lobbies and lavatories.

The 32-88's face plate is of solid **cast aluminum** with a gleaming satin finish. Corrosion resisting construction features a reinforced and insulated back plate of zinc-clad bonderized steel. The cast carrara glass bowl swings to one side for easy cleaning. Available with mcPhilben's exclusive one-piece **cast aluminum** hinged guard. Also in vaportight 43-88 series.

Ask your nearby mcPhilben representative for full details. See our insert in Sweet's file 32a/mc or write for data sheet.

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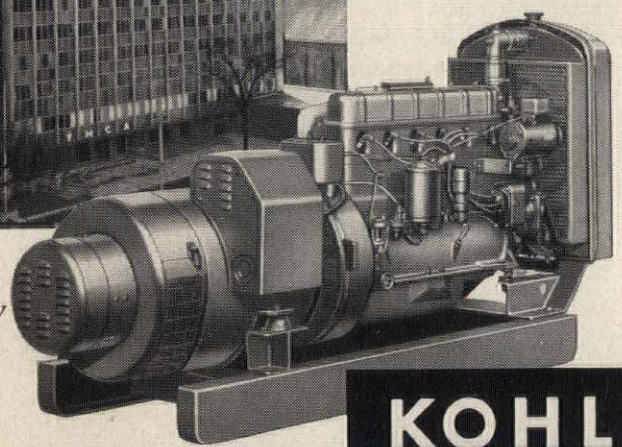

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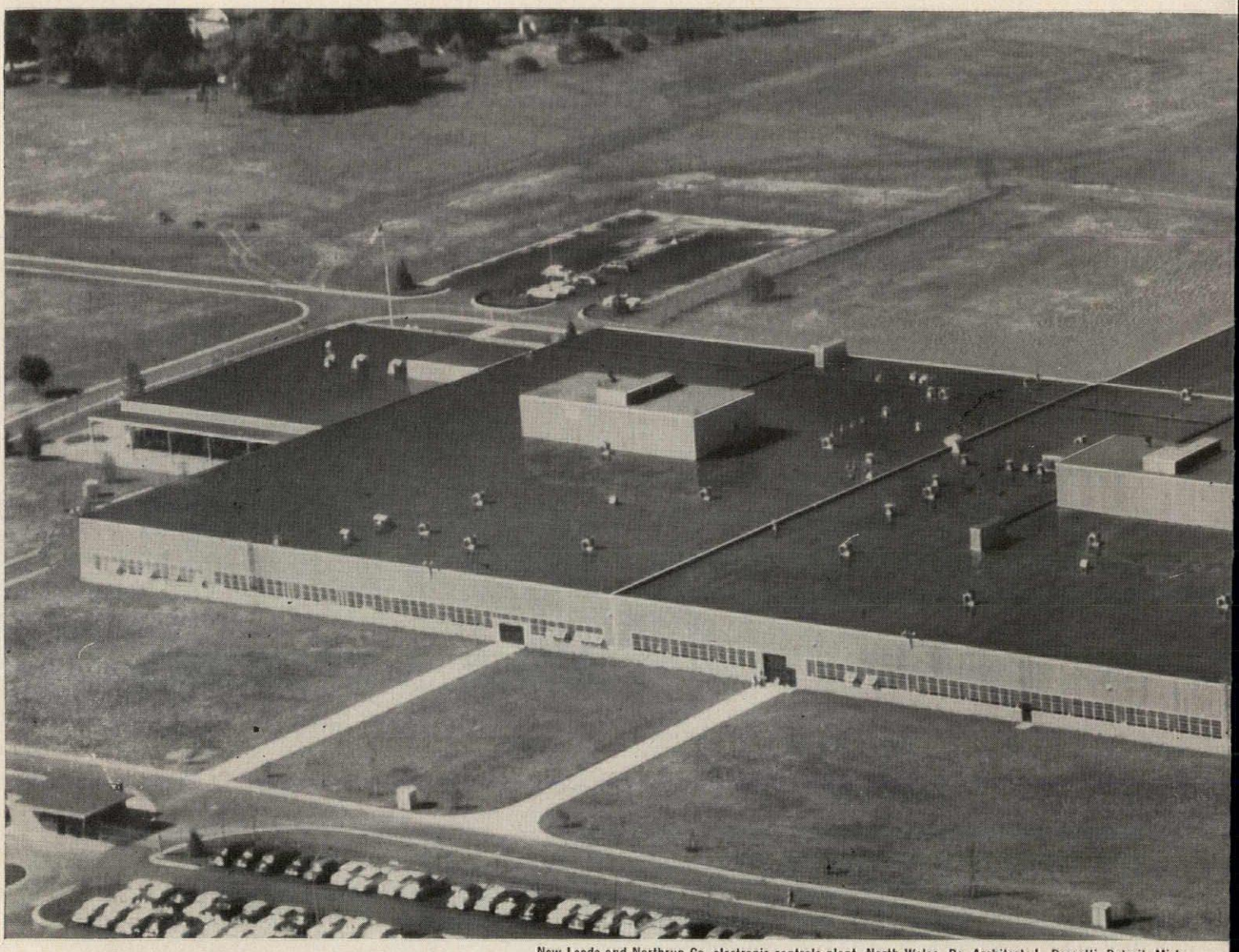
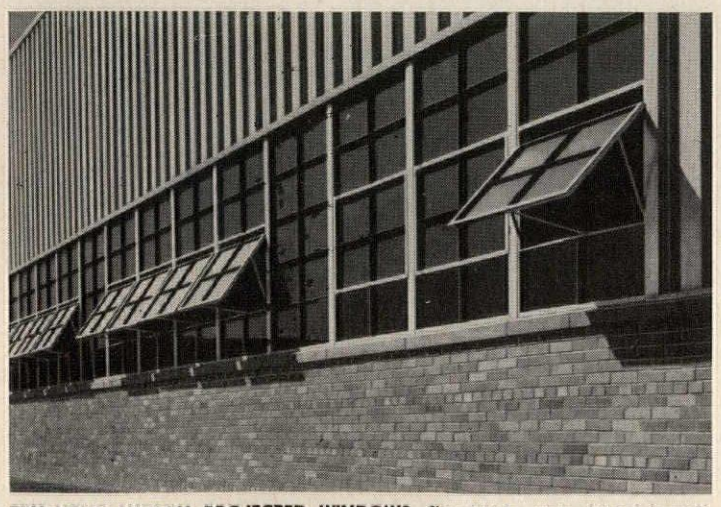


New Leeds and Northrup Co. electronic-controls plant, North Wales, Pa. Architect: L. Rossetti, Detroit, Mich.

ONE OF THE "TOP TEN" PLANTS*



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LEEDS and NORTHRUP plans

With an eye to tomorrow, Leeds and Northrup—working with architect L. Rossetti—conceived this new job shop at North Wales, Pa., as the initial building in their new electronic-controls manufacturing plant.

The first of the planned expansions of this building has already been completed. A long section of wall was moved out some 120 feet, and additional sidewall and roof were built to add about one acre to the building. The original LUPTON "Master" Projected Aluminum Windows were re-installed with no alteration whatsoever, and continue to provide a "ribbon" of controlled ventilation and light.

Apart from their flexibility—which was ideal for Leeds and Northrup's planned expansion—let's see why "Master" projected windows meet so many requirements on important projects.

