

ARCHITECTURAL RECORD

January 1960

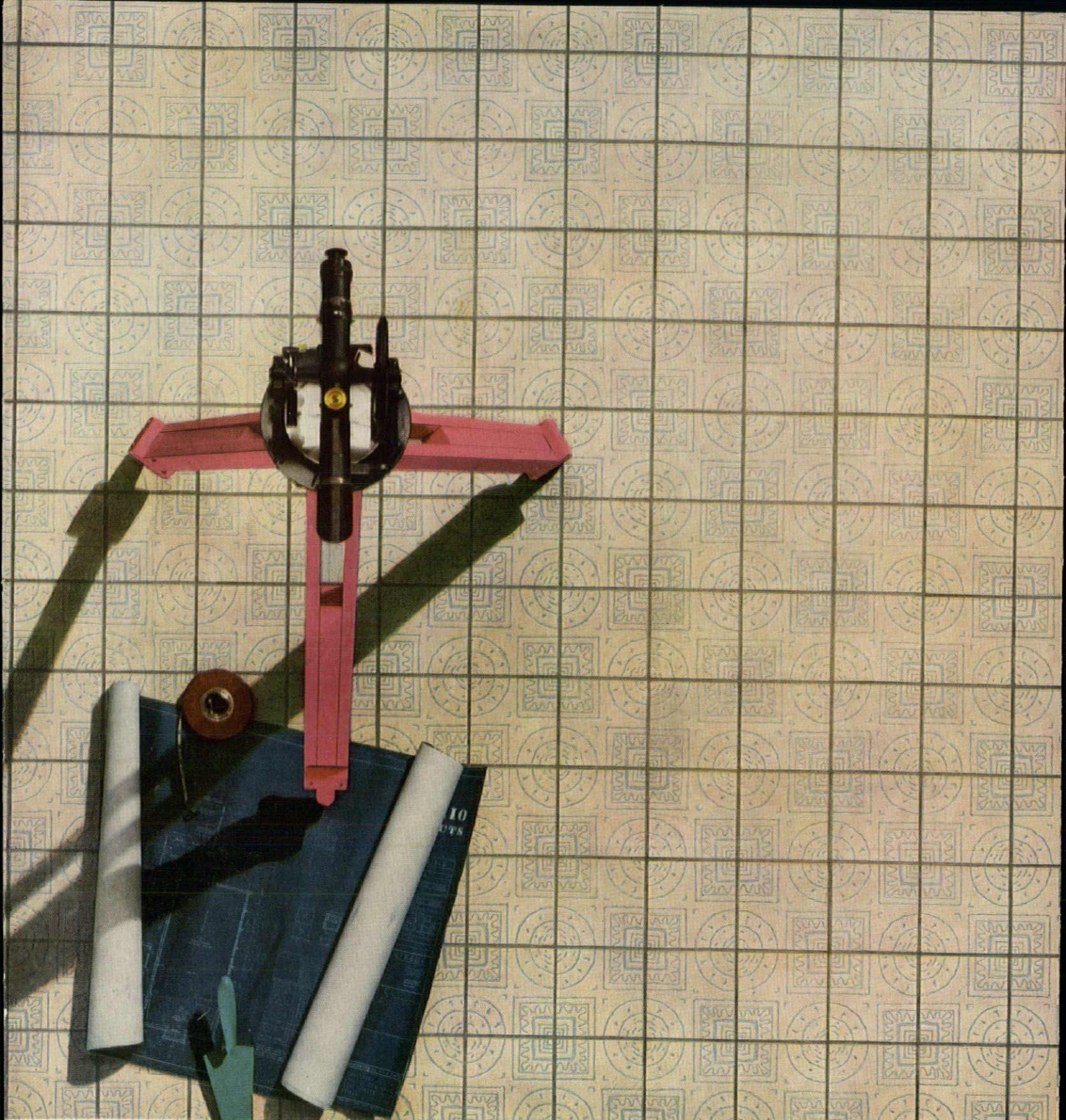
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Building Types Study: Industrial Buildings

Recent Work of Marcel Breuer

Rehabilitation Centers

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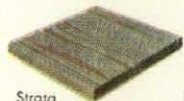


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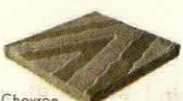
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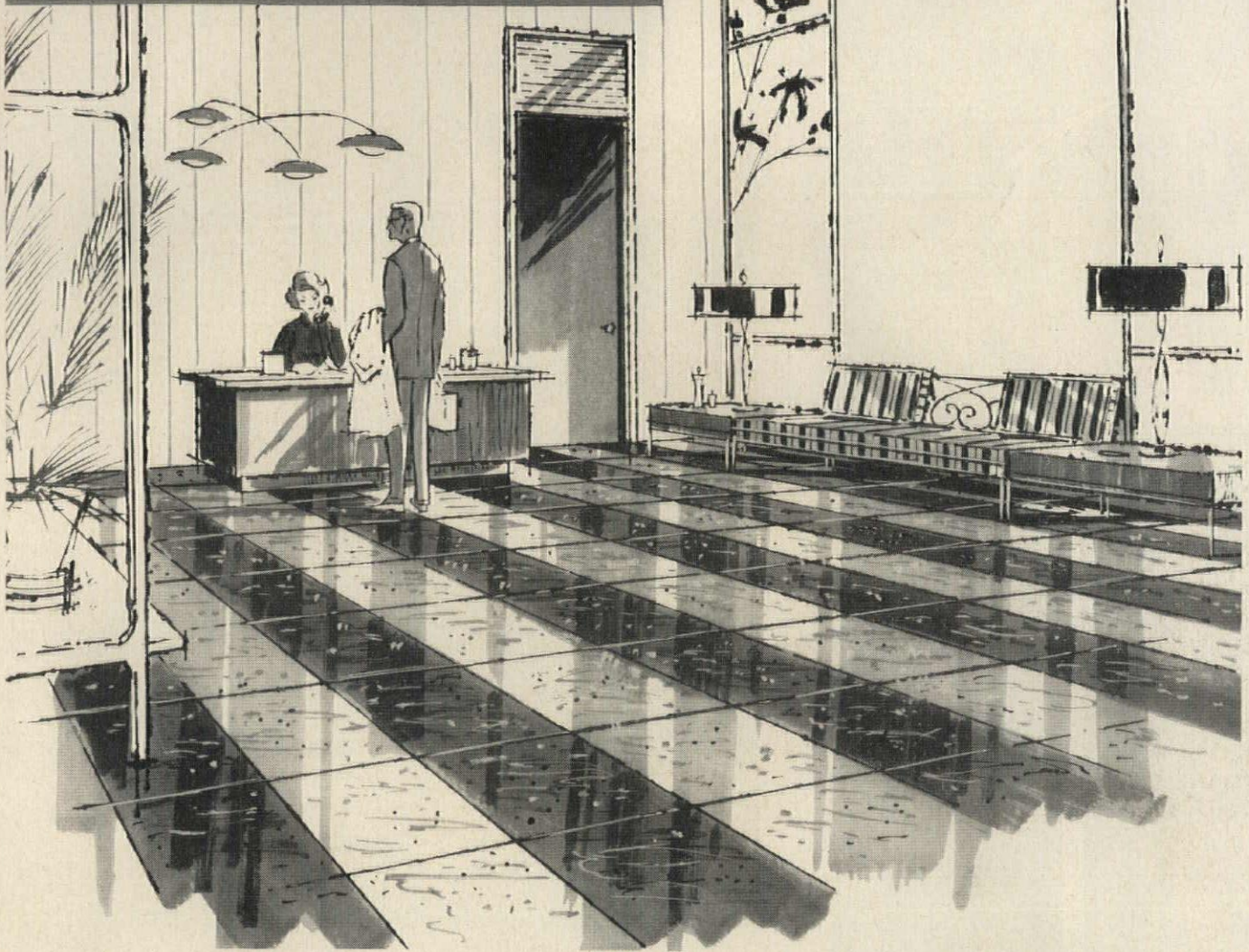


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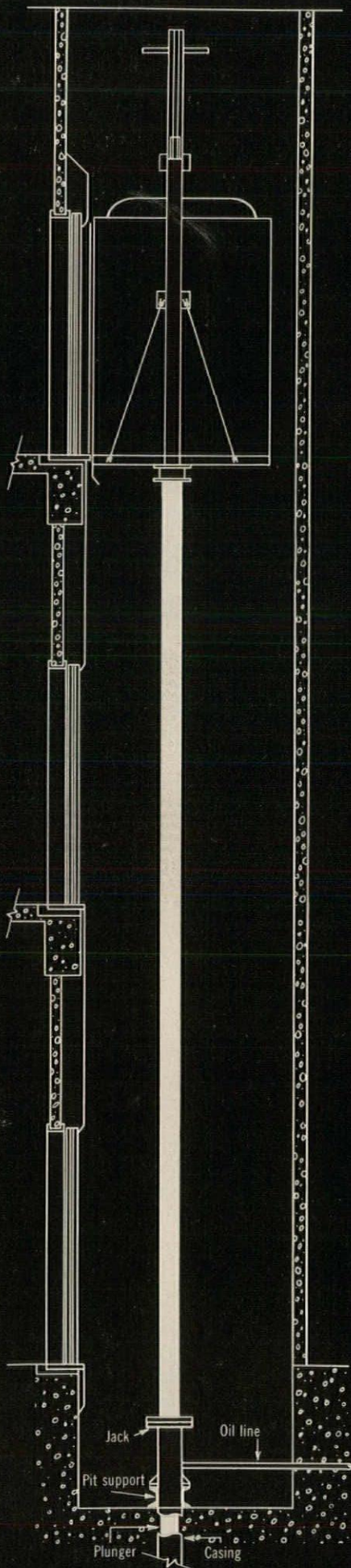
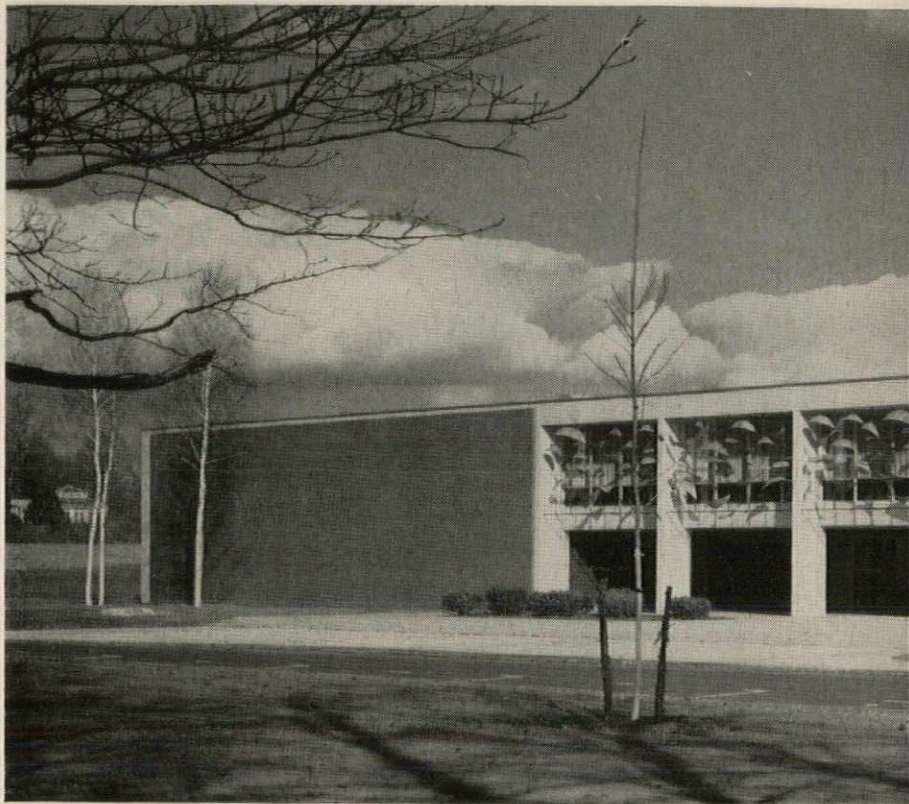
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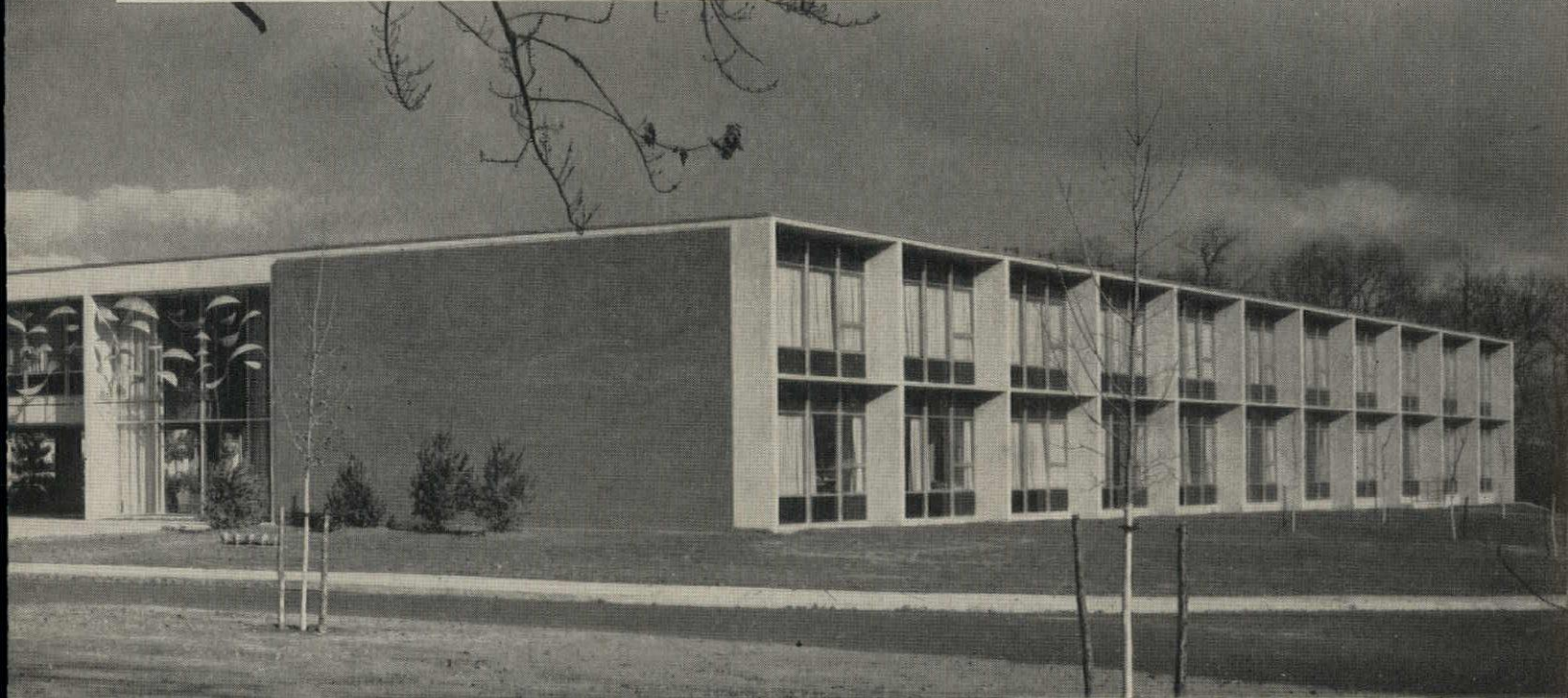


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GENERAL CONTRACTOR:
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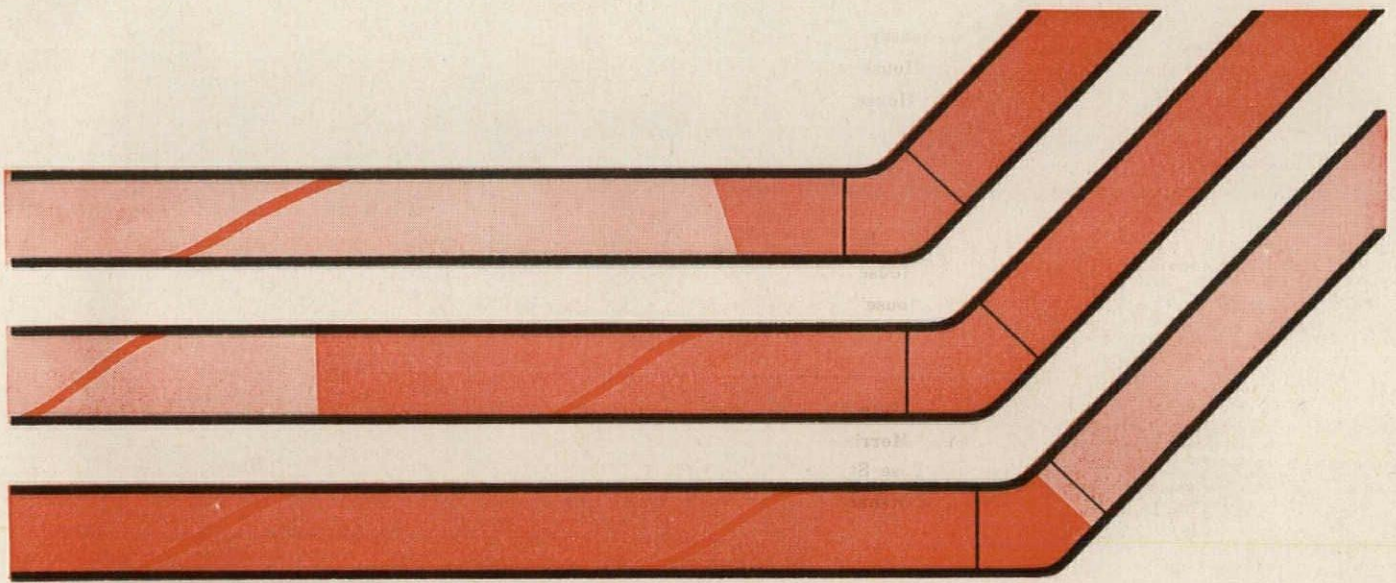
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ARCHITECTURAL RECORD

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Coming in the Record

YAMASAKI IN A QUIET MOOD

Or maybe it should be two quiet moods. The oft-published Yama is rapidly getting known for high vaulted forms in pretty exuberant styling. These two buildings—Warren Methodist Church and Detroit Institute of Arts and Crafts—show him in the softer accents of his forebears. There is a good deal of Japanese feeling in them; also a couple of nice devices to shield the buildings from less pleasant surroundings.

IMAGE OF THE ARCHITECT IN PRACTICE

Now that the little man with the beret and the brush has raised the question in these pages of the image of the architect, it is time to get a bit more serious about the architect and his functions in an age of boom and bustle. The February number will close out the list of promised examinations of the image, with a hard look at the public relations efforts of the architectural profession. This will be followed by the first results of a survey of architectural firms which have organized to meet the calls of the times. A great many architects tell, in their letters, of new activities and services, and, yes, new prosperity in architectural offices.

BUILDING TYPES STUDY: SCHOOLS

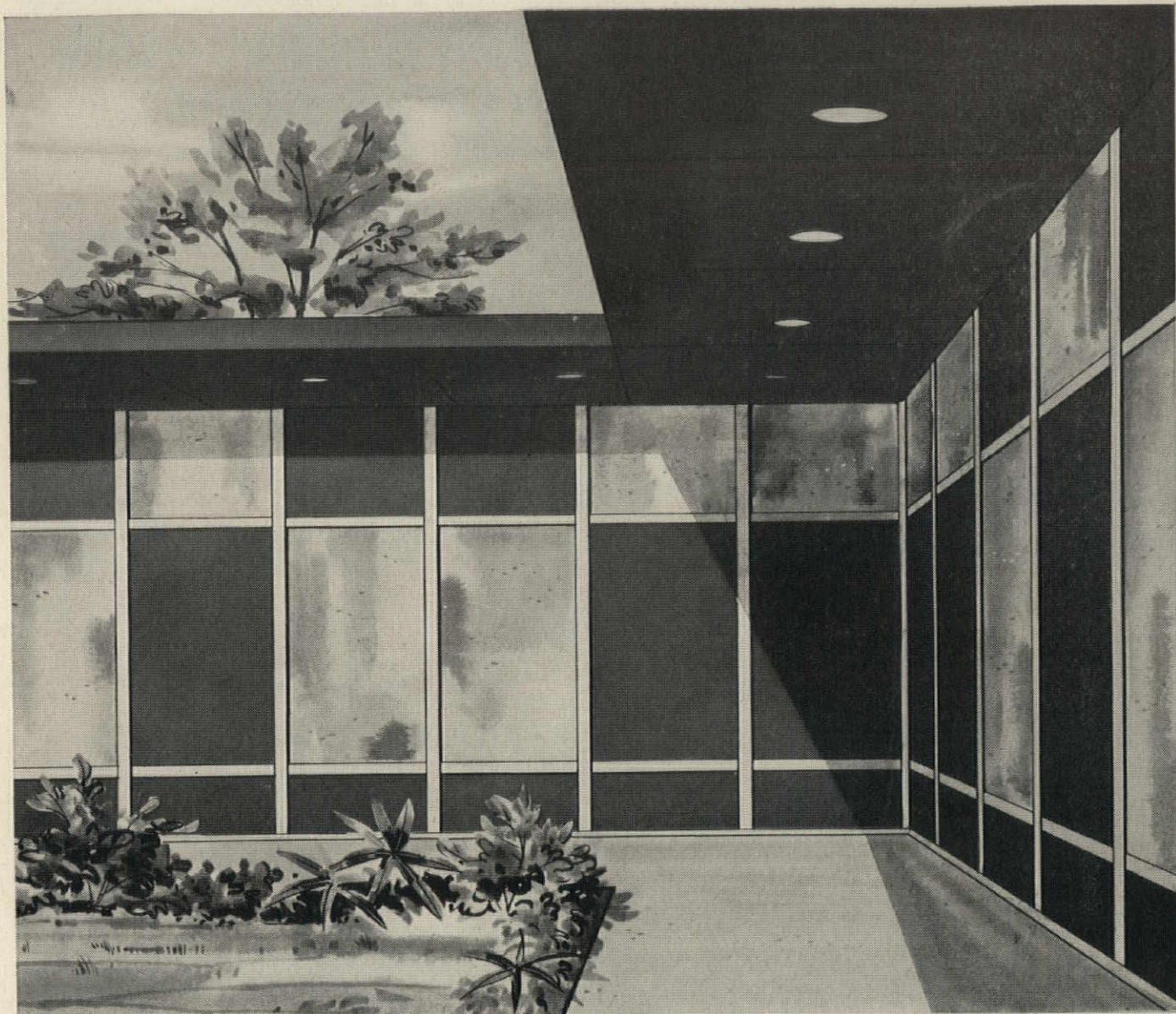
Another of our studies on schools, led off by an article on two schools especially designed for the teacher-team philosophy of education.

OTHER F. W. DODGE SERVICES: Dodge Reports—Dodge Construction Statistics—Sweet's Catalog Services—Dodge Books—Dodge Mailing Service—The Modern Hospital—The Nation's Schools—College and University Business—Hospital Purchasing File—Chicago Construction News—Daily Pacific Builder (San Francisco)—The Daily Journal (Denver)—Real Estate Record & Builders Guide—Dow Building Cost Calculator.

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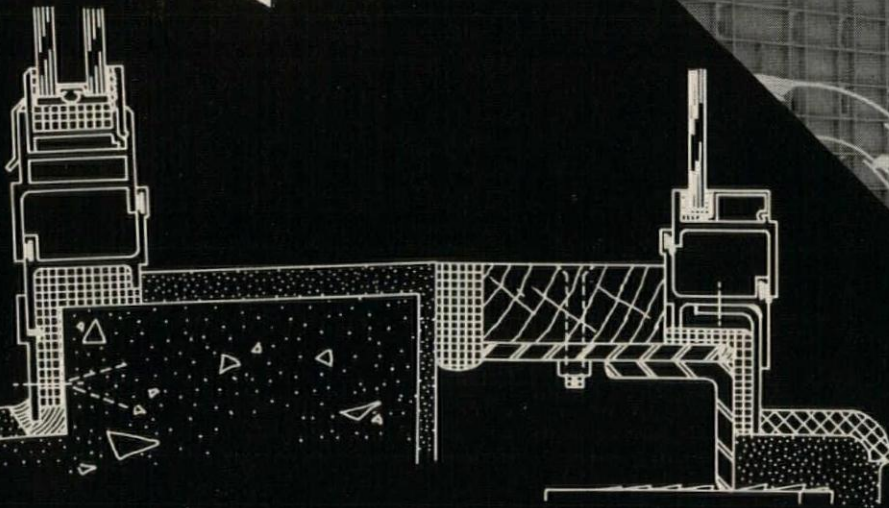
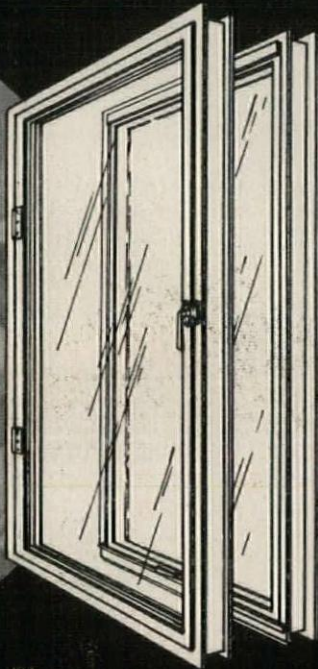
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Perspectives

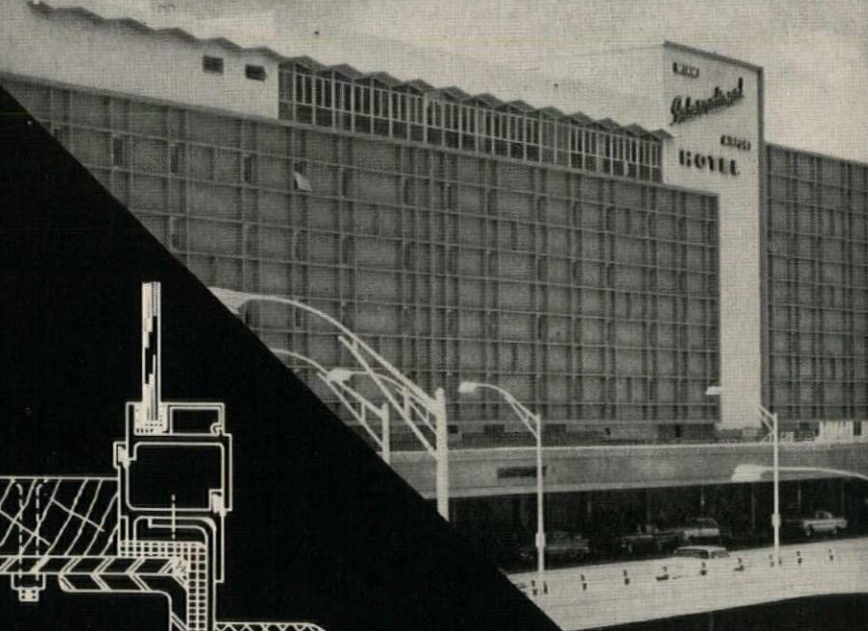


These "Jet Age Twins", cushioned in heavy neoprene gaskets are a new perspective in fenestration created by the necessity of living and working in an atmosphere of progress and industry where the "sounds of progress" must be softened. Comfort, beauty and convenience coupled with economy, durability and quality workmanship make these "twins" an unbeatable combination. Complete soundproofing was accomplished by a Ware Series 500 Intermediate Casement and Series 800 Monumental Projected. Both of these windows were vented for easy cleaning from the inside and to meet the Florida State Hotel Association regulations. The elaborate weatherstripping of each window was further augmented by the use of heavy neoprene gaskets for sound and vibration.



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Architecture vs. Art?

The critique of the new Guggenheim Museum architects will not want to miss appeared in the December 5 issue of *The New Yorker*—a “Sky-Line” piece by Lewis Mumford entitled “What Wright Hath Wrought.” The summary of Mr. Mumford’s reaction is monumental disappointment with what he regards as a monumental miscarriage of the Wright genius. “Those who respond to the interior do proper homage to Wright’s genius. If the purpose of the Museum is solely to exhibit Wright, the interior has magnificent justification for its existence. And if the spectator forgets the other works of art it contains, the building is—for him if not for the neglected artists—a compensation and a unique reward. What other monumental interior in America produces such an overwhelming effect?” But: “Instead of showing, as he well might have, how a great modern architect does justice to every aspect of a building, and not least the esthetic—without making timid compromises or irrational sacrifices or frivolous omissions—Wright turned his back on that challenge. He thus defeated his own purpose by producing a building that in order to function at all could not remain what he had planned it to be long enough to be formally opened. The old should not set such a bad example to the young, and the greatest of our architectural masters should not, while still hale and of sound mind, have added such a codicil to his last will and testament.” In a long preliminary to the critique, Mr. Mumford concludes: “If I have occasion to speak severely, remember that I am talking about a true artist, one of the most richly endowed geniuses this country has produced—an artist who has no need for the apologetic leniency one might accord to a lesser talent. For the most serious flaws in Wright’s work, it may be that the country fully shares reproach with the artist. Had we the proud understanding, when he was in mid career, to encourage him with great commissions, we would have earned the right to challenge his narcissism

and his complacent egocentricity and to require a more sober perfection than he, in the sheer willfulness of his genius, was prepared to achieve.”

Art vs. Architecture?

Can the famous rift between modern art and modern architecture be in fact a true schism?—has modern architecture, with its high concept of functional responsibility, been in effect deserted by a concept of art which deliberately rejects function? Emerson Goble, editor of ARCHITECTURAL RECORD, discussing homes for the aged at the Architectural League of New York last month, suggested that while a great opportunity exists for artists in such buildings it is far from sure they will welcome it. “It does seem clear,” Mr. Goble said, “that people in their declining years would reach out with special appreciation for what comfort or solace they might find in contemplation of beautiful objects or surroundings. . . . It would be a mistaken oversimplification to consider that the challenge to the artist was merely to assume a nostalgic mood of the guests and paint still-lives of American Beauty roses, or even landscapes à la Grandma Moses. Nevertheless the nostalgia is there, and it is very real. And the artist definitely has a functional assignment. And this, of course, is what the modern artist has rejected. . . . Beatniks to the contrary, modern painters have with remarkable unanimity proclaimed that their art represented release from the representations of life. They have asserted that they were expressing themselves and their techniques, not yielding to the moods or the saccharine demands of the moment. I should say that statements of that kind, so forcefully proclaimed, amount to a firm rejection of the idea that modern art has or wants functional responsibilities, as for instance in brightening the lives of older shut-ins. Let me hasten to say that I would agree that in some instances modern art might have exactly that effect. But that was never its intent; no modern painter ever showed the

slightest sign that he was trying to brighten anybody’s life. He would fight the man who made any such scandalous suggestion. That’s what I mean by questioning whether the artist would find congenial the assignment to contribute something constructive to the environment of a home for the aged. He might welcome the commission, and he might even convince himself that his art had functional values. But you all know perfectly well that it would be the same egocentric thing he would do for his own satisfaction in his own studio. I might add that on the relatively rare occasions when modern painting has been presented with some functional challenge, this has been its response.”

Architect to Producer: Help!

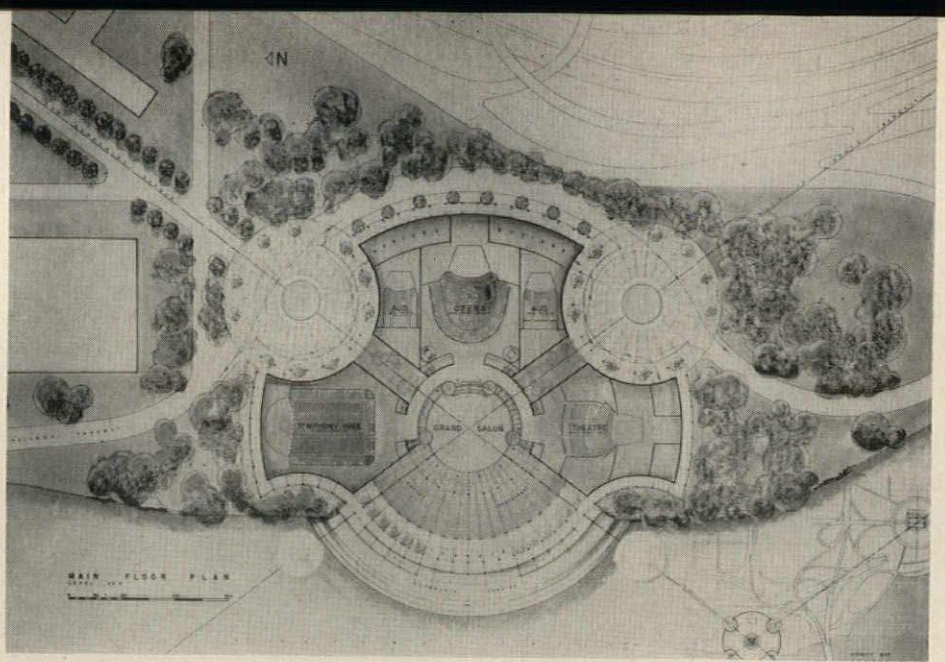
San Francisco architect Henry Hill, invited to address the annual meeting of the National Lumber Manufacturers’ Association on the subject of what architects need from the manufacturers, had one clear answer for them: *knowledge*. If lumber production has decreased over the last 50 years, Mr. Hill said, “I feel that during this period the public (and the architect) have come to feel that wood is for residential work only—and when it appears in larger work, it is mostly as a decoration, or as a softening effect only. Is this good enough? And why has it come to this? And the architect is *GIVEN* the information that he can span ‘so and so’ with steel and concrete. Can he do it with wood? Where can he find out? Who will help him? Where is the knowledge (and knowledge that is up to date)? What tools for the use of wood have you given us? . . . To realize his belief and conviction the architect has in the past (and unfortunately in the present) developed his detailing by himself. We have nothing we can use for the framing of openings. . . . You have given us plywood, and the laminates; which is good, but not good enough. . . . We ask for help—in standards and stock sizes for today’s needs, convictions and beliefs.”

Buildings in the News

National Cultural Center Plans Now Approved

Plans for the proposed National Cultural Center for the Performing Arts in Washington were unveiled recently. They are the work of Edward Durell Stone, appointed last June as consulting architect to the Center's Board of Trustees.

Arthur S. Flemming, Secretary of Health, Education and Welfare, is chairman of the Board of Trustees; Robert W. Dowling is chairman of the Advisory Committee on the Arts. The Federal government provided a 10-acre site under an act passed by Congress in September, 1958. Mr.



Above: Plan of the main floor of the Center, a single building about 850 ft across and 75 ft high, jutting about 200 ft into the river. Shown are the locations of the symphony hall (3000 seats), opera house (3500-4000), with two flanking auditoriums (800 and 400), and theater (1200-1800). The Grand Salon is intended for official and special receptions and balls and as a focal point. A restaurant, terrace, and ceremonial landing are included.



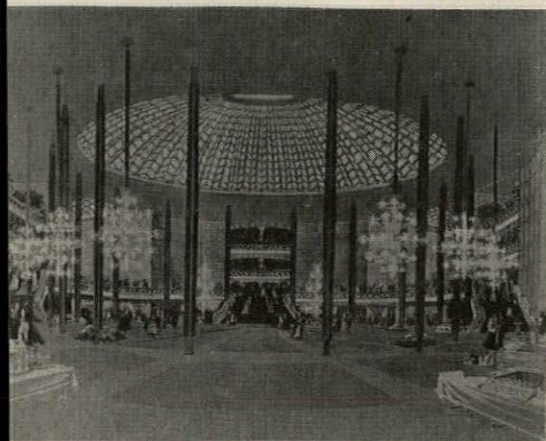
Left: Rendering of an aerial view of the Center

Stone's concept has been approved by the National Capital Planning Commission and the Fine Arts Commission. Total construction cost is estimated at \$61 million; it is planned to raise the funds by a national subscription campaign.

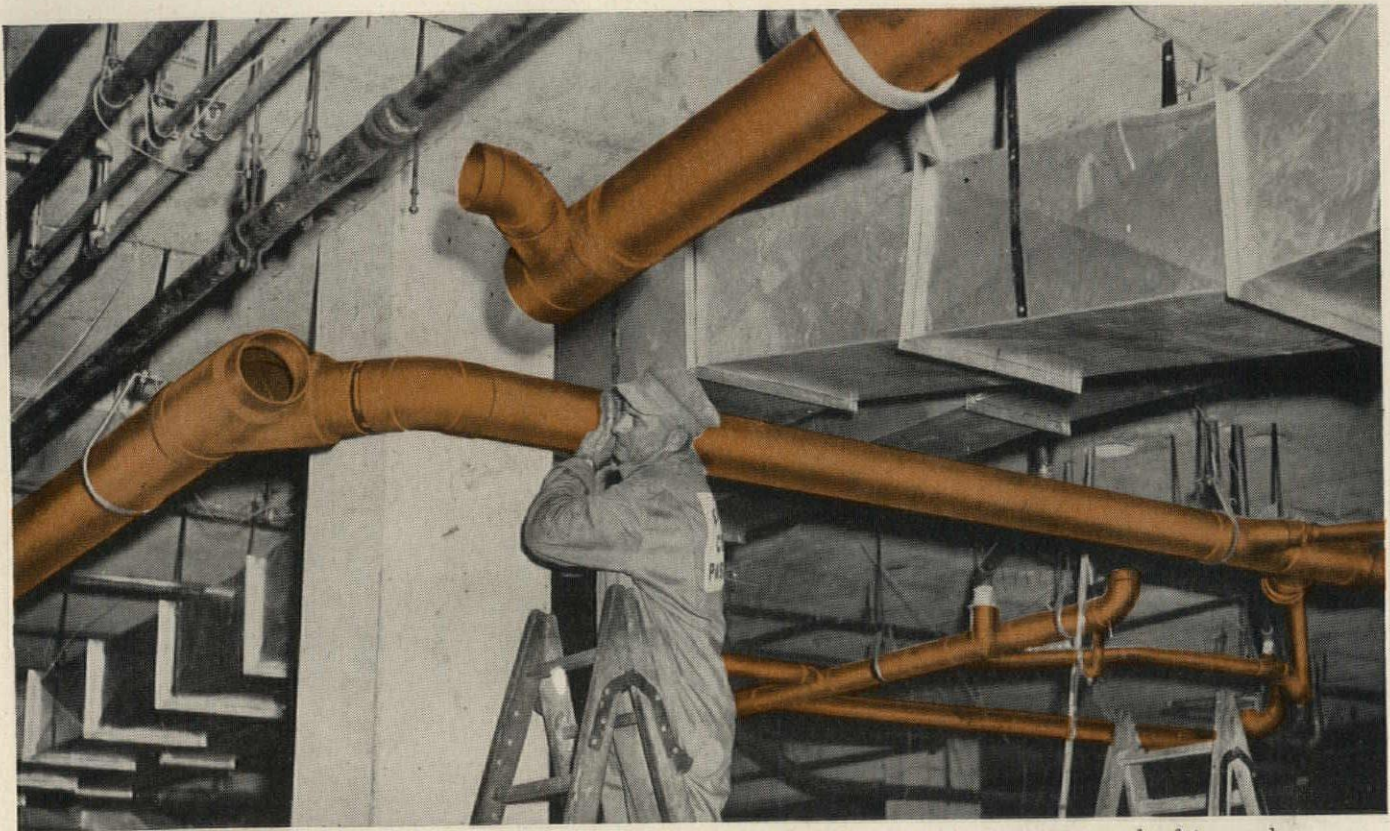
The site is on the edge of the Potomac River. Mr. Stone has designed the Center "in the tradition of the L'Enfant plan" for Washington, with two circular plazas, one terminating New Hampshire Avenue, the other, to the southeast, terminating the axis to the Lincoln Memorial.



Above: Rendering of the Center as seen from the New Hampshire Avenue plaza

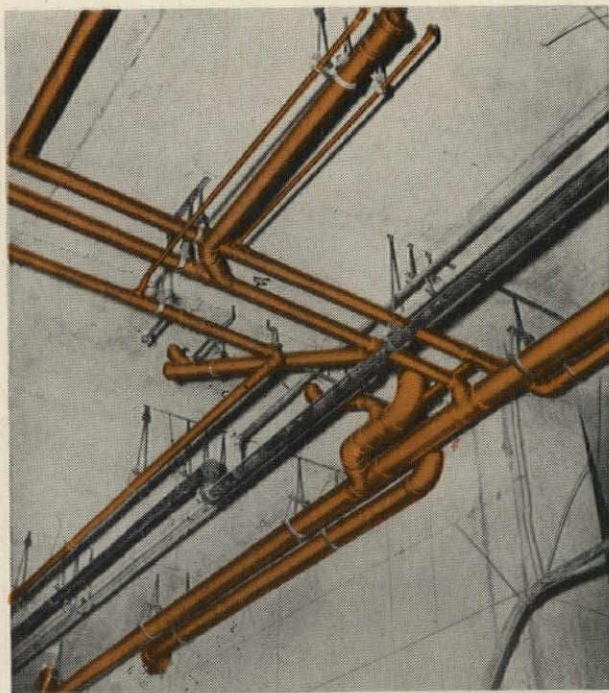


Left: Rendering of the interior of the glass-domed Grand Salon, 140 ft across, proportioned after the Pantheon in Paris



EASY TO HANDLE. Mechanic easily connects a length of 6-inch copper tube. More than 16,000 pounds of Anaconda Copper Tube, Type M, in sizes up to 8 inches, was used for the sanitary drainage systems. Architect and Engineer: California State Division of Architecture. Mechanical Engineer: Division of Architecture. General Contractor: Robert E. McKee, Inc., Los Angeles. Plumbing Contractor: E. O. Nay, Inc., Pasadena.

COMPACT COPPER SANITARY DRAINAGE SYSTEM GIVES NEW CALIFORNIA HOSPITAL MORE USABLE SPACE



CLOSE WORK LIKE THIS is possible only with copper tube. Water and drainage lines hug the ceiling, giving ample basement headroom. Even in tight quarters, connections are easy to make. Sizes in this photo range from $\frac{3}{4}$ " water lines to 4" for drain and vent lines.

Copper tube sanitary drainage lines in the hospital building and administration wing of the new Fairview State Hospital at Costa Mesa, California, eliminated wasted space in furrowed areas and allowed ample headroom in the basement. Equally important to the project owners, however, was the fact that copper tube drainage systems are easier to install, are long lasting, require less maintenance than other materials.

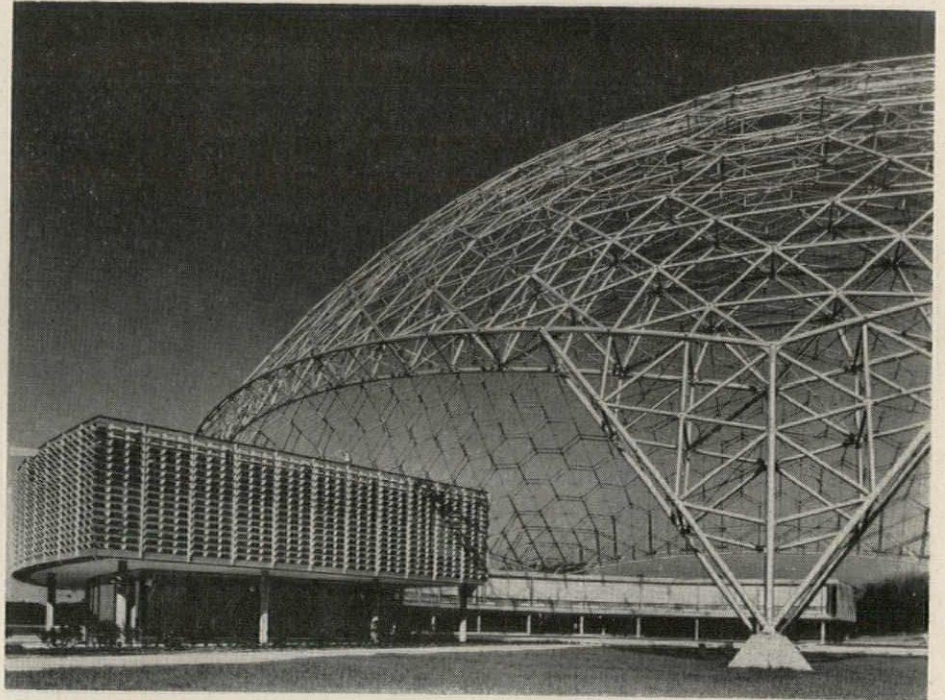
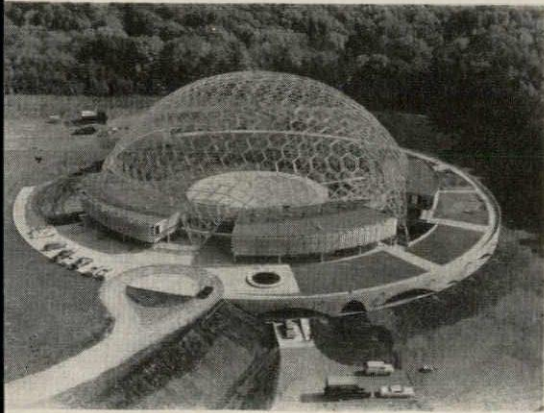
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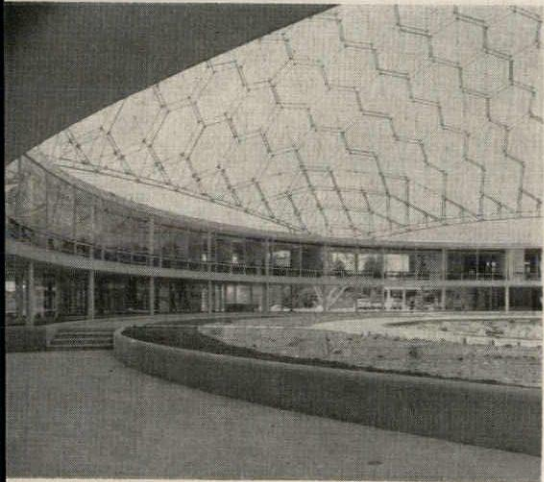
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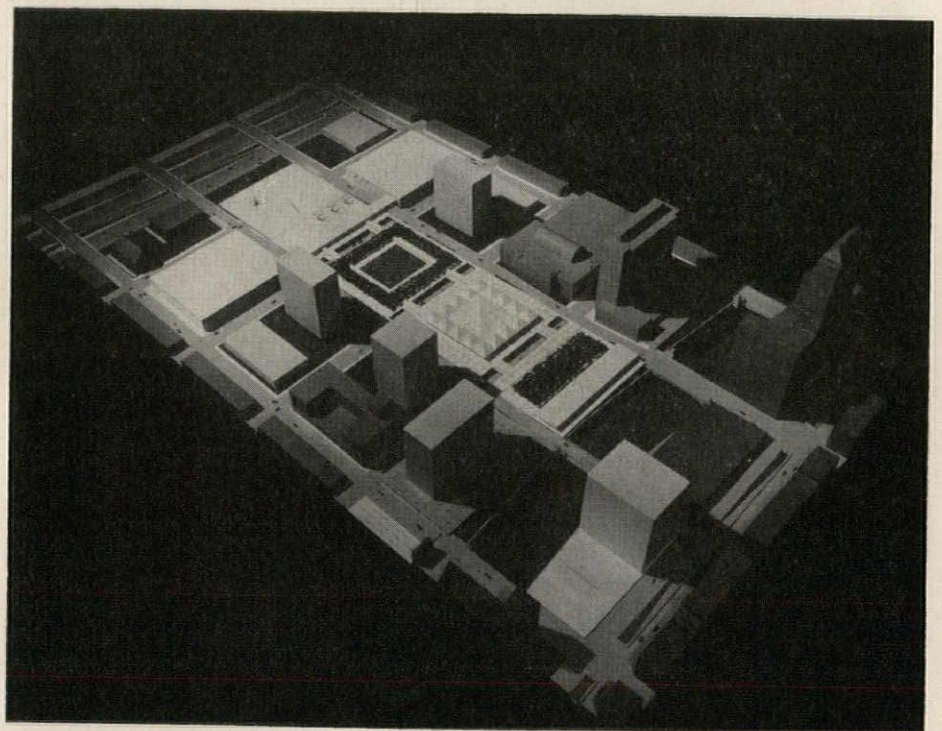


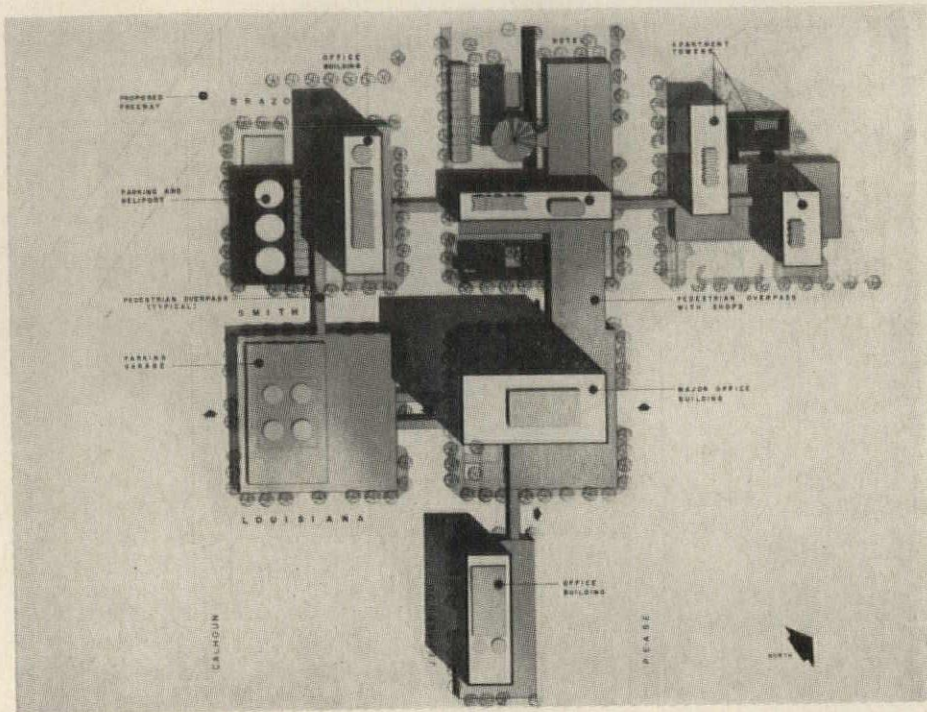
In Novelty, Ohio, near Cleveland, the American Metals Society's staff of 100 has moved into its new headquarters. The society's message on the uses of metal should be readily perceived by any viewer seeing the aluminum geodesic dome—"space-lattice," the stainless steel sunshades on the semi-circular office building, and the 350 samples of ore and minerals which will be displayed in the central Mineral Garden. In addition

to these, metals used for hardware and furnishings include bronze, brass, titanium, chrome and copper. Structure is a flat-plate concrete supported by concrete-filled lally columns. The dome, designed by R. Buckminster Fuller of Synergetics, Inc., is actually a double dome, supported by five stainless steel pylons; it weighs 83 tons. John Terence Kelly was the architect, Gilmore-Olson, contractors and engineers

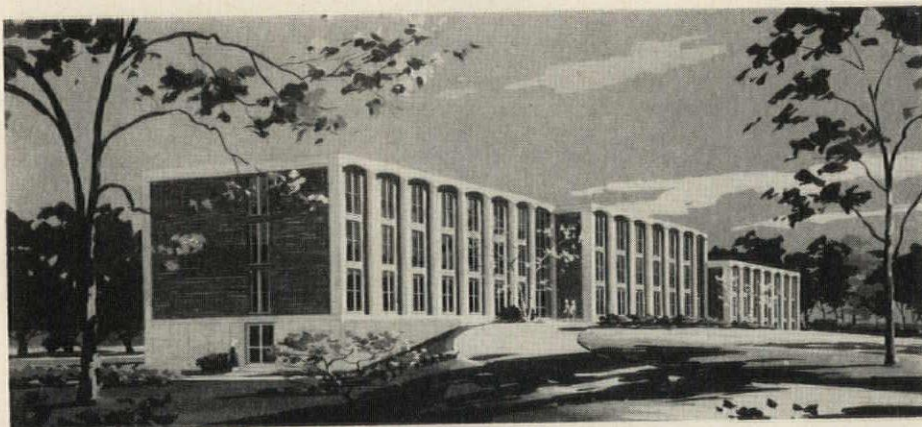
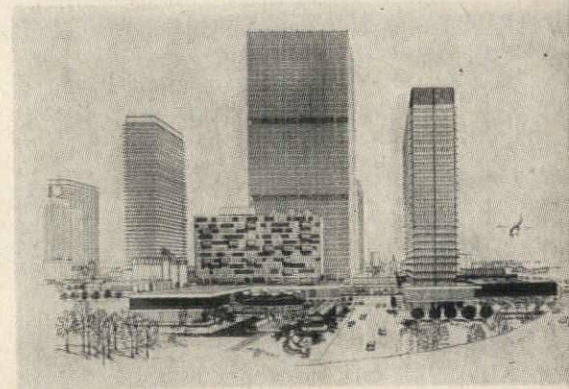


Commissioned by the West Central Association, a group of Chicago businesses in the neighborhood, a design for Gateway Center will be presented to the city's planning commission. When built, it will serve as the principal entrance to the downtown area from an expressway now under construction. Facilities will include a heliport, flanked by two parking garages; across the plaza from the heliport will be a downtown air terminal. Model towers on either side of the plaza reflect hope for future development of the area, now one of Chicago's Skid Rows. Architects and planners are Skidmore, Owings & Merrill





Scheduled to get underway immediately, Houston's \$100 million Cullen Center is said to be the largest privately financed downtown redevelopment yet contemplated in this country. Early buildings will include an office building, a hotel and parking facilities, to be followed in the future by two more office buildings, apartments and stores. The architects and planners are Welton Becket & Associates



Sarah Lawrence College, at Bronxville, N. Y., is building three dormitories as part of its expansion program. The buildings, to be ready in fall 1960, will house 150 students at a cost of \$1,200,000. Future buildings

will include a library, plastic arts building, science teaching facilities and music building. Philip Johnson is the architect of the dormitories; the general contractor is Nadal Baxendale, Inc.



Construction is well underway on the Belgian headquarters of Esso, in Antwerp. The building, which will have a façade of glass and gray aluminum, will comprise office space, cafeteria and parking facilities. The architect is Lathrop Douglass, and the contractor is the Compagnie Industrielle de Travaux



Final plans for Philharmonic Hall, the first building to be erected in New York's Lincoln Center of the Performing Arts, have been announced. The auditorium, designed so that orchestral performances should take acoustical preference over other musical programs, will accommodate 2400 listeners. Behind the 70-ft portico, glass walls will allow view of the plaza from terraces during intermissions. The hall is scheduled to be ready for the 1961-62 season. Max Abramovitz, of Harrison & Abramovitz, is the architect; contractors are Fuller-Turner-Walsh-Slaterry

Design Awards Made at Six Schools in Koppers Competitions

The winners of the second annual Koppers Architectural Student Design Awards were recently announced. The competition, for fourth-year architectural students, is sponsored by the Tar Products Division of Koppers Company, Inc. Each winner receives \$1000 from the company toward his fifth-year tuition.

The Koppers competition is actually not one competition, but a program of individual competitions at individual architectural schools. In 1958 the competition was conducted at five schools: Carnegie Tech, Georgia Tech, Cornell, University of California, Washington University. In 1959 the awards shown here were made at these schools and Yale. (It is tentatively planned to hold the 1960 competition at eight schools.) Each department of architecture selects its own subject, draws up its own program, and, in other words, runs its own contest. The only stipulation made by Koppers is that all designs entered have primarily flat roofs. The six award-winning designs, their descriptions, and the names of their student designers are shown on these pages.

Washington University—The motel is planned for 60 units initially, 40 later. The jury: Dean Joseph Pasonneau, School of Architecture, and St. Louis architects John A. Holabird and Joseph D. Murphy.

Yale University—The jury: Architects Douglas Orr of New Haven and Ulrich Franzen of New York and hospital research specialist Robert Pelletier.

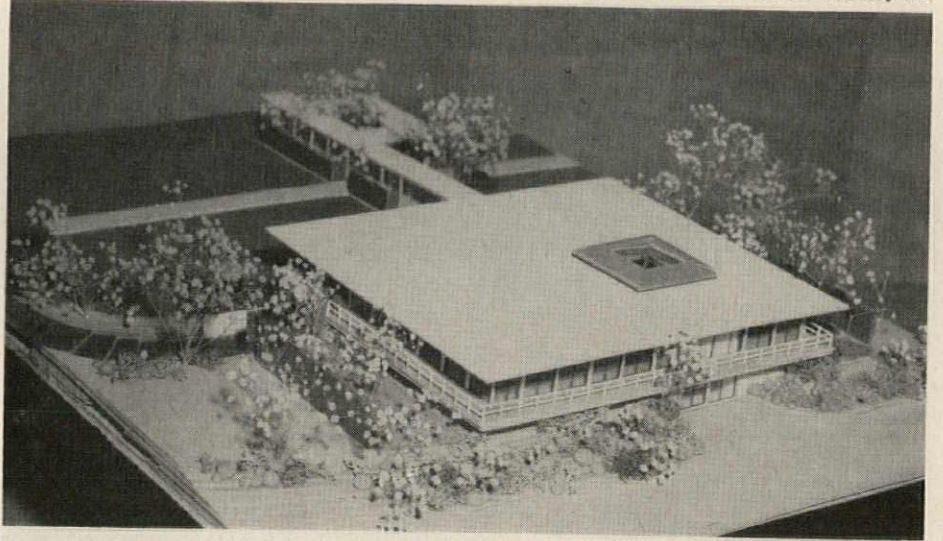
Cornell University—The jury: T. H. Canfield, acting chairman, department of design, and architects Milo Folley of Syracuse and Jerome G. Harrison of Philadelphia.

Carnegie Institute of Technology—The jury: William Metcalfe Jr. and Joseph Neufeld, visiting critics and hospital design authorities; Dr. Louis Block, in charge of research grants under the Hill-Burton program; B. Kenneth Johnstone, former dean of Carnegie Tech's College of Fine Arts.

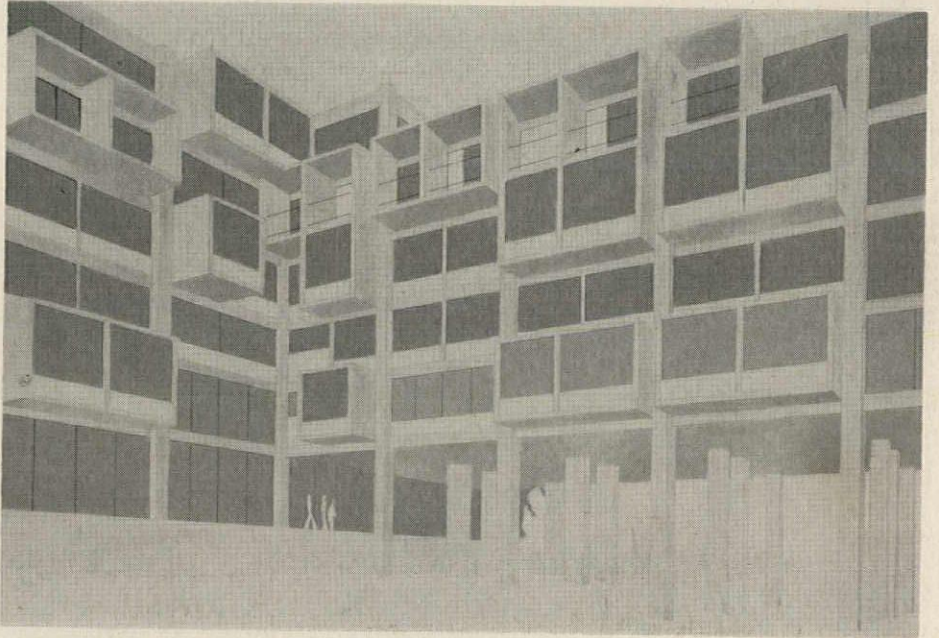
Georgia Institute of Technology—The jury: James H. Finch, critic in advanced design, and Atlanta architects Edward A. Moulthrop and M. Oliver Saggus.

University of California—The jury: Donald Powers Smith, president, Northern California Chapter, A.I.A.; William W. Wurster, dean, College of Architecture; Anson Boyd, architect for the state department of public works.

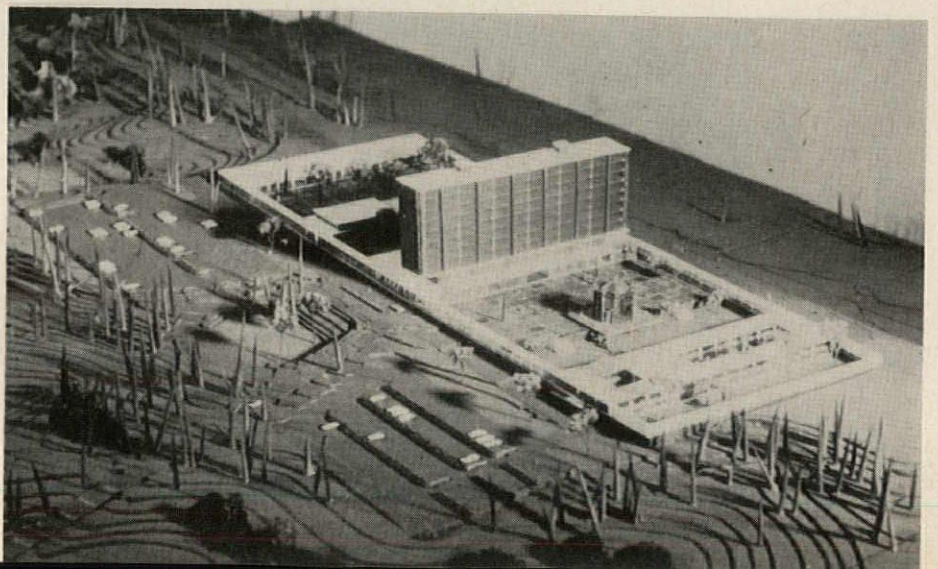
WASHINGTON UNIVERSITY. Project: A 100-Unit Motel. Winner: Robert L. Vickery Jr.

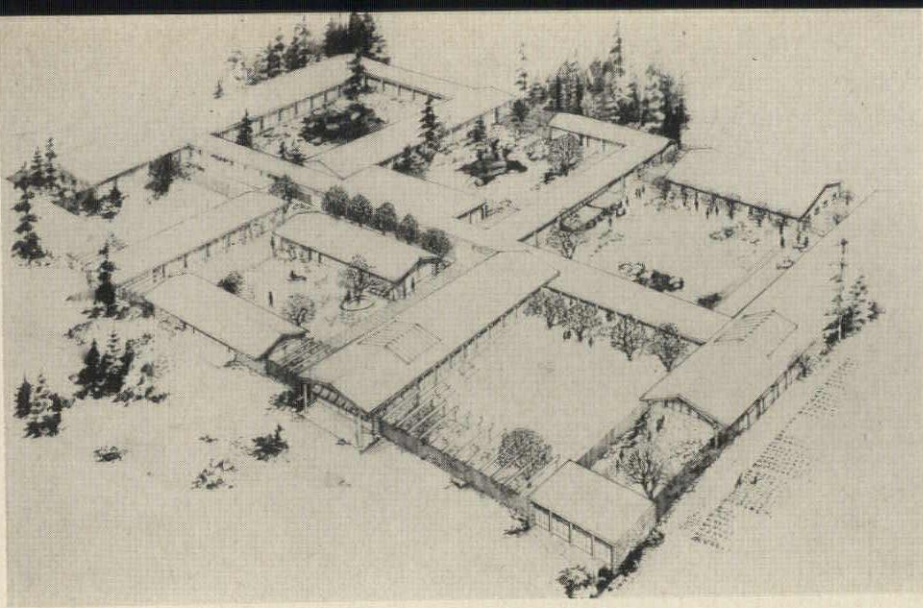


YALE UNIVERSITY. Project: A Community Hospital for Fairfield, Conn. Winner: Judith D. Chafee



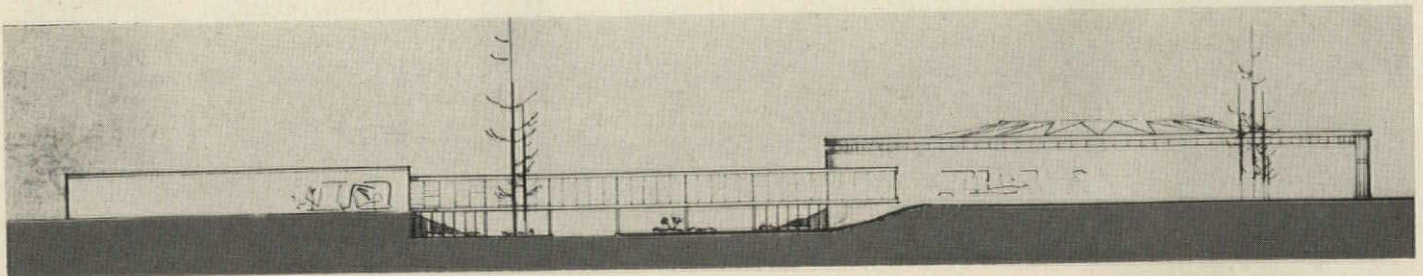
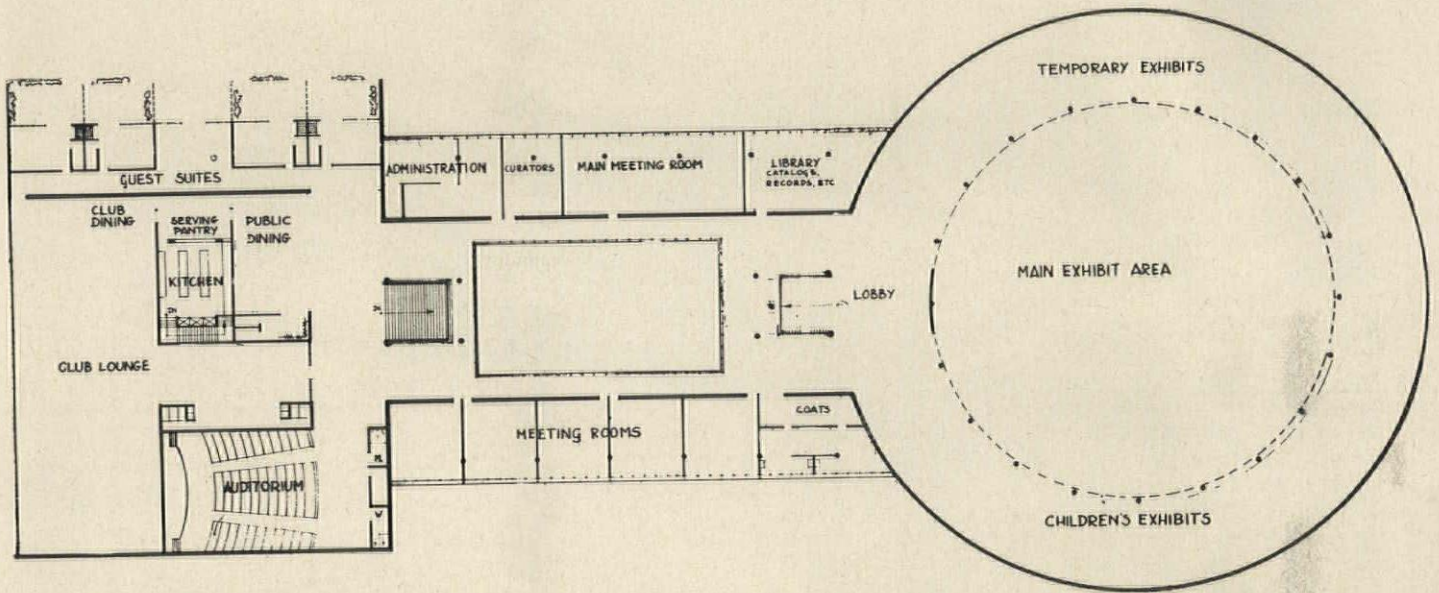
CORNELL UNIVERSITY. Project: A General Hospital for Atlanta, Ga. Winner: Charles F. Rogers II



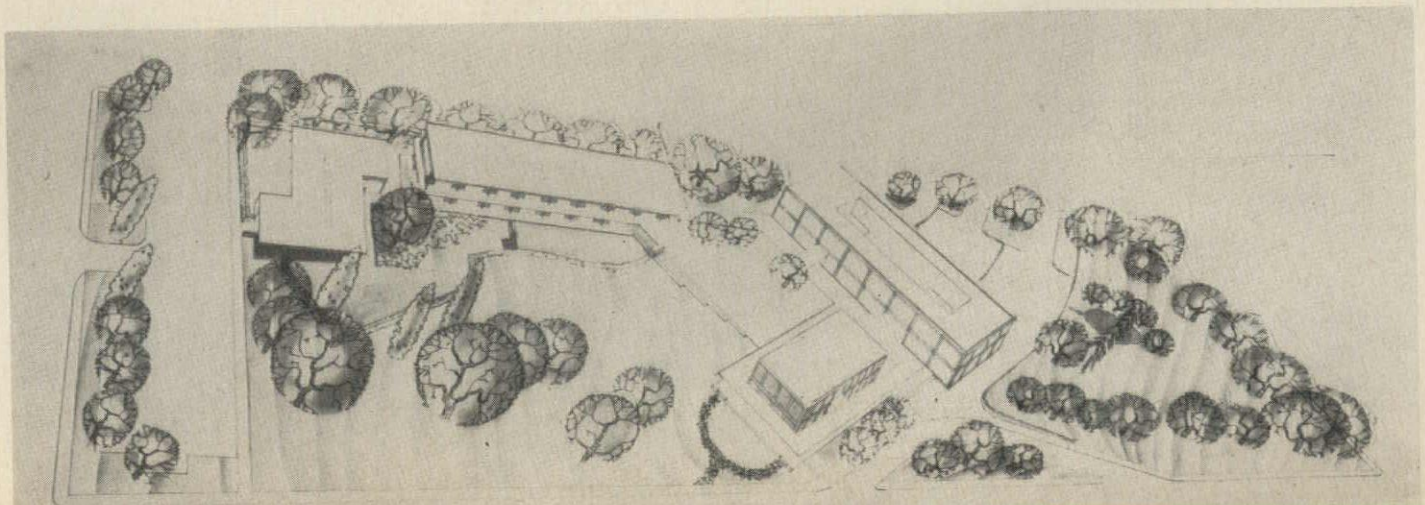


Left: CARNEGIE INSTITUTE OF TECHNOLOGY. Project: A Community Psychiatric Rehabilitation Unit. Winner: William C. Shopsin.