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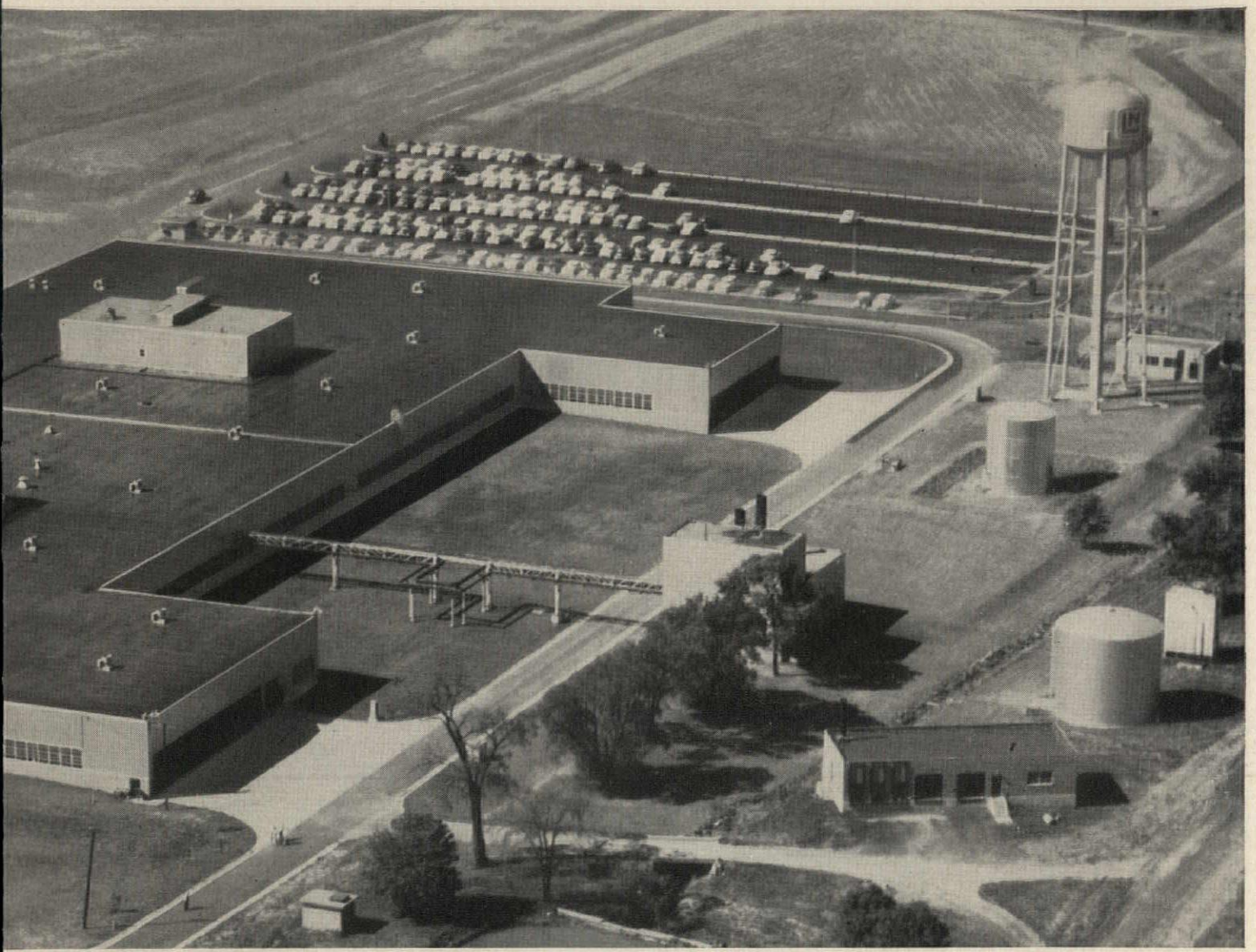

Contractor: Baton Construction Corporation, Philadelphia, Pa. Photograph by Aero Service Corp., Philadelphia.

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* "Slickest Job Shop of the Year" is what the Editors of Factory Management and Maintenance called the Leeds and Northrup building in choosing it as one of the "top ten" plants of 1956 from nominations by leading architects and builders. Of these 10 projects, *three* feature LUPTON curtain walls or LUPTON windows: Lambert-Hudnut at Lititz, Pa.; Owens-Corning Fiberglas at Barrington, N.J.; and the Leeds and Northrup plant shown above.

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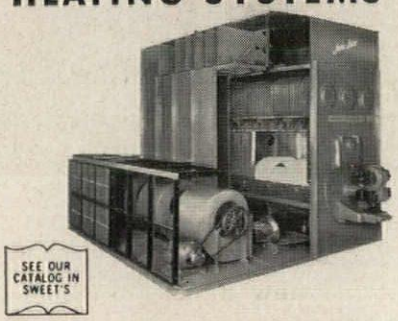

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Washington Topics

parts of our country these unhealthy financing practices are the order of the day."

Lenders were urged to reëxamine their investment programs and to make more FHA loans available for housing.

There were frequent hints among the lawmakers concerned with the problem that they would be taking a look this year at alternative—but still government-aided—programs to make low-equity first mortgages available outside the FHA framework.

N.A.H.B. Research House Sold But Studies Will Continue

The National Association of Home Builders sold its first research house —the so-called million dollar dwelling—to Mr. and Mrs. Quentin R. Verdier. At 36, Mr. Verdier is management officer, U. S. Savings Bond Division, Treasury Department. He will occupy the research dwelling with its "features of the future" along with his wife and two daughters, aged eight and two, and one son, five. The house is located in Kensington, Md., near the District of Columbia line.

The house, constructed by the N.A.H.B.'s Research Institute as a sort of laboratory for the industry, incorporates many materials and appliances that were not on the market at the time. The home was constructed from plans developed by the Institute under the direction of Martin L. Bartling, Jr., Knoxville, Tenn., builder.

Designed and built to modular scale, the unit featured the advanced products of more than a dozen manufacturers.

In purchasing the home for $22,500 under an FHA mortgage arrangement, the Verdiers agreed to permit researchers to enter and inspect materials and equipment during specified times of the day for one year. Some exterior aspects of the house may be under study for many years. The home is a three-bedroom, two-bath unit of contemporary design with floor area of 1300 sq ft.

N.A.H.B.'s Research Institute is to plan a second research house this year, with construction (on a site not yet selected) scheduled in 1959, according to present plans.

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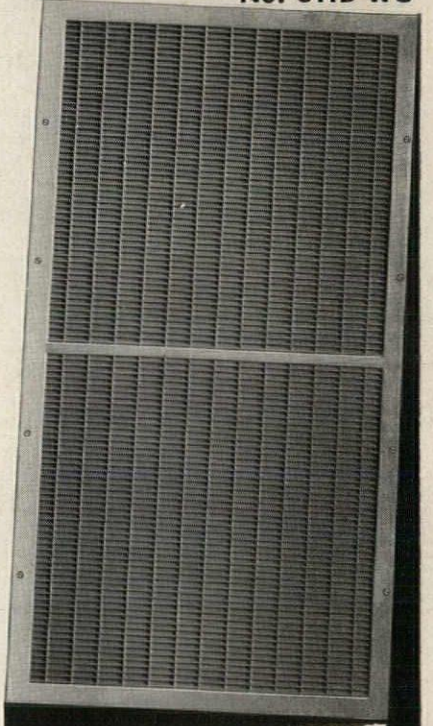

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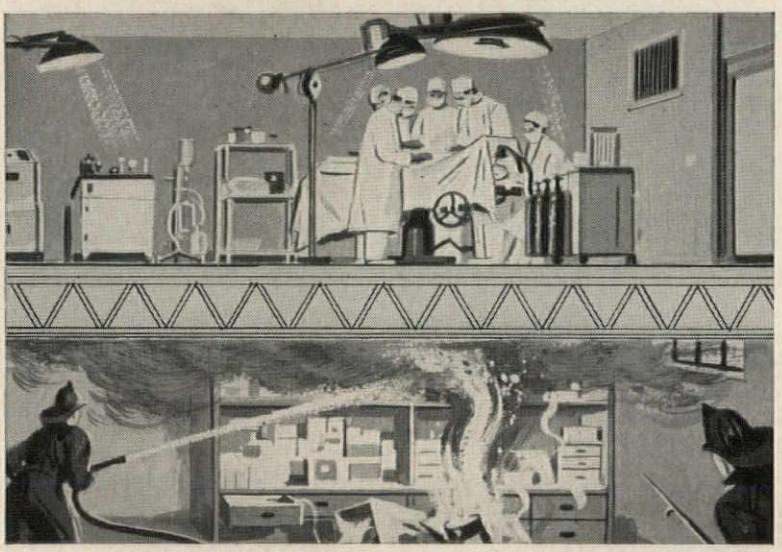
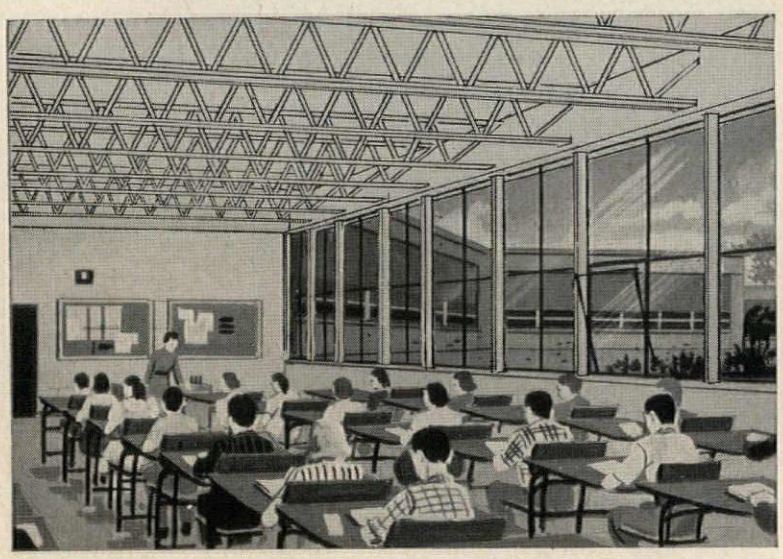


FIRE-RESISTANCE



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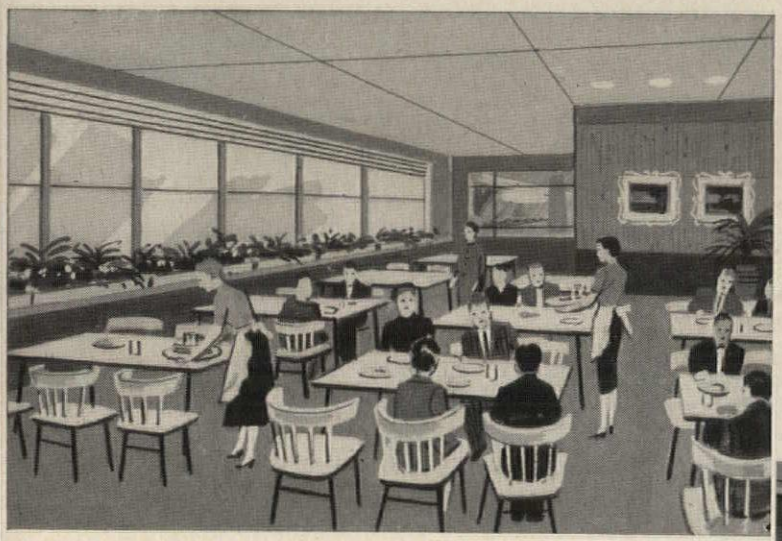
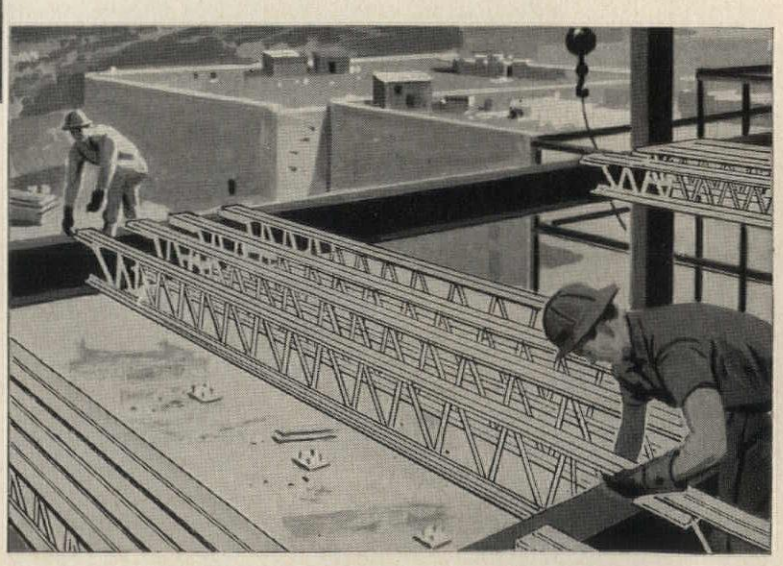


COLUMN-FREE SPACE

VIBRATION-RESISTANCE

SOUND-RESISTANCE



FAST, ECONOMICAL CONSTRUCTION

BETHLEHEM STEEL

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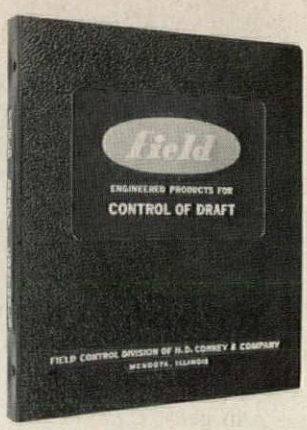
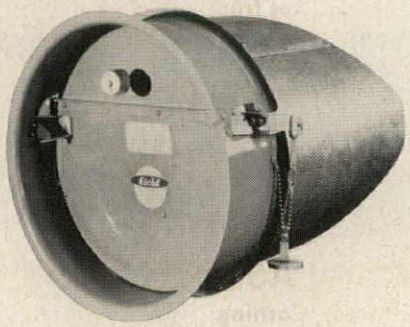
DRAFT CONTROLS



Write for your copy of the FIELD ARCHITECTS AND ENGINEERS MANUAL, covering application of the new three-fuel Field M+MG2 Barometric Draft Control, in sizes 10″ through 32″, for industrial furnaces and boilers.



Three-fuel Field M+MG2: Only minor, on-the-job adjustment is required when changing from one fuel to another—oil, gas, oil-gas, or solid fuels.

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AFFILIATES:
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Washington Topics

gineering Council. The movement stems from a meeting sponsored many months ago by the Building Research Institute in an effort to appraise plumbing practices and see what might be done about making more rapid progress toward modernizing the industry.