Below: GEORGIA INSTITUTE OF TECHNOLOGY. Project: A Regional Cultural Center and Museum of Arts and Sciences. Winner: Ronald Otto Hollnagel



Below: UNIVERSITY OF CALIFORNIA. Project: An Institute for Human Development. Winner: James Dale Lackey

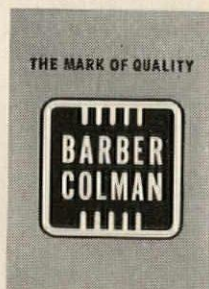


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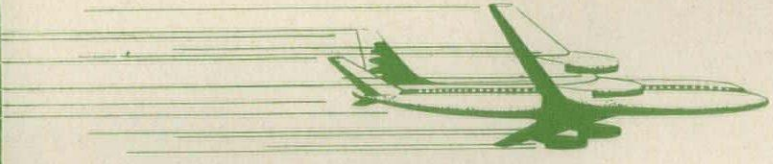


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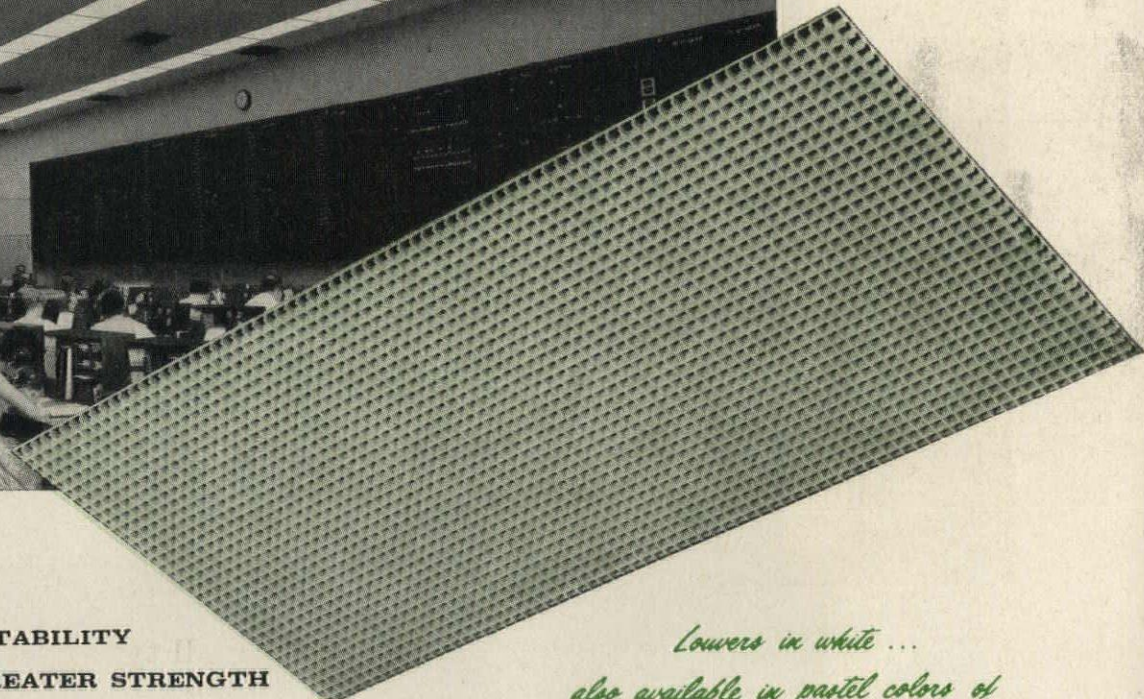
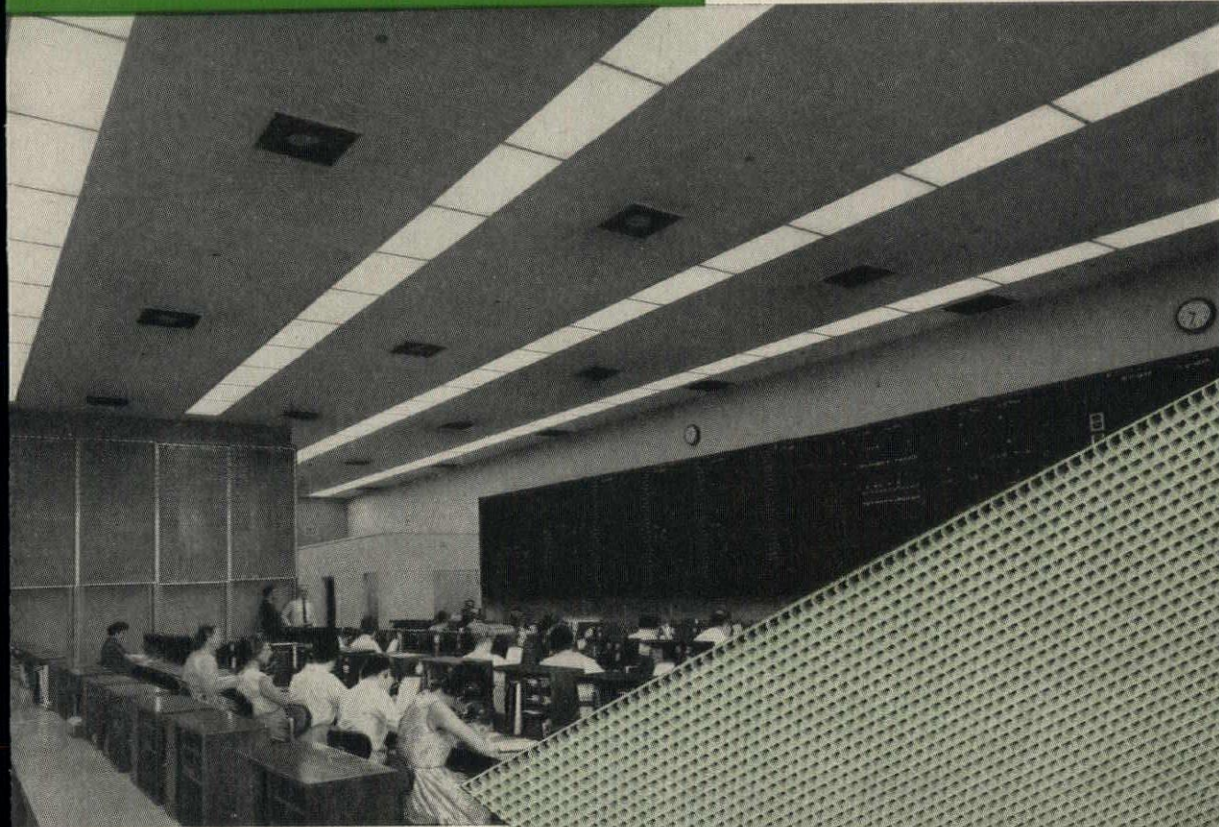
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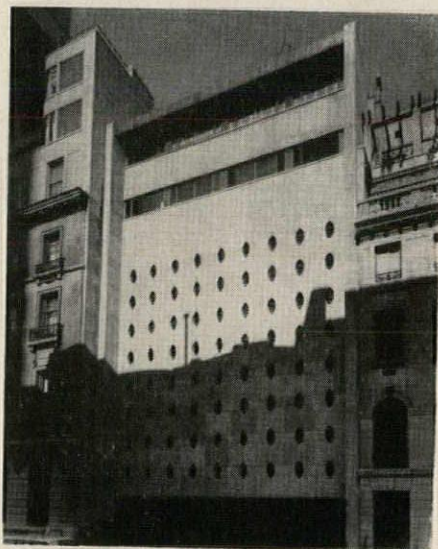
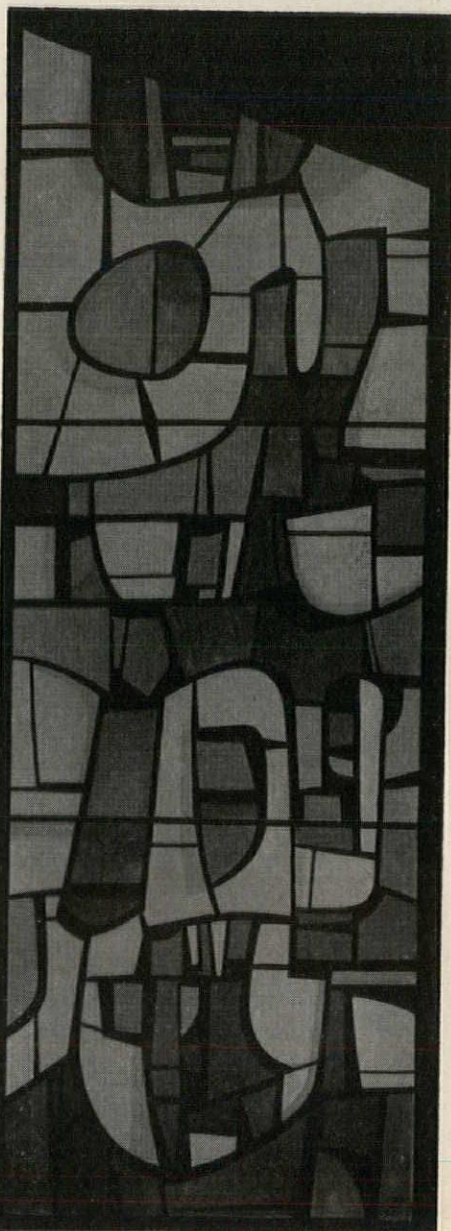
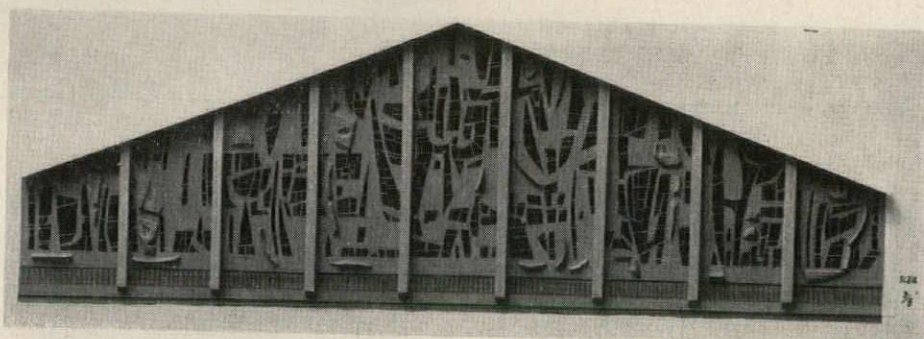
Stained Glass by Robert Pinart Exhibited in New York



Stained glass by Robert Pinart was the subject of an exhibit at the Architectural League of New York last month. Shown here are four examples and a mural on silk, also by Mr. Pinart.

Robert Pinart, a native of France, came to this country in 1951. In recent years he has worked on six of Percival Goodman's synagogues

Above and right: Day and night views, from interior, of models of two of four windows for Temple Emanuel, Denver (Percival Goodman, architect). The windows, of slab glass and concrete, are each 63 ft by 21 ft 4 in. *Below:* Cartoon of a window executed for an architect's own house in Berkeley, Calif. (Robert W. Ratcliff, architect). The window, between living room and garden, is in violets and ochers and milky opal-antique glass; it is 6½ ft by 2 ft

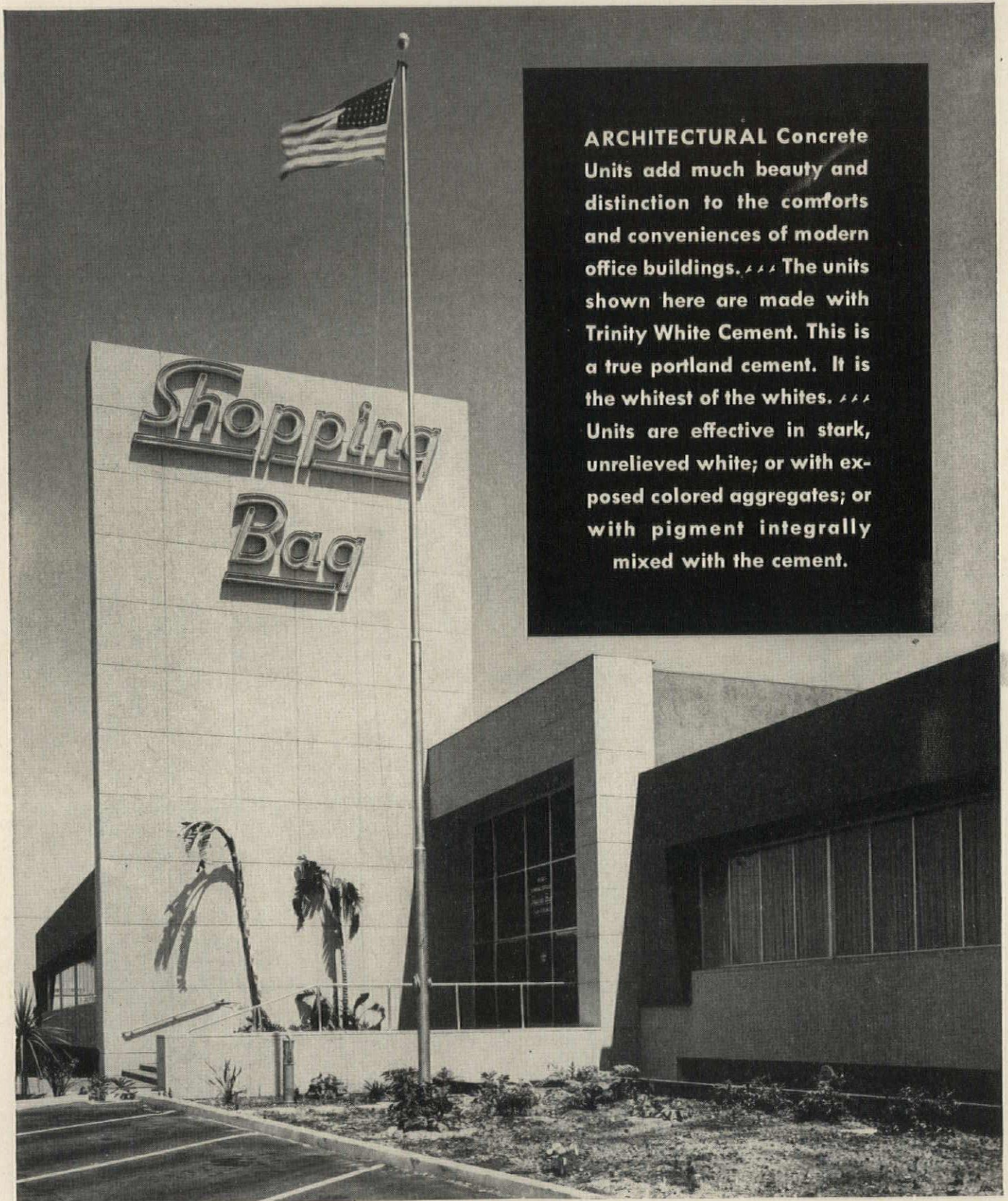


Above: Leaded glass in the façade of the Fifth Avenue Synagogue, New York (Percival Goodman, architect). *Below:* Mural painted on silk, Fifth Avenue Synagogue; 40 ft by 9 ft

(two of them shown are here). Among his other commissions have been the windows for the Music and Arts Building, University of California.

The windows for the Fifth Avenue Synagogue, shown at left, range from cool to warm colors up the façade: the two bottom rows, outside the wedding chapel, are in blues and violets; the next four rows, outside the sanctuary, are in ochers, yellows, and oranges; the two top rows, outside the card room, are in crimsons and violets. The windows are repeated on the ceiling and back wall of the sanctuary. The mural painted on silk, in the banquet hall, depicts the desert flora of Israel; its colors are subdued browns, ochers, violets, and oranges.





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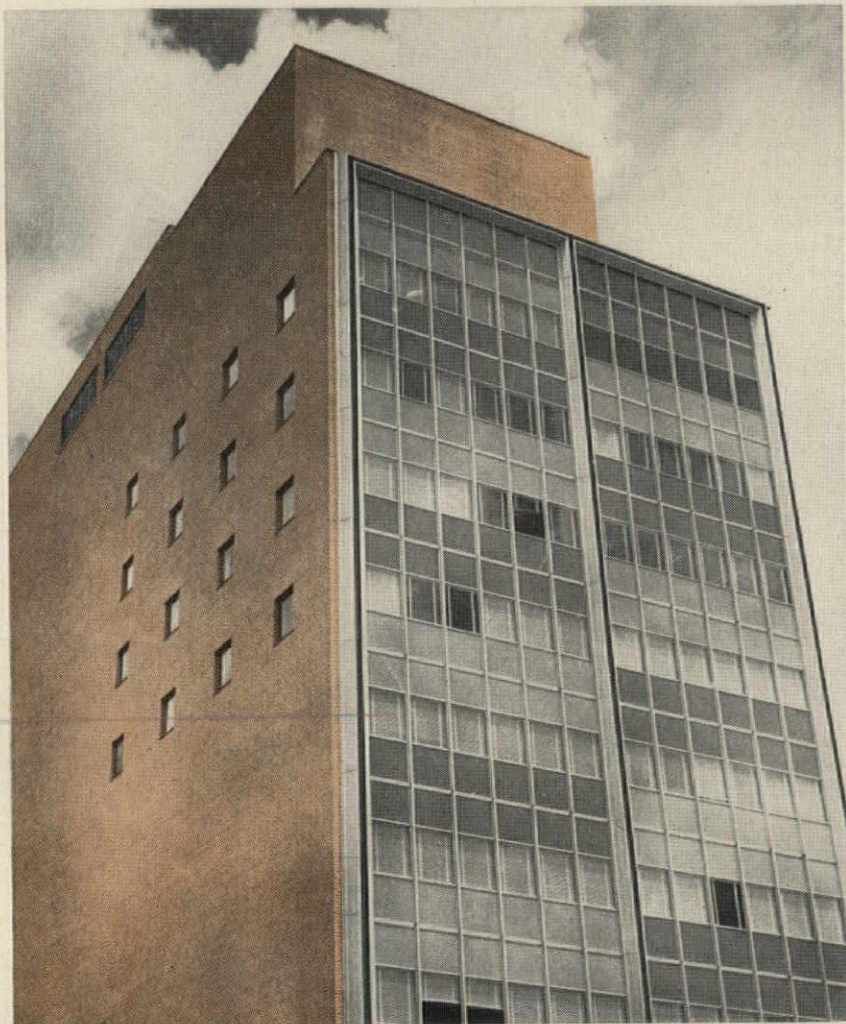
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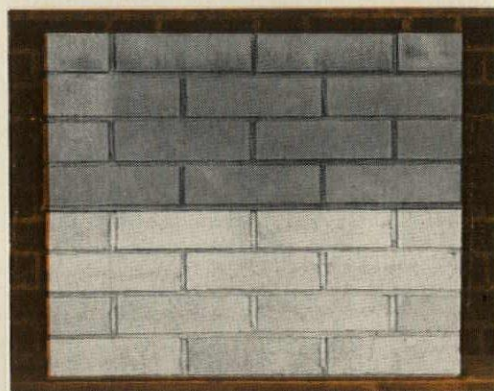
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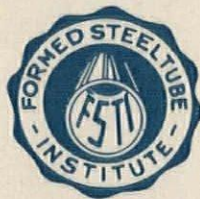


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—Drawn for the RECORD by Alan Dunn

North Central A.I.A. Meets

"Color in Architecture" was the theme of the North Central States A.I.A. Regional Conference, held in Milwaukee during the fall. The region includes Minnesota, North and South Dakota, Illinois, and Wisconsin.

A major speaker was Julian Garnsey, color consultant, on "Color as Selected." Isay Balinkin, professor of experimental physics, University of Cincinnati, led a seminar on "Color Fundamentals for Architects." Howard Ketcham, color consultant, discussed "The Psychological Use of Color in Building Materials," and Walter C. Granville, president of the Inter-Society Color Council, spoke on "Color and Design in Architecture." John Noble Richards, F.A.I.A., and Philip Will Jr., F.A.I.A., president and first vice president of the A.I.A., also spoke. Joseph Flad is president of the host Wisconsin chapter, and Karel Yasko was conference chairman. (Mr. Yasko recently was appointed chief state architect of Wisconsin.) Harold Spitznagel of Sioux Falls, S. D., is the regional director.

Consulting Engineers Meet

When the Consulting Engineers Council held its semi-annual meeting in Cincinnati recently, a number of topics of interest were considered.

George W. Poulsen, documents committee co-chairman, described 11 C.E.C. documents just published; they include architect-engineer and engineer-client agreement forms, legal and procedural documents and bonds, and mechanical-electrical special conditions. A progress report on cost elements involved in the operation of a consulting office was presented by Cedric Acheson, office practice committee chairman.

Larry N. Spiller, C.E.C.'s executive secretary, reported on the results of a survey of 71 air-conditioning and heating equipment manufacturers. Firms were asked to indicate whether or not local agents performed design engineering. Mr. Spiller said the results show a growing awareness among manufacturers of the consultants' feelings about design competition; he added that many companies announced their intention to prohibit such activity.

Ralph M. Westcott of Los Angeles is president of C.E.C. National offices of the organization are at 326 Reisch Bldg., Springfield, Ill. The next meeting of the group is to be May 4-7 in Portland, Oregon.

Worth the Winning

THE SECOND ANNUAL \$25,000 MASTIC TILE ARCHITECTS' COMPETITION, sponsored by the Mastic Tile Division of the Ruberoid Company. The sub-

ject is "Education for Youth and Adult—Recreation for All the Family." The problem is the planning of an educational and recreational "plant" for a specific area adjacent to the site of middle-income housing planned during the first annual competition (AR, Sept. '59, pp. 14-15). The jury is to be headed by Henry L. Kamphoefner, F.A.I.A., dean, School of Design, North Carolina State College. The other members will be: Harry J. Carman, dean emeritus, Columbia College; William W. Caudill of Caudill, Rowlett, Scott & Associates; John Lyon Reid, F.A.I.A.; Eberle M. Smith, A.I.A. Professional adviser will again be A. Gordon Lorimer, A.I.A. Eligible are registered architects of the U. S., architectural assistants, and architectural students. The deadline for submission of entries is June 30. Details from: Mastic Tile Division, The Ruberoid Co., P. O. Box 128, Vails Gate, N. Y., or from any sales representatives or distributors.

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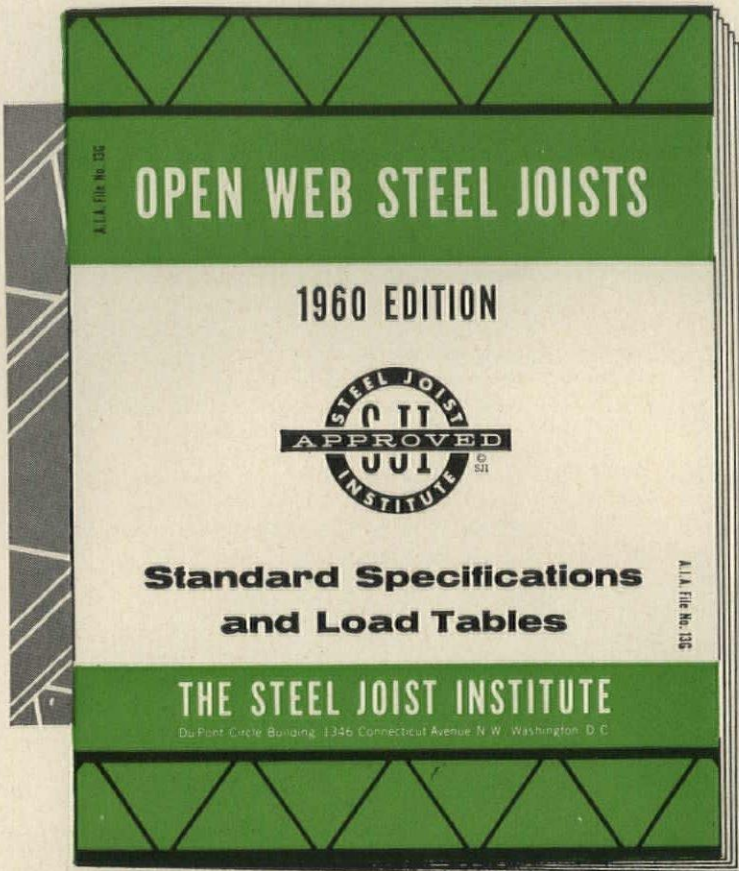
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Meetings and Miscellany

SHIP of \$3000, available to architects of the New York area who are between 23 and 30. The 1960 award will be given on the basis of a competition for the design of a heliport. Entries are due by March 7. Program and details from: Lester D. Tichy, Chairman of the LeBrun Committee, New York Chapter, American Institute of Architects, 115 E. 40th St., New York 16.

THE BUFFALO-WESTERN NEW YORK CHAPTER, A.I.A. SCHOLARSHIP AWARD of \$1000 for postgraduate study. The award, sponsored by Anchor Concrete Products, is available to residents of the eight western New York State counties who are under 30. Details from: Thomas Justin Imbs, A.I.A., 225 Delaware Ave., Buffalo 2, N. Y.

THE 1960 HOMES FOR BETTER LIVING NATIONAL AWARDS, sponsored by the American Institute of Architects in cooperation with *House & Home* and *Life* magazines. Entry slips are due by January 15 and entries by February 12. Details from: A.I.A., 1735 New York Ave., N.W., Washington 6.

Parents' Magazine Winners

The winners of *Parents' Magazine's* Tenth Annual Builders' Competition for the best houses for families with children were recently announced. Houses were entered and judged in two cost categories (exclusive of land): Up to \$15,999 and \$16,000-\$25,000.

The National Merit Award in the lower-price group went to *Lincoln Built Homes*, Lafayette, Calif. The same builders also won a qualifying Regional Merit Award for the Seymour house, Roseville, Calif.; David B. Whittet, designer. Other Regional Merit Awards in the lower-price group were given as follows: *Bell & Valdez, Inc.*, Bellevue, Wash., for the Chambers house, Bellevue; John M. Anderson, architect. *Federal Development Corp.*, Tucson, Ariz., for the Willoughby house, Tucson; Scholer & Fuller, architects. *Norman Igo*, Lubbock, Texas, for the Burkhalter house, Lubbock; Schmidt & Stuart, architects.

Regional Merit Awards in the higher-price group were given to: *E. B. Vaughters*, Seattle, for the Pitts house, Mercer Island, Wash.; Seth M. Fulcher, architect. *Eichler Homes, Inc.*, Palo Alto, Calif., for the Reed house, Sunnyvale, Calif.; A. Quincy Jones & Frederick E. Emmons, architects.

The jury this year consisted of: Martin L. Bartling Jr., Knoxville

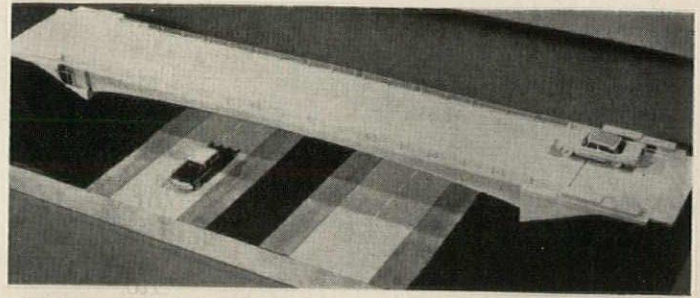


Eero Saarinen, one of three men recently elected to membership in the American Academy of Arts and Letters. Mr. Saarinen will occupy Chair No. 9, formerly held by Frank Lloyd Wright. Membership in the Academy is limited to 50 men and women, chosen for special distinction from the 250 members of the National Institute of Arts and Letters, its parent body. The two other new members are Robert Penn Warren, novelist and poet, and Virgil Thomson, composer

builder and first vice president, National Association of Home Builders; Richard M. Bennett, F.A.I.A., Loebel, Schlossman & Bennett; Ralph J. Johnson, director, N.A.H.B. Research Institute; William H. Scheick, A.I.A., vice president, Timber Engineering Co.; Maxine Livingston, Family Home editor, *Parents' Magazine*.

Award to McGavran

G. E. "Rod" McGavran, publisher and editor of *Daily Pacific Builder*, a newspaper for the construction industry published in San Francisco by the F. W. Dodge Corporation, received the 1959 "Honor Award" in San Francisco from the Building Industry Conference Board. The award, given for "service to the industry and community," was presented by architect Wayne Hertzka at a banquet. John Noble Richards, F.A.I.A., president of the A.I.A., was a speaker. Sherman P. Duckel, San Fran-



This bridge won for Allan M. Beesing the \$15,000 first award (professional) in the recent Steel Highway Bridge Design Competition sponsored by American Bridge Division, U. S. Steel Corporation. The competition, held and judged under the auspices of the American Institute of Steel Construction, brought in 300 entries; 15 professional and student awards were made. Mr. Beesing, a registered professional engineer in Buffalo, N. Y., designed a 160-ft span of welded steel girders with no center pier. The purpose of the competition was "to stimulate more imaginative, effective, and economical use of modern use of modern, high-strength steels in overpass structures"

cisco City Administrator, received the 1959 "Achievement Award" on the same occasion and for the same reasons.

Ohio Architects Meet

When the 26th Annual Convention of the Architects Society of Ohio met in Akron this past fall, the theme was "Fine Arts in Architecture." Among the speakers were Henry Lee Willet on "Stained Glass Today"; Linn Smith, A.I.A. Great Lakes regional director; Clinton H. Cowgill, F.A.I.A.

Officers of A.S.O. now are: Harold W. Goetz, president; Gilbert Coddington, first vice president; Howard B. Cain, second vice president; Orville H. Bauer, third vice president (newly elected); Frank E. Poseler, secretary (re-elected); Joseph Tuchman, treasurer (newly elected). The immediate past president is Hermon S. Brodrick. The executive director is Clifford E. Sapp.

Why do architects prefer **Roddis Doors 2 to 1?**

Recently an independent research organization asked architects: "What brand of flush veneered doors is your first choice preference?" More than twice as many chose *Roddis* than the next leading brand! Why this great vote of confidence?

These architects know the Roddis name represents a standard of quality and craftsmanship unmatched in the industry. A standard maintained through more than 60 years of manufacturing and design leadership.

Today, more and more architects are specify-

ing Roddis Doors. In the nation's schools, for example. School boards . . . and taxpayers . . . are vitally concerned that their new schools be built of quality products for greatest long-run economy. They insist on doors that will assure proper function, low maintenance and safety, for decades to come. Roddis has them!

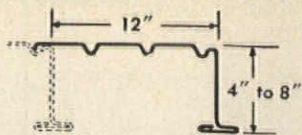
Roddis now offers the most complete wood door line wholly designed and produced by a single manufacturer. May we send you our latest brochure? Write to:

Roddis Plywood Corporation, Marshfield, Wisconsin.



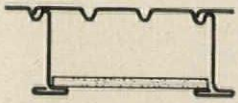
Roddis

THE MOST RESPECTED NAME IN DOORS

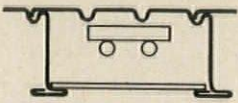


T-STEEL — New! Galvanized. For clear spans to 32'0". Adaptable to acoustical and flush, luminous ceiling treatments. Provides superior diaphragm to transmit seismic and wind loads.

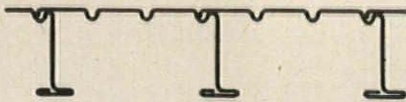
Ceiling Treatments with T-Steel Deck



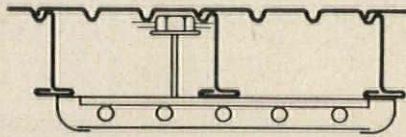
Standard Tile or Board



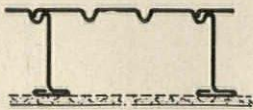
Corrugated Diffuser



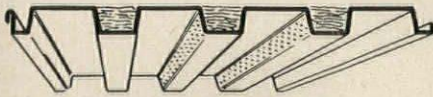
Exposed (Underside painted for increased reflection)



Surface-mounted Fixture

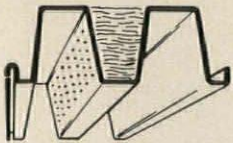


Lath-and-Plaster Fireproofing



TYPE B ACOUSTIDECK

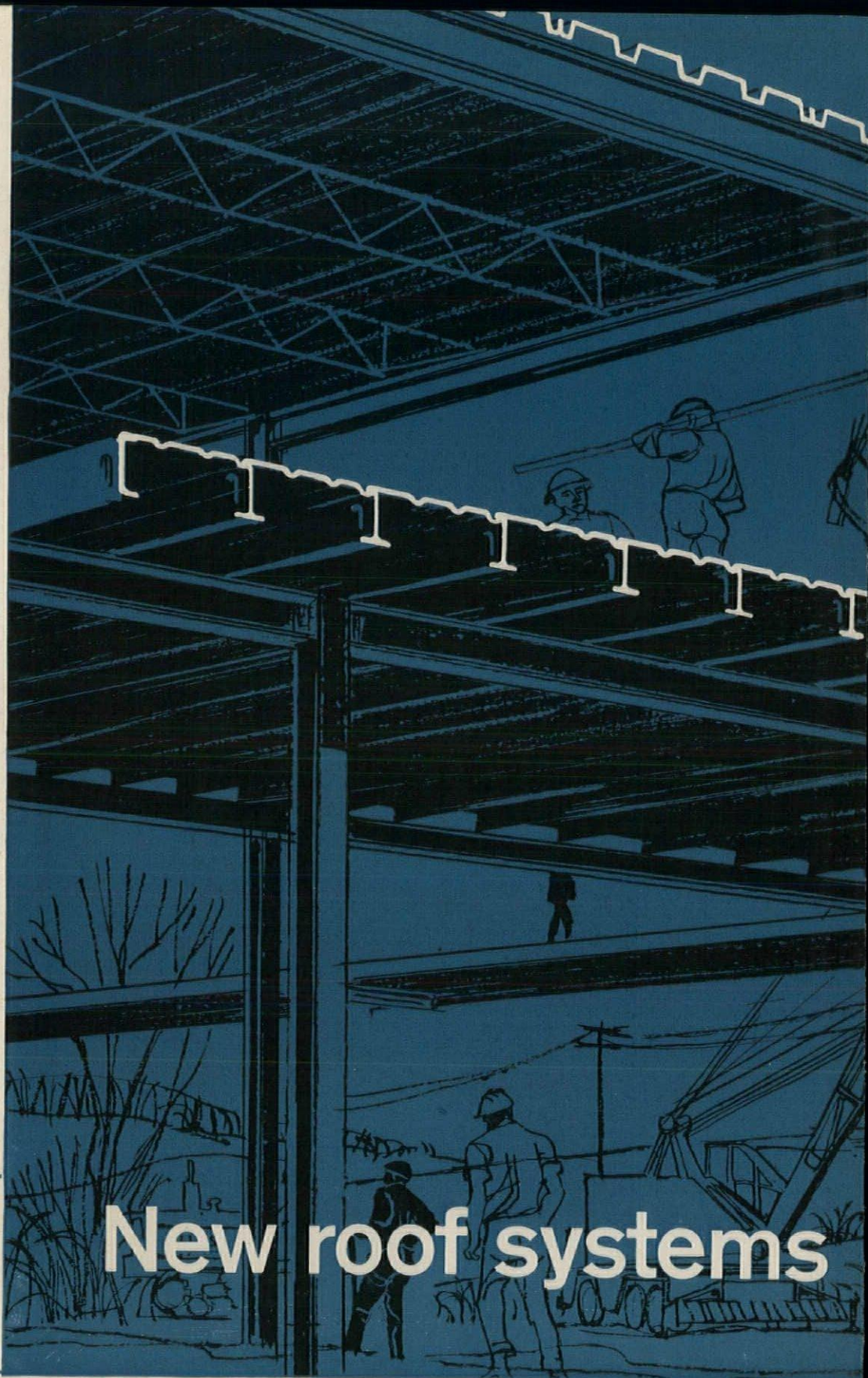
For purlin spacings from 6' to 10'. Uses minimum of 1" rigid insulation board.



TYPE C ACOUSTIDECK

For purlin spacings from 10' to 24'. Uses minimum of 1½" rigid insulation board.

When requested, Inland roof-system specialists accept complete responsibility for the erection of T-Steel and Acoustideck — or provide assistance to the contractor or his sub.



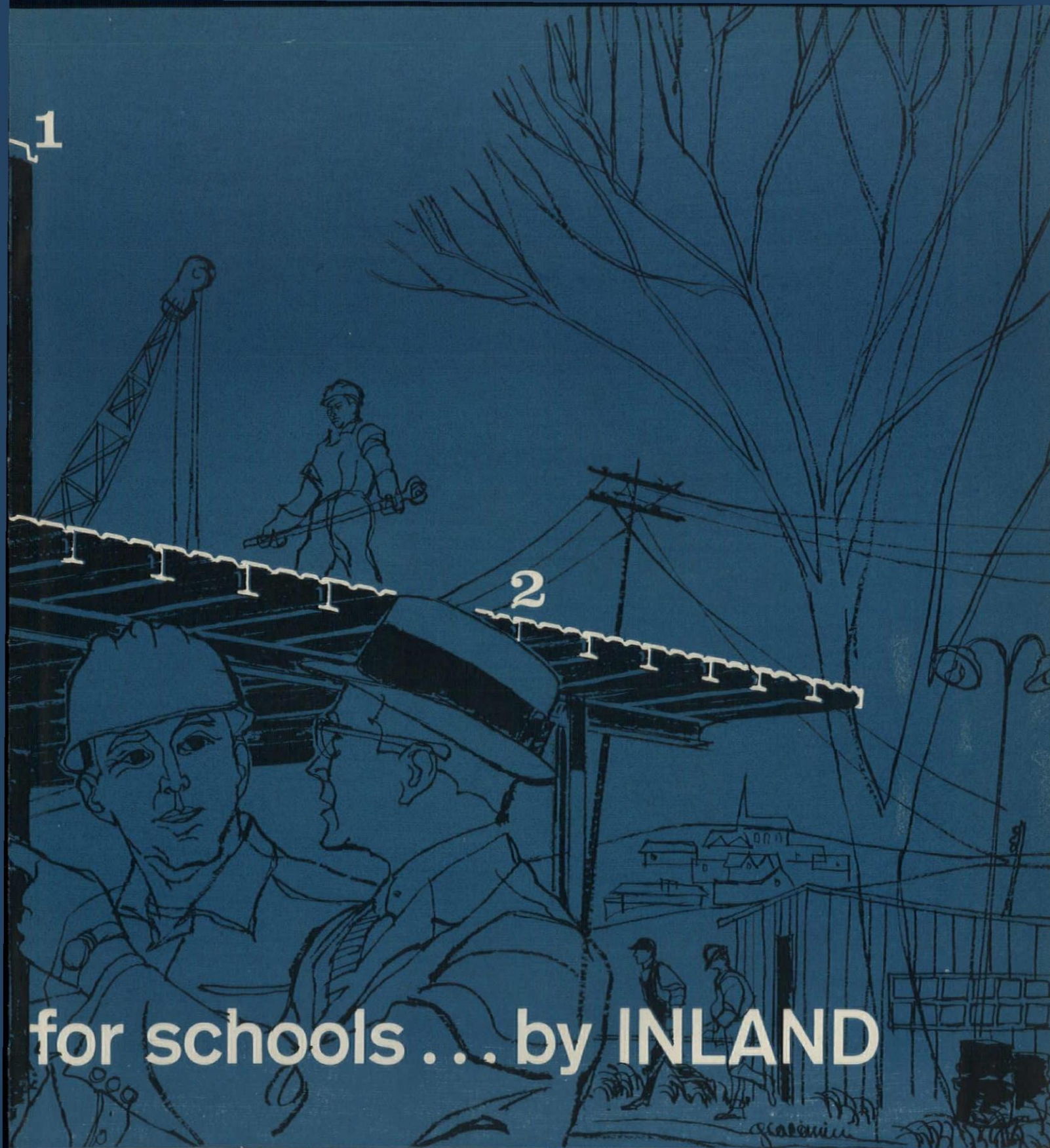
New roof systems

Complete structural systems that broaden your latitude in planning ceilings, lighting, acoustics — within realistic budget boundaries

1. Acoustideck for gymnasiums, other activity areas

Two-in-one panel combines steel roof deck and acoustical ceiling. Provides acoustical treatment that is considerably less subject to damage than other types — Noise Reduction Coefficient of .70. Installed by welding in the same manner as regular steel deck.

Acoustideck has all the additional advantages of steel-deck construction: It is erected fast — in any weather that a man can work. Its Bonderized baked-enamel prime finish cuts painting costs in half. The interesting ribbed underside can be left exposed as an attractive ceiling.



for schools ... by INLAND

2. New Inland T-Steel Roof Deck for clear-ceiling classrooms

Especially suitable over classrooms of 26' to 32' spans — or other areas where you want a large expanse of unbroken ceiling surface for a contemporary feeling.

You can provide practically any acoustical treatment — T-Steel permits installation of acoustical tile at an economy no other roof system can match. You can provide a flush, luminous ceiling — or you can leave the underside of T-Steel exposed and painted.

T-Steel deck provides a superior diaphragm to

resist seismic and wind thrusts . . . as proved by full-scale shear tests conducted by independent engineering firms.

Write for catalogs 240, 241, and 246 or See Sweet's, sections 2c/Inl and 11a/In for full information on T-Steel and Acoustideck. Inland Steel Products Company has developed a force of trained sales engineers who are capable of giving you the benefit of their diversified experience on specific problems. Write or call your nearest Inland office.

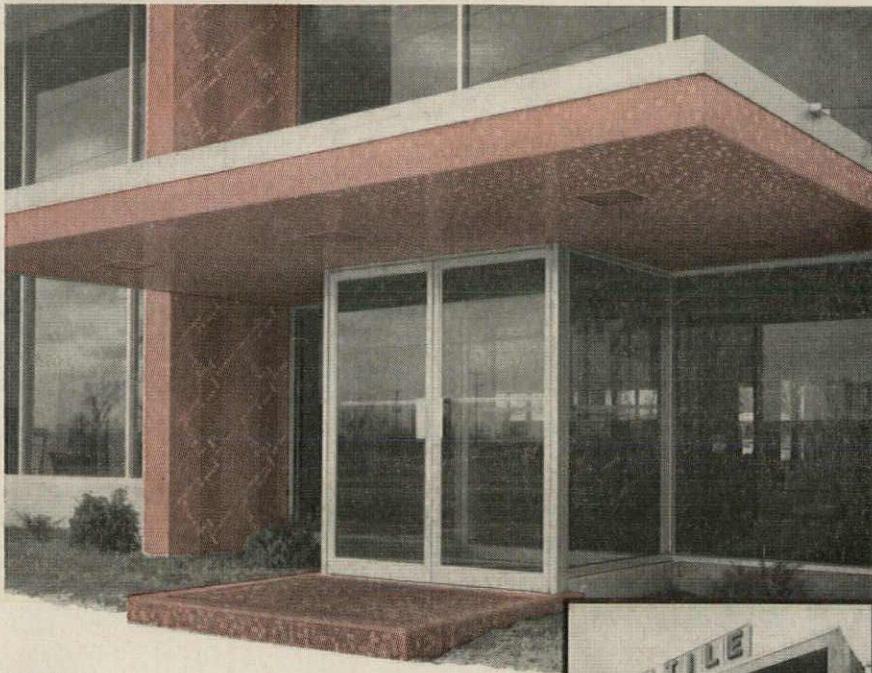
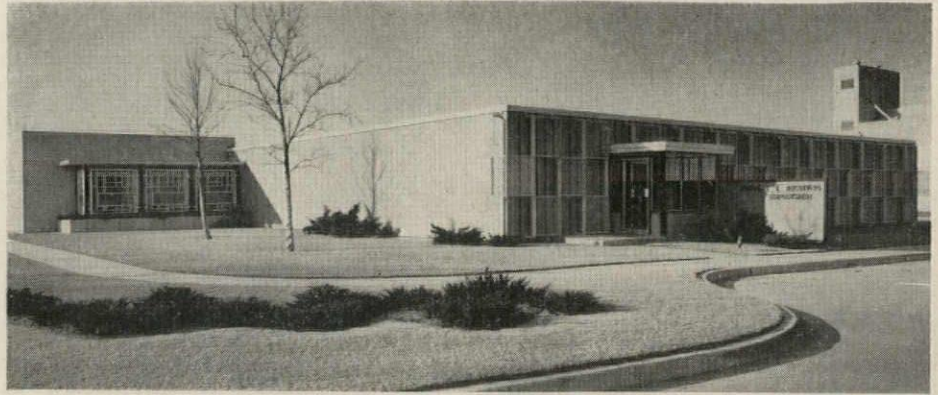


ENGINEERED PRODUCTS DIVISION
**INLAND STEEL
PRODUCTS COMPANY**
Dept. A, 4033 West Burnham Street
Milwaukee 1, Wisconsin

Flint Builds Offices as Showcase for Steel

The new office building of the Flint Steel Company in Tulsa was frankly intended by the company to be a *tour de force* in architectural uses of steel as well as an efficient headquarters; and Architect Donald McCormick can list 25 uses of 12 steel components in the 20,000-sq-ft building.

Beyond such functional uses as framing, walls, partitions, ceilings, doors and windows, Mr. McCormick has found numerous occasions in the



Dale Tile Co.
Minneapolis, Minn.

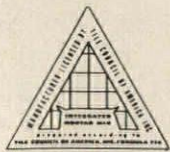
**FOR OUTDOOR INSTALLATIONS,
MEN WHO KNOW TILE BEST**

*Specify
and Use*

TILE-MATE

When Bill Dale, president of the Dale Tile Co., Minneapolis, constructed a new building for his growing business, he chose frostproof ceramic tile for the exterior — installed with TILEMATE. Men who know tile best invariably specify TILEMATE for all weatherproof exteriors — swimming pools, too. A thin-set mortar, TILEMATE can be used over cement mud coat, or against dry back-up. Mixes with water at the job site. Lighter, easier to handle, saves labor and material costs. Write for catalog.

Mf'd. under license issued by The Tile Council of America

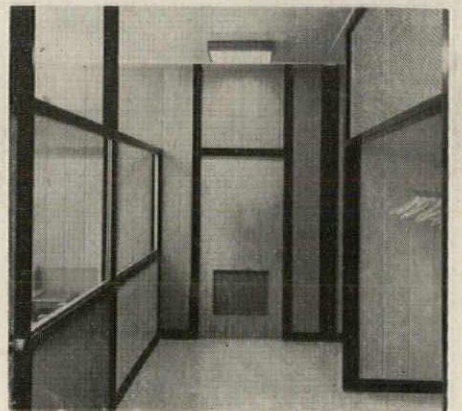
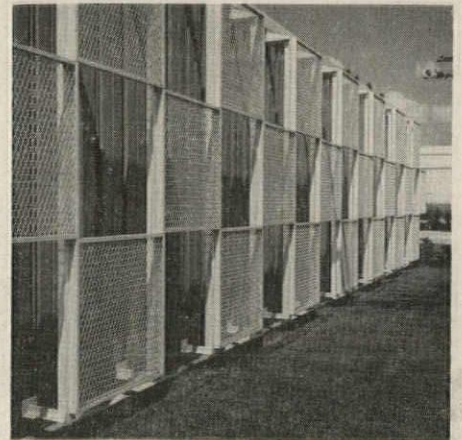


In the West, HYDROMENT, INC., Monterey Park, Calif.

THE UPCO CO.

4805 LEXINGTON AVENUE • CLEVELAND 3, OHIO

Manufacturers of Hydroment Joint Filler



building for steel as decorative accent — from the ornamental screens on both exterior and interior to the lobby mural and the sculpture and planting boxes outside.

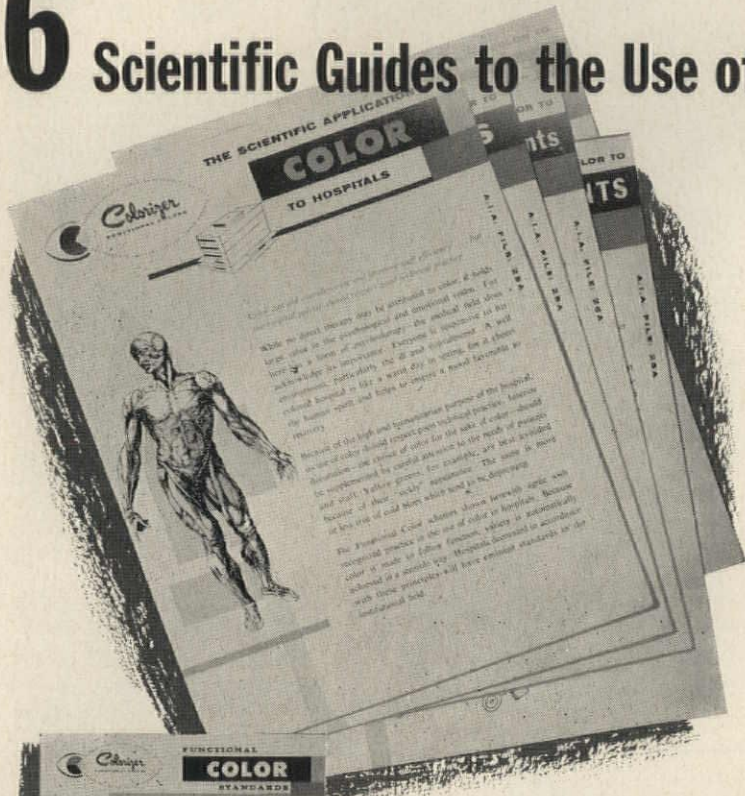
The acoustical problem was solved through the use of a sandwich-type wall panel with a fiberglass core for both exterior and interior walls—the panels perforated on one side only and erected with plain and perforated sides alternating to give each room a 50 per cent acoustical treatment on the walls. Ceiling panels also alternate for a 50 per cent acoustical treatment on ceilings.

In design, Mr. McCormick notes, "an effort was made to take massive, heavy-looking shapes, and through color, lighting, the flow of space, etc., make them appear light, free and in human scale."

more news on page 48

6 Scientific Guides to the Use of

COLOR



in

- SCHOOLS
- HOSPITALS
- INDUSTRIAL PLANTS
- RETAIL STORES
- RESTAURANTS
- MOTELS

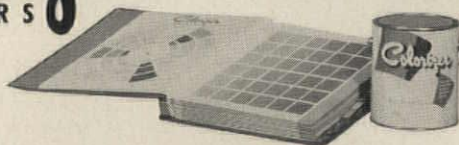


Including 36 Functional Colors and Instructions for their Use

If you are responsible for the specification of color in any of these six fields, these Colorizer Functional Color Kits will be an invaluable aid. They were prepared by a nationally-respected color authority, and show in precise detail how color can be used in these 6 types of institutions—not only to provide tasteful decoration but to promote morale and efficiency, better seeing, safety, and improved employee and public relations. Each kit illustrates and specifies exact colors for various interior and exterior areas—and explains **why**. The 36 recommended paint colors are coded for easy selection, and reflectance percentage is given for each color. Colorizer Paints are available throughout the U.S. and Canada. Choose from easier-to-use Colorizer "Instant Paint" for interiors . . . highest quality enamels . . . floor paints . . . wood finishes . . . long-lasting exterior finishes.

Colorizer PAINTS

IN 1,322 COLORS



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PLEASE ATTACH TO YOUR LETTERHEAD

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343 North Western Ave. • Chicago 12, Ill.

As an aid to be used in specifying color, I would like the Colorizer Functional Color Kit (or Kits) checked below:

- | | | |
|------------------------------------|--|--------------------------------------|
| <input type="checkbox"/> Schools | <input type="checkbox"/> Industrial Plants | <input type="checkbox"/> Restaurants |
| <input type="checkbox"/> Hospitals | <input type="checkbox"/> Retail Stores | <input type="checkbox"/> Motels |

Name _____

Title _____

Company _____

Address _____

City _____ State _____

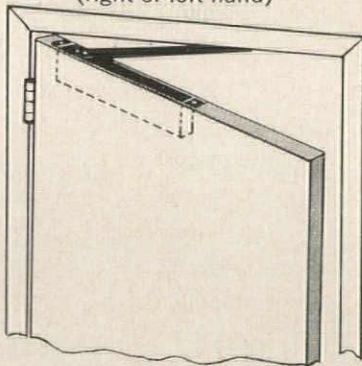
MULTI-CHECK®

FOR INTERIOR DOORS

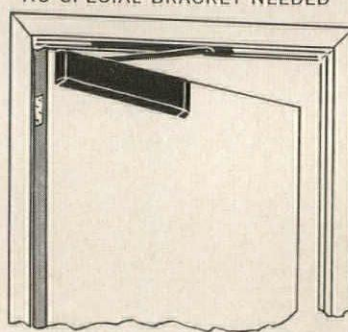


mounts any way you like...

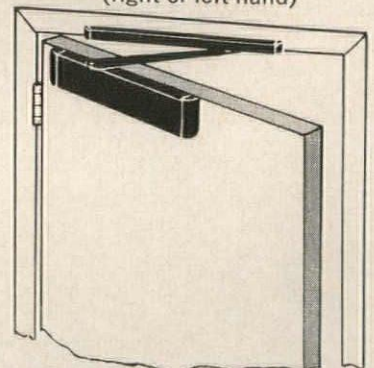
mortised in the door
(right or left hand)



push side—surface mounted
(right or left hand)
NO SPECIAL BRACKET NEEDED



pull side—surface mounted
(right or left hand)



non-handed closer meets every mounting need...

ONE-PIECE (non-protruding) ARM hides away when door is closed.

HOLD-OPEN quickly adjustable to any one of 7 points.

FLOATING ROLLER in arm rides freely to adjust to door sag or improper hanging.

TRAVELING SPINDLE moves with arm to relieve leverage stress on hinges and door frame.

TWO CLOSING SPEEDS independently adjustable.

write for complete details and installation templates

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THE OSCAR C. RIXSON COMPANY

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CANADIAN PLANT: 43 racine rd. (rexdale P.O.) toronto, canada

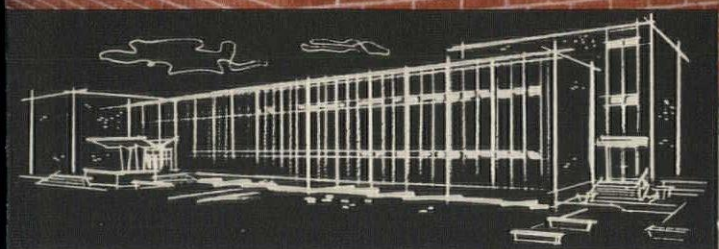
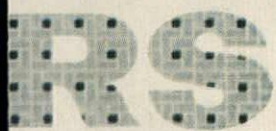
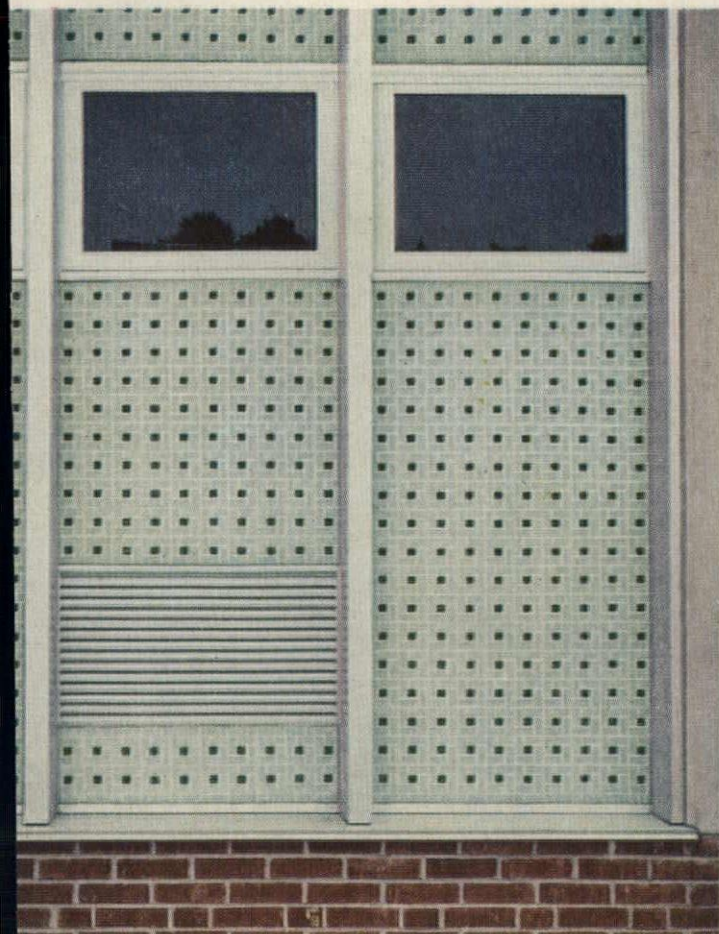


Plate No. 1085 New Science Hall, THIEL COLLEGE, Greenville, Pa.
 Architects: LOUIS G. MARTSOLF & ASSOCIATES, New Brighton, Pa.
 Panels installed by: NEWMAN BROS., INC., Cincinnati, Ohio



CERAMIC TILE CURTAIN WALL PANELS offer new freedom in exterior design



Close-up showing detail of
 RS Ceramic Tile Panels design

Used alone, or in conjunction with conventional exterior finishes, RS Ceramic Tile Panels offer the designer unlimited latitude in choice of color, texture and pattern. Here is the permanence and maintenance-free beauty of time-proven ceramic tile, delivered to job-site in light-weight, custom-made prefabricated units, ready for simple, speedy erection in any frame. A favorable unit price combined with low installation cost makes RS Panels an outstanding value. Want more information? Call your nearby Romany-Spartan sales representative, or write for full-color Bulletin RSP-202. Ceramic Tile Panels, Inc., Dept. AR-11, Canton 2, Ohio.



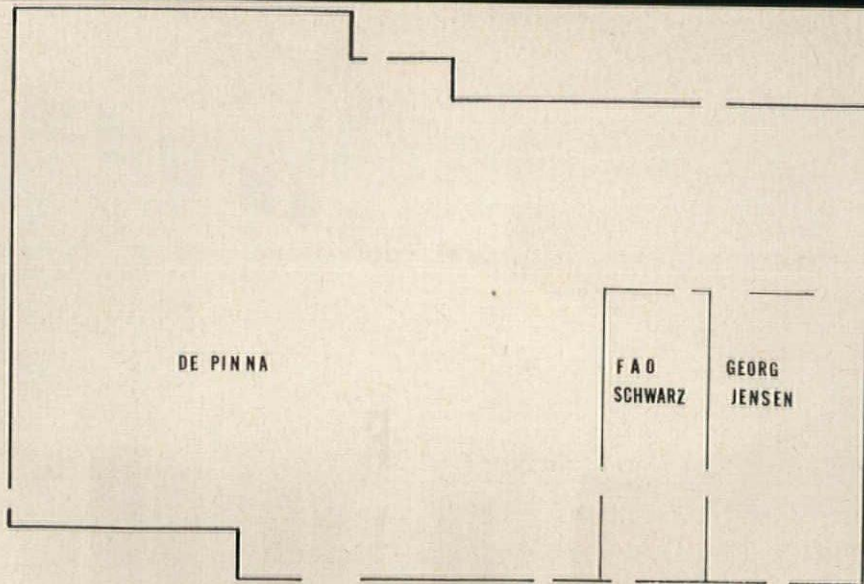
RS Panels

CERAMIC TILE PANELS, INC.
 A subsidiary of United States Ceramic Tile Co.

**Three Stores Under One Roof:
Separate But Connecting**

Three noncompetitive stores have opened branches in the same new building, first (and principal) unit of the Vernon Hills Shopping Area in Eastchester, N. Y., for which Copeland, Novak and Israel are the architects.

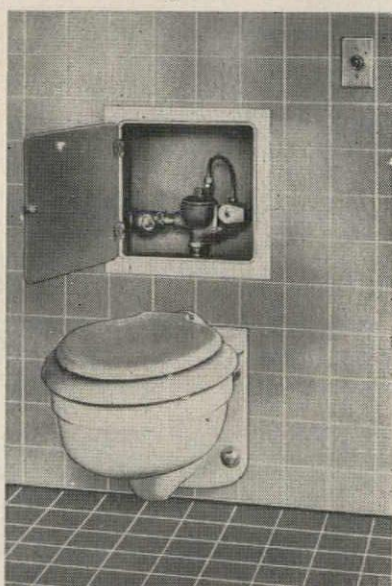
The stores have separate exterior entrances (and identities), but are interconnecting from within, without any doors or gates. Merchandise groupings have been coordinated among the three stores to comple-



HAWS

BEST FOR NEW IDEAS

in water coolers . . . and flush valves



Haws Wall Mounted "Off the Floor" Water Coolers break with tradition to "clear the deck" for uncluttered maintenance ease. Crisp styling and the completely enclosed plumbing-electrical unit make this distinctive cooler a Haws "first"—in beauty *and* engineering!

Haws-Kramer Residential Flush Valve System utilizes the newly-developed Nyla-Phragm valve to reduce bathroom flushing noises and eliminate long, noisy tank refill. And here's another "first": out-of-sight H-K "Silent Service" operates with *conventional residential pipe sizes!*

Specify these new Haws items. See them in Sweet's Architectural File or write for complete Haws catalog—today!

HAWS DRINKING FAUCET COMPANY
1441 FOURTH STREET • BERKELEY 10, CALIFORNIA

HAWK HAWS / KRAMER FLUSH VALVE DIVISION
819 Bryant Street • San Francisco 3, California

EXPORT DEPARTMENT: 19 Columbus Avenue • San Francisco 11, California • U.S.A.



ment one another—DePinna's Linens and Domestic Department has been placed adjacent to Georg Jensen, Inc.'s dinnerware and giftwares, and its children's area leads directly to the F.A.O. Schwarz toys. The effort was to maintain complete character and identity for each establishment while creating "one homogeneous concept of integrated selling" for the three.

Interiors of the DePinna and Schwarz stores were designed by Copeland, Novak and Israel; the Jensen interior is by Finn Juhl. Bianco & Pope were the builders.



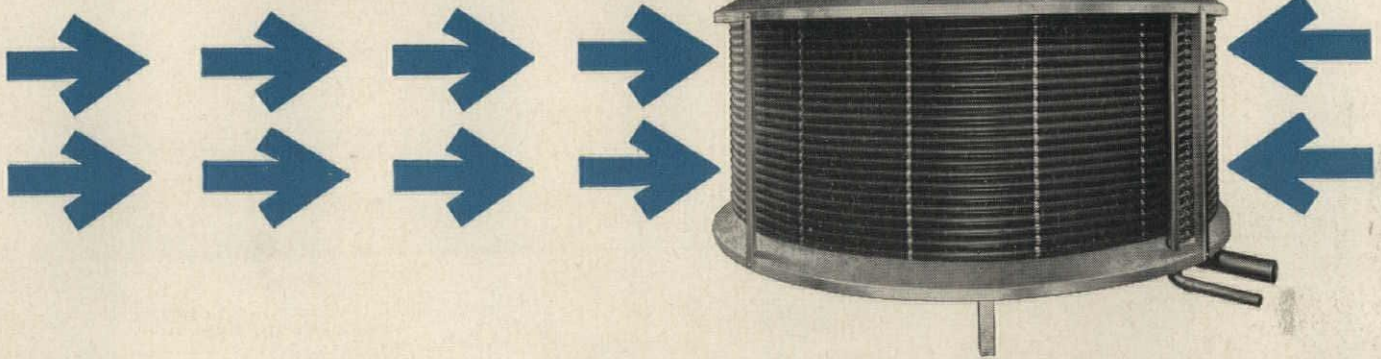
more news on page 52

NEW LOW SILHOUETTE



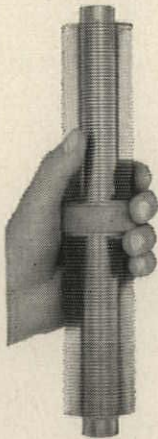
AIR-COOLED CONDENSERS

**ALWAYS FACED RIGHT
—NO MATTER WHAT
THE WIND DIRECTION**



No need to position circular Fandaire Air-Cooled Condensers to meet prevailing winds. Just set it anywhere for easiest piping.

*Exclusive Aimco
fintube design
provides high-
heat dissipating
efficiency for
circular Fandaire
condensers.*



Here's the newest, most advanced air-cooled condenser on the market — Fandaire! This modern low silhouette condenser is engineered around a new high-heat dissipating fintube of exclusive design and manufacture. In operation, the entire spiral of fintubing is surrounded with a circle of swiftly moving cool air for highest cooling efficiency. Every degree in temperature drop is fully utilized as this circular design captures the wind from *any* direction, regardless of placement or location. A powerful fan pulls cool air in and pushes warm used air up and away. Fandaire's constant gravity tube drainage gives continuous movement to condensate.

With its low, clean-lined silhouette, Fandaire does not detract from the general architectural effect of the building. And weighing $\frac{1}{3}$ less than conventional installations, the Fandaire usually can be positioned where needed, without guy wires or extra bracing. Savings in piping and installation alone may be considerable.

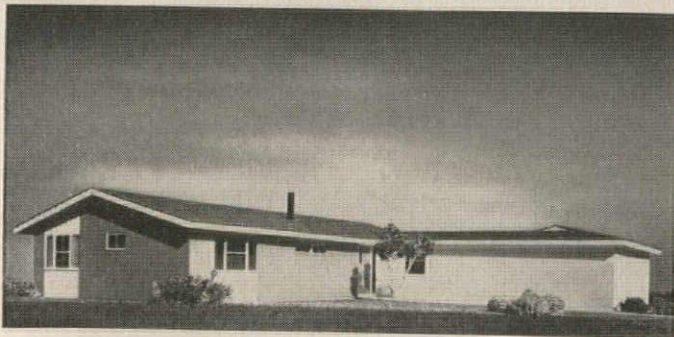
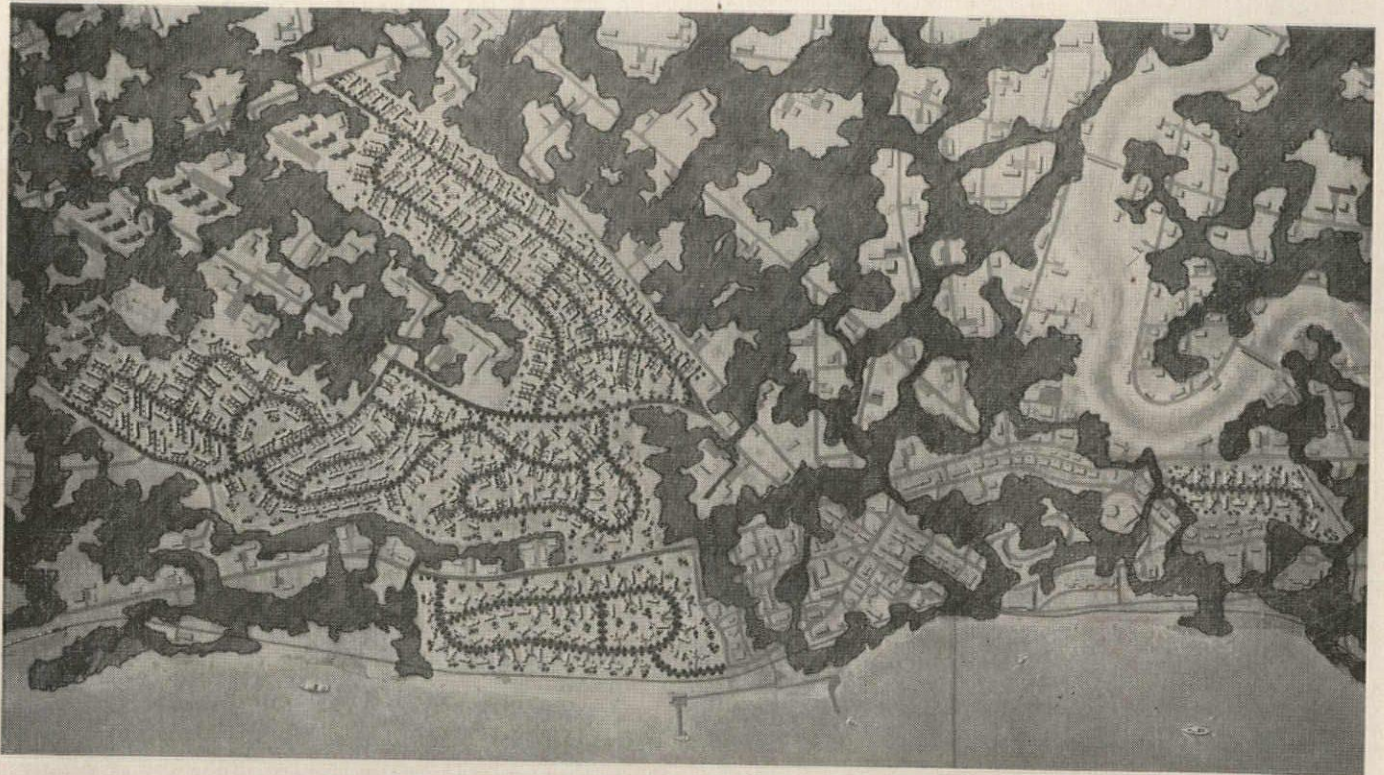
Where there is a problem of architectural compatibility, or of cost or performance, chances are the new Fandaire Air-Cooled Condenser is the best solution. Engineered in sizes from 3 to 120 tons per unit, there is a Fandaire model for practically all single or multiple installations. Get complete information today.

specialists in circular air-cooled condensers



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Architects-Engineers: Kelly & Gruzen, New York; George G. Shimamoto, AIA Associate • General Contractor: S. S. Silberblatt Incorporated, New York • P&H Contractor: Northeastern Construction Co., Plattsburgh • Pipe Distributor: E. J. Monroe Co., Plattsburgh

Steel pipe serves hot-water heating system of 1,685-unit Armed Services Housing Project

One of the largest housing developments in the country is the \$27,500,000 project recently completed at Plattsburgh A.F.B., New York. Spread over 235 acres, the 396 buildings will accommodate Air Force officers, enlisted men, and their families.

A centralized hot-water heating system will keep

the buildings comfortable even in the coldest of winters. And for the greatest of economies, the system was built with steel pipe—some 450 tons of Bethlehem Electric Resistance-Weld and Beth-Co-Weld steel pipe were used on the job.

For low original cost, low installation cost, and low maintenance, there's no substitute for steel pipe, the most economical and the most widely used general-purpose piping in America.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor:

Bethlehem Steel Export Corporation

STEEL PIPE IS FIRST CHOICE
for lasting strength
economy
workability

insist on

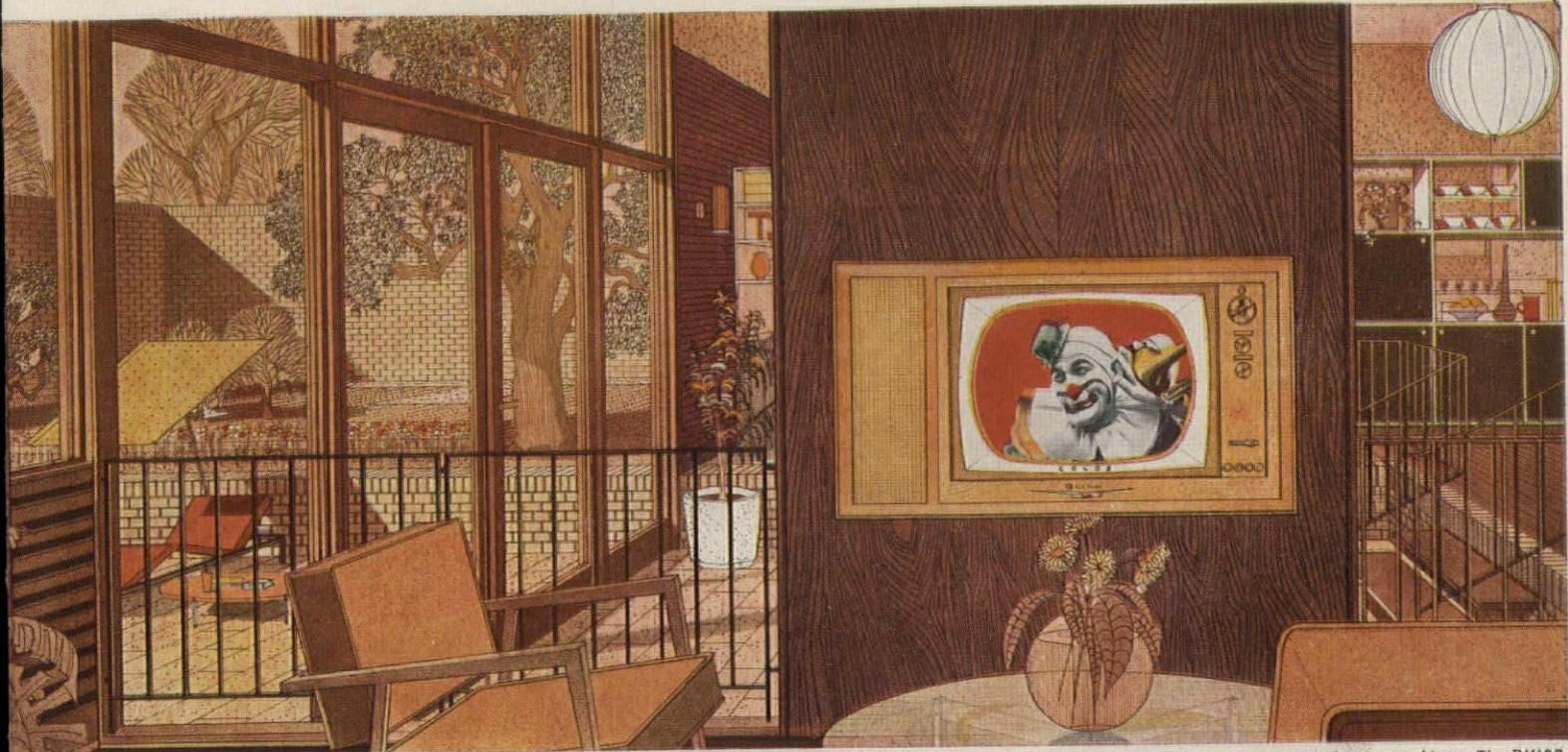
STEEL PIPE MADE IN USA

BETHLEHEM STEEL



Now RCA VICTOR Built-in TV and Stereo... Expressly designed for today's modern homes

ANOTHER WAY RCA
SERVES YOU
THROUGH
ELECTRONICS



"LIVING COLOR" MURAL TV. Like 2 sets in one, built in the magic of Color TV and get superb B&W reception too. Simplified color-quick tuning, mirror-sharp

picture, 3-speaker panoramic FM sound, adaptable for stereo. Above, The DK107 Frame for rear ventilation. Front ventilation design also available.

designs by Jacoby



TV MURAL TV... Another Newsmaker! The custom TV look plus the convenience of a "wiz" remote control. Full feature monochrome performance—25% brighter picture. 3-speaker Panoramic sound. Above, The DK103 designed for front ventilation, rear ventilation also available.



PUSH BUTTON RADIO-VICTROLA... High Fidelity Stereo. Monaural and stereo 4-speed record changer that slides out for easy loading, stereo AM-FM, Tuner, visual Stereo Balance Control, 2 in 1 supercharged chassis with 58 watts of power. Above, the BK2 shown with DK109 Panoramic Sound, 3-speaker units. (©RCA Trade Mark for Record Players)

These solid value Built-ins sell houses!

"Everything is built in," says the wife. "... and look at that built-in Color TV!" says the husband. We'll leave it

performance and dependability. They're designed to mount in walls, wall cabinets, room dividers... adaptable to almost any spot where families meet to enjoy TV and music.

RCA Victor sales engineers are prepared to discuss plans, models and costs with you. Their experience will be helpful. Write for complete information and literature to RCA Sales Corp., Box 1226-K, Phila. 5, Pa.