Seven representatives from five firms met with B.R.I.'s plumbing research committee in December and agreed that plans for forming such a Council should proceed. Additional industry representation was invited to another meeting tentatively scheduled for May.

It also was agreed to present plans for the new Council to other industry segments such as the Central Supply Association, branches of the National Electrical Manufacturers Association, the Plumbing Fixtures Manufacturers Association and the Plumbing Brass Institute.

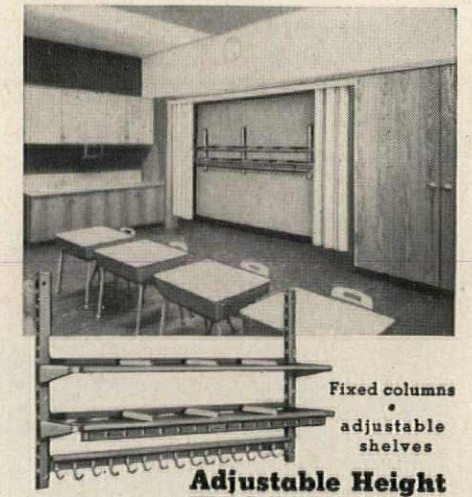
Sponsors hope the Council can eventually equal in scope and activity the electrical industry's underwriters' laboratory. The Council would work toward improving the quality of plumbing, reduction of installation costs and equipment costs, and toward improved quality. It hopes to draw into its membership all organizations in the industry, plumbing inspectors, health officials and architect and engineer organizations. New machinery for intra-industry cooperation is another goal.

Civil Status Is Urged For Building Trades Unions

In a brief submitted to the Ontario Legislature's Select Committee on Labor Relations, the Canadian Construction Association, the Ontario General Contractors' Association, and the Toronto Builders' exchange have urged that labor unions should be given complete civil status so they can sue and be sued in the courts.

Construction firms which fail to meet agreed completion deadlines or building standards can be sued in the courts and are liable for heavy damages. So are suppliers of materials under contract. But there is no similar redress for a firm injured as a result of an illegal work stoppage.

J. J. Pigott, Hamilton general contractor, said, on behalf of the petitioning organizations: "A building trades union is a contractor in the industry—it contracts for the supply of labor—and it is intolerable that this kind of contractor only should be beyond the civil law."



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Solve the pupil wraps problem efficiently with Wallmount Coat and Hat Racks. Mount on any available wall space. Hat shelves and hanger bar adjustable on permanently attached columns to height for any age group. Double hat shelves and double row of spaced coat hooks accommodate 6 pupils per running foot. Basic 3′ 2″ or 4′ 2″ units interlock to make continuous racks to fit any space or capacity requirements.

OTHER Schooline® UNITS

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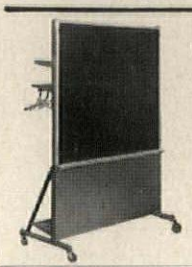
Dual-purpose wardrobe rack. Provides two 4 ft. hat shelves, 4 ft. Hook and Hanger rails for coats adjustable in height to all age groups. 4 ft. overshoe shelf. And, on other side a 50″ x 48″ chalkboard. Portable or stationary.

CORKROBE®
Identical to Chalkrobe but with pin-up cork board instead of "Chalkboard". These units permit complete flexibility in use of floor space. Can be anchored to floor, or wheeled about on casters. Hold wraps out of the way in orderly and efficient manner.



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With closure panels (as original equipment or add-on units) Chalkrobe and Corkrobe units serve as flexible room dividers, movable walls or screens. Widely used to enclose temporary class rooms, to "build" cloak rooms, meeting rooms, etc.

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Matching units for Wallmount. Keep overshoes off-the-floor in an orderly manner.

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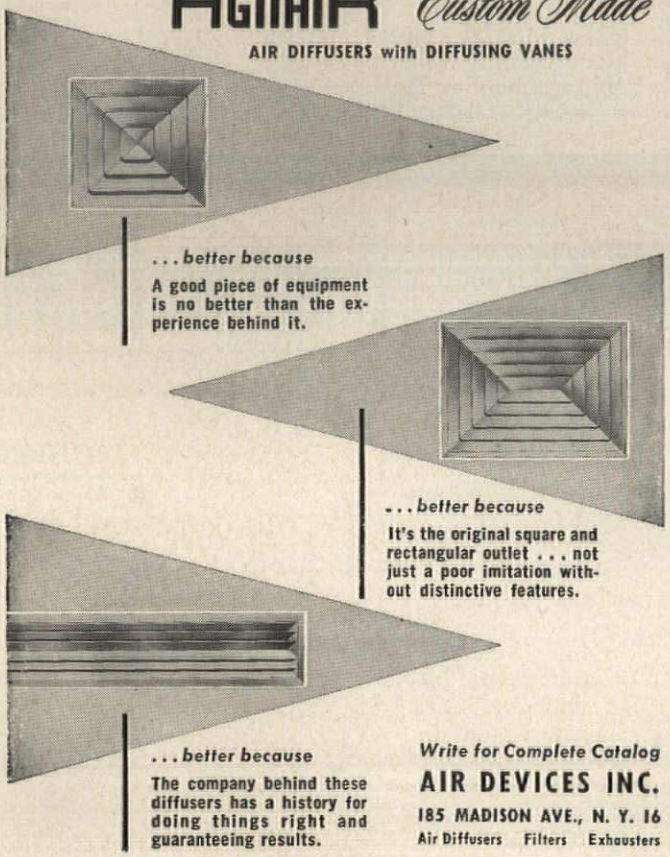

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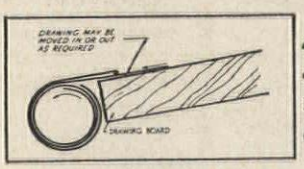

42"	Note: actual lengths	$9.25 ppd.
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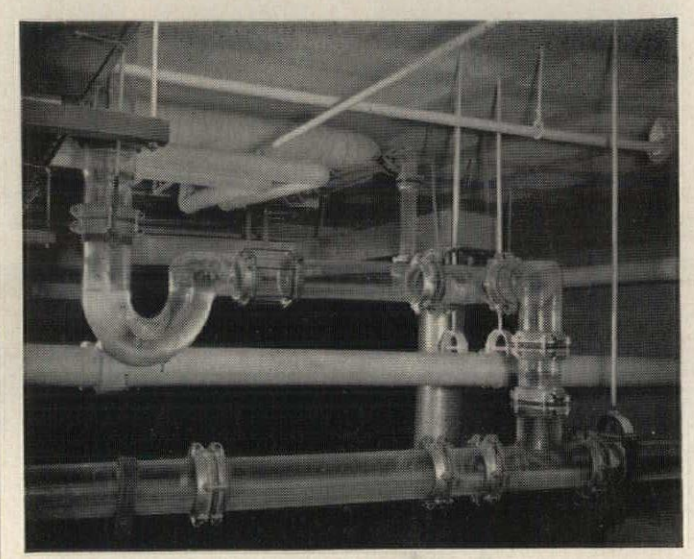

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Your problem, where disposal of acid wastes is concerned in plant or laboratory design, is in getting them to the point of disposal . . . *safely*.

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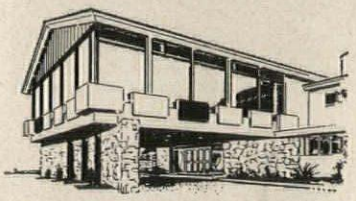

Almost limitless design potential is opened to the architect who plans with Acousti-Celotex Sound Conditioning products.