See RCA Victor's complete line of built-ins at the
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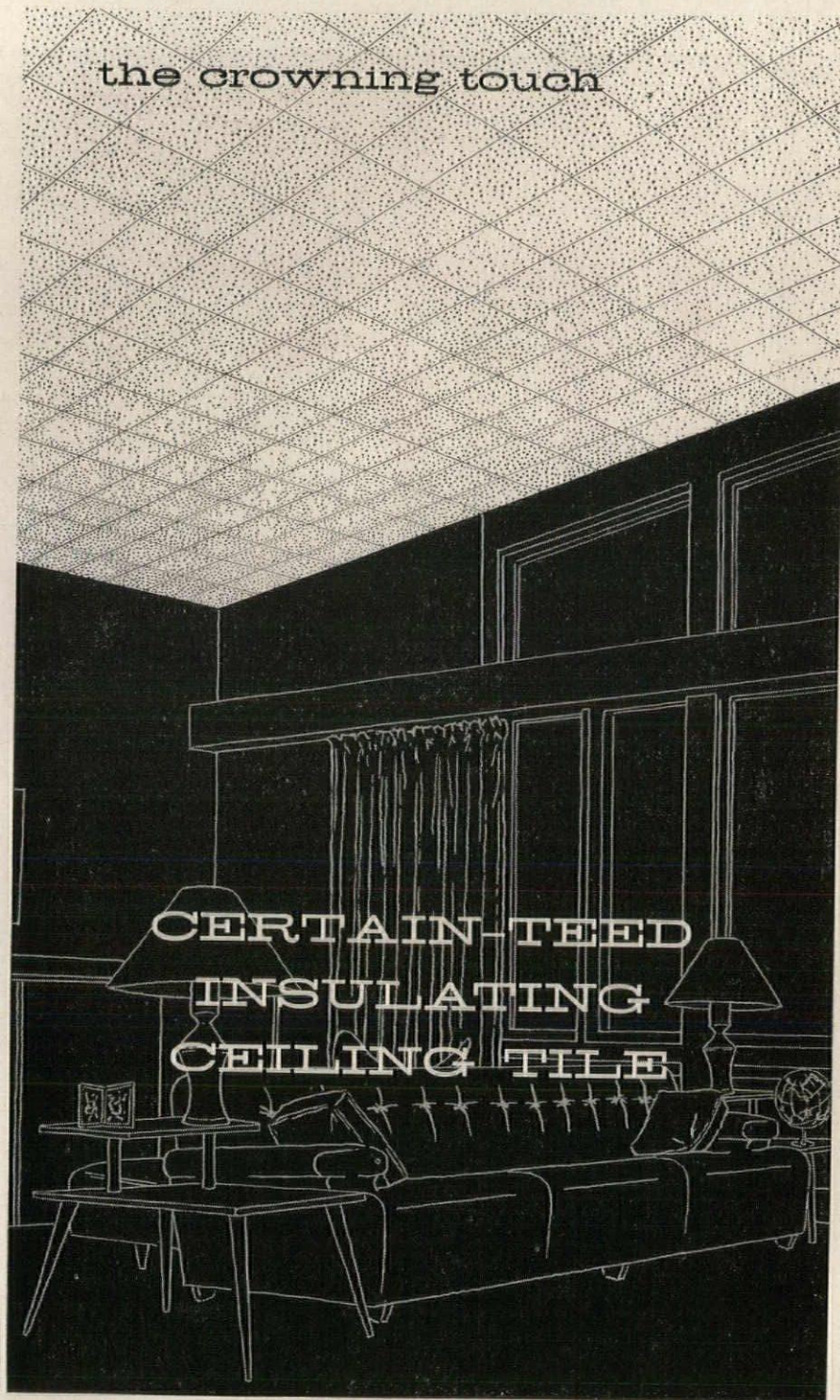


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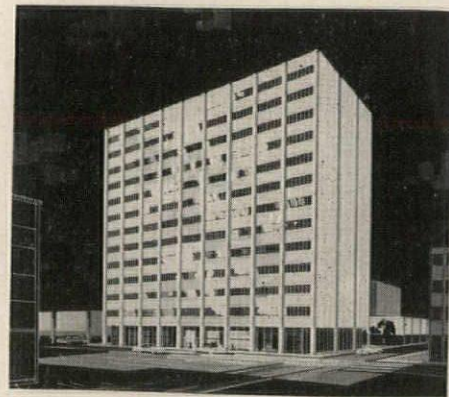


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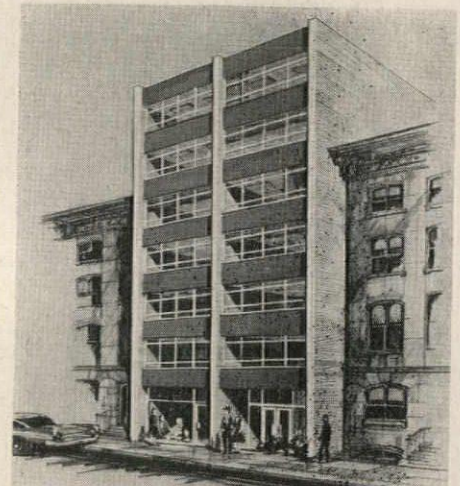
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The Record Reports



Texas Town's New Building Starts Downtown Mall

Plans have been announced in Beaumont, Tex., for a 14-story office building to be known as the American Building, the first major office building to be erected in Beaumont in 31 years. The new building, to be constructed as a joint venture by the Centex Construction Co., Inc., and real estate developer Raymond D. Nasher, will be integrated in planning with the projected new building for the American National Bank adjacent to form a block-long mall-type office and shopping center. The American Building itself will have shops as well as a lobby on the ground floor opening onto the landscaped mall. It will have an overall area of 211,706 sq ft, exteriors of marble, masonry, aluminum and glass. Architects for both new buildings are Harrell & Hamilton.

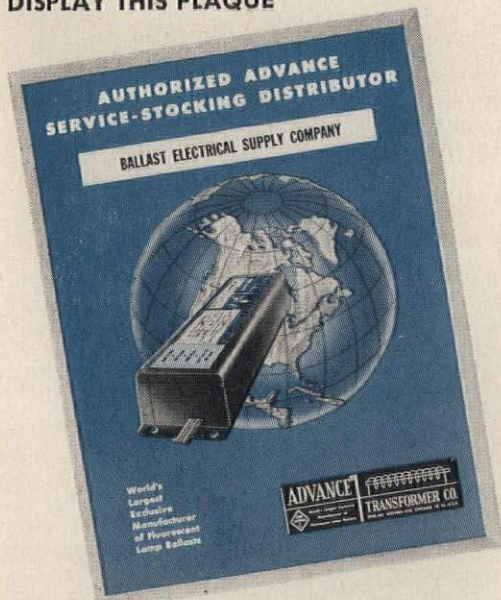


BUSINESS PROFESSIONS BUILDING has been designed and built for themselves at 110 East 30th Street, New York City, by a group of architects as an office building for professional and service firms for which location in a quiet residential area is desirable. Remodeled at a cost of \$185,000 from the shells of two old brownstones, the building has seven floors of 2200 sq ft each, a façade of glass and glazed brick. S. R. Rosenberg, architect; A. N. Sirof and William E. Sivertsen, architects and engineers

more news on page 56



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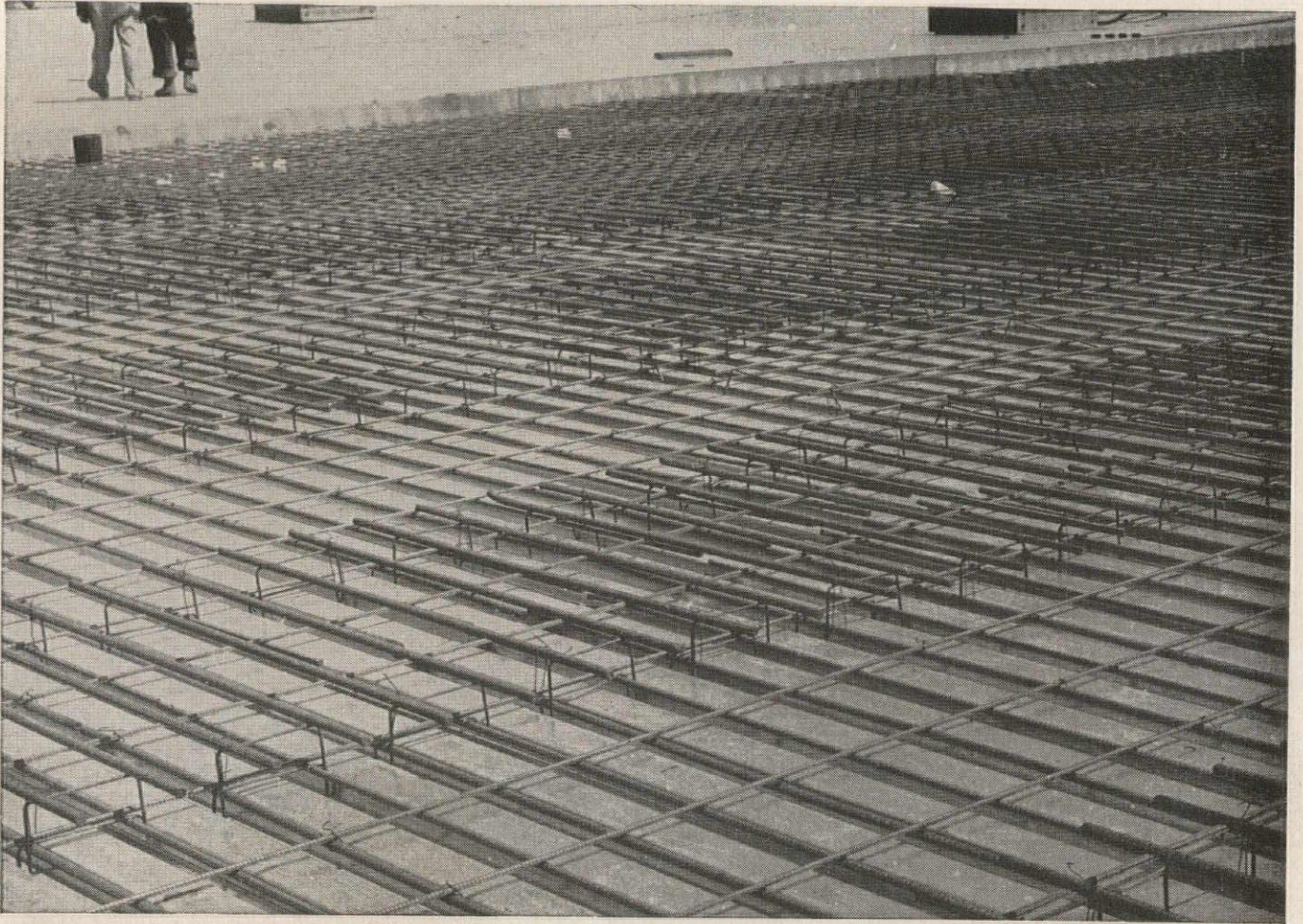


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Fabricated to extremely accurate dimensions, units were easily handled and dropped into place on the metal deck. Approximately 100,000 ties were saved by the use of these special Laclede-designed units.



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ARCHITECTS AID HHFA IN PLANNING FOR WHITE HOUSE CONFERENCE ON AGING

Architects are well represented on the new planning committee on housing established within the Housing and Home Finance Agency to help that agency with its contribution to the general White House Conference on Aging to be held in Washington, D. C., January 9-12, 1961.

Walter K. Vivrett, A.I.A., HHFA's chief adviser on housing for the elderly and assistant professor of architecture at the University of Minnesota, now has been named Technical Director (Housing) for the conference. In this capacity he has announced the names of his planning group—17 in all—which will identify the subjects to be discussed at the housing round-tables in January of 1961.

This committee held its first meeting in Washington on November 30 and conferred with Mr. Vivrett on the problem areas in housing for the aging. No recommendation will come from this unit, the general conference itself being charged with issuing firm proposals after its meetings.

Architects serving on HHFA's planning committee are William Keck, A.I.A., of the firm of George Fred Keck—William Keck, Chicago, and Preston S. Stevens, A.I.A., of the firm of Stevens & Wilkinson, Atlanta. Chairman of the group is Walter C. Nelson, Minneapolis, president of the Mortgage Bankers Association of America.

Mr. Vivrett said his new committee had reviewed progress on the working paper he is preparing as background for the housing portion of the White House Conference. It also will assist the various states in the selection of delegates to the conference, he explained.

The background paper on housing, in its early stages, was outlined with six general subject sections: (1) housing needs; (2) extent to which needs are being met; (3) current efforts, organized programs, trends; (4) framework for providing housing, some limitations and obstacles; (5) current issues; and (6) gaps in knowledge which need filling.

Housing for Aging Up Sharply

As part of his early work in preparation for the conference, Mr. Vivrett has surveyed the housing for aging inventory in 1958, comparing it with 1950. He found that nearly every state had increased its facilities during the period, with additional construction running 50 per cent to 250 per cent over the eight years. Construction of facilities for older persons has more than kept pace with population increases in the age group, he noted.

A part of the continuing survey will be a measure of the facility increase by institutional identification.

The background document will be published next spring to give conference delegates reference material prior to the 1961 meeting.

The planning committee in HHFA is not to be confused with the advisory committee to the Health, Education, and Welfare Department, which now numbers almost 150 persons.

FEDERAL COUNCIL ON AGING SUBMITS "REPORT OF INQUIRY": ACTION TO COME

The Federal Council on Aging has submitted its first report to President Eisenhower, described as a "report of inquiry" by Council Chairman Arthur S. Flemming, Secretary of Health, Education, and Welfare. It includes shelter as one of the basic areas for consideration in defining resources and programs of the Federal government.

Secretary Flemming's letter of transmittal to the President stated:

"The work of the Council during its first months of activity as a Cabinet-level committee has been, first, to take a measure of what is being done, and second, to sharpen the focus of responsibility in the field of aging of the several Departments and agencies.

"This foundation will provide a solid base on which to develop sound proposals and projects. Accordingly, we plan to submit a further report showing action and findings on matters listed herein."

The Council membership also includes Robert B. Anderson, Secretary of the Treasury; Ezra Taft Benson, Secretary of Agriculture; Frederick

H. Mueller, Secretary of Commerce; James P. Mitchell, Secretary of Labor; Sumner G. Whittier, Administrator of Veterans Affairs; and Norman P. Mason, Administrator of the Housing and Home Finance Agency.

Income Noted as Key

Despite the fact that age alone does not automatically bring about a housing problem, the report notes, there are shelter problems among the elderly, especially in the lower income groups.

A substantial number of old people is well housed; two thirds of those 65 or over own their own homes. Yet a 1950 study showed that twice as many houses owned and occupied by older persons were in poor condition as those owned by younger people. Almost twice the proportion of older families occupied low rental (\$30 monthly) quarters as younger families, suggestive of low quality conditions.

It was noted that while the high rate of home ownership is an offset-

ting consideration, the fact remains that three fifths of people 65 and over have less than \$1000 annually in actual money income.

Federal programs are helping increasing numbers of younger families to be so housed as to minimize their shelter problems as they age, the Council reported to the President. Some 80,000 aged persons of low-income living in Federally-aided low rent projects and substantially larger numbers of older people living in FHA-insured houses and apartments are comfortably quartered in units they moved into before they were elderly. But the report notes that there are many other elderly persons who need living quarters better suited to their needs.

Federal Program Enlarged

In three years, it was shown, the Federal Housing Administration has agreed to insure mortgages on 61 projects involving 6793 units with a mortgage amount of \$60,845,150. The

continued on page 248

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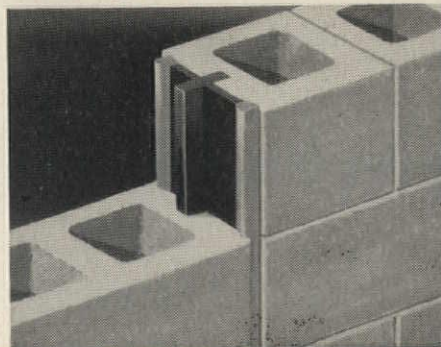
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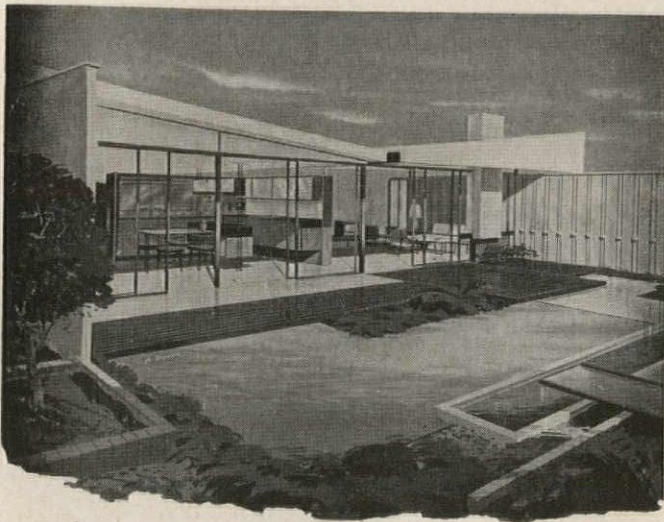
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FHA Studies New Standards For Multi-family Housing

The Federal Housing Administration began work in earnest on its revision of the Minimum Property Requirements for multi-family housing. The new Minimum Property Standards issued earlier this year from the agency's architectural standards division applied only to one- and two-family dwellings.

The new advisory committee on the rental housing revisions will convene shortly in Washington, D. C.,

to review the needs and progress of the program at that point. It probably will take a year to perfect the new standards on multi-family housing.

Before these are issued, a number of specific item changes can be expected on subjects such as room count and corridor length. In certain limited areas—such as materials use—the new MPS for one- and two-family units are applied by reference to rental housing structures.

William S. Brown, formerly staff architect at the Building Research

Advisory Board, joined the FHA division December 1, 1959 to work on the general revision of MPR for the multiple unit dwellings. He worked on BRAB's technical studies for FHA before changing positions.

Jet Runway Length Maximum Fixed in Federal Ruling

The Federal Aviation Agency made absolutely final as a maximum figure the 10,500-ft length of airport runways for new jet aircraft.

James T. Pyle, deputy administrator of FAA, said that in the future the agency would not provide any Federal aid to communities for construction of runways greater than this length.

The limitation was announced following a series of meetings in which airport authorities, manufacturers, carriers and FAA personnel participated and Mr. Pyle insisted it was not an arbitrary figure but one based on sound economics.

Enrollment Uptrend Continues, New College Survey Shows

Greater and greater demands are being placed on higher education facilities, with enrollments increasing year after year. College and university student enrollment figures for the start of the 1959-1960 scholastic year showed an all-time enrollment high of 3,402,297 students, 4.4 per cent more than the number in colleges and universities the year before.

These Office of Education statistics showed that the number of students enrolled in colleges for the first time rose to 826,969, a jump of 5.9 per cent or 45,894 over the fall of 1958. The 1959 fall rosters included 2,173,797 men and 1,228,500 women.

The Office of Education survey on which the figures were based included all degree-credit students; those whose current program consists principally or wholly of work leading toward at least a bachelor's degree.

A.I.A. Board Adopts Policy On Retained Percentages

The issue of retained percentages, raised anew this year as subcontractor, contractor, and credit groups petitioned the American Institute of Architects to change its stand (and preferably its contract documents) on this matter, may well have been

continued on page 270



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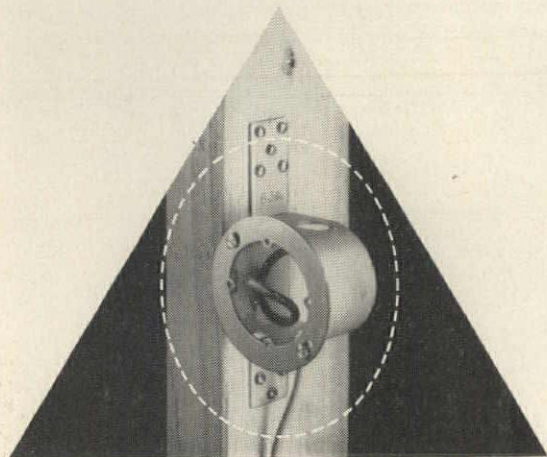


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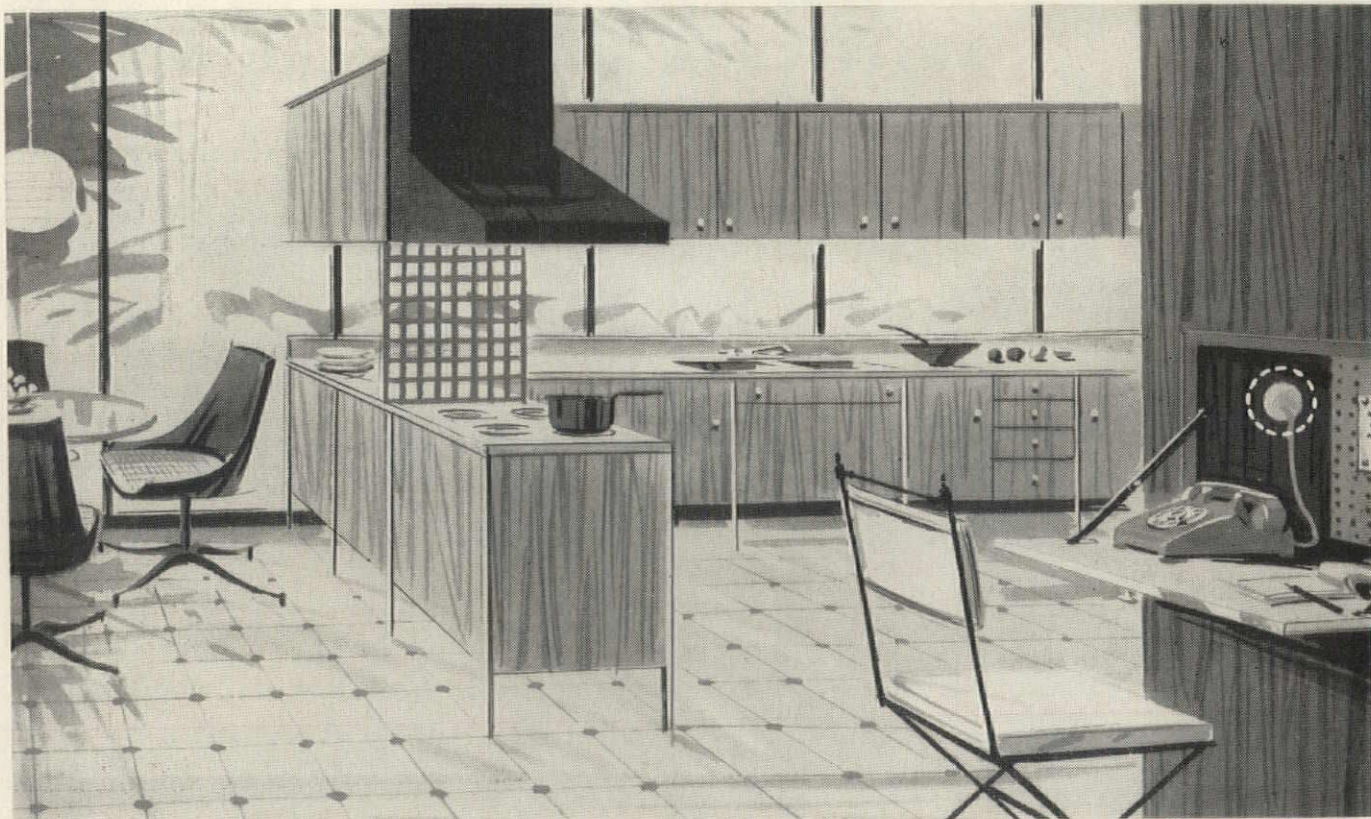
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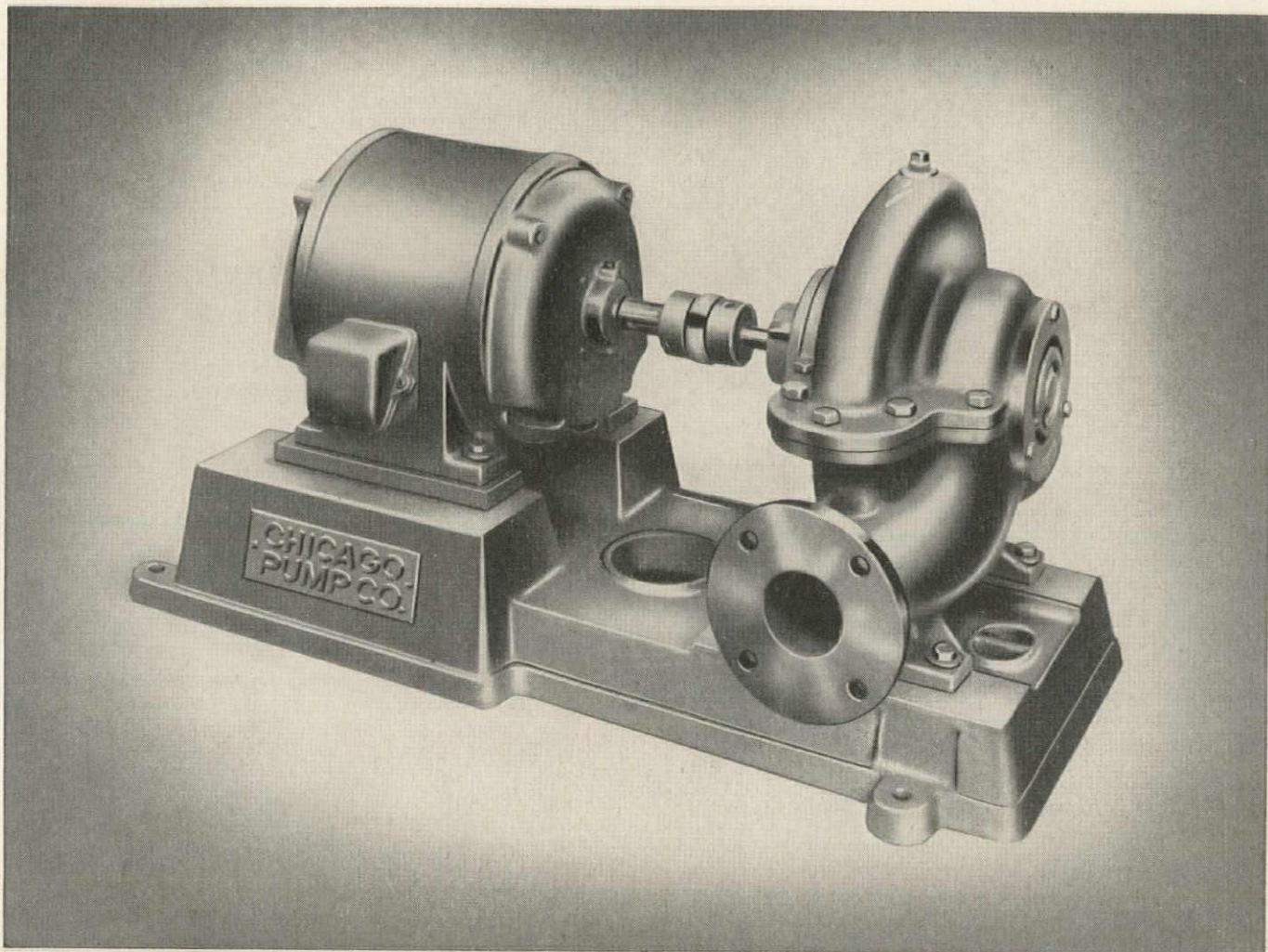


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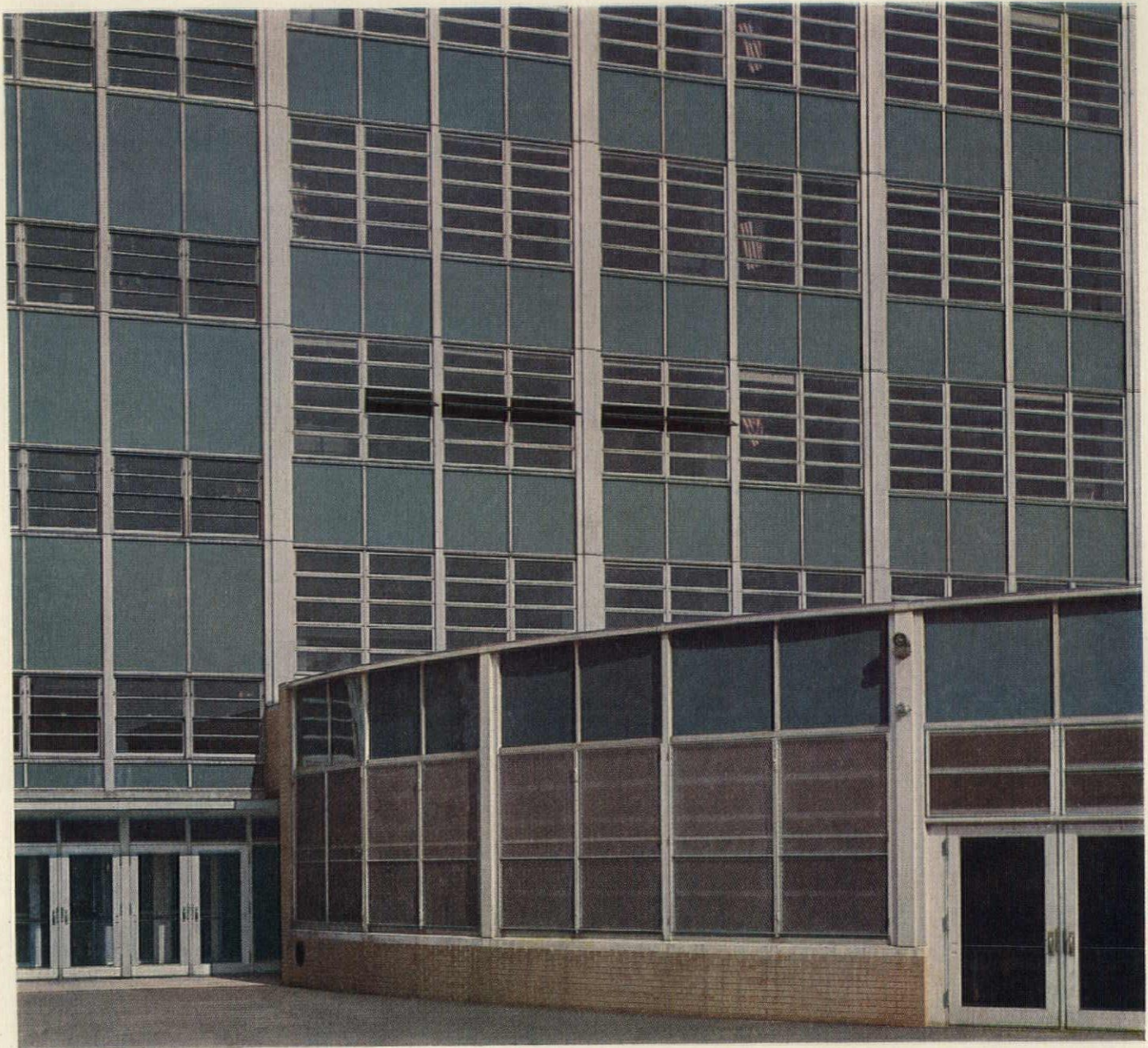
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Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc., Inc.

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

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1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.6	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	274.9	271.8	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	265.2	262.2	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	233.5	228.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.8	231.8
1956	310.8	302.2	320.1	328.6	324.5	237.2	235.7	241.7	244.4	246.4
1957	318.5	308.3	333.1	345.2	339.8	241.2	239.0	248.7	252.1	254.7
1958	328.0	315.1	348.6	365.4	357.3	243.9	239.8	255.7	261.9	262.0
Aug. 1959	344.6	331.4	370.4	388.5	376.9	254.9	249.9	269.5	276.2	276.2
Sept. 1959	344.9	331.7	370.8	388.5	376.9	254.9	249.9	269.5	276.2	276.2
Oct. 1959	344.9	331.7	370.8	388.5	376.9	254.9	249.9	269.5	276.2	276.2
Oct. 1959	% increase over 1939		183.7	191.2	189.7	% increase over 1939		183.4	183.6	191.6

ST. LOUIS

SAN FRANCISCO

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.6	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	102.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.0	259.2	255.2	257.2	256.6	261.0	259.7
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.0	275.0	284.4	279.6
1956	288.7	280.3	287.9	299.2	293.3	279.0	270.0	288.9	298.6	295.8
1957	292.0	283.4	295.2	307.1	302.9	286.3	274.4	302.9	315.2	310.7
1958	297.0	287.9	304.9	318.4	313.8	289.8	274.9	311.5	326.7	320.8
Aug. 1959	306.9	297.5	317.0	332.0	326.0	298.3	285.0	320.8	334.7	327.9
Sept. 1959	306.9	297.5	317.0	332.0	326.0	303.3	287.8	327.7	344.2	334.3
Oct. 1959	306.9	297.5	317.0	332.0	326.0	303.3	287.8	327.7	344.2	334.3
Oct. 1959	% increase over 1939		167.0	177.1	173.9	% increase over 1939		179.1	182.4	186.9

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

$$\frac{\text{index for city A} - \text{index for city B}}{\text{index for city B}} = \text{percentage difference}$$

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

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

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

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

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

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

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

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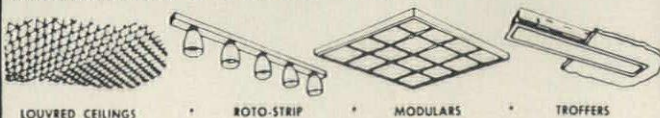
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← MIAMI BEACH, FLORIDA . . . EXHIBITION HALL. A Cat D337 Series F Electric Set supplies emergency power for lighting, telephone system, 2 air compressors, and heating.

→ TEXAS TV STATION . . . 263,000 watts. This Caterpillar Diesel Engine installation was purchased through competitive bidding and ability to do the job. Owner reports: "It will put a picture back on the screen in seconds. All the operator does is wait for the engine to start."



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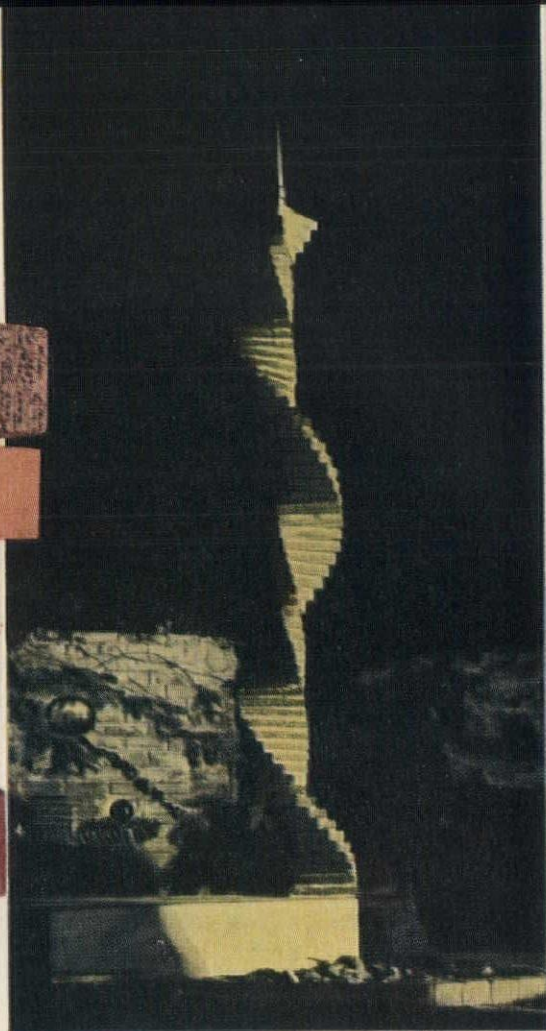
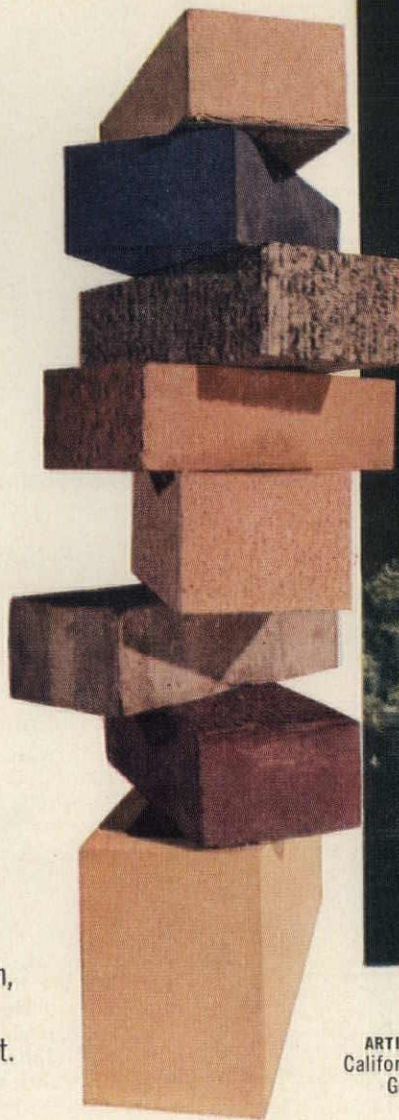


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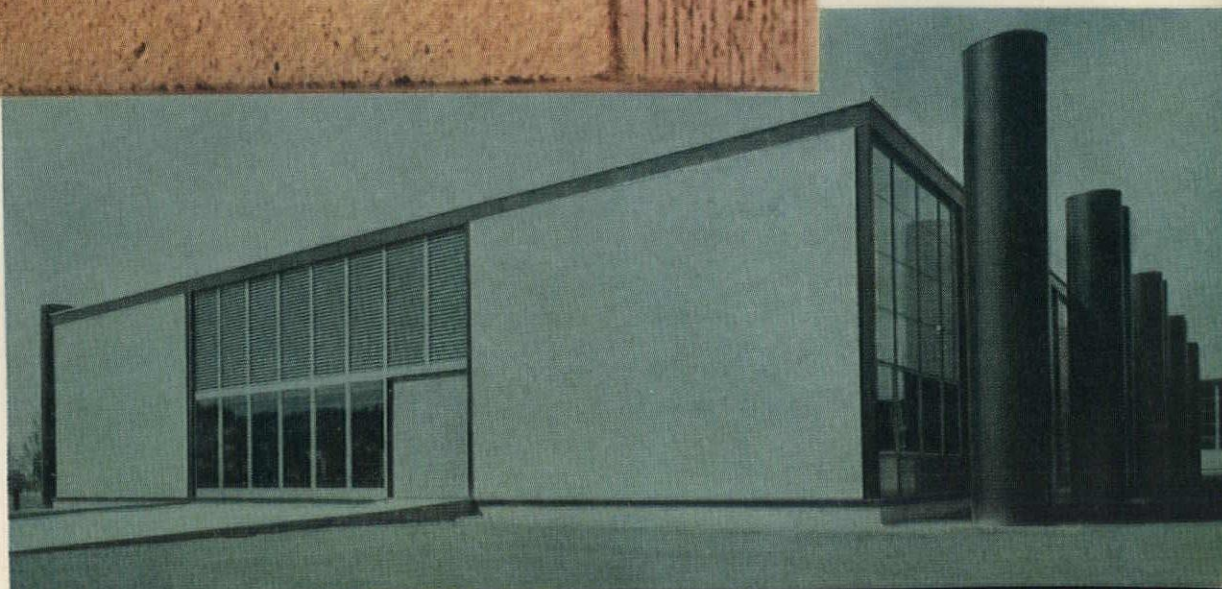


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Required Reading

Crystal Palace, London, 1851; Joseph Paxton. View over the roof toward the entrance hall



History Judged Good Source On Modern Architecture

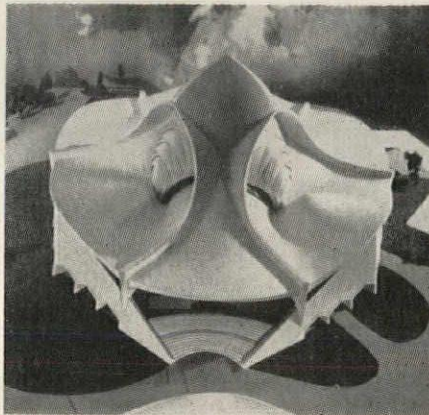
A HISTORY OF MODERN ARCHITECTURE. By Jürgen Joedicke. Translated by James C. Palmes. Frederick A. Praeger, Inc., 15 W. 47th St., New York 36. 243 pp., illus. \$10.

BY JONATHAN BARNETT

It is necessary to say at the outset that the publication of this book is not that long-awaited event, the presentation of a satisfactory history of modern architecture. This is particularly unfortunate because the work seems to possess almost every qualification for success at this difficult task. It is obviously the product of very extensive scholarship, it is cogent, perceptive, and well illustrated. There is even a fair measure of an ingredient too seldom present in architectural histories, the analysis of buildings in terms of structure as well as form. Regrettably, however, the final effort of integration seems to be missing, and the book somehow does not manage to fuse its subject matter into a coherent history.

The key to the problem seems to be a matter of definition. Is modern architecture a special current discernible within the general flow of architectural history, or is it the sum of all the building that has taken place in modern times? Mr. Joedicke apparently takes the position that modern architecture began as the former and has now virtually attained the latter status. Thus he begins with a concise consecutive narrative and ends with a diffuse compendium of recent buildings considered under diverse headings. He complicates the question further by breaking the chronological series whenever a major figure appears on the scene in order to follow his architectural career up to the present. As a result, the reader must assimilate a constantly fluctuating time scale in which the Harvard Graduate center is presented before the Barcelona Pavilion, and Ronchamp appears before the De Stijl movement. When his history has been brought up to 1930, the author abandons any sort of total chronological scheme entirely, in order to trace the evolution of skeleton frame construction and of new spatial conceptions. The book then concludes with 11 separate histories of the development of modern architec-

Pilgrimage Church, Syracuse, Italy (project), 1957; Enrico Castiglioni. Irregular hexagonal plan; outside walls of masonry. Reinforced concrete shell roof resting on three free-standing piers and on six supports set in the outside walls



ture in various countries, in which a certain amount of material is actually repeated.

To be successful, a history which is selective rather than exhaustive, and which departs from a chronological narrative, must needs be founded on some sort of analytical framework. And yet Joedicke not only does not set forth the basic assumptions that define his view of modern architecture, but chooses to remain enigmatic about the question of whether modern architecture accomplished its march from the Crystal Palace to such a building as Castiglioni's project for a Pilgrimage Church without any change in essential principles.

To this and to other questions the reader must provide his own answers. The author declines to present any clues, either in the form of a unified chronological sequence of events or by a rigorous theoretical analysis. In fact, so much is left to the reader that the work tends to resolve itself into a source book, or a published series of lectures. Considered in this light, it is brilliantly successful, not as history, but as a thorough and perceptive assemblage of the materials from which history is made.

Architecture, Design Explored

CHARLES DONAGH MAGINNIS, F.A.I.A., 1867-1955: A SELECTION OF HIS ESSAYS AND ADDRESSES. Edited by Robert P. Walsh, A.I.A., and Andrew W. Roberts. Privately printed, New Haven. Available from Andrew W. Roberts, 1141 Hollywood Ave., Linden, N. J. 51 pp., illus. \$4.50.

THE COLLECTED WRITINGS OF ALVIN LUSTIG. Edited by Holland R. Melson, Jr. Introduction by Philip Johnson. Privately printed, New York. Available from Holland R. Melson, Jr., 1215 Park Ave., New York 28. 95 pp., illus. \$3.50.

These two books, profoundly different in attitude and spirit, have nonetheless a basis for inclusion in a single review. Each is a posthumous collection of short essays and speeches by a man active in the arts. Both books were published, edited, and designed by individual students in the graphic arts department of the Yale University School of Art and Architecture. The books are primarily exercises in the art of book design and exhibit a high degree of care in typography and format.

Charles Donagh Maginnis, the distinguished Irish-born architect who headed a firm in Boston from 1898 until his death in 1955, will be remembered longest for the felicity and wit of his language. Those architects fortunate enough to have been present at the occasions at which he made speeches should welcome a book which includes the best of them, and it is good to have three of his finest essays in this single collection. For those too young to remember Mr. Maginnis, some quotes: ". . . This is not to say that democracies have more indifference to beauty but only that in their tolerant nature they have less capacity to compel it. Our olfactory nerves are protected by legislative act but our optics still cry vainly for mercy." In reference to the assumption that architecture will capitulate to engineering: "Once, at a convention of our presumptive rivals, the president in his address invested his profession

continued on page 76



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Required Reading

so liberally with prerogatives that, when my turn came, I was left only to apologize for a wasted career. Defensively, I submitted as the difference between an engineer and an architect that, while both must keep their feet on the ground, the architect has to keep his head in the stars."

The career of Alvin Lustig was cut short by his tragic death at the age of 40. He practiced graphic, interior, and industrial design with great skill but refused a specialist's label. He wrote: "The words graphic designer, architect, or industrial designer stick in my throat, giving me a sense of limitation, of specialization within the specialty, of a relationship to society and form itself that is unsatisfactory and incomplete. This inadequate set of terms to describe an active life reveals only partially the still undefined nature of the designer." Philip Johnson says of Lustig's work in his introduction to this book: "It was part architecture, part industrial design, part typography, part advertising . . . and all of it art." The book includes general notes on graphic design, architecture, and design education.

—MILDRED F. SCHMERTZ

Notre-Dame in Depth

NOTRE-DAME OF PARIS. By Allan Temko. Viking Press, 625 Madison Ave., New York 22. 338 pp. illus. (Compass paperback). \$1.75.

This reprinting of Allan Temko's 1952 work represents a real bargain, for *Notre-Dame of Paris* is a detailed, multi-faceted, vividly written story of the life and times of one of Western civilization's most important buildings. The book is highly recommended to anyone who missed it the first time around.

Mr. Temko's history stretches from Druidic Gaul to the liberation of Paris in 1944, but most of it, of course, concerns the period from the decision to build Notre-Dame in 1160 to its completion in 1351. The author has been most successful in portraying the complex religious, political, social, and artistic changes during those two centuries of ferment through their effect on the cathedral. The influence of the cult of the Virgin on Medieval building is especially well shown. Of particular interest to the architect is the extensive analysis of ogival construction techniques, admirably illustrated, which the author utilizes to demonstrate the evolution of Gothic style.

—ARTHUR FISHER

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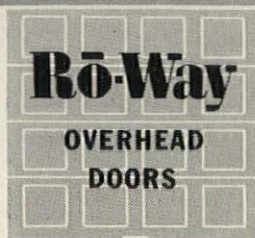
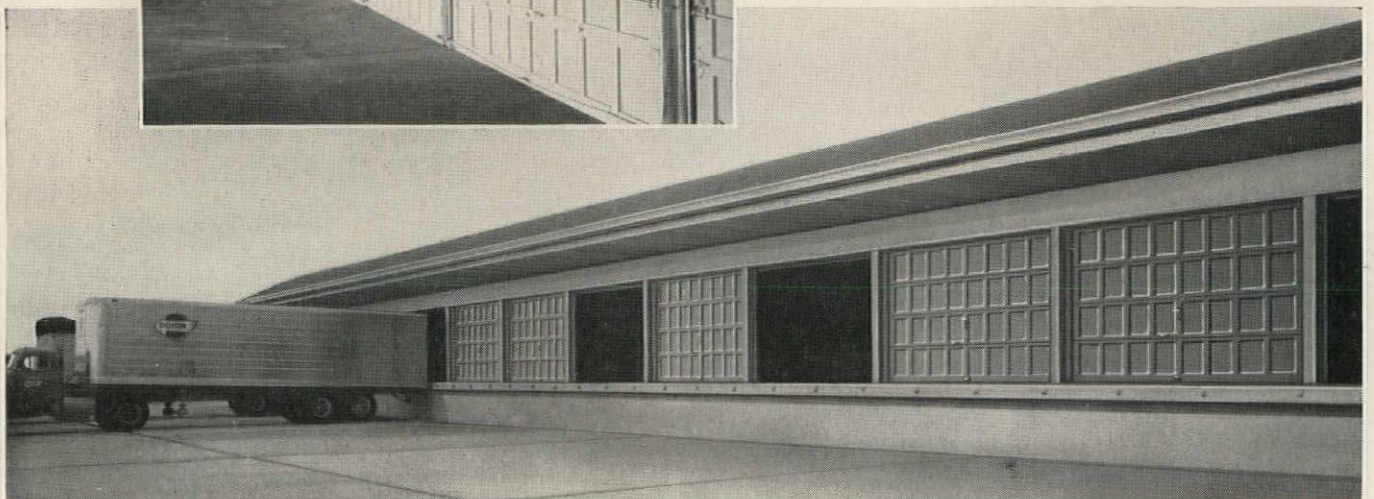
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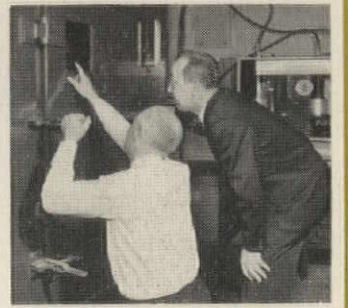
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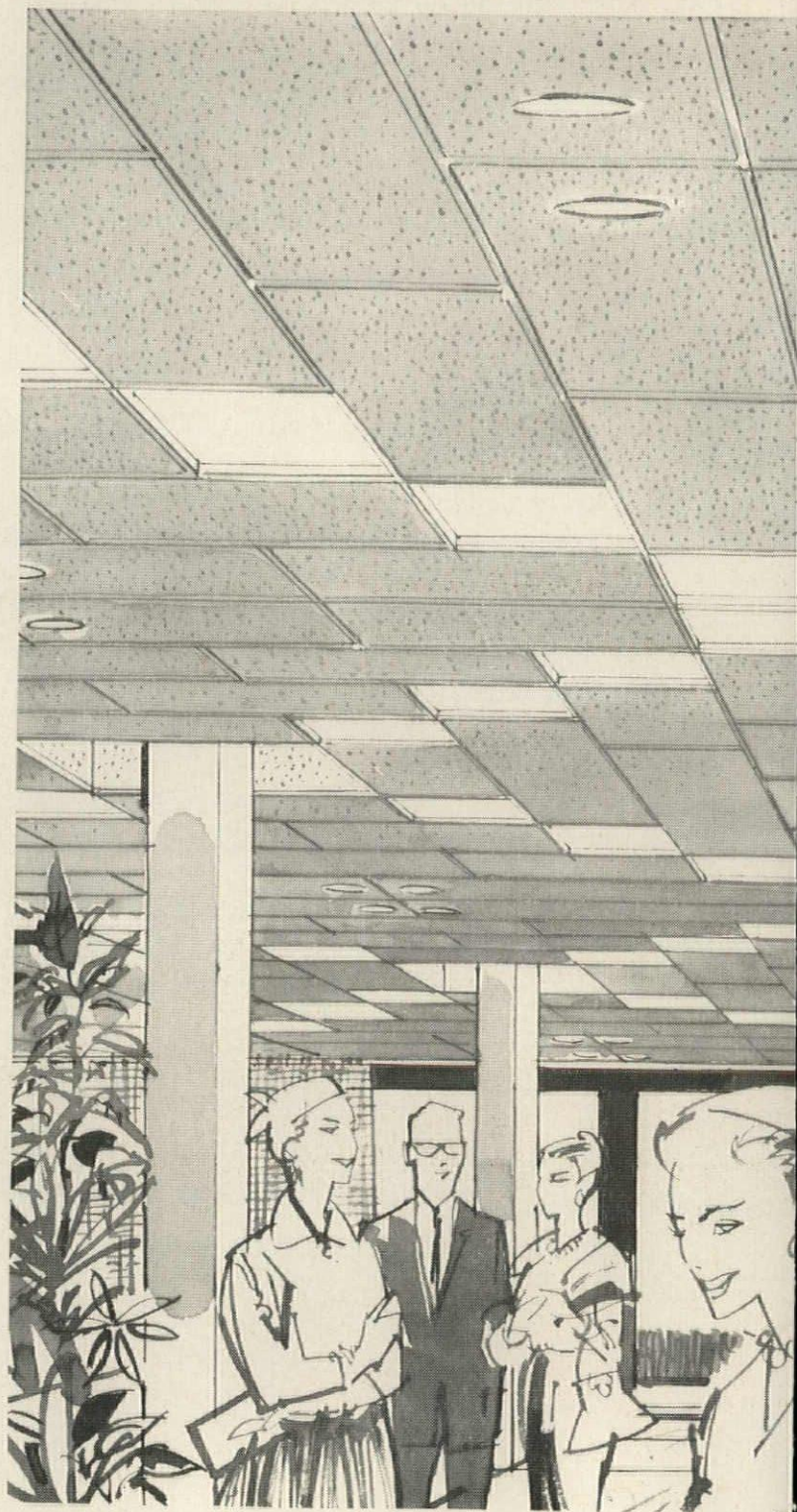
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*plan by George L. Dahl
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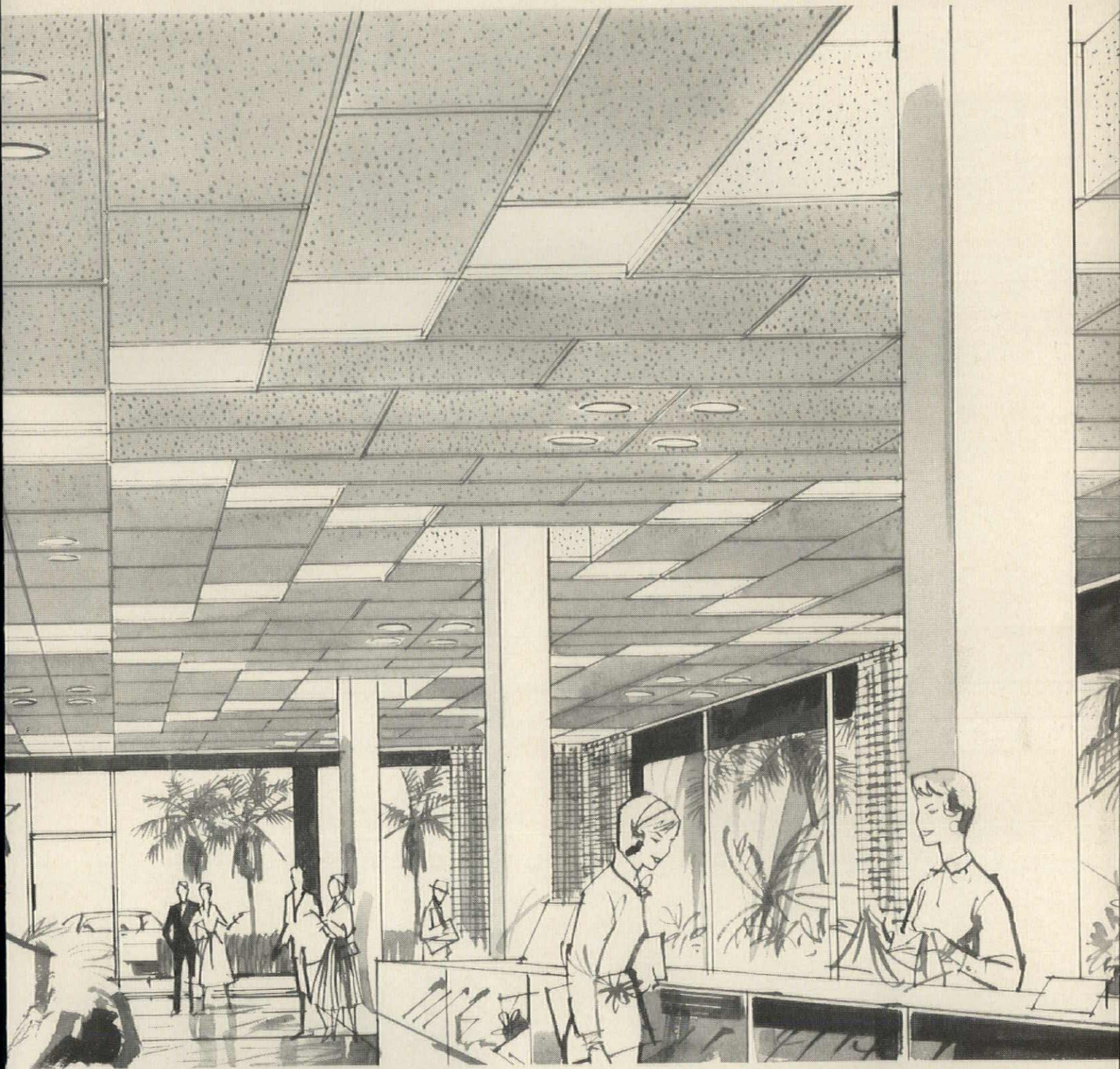
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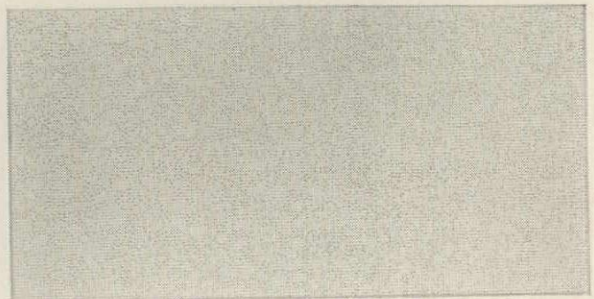
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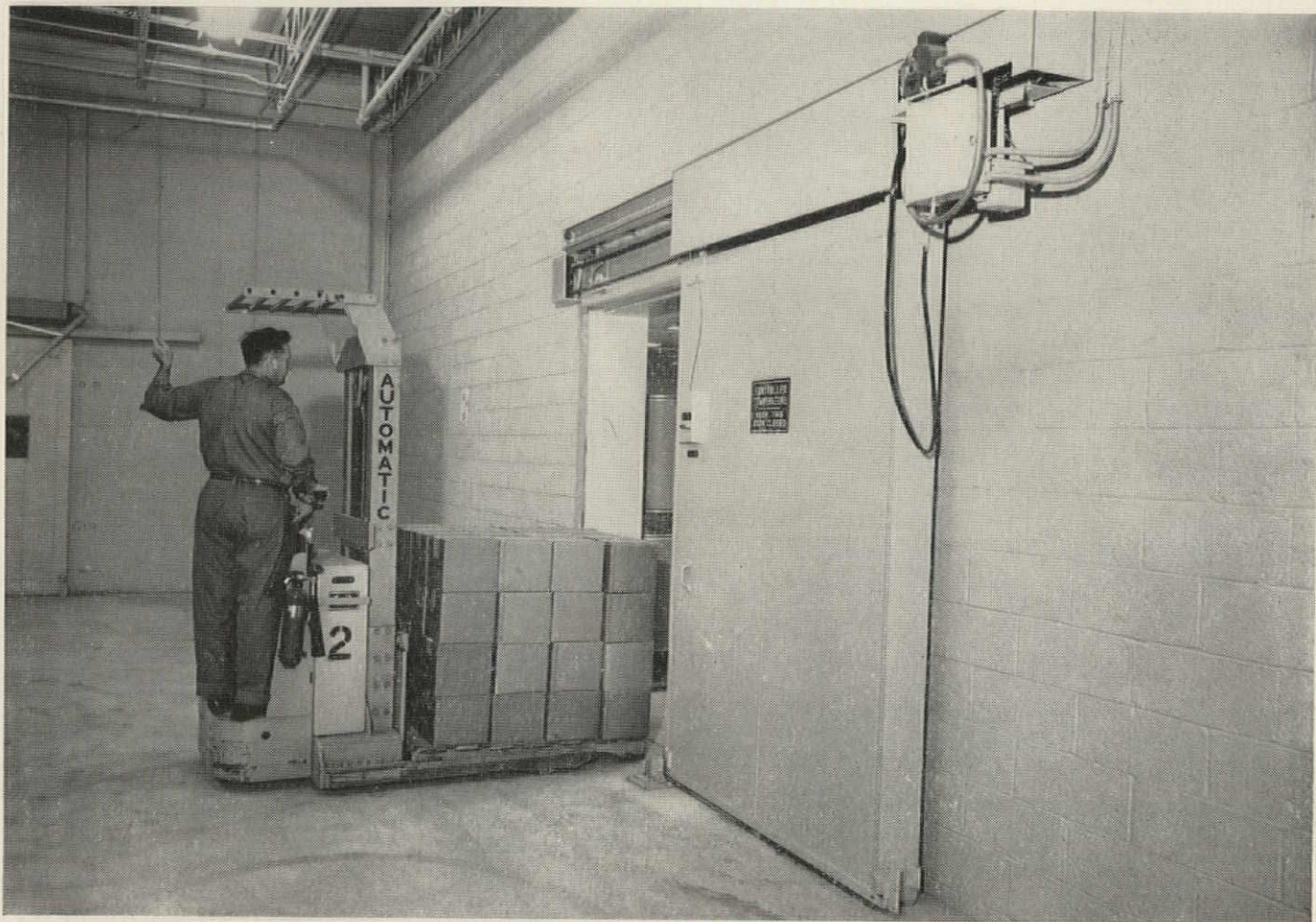


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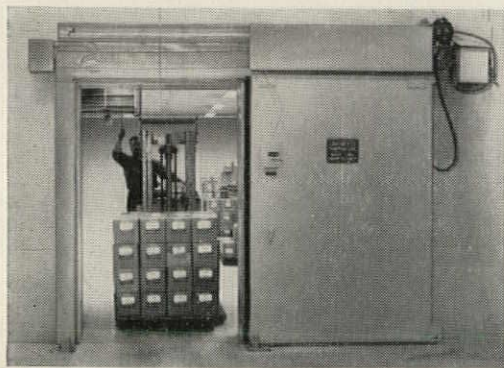
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Seating May Set Pattern For Future

Seating in the new Rock Island High School Fieldhouse may become a model for buildings of this type throughout the nation.

The main sections of bleachers, which can be opened and closed simply by pressing a button, are the largest installation of this type to be installed in any building in the United States.

The manufacturer of the bleachers, Medart Seating Co., St. Louis, has been using the Rock Island installation to show customers. The Rock Island installation may be advertised in trade journals to show the use of retractable seating in a building of its size.

Located along the east and west walls of the fieldhouse, the main sections of bleachers range from 70 to 75 feet wide. These sections on both the main playing floor and balconies may be opened and closed in a matter of minutes from a central control point. The bleachers are moved by electric motors.

Never before have retractable bleachers been used in such large sections, according to Benj. A. Horn, architect.

Seat 6,110 Persons

The bleachers to seat 6,110 persons were installed at a cost of about \$90,000. This type of seating was purchased to give the maximum use of floor space for physical education classes.

Risers on the new bleachers are treated with a pigmented varnish to make their color lighter to blend with the attractive light colors predominating the fieldhouse. This pigmented varnish will prevent the bleachers from turning dark in years to come.

This is also the first time that this type of bleachers has been treated with the pigmented varnish, Horn said.

The installation of this type of seating in the new fieldhouse is an indication of the farsightedness of the Rock Island Board of Education, Horn commented.



ROCK ISLAND
HIGH SCHOOL FIELDHOUSE
Rock Island, Ill.
Benj. A. Horn, Architect
Rock Island, Ill.

Whatever seating capacity is required...

POWER-OPERATION makes sense in gym seats!

Open in seconds... at the turn of a key! No muscle power, no noise, no binding, no damage to seats, walls, floors.

Close in seconds... just as smoothly, quietly, safely as opening operation.



Medart Power-Operated Gym Seats require no floor tracks, no extra wall reinforcements, no special construction provisions. Only regular 110-v. or 220-v. electric source is needed.

Cost? Just a fraction more than manually-operated seats—and this is soon recovered through lower maintenance and service expense. *Write for catalog.*

MEDART

TELESCOPIC GYM SEATS



SPECIFY the best, then INSIST on it!

Reprinted from
Rock Island Argus
Rock Island, Illinois
September 16, 1959

FRED MEDART PRODUCTS, INCORPORATED • 3540 DE KALB STREET • ST. LOUIS 18, MO.

How to
take the cold out
of contemporary...



Maximum ventilation and protection against rain are achieved by Andersen Wood Flexivents when operating sash is open in awning position. 18 stock sizes for your design needs. Chapel of St. James the Fisherman. Architect: Olav Hammarstrom.

Andersen Windowalls
TRADEMARK OF ANDERSEN CORPORATION



ANDERSEN CORPORATION • BAYPORT, MINNESOTA

For natural warmth
and beauty specify
Andersen WINDOWALLS
... the complete wood
window unit

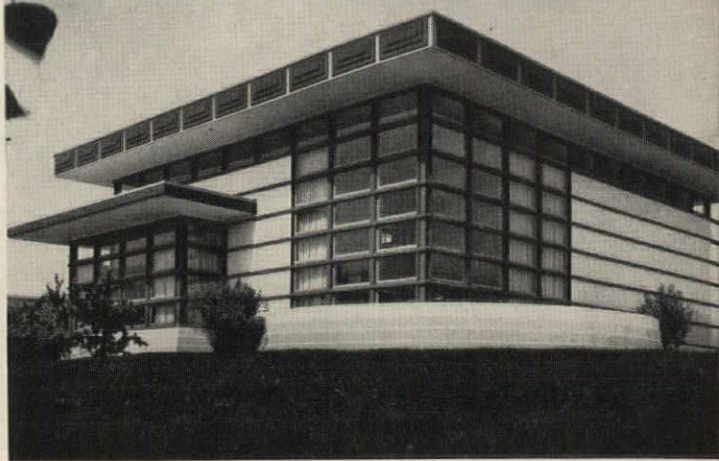
The Chapel of St. James the Fisherman is at Wellfleet, Massachusetts, a once flourishing Cape Cod whaling village, rich in seafaring history. Exposed wood framing and siding suggest the structural honesty of a stout wood ship. Overhead skylight and floor level fenestration achieve a luminous atmosphere for devotion. Seventy-two wood Andersen Flexivents® form a continuous window ribbon at floor level.

Versatile and adaptable Andersen WINDOWALLS offer a wide range of design possibilities with 7 basic units, 30 different types, 685 cataloged sizes...in combination, limitless possibilities for creative design.

Andersen WINDOWALLS are crafted in wood, a natural insulating barrier. They are 21.5%* more effective than aluminum sash in blocking outside heat or cold. Offer savings up to 10% in total heating and air conditioning costs. WINDOWALLS are easily painted or stained to beautiful natural wood finishes.

With all factors considered, Andersen WINDOWALLS often cost less than other windows you may have specified. Check your Sweet's File or write for Detail Catalog and Tracing Detail Files. Andersen Windows are sold by lumber and millwork dealers throughout the United States and Canada.

*ASHRAE GUIDE

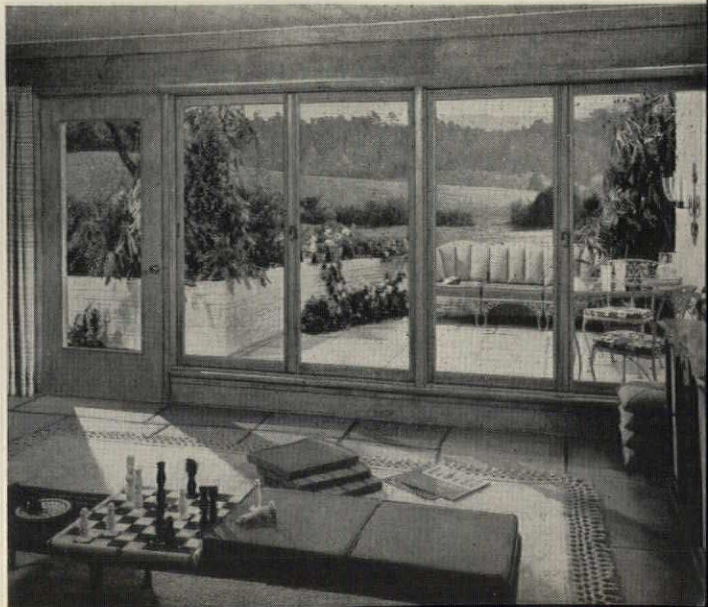


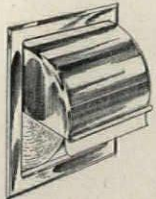
Designed by Frank Lloyd Wright for prefabricated construction, this house makes liberal use of Andersen Flexivent Windows with fixed and operating sash. Corner WINDOWALLS in 2-story living room give feeling of immense spaciousness.



Big, big Andersen Gliding Windows flick open sideways at a finger's touch. Solution to an irregular downhill site achieves WINDOWALL effect without sacrifice of ventilation. Motel, St. Clair, Michigan. Architect: George D. Lytle.

An invitation to patio living, thanks to Andersen Patio Wall. Gliding Windows combine economically with hinged door, offer patio access and year-around comfort. Space under windows provides for heating and wiring.

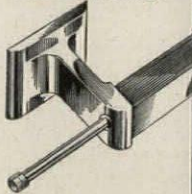




Concealed Toilet Paper Holder—revolving hood protects, covers paper.



Handsome lucite and chrome Towel Ring.



Coronado Extendo-bar for drying nylons, lingerie.



Shower Recess Unit—handy, safe spot for shampoo bottles, etc.



Relaxation Unit is luxuriously practical—recessed for toilet paper, cigarettes, ashtray, magazines, papers.



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LIGHTING TOOL
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GRATELITE
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Five years of time and over \$100,000 in research and engineering . . . that's what it took to create this even greater GrateLite in new 2' x 2' module units.

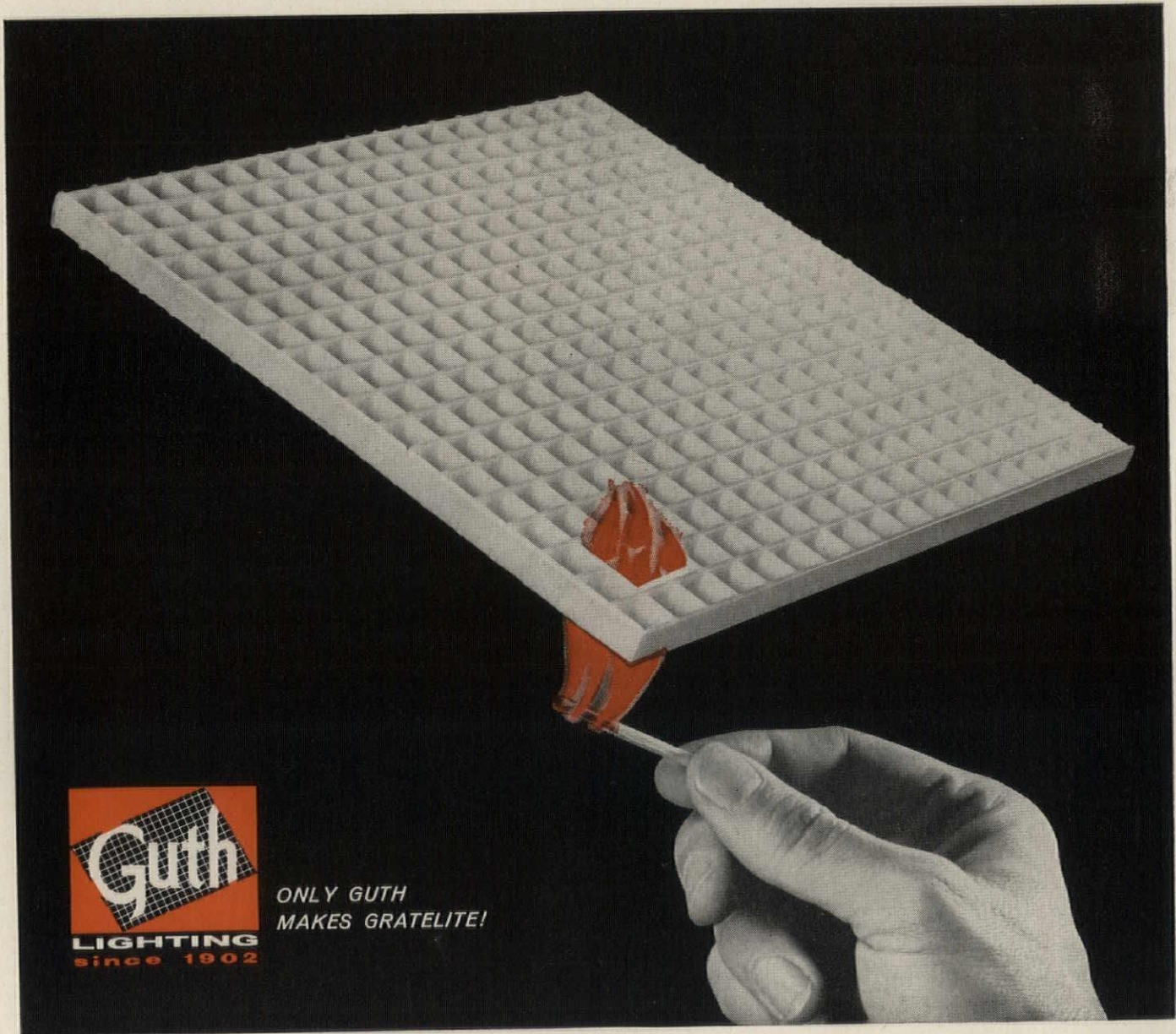
It's molded of non-combustible plastic . . . listed by Underwriters' Laboratories, Inc., as NON-COMBUSTIBLE with a low 25 rating.