Shown at the right is an interesting example in which Celotex Acoustical Materials have been used with outstanding effect . . . integrating color- and design-ideas to create an unusually attractive ceiling appearance at a moderate cost yet with high sound absorption and easy maintenance.

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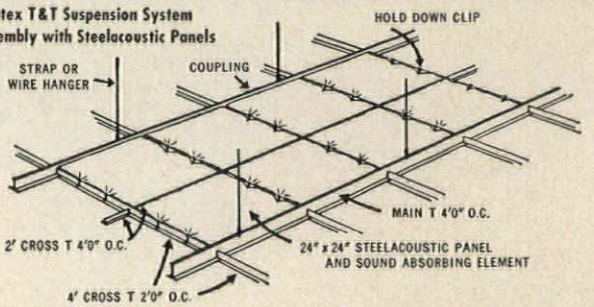
La Jolla Country Club, La Jolla, California, showing ceiling of Acousti-Celotex Stria-Colored Steelacoustic* Panels on a T & T* Suspension System. **Architects:** Paderewski, Mitchel and Dean, San Diego. **Acousti-Celotex Contractor:** Hackett Acoustics and Specialties, Inc., San Diego, Cal.

*TRADE MARK REG. U. S. PAT. OFF.

SPECIFICATIONS: Write for portfolio of specifications, including detail drawings, covering this and other ceiling assemblies and Acousti-Celotex applications.

Celotex T&T Suspension System Assembly with Steelacoustic Panels



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Philadelphia 31, Pa.....Jacobson & Co., Inc.

DISTRICT OF COLUMBIA
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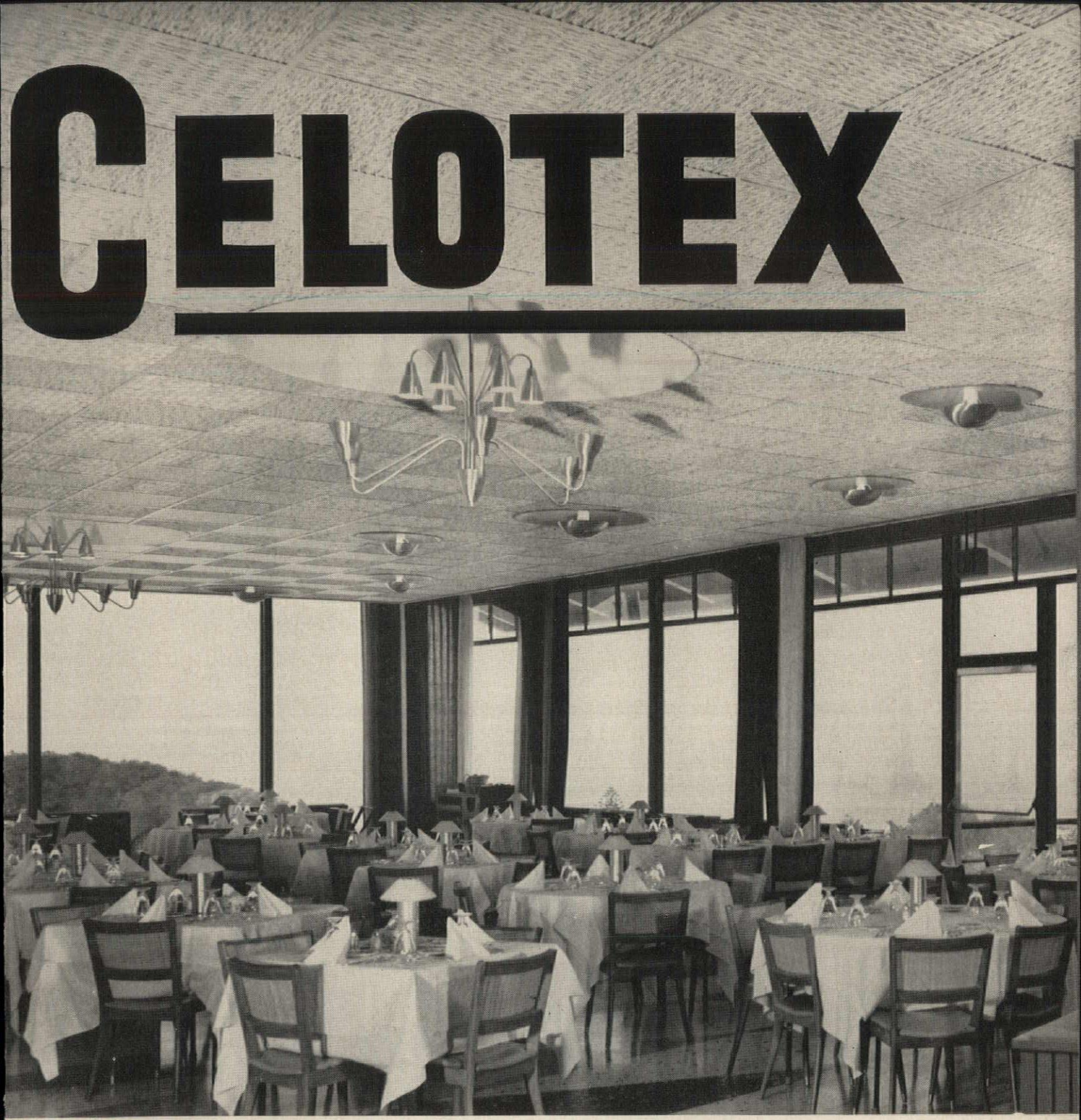

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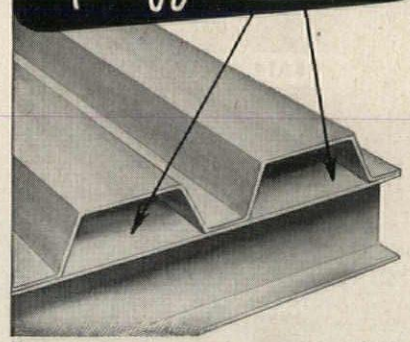

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Washington Topics

Urban Renewal Agency Acts to Give New Push to Rehabilitation

The government's Urban Renewal Administration has taken three major steps to give rehabilitation a new push. With about 100 projects now in the urban renewal program, the agency established a rehabilitation and conservation branch in its Washington office, added more planners and code and rehabilitation specialists to its regional staffs, and selected two or three rehabilitation-type urban renewal projects in each region for special expediting, assistance, and observation.

Primary purpose of the new branch, said URA Commissioner Richard L. Steiner, is to discover, develop, and disseminate rehabilitation "knowhow."

Only a few of the 100 rehabilitation projects are already in execution but the program is expected to pick up momentum rapidly.

Commissioner Steiner characterized the effort as "a projection into the unknown."

"We know something about rehabilitation to a high standard of scattered houses and we know something about code enforcement on an area basis," he said, "but we really have very little certain knowledge about thorough-going area rehabilitation."

New Friend for Modular Measure: Contractors' Joint Committee

Modular measure in design and product received support from an unexpected source when the newly formed National Joint Cooperative Committee of the Associated General Contractors of America and the Council of Mechanical Specialty Contracting Industries encouraged industry efforts along these lines. The joint group said greater efficiency and lower costs would result through modular coordination both in design and product manufacture.