Supported by Guth Una-Tee system, N. C. GrateLites can't fall out and cause panic.

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**ONLY GUTH
MAKES GRATELITE!**

These Southeast Decision-Making WESTINGHOUSE ELEVATOR "30-MINUTE"



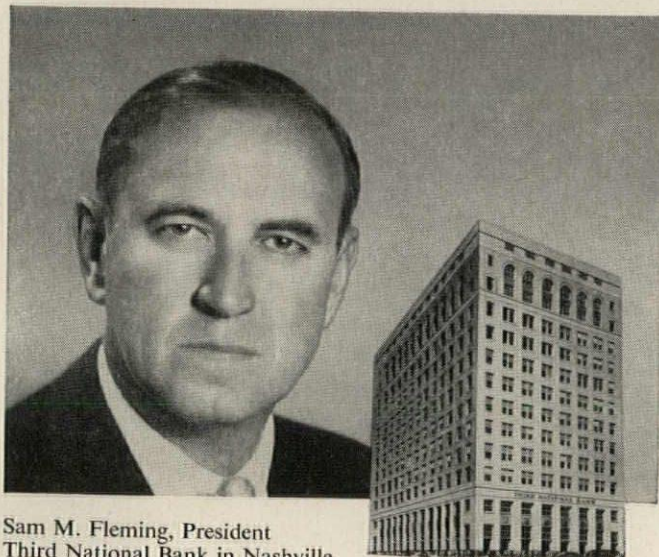
Joe B. Hutchison, Co-owner
Electric Building
Atlanta, Georgia

“Our overriding consideration in selecting the elevator system for the Electric Building was future tenant satisfaction. My associate, Henry C. Beck, Jr., and I, made this our greatest single requisite. After experiencing demonstrations of operatorless elevators, Westinghouse won hands down. We are sure our major tenant, Georgia Power Company, will enjoy the most efficient elevator service available anywhere.”



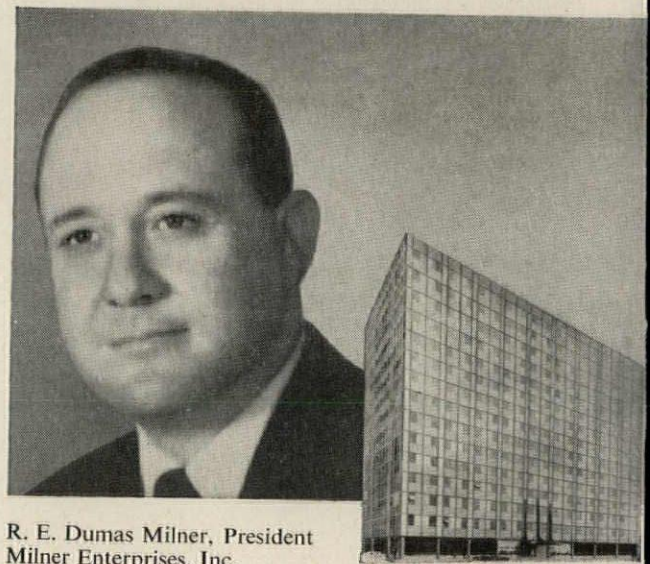
Steve H. Bomar, Senior Vice President
Secretary-Treasurer
Trust Company of Georgia

“Our study of operatorless elevators proved to our complete satisfaction that Westinghouse Selectomatic Automatic equipment was a wise choice for our main bank building. We have obtained safe, efficient elevator service from our installation which handles our heavy traffic peaks smoothly and quickly. We can heartily recommend a demonstration of Westinghouse to anyone interested in automatic equipment.”



Sam M. Fleming, President
Third National Bank in Nashville
Nashville, Tennessee

“At the time we were considering modernization of our elevators, we were given behind-the-scenes Westinghouse demonstrations. We were impressed with the smooth operations of the cars, efficient passenger handling and the courtesy of elevators without operators. The Westinghouse reputation for reliability of product and *proof by demonstration* influenced our decision.”



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Milner Enterprises, Inc.
Jackson, Mississippi

“We weren't guessing when we installed Westinghouse in the new Petroleum Building in Jackson, Mississippi. I had already experienced the advantages of its Automatic Traffic Pattern and other outstanding features when, in 1954, we installed Westinghouse elevators in the Milner Building, also in Jackson. This was my first commercial office structure, and it certainly made it easy to say 'Westinghouse' when we planned the Petroleum Building three years later.”

Executives Experienced the PRE-INVESTMENT EYE-OPENER"

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Westinghouse invites you to participate in a demonstration of the most advanced elevator system in the world. You must experience elevator performance to appreciate the remarkable results of Westinghouse engineering skills. Here are elevators that "think" for themselves electronically and automatically. They are as new as tomorrow—and more dependable than any elevator system previously devised. Tenants expect to find them in new buildings—and more and

more managements of existing buildings specify them at modernization time.

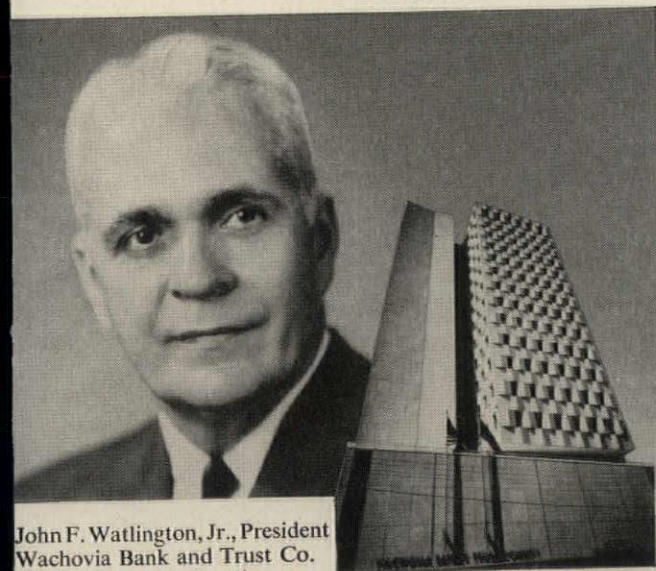
Selecting an elevator system is a key decision which deserves your personal attention and approval. As a building owner or manager, it pays you well to investigate before you invest. Make arrangements to see this behind-the-scenes demonstration by calling the Westinghouse Elevator Division Sales Office in your city. Consult the Yellow Pages of your telephone directory.

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Charlotte, North Carolina



Sheppard M. Latter, President
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New Orleans, Louisiana

“The elevators for our new Charlotte Building represented an important capital expenditure well worth our thorough investigation before any investment. Our study clearly demonstrated the technical quality and refinements necessary for efficient elevator service. We chose Westinghouse Selectomatic Elevators (and Electric Stairways) for this building. We are confident our decision was a wise one.”

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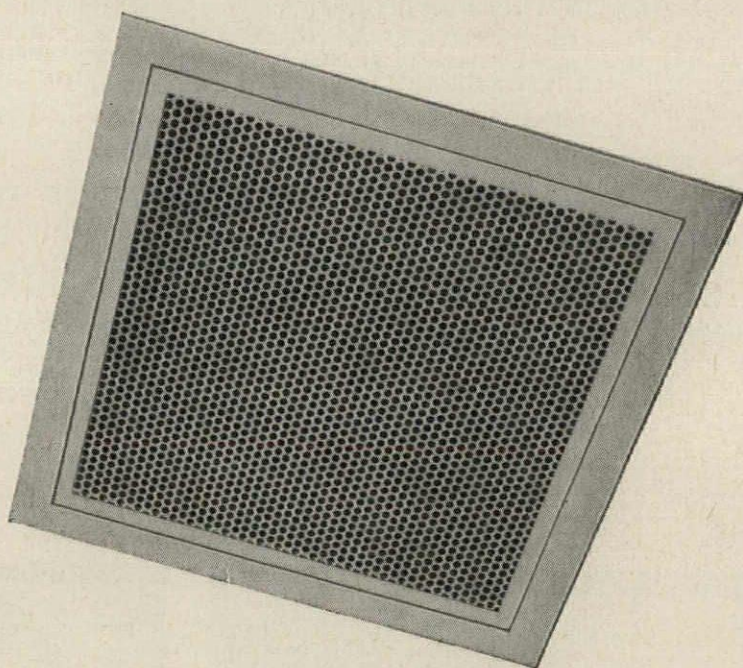
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by **GENERAL BRONZE**

FOR THE NEW HOME OFFICE BUILDING
EQUITABLE LIFE ASSURANCE SOCIETY
NEW YORK CITY

Contractor: Turner Construction Co.

Architects: Skidmore, Owings & Merrill

Here's another of America's outstanding buildings—the new Home Office of the Equitable Life Assurance Society of America. And like so many other distinctive buildings, it too features Curtain Walls engineered, fabricated and erected by General Bronze.

To give a pleasing contrast to the natural finish aluminum grid and panel units, the architects, Skidmore, Owings & Merrill, have used black glass spandrels below each of the fixed light windows as well as black finish louvers on all the mechanical equipment floors.

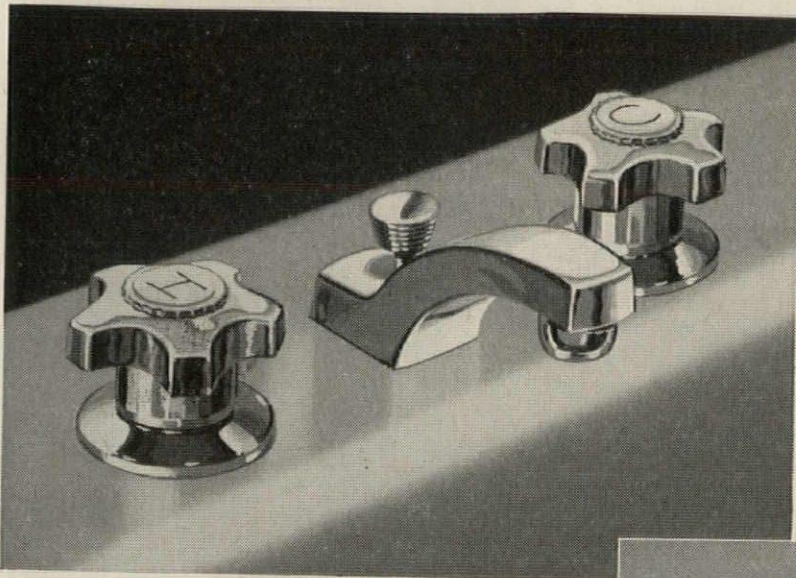
If you are planning a curtain wall building in either aluminum, bronze or stainless steel, we can help you in many ways. For detailed information on GB products—curtain wall systems, windows, revolving doors, architectural metalwork—give us a call or see our catalogs in Sweet's.



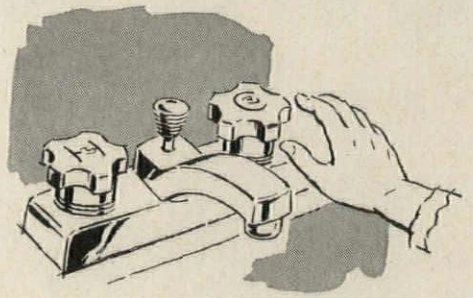
GENERAL BRONZE
CORPORATION · GARDEN CITY, N.Y.

SALES OFFICE: 100 PARK AVE., NEW YORK 17, N. Y.

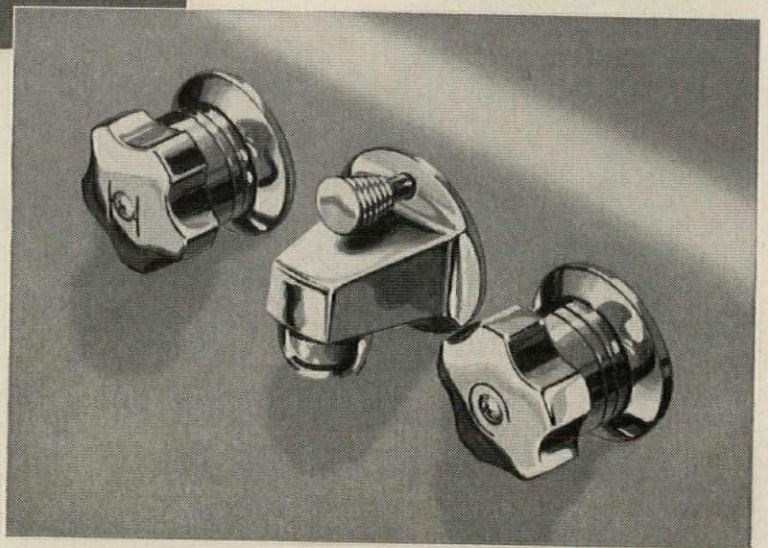
PERMATITE DIVISION—Custom-built Windows, Curtain Walls, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows and Doors. BRACH MFG. CO. DIVISION—Radio, Television and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in Steel and Iron.



Galaxy series with brushed chrome finish.
Lavatory fitting K-6965.



Constellation series with polished chrome finish.
Lavatory fitting (below) K-7450.



KOHLER

All Brass Fittings

as durable as they are distinctive

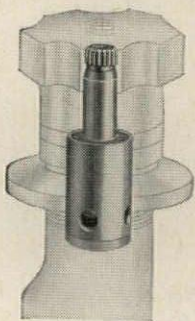
When you specify Kohler fittings for Kohler plumbing fixtures, you insure first quality and harmony of design throughout the installation, with undivided manufacturing responsibility.

The only metal beneath the chrome-plating of Kohler fittings is brass, of high copper content. Brass has superior wearing qualities, maximum resistance to corrosion. It takes and holds chrome-plating better than any

other metal, requires less maintenance.

Kohler fittings respond easily, reliably, to finger pressure. Interchangeable valve units afford positive action, maintain water-flow at volume set. Their non-rotating action—pressing the seat washer against a stationary seat—eliminates the wearing action of the conventional screw-type valve.

Kohler fixtures deserve Kohler fittings.



Interchangeable
valve unit

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*Enameled Iron and Vitreous China Plumbing Fixtures • Brass Fittings
Electric Plants • Air-cooled Engines • Precision Controls*



San Angelo Central High School, San Angelo, Texas

Ulric Meisel photo

primary and
secondary
pumping with
B&G® PUMPS
keeps horsepower down

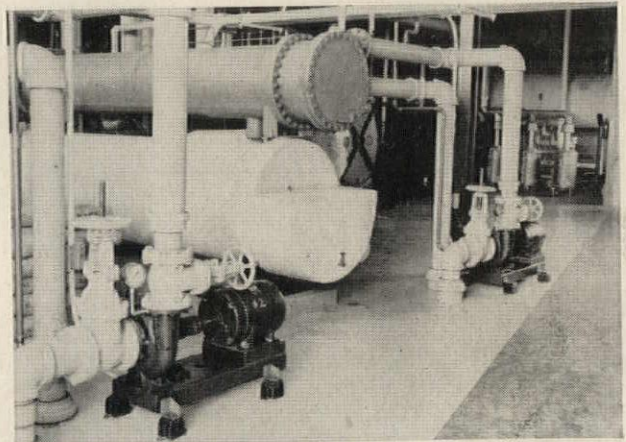
Architects: Caudill, Rowlett & Scott—
Houston, Texas, Oklahoma City, Okla.,
Corning, N. Y. and Stamford, Conn.
Associate Architect: Max D. Lovett—
San Angelo, Texas
Engineer: J. W. Hall—Bryan, Texas
Mechanical Contractor: R. M. Wells—
Quanah, Texas

The twelve buildings of this campus-type high school are heated and cooled with water. The pumping equipment consists of six B&G Universals, twelve Series 1510-B pumps and eight Boosters.

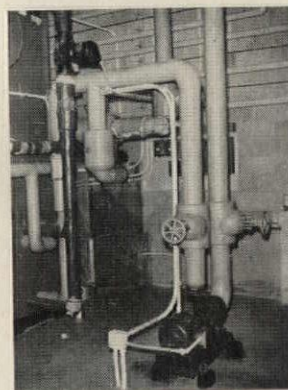
These pumps circulate single and dual coil units for heating and cooling and also the service water lines. Pump sizes range from 1/6 HP Boosters to 20 HP Universals.

To keep pumping horsepower at a minimum, a B&G primary and secondary pumping arrangement is employed, with the piping divided into three primary circuits. Each primary pump is sized to circulate the maximum demand for water through a single loop. The pump, therefore, need only be large enough to overcome the friction head in the primary piping circuit.

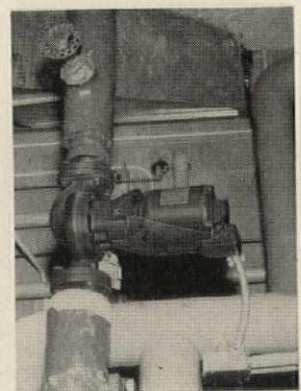
Secondary pumps in each building, and for each major zone in each building, handle water quantities out of these main circuits and overcome the balance of the head in the system.



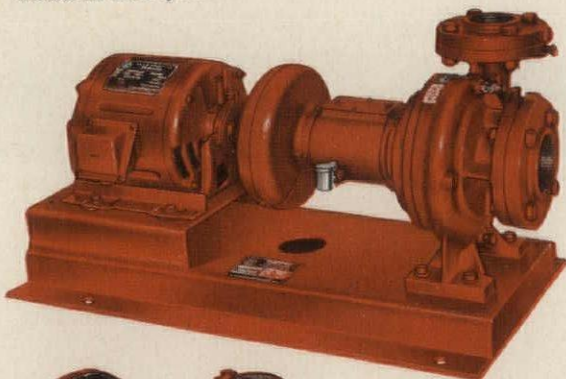
Two B&G Pumps for circulating chilled water



B&G Universal Pump for circulating heated water through primary circuit



B&G Booster circulating one of the secondary circuits



B&G Universal Pump



B&G Booster



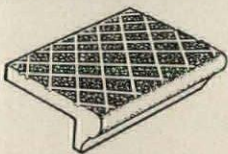
BELL & GOSSETT
C O M P A N Y

Dept. GA-32, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

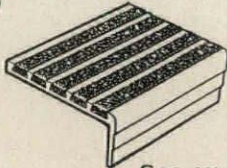


QUALITY
starts here...



Abrasive Cast
Safety Treads

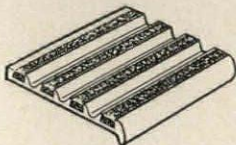
Super-Grit
Safety Treads



Pouring the molten metal for Wooster abrasive cast safety treads and thresholds is just one step in a manufacturing operation that is called upon to constantly meet a number of varying conditions.

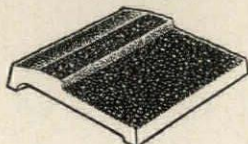
The constant care necessary to insure quality materials depends upon craftsmen like the molders above - just one part of our team working to maintain this quality tradition.

See our new enlarged catalog in Sweets architectural file $\frac{13b}{Wo}$ or send for free copy



Safe-Groove
Safety Treads

Abrasive Cast
Thresholds



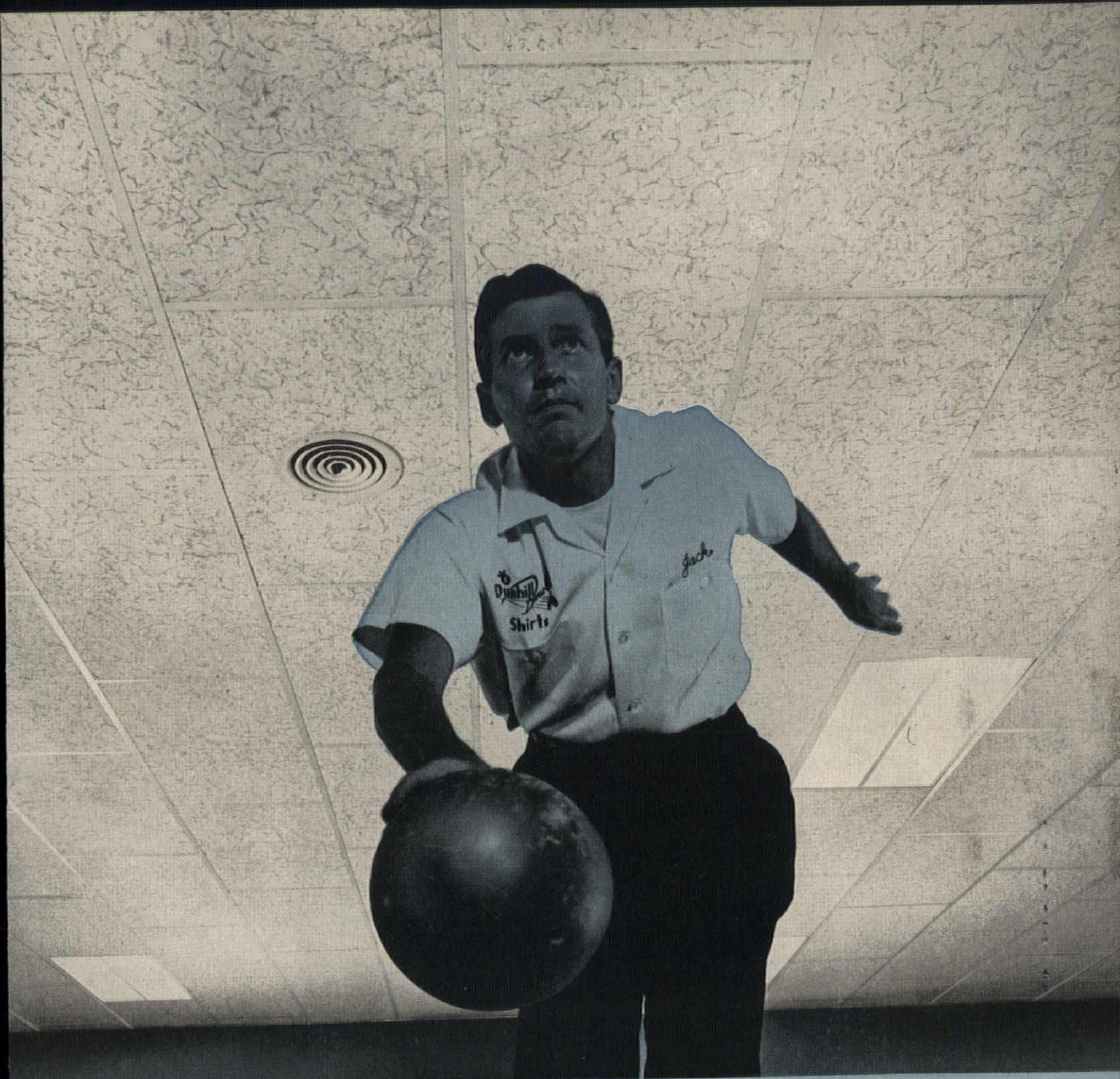
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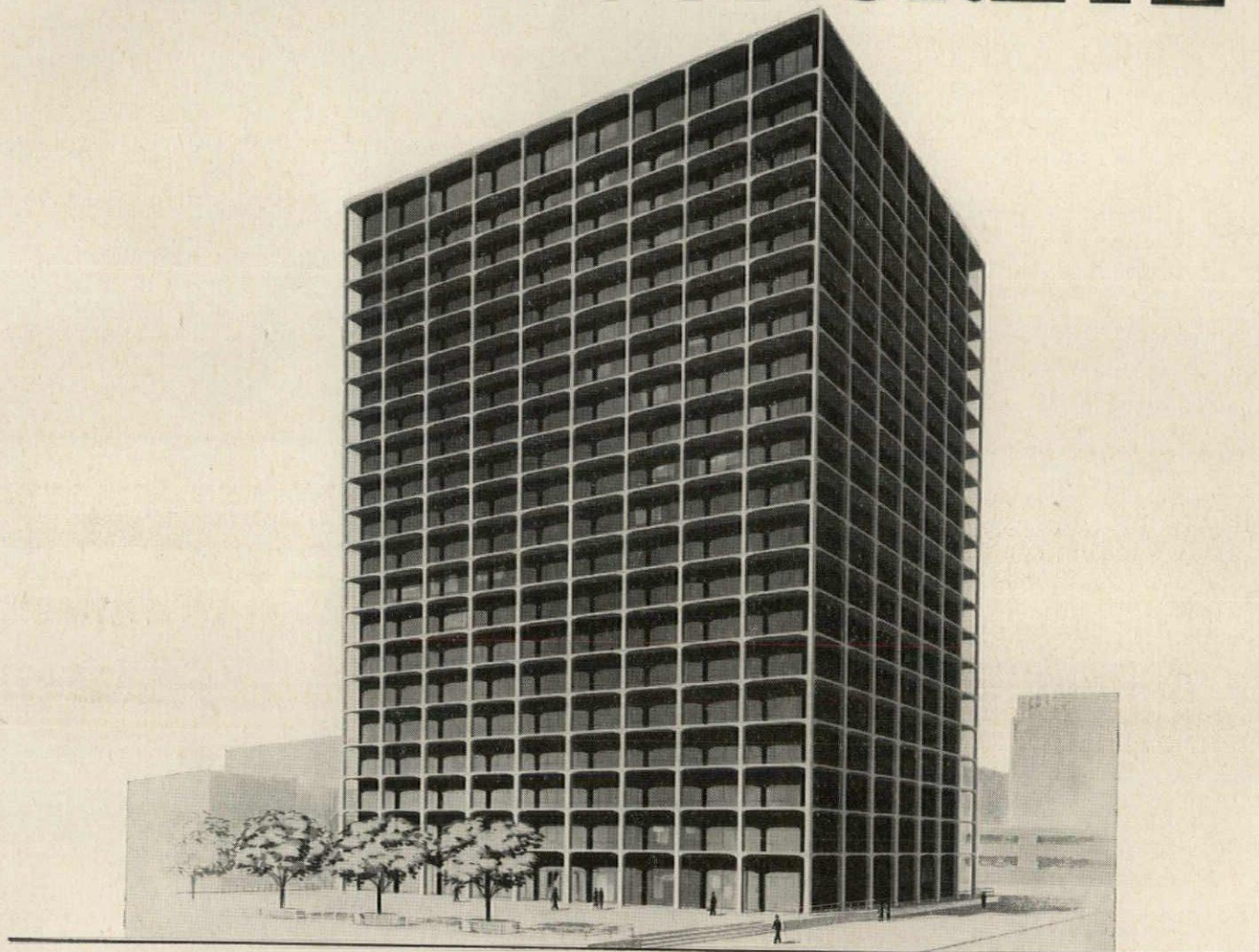
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Another First in Building Design *created by*

Reinforced CONCRETE



The Hartford Building, Western Department Headquarters of the Hartford Fire Insurance Company Group, Chicago, Illinois
Architects and Engineers: Skidmore, Owings, and Merrill, Chicago, Illinois
General Contractors: George A. Fuller Company, Chicago, Illinois

A unique example of reinforced concrete's greater design flexibility will be the new 20-story, \$20,000,000 Hartford Building now under construction in Chicago. Described as another first in office building design, this unusual reinforced concrete and glass structure will have curtain walls recessed 4 feet to provide canopies above each floor to shade office areas from the glare of sun and sky.

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Springfield, Ill.



CHARLES BRUNING COMPANY, INC.
Mt. Prospect, Ill.
Engineer-Architect: A. Epstein & Sons, Inc.,
Chicago
Plumbing Contractor: Marcus Weil & Sons,
Chicago



TEXAS INSTRUMENTS INCORPORATED
Dallas, Tex.
Architects: O'Neil Ford & Associates,
San Antonio; Richard S. Colley, Corpus
Christi; A. B. Swank Associates, Dallas
Plumbing Contractor: Beard Plumbing Co.,
Dallas



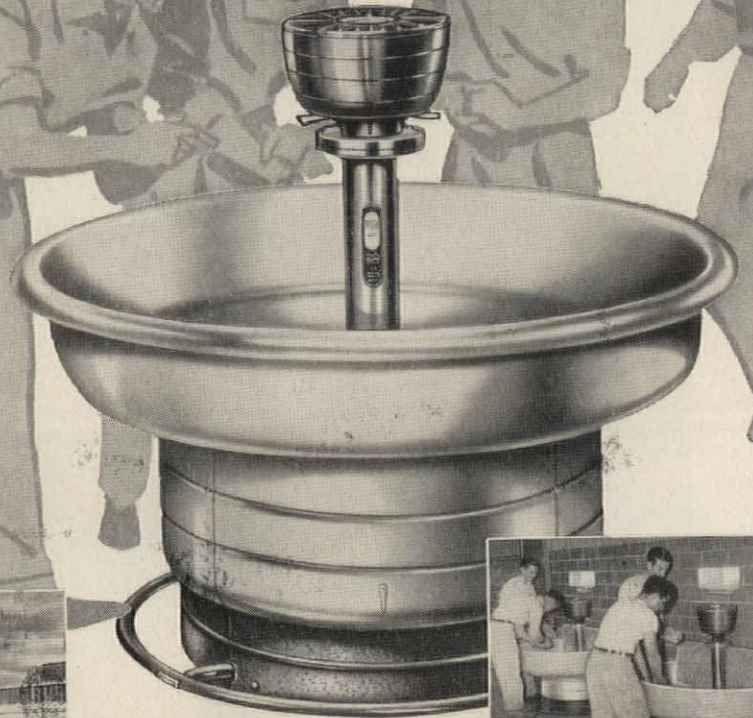
NATIONAL BISCUIT COMPANY
Fair Lawn, N. J.
Designer-Engineer: Nabisco
Engineering Department
Plumbing Contractor: Frank A. McBride
Co., Paterson, N. J.



**KAISER ALUMINUM & CHEMICAL
COMPANY, Ravenswood, W. Va.**
Engineer-Designer: Kaiser Engineers,
Division of Henry J. Kaiser Company



SQUARE D COMPANY
Glendale, Wis.
Architect: Grassold-Johnson & Associates,
Milwaukee
Designer: Brooks Stevens Associates,
Milwaukee
Plumbing Contractor: P. J. Grunau Co.,
Milwaukee



ABOVE: 54-inch circular Washfountain;
at right: Semi-circular wall type models.



FACTORY MAGAZINE'S *Top Plant Awards* 1959

Each year for 25 years, *Factory's* editors have selected Ten Top New Plants. It is noteworthy that so great a majority of such Top Plants have Top Washing Facilities—Bradley Washfountains.

The 1959 selections include—Bucyrus-Erie plant, Richmond, Ind.; Charles Bruning, Mt. Prospect, Ill.; Cutler-Hammer, Lincoln, Ill.; Kaiser-Aluminum & Chemical Corp., Ravenswood, W. Va.; National Biscuit, Fair Lawn, N.J.; Square D, Glendale, Wis.; Texas Instruments, Dallas, Texas.

And among the 1958 Top Ten there were: Automatic Electric Co., Northlake, Ill.; Beckman-Helipot Corp., Newport Beach, Calif.; Chrysler Corp., Twinsburg, Ohio; Johnson & Johnson, North Brunswick, N.J.; Marquardt Aircraft Co., Ogden, Utah; The Martin Co., Orlando, Fla.; National Lock Co., Rockford, Ill.; Polaroid Corp., Waltham, Mass., all Bradley equipped.

Better Washing Facilities In Less Space

Employees like the ease of water control by means of the foot ring, eliminating need for faucets—they like the cleanliness of the big self-rinsing bowl.

Economy of space, installation and maintenance costs—the maximum in sanitation—have led to the wide use of Bradley Washfountains in plants of every size and kind—25-man plants and those employing hundreds and thousands.

When considering new plants, extensions, or improvements, install Bradleys . . . Latest catalog mailed on request.

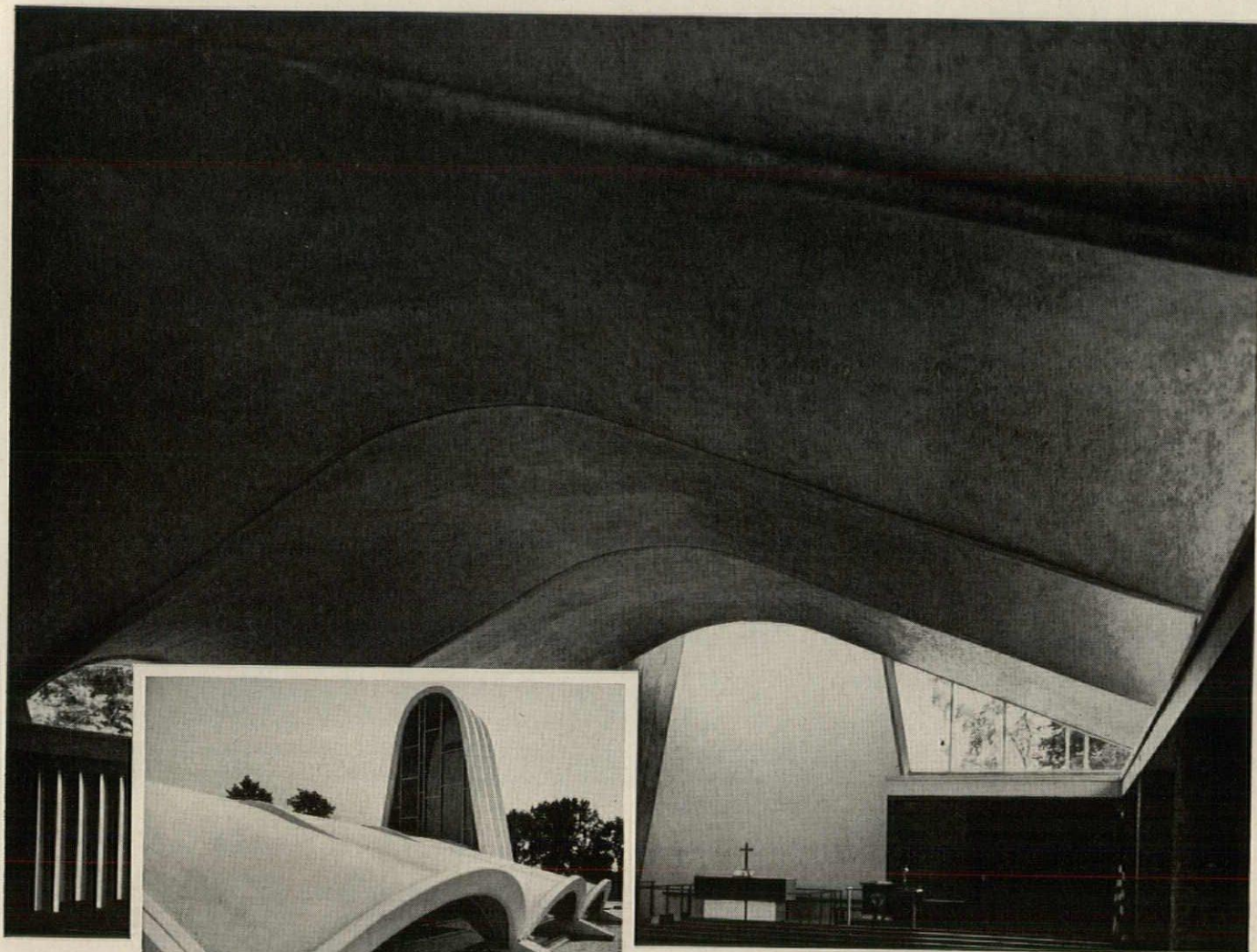
BRADLEY WASHFOUNTAIN CO.
2227 W. Michigan St., Milwaukee 1, Wis.

BRADLEY
washfountains

In Canada
Aristocrat Manufacturing Co., Ltd.
Toronto 9, Ont., Can.

Write
for
Catalog
5601





St. Mark's Lutheran Church, Norwich, Conn. Architect: John MacL. Johansen. Authorized SPRAYED "LIMPET" ASBESTOS Applicator: E. B. Carley & Co., Inc.

As you can see above, the $1\frac{3}{8}$ " coating of SPRAYED "LIMPET" ASBESTOS faithfully follows the contours of the vaulted nave . . . pre-cast, re-enforced concrete shells. But, there's more than flexibility to the credit of this sprayed-on-with-a-gun insulating material. It has a "U" factor of heat transmission of .17 BTU/hr/ft²/°F. plus a sound absorption quality—in terms of noise reduction coefficient—amounting to .85. And, the high capillarity of the asbestos fibers provides condensation control and prevents dripping.

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Find out why more and more modern structures are turning to this marvelous material for thermal insulation, condensation control, acoustical treatment, and fireproofing.

Just write to us today for more information.

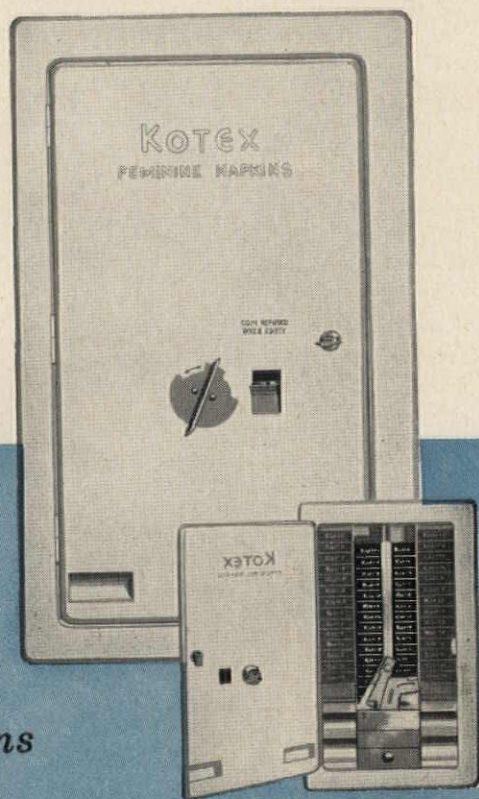
Insulates steel, aluminum, and concrete • For floors, ducts, beams, and all structural elements • No forms or shoring required • Goes on in all kinds of weather—as long as temperature at point of application is above 40°F. • Minimum clean-up • Takes paint beautifully • Adheres with strength of 100 lbs. per sq. ft.

SPRAYED "LIMPET" ASBESTOS

A 100% Asbestos blanket insulates a strikingly modern house of worship!



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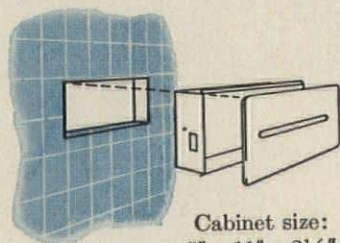
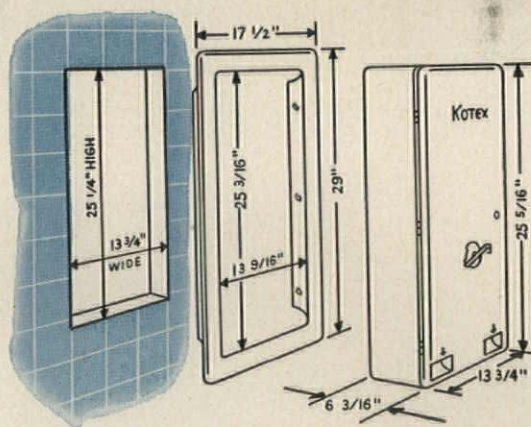
RECESSED VENDORS

for **KOTEX** *feminine napkins*

TO KEEP PACE with the latest architectural designs, Kimberly-Clark has styled a brand new recessed dispenser for Kotex feminine napkins for rest room use in schools, offices, stores; industrial and public buildings. This unobtrusive, built-in vendor holds 63 individually boxed napkins. 33 vend from a single loading, 30 are held in storage.

These streamlined, sturdy, pilfer-proof vendors add a much appreciated service to any public building. They are available with either a five-cent or ten-cent coin mechanism.

Available in durable white enamel, satin chrome, gleaming polished chrome and stainless steel. Matching frame for recessed installation. (Other vendors that can be surface mounted are also available.)



Cabinet size:
5" x 11" x 2 1/16"



RECESSED DISPENSERS FOR KLEENEX TISSUES

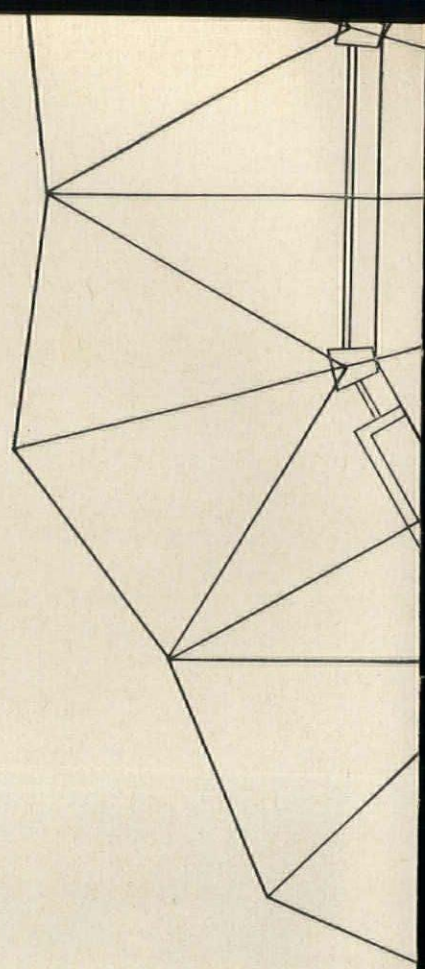
Holds full box of Kleenex 200's. Dispenses one tissue at a time. Mirror-chrome finish. Holes in back and side make it easy to fasten to studding.

For further details on how these attractive new dispensers can fit into your plans, see Sweet's 1959 Architectural File Cat., Section 26e/Ki. or write to Kimberly-Clark Corp., Dept. AR-10, Neenah, Wisconsin.

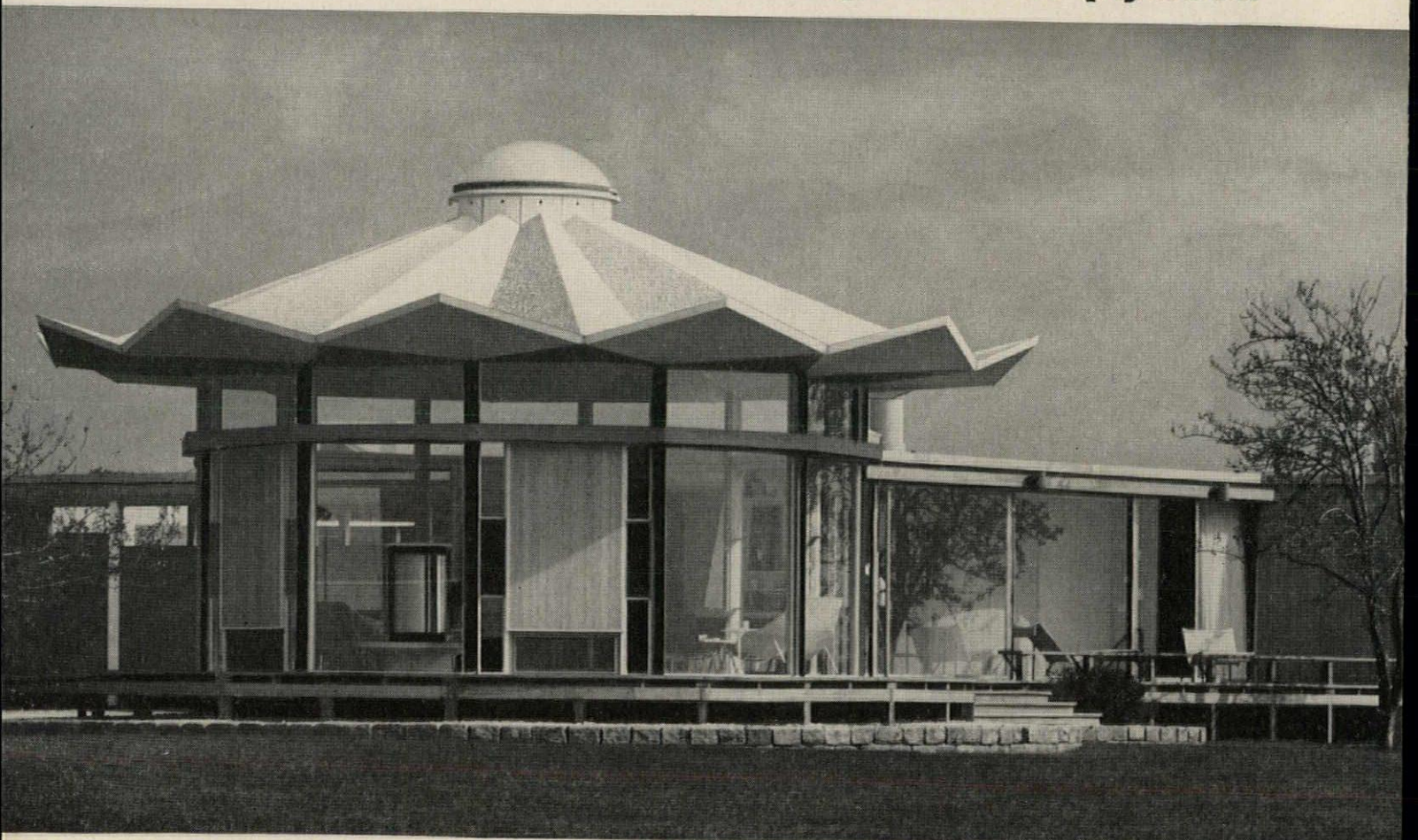
KOTEX and KLEENEX are trademarks of KIMBERLY-CLARK CORPORATION

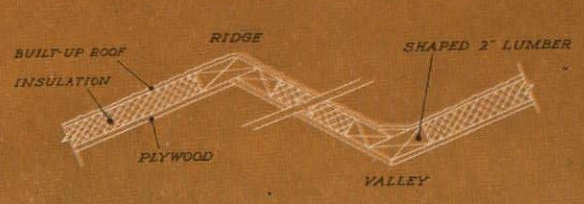
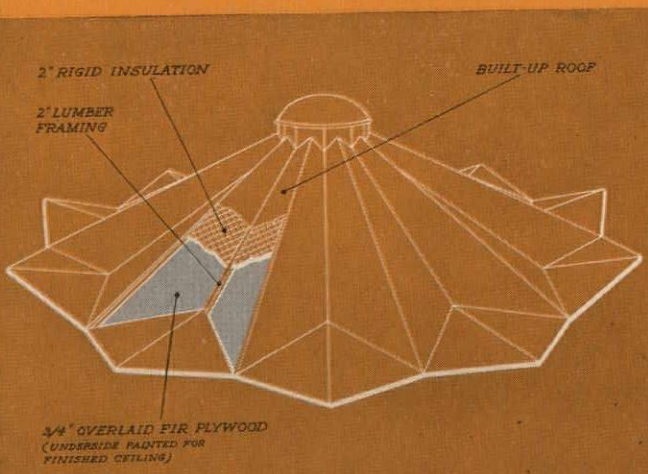
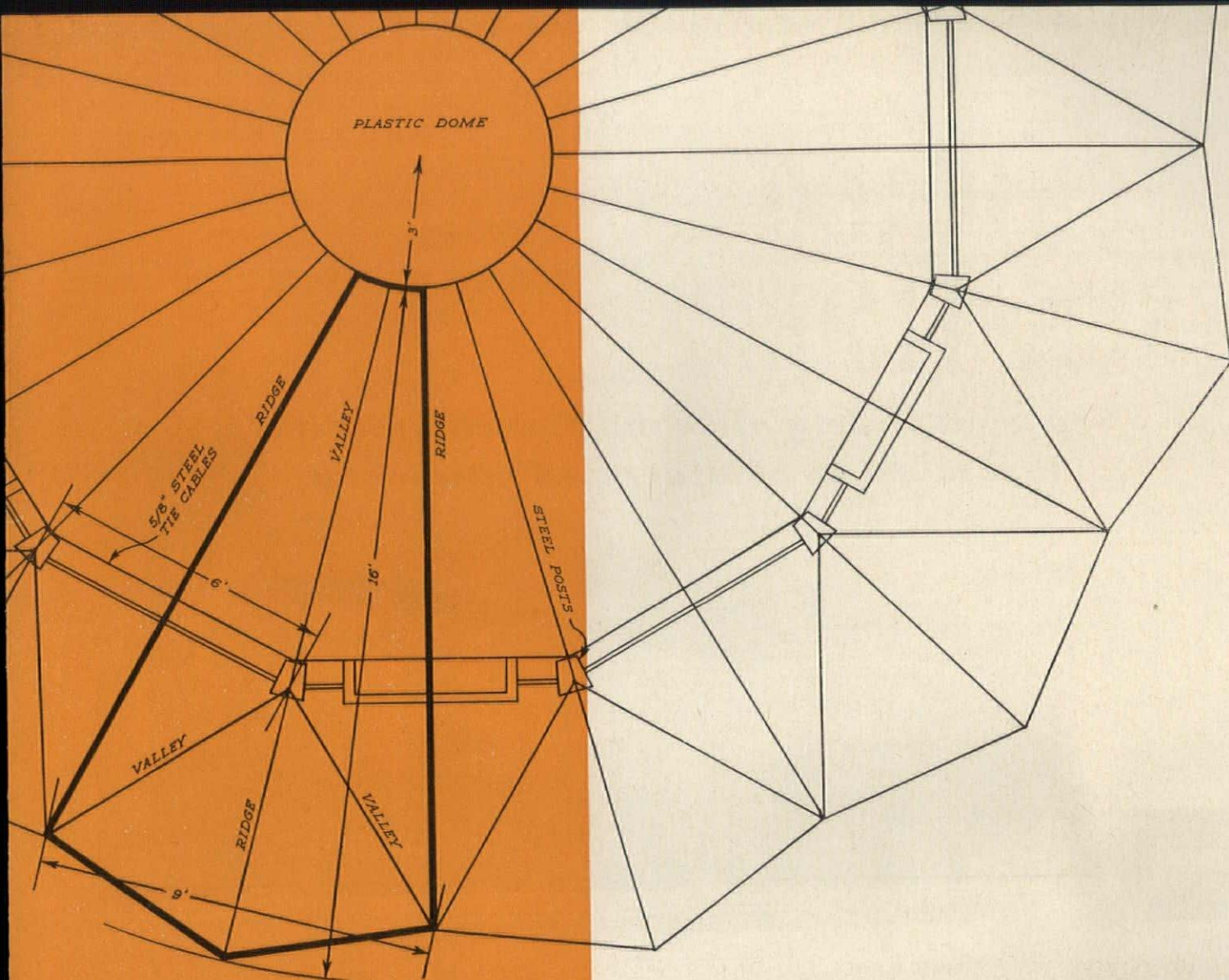
KIMBERLY-CLARK  **CORPORATION** NEENAH, WISCONSIN

ARCHITECTURAL RECORD January 1960



new approaches to structural design with fir plywood





ARCHITECT: Alexander Knox
 LaFarge, Knox & Murphy, New York, N. Y.
BUILDER: Charles Rush, Amaganset, Long Island
LOCATION: Bridgehampton, New York

THE PLEATED ROOF that crowns this pavilion-like living room is a prime example of the bold and imaginative forms derived from the basic fir plywood folded plate principal. Shape rather than mass is the key to its strength. The distinctive sawtooth configuration capitalizes on fir plywood's high diaphragm strength to create, in effect, a series of rigid, lightweight "V" beams. Intermediate posts, trusses and bulky framing are eliminated.

In this sophisticated circular design, the plywood folded plates provide a dome, spanning 26 feet, wall to wall. No central support is required. Where desired, far greater spans could be achieved utilizing the same basic system.

The roof itself is composed of 12 basic "boat-shaped" fir plywood components which were crane-lifted into position atop the steel supporting columns. Each component, in turn, is made of four triangular pieces of 3/4" overlaid fir plywood, perimeter framed and interconnected with shaped two-inch lumber. Alternate projecting and recessed stiffeners along the ridges connect each component with its neighbors. Each component combines roof deck, insulation and finish ceiling.

For basic design data or other information, write (USA only) Douglas Fir Plywood Association, Tacoma 2, Washington.



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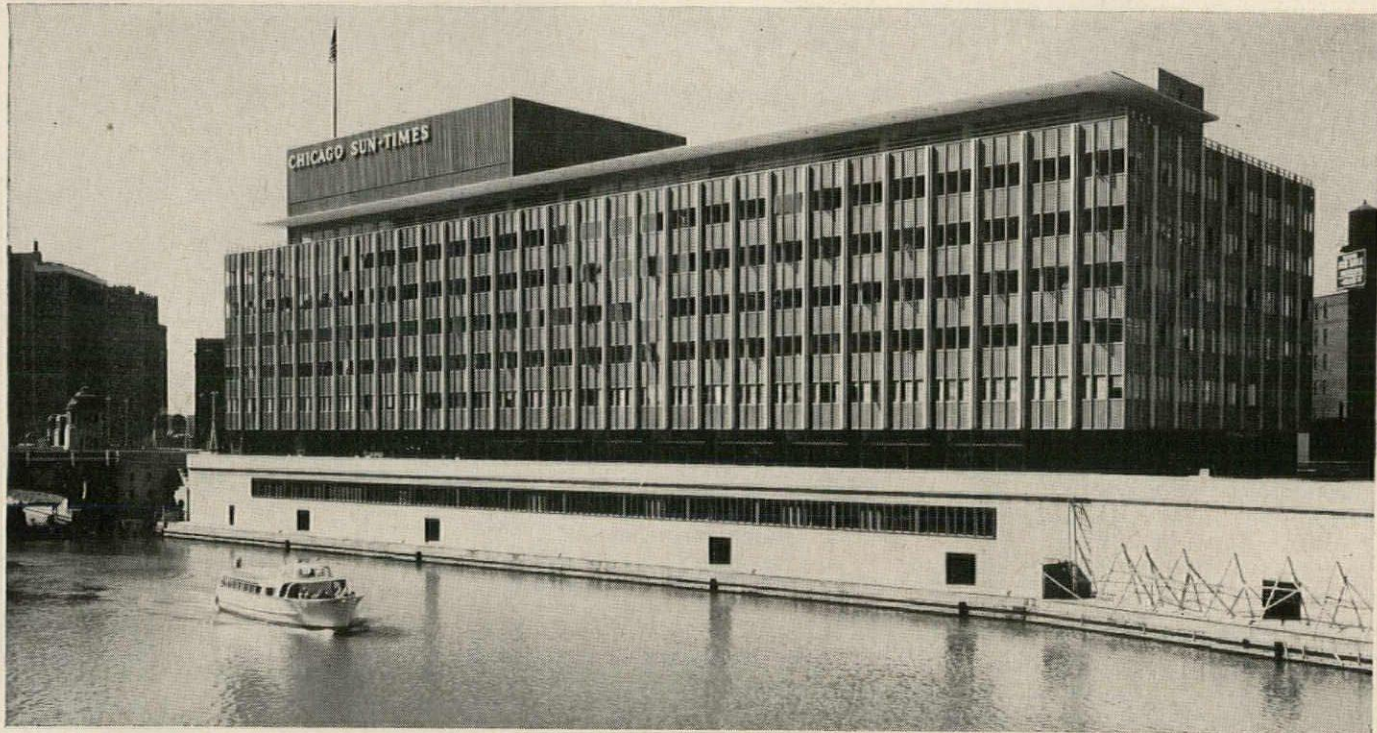
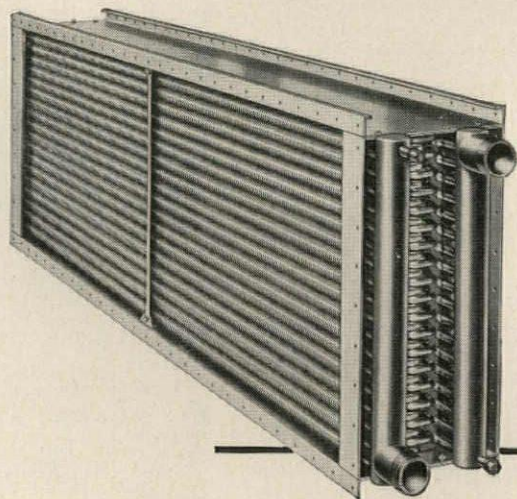


Photo: Hedrich-Blessing, Chicago

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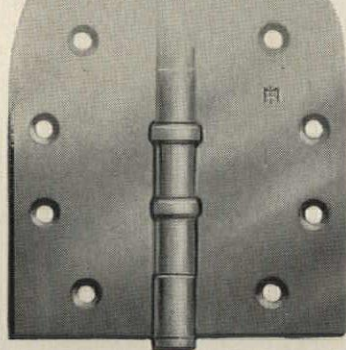
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- ... the craftsmanship of a master

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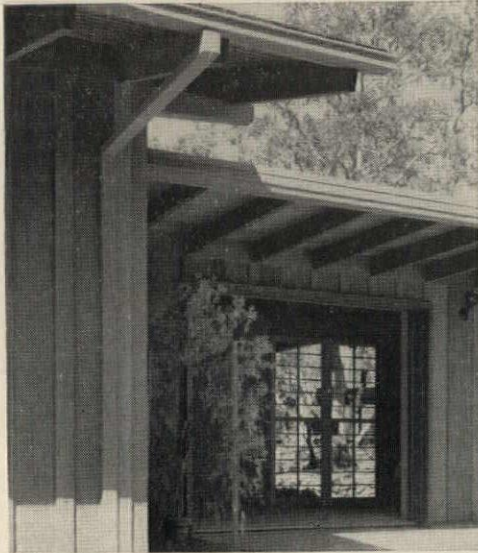
CRA

CALIFORNIA REDWOOD'S

rich, natural beauty creates a feeling of warmth
and serenity . . . is in perfect harmony
with other compatible building materials.



Architect: Edward Page, A. I. A.

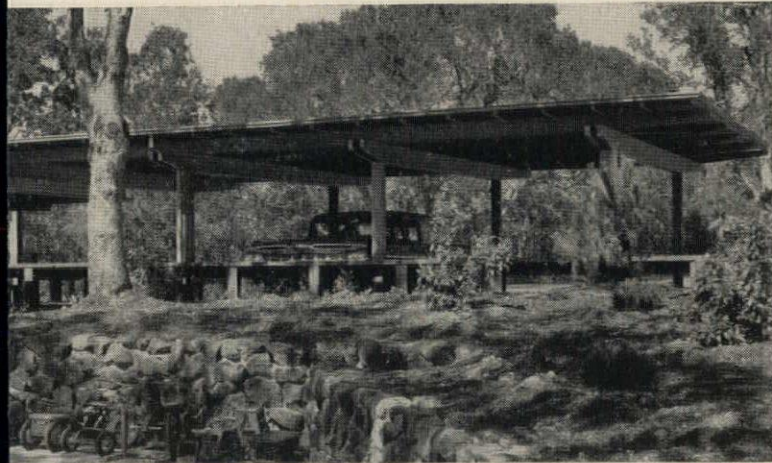


The saw-textured board and batten siding, of Certified Kiln Dried redwood, is treated only with a water repellent and will weather naturally and beautifully. Redwood is one of the very few woods that defies the elements, year after year, even when left without a protective finish.



Because redwood provides a high degree of insulation, the ceiling in this handsome room also serves as sub-roofing. Note how the color variations in the boards add visual interest.

This unusual treatment of the overhang, using redwood 2x2's, is not only an interesting decorative element but also avoids the possibility of the roofing nails breaking through.

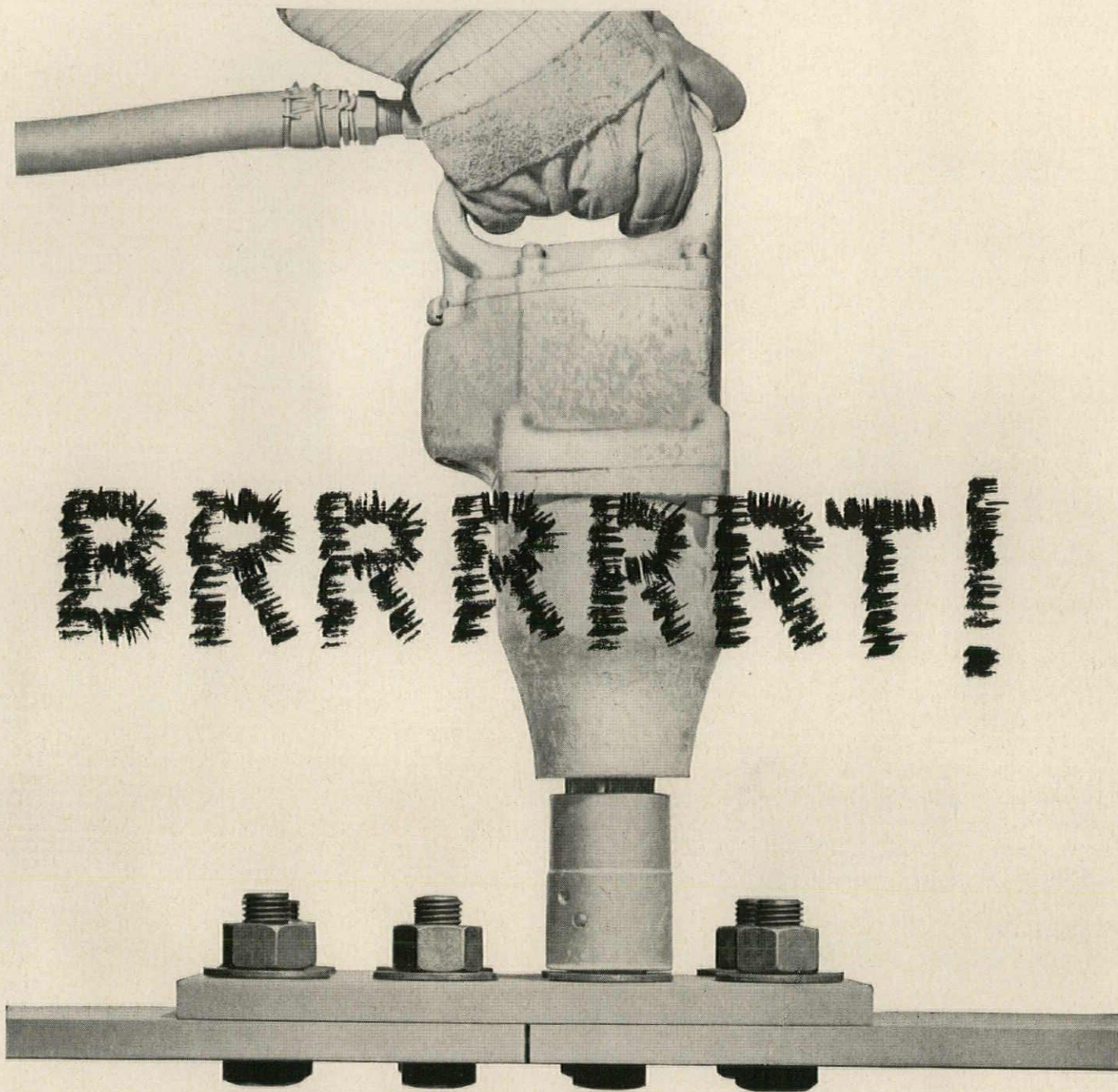


The redwood carport is in perfect harmony with nearby foliage and planting... helps to relate house and garden. Incidentally, the use of aluminum, stainless or hot-dipped nails is recommended for all exterior applications of redwood.



All the wonderful warmth of wood is best expressed in redwood.

To the architect, Certified Kiln Dried redwood's natural charm, adaptability to almost every use and fascinating variety of grain patterns and color tones offer a challenge to his imagination and inspire his best work. To the owner, redwood's beauty is a continuing source of pride and satisfaction and its durability and ease of maintenance are a reflection of his good judgement.



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And that's why architects and engineers specify high-strength bolting when they want steel to go up fast. It's speedy, and it's *sure*. Every joint is tight—*permanently!* Safe, too, since there's no fire hazard, or danger of injury from tossed rivets. And because it's far less noisy than riveting, bolt-

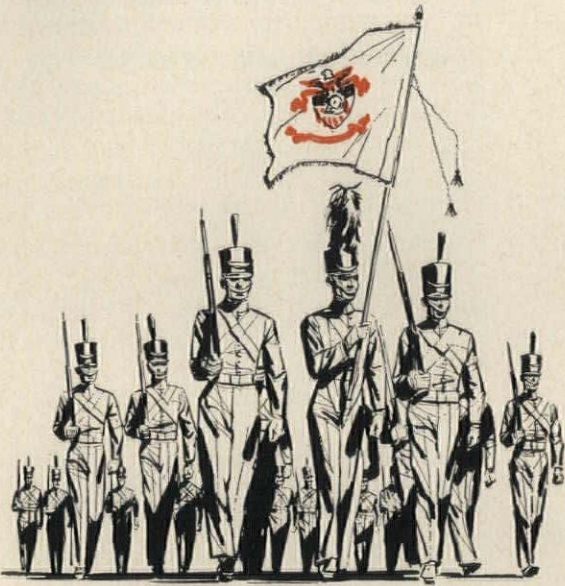
ing is especially welcome in hospital and school zones. Bethlehem supplies a full size range to meet every construction need . . . and the requirements of ASTM Specification A-325. Plan to use Bethlehem High-Strength Bolts on your next job.

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A new idea for Industrial Building Architects



How Movable Seats Solve Training Class Seating Problems

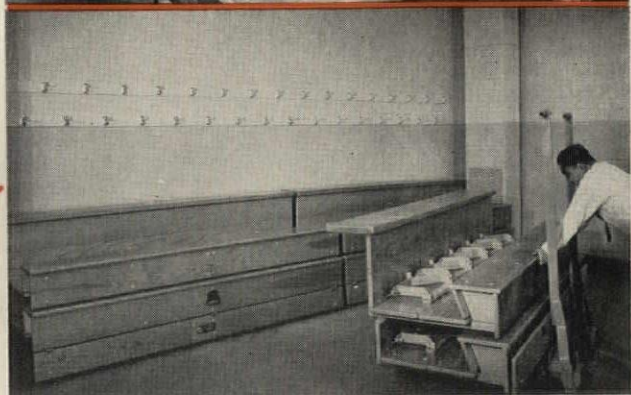
Situation: Industry has a problem seating men for on-the-job training. If they schedule the class at the site of the machine, there's no place to sit or write notes and it's difficult to see. If they set the class up elsewhere, a machine has to be hauled to the class.



Walter Dorwin Teague Associates created the idea that produces an answer. At West Point Military Academy, classroom seating was needed for chalkboard sessions. That same floor space was also needed for Concrete Testing Lab. experiments. Teague's solution: use movable Hussey Closed Deck Roll-Out gym seats with detachable tablet arms, as illustrated. This way, one area serves both purposes.



This idea is equally applicable to on-the-job training. During classes, aisle space is temporarily made into a seating area. Open, a 3-row section 8' 0" long, which comfortably seats 18 people, is 4' 11 $\frac{3}{4}$ " deep. It closes to 3' 1 $\frac{1}{4}$ ". It moves quickly and easily out of the way on a hydraulic dolly. Less than 5 minutes is required to set up seats including tablet arms. The Closed Deck insures complete safety and prevents anything dropping under the seats. There is 18" of comfortable foot-space, and 14 $\frac{3}{4}$ " of knee room. The elevated seats permit everybody to see. Units available from 3 to 10 rows high and in 8' to 16' lengths.



For further details write or call collect
(OSborne 6-2271).

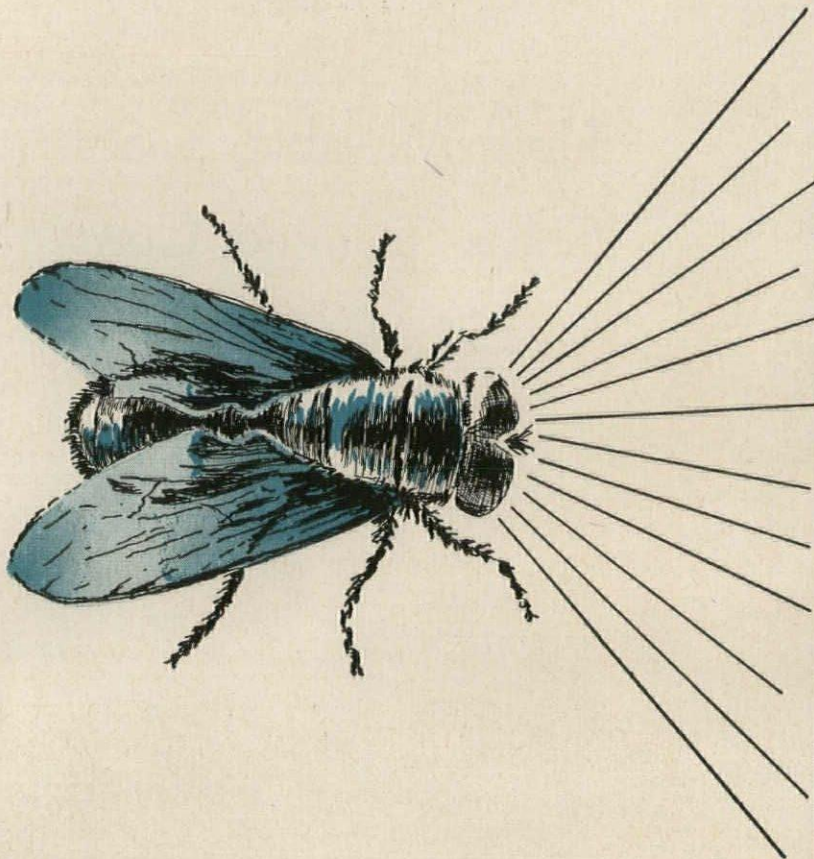
Photos by Joseph W. Molitor



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A Fly's Eye Shows Why



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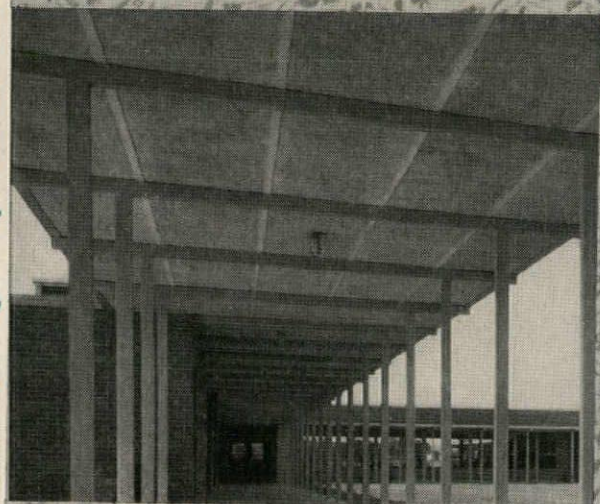
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Architect: Wm. Freeman & Associates,
Greenville, S. C.
Contractor: Triangle Construction Company,
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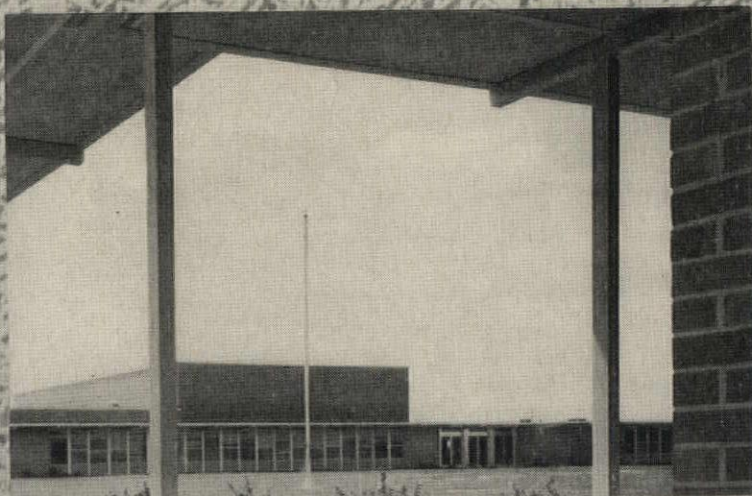
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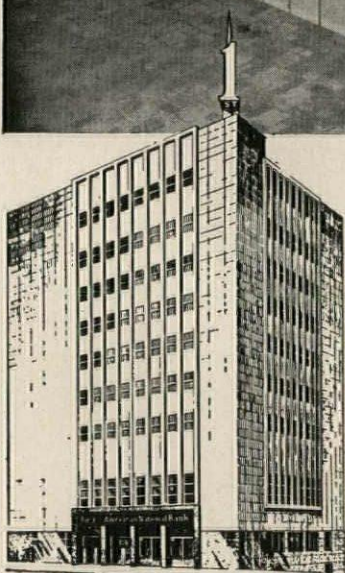
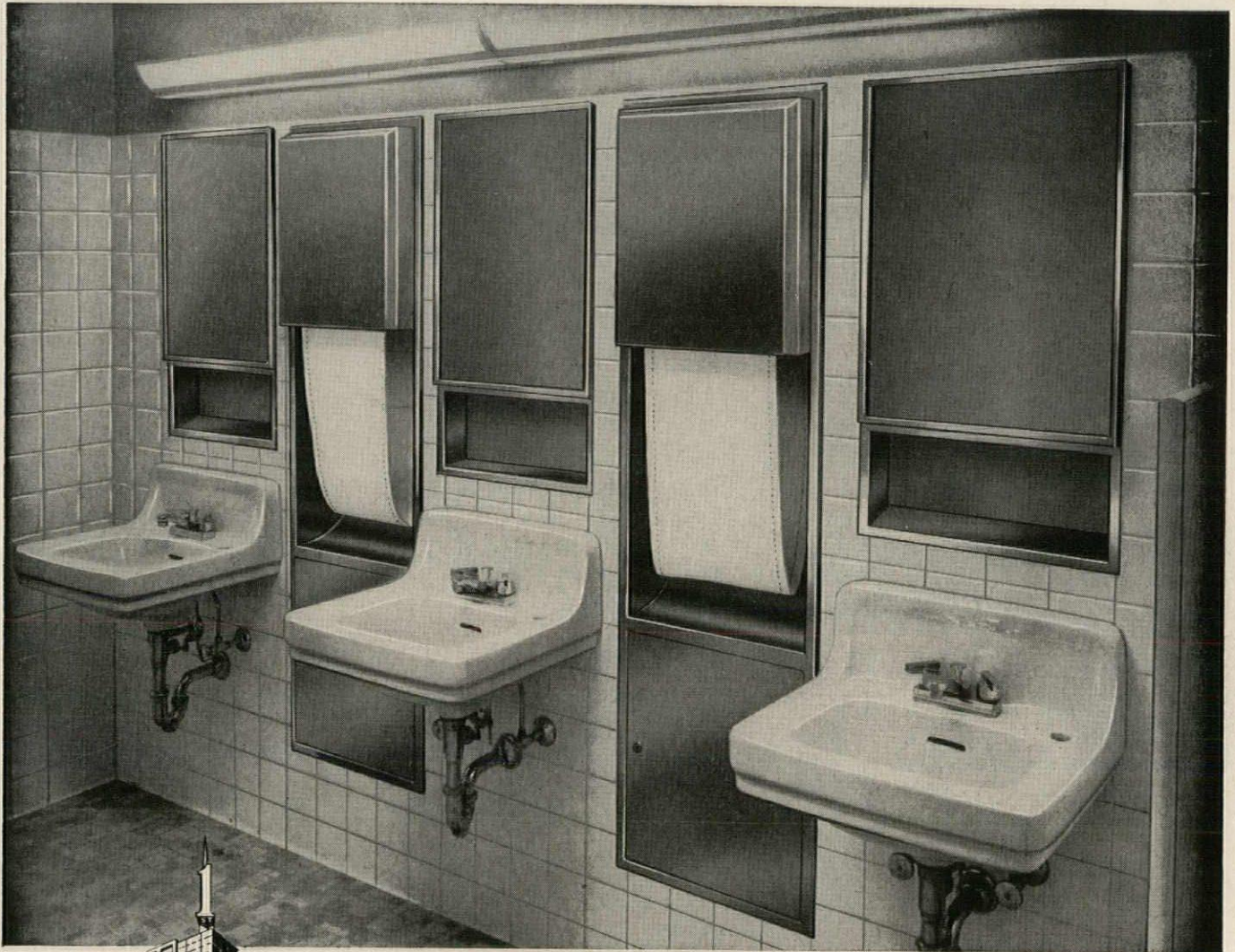


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functional beauty
and "linen" luxury
with

Continuous Cotton Towels



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

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

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

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

Add to this, the fact that you do not

obligate the owner to any particular service, even when you specify recessed cabinets like the ones pictured above. (Recesses are designed to accept any of a wide variety of cabinets.)

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

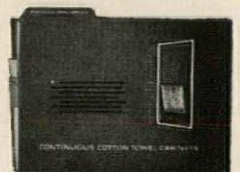
** Send for this free Planning-for-Cloth kit*

Linen Supply

Association of America

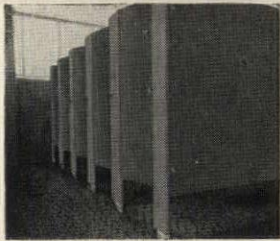
and National Cotton Council • 22 West Monroe Street, Chicago, Ill.

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



Sanymetal's NEW INTEGRAL DOOR HINGE BRACKET

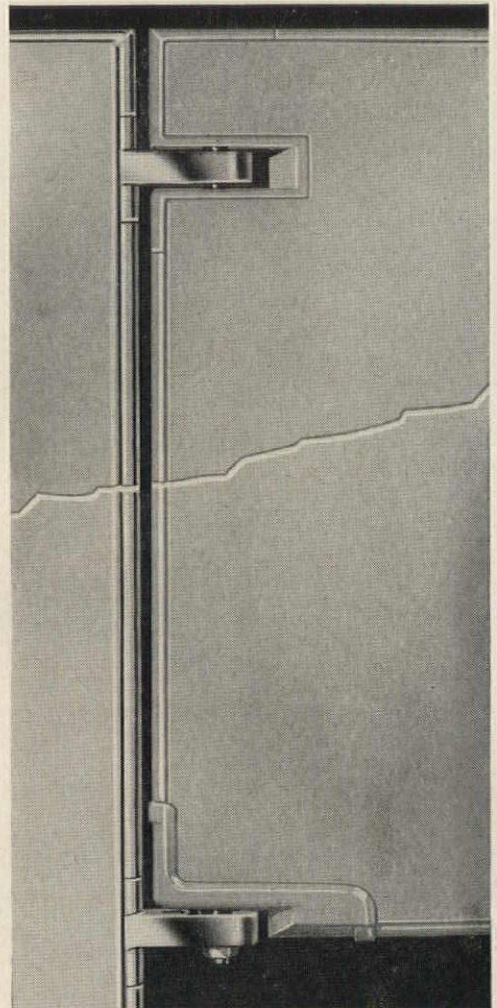
the
most important
toilet compartment
advance since 1953



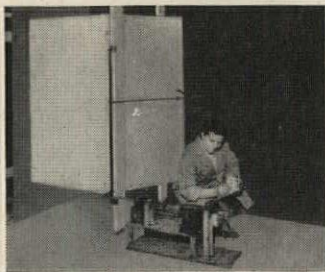
Toilet partition pilasters can now have true 'flat-slab' architectural appearance, a clean line uninterrupted by bolts that protrude, or hinge bracket parts that extend over the pilaster surface. Sanymetal's new INTEGRAL HINGE BRACKET is part of the pilaster, clean-lined and functional, bringing more beauty to compartment design, the

greatest advance since introduction of Sanymetal's 7900 series hinge in 1953. The improvement has important practical advantages, too — easier, quicker installation, no bolts to loosen or be stolen, faster, more thorough cleaning. These durable and attractive new brackets are another of the features you get from Sanymetal's progressive design development features that contribute to the Sanymetal quality which brings greater beauty and prestige, with lower maintenance and repair costs.

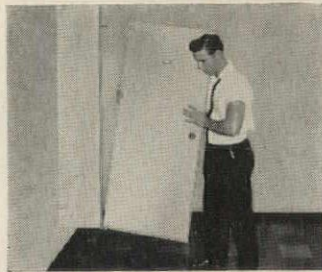
(Ask us to send the booklet "NEW Sanymetal INTEGRAL HINGE BRACKET")



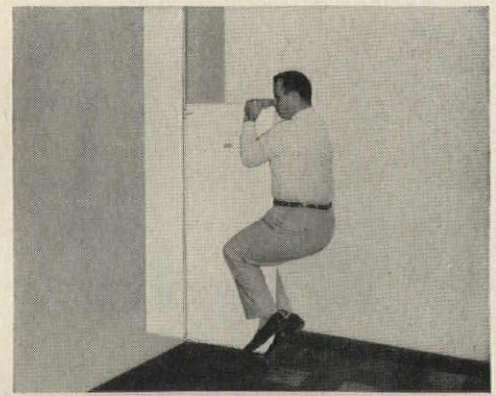
Sanymetal Integral Hinge Brackets have no protruding bolts or parts that interrupt the flat pilaster surface.



TESTED in an independent laboratory these brackets supported a door swung over 1,000,000 times; after the test the brackets still showed no evidence of wear.



Because brackets are factory-applied, application is faster, better. There are no bolts, no adjustments requiring field labor-time.



Sanymetal Integral Brackets support the playful swinging of a 240 pound man, with strength to spare.

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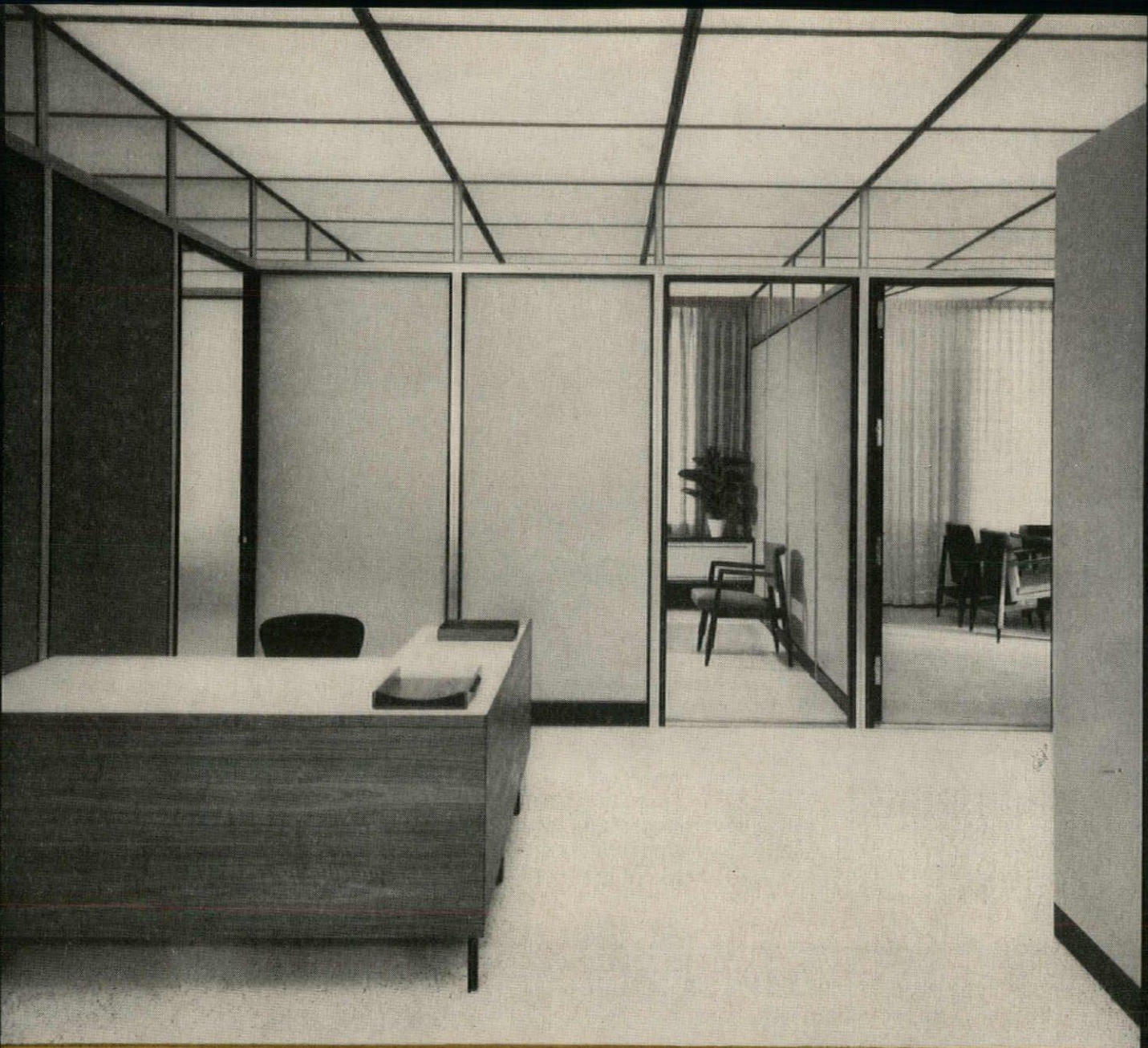
Sanymetal[®]

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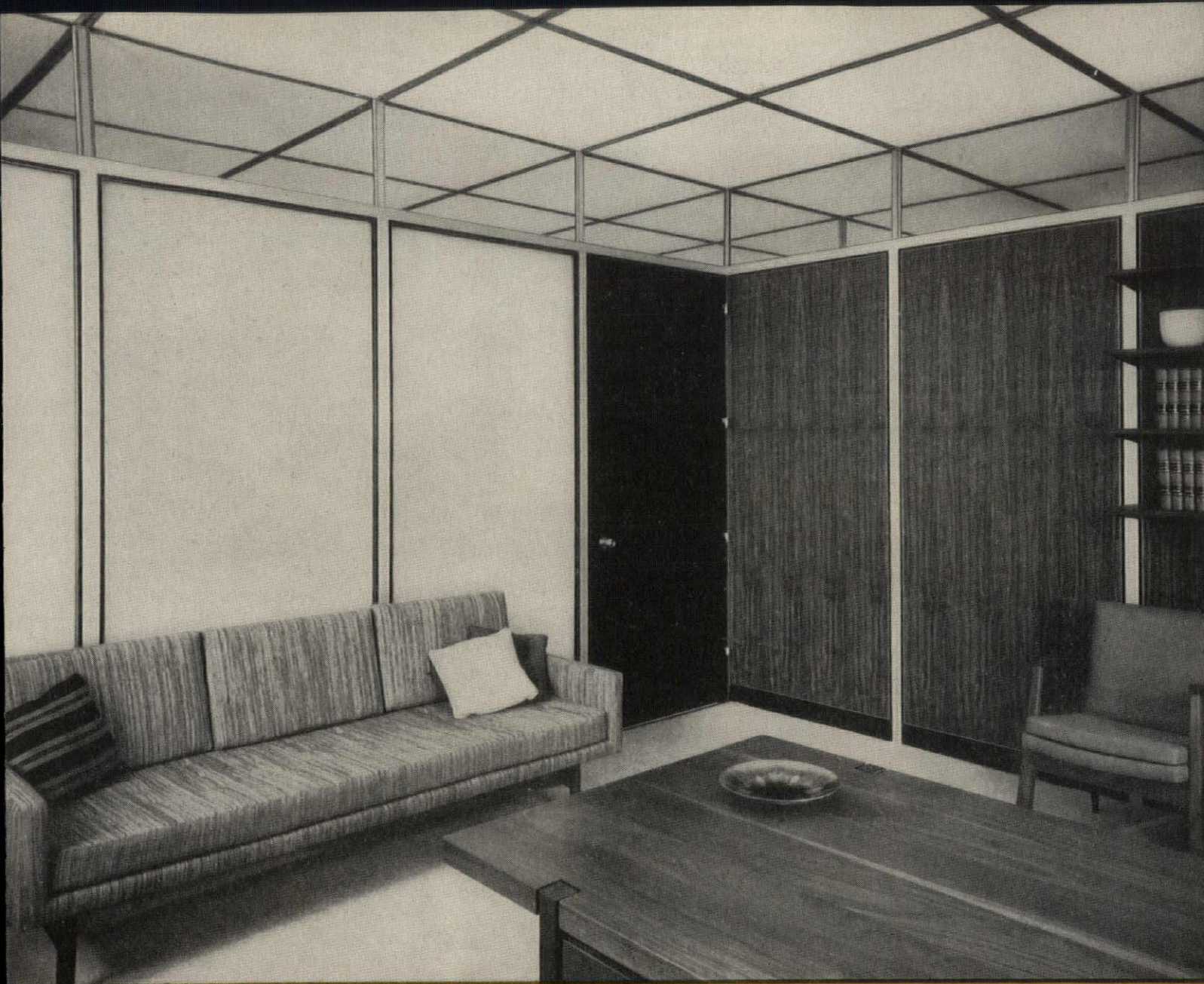
ARCHITECTS: HOYLE, DORAN & BERRY, BOSTON, MASS. CONTRACTOR: GILBANE BUILDING CO., PROVIDENCE, R. I.
INTERIOR PLANNERS & DESIGNERS: DESIGNS FOR BUSINESS, INC., NEW YORK, N. Y. THE BERKSHIRE LIFE INSURANCE BUILDING, PITTSFIELD, MASS.



3,893 ft. of movable Aetnawall-A almost entirely replaced interior masonry walls throughout the working and executive areas in the new Berkshire Life Insurance Building, Pittsfield, Mass. A wide range of partition panels gave unusual flexibility to

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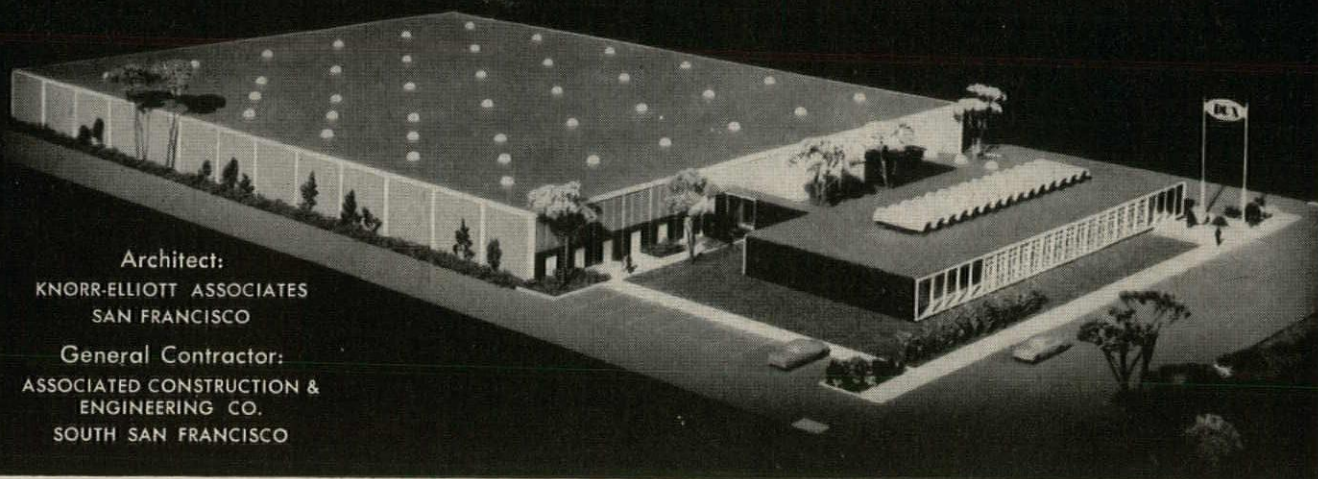
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Award-winning DUX Incorporated, importers and manufacturers of Scandinavian furniture, has just moved into its new national headquarters in Burlingame. The offices and assembly plant occupy 46,000 square feet near the San Francisco International Airport.

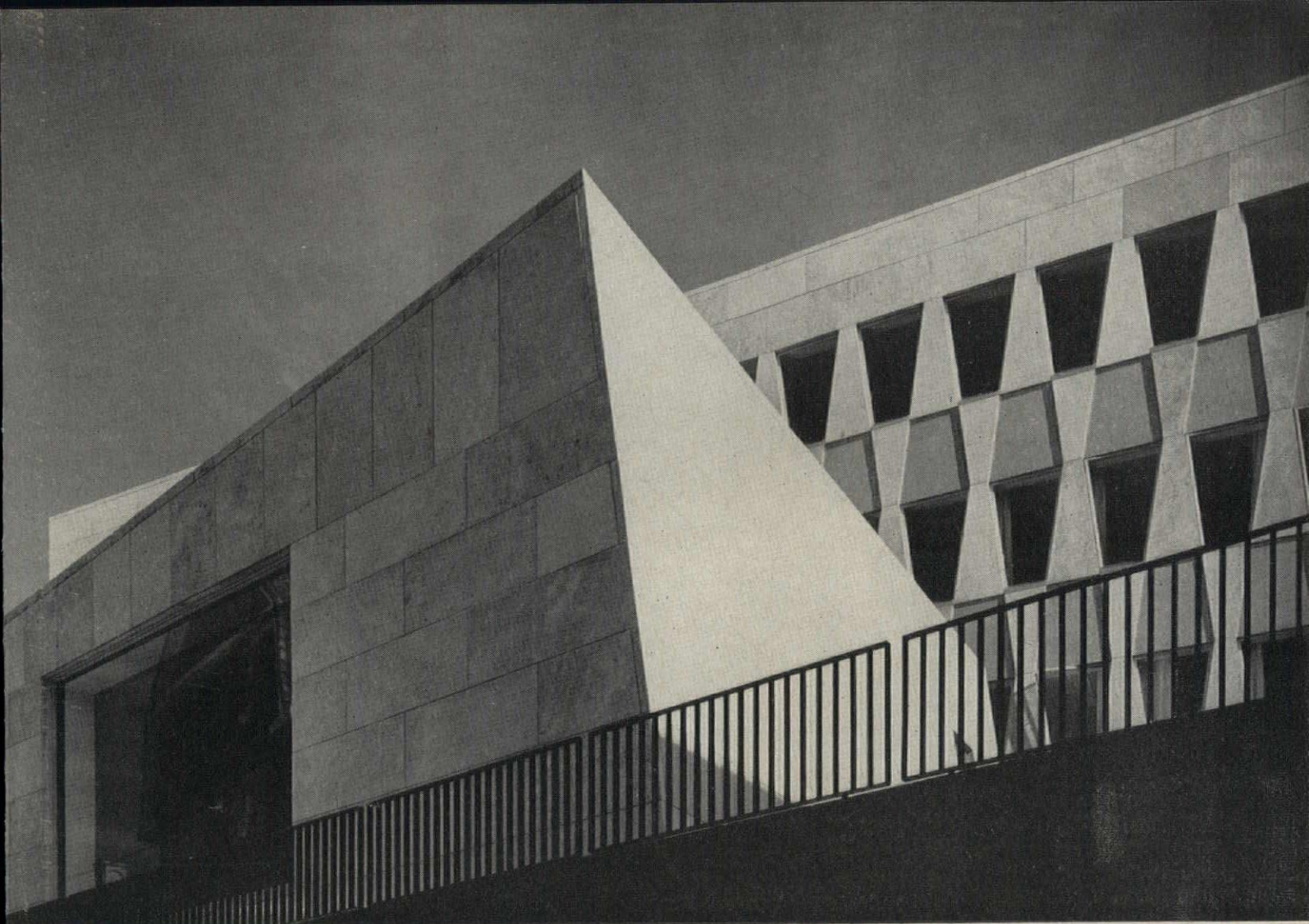
To safeguard its matchless designs, as well as the plant and offices against fire, burglary and other hazards, DUX chose, naturally, a combination of ADT *Automatic Protection Services*. The handsome structure is protected against fire by ADT Sprinkler Supervisory and Waterflow Alarm Service, which automatically summons the fire department whenever the sprinklers operate. This service also maintains a constant automatic check on shut-off valves and other water supply conditions. ADT Burglar Alarm Service summons police in case of attack on doors, windows and other vulnerable points.

You can have the same *complete* protection as DUX, whether your project is large or small. There is an ADT *Automatic Protection Service* to meet your requirements and give better protection for property, profits and employees' jobs at *lower-cost!* Call our local sales offices if we are listed in your phone book, or write to our Executive Office.



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Executive Office: 155 Sixth Avenue, New York 13, N. Y.



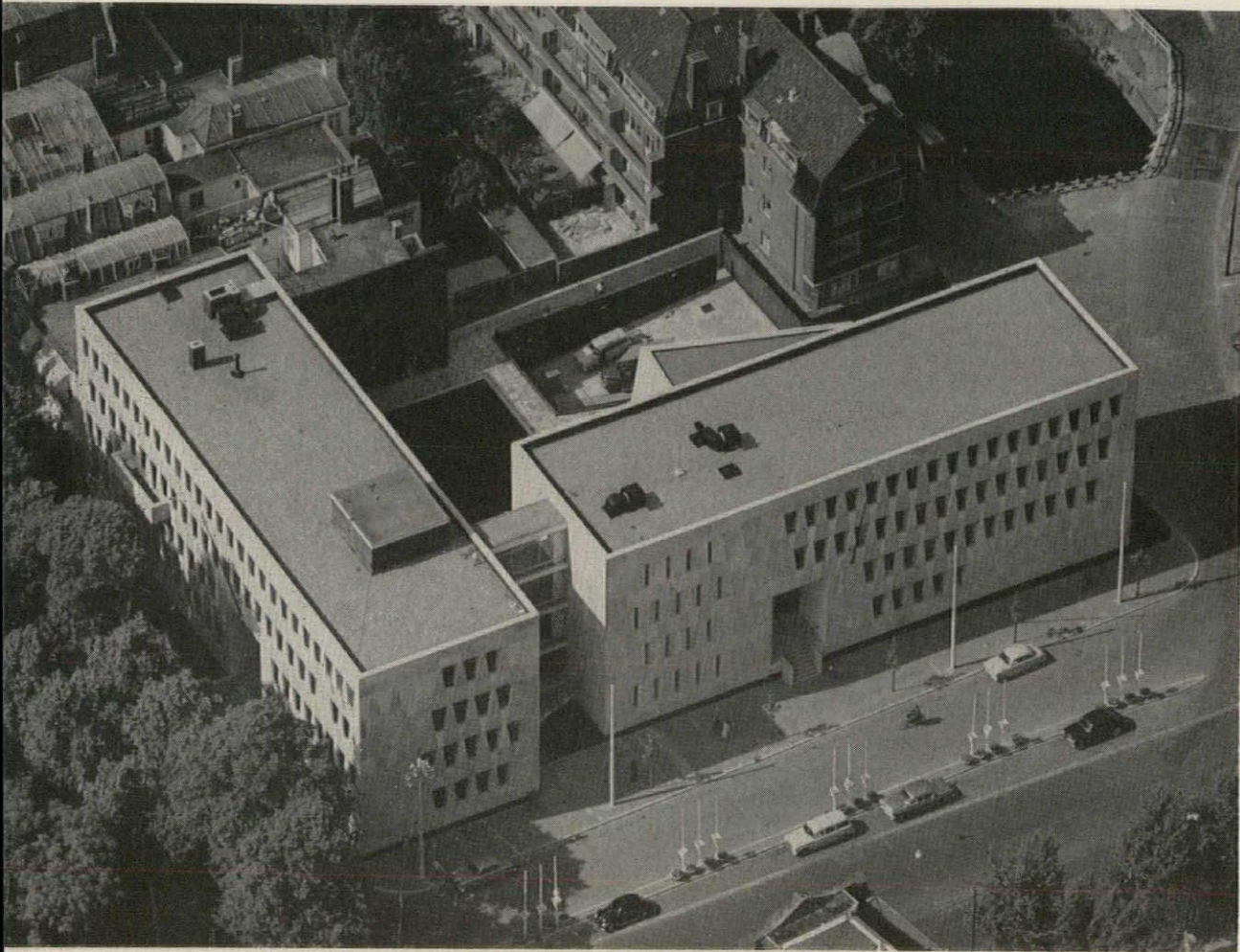
Recent Work of
**MARCEL
BREUER**

There is evidence of maturity in these latest examples of Breuer's work. There is proof also of the continuing validity of early concepts, steadfastly held since the '20's. These buildings all show a preoccupation with masonry, concrete and the contrast of surfaces; but the architect will explain that he has *always* been interested in stone and the interplay of masonry textures with others—that he continues to regard stone as a material that looks good, ages gracefully, and requires little maintenance.

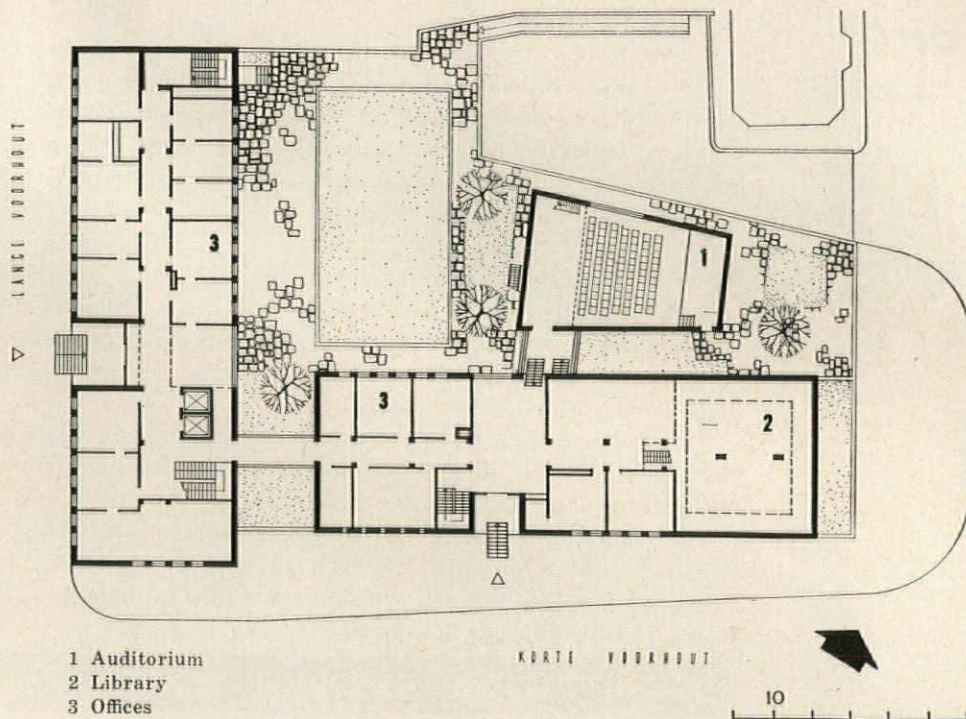
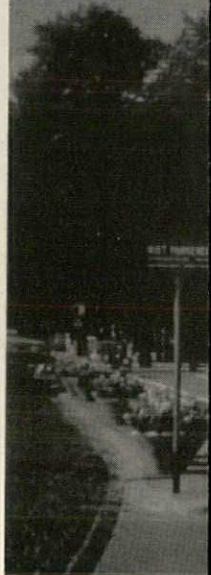
If one asks if this is a turning away from an earlier concern with the delicacy of metal and glass, he will point out how metal and glass is used in these examples; and will protest—with perfect justification—that his 1928 tubular chair appears completely at home in any of these later, stone-walled, flagstone-floored buildings.

Regarding texture, pattern, and color, Breuer says, "The variations of a natural texture (stone, wood, rush, etc.) next to a flat color or smooth surface give a certain physical sense to form and space, both exterior and interior. We seem to like this; we like the touch of it in somewhat the same simple way we like the warmth of a fire.

"The atmospheric, emotional radiation of color gives something else. So we do not use one thing to the exclusion of everything else. An architectural composition needs all elements—materials, patterns, textures, colors—it needs the freedom to use them and the strict discipline to use them in a lasting way. After all, we don't change buildings in the same way we change neckties."



Quotations through this article come either from direct conversation with Marcel Breuer or from his book, *Sun and Shadow*, a philosophic and pictorial summing-up, published in 1955 by Dodd, Mead & Co. —J. S. H.





All photos by Jan Versnel

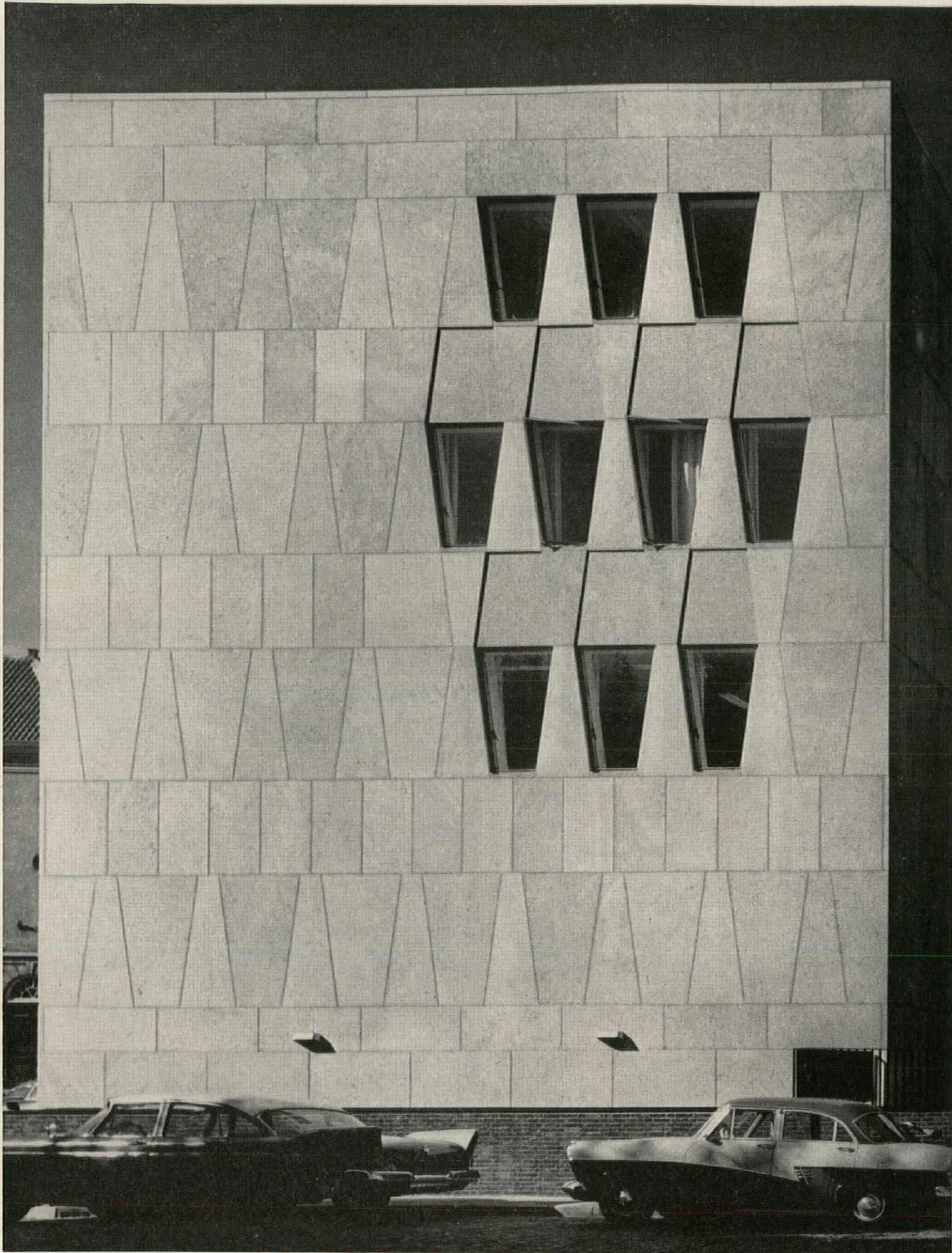
Recent Work—Breuer

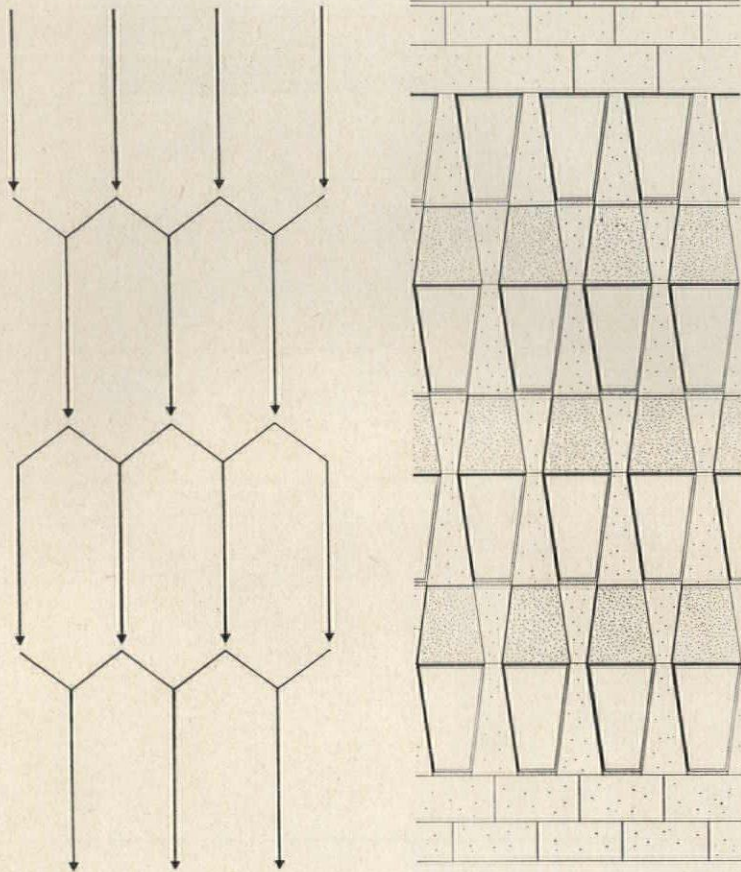
U. S. EMBASSY, THE HAGUE, HOLLAND

In designing the recently completed United States embassy in The Netherlands, the site, the city, and history weighed heavily in all decisions, for tradition is not to be taken lightly in The Hague, traditional seat of Dutch government. The site faces a widening in the street (Lange Voorhout), and is surrounded by 17th and 18th century buildings, small in scale and built of masonry. Thus, the architect said, "the scale of the new building is important, as are its dignity and appropriateness. It must make a proper *presence*. A steel and glass building would strike a jarring, aggressive note—masonry would seem to be much more at home in this situation."

To cut down the scale of the new building—necessarily greater in bulk than any nearby—its long elevation was divided into two elements joined by a crystalline link, and the entrances were designed as penetrations through the solidity of the masonry, which was divided into five masses to reduce the apparent size of the whole.

Slocum & Fuller, Mechanical, Electrical Engineers; Farkas & Barron, Structural Engineers; Bakker & Dicke, Supervising Engineers; Ingenieursbureau voor Bouwnijverheid N. V., General Contractors.

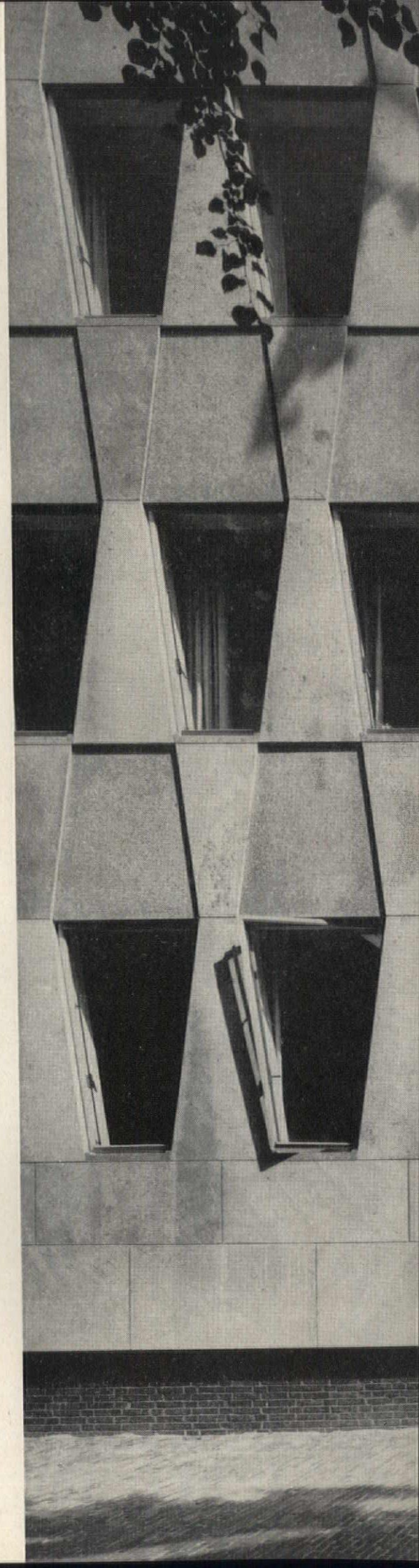




Recent Work—Breuer

U. S. EMBASSY, THE HAGUE

The goal was to express the masonry bearing wall as a single entity—to maintain both its visual and structural integrity as a unit, and avoid the usual rows of windows that jab holes in the wall and transform it structurally into a series of load-bearing piers. Thus, the 5-ft module was staggered floor to floor, and the openings were chamfered to ease the flow of diagonal stress. The result looks good, causes the wall to act as a unit, and makes it possible to group openings in unusual patterns, as at left. The facing is striated limestone (with striations variously horizontal, vertical, or diagonal); the upper halves of the coffin-shaped openings are faced with highly-polished gray granite





Recent Work—Breuer

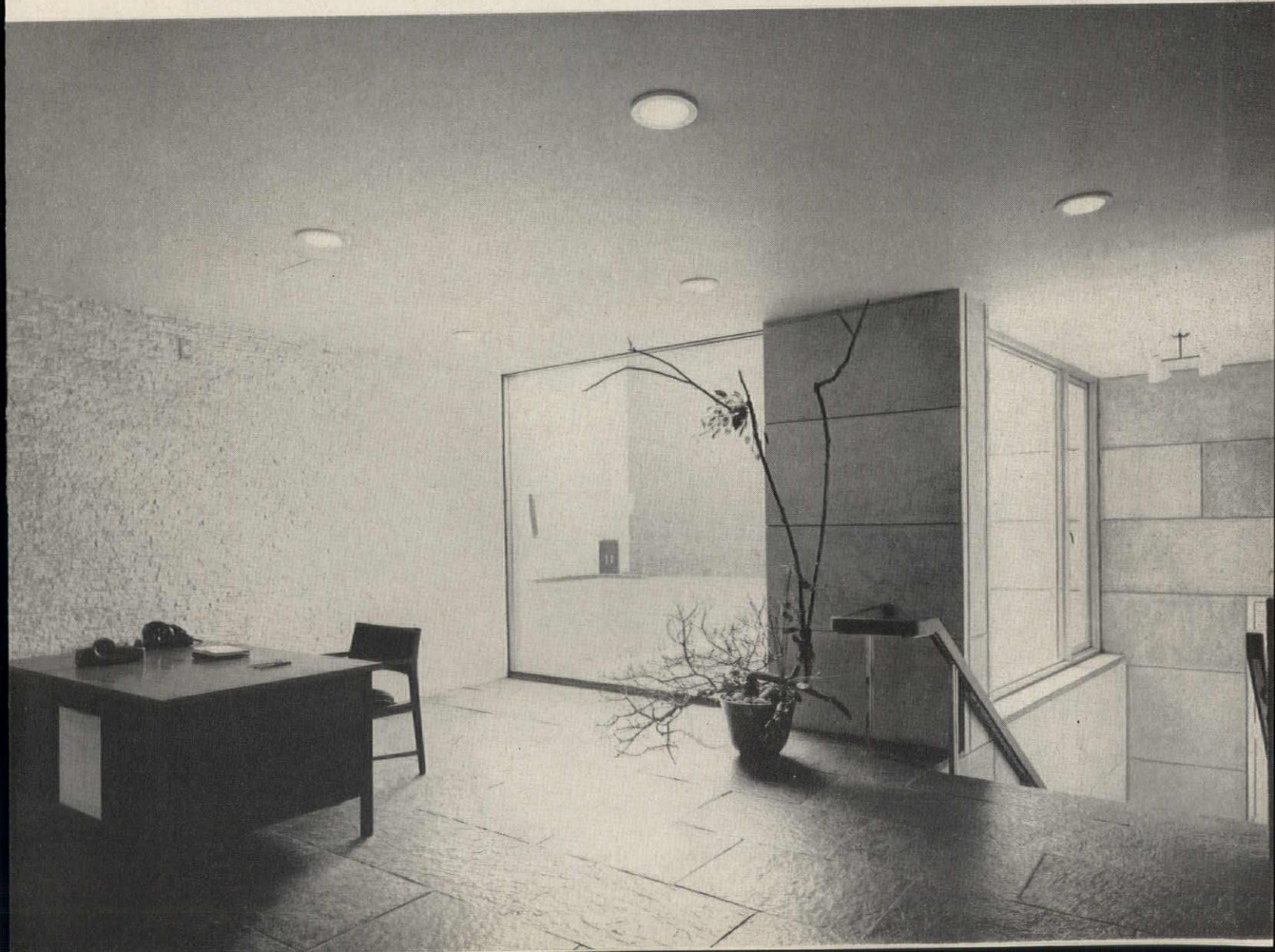
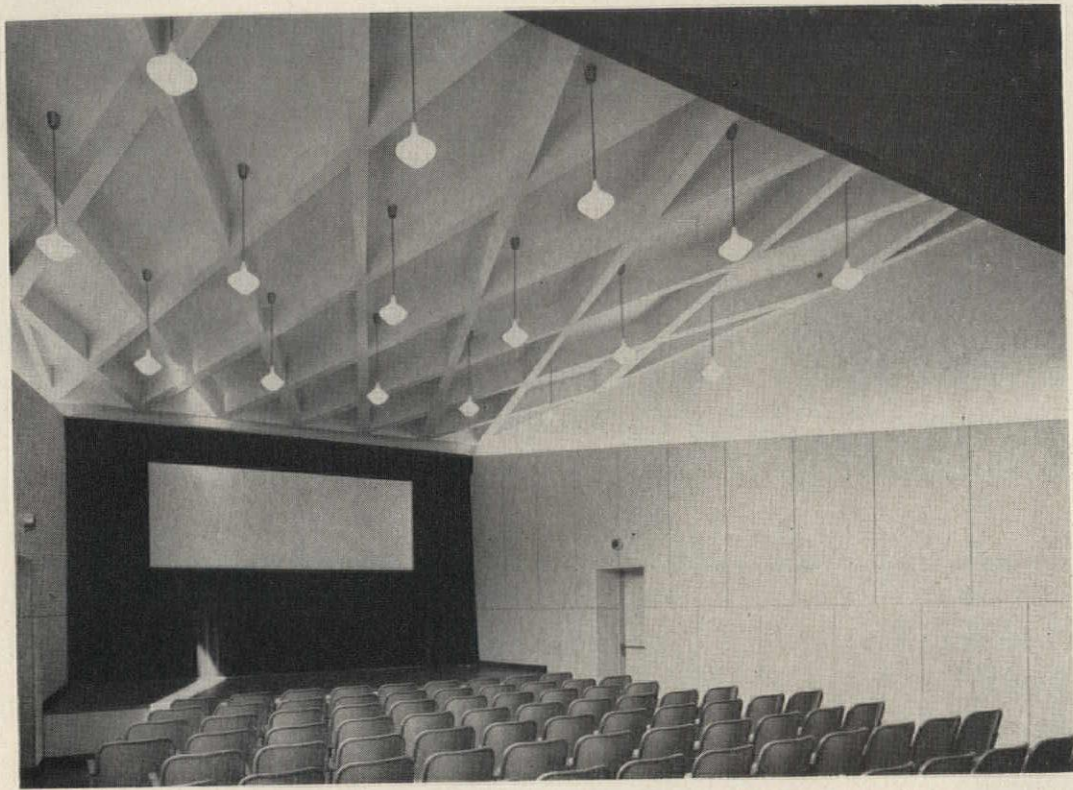
U. S. EMBASSY, THE HAGUE

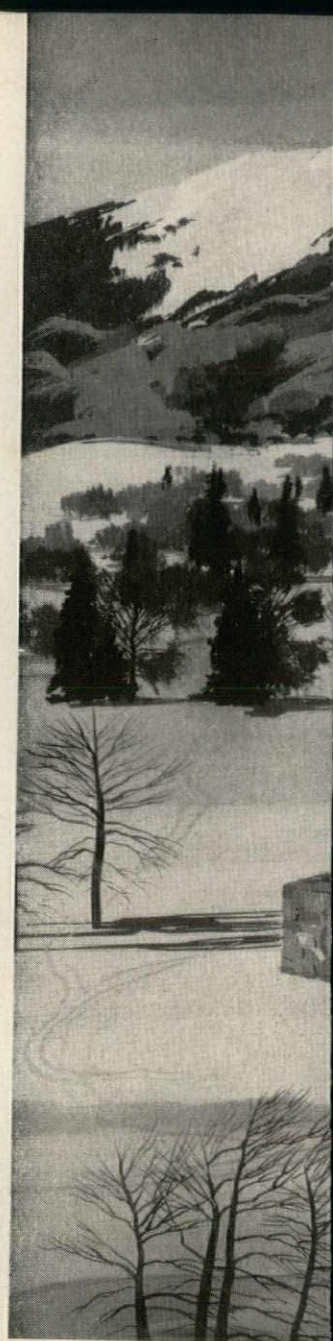
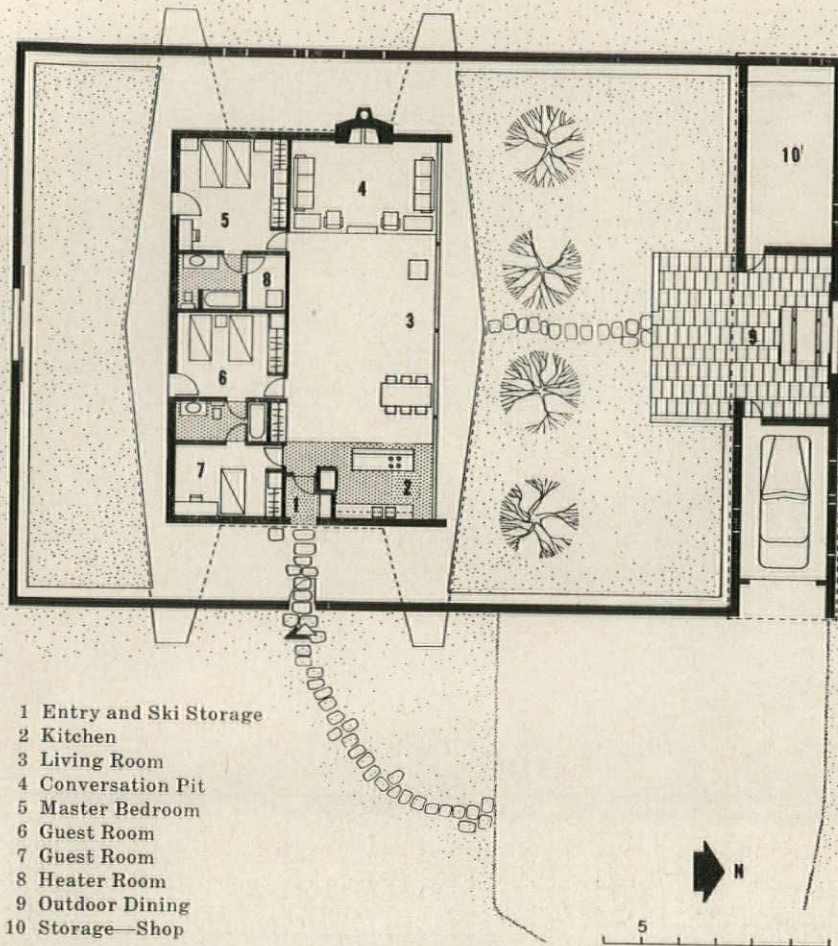
Concerning space and detail, architect Breuer has this to say: "the two most important developments that underlie our new architecture have at their base the concept of flow, or motion: the flow of space that leads to spatial continuity; and the flow of structural force that leads to continuous structure.

"Space may be given certain qualities by its defining elements—depending upon whether they are wood, glass, metal, brick, of this color or that texture. The quality of the defining elements is, in turn, dictated by practical needs.

"We subordinate everything to the greater unity of our new kind of space: the house to the street, the street to the square, the square to the city-space.

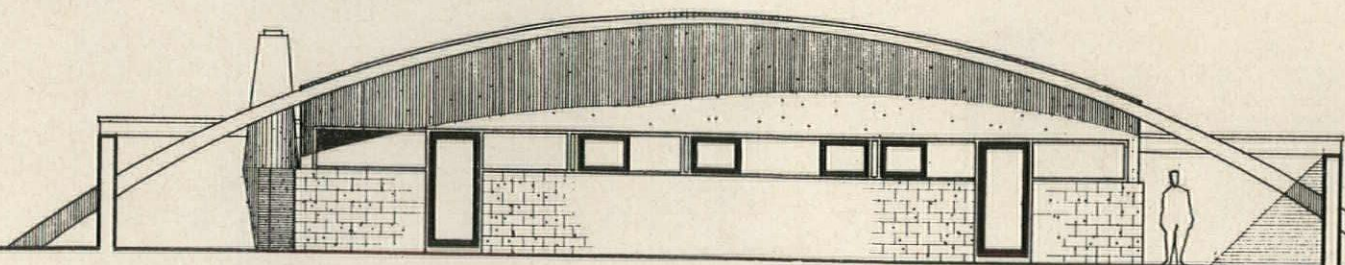
"Detail is thus subordinated to the sense of continuity of the space where it occurs and its relationship to the space of the entire building and its setting. Spaces are thus calmer, less busy, much more relaxing. Detail is not independently aggressive; is without its own esthetic demands."





The design of this unusual summer and week-end house is based on the twin ideas of informal outdoor living and easy maintenance. The entire structure will consist of a reinforced concrete vault set within a walled compound that will form an outdoor room, relatively small in area for simple upkeep. The house will be one of a group of 10 or 12, each on about an acre, and each designed by a different architect. The 6-ft-high wall is calculated to insure privacy from neighbors and at the same time provide the high views of the mountainscape that are the principal natural attraction of the region.

Since the occupants will probably use nearby clubs and restaurants for most meals, the kitchen and utility facilities will be informal in character and not as complete as in a year-around house. The vault will rise 13 ft; will vary in thickness from 12 to 6 in.; and will be poured against a form made of planks of wood chips embedded in concrete. The plank will be spray-painted white as ceiling; the upper surface of the vault will be insulated and protected by roll roofing.

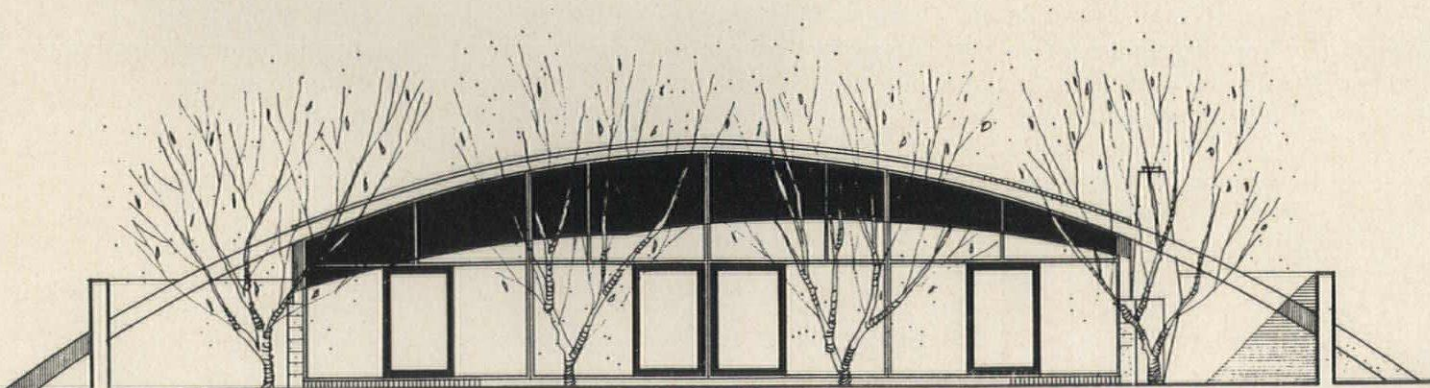


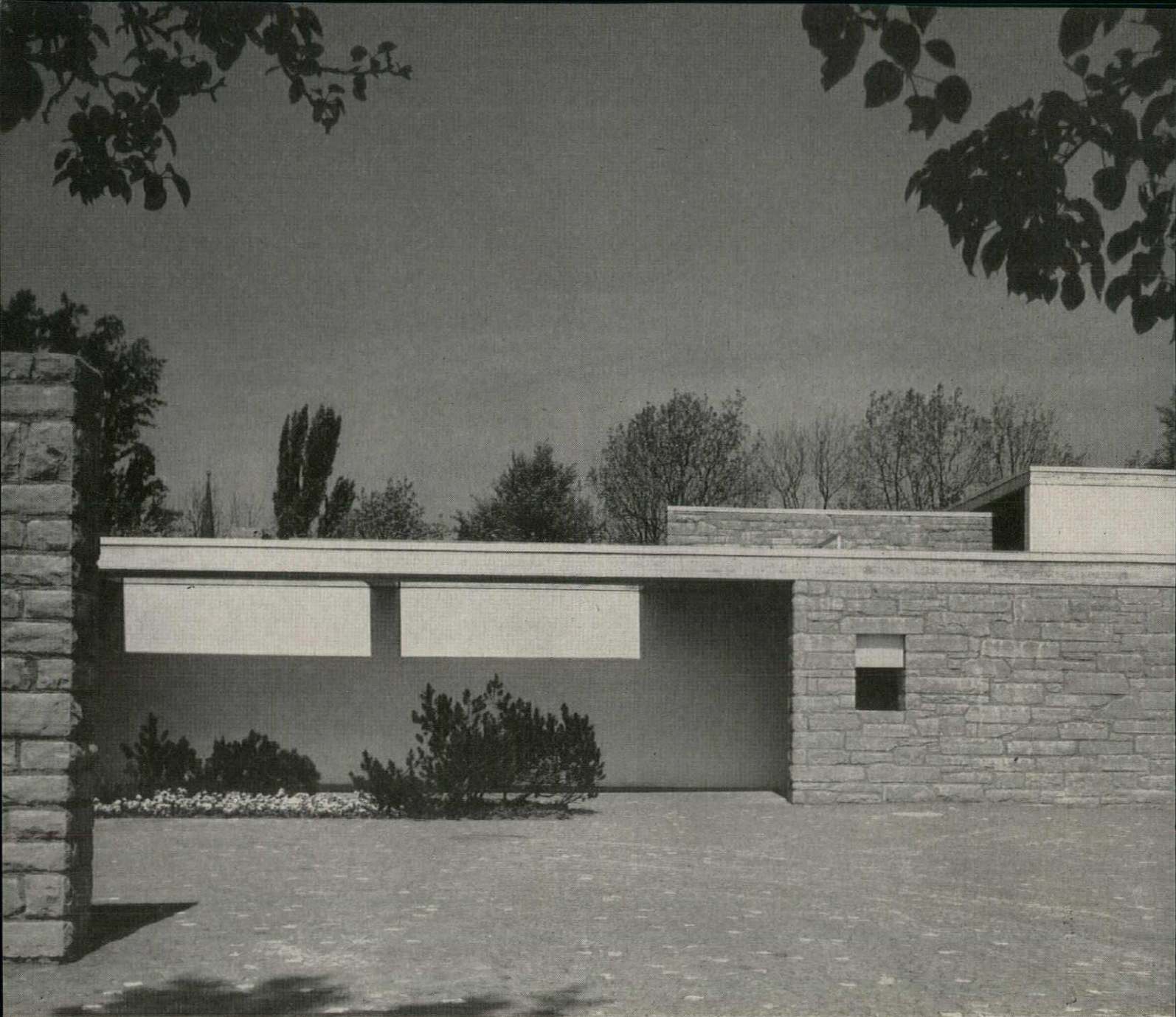


Rendering by Pierre Lutz

Recent Work—Breuer

VACATION HOUSE, ASPEN, COLORADO





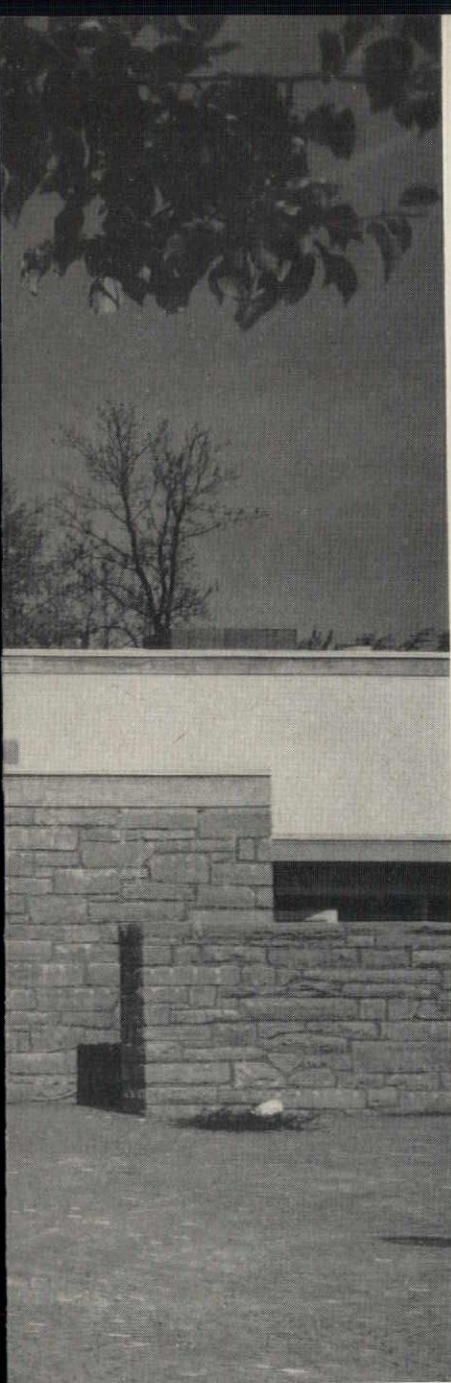
Recent Work — Breuer

STAEHELIN HOUSE, FELDMEILEN, SWITZERLAND

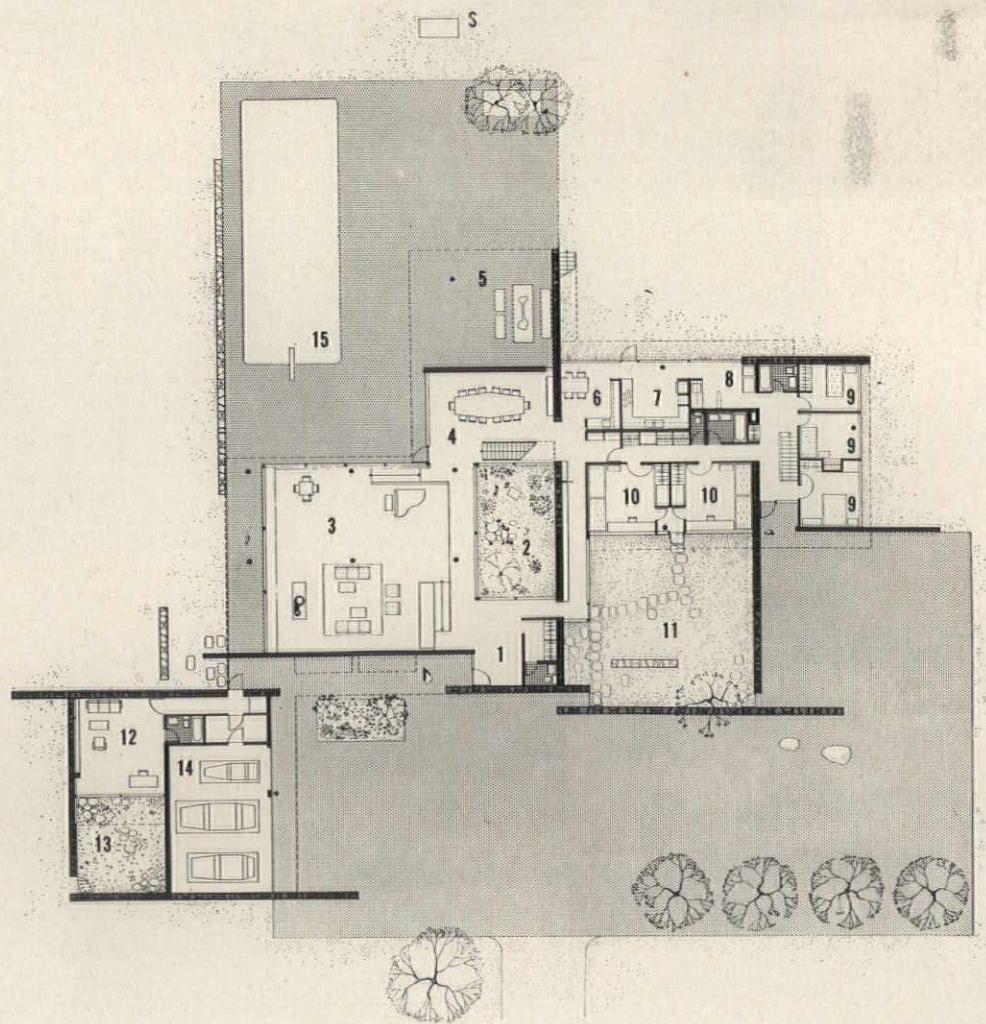
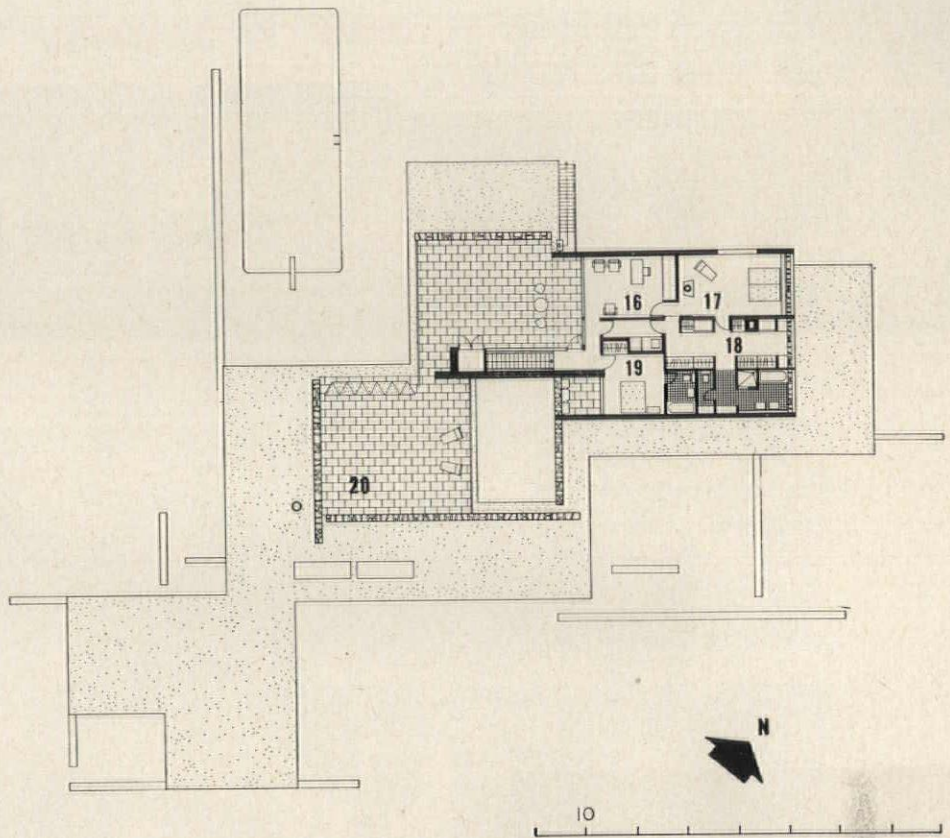
In this house much is made of the contrapuntal interplay of fieldstone and smooth stucco (or plaster) surfaces. This is true both inside and out, with these materials consistently expressed everywhere. The stone is native, gray and bluish in color; the stucco (or plaster) is painted white for contrast. Both materials are facings for the concrete structure—a conventional bearing wall, slab, and interior column system. Free-standing columns are natural concrete, bush-hammered for textural interest.

The plan is informal in character and actually a mature, considered expression of Breuer's earlier binuclear concept. In this case—which one might describe as a "double take"—the elements revolve about a series of courtyards and terraces; and the children's zone is under the direct control of servants, with the parents' quarters upstairs. The house is set within several acres of gently sloping, sparsely wooded meadowland on the shore of the lake. Entrance and service paving is traditional cobblestone in radial pattern; other terraces and floors (except in bedrooms and baths) are flagstone.

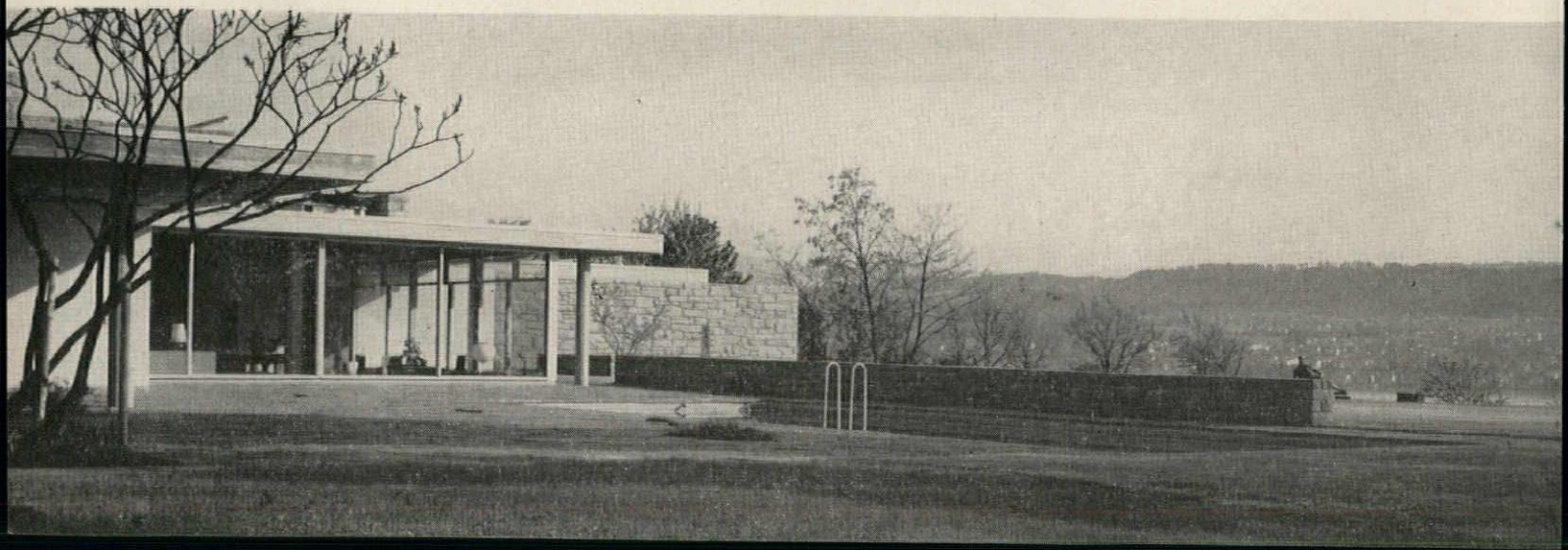
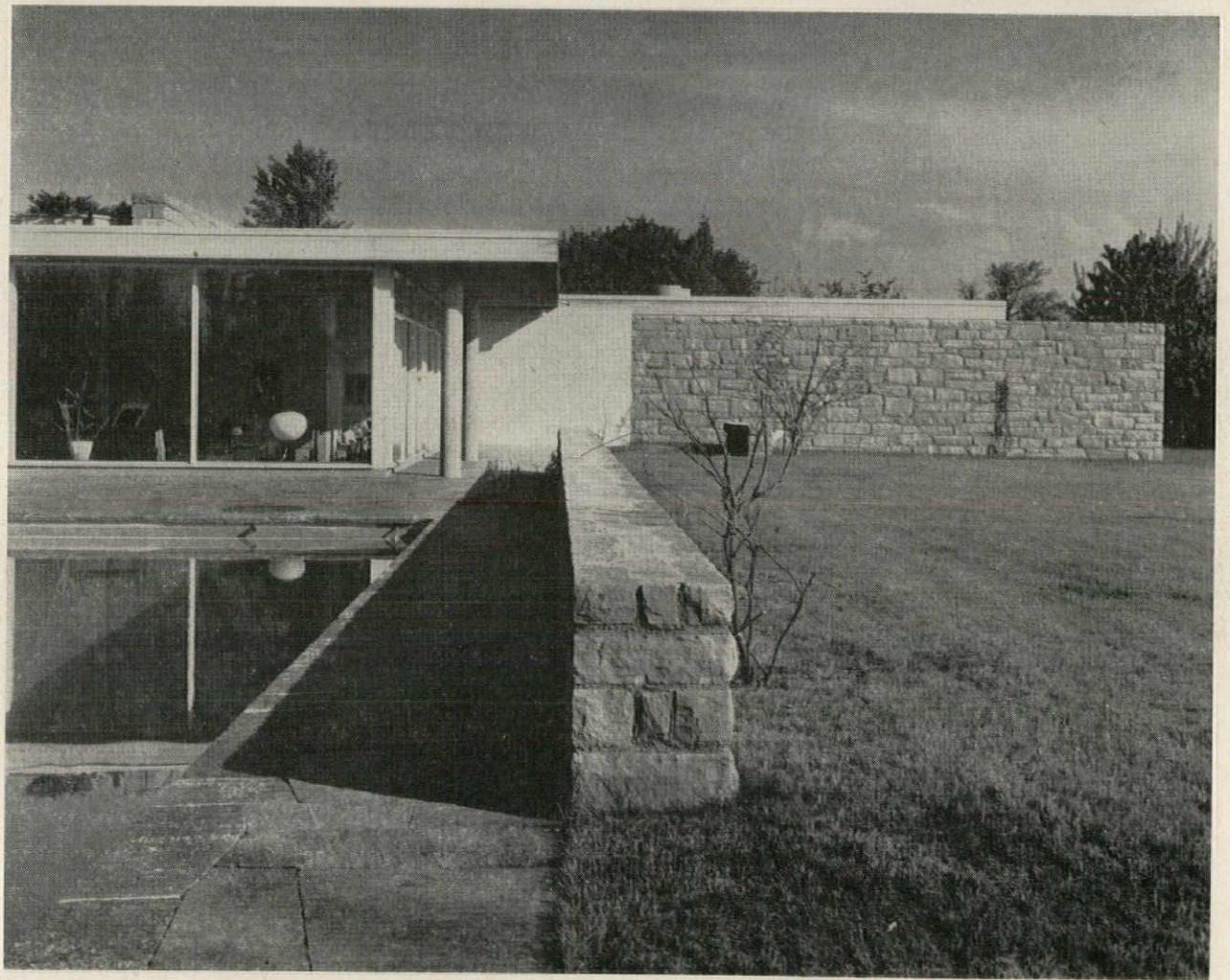
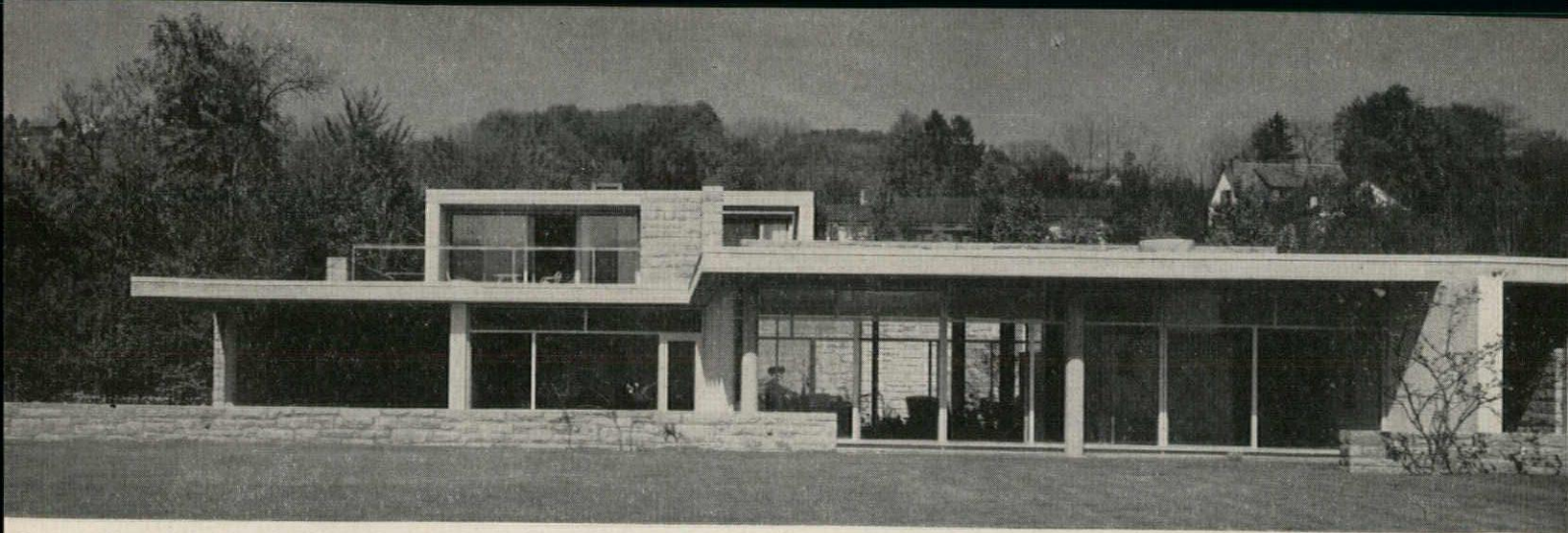
Herbert Beckhard, Associate Architect; Eberhard Eidenbenz, Supervising Architect.