Another of the joint committee's goals is to curb the trend toward restrictive clauses in labor agreements that limit industrial management's choice in performing construction work by contract.

The first meeting of the group was held November 22, in Washington, D. C., marking the first time that general and mechanical specialty (heating, electrical, plumbing, air conditioning, refrigerating and ventilation) contractors had ever convened in formal conference on matters of broad industry concern.

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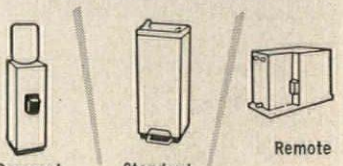

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Ask for Catalog 58.

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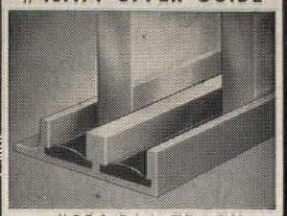

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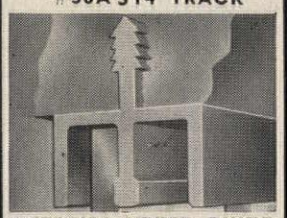

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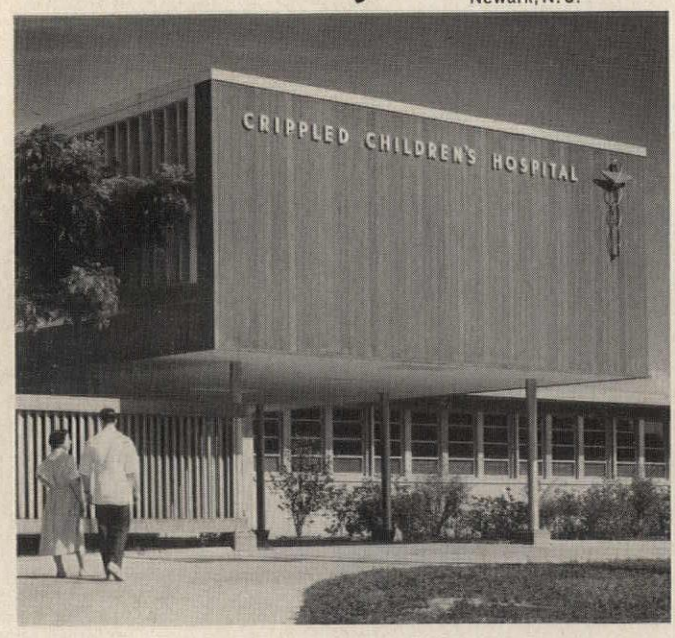
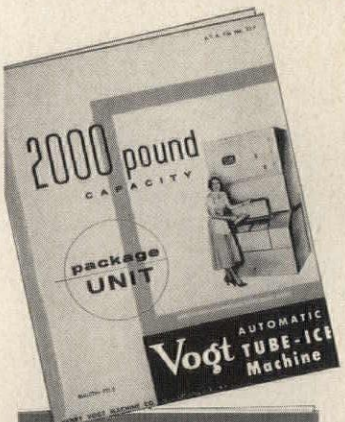


Get the Latest Data on Automatic Ice Making



It's easy to include automatic ice machines in your planning IF you have the necessary facts and figures. These two bulletins covering 2,000 pound and 5,000 pound capacities outline the operation principle and list such specifications as weight, water connections, the refrigerant and electric requirements, etc. For custom built units of larger capacity, write for Bulletin TI-3, Dept. 24A-RTAR.

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OFFICE AREAS OPEN INTO ONE ANOTHER ACROSS BROAD SPACES OF BIGELOW CARPET

BIGELOW CARPET

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Architects:

Skidmore, Owings & Merrill

Interior Design Consultants:

Knoll Associates, Inc.

"Security" in architecture, once symbolized by the massive arch, now is symbolized by "the long free span." Great example is the vast glass-walled Connecticut General Building in Bloomfield, Conn. Here, in one of the finest buildings of our age, long vistas of Bigelow Carpet blend into a panorama of surrounding hills.

Specially woven Bigelow Carpet in gray, charcoal and beige, with a high, dense looped pile in subtle corduroy effect was used for a serene three-dimensional feeling. Grass, water, sky, trees set the motifs of Bigelow Carpets chosen by Mrs. Florence Knoll, president of Knoll Associates, who were retained by Skidmore, Owings & Merrill as interior design consultants. Mrs. Knoll says:

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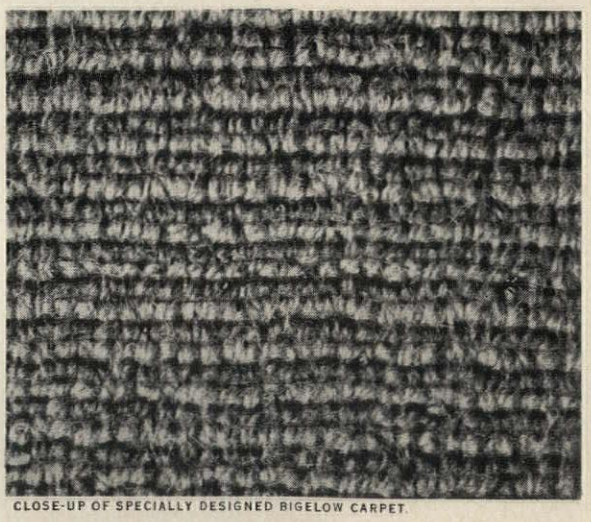

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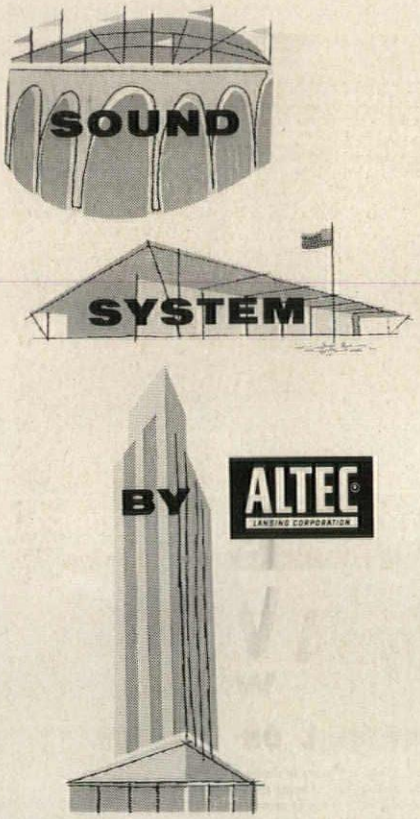
SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY



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12-23

REQUIRED READING

continued from page 62

Relocation: Critical Phase

. . . *of Redevelopment* is a report on the large scale relocation of families displaced from their homes by slum clearance programs and community redevelopment; specifically on the rehousing of some 1,626 families from a two-block area in New York City called Morningside Heights. *Morningside Heights, Inc.*, 90 Morningside Drive, N. Y. 16 pp.

Asilomar

A compilation of papers and discussions presented at the first annual conference of the American Craftsmen Council, this publication treats the needs of a creative and experimental approach to craft design, and the practical problems of production, marketing, etc. *American Craftsmen's Council*, 29 West 53rd Street, N. Y. 168 pp., illus.

The American Chair

. . . *1630-1890*, by Marion Day Iverson is a comprehensive account of the changing styles of chairs from the time of English colonists to the Victorian era when mass-production methods superceded the individual craftsman. *Hastings House*, (N. Y. 22, N. Y.) 1957. 241 pp. illus. $10.