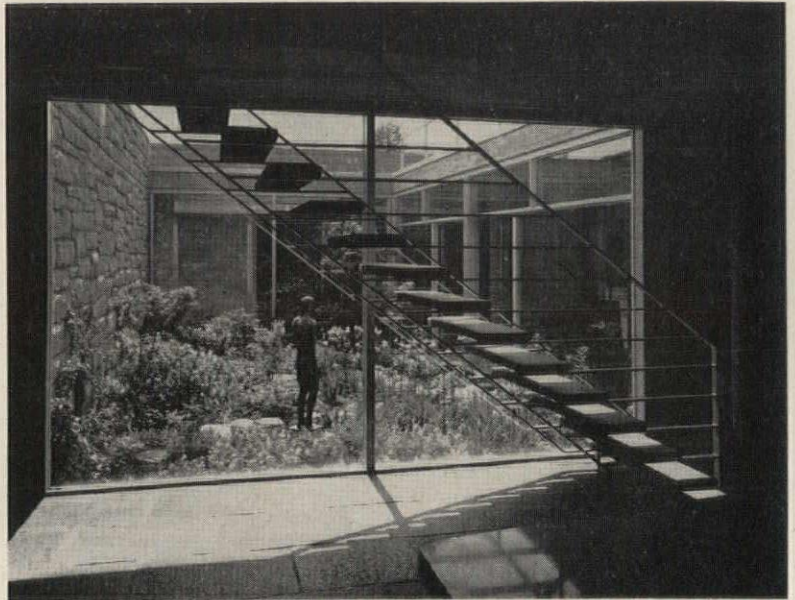
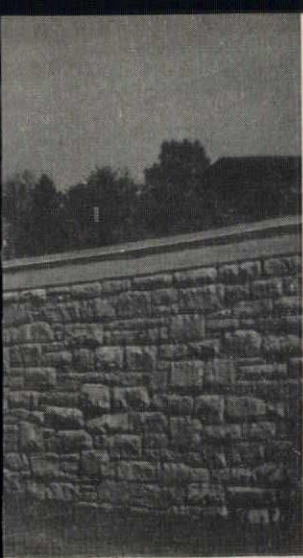


All photos by Bernhard Moosbrugger



- 1 Entry
- 2 Garden Court
- 3 Living Room
- 4 Dining Room
- 5 Cocktail Terrace
- 6 Breakfast Room
- 7 Kitchen
- 8 Laundry
- 9 Servants' Quarters
- 10 Children
- 11 Outdoor Play Area
- 12 Studio
- 13 Studio Garden
- 14 Garage
- 15 Pool
- S Sculpture
- 16 Study
- 17 Master Bedroom
- 18 Dressing Room
- 19 Guest Room
- 20, 21 Roof Deck

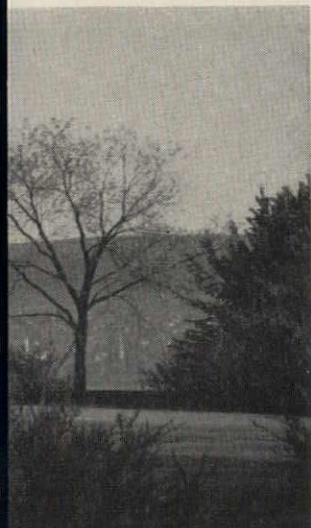
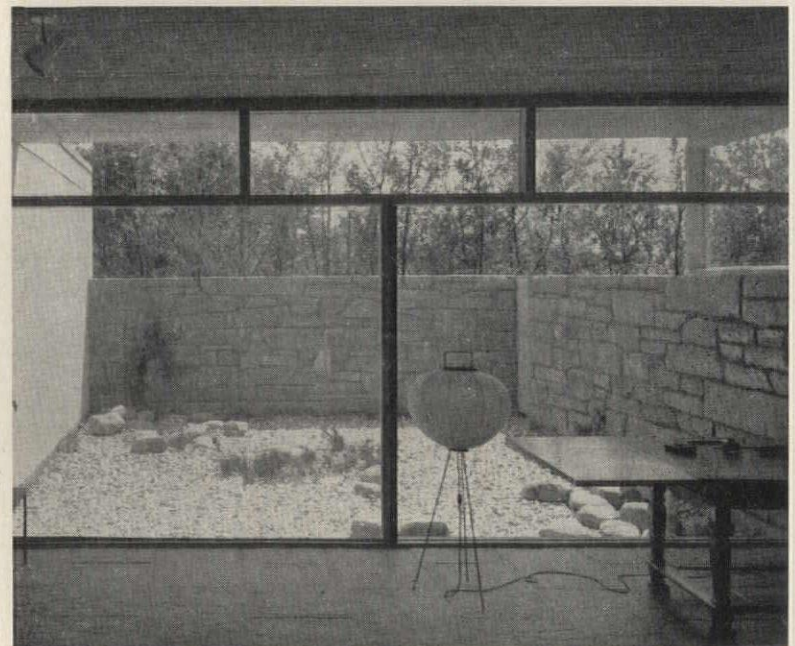
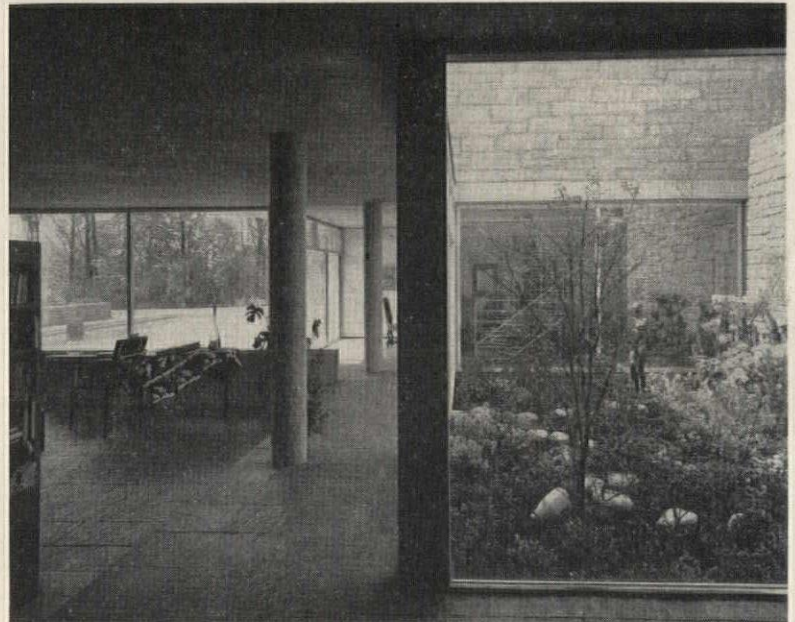




Recent Work—Breuer
STAEHELIN HOUSE

Of the house in its setting, Breuer has this to say, "Nature and architecture are not enemies—they must live together (as man and wife) but are distinctly different (as man and wife). I see no reason why buildings should imitate natural, organic or growing forms; or why one should adapt natural forms to the crystalline, geometric forms of architecture, as in the Rococo period.

"When the geometry of the house is projected out into the landscape—through retaining walls, terraces, etc.—it must be treated as a distinctly man-made thing. It is definitely something built as a backdrop to the landscape—and the landscape is a backdrop to it."





Recent Work—Breuer

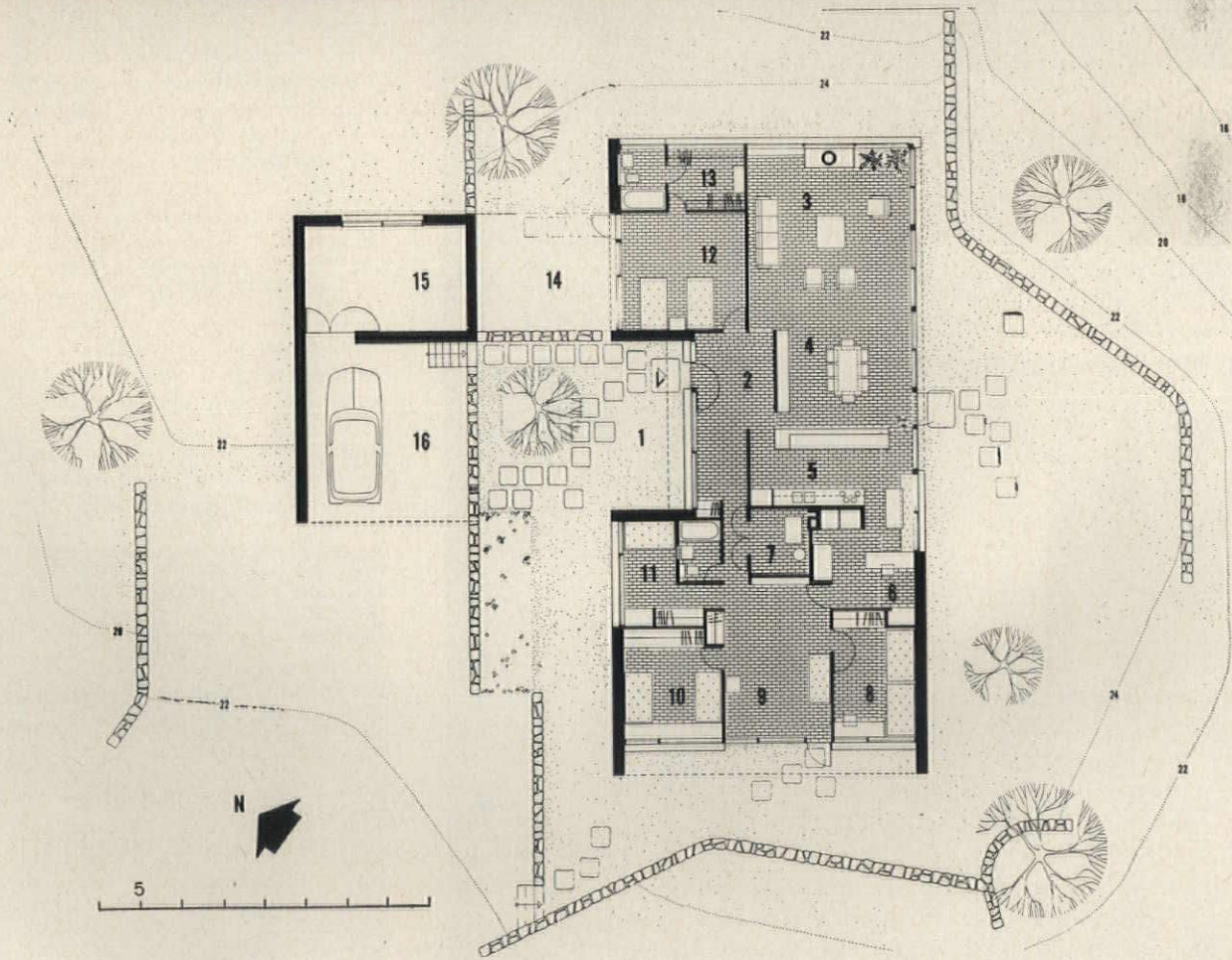
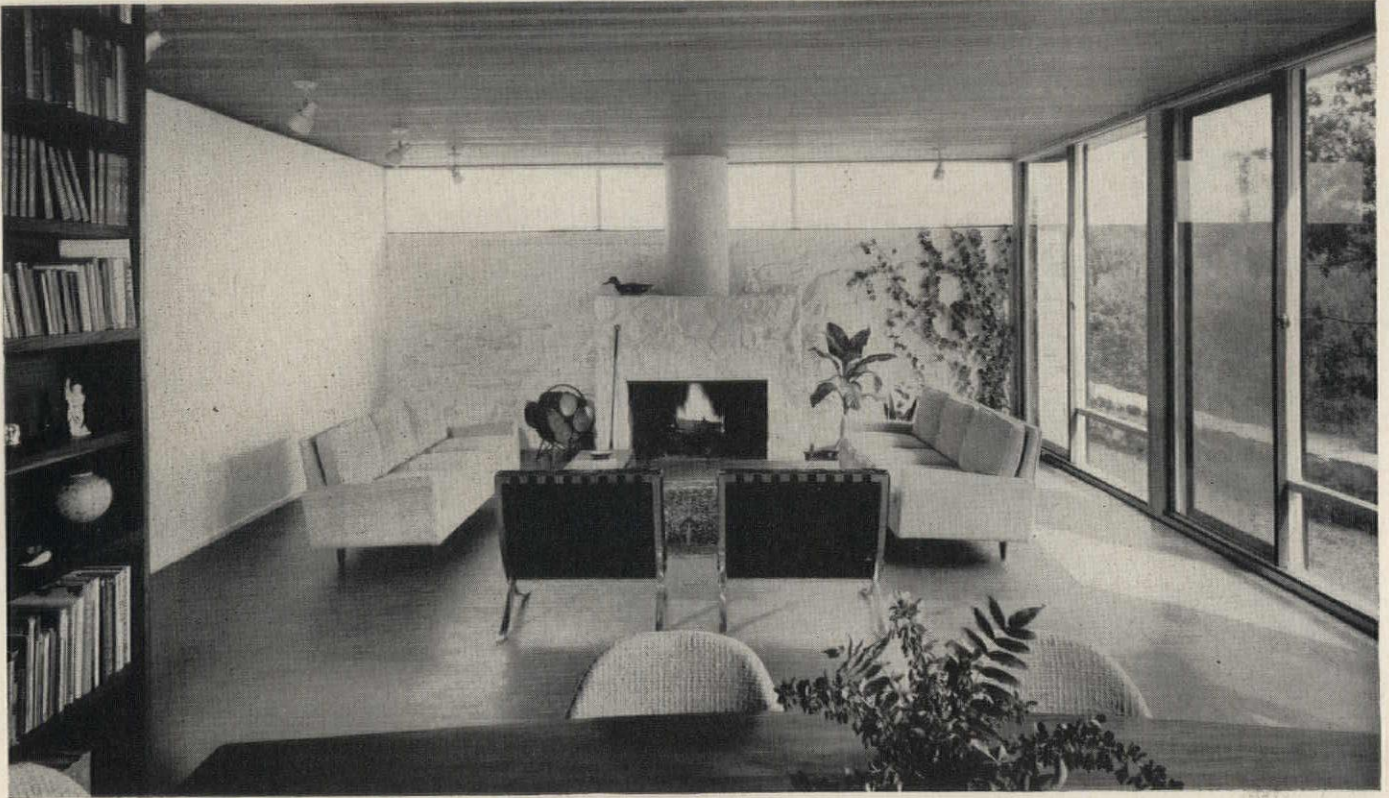
LAAFF HOUSE, ANDOVER, MASSACHUSETTS

In this Yankee house with a Mediterranean twist, the spaces are arranged in classic binuclear fashion. Grownups are separated from children, but connected by a hall; kitchen-laundry-sewing areas serve as buffer where zones meet. The entrance courtyard separates service elements from the main house mass. In both elevation and plan, the transparency of glass and the solidity of stone are decisively contrasted.

Speaking of *contrast*, Breuer says, "The real impact of any work is the extent to which it unifies contrasting notions—opposite points of view. *I mean unifies and not compromises.*

"Take an example: transparency through the use of glass is definitely one of our objectives, but transparency needs also solidity. Not for esthetic reasons alone, but because the total glass wall leaves out such considerations as privacy, reflections, transition from disorder to order, furnishings, a background for you, for people. Transparency becomes more crystalline next to solidity—and solidity makes it work."

Dan Kiley, Landscape Architect; Fichera Construction Co., General Contractor.

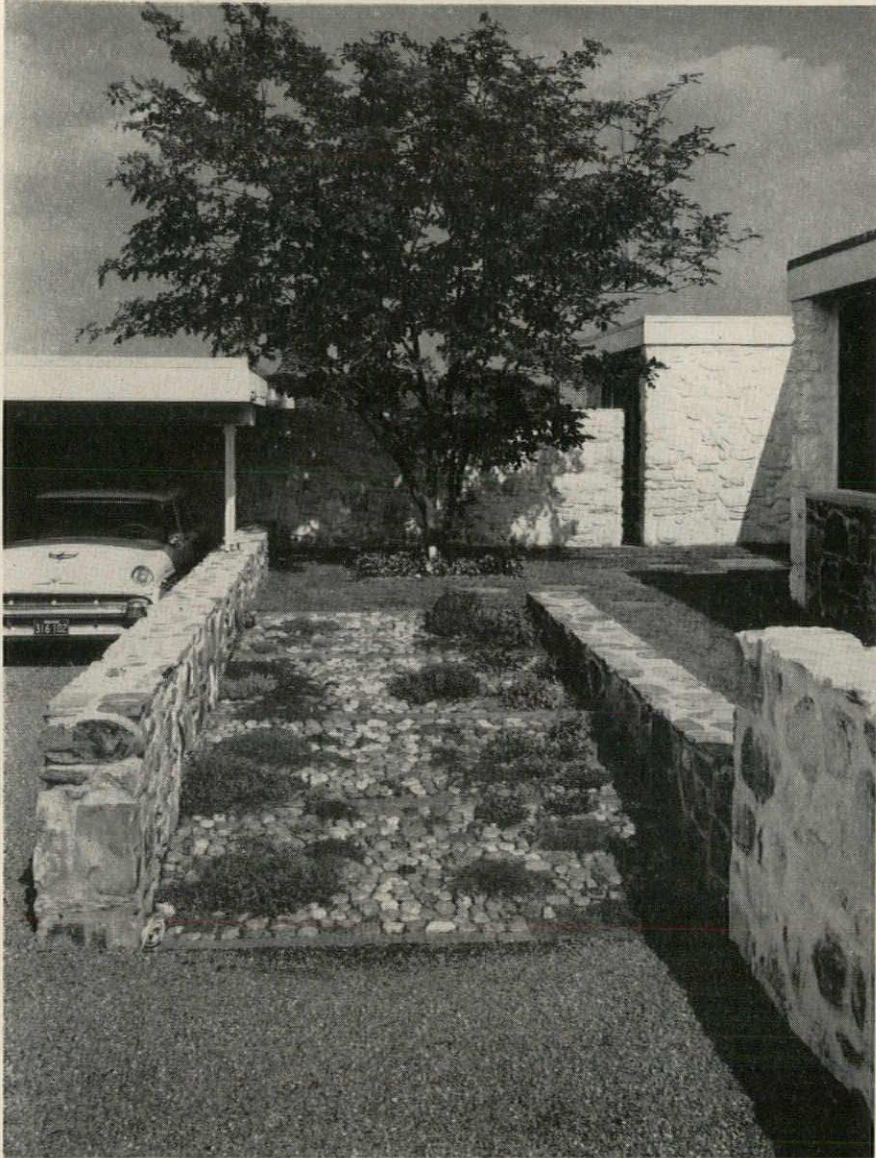


- 1 Entry Court
- 2 Entry
- 3 Living Room
- 4 Dining

- 5 Kitchen
- 6 Laundry—Sewing
- 7 Heater
- 8 Children

- 9 Playroom
- 10 Child's Room
- 11 Child's Room
- 12 Master Bedroom

- 13 Dressing Room
- 14 Pool
- 15 Storage—Shop
- 16 Carport



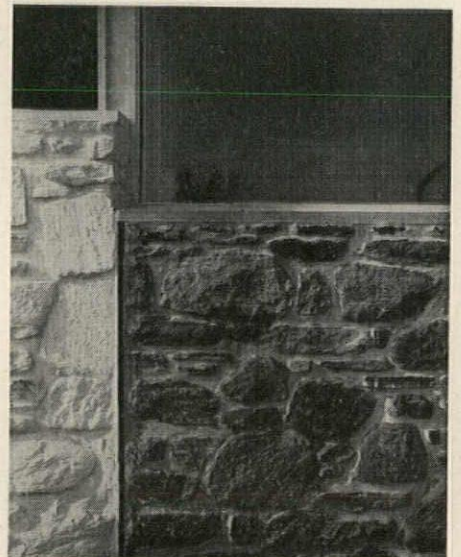
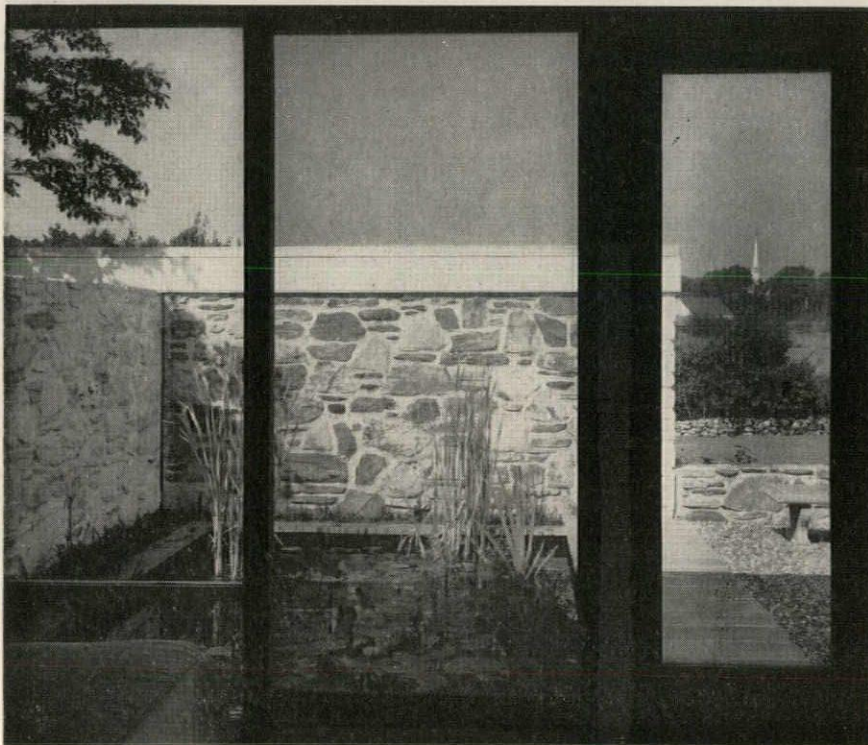
Recent Work—Breuer

LAAFF HOUSE

The photos on this page point up particularly the interesting textural interplay between natural fieldstone and whitewashed fieldstone that is one of the leading aspects of this exterior.

Regarding the use of stone, architect Breuer says, "When stone is used in a wall, it is no longer some sort of rock formation, but a clear-cut slab—made of stone for the reason that stone is a good and durable and texturally pleasant material.

"Even when a wall is free in shape—so free you might be tempted to call it organic—it is still made clear, crystal clear, that this is a wall built by a mason, and not a grotto or part of a romantic rock garden."





James Herrlin photos

HOUSES

A THREE-PAVILION COUNTRY HOUSE

OWNERS: *Mr. and Mrs. John A. Orb*

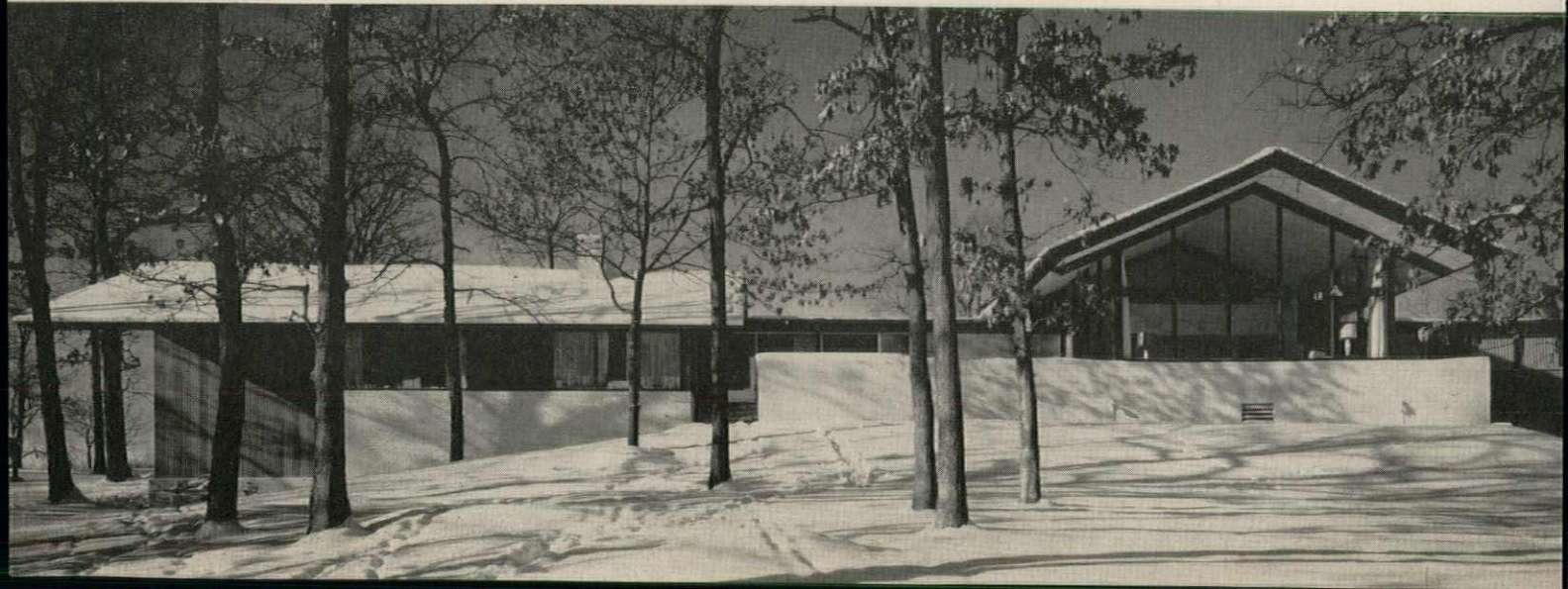
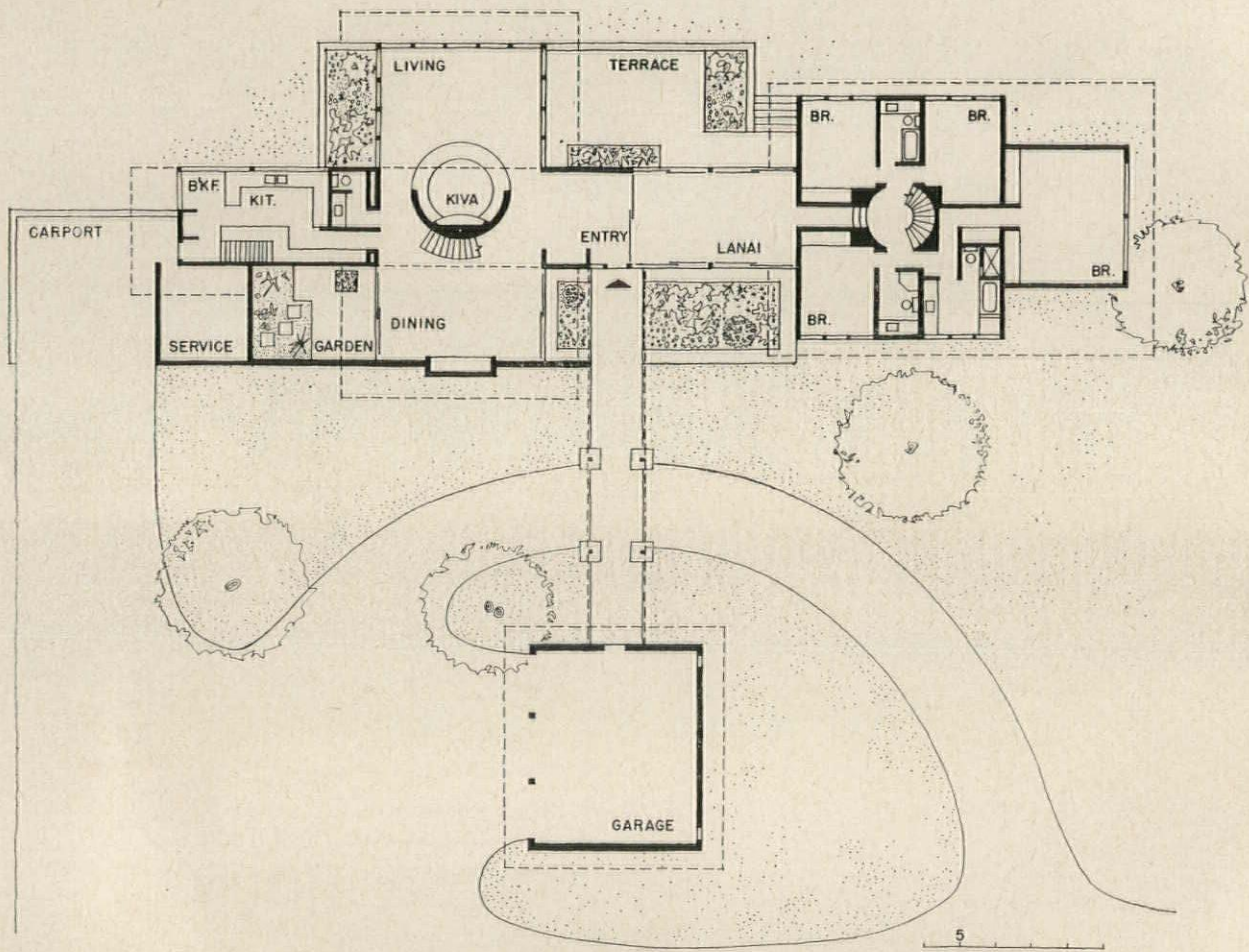
LOCATION: *Barrington, Illinois*

ARCHITECT: *Edward D. Dart*

ENGINEER: *Donald Robinson*

CONTRACTOR: *Rieke Construction Co.*

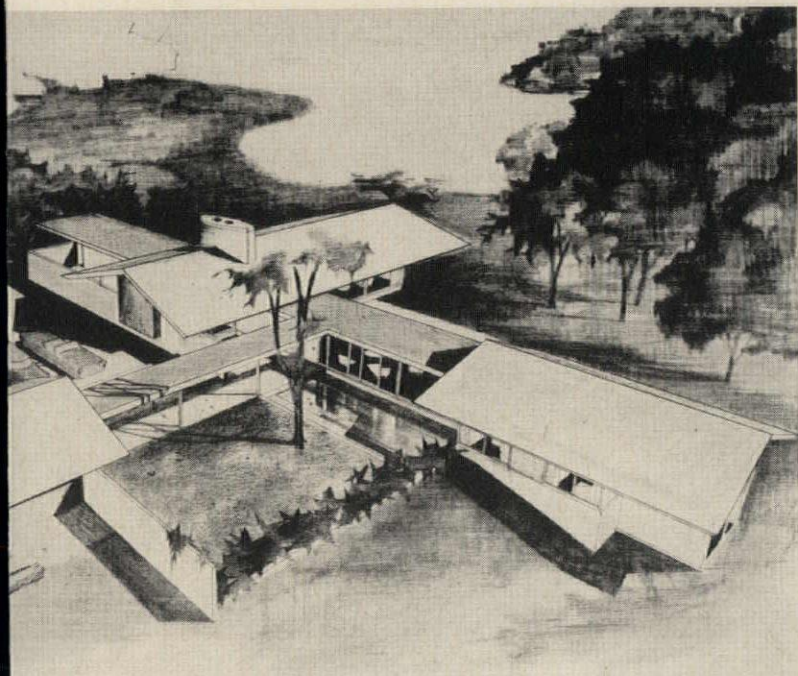
This large country house gains a high degree of privacy, zoning of activities, and noise control by separating functions into three distinct pavilions or "houses." Each unit is emphasized by a pitched roof, and all are linked by flat-roofed walks or glassed-in loggias. The site comprises twenty acres of rolling, wooded land.



Orb House

The design of the house, while comfortably relaxed overall, has a refreshing crisp simplicity in its detailing. On the exterior, this neatness underscores interest in the massing of the three units (see sketch below).

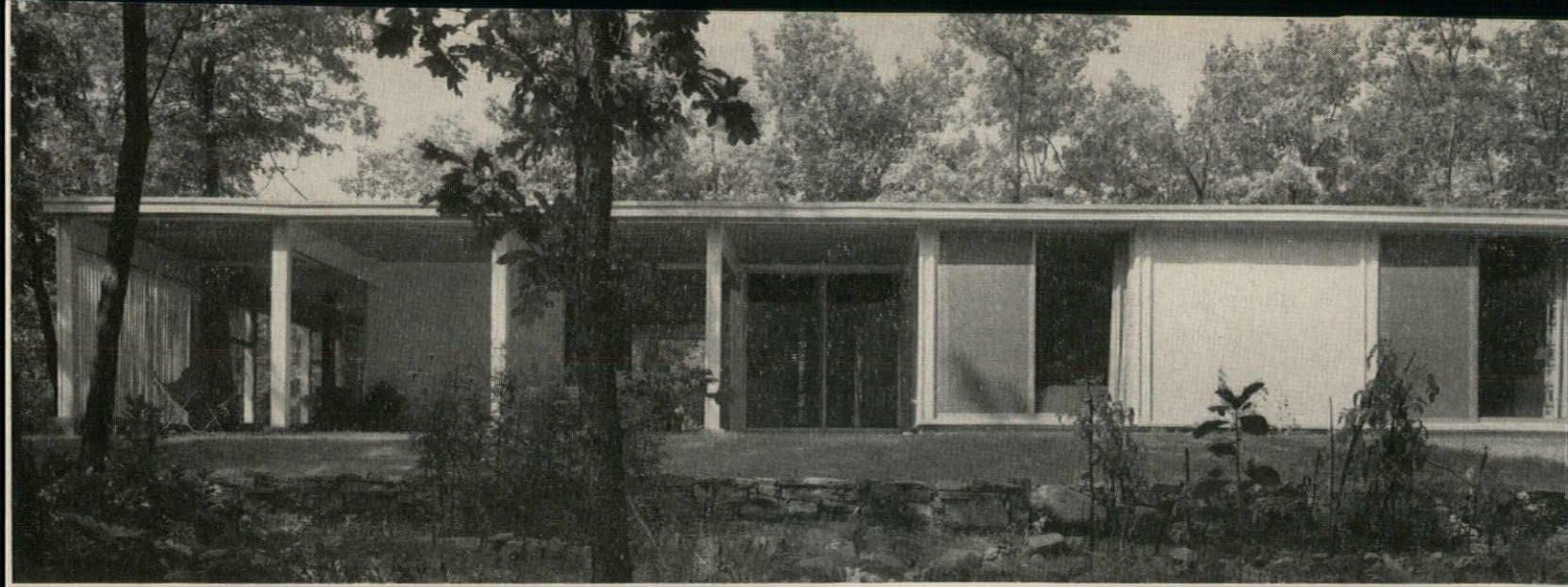
The central pavilion, devoted to living-dining, is treated in an open manner to heighten the spaciousness. High ceilings follow the roof lines. Living and dining areas are separated by the fireplace, over which is bridged an open study balcony. The living area features a "conversation pit," dubbed here with the more exotic name of "kiva." A flat-roofed service wing flanks this unit. A full basement has storage, maids' rooms.



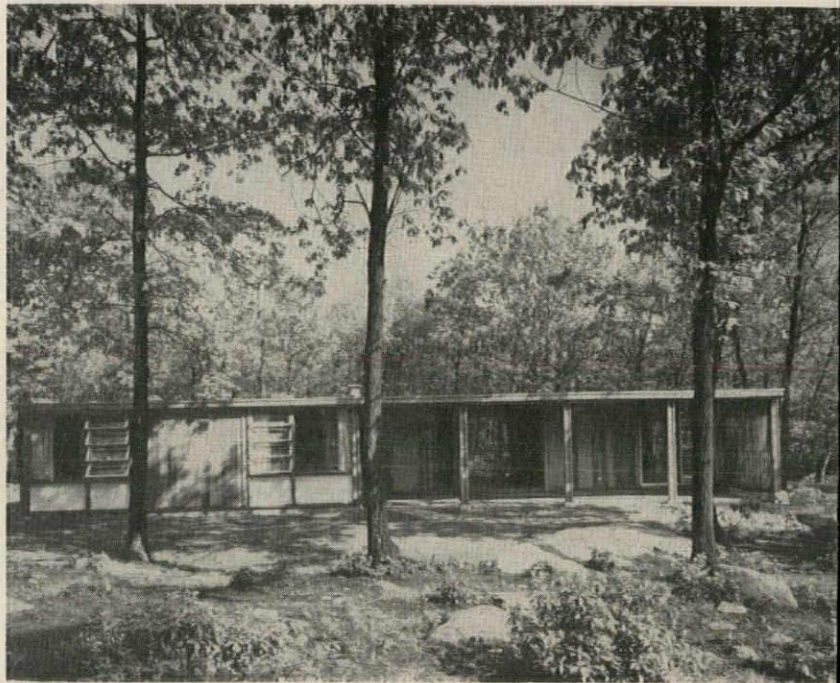
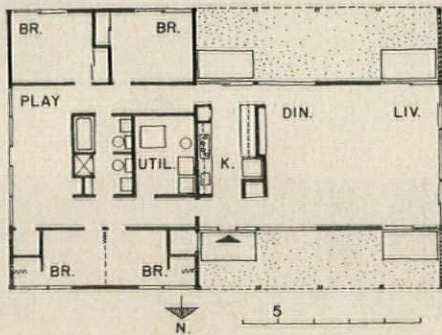
The bedroom pavilion is linked to the living unit by a glassed-in lanai. The front entry is separated from the lanai by a screen of carved Japanese panels. The basement below this unit contains a large children's playroom, which (due to the slope of the land) has outside access at ground level. From the inside, it is reached by a circular stair. The plot, as developed, substitutes a circular drive for the walled-in entrance court, and uses the covered walk as a porte-cochère.

The frame of the house is steel, with concrete foundations. The exteriors are surfaced with painted brick, vertical redwood siding, wood shingle roofs. Interiors are plaster, wood paneling. Heating-cooling has two zones, two units.

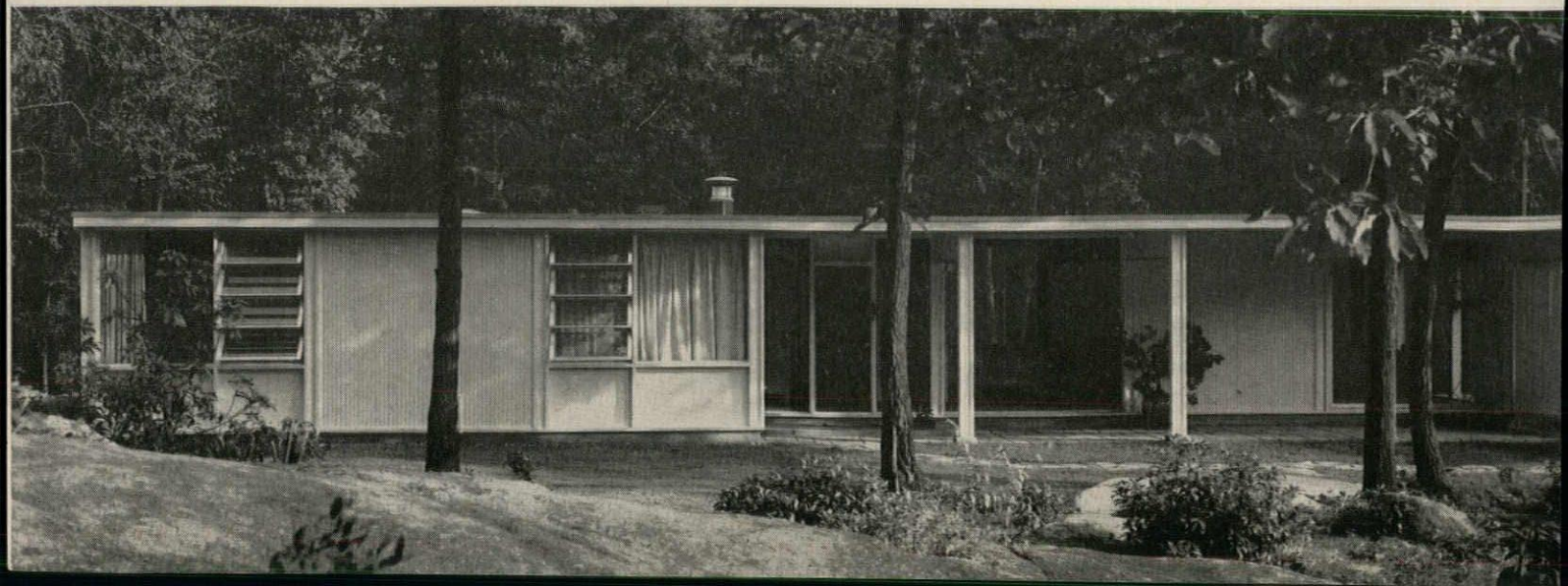




Alex Von Steiger for Namuth Studio photos, except as noted



Lisanti



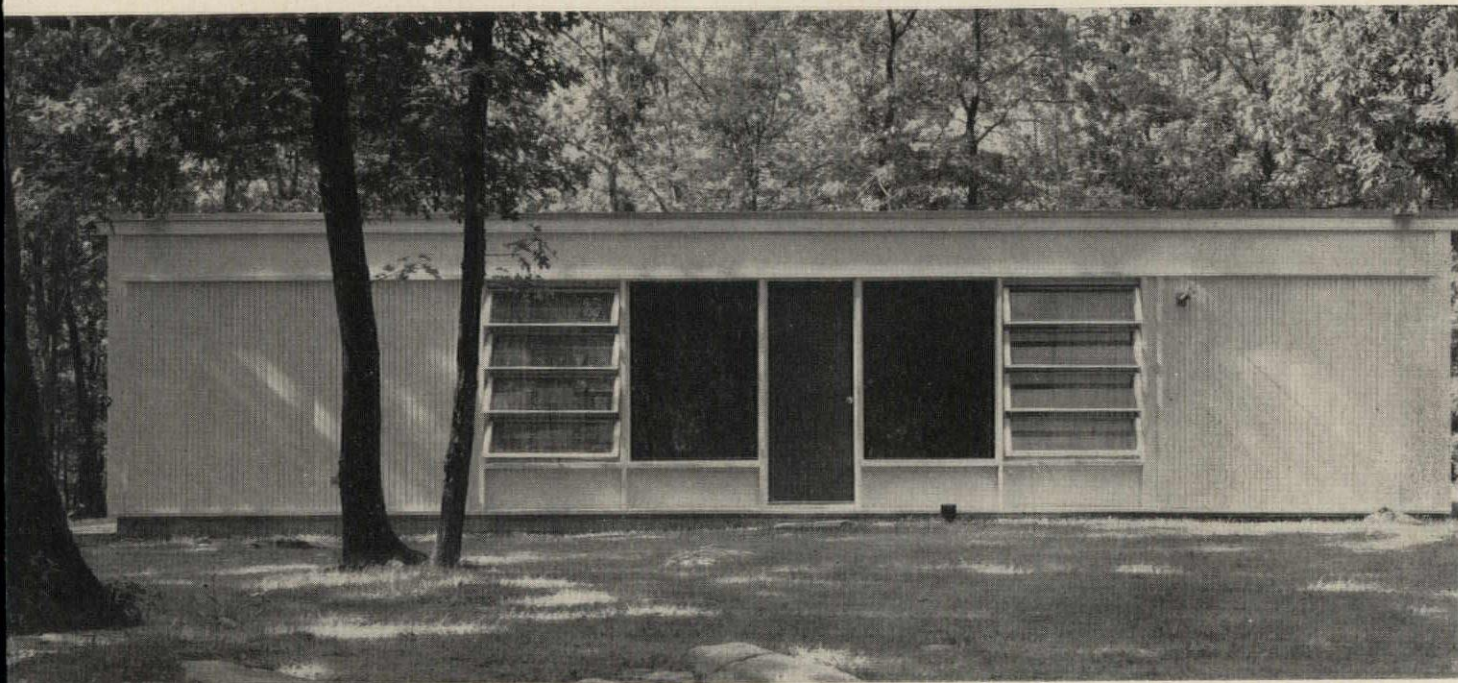
ORDERLY PLANNING FOR LOW COST HOUSE

OWNER: *John Martinez*

LOCATION: *Pound Ridge, New York*

ARCHITECTS: *Peter Blake & Julian Neski*

An orderly neatness of planning and construction highlights this small, but spacious, four-bedroom house. The house was developed on a module of about 8 ft, determined by the width of a standard, aluminum-framed sliding glass door. The regular post-

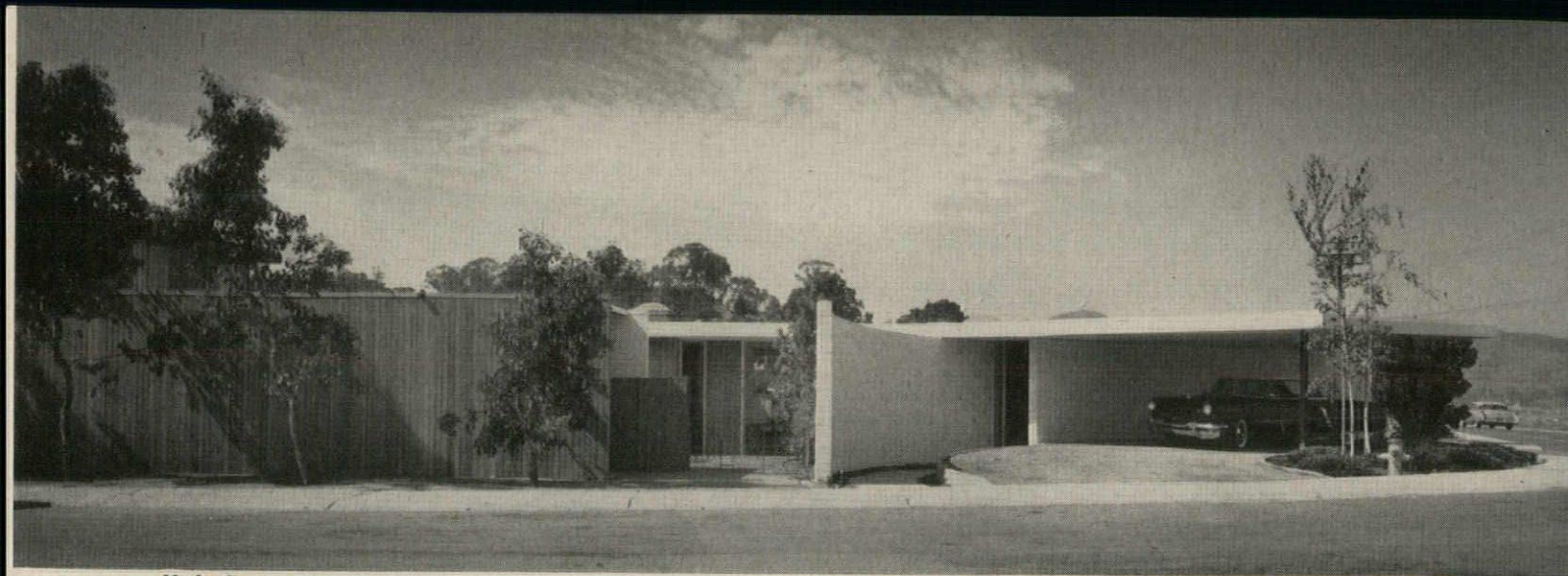


and-beam frame follows the module, and is set on a concrete slab, roofed with 2-by-3-in. planks. Standard sheet materials are used for all surfaces: plywood, plasterboard, built-up roofing, vinyl tile floors.

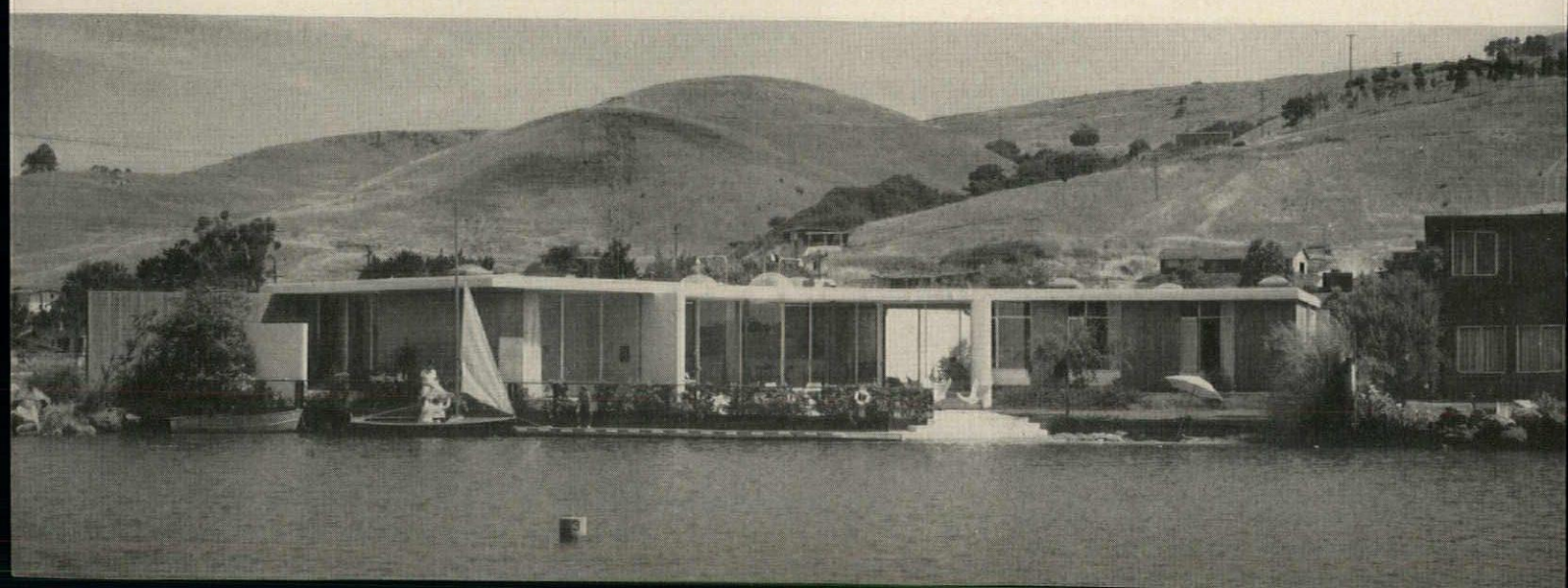
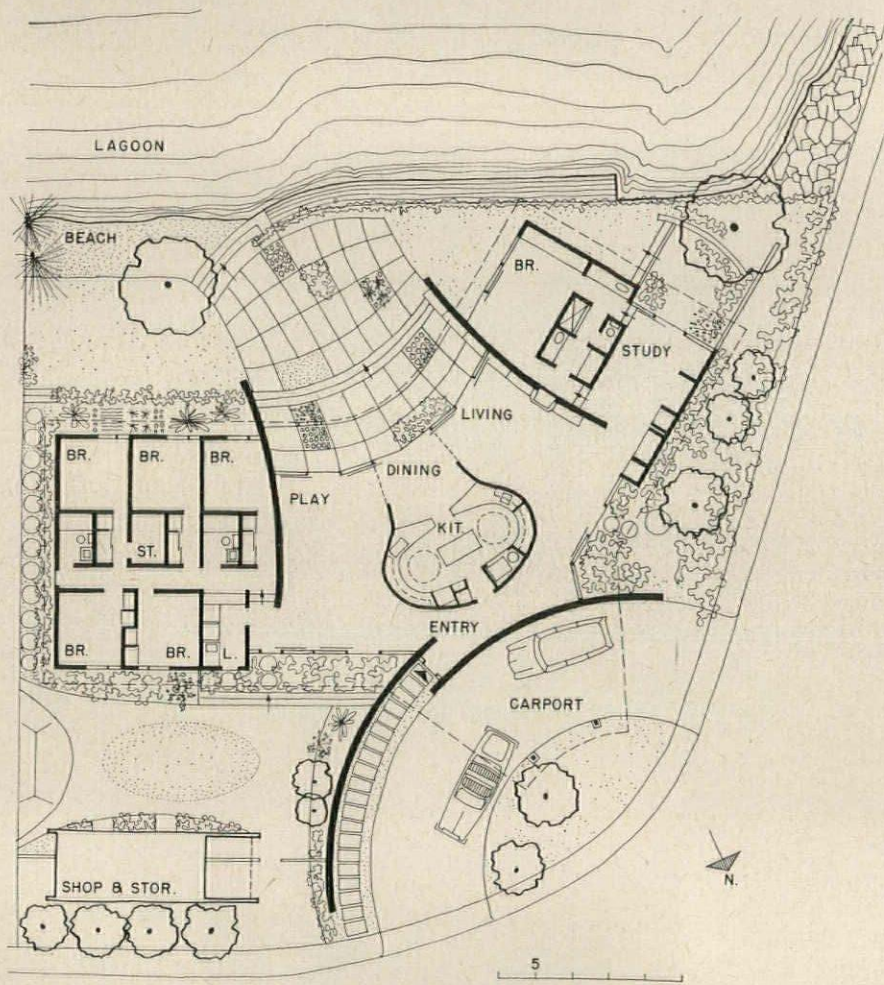
The plan centers on a mechanical core containing kitchen, utility room and two baths. Location of the core separates the two living areas—the living-dining room, and a play or family room. Linking halls permit the areas to be used separately or together for entertaining. Cost of the house was about \$28,000, or \$12 per sq ft.

The textured plywood exterior panels were first left natural (photo left center), but later painted white to provide more unity for so crisp a structure.





Morley Baer



HOUSE MAKES OASIS OF TINY PLOT

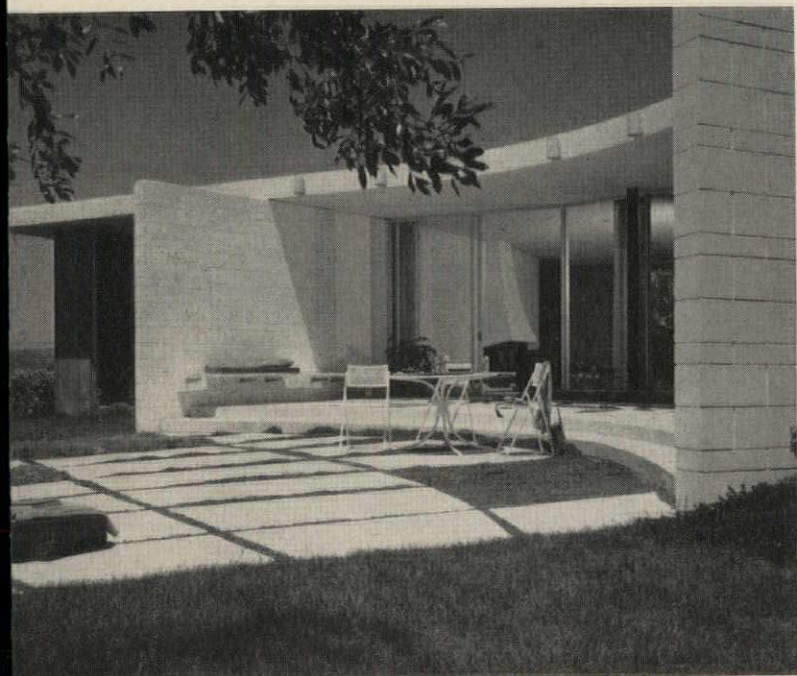
OWNER-ARCHITECT: *George Goddard*

LOCATION: *Belvedere, California*

CONTRACTOR: *Stewart Dinwiddie Company*

LANDSCAPE DESIGNER: *Janet McDonell*

This ingenious house provides all the amenities of a big country house, for a family with five children, on an extremely limited waterfront site. A separate bedroom is provided for each child, with adjoining indoor and outdoor play areas which are easily super-



vised. At the opposite end of the house is a quiet, private suite of bedroom and study for the parents. Projecting fin walls on the water side of the house add further seclusion to the bedroom wings on a side left open to the view.

Privacy from the street and neighbors is gained by curving the plan of the house to the view, and curving carport and garden walls on the opposite side to the street; the spaces between are treated as play and garden courts.

An unusual sliding gymnasium-type ash partition is used to close off either side of the dining area, or to open up pass-throughs at the kitchen sink and bar sink (see photos next page). Thus a number of space combinations can be made at will.

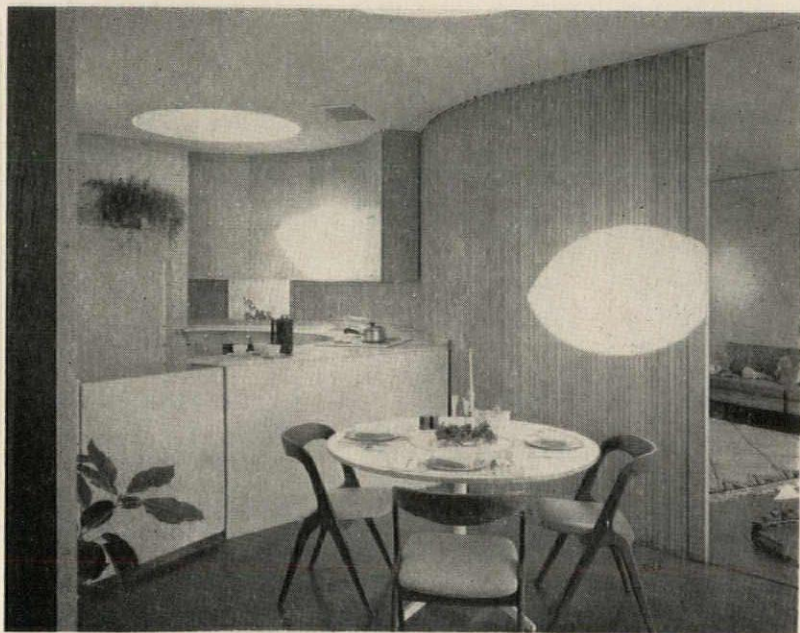
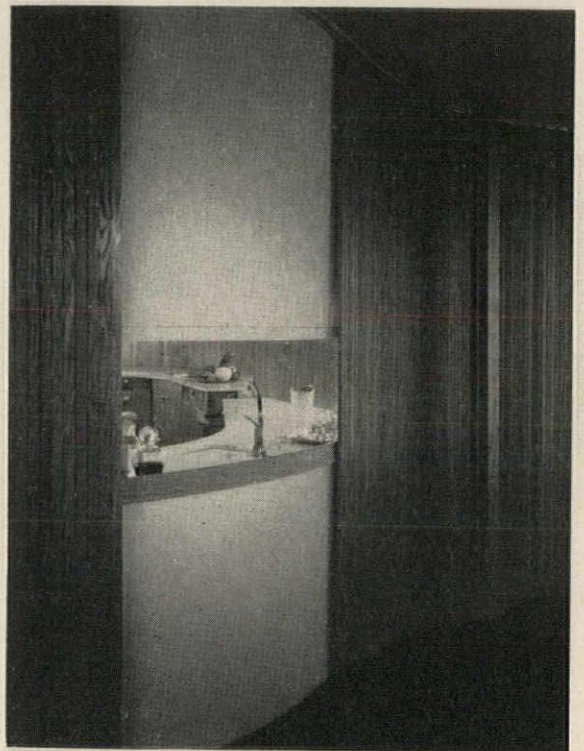




Goddard House

The extreme flexibility of the kitchen-dining area partitions is shown clearly in these photographs. At top, the area is entirely screened-off from the adjoining living and play rooms. Below, the wall by the play room is shown partially open. At right, the wall is opened by the bar sink to form a serving counter or pass-through.

The house has concrete-block and wood-frame bearing walls, with steel frame and columns at the kitchen-dining area for sliding partitions. The roof is wood joist with built-up tar and gravel surface, acoustical plaster ceilings. Floor slabs are concrete with a colored topping. Wall finishes are painted concrete block, redwood, natural ash



REHABILITATION CENTERS



F. Wilbur Seiders

1. Texas Institute for Rehabilitation and Research

LOCATION: *Houston, Texas*

ARCHITECTS: *Wilson, Morris, Crain and Anderson*

STRUCTURAL ENGINEER: *Walter P. Moore*

CONSULTING ENGINEERS: *Dale S. Cooper and Associates*

CONTRACTOR: *Knutson Construction Company*

ARCHITECTURAL RECORD *January 1960* 147

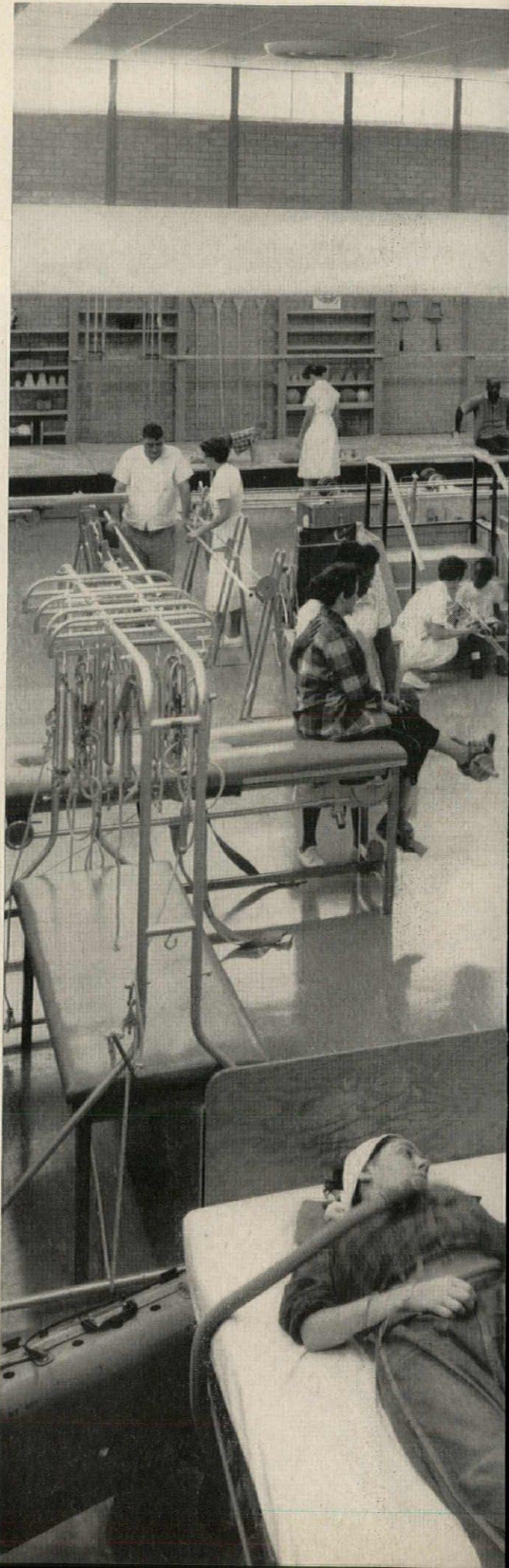
In recent years government financial aid has encouraged the construction of rehabilitation centers for the survivors of catastrophic disease. These people, rendered tragic and desperate by their disabilities, through comprehensive treatment and training can learn to enjoy their lives, take care of themselves, and play their role in society. The Texas Institute for Rehabilitation and Research is a representative example of the new centers. A pilot project to demonstrate the value of a comprehensive medical program, it is a non-profit, charitable, scientific and educational enterprise. Physical medicine and physical therapy are the essentials of any complete rehabilitation service. This 54-bed unit for in-patients and out-patients with multiple disabilities of severe degree, provides intensive integrated services in the four basic areas of rehabilitation: medical, psychological, social and vocational. It also provides research and teaching facilities.

Total cost of the center was approximately \$1,350,000. \$676,000 of this came from Hill-Burton funds and the balance from local philanthropy. Hill-Burton, known officially as the Hospital Survey and Construction Program, provides Federal funds to match state and local tax funds or private contributions in the construction of both public and voluntary non-profit hospitals. Several years ago Hill-Burton was extended to include non-profit rehabilitation facilities for the disabled, and this Texas treatment center is among the first buildings completed under the extended program.

The site is a 4½-acre area located in Houston's Texas Medical Center. Rehabilitation units are best located in medical centers for several major reasons: 1. the many kinds of specialists required in the early stages of rehabilitation are available; 2. training programs exist or can be planned to relieve shortages of personnel; 3. specialists' assistance in the development of treatment techniques can be readily obtained; 4. rehabilitation can be begun as early as possible in conjunction with treatment provided patient in other parts of the center; 5. duplication of personnel and equipment is avoided.

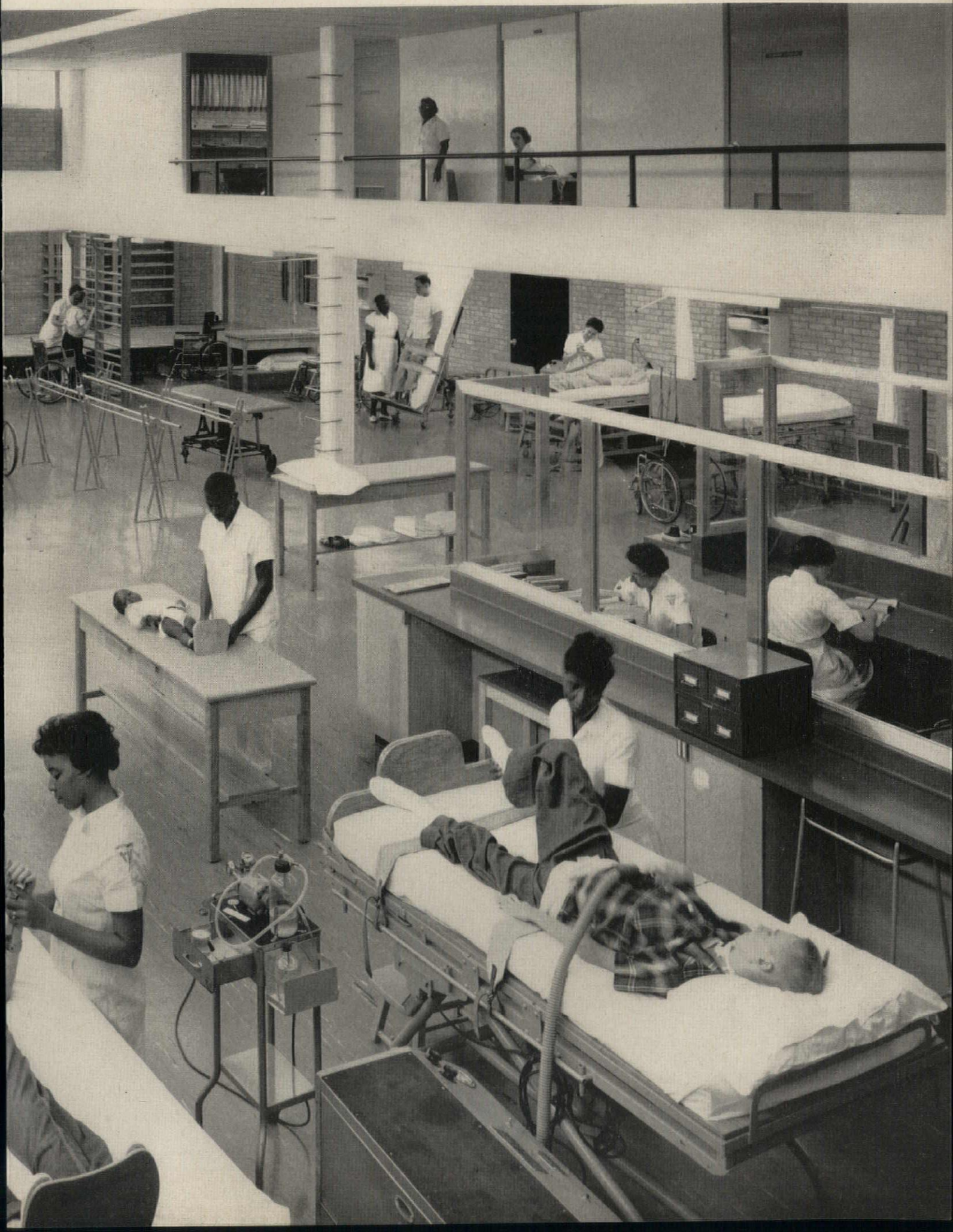
The building is of concrete frame construction with a suspended concrete floor slab and pre-cast concrete joist roof framing. Interior walls are 4-in. brick, exterior walls are brick and stucco. Windows and doors are aluminum frame. Because of the great physical exertion involved in rehabilitation it has been recommended that every rehabilitation building be air conditioned. This one is provided with both summer and winter air conditioning.

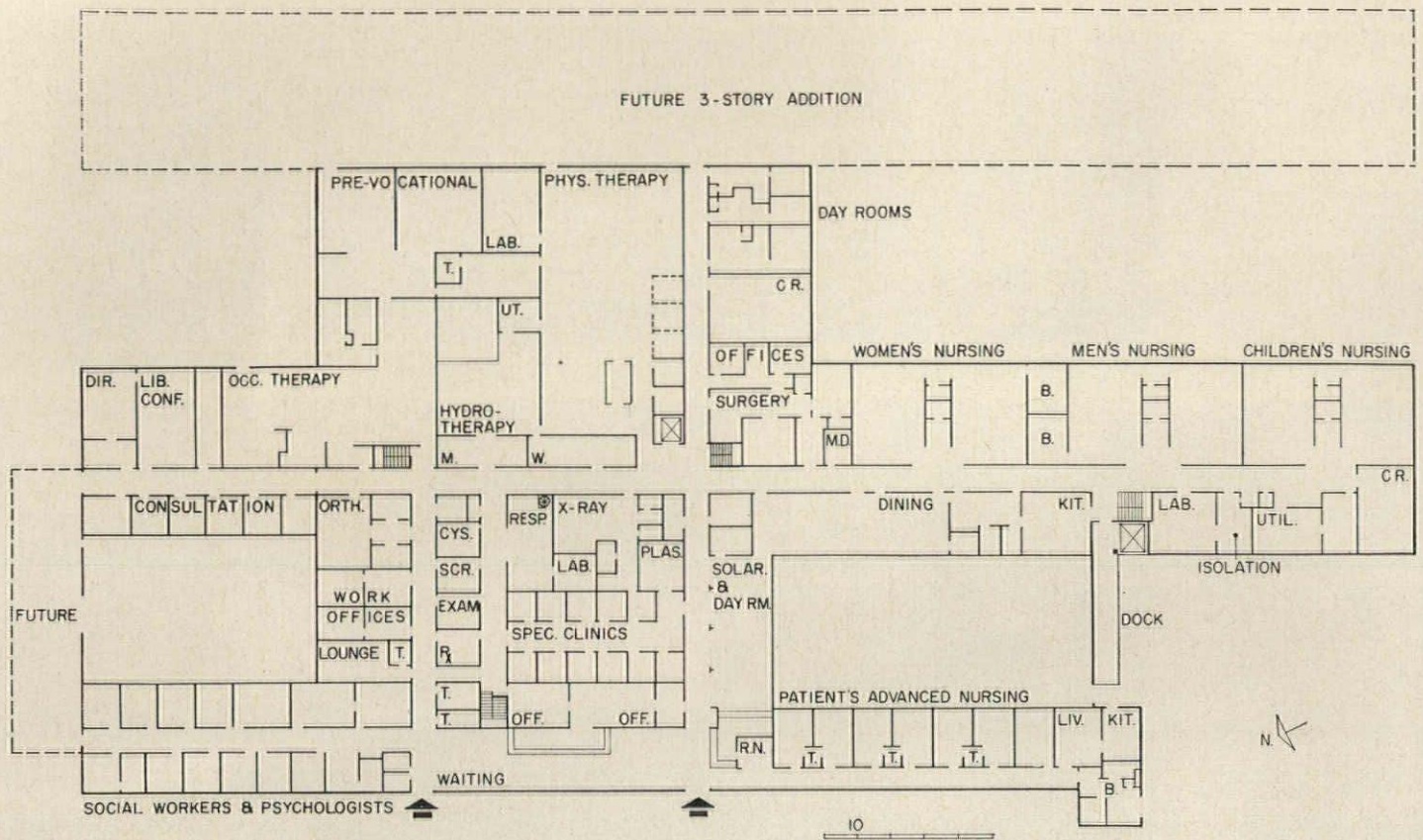
The architects state that the building was modularly coordinated and that drafting and specification time was greatly reduced thereby. They maintained a low hospital budget with a construction cost of about \$16.00 per sq ft which included much of the built-in cabinet work.



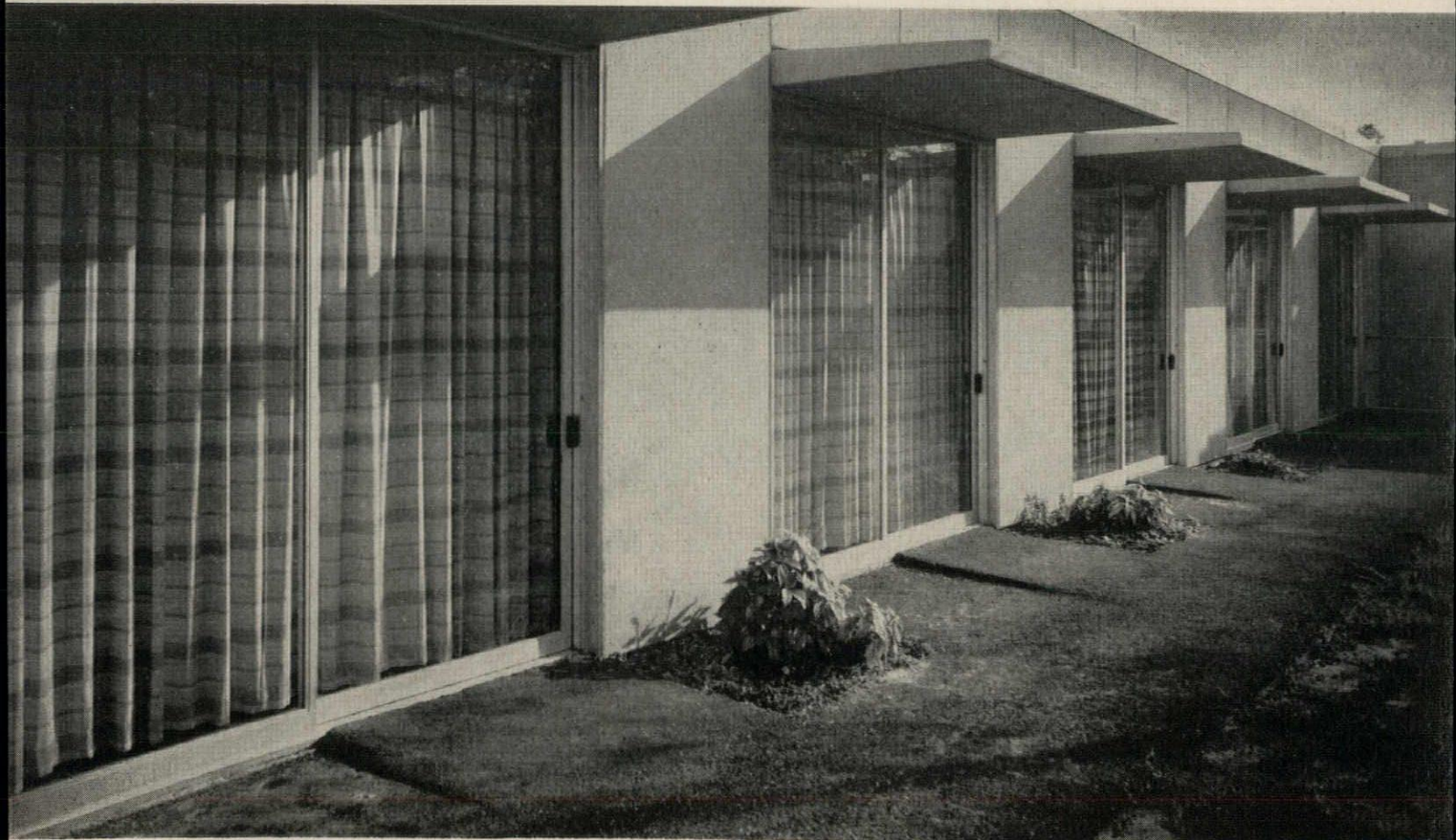
F. Wilbur Seiders

Most patients are paraplegics, quadriplegics or individuals with pulmonary or cardiovascular insufficiency. Non-functional, dependent, as a group they require every available service. A large open physical therapy room is recommended, not only for economy and ease of operation but for its value to patient morale. The patient takes comfort and encouragement in watching the constructive effort and improving skills of others. Note use of mezzanine for observation by professional staff





Plan provides generous area for social workers and psychologists. In rehabilitation centers psychologists test, evaluate and counsel patients. They also counsel the staff about the reactions of the patients to their disabilities. Medical social workers are a link with the patient's family and community



Sliding glass panels provide easy access to outdoors. Note gentle ramps for wheel chairs



A playful fountain helps avoid a depressing institutional character



A nurse's station is located in the center of each nursing unit. Here it subdivides the children's nursing unit

2. Carolyn Rose Strauss Rehabilitation Center

OWNER:

Ouachita Parish Society for Crippled Children and Adults

LOCATION: *Monroe, Louisiana*

ARCHITECTS:

Curtis and Davis, and Associated Architects and Engineers

CONSULTING MECHANICAL AND ELECTRICAL ENGINEERS:

deLaureal and Moses

CONTRACTOR: *F. C. Eason Construction Company*

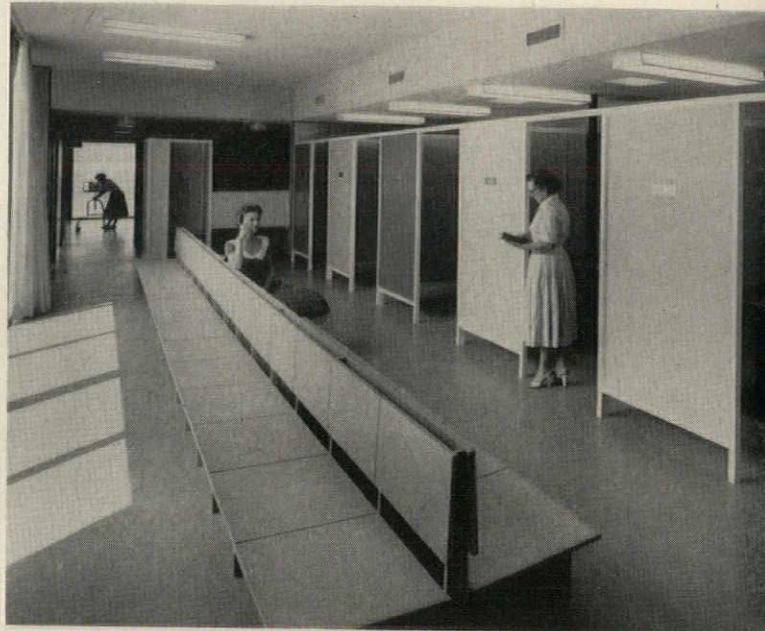
In contrast to the preceding rehabilitation center, this one is very small in scope. It is restricted to children all of whom are ambulatory or wheel chair patients, and handles approximately fifteen of them per day. There are no in-patients. On two days each month general clinics are held and on these days 60 to 130 children accompanied by parents are accommodated. The center is in a small community and serves a large surrounding area in Northern Louisiana.

The waiting area could not economically be made large enough to take care of the twice monthly overflow crowds so a waiting patio and an outdoor canopied area have been provided. The patio admits sunlight to the waiting area. Built-in seating imposes an order on the crowds and conserves space. The examination and treatment areas are arranged in the sequence the patient travels and establish an orderly flow of traffic on clinic days. Office locations have been planned to help control and direct patients.

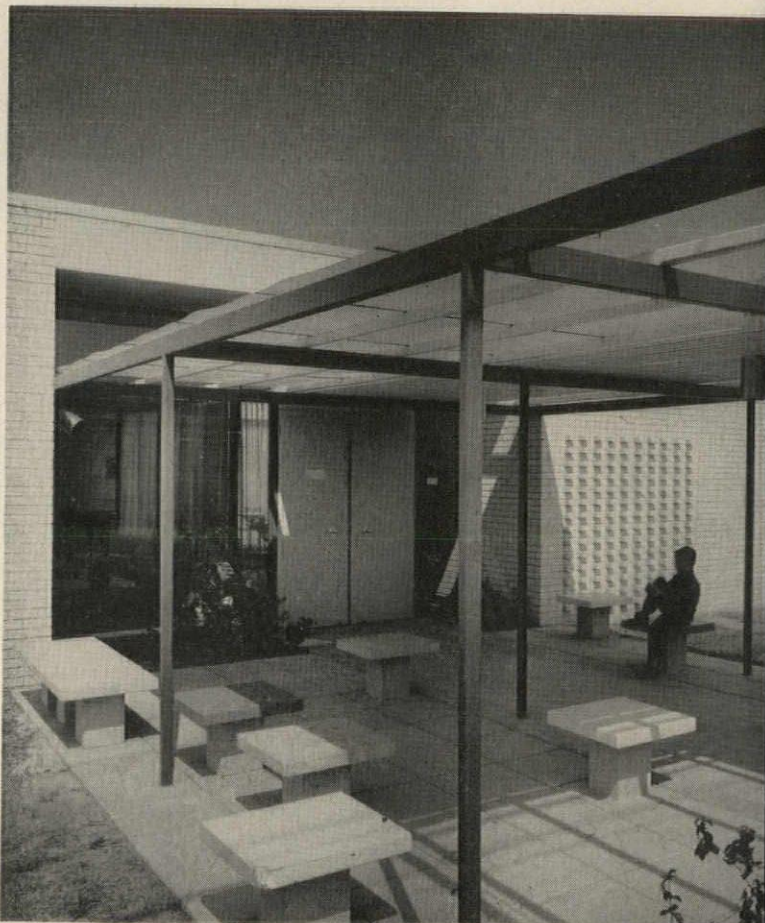
Three exterior walls face streets and are made of brick with no openings for the sake of privacy. Skylights are extensively used in the smaller rooms. The therapy rooms have been placed in the rear of the structure and overlook a fenced-in play yard which in the future will have a swimming pool. The rear wall is glass from floor to ceiling with doors providing access from the therapy rooms to the yard where other forms of therapy take place.

Certain rules for correct detailing in rehabilitation centers were followed. Heavy duty pre-polished vinyl flooring was used for its slip resistant quality and for its resistance to permanent indentation resulting from concentrated loads of equipment. Doors are oversized and furnished with special hardware, toilets are equipped with special grips and other devices, and drinking fountains project from the wall to facilitate use from wheelchair or crutches.

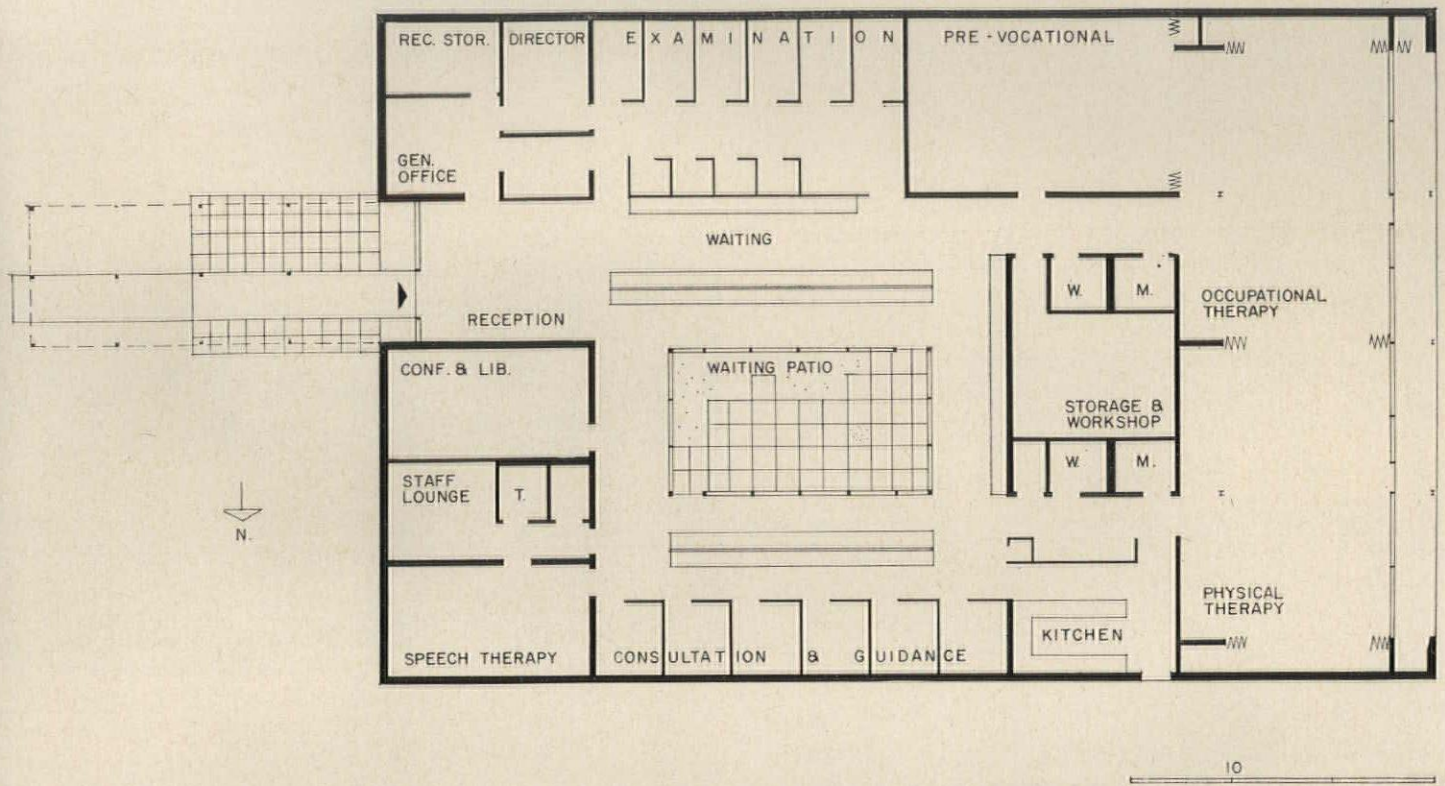
The entire building is air conditioned the year round. Built with the assistance of Hill-Burton funds, its cost was \$124,770 including all construction, extras, built-in furniture and landscaping. Cost of land, other furniture, and architects' fee are not included in this figure.



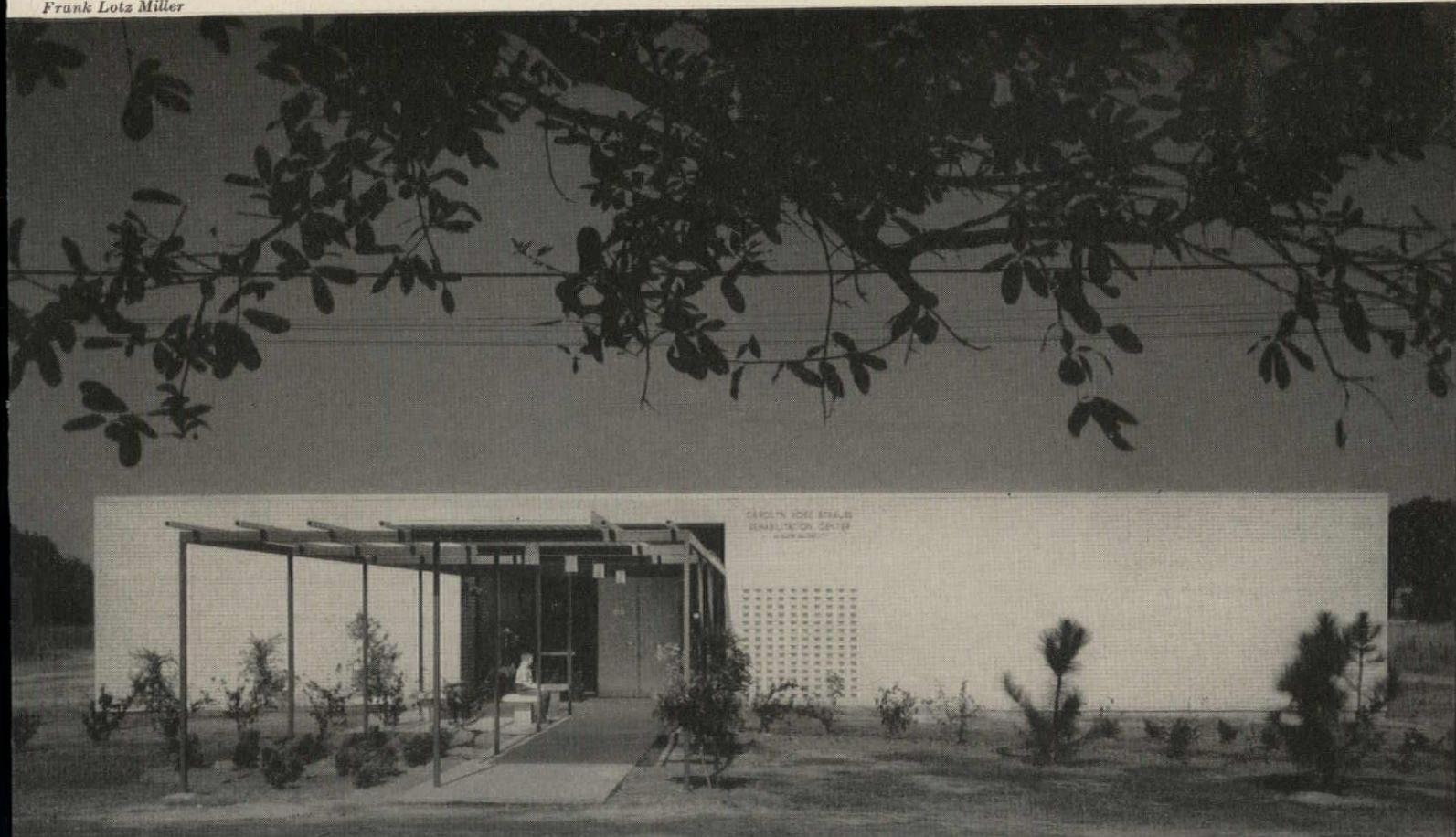
Waiting bench outside consultation and guidance booths



Entrance is without steps and protected by canopy. Seats are to help handle overflow on general clinic days



Frank Lotz Müller



Because of need for privacy building is closed on three sides but opens onto a fenced play-yard at rear

3. Outpatient Rehabilitation Center

OWNER: *Crippled Children's Society, Miami, Florida*

LOCATION: *Miami, Florida*

ARCHITECTS: *Weed-Russell-Johnson Associates*

STRUCTURAL AND ELECTRICAL ENGINEERS:

Norman J. Dignum and Associates

MECHANICAL ENGINEER: *R. L. Duffer*

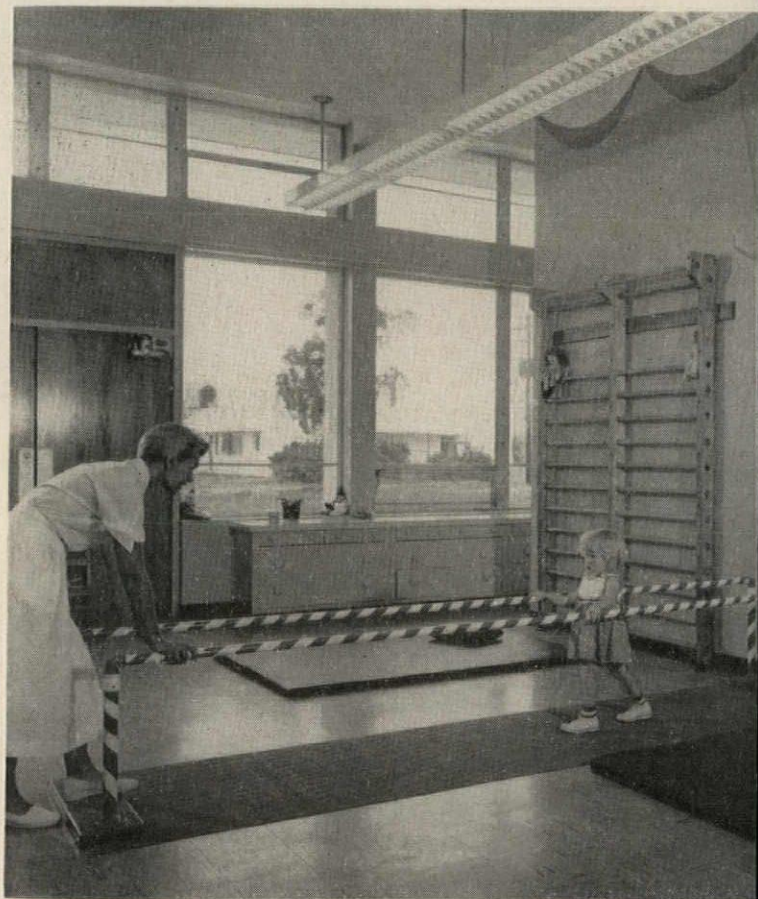
CONTRACTOR: *M. R. Harrison Construction Company*



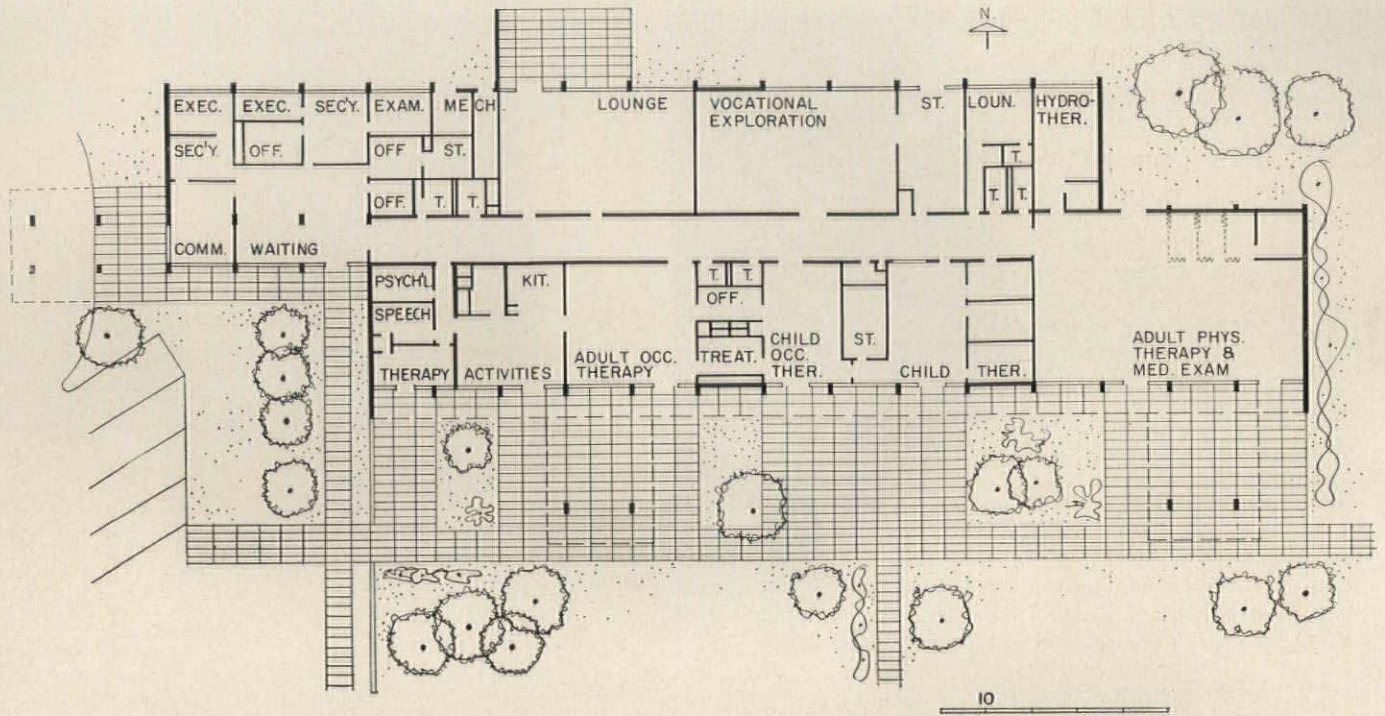
West elevation showing entrances

This rehabilitation center for children and adults follows most of the rules of good practice which have been carefully set up for these centers. It has no steps or ramps, and thresholds at doorways are flush. It is a one-story unit with everything located on the ground floor so that patients have access to treatment and outdoors without the need of elevators. In addition a one-story unit reduces the danger from fires and can be expanded easily in the future. Wide clearances are given everywhere in consideration of the fact that the patients are active and mobile in wheel chairs and on crutches. Window sills are kept low so that patients seated in wheel chairs may see out, and direct access from therapy rooms to an outdoor exercise area has been provided. The building is completely air conditioned in consideration of the strenuous physical activity which takes place.

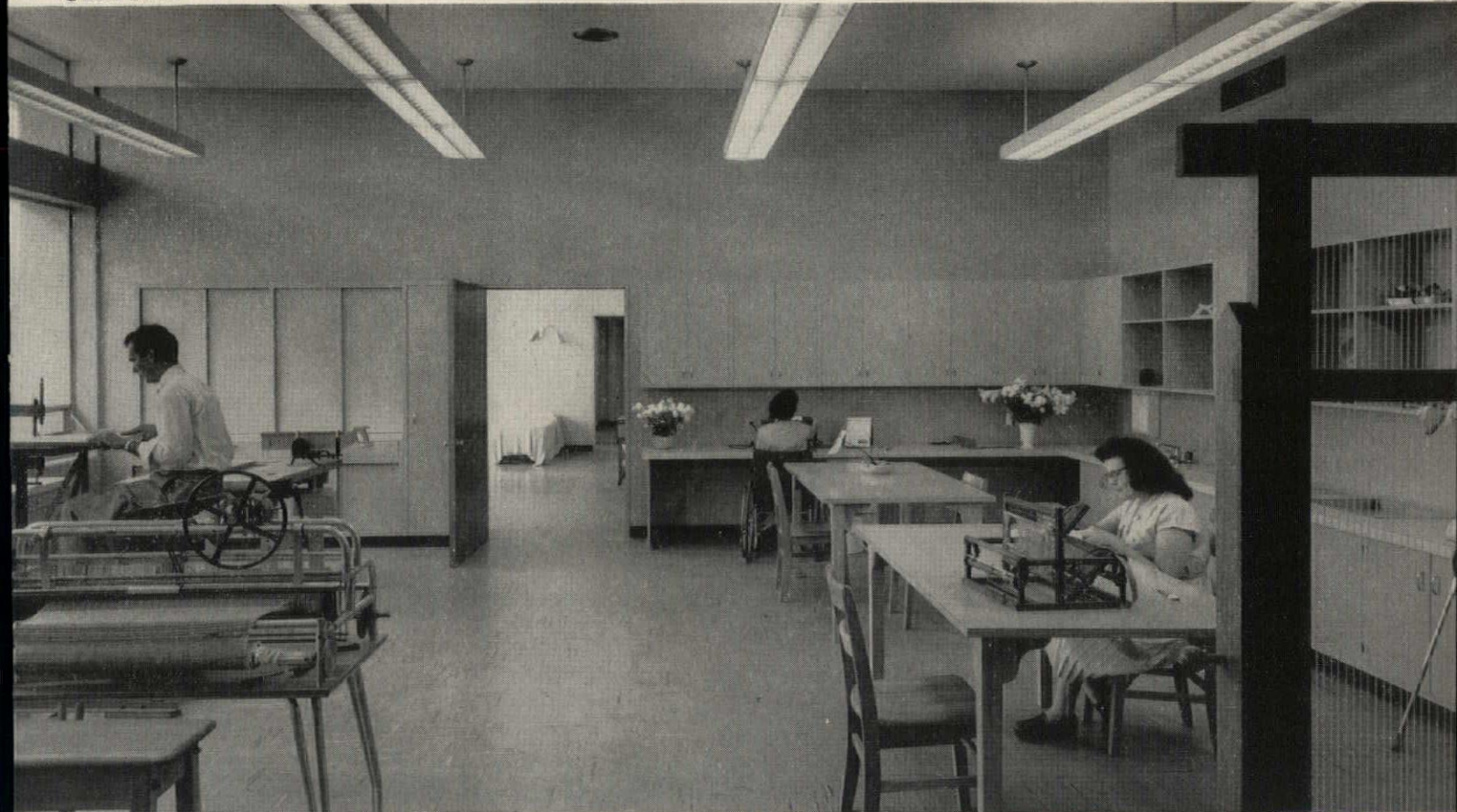
In addition to obeying the rules, the research center solves problems of its own. Indoor-outdoor therapy areas face south to take advantage of the prevailing breeze while being shielded from cold north winds. This exposure makes good use of the expanse of property stretching southward away from vehicular traffic for a safe play and training area. Blank walls on the east and west eliminate low direct sun rays, while south overhangs shield therapy rooms from summer sun while admitting lower winter sun. A limited budget determined the choice of materials and structural system. Exterior wall surfaces are of river gravel faced concrete blocks. This finish requires no maintenance. The structural frame consists of reinforced concrete columns and tie beams supporting open web steel joists which frame the roof. The cost of the building was \$256,500, part of which was contributed through the Hill-Burton fund.



Low window sills, wide doors providing access to outside are provided for wheelchair patients



© Ezra Stoller



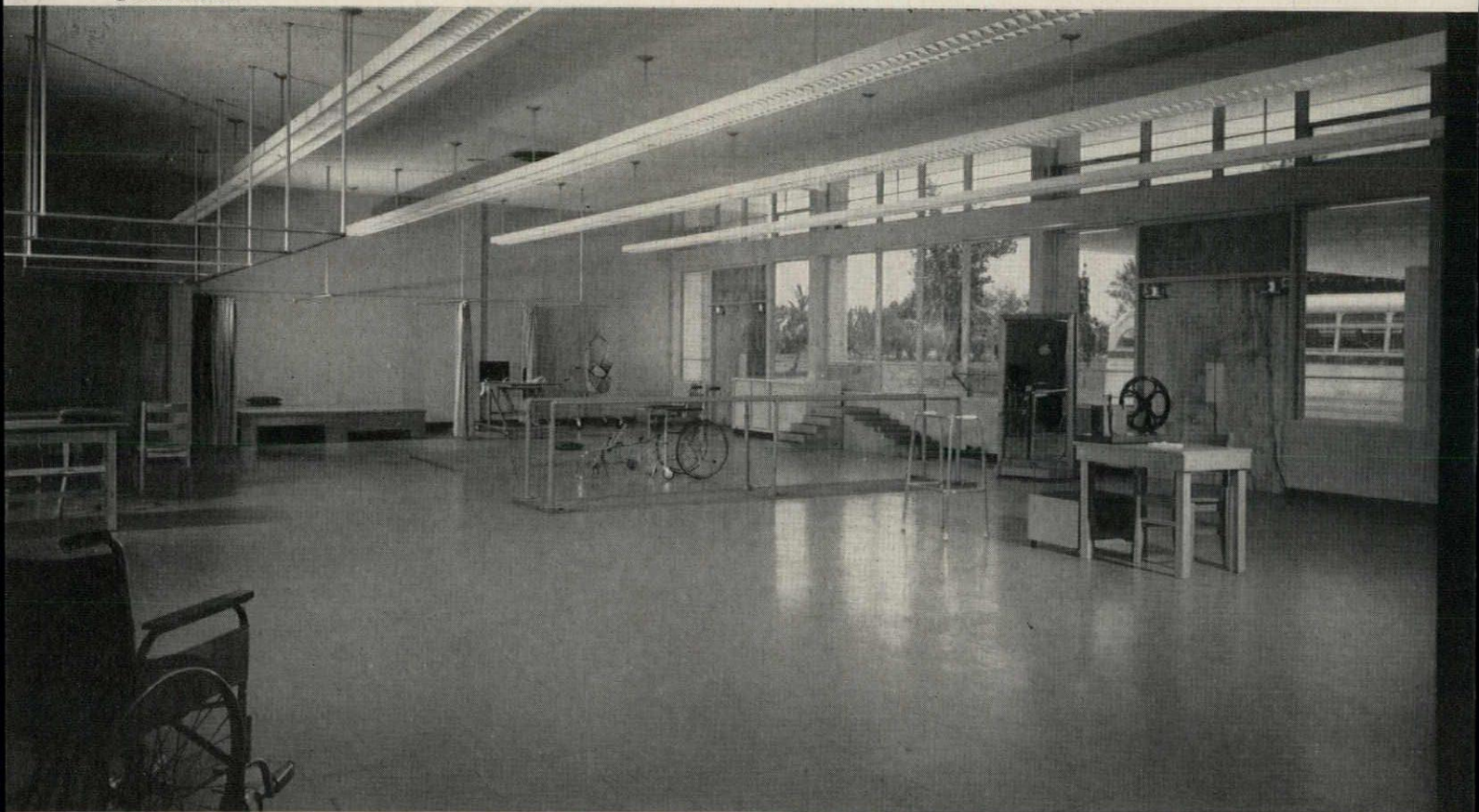
Wide clearances in arrangement of equipment and furniture should be standard procedure in rehabilitation centers. The adult occupational therapy room provides facilities for the practice of numerous skills

Rehabilitation Centers: Outpatient Unit



Note width of corridor and doors. A conflicting viewpoint exists on the use of handrails on corridor walls. Some doctors believe that the patient should not become dependent on aids not found in his normal environment. There is more general agreement about non-use in adult centers than in children's units

© Ezra Stoller



Suspended rods are for cubicle curtains to be drawn when necessary. These rods must hold curtains firmly enough to support patients who hold on to them for balance. Air space above will properly ventilate cubicles when curtained off

INDUSTRIAL BUILDINGS

BUILDING TYPES STUDY 278

®

Opportunities for Architects and Engineers

At a recent business forecasting meeting, one speaker referred to the fact that business capital spending plans go up and down rather sharply every few years. A member of the audience asked why this should be true. The speaker thought for a moment. "You know," he said, "it's probably because too many business men go to forecasting sessions like this. They hear all the same talks, get the same ideas, and then go back to their offices and take the same actions."

Be that as it may, it is apparent that waves of business optimism and pessimism alternate more or less regularly—and surprisingly enough, it seems that management is more acutely sensitive to them than the general public is. There is a tendency to cut back sharply on plans for new productive capacity and for new research and development when the short-term outlook is shaky, and to expand when the short-term outlook is good. It might be argued that the short-term future should not have such a profound influence on what are, after all, long-range plans—but it does, and that's that.

The importance of all this, currently, is that we are now very clearly in an optimistic, or expansion period. The expansion began slowly, after it became fully evident to all that the 1958 recession was well interred, and we are now in what might be called the "momentum-gaining" phase of the upturn. The steel strike may have slowed the increase in capital outlays somewhat, but it does not seem to have had a serious impact on plans for future increases in business spending for new plant and equipment. Assuming no resumption of the strike, we should be able to look forward to at least two years of extremely high activity in the design and construction of industrial buildings.

Because of the recession, 1958 was the worst year for industrial construction that we have seen in some time. Even so, by the standards of only a decade or so ago, it loomed very large. Dodge statistics show that 1958 industrial building contracts totaled \$1.4 billion. The improvement in the past year will be in the neighborhood of 30 per cent, making the 1959 total somewhere around \$1.8 billion. During this year, we estimate that there will be a further gain of perhaps 20 per cent, which would put 1960 contracts for industrial construction at nearly \$2.2 billion.

Not all of this amount, of course, constitutes a market for architectural services. Some of the segments, such as chemical and petroleum refining, often utilize a great deal of highly specialized engineering, but relatively little in the pay of architectural design. On the other hand, there will be a large volume of contracts for government and university research facilities and commercial warehouses, which are closely akin to industrial building design, but which are not included in the \$2.2 billion figure.

While it is hard to come by a precise estimate of the industrial building market from the architect's point of view, two important points are apparent. First, the field is measured in billions of dollars. Second, it is currently growing rapidly; and while future set-backs may be expected, the long term trend will be substantially upward as industry tries to keep up with the growth of population and markets, with the development of new products and techniques, and with the erosion of time on existing facilities.

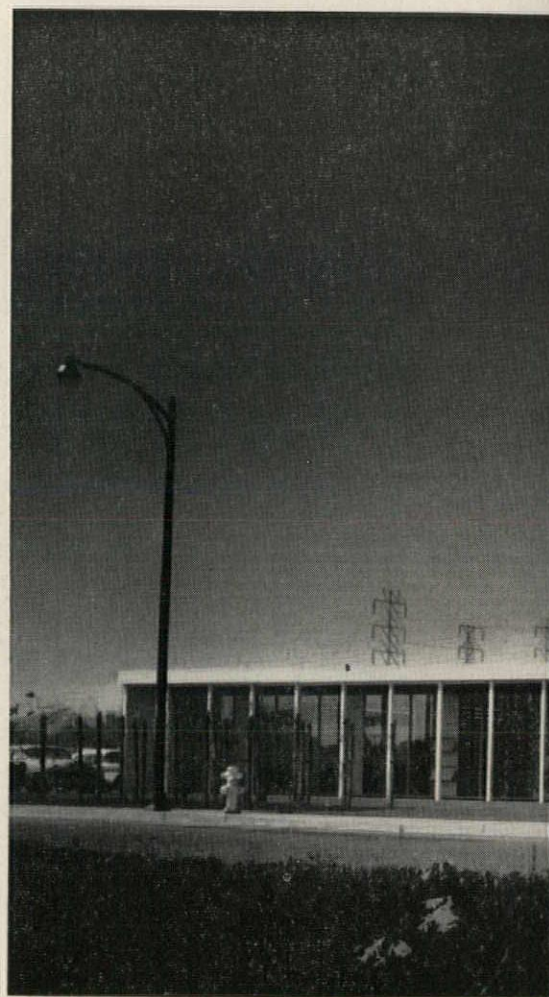
GEORGE CLINE SMITH,
Vice President and Economist
F. W. Dodge Corporation

DESIGN FOR FURNITURE DISTRIBUTION

This California plant combines office facilities with required storage spaces and related assembly areas, in a tasteful, efficient, and orderly architectural solution

This combination office-warehouse-factory is a good example of the sort of enlightened industrial building design which can result from close collaboration between the architects, their consultants, and an enlightened client. Folke Ohlsson, president and chief designer of the furniture firm which owns this building puts it this way, "Quality architecture is to us a symbol of quality furniture. An architect does not merely select and indicate the assembly of materials in a sound and economic manner; he is also responsible for the creation of a pleasant working environment. This depends primarily on careful planning and design—the use of color, line, texture, and space. Realizing that the building must perform more than the function of an industrial operation, the goal here was to achieve an architectural environment that will promote interest in one's work." To this the architects add, "It was felt that the office section should show off the furniture in a warm, friendly atmosphere within and without the building."

Essentially, the structure of the building is composed of steel columns supporting structural glue-laminated wood beams and joists. The warehouse-factory section has walls of precast concrete with exposed aggregate; the office section is enclosed with glass, stained redwood, and a decorative copper screen. A system of thin vaulted plywood panels is used for roofing the central arcade of the office portion of the plant.



Morley Baer photos



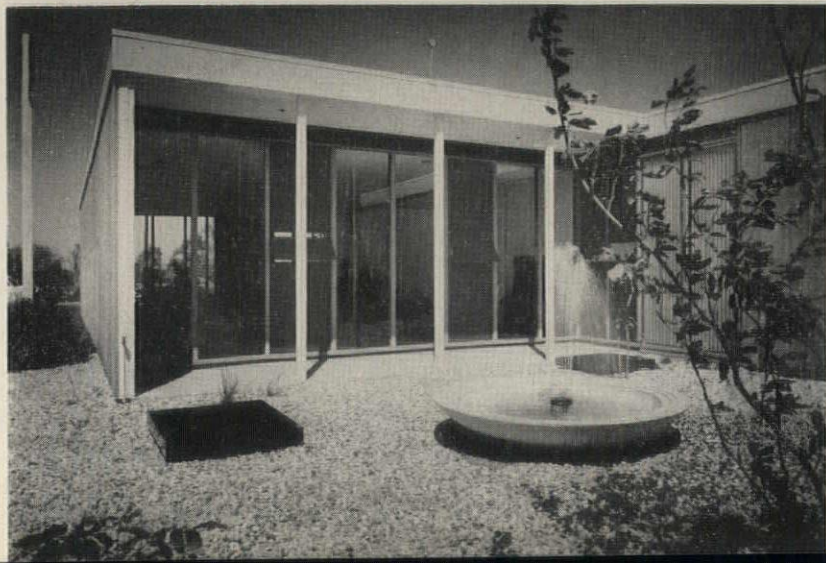
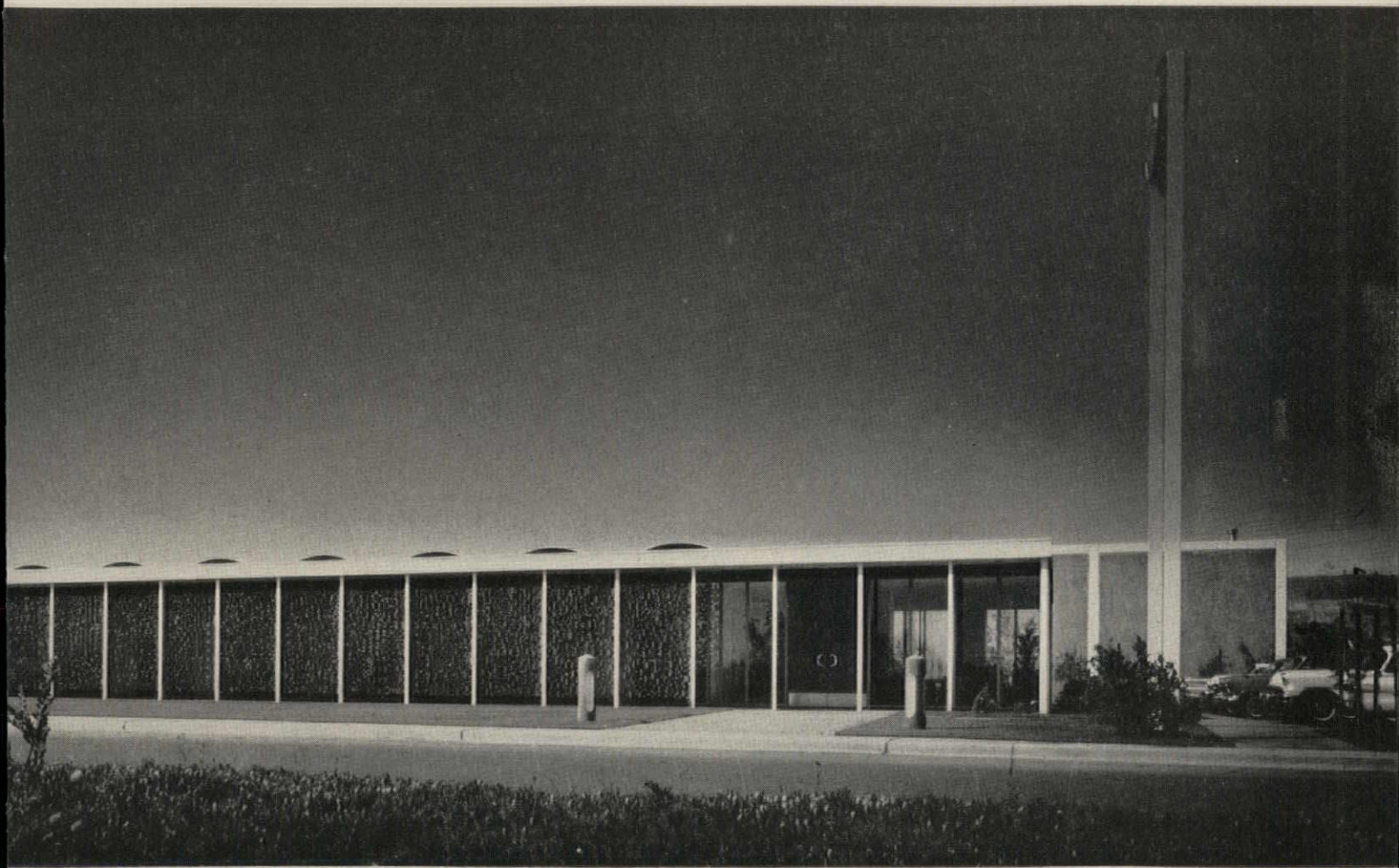
DUX, INC., PLANT AND OFFICE, BURLINGAME, CALIF.

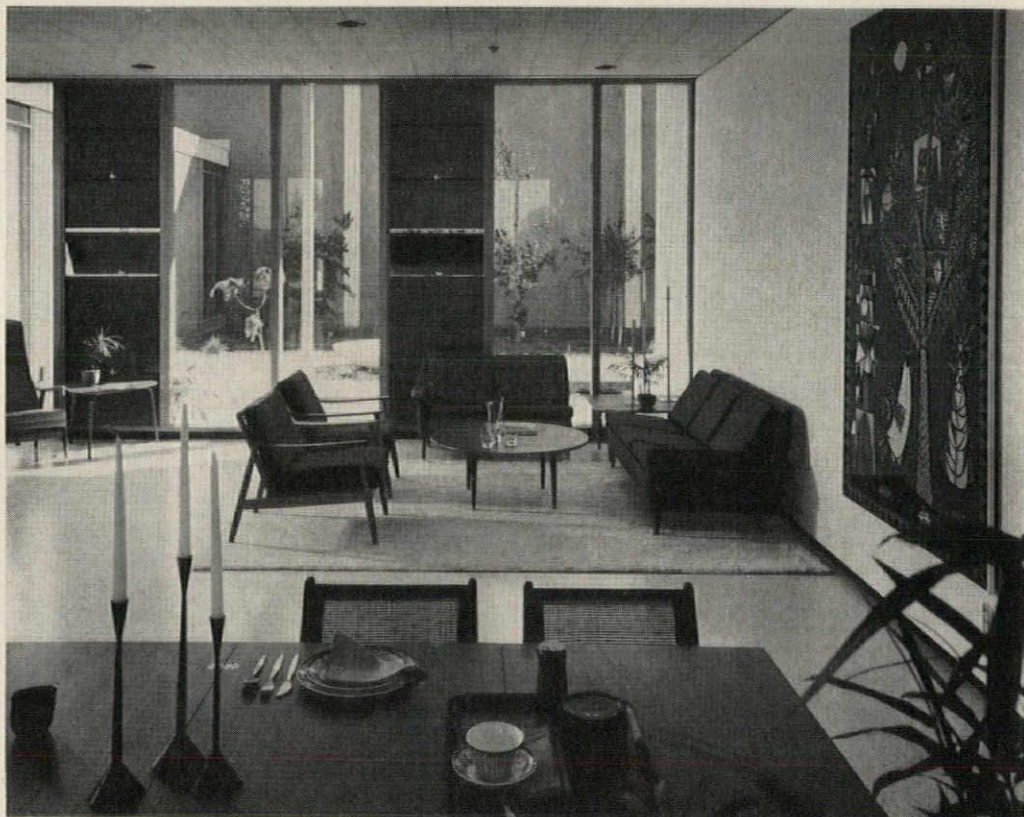
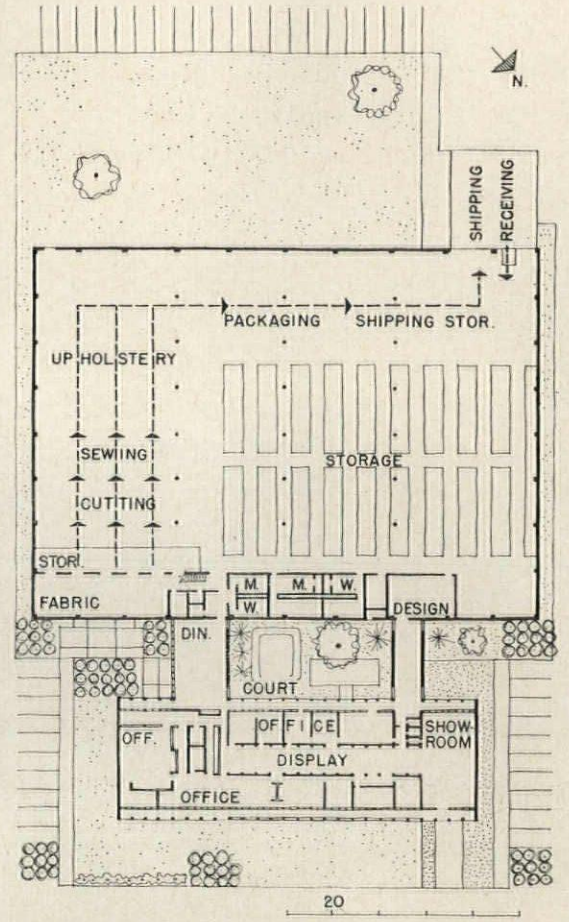
ARCHITECTS: *Knorr & Elliot*

STRUCTURAL ENGINEER: *Stefan J. Medwadowski*

LANDSCAPE ARCHITECT: *Richard Haag*

CONTRACTOR: *Associated Construction Co.*





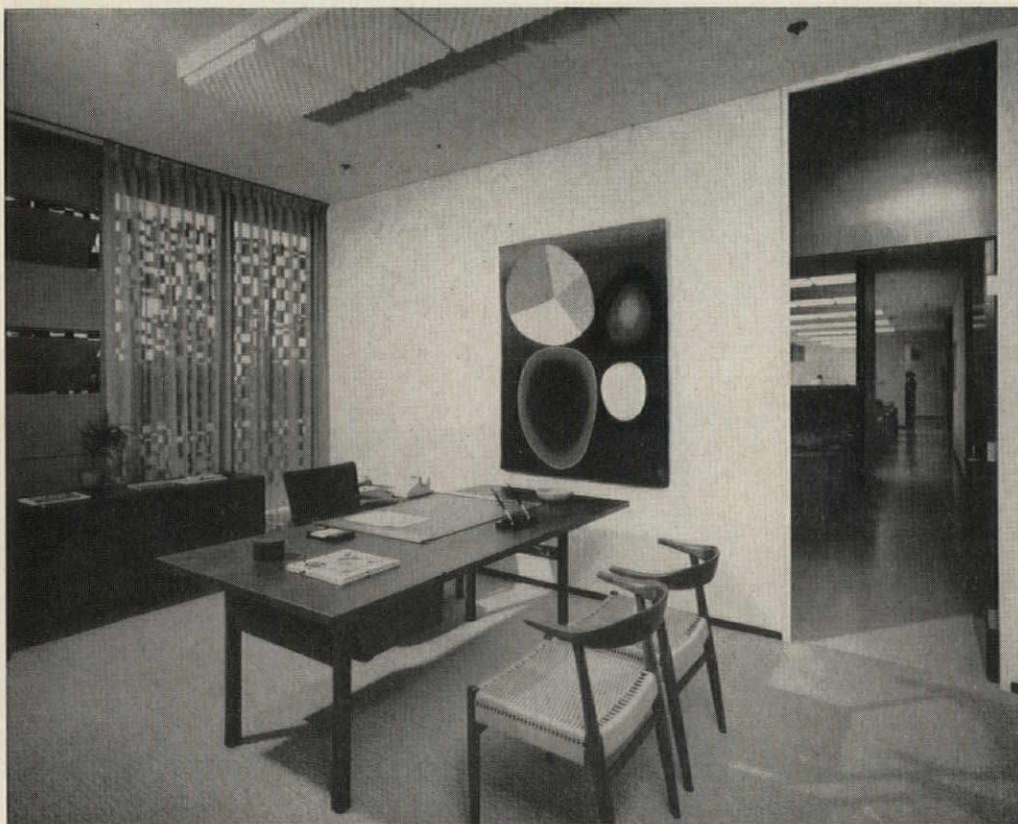
Industrial Buildings

Furniture Plant and Office

The two views of the interior arcade (above, left and right) give some indication of the special character made possible by the use of light plywood vaults. These illustrations, together with the others shown, are representative of the warm residential quality achieved in the interiors, a character which seems highly functional and appropriate in a building of this type and purpose. The plan shows the simple division of functions within the building. Primarily, this consists of an office-showroom element, connected with a warehouse-production area by courts and covered multi-purpose corridors. The factory section is functionally subdivided into storage and production areas

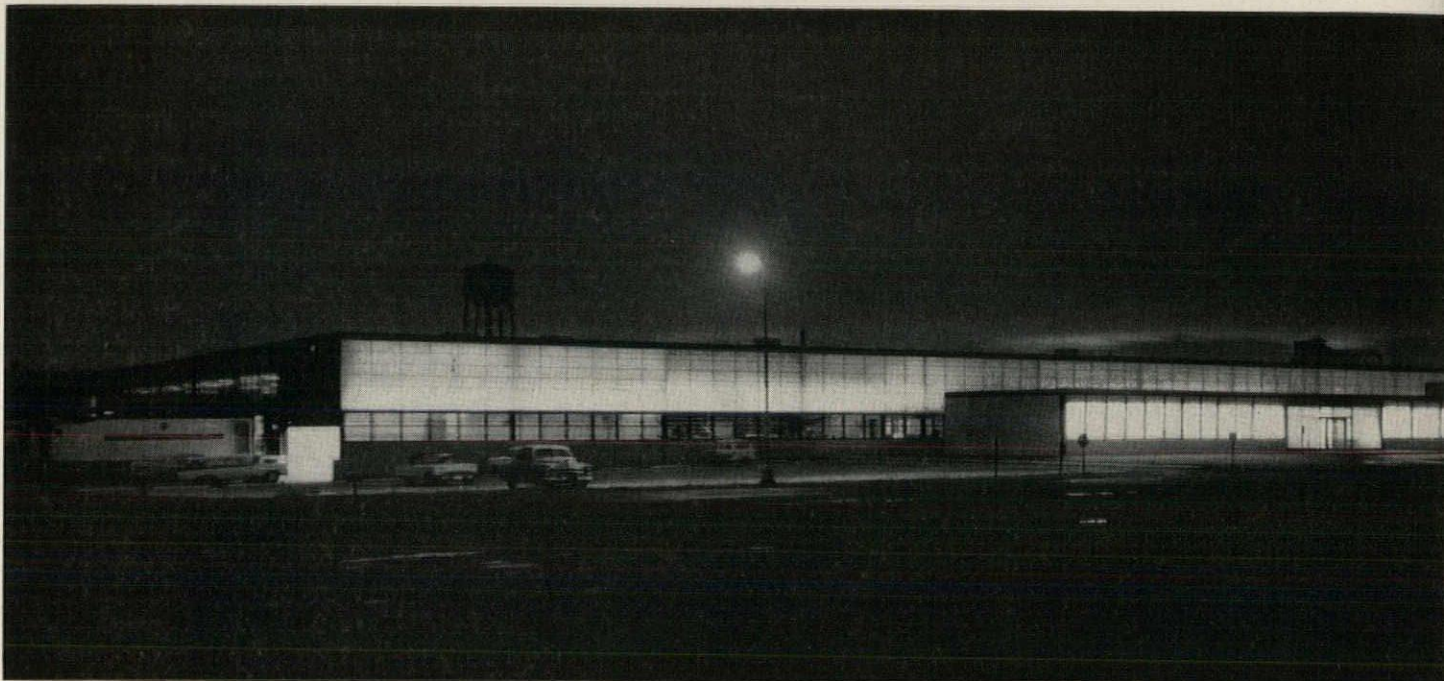


Morley Baer photos

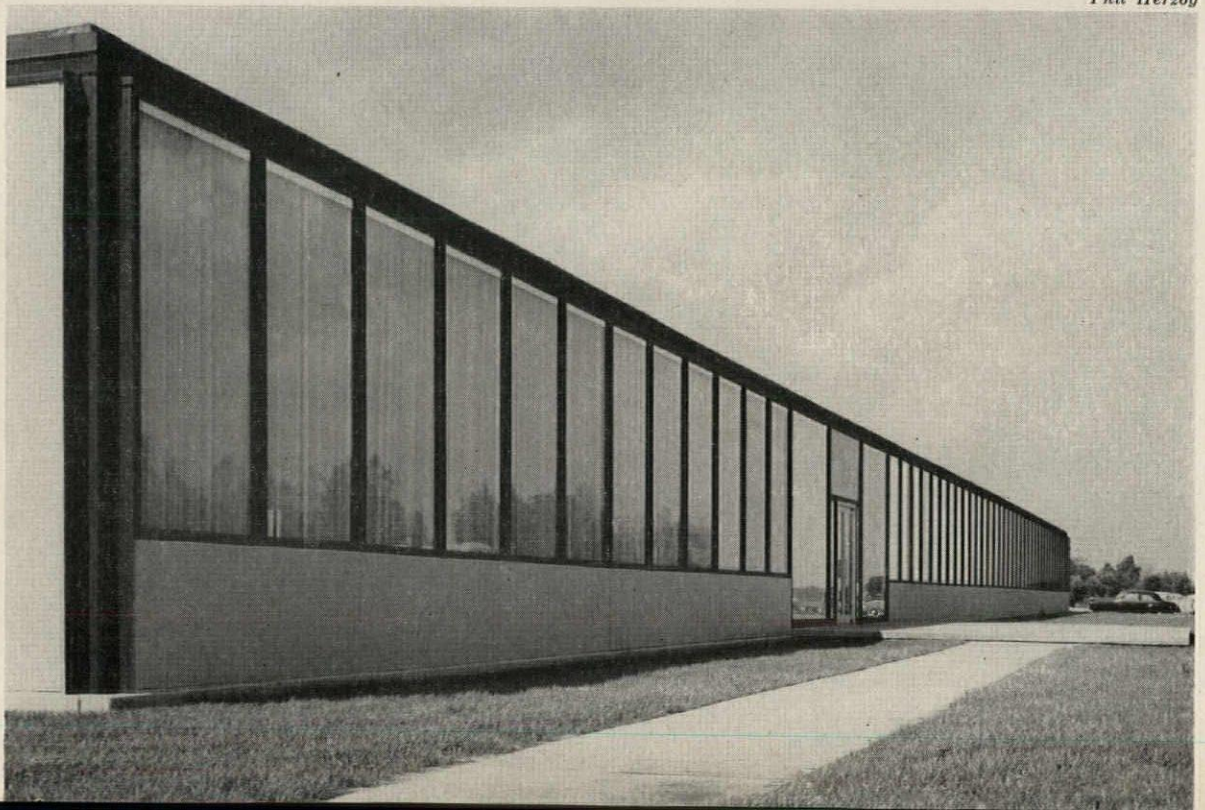


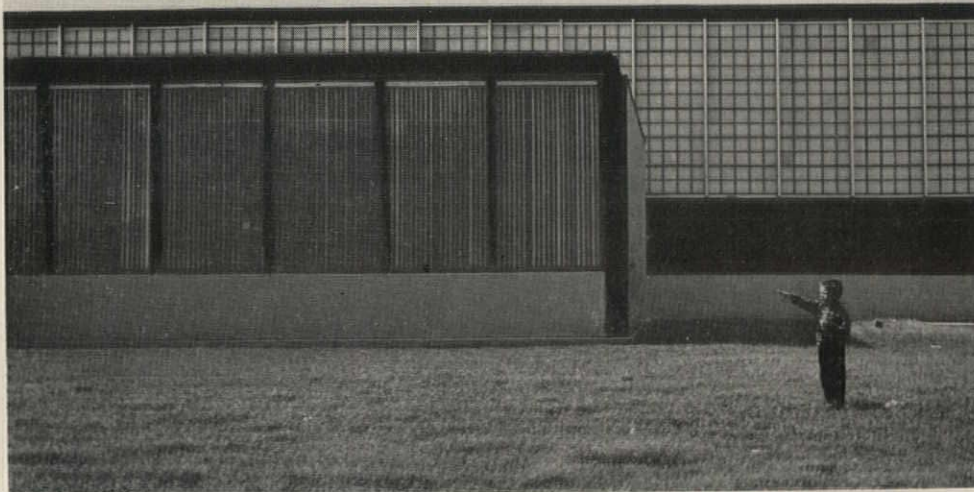
GLASS TILE ENCLOSED PAPER PLANT

Thin glass tile, set in an aluminum grid, forms a major portion of the exterior wall of this new plant, built to answer the demand for corrugated boxes

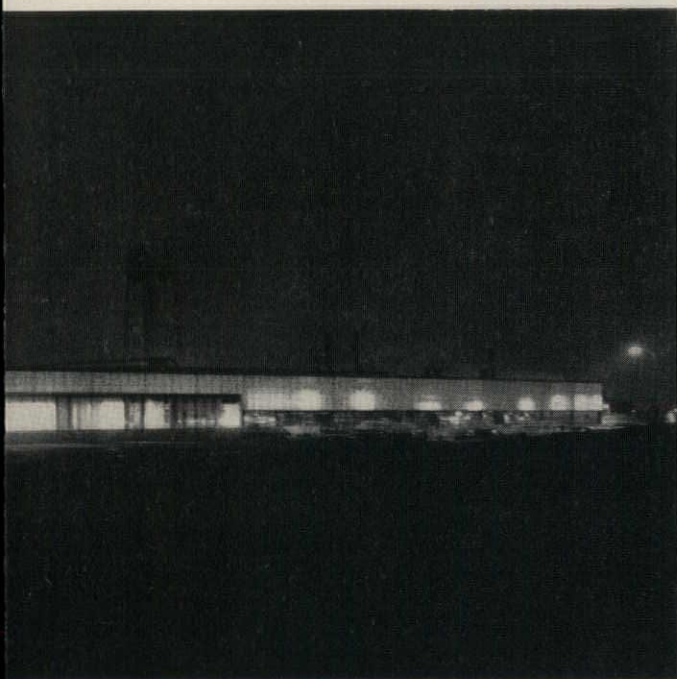


Phil Herzog





Phil Herzog



Bill Engdahl, Hedrich-Blessing

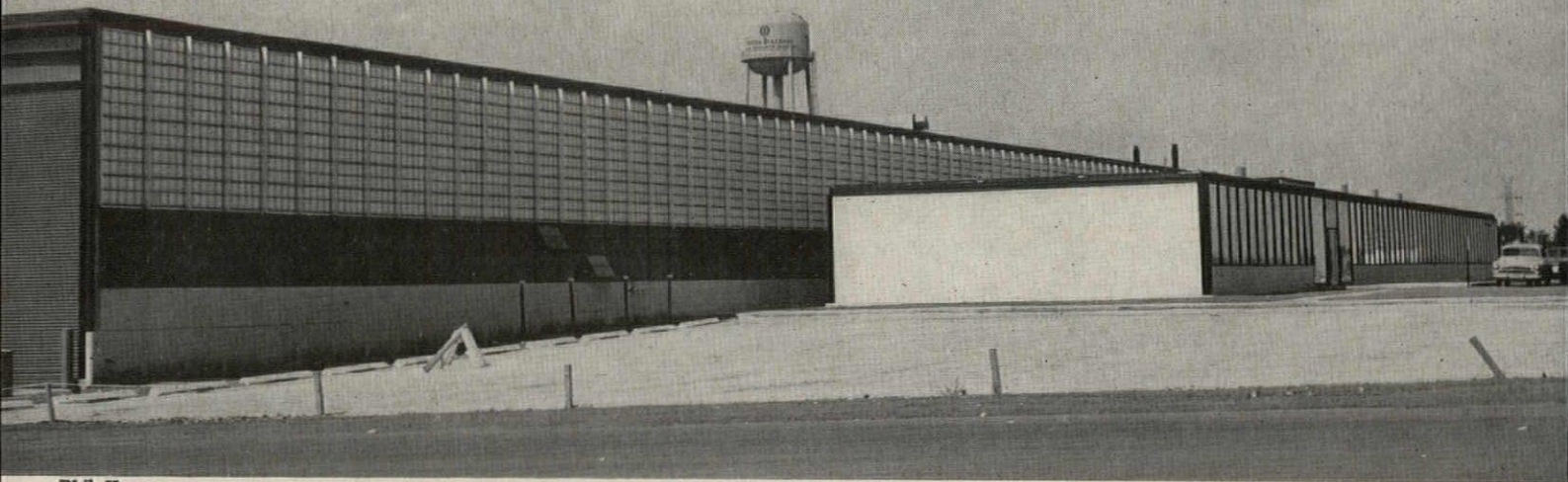
OWENS-ILLINOIS GLASS COMPANY, PAPER PRODUCTS
DIVISION PLANT, CHICAGO, ILL.

ARCHITECTS & ENGINEERS: *Skidmore, Owings & Merrill*
ASSOCIATES: *Owens-Illinois Engineering Dept.*
CONTRACTOR: *G. C. Luria Engineering Company*

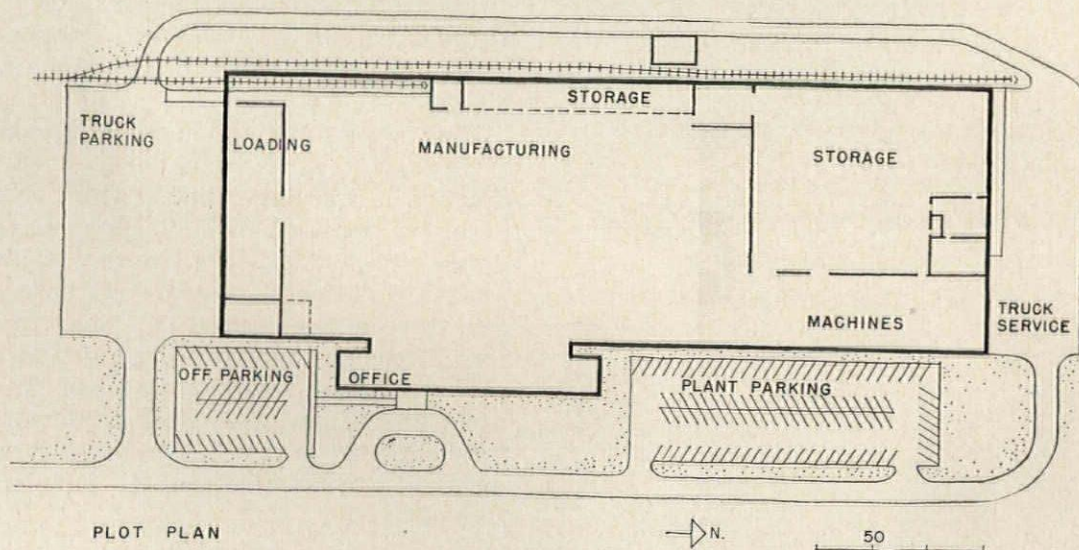
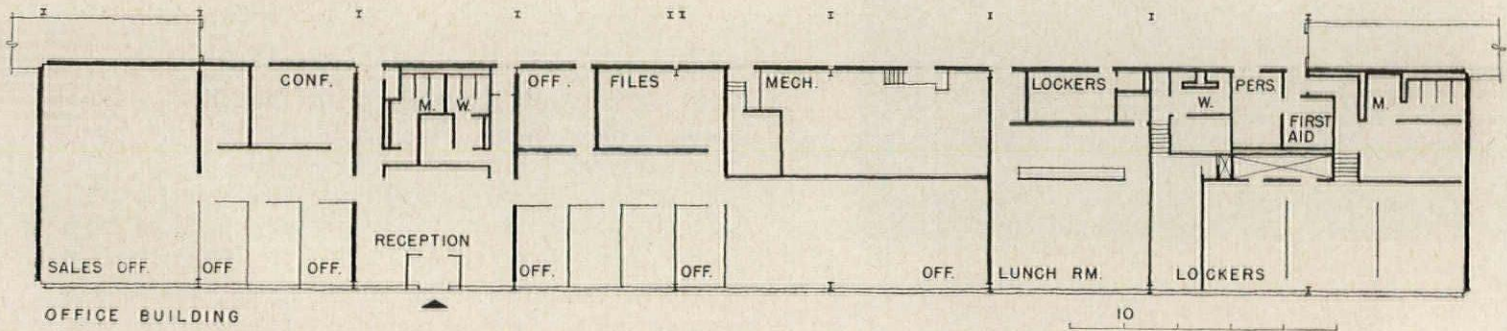
Working in close harmony with the client's engineering department, the architects of this plant have provided a highly efficient solution to the problems of automation (at full capacity, the 225,000-sq-ft plant will employ only 350 people) and high speed production (about 4500 sq ft of corrugated board per minute). The plant layout includes a pleasant office wing, somewhat separated from the production area for comfort and quiet, but closely related to it for ease of supervision. An extra dividend in the design is the opportunity for showing off one of the company's products in its largest single installation, the long wall of thin glass block (tile) prefabricated into 2- by 5-ft aluminum-framed panels.

Most of the production in this plant will consist of corrugated paper boxes for a variety of products, ranging in carrying capacity from about one pound to the two ton size. Demand for these containers has grown rapidly, and they are now rapidly replacing wooden containers for many purposes. Other products to be manufactured here may include such diverse items as concrete forms, in addition to boxes.

The building structure is steel frame with bar joists and a steel roof deck. Exterior walls, other than the curtain wall, are constructed of precast concrete panels. The roof is completely insulated with glass fiber.