Housing: A Factual Analysis

This book, by Glenn H. Beyer, studies the evolution of the vastly expanding housing market, including urban, surburban, exurban, and rural dwellings. The economics and financing of housing, population migration and growth, city rehabilitation and renewal, and the expansion of new neighborhoods are among the topics explored. Graphs, charts, and other statistical comparisons are shown. *The MacMillan Company*, (N. Y. 11, N. Y.) 1957. 355 pp., $8.95.

Technical References

Basic Reinforced Concrete Design:

. . . *Elastic & Creep*, by George E. Large, is a textbook planned for students who are acquiring a basic understanding of reinforced concrete design. Included are what the author considers the "rock-bottom essentials." *The Ronald Press Company*, (N. Y.) 1957. 527 pp. illus. $7.

Glass Reinforced Plastics

This new edition, edited by Phillip Morgan, has been thoroughly revised, with new chapters on resins, and on chemical plant applications. *The Philosophical Library* (N. Y.), 1957. 265 pp., illus. $15.

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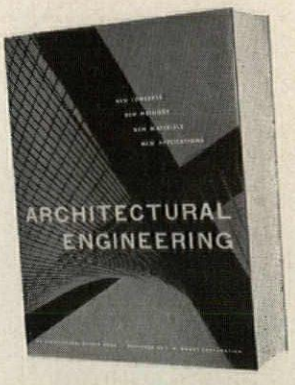
by the Editors of *Architectural Record*



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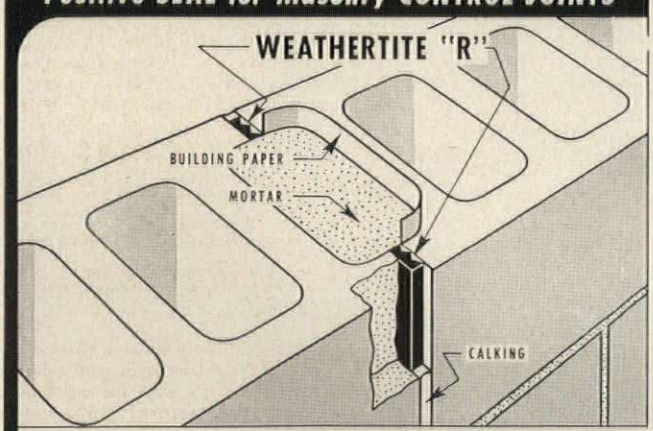
Acting on the belief that most freezer-refrigerator combinations are too small to be practical, the manufacturers of the built-in 2-Zone have designed a new square-styled unit with 10 cubic feet of refrigerator space and 13 cubic feet of freezer space. The freezer compartment, which holds 455 pounds of foods, is likely to meet any family's present and future storage needs.

The new built-in 2-Zone, surprisingly compact for its high capacity, requires little more space than a conventional refrigerator. It is 82 inches high, with a cabinet 36 inches wide and 24 inches deep. Architects can easily match the new unit to any kitchen by specifying right- or left-hand doors and their choice of frost white, rich antique copper, lustrous Satinized stainless, or a prime coat for special color styling. Simple six-step instructions make installation quick and easy.

The approval seals of both Good Housekeeping and Parents' Magazine have been granted the 2-Zone, which reportedly sells at the lowest price per cubic foot of capacity. Complete information is offered to architects who write the manufacturer, Manitowoc Equipment Works, Manitowoc 38, Wis.

WEATHERTITE

Positive SEAL for Masonry CONTROL JOINTS



To guard against cracks in block-constructed masonry walls, caused by shrinkage, always use an approved Control Joint . . . to prevent water seepage through these very necessary control joints, always use WEATHERTITE for a permanent SEAL. This time-tested product is a continuous strip of expanded Polyvinyl Chloride . . . it is formed with serrations on one side to permit adequate compression when installed, and to provide the positive expansion which so effectively and permanently seals control joints in block constructed masonry walls. WEATHERTITE is available in three sizes which are designed to effectively seal any type of masonry control joint.

See Sweet's Architectural File, Section 9, or write for information.

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State Architect, Charles L. Marshall, Topeka, Kansas

BIRMINGHAM MUNICIPAL AUDITORIUM
Architect, Charles H. McCauley, Birmingham, Ala.

MISSISSIPPI STATE COLLEGE FOR WOMEN, Columbus, Miss.
Architects & Engineers, Thomas H. Johnson & Associates, Starksville, Miss.

U. S. NAVAL RECEIVING STATION
WELFARE & RECREATION BLDG., Charleston, S. C.
Captain A. J. Barrett, Jr., U.S.N.

CENTRAL VOCATIONAL HIGH SCHOOL, Cincinnati, Ohio
Architect, Harry Hake & Harry Hake, Jr., Cincinnati, Ohio

PLYMOUTH TEACHERS COLLEGE
Plymouth, N. H.

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See Sweet's Catalog 23G / M1

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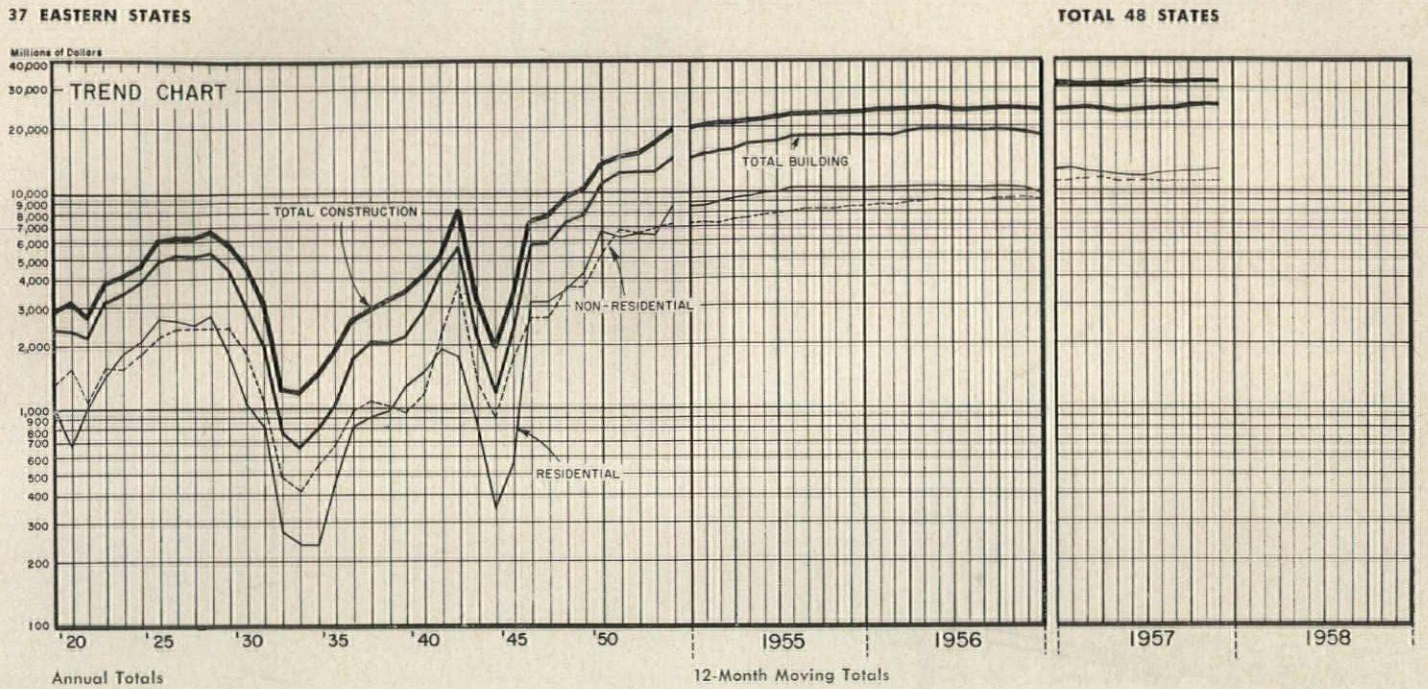
ARCHITECTURAL RECORD

119 WEST 40TH STREET, NEW YORK 18, NEW YORK

"workbook of the active architect and engineer"

Current Trends in Construction

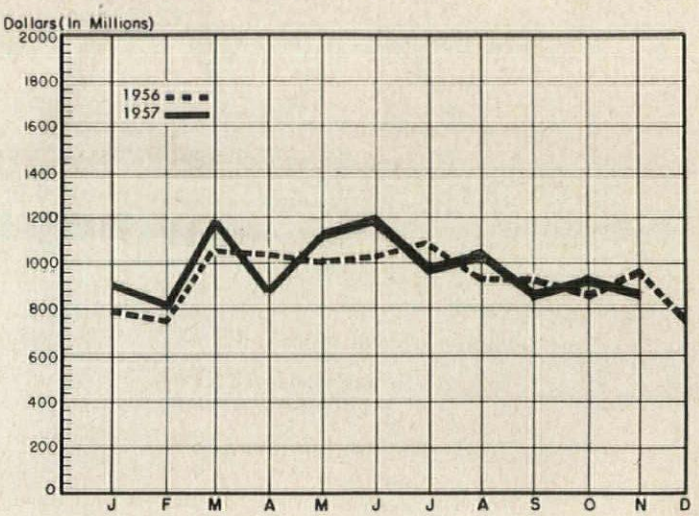
As Reflected in Contracts for Future Construction in the U.S. Reported and Tabulated by F. W. Dodge Corporation



Housing Upturn Continues, Construction still strong

Contracts for future construction in the U.S. in November reached approximately the same level as in the same month a year ago, F. W. Dodge Corporation reported, with a decrease in contracts for nonresidential buildings approximately offsetting increases in the residential and heavy engineering categories. The November total of $2,370,699,000 included $929,987,000 in contracts for new residential buildings, up three per cent from November of last year; $878,484,000 in contracts for nonresidential buildings, down nine per cent from November 1956; and $562,228,000 in heavy engineering contracts, up 11 per cent from the 1956 month. Cumulative figures for the first 11 months of 1957, as reported by Dodge, put the overall total at $30,211,070,000, two per cent above the first 11 months of 1957, nonresidential building at $10,-594,237,000, up one per cent; residential building at $12,-300,425,000, up one per cent; heavy engineering at $7,316,408,000, up five per cent.

NONRESIDENTIAL BUILDING (VALUATION)



RESIDENTIAL BUILDINGS

Construction Contracts—37 Eastern States

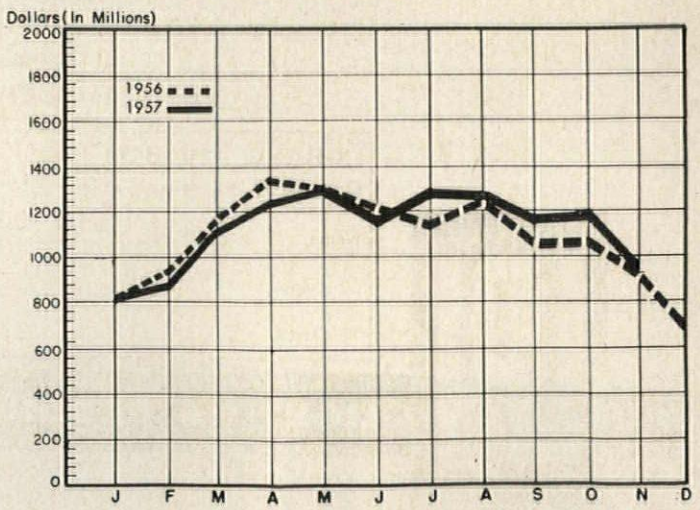
Valuation (in thousands of dollars)

YEAR	ANNUAL TOTAL	MONTHLY AVERAGE	YEAR	ANNUAL TOTAL	MONTHLY AVERAGE
1929	1,915,729	159,644	1951	6,205,388	517,115
1935	478,843	39,904	1952	6,657,504	555,625
1943	867,815	72,318	1953	6,479,143	539,928
1947	3,153,773	262,814	1954	8,518,291	709,857
1950	6,741,028	561,752	1955	10,185,259	848,771

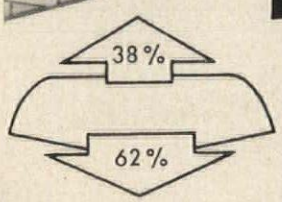
MONTHLY TOTALS

	1956	1957		1956	1957
JAN.	597,607	611,624	JULY	901,534	1,067,326
FEB.	714,347	676,347	AUG.	956,263	1,034,876
MAR.	904,916	861,165	SEPT.	844,697	918,290
APR.	1,071,010	965,131	OCT.	820,375	913,460
MAY	1,049,296	1,021,351	NOV.	692,883	736,908
JUNE	955,193	887,120	11 MOS.	9,508,121	9,693,598

RESIDENTIAL BUILDING (VALUATION)



New! DAYSTAR



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LIGHTING PRODUCTS INC., Highland Park, Illinois

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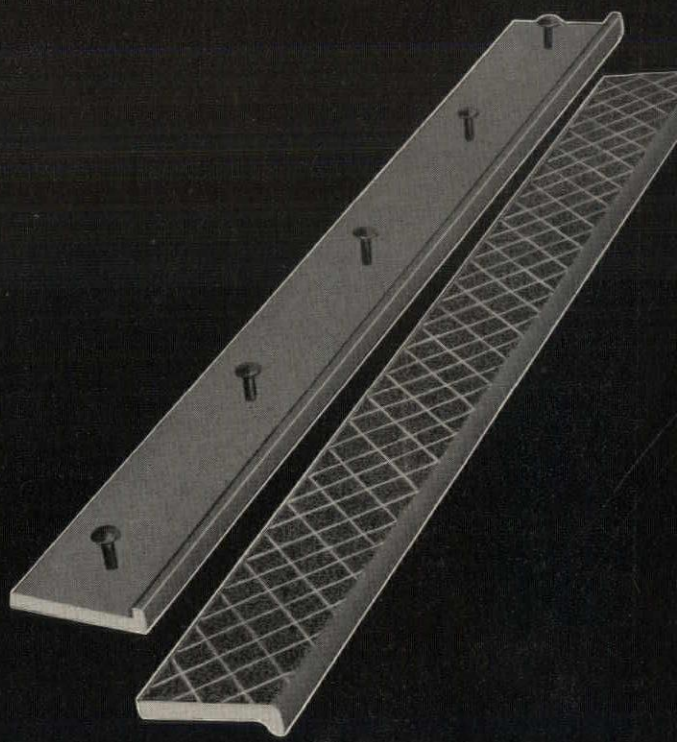

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