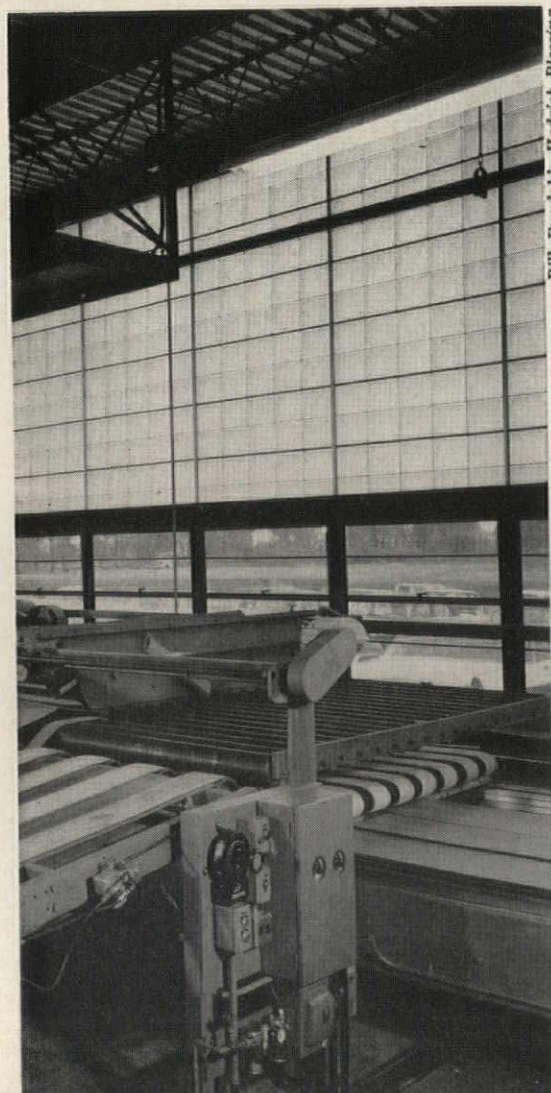
Phil Herzog



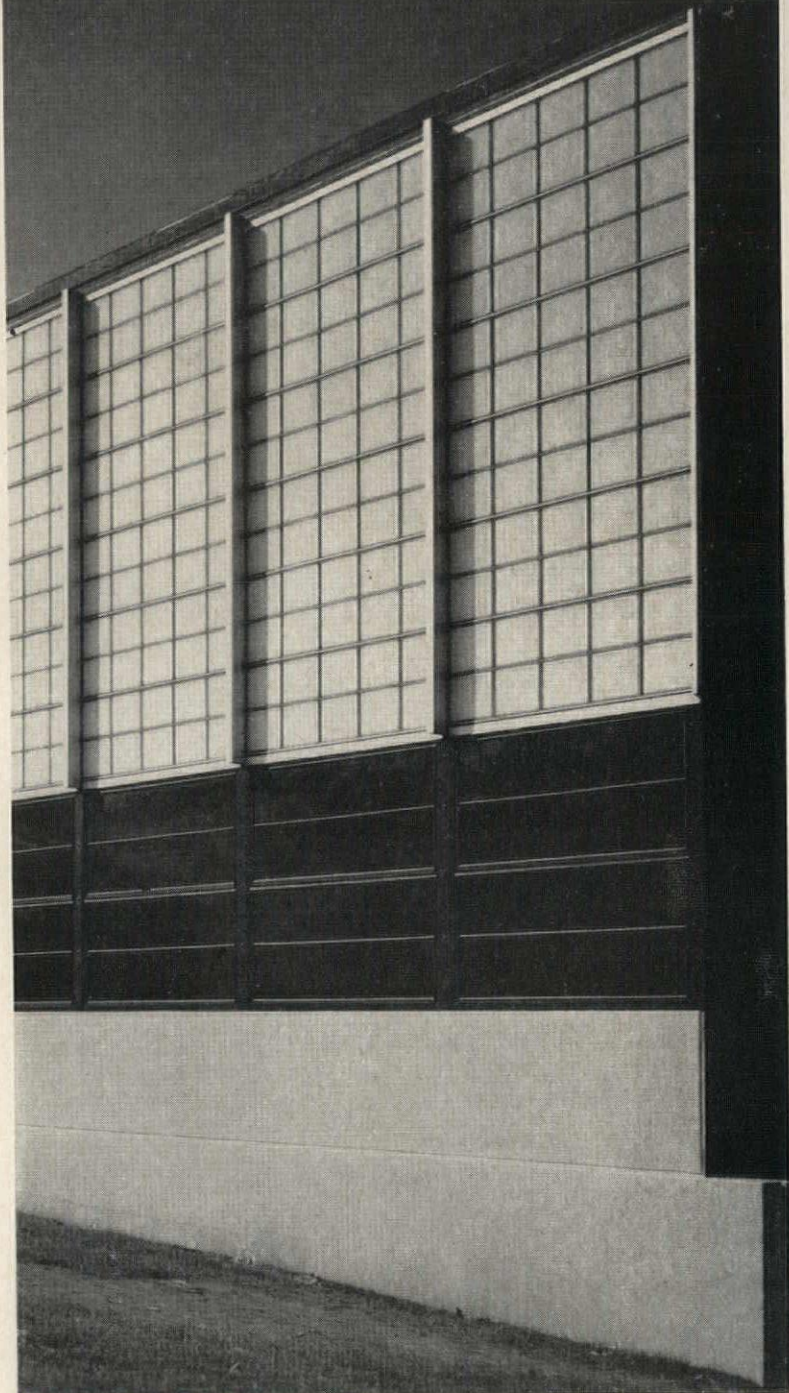
Industrial Buildings

Paper Products Plant

In the illustration (left) may be seen the projecting office wing with the thin glass block curtain wall of the plant behind. A closeup of an exterior corner of this wall is shown below. Its appearance on the interior of the building is shown in the photograph at the right; some of the automatic machinery appears in the foreground. The over-all plan is simple and well-studied for utmost efficiency of operation. In the large-scale plan of the office wing may be seen the quite complete facilities for sales and general office personnel, locker rooms and other facilities for plant workers, and the lunch room. The photograph, below, right, shows the 15 truck capacity loading dock. Additional shipping flexibility is provided for by a rail siding which extends into the plant proper

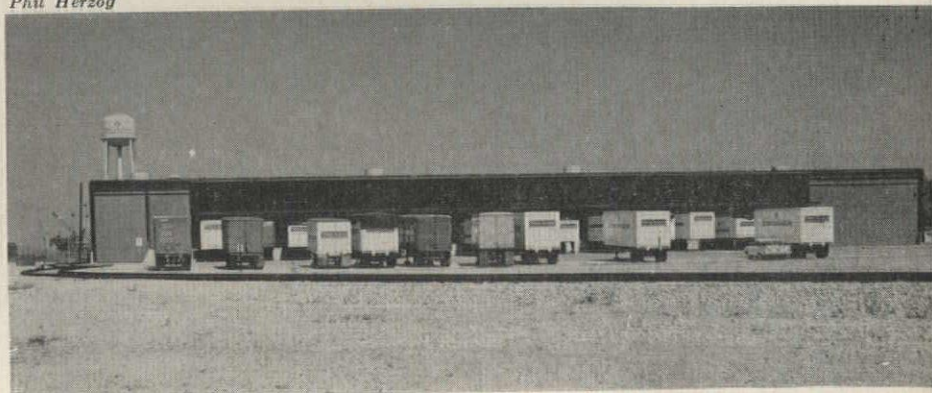


Bill Engdahl, Hedrich-Blessing



Hube Henry, Hedrich-Blessing

Phil Herzog

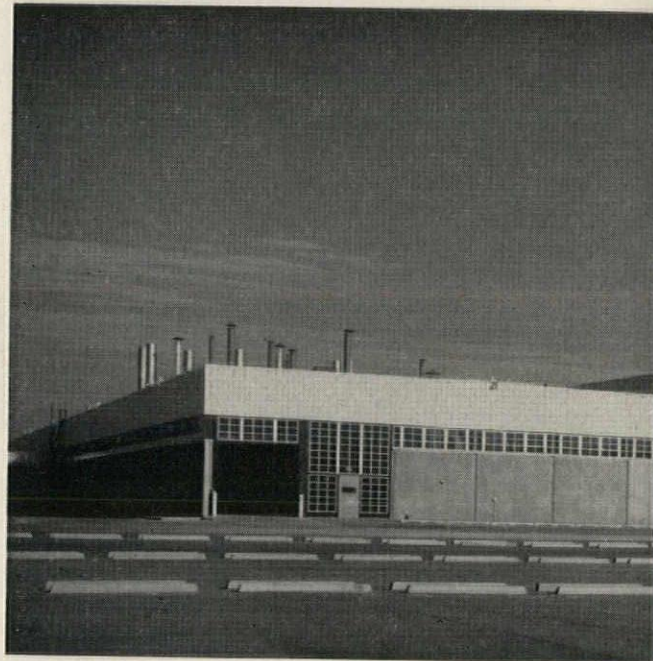


COMPLEX PROBLEMS SOLVED IN PLANT

The programming, organizational, and planning problems involved in the design of a large plant for a major auto company have been efficiently handled here

In this huge new assembly plant for one of the giants of the American automobile industry, may be seen how an architectural and engineering firm geared to this sort of work can produce an efficiently functioning complex with the architectural attributes necessary for modern production. This plant is big—it contains about 1.4 million sq ft of floor area in the assembly building alone. In addition, there are numerous smaller auxiliary buildings, including an office, a power house, a paint mix building, two guardhouses, and a new car checkout center. Other facilities provided are a complete industrial waste treatment system, an oil tank area, an electrical substation, and an oxygen-acetylene building. The problems solved here are those which must be solved in any industrial building, regardless of its size, but here, the problems multiply and expand with the huge scale and complexity of the operations to be performed.

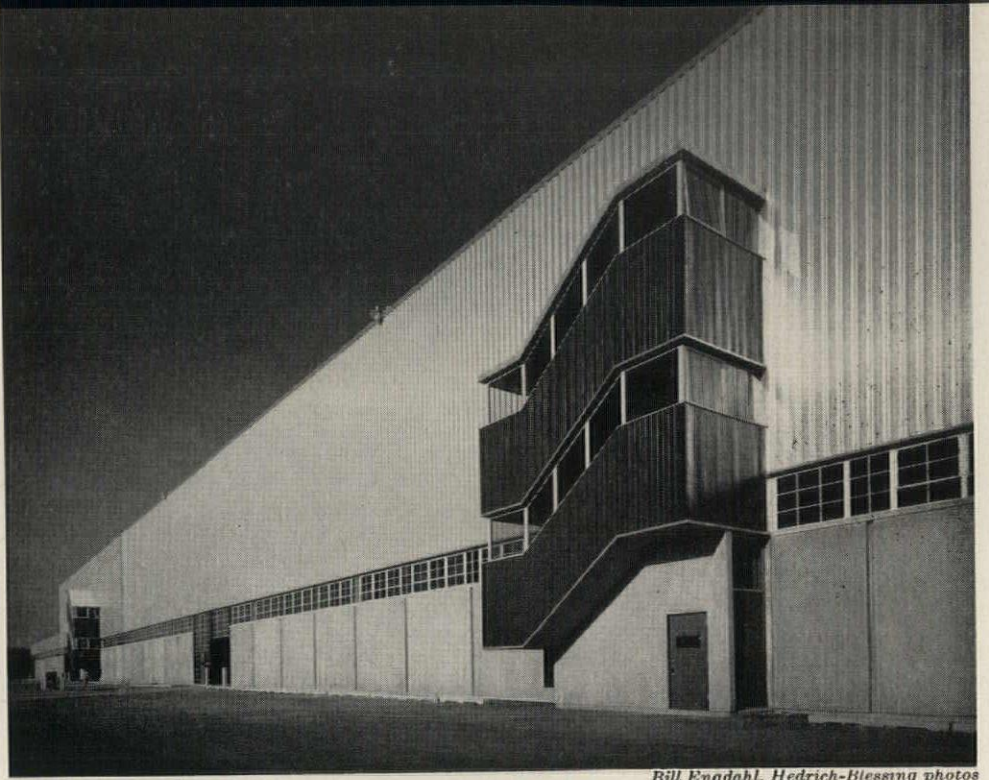
It is to the credit of the team of professionals who designed the plant that the final result works, yet retains some measure of human scale; it functions admirably as an enclosure for high-speed, present-day production, yet provides for the comfort of the great numbers of workers who must spend their working lives inside. As is usual in the U. S. for a plant of this scope, the structure is steel frame. Less usual, perhaps, is the wall which is composed of a lower band of precast concrete panels, 13 ft 6 in. high, a middle band of continuous windows, and an upper band of aluminum siding. A 15-ft-wide strip of sash with an emergency door in the center is extended down to the floor at 225-ft intervals along the wall.



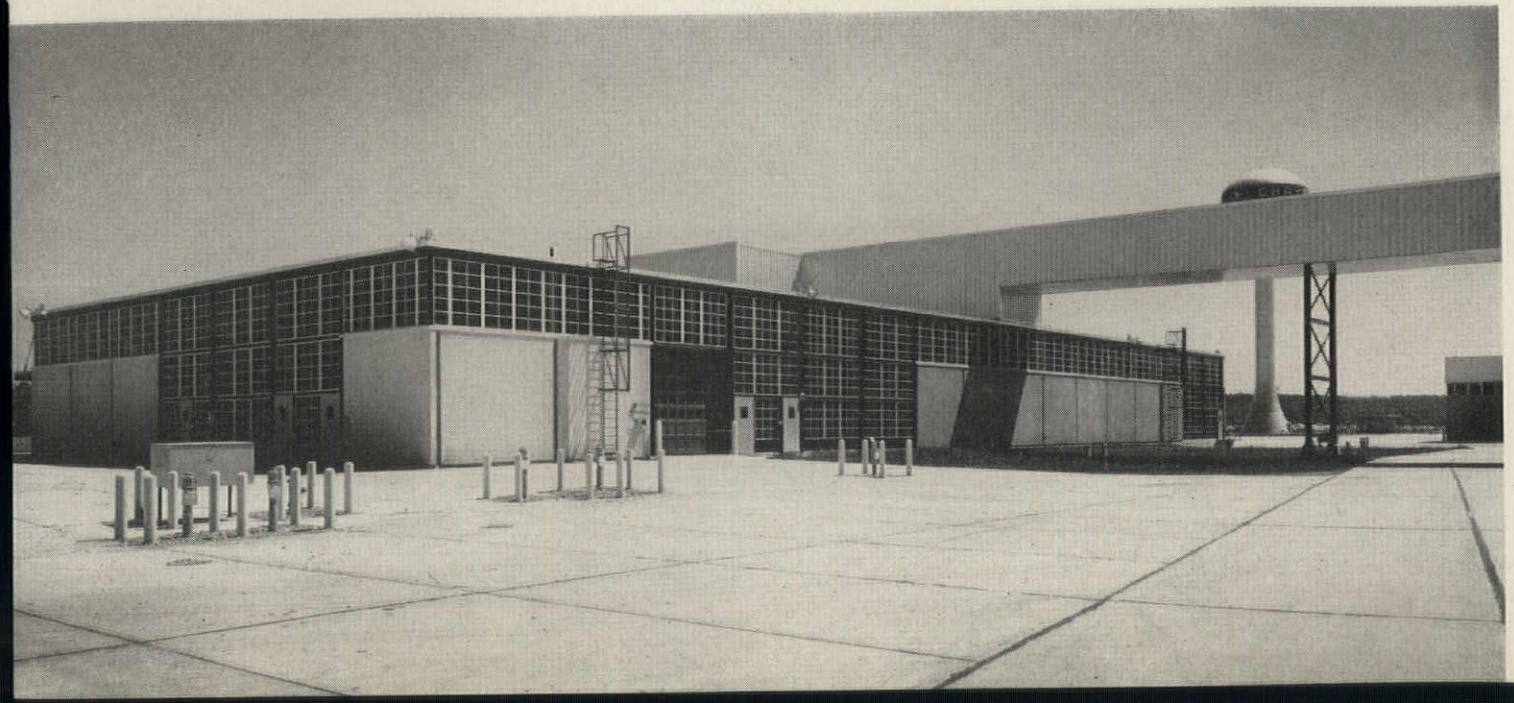
ASSEMBLY PLANT, CHRYSLER CORPORATION,
ST. LOUIS (FENTON), MISSOURI

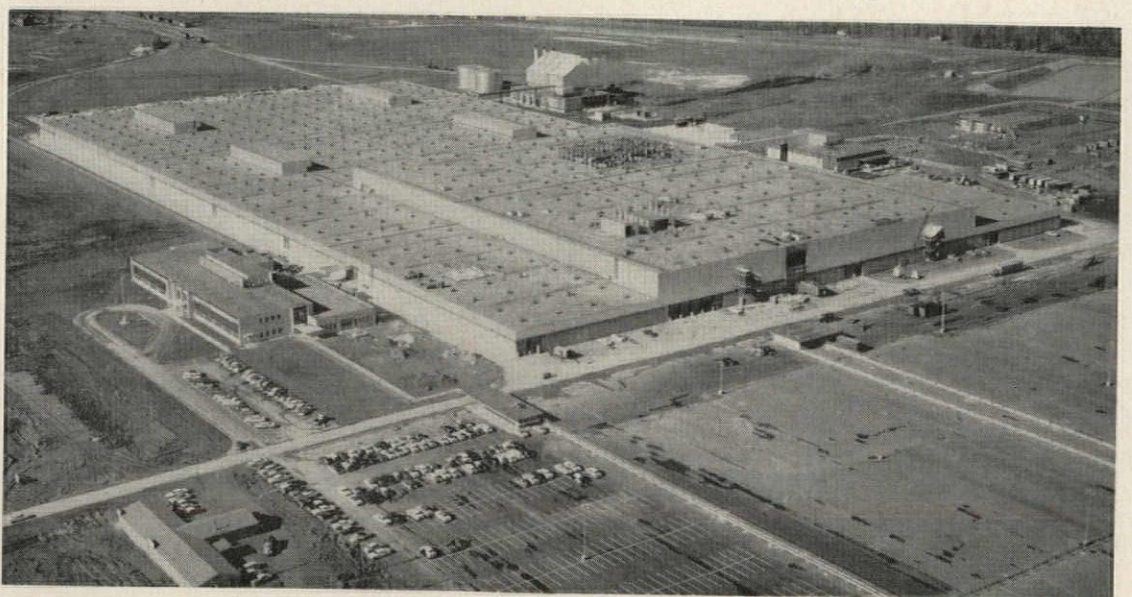
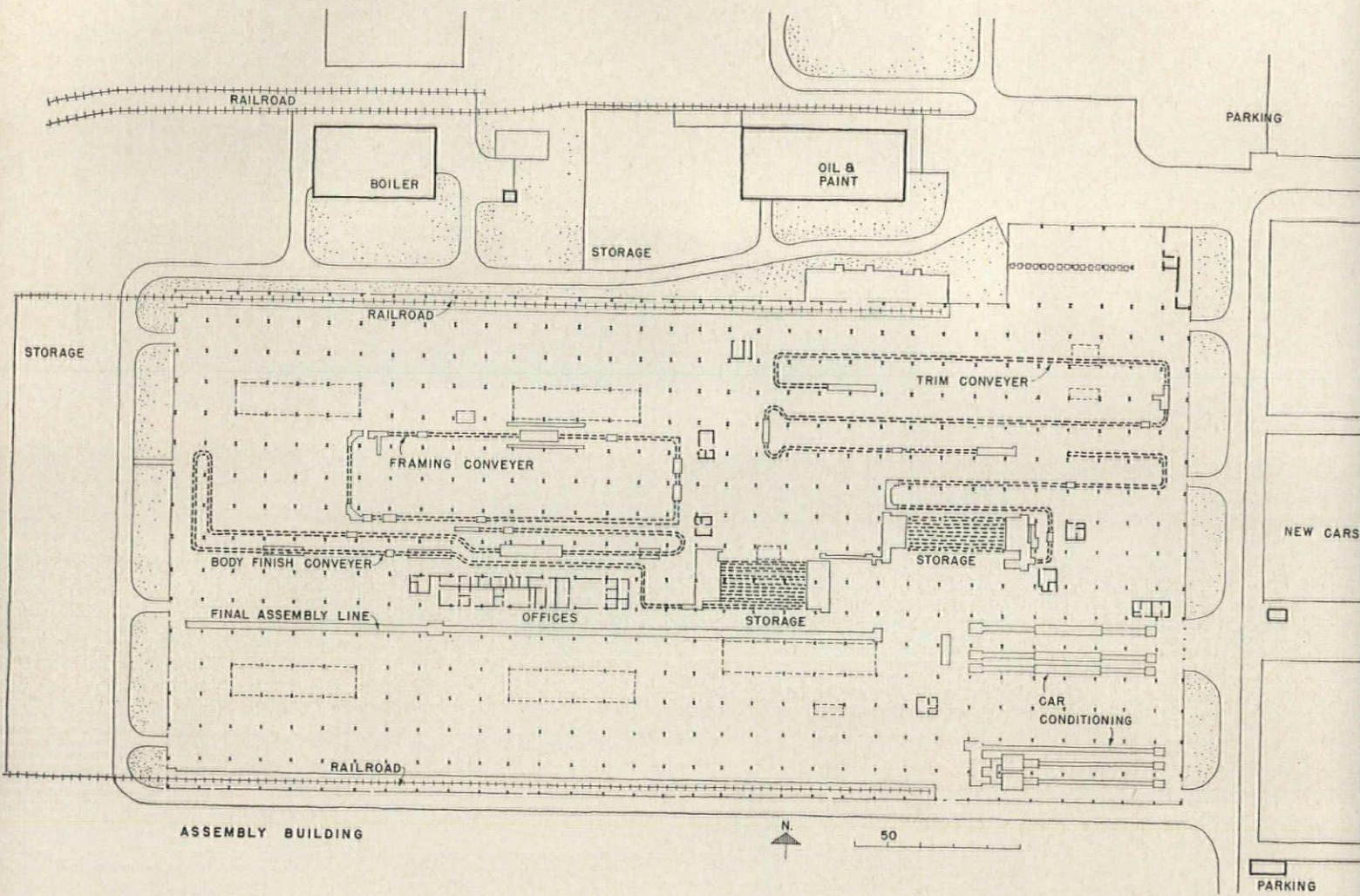
ARCHITECTS & ENGINEERS: *Albert Kahn
Associated Architects & Engineers, Inc.*

CONTRACTOR: *H. D. Tousley Co., Inc.*



Bill Engdahl, Hedrich-Blessing photos



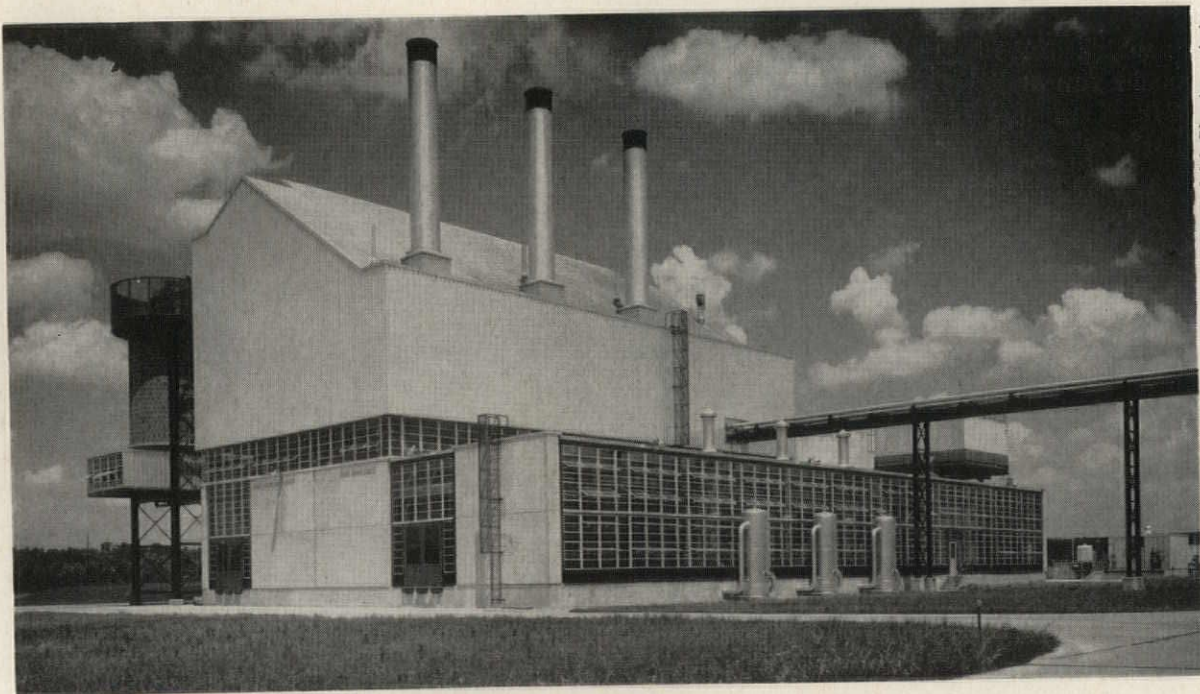


Industrial Buildings



Assembly Plant

The plan and aerial photograph across-page serve to indicate the size and scope of this large plant. Included in the present project are the assembly plant and all of its auxiliary buildings except the administration building at the front (designed by Sverdrup & Parcel; Fruin Colnon Co., Contractor). Right, top: plant protection building (guardhouse). Right, center: a new checkout building. Below: power house. The assembly building is one-story, but includes a large mezzanine, which may be seen in the aerial view. To the right of the assembly building in this view is shown the large parking lot (approximately 4500 car capacity)



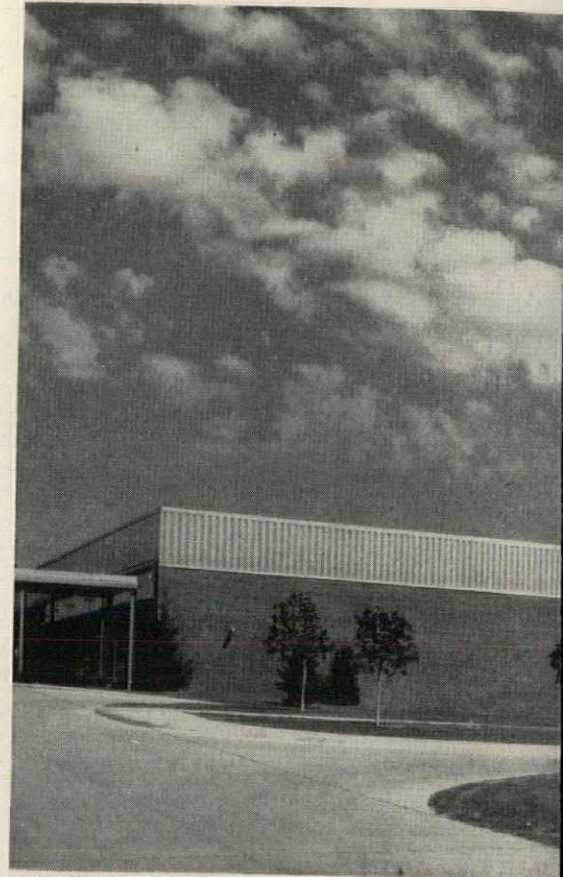
Bill Engdahl, Hedrich-Blessing photos

STANDARD UNITS FOR CONSISTENCY

A system of coordinated materials, sizes, and modules has been used for bringing order into these buildings for the storage and distribution of automobile replacement parts

In addition to the obvious problems of material handling involved in the design of a large (in excess of a million sq ft) distribution center of this sort, the architects felt that considerable effort should go into the provision of consistency of design in all of the elements of the complex. They wanted to provide this consistency, within the framework of attractive landscaping and appearance, on a human scale. In order to achieve these goals, the architects established a common denominator, used throughout the building, of coordinated sash, door, and sill heights and sizes. In so far as was possible, the materials chosen were those which could be used throughout, except where unusual functional requirements dictated otherwise. Materials handling considerations in the design of this plant are based on the principle of continuous flow of materials in, through, and out of the plant. To facilitate this, both long sides of the building are used for enclosed truck and rail docks. From these areas, many of the materials are moved entirely by floor conveyors, controlled electronically. Fork trucks and other means are used where necessary.

The distribution building is one-story with 50- by 50-ft bays, except for a one-bay-wide, two-story section at the north end. Since no cranes or other major overhead loads are used, the structure utilizes economical steel framing with a light steel truss roof. The office wing first story is reinforced concrete, with a steel frame second story. This construction was dictated by site considerations (the first floor is partially below grade).



Hube Henry, Hedrich-Blessing photos

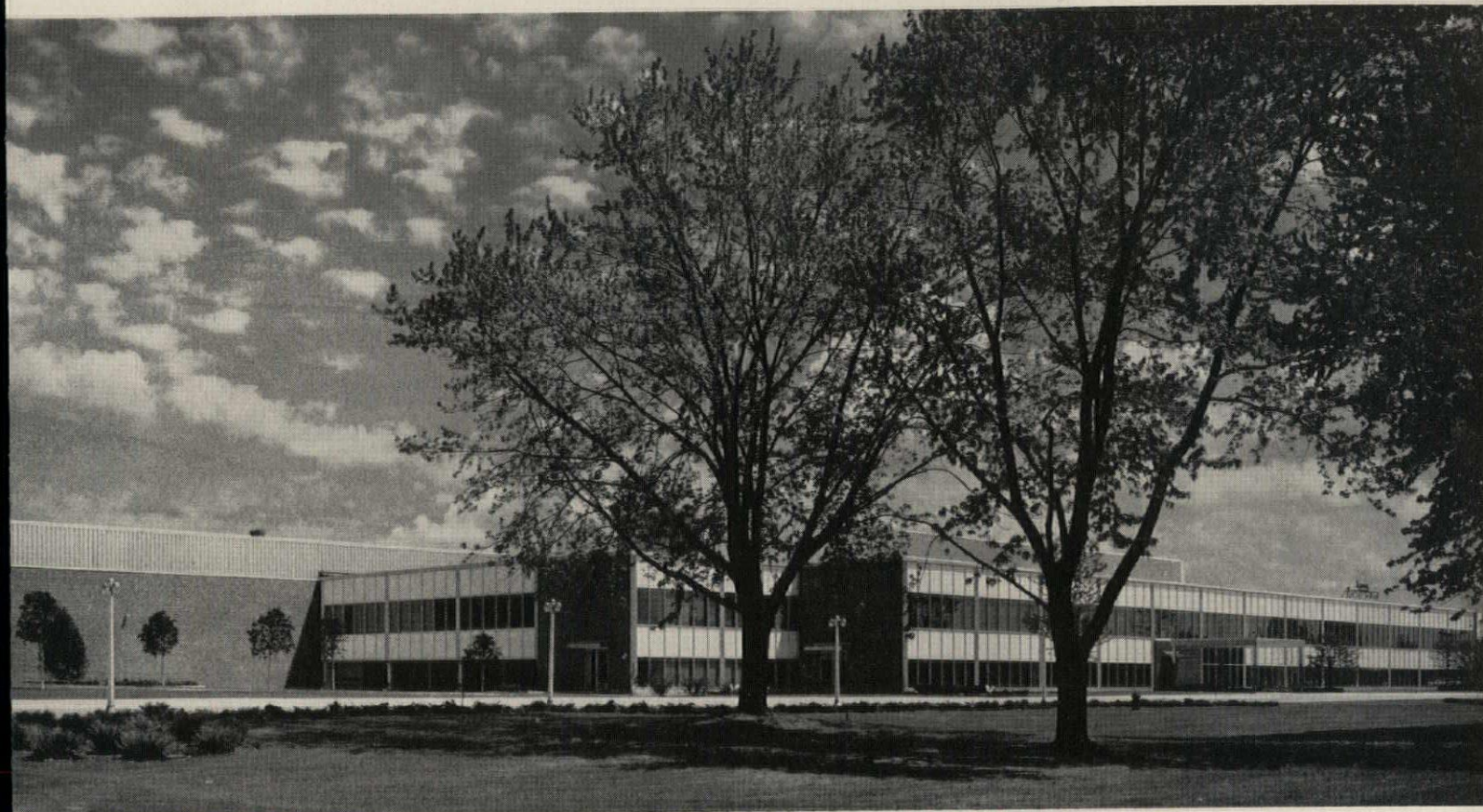


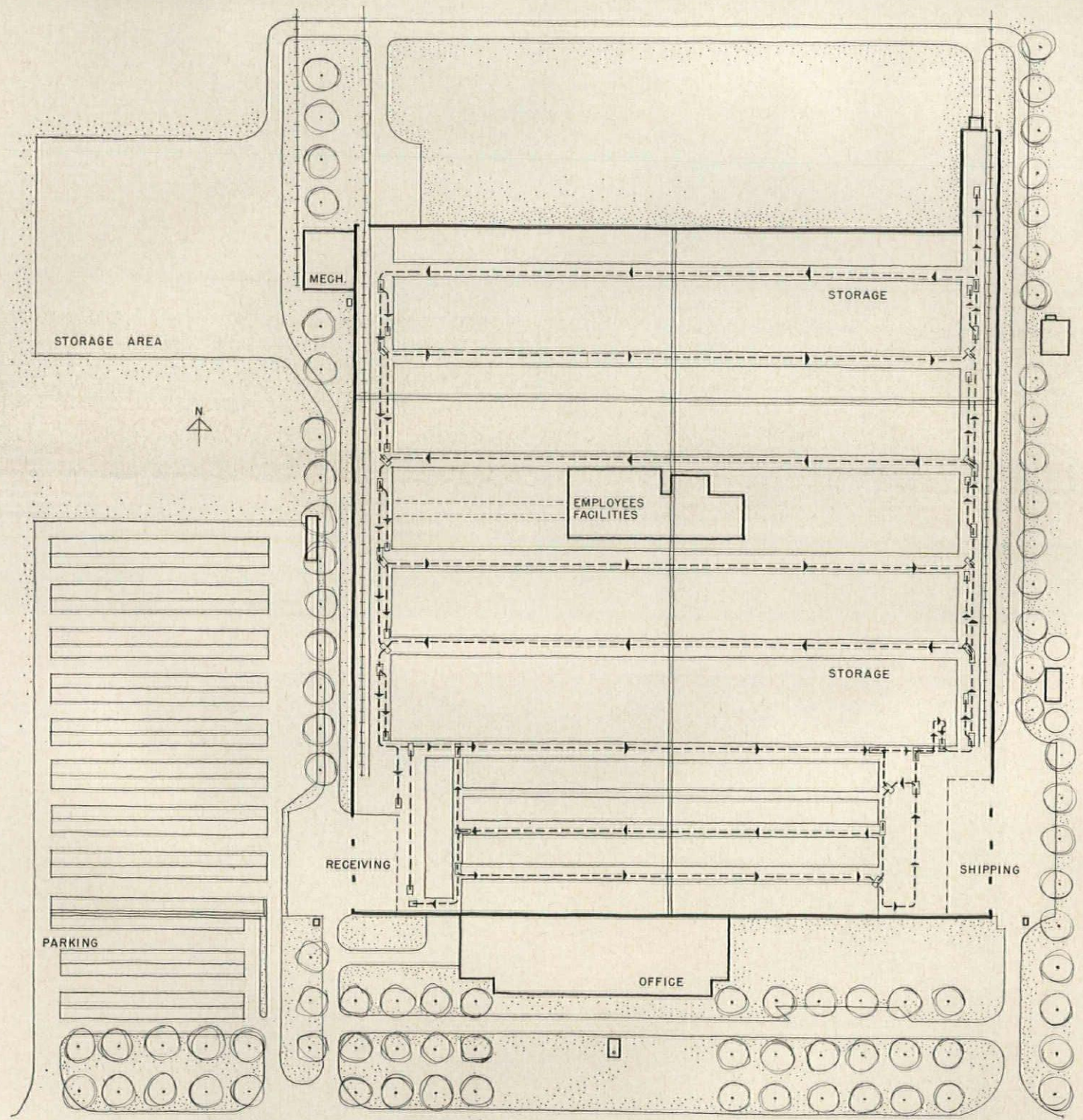
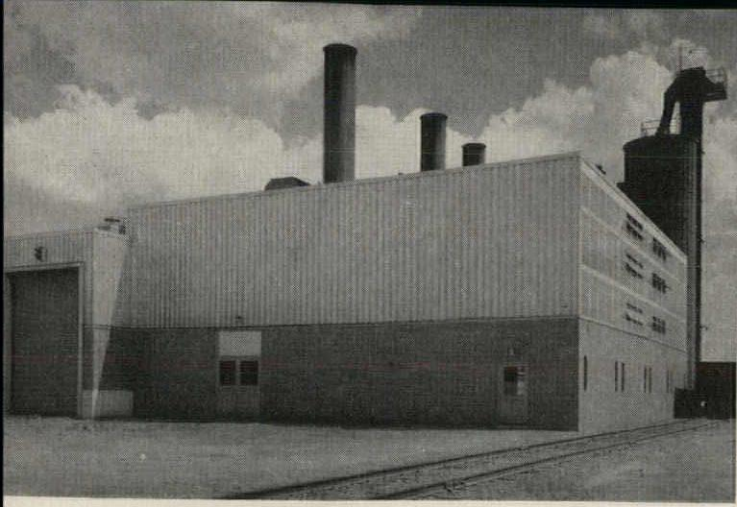
MAJOR SUPPLY DEPOT, CHEVROLET MOTOR DIVISION,

GENERAL MOTORS CORPORATION, FLINT, MICH.

ARCHITECTS & ENGINEERS: *Albert Kahn, Associated Architects & Engineers, Inc.*

CONTRACTOR: *The J. A. Utley Company*





Industrial Buildings

Supply Depot

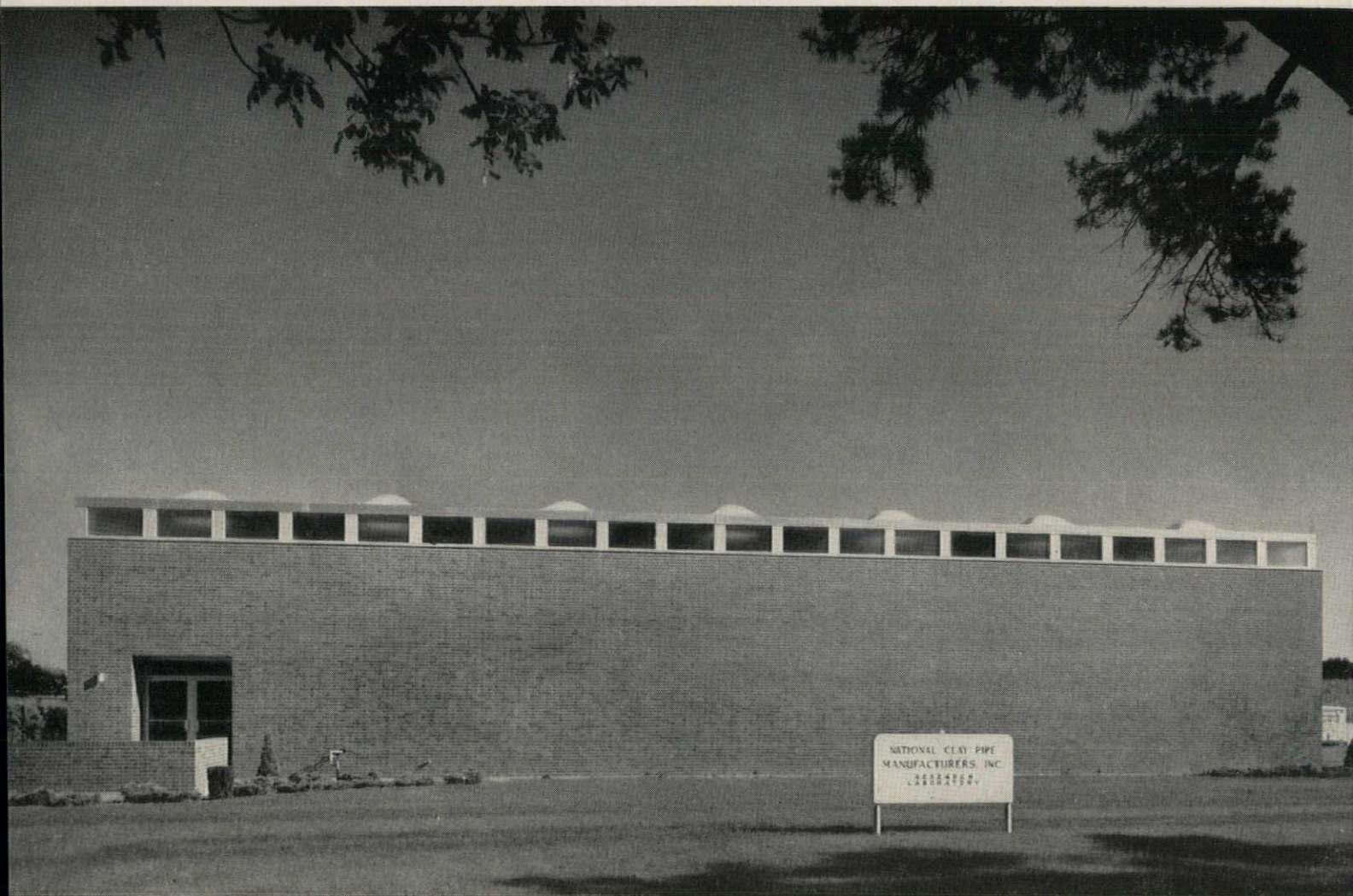
In the photographs across-page are shown the large power house for this plant and the main receiving entrance (a major consideration in a distribution center of this scope). On the plan may be seen the general patterns of the flow lines for incoming items, their progression through the space to storage points and finally to shipping. It may be noted that office functions are almost entirely segregated from those of the warehouse area. For convenience and ease of use, the facilities for warehouse employees are located near the center of the area in which these employees work. The illustrations below and right show the entrance lobby and reception area of the main section office

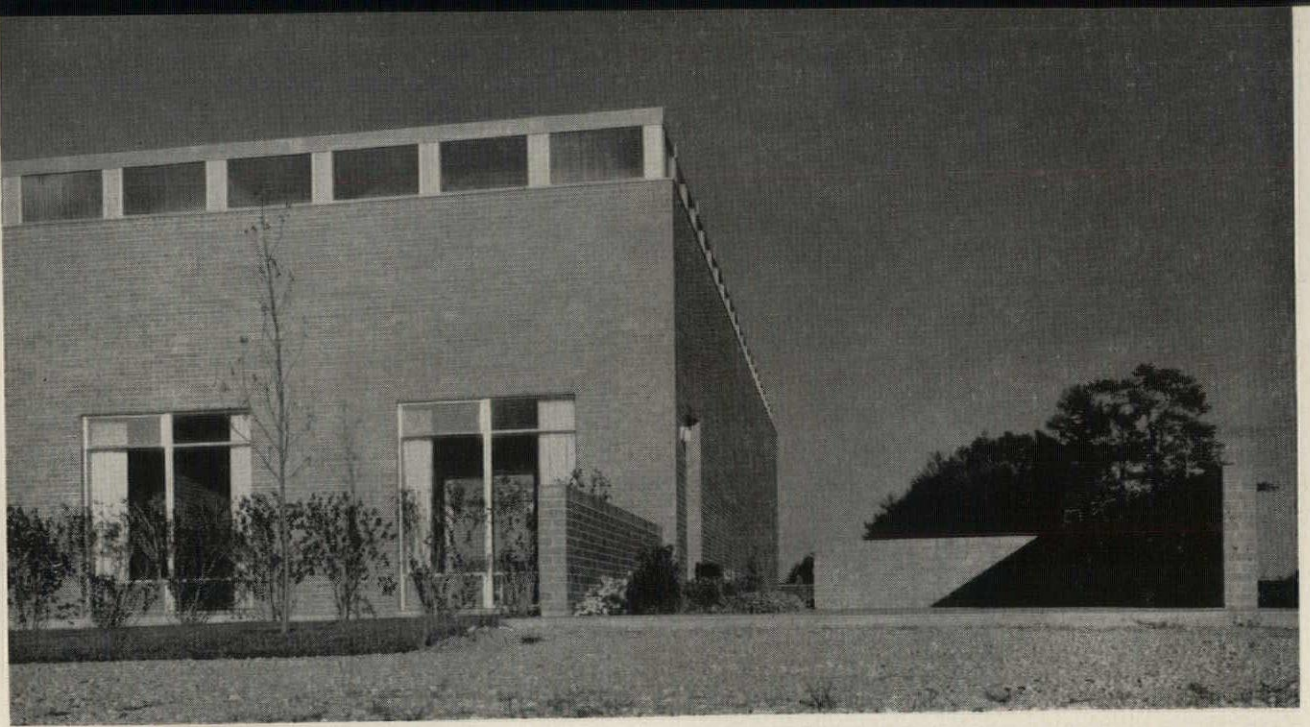


Hube Henry, Hedrich-Visiting

ECONOMICAL DESIGN FOR RESEARCH

In this association laboratory, provisions are made for research into the uses and improvement of clay sewer pipe, within a simple, highly flexible, well-illuminated space





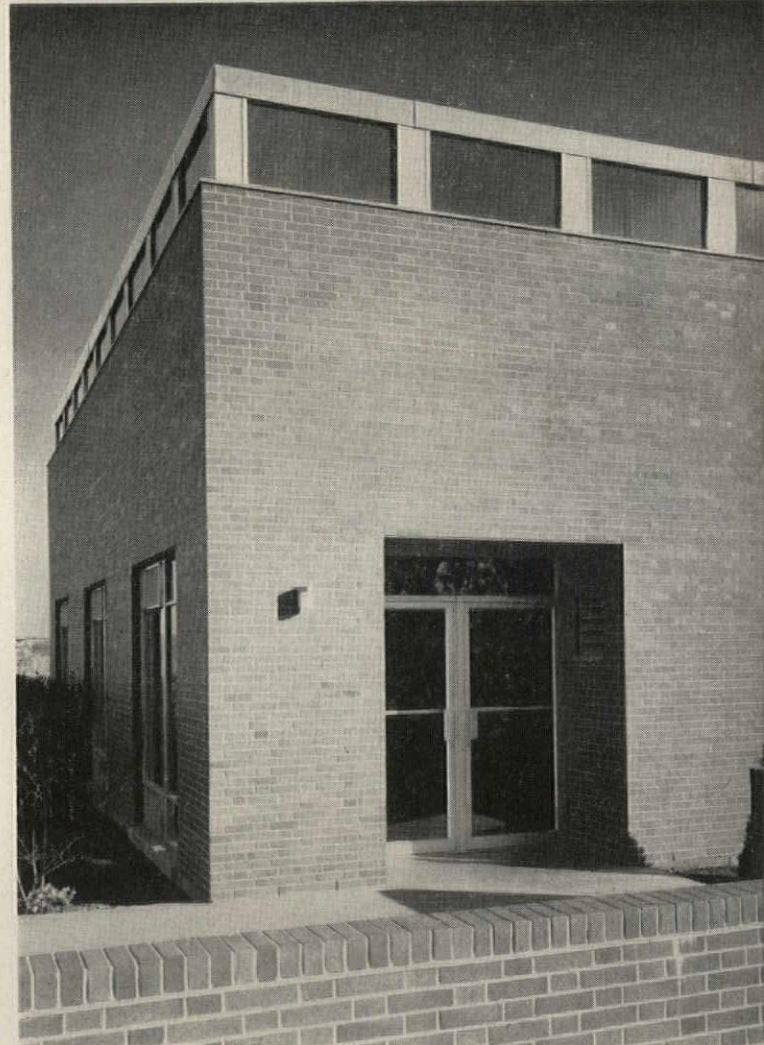
D. M. STRICKLAND RESEARCH LABORATORY, NATIONAL CLAY PIPE MANUFACTURERS, INC., CRYSTAL LAKE, ILL.

ARCHITECTS: *George Fred Keck-William Keck*

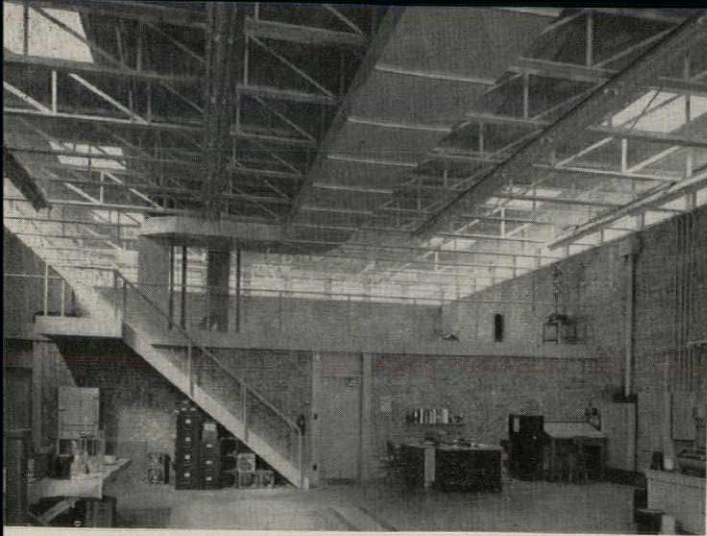
CONTRACTOR: *Rieke Construction Co.*

With extreme economy of means and materials, the architects of this small research building have provided their clients with space for the types of experimental work on clay pipe and related products to be handled. Major program requirements included open floor area which could be used for various large scale experiments and mockups, a high level of natural and artificial illumination, and adequate wall space for the placement of laboratory benches and equipment. Therefore, the architects came to use the present scheme, which is composed of a large open laboratory area with all offices and auxiliary spaces grouped together at one end. To provide the required amount of wall space, cavity walls of brick were used without windows, except for the high continuous course, bar joist high, which runs around the building. To supplement the natural light from this source, a number of plastic dome skylights were introduced in the roof.

Extreme care was taken in the selection of the brick and the bond used in order to insure that this work would represent the highest quality of materials and workmanship possible today. Special mechanical and electrical requirements provided for include conduits for electric, water, air, and gas services hung at the 8-ft level over the lab floor, an open sediment collector drain in the center of the floor, a high capacity electric panel to provide for future kiln installations, and a large exhaust fan in one of the skylights to remove heat from the kilns.



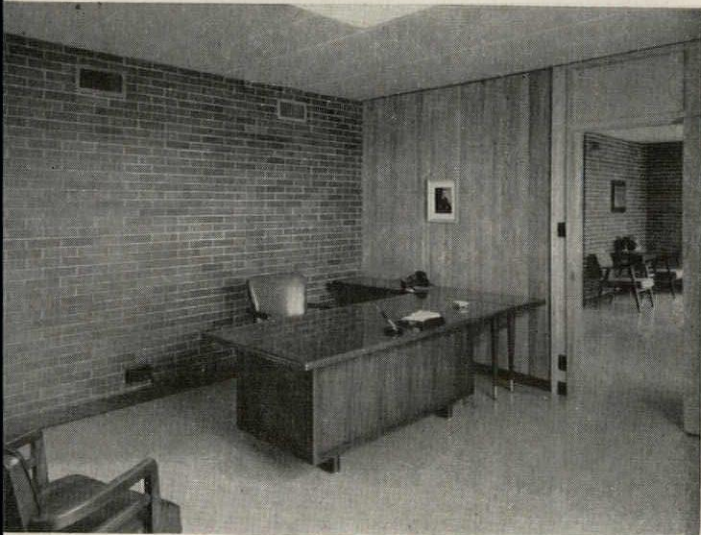
Herrin Studio photos



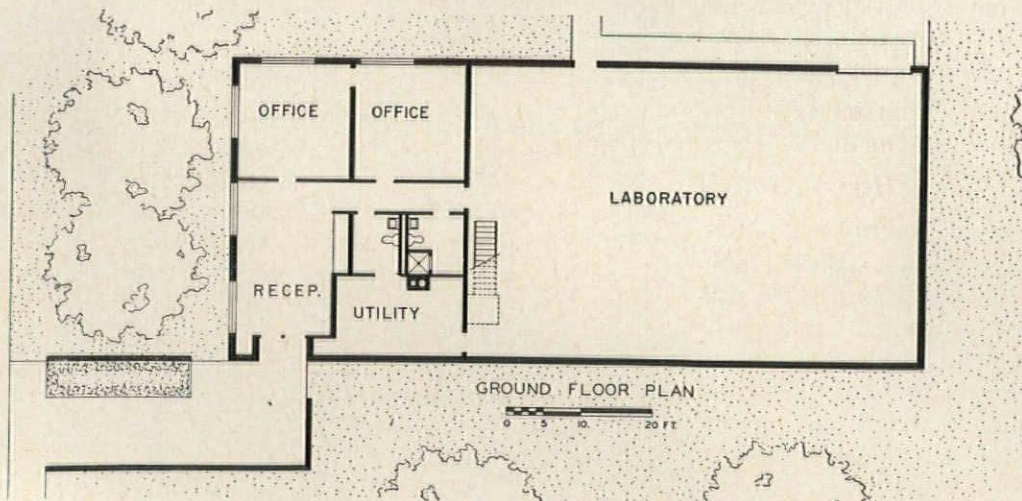
Industrial Buildings

Clay Pipe Laboratory

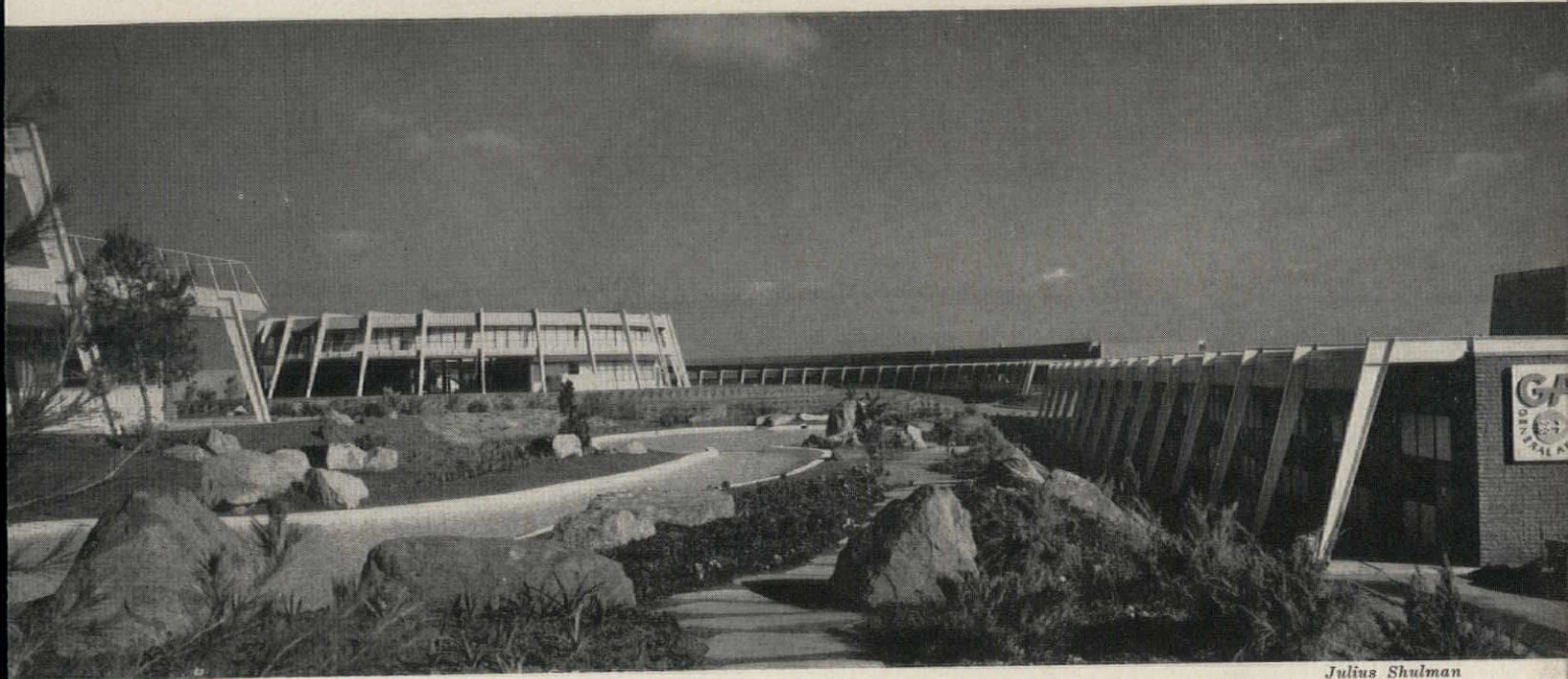
In the illustration above, right, is shown a portion of the laboratory. Brick cavity walls, exposed both sides, support a long-span joist roof structure. On the second level, over the office area, additional space is available for experimental work and storage. The photograph below, right, shows the entrance lobby-reception area. The interior treatment, consisting of exposed brick walls contrasted with natural wood, is typical of the office area. In the illustration below may be seen the continuation of these walls into one of the private offices thereby tying the spaces together, visually. The extreme simplicity of the plan gives some indication of the economy of means employed



Herrlin Studio photos



PLANNED FOR ADVANCED RESEARCH



Julius Shulman

Located on a rugged site north of San Diego, these buildings form the nucleus for what will be the world's largest, most diversified private nuclear R & D center

JOHN JAY HOPKINS LABORATORY FOR PURE AND APPLIED SCIENCE, GENERAL ATOMIC, A DIVISION OF GENERAL DYNAMICS CORP., TORREY PINES MESA, CALIF.

ARCHITECTS: *Pereira & Luckman*

CONSULTING STRUCTURAL ENGINEERS:
Johnson & Nielsen

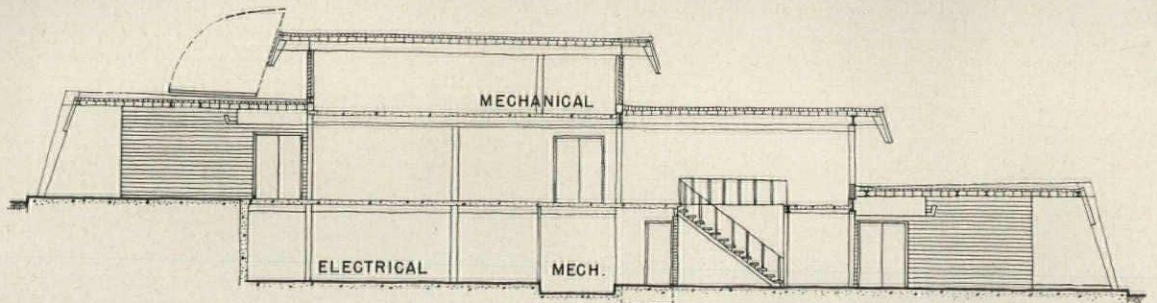
CONSULTING MECHANICAL AND ELECTRICAL ENGINEERS:
Levine & McCann

LANDSCAPE ARCHITECT: *Robert Herrick Carter*

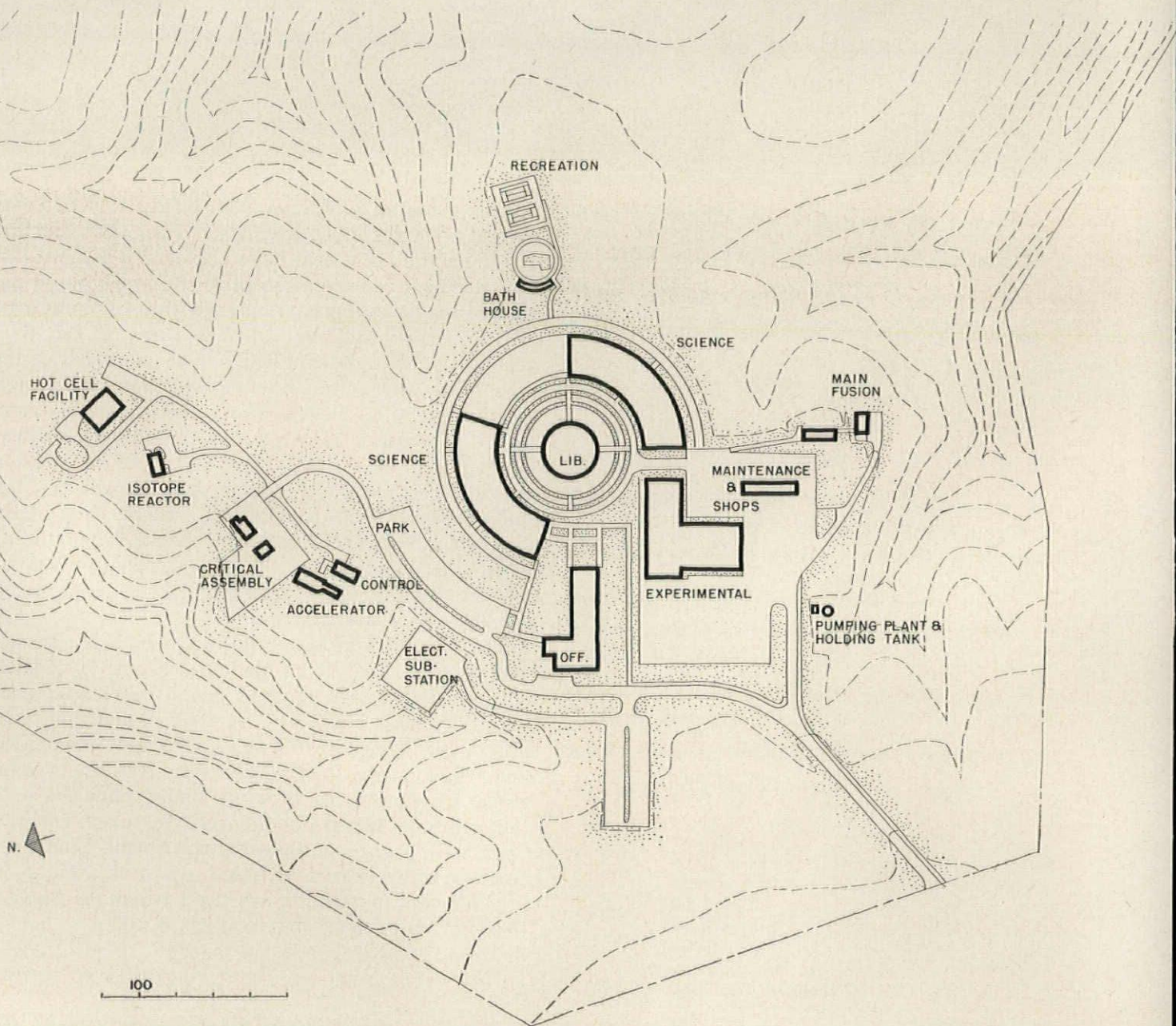
CONTRACTOR: *Haas-Haynie-Frandsen, Inc.*

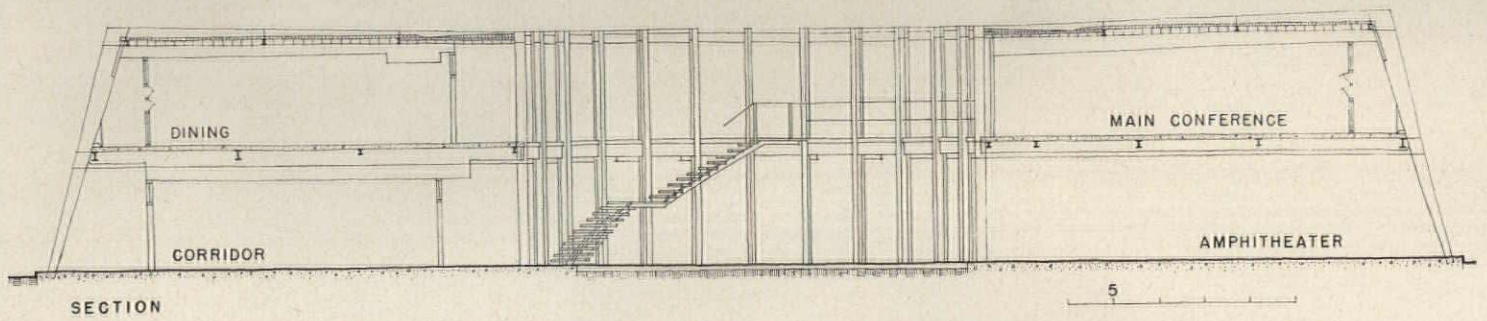
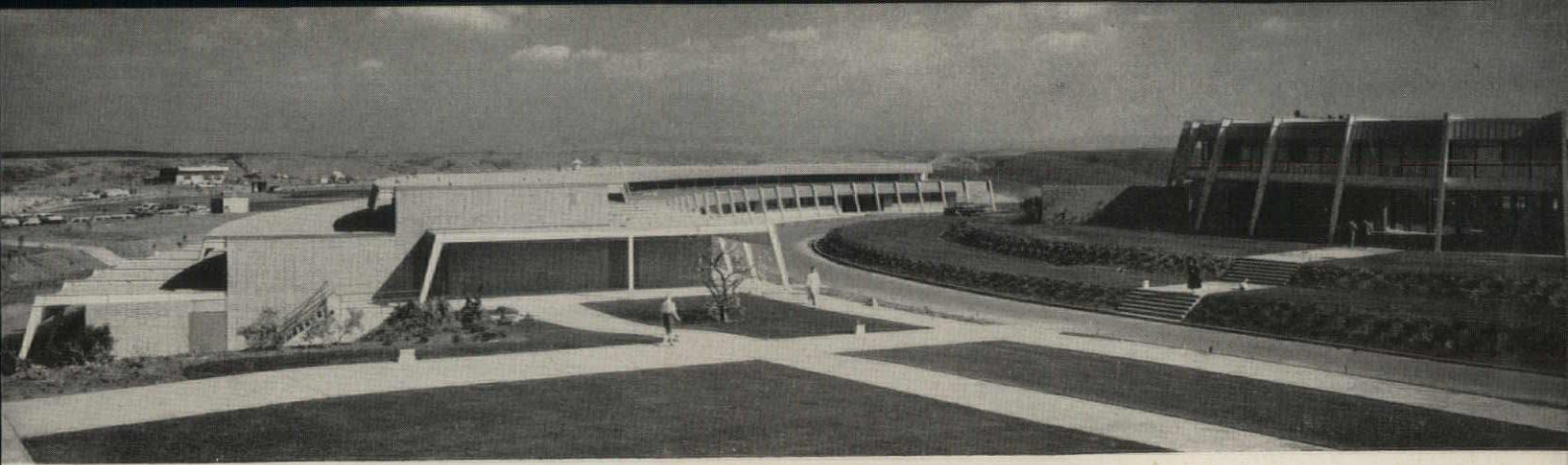
In this group of buildings, whose functions are concerned with the most advanced of sciences, nuclear research, the architects have achieved a campus-like layout which reflects something of the advanced nature of the activities carried on within the buildings. The present buildings are but part of the final scheme which allows for further development of the large site and a number of additional buildings. Eventually, all of the necessary facilities for a completely diversified research and development nuclear complex will be included. The shapes of the present buildings derive not only from nuclear science, but quite logically from the natural configuration of the site, with its inherent design problems. The building designs seem to accept the site as an ally. The resulting appearance of buildings and landscape seems somehow right and fitting.

The structure of the buildings, which is exposed, is a dominant aspect of the appearance. It consists of custom designed tapered bents, fabricated from structural steel plate. This system, in addition to its other advantages, proved to be extremely economical and fast to erect. Roofs and upper portions of walls and canopies are steel decking. Walls below the decking combine integrally colored, textured concrete block with a glass and steel curtain wall. Floors are concrete slab, covered with terrazzo or resilient flooring. Movable partitions are used wherever feasible to achieve the utmost in flexibility.



SECTION





Industrial Buildings

John Jay Hopkins Laboratory

As may be seen in the plan, the library building forms the hub of the layout. In this building are located technical information service areas, the cafeteria, printing, reproduction, photography facilities, and conference rooms. The section of this building (above) shows the open well and stairs which afford access to various spaces. Grouped around the library building are the two main science building units. These contain the laboratories and offices necessary for work in metallurgy, chemistry, experimental physics, engineering, and reactor physics. The L-shaped experimental building houses facilities for large-scale experiments, and for work involving the handling of nuclear materials. Other important buildings include the office building (administration and engineering), critical assembly, and hot cell buildings

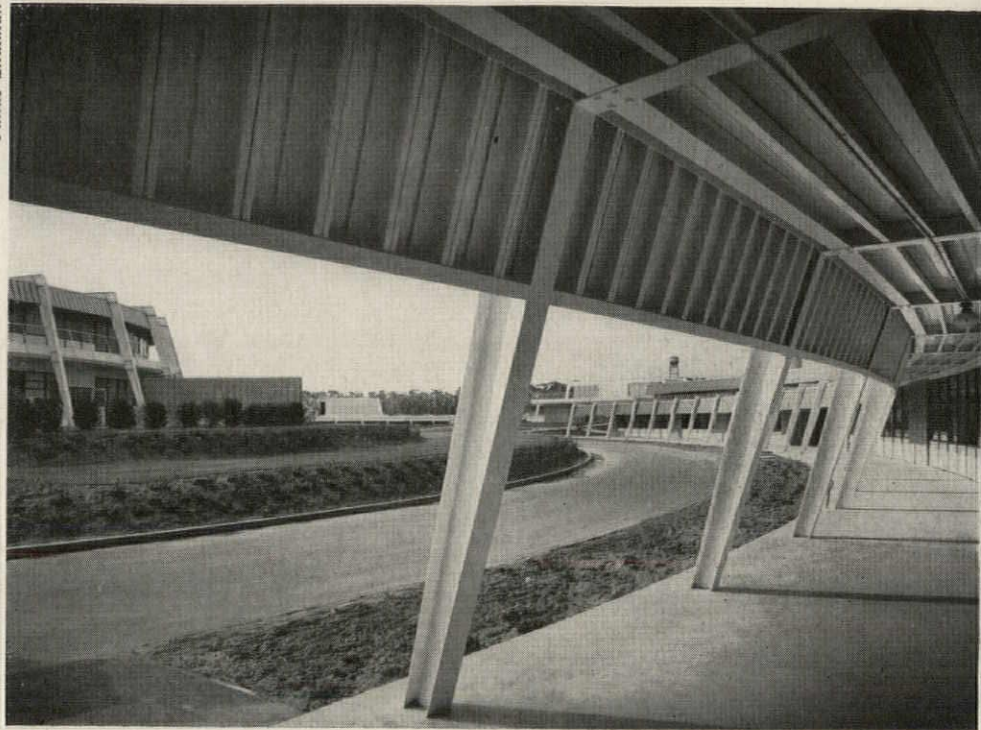
Julius Shulman photos



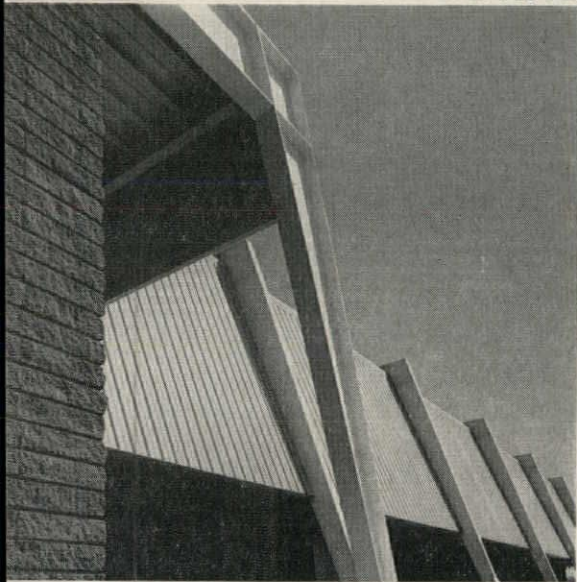


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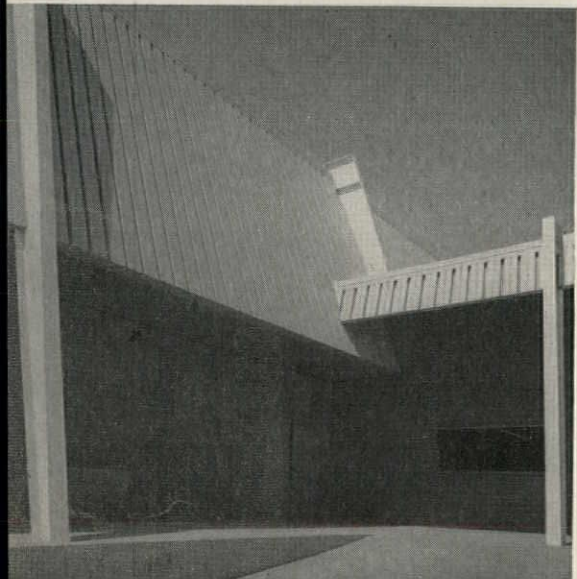
Julius Shulman



H. L. Van Pelt



H. L. Van Pelt



Industrial Buildings

John Jay Hopkins Laboratory

The illustrations give an indication of the appearance and detailing of the steel bent structure and metal decking, used for the library and the main science buildings. In all of these buildings the steel bents are carried to the outside, forming covered walkways. The steel decking is installed on the same angle as the bents, creating a combination of overhang and canted sun shields which has proved highly effective in controlling the solar gain within the buildings. In the close-ups may be seen the extremely fine finish given the welds of the steel plate forming the bents and the attention by the architects to effects of planes, solids, and voids

Architectural Engineering

A 1500 Watt "Shaft" of Light

Can you picture a moderate-sized auditorium, illuminated to a level of 40 foot-candles by only four lamps, each 10 inches long and no larger in diameter than your little finger? This is not a laboratory dream, but a working installation to be ready this year. [The fixture is a small, V-shaped trough which indirectly lights the ceiling. Each lamp operates at 1500 watts, 277 volts, and the total of 6 kw is equivalent to the load of an electric range; the lamp also is made in a 500-w size.] Thus it is again clear that the problem in lighting of buildings is not the lack of more versatile sources, but in the assimilation by designers of those being made available by industry. The potentialities for such a high-output lamp are exciting. Outside the building field, a space-age possibility is to use these quartz lighting lamps to produce food by photosynthesis aboard rocket ships or in atomic submarines. First application was a 150-w lamp for wing-tip lighting on jet planes. But closer to AR readers are such applications as large area lighting in commercial and industrial buildings and sports arenas; show window, counter and display lighting in stores; and building and airport runway flood lighting. The lamp for lighting is a cousin to the quartz infrared lamp used for heating which has a lower filament temperature and is used in industry and for such off-beat applications as theater marquees to take the chill off between-the-acts smokers. Characteristics and applications of the quartz lighting lamp were reported in a paper given at the recent National Technical Conference of the Illuminating Engineering Society by Carl J. Allen and Ronald L. Paugh of G. E.'s Large Lamp Department in Cleveland.

The Distress of "Cold Feet"

The term, "cold feet," has both physiological and emotional implications, and the former have just been investigated by two researchers at the Division of Building Research in Melbourne, Australia. In a publication called *Temperature and Comfort of the Human Foot*, R. W. Muncy and T. S. Holden describe a study in which they recorded temperatures of the ball of the foot and corresponding subjective reactions for 17 normally clad people in a room at temperatures ranging from 60 to 80 F. Thirteen people felt that temperature near the floor was of prime importance in producing a sensation of comfort or discomfort. The scientists' conclusion: . . . "heating for comfort should aim primarily at heating the air near the floor, where the air temperature is apparently critical for most people . . . This requires a change of ideas as to the best place to locate thermostats, and of methods for assessing the efficiency of heating systems."

Silencing the Riveting Hammer

News that the lowly rivet has practically been displaced by the more efficient, more economical and less noisy high strength bolt makes us happy for the improved technology, but perhaps a bit sad for the sidewalk superintendent. He's going to miss the spell-binding sight of the rivet in its fiery toss. And another thing, what will the encyclopedias and documentary movies do to symbolize the construction of steel skyscrapers? While the operation of installing high strength bolts may not be dramatic, the statistics concerning their use are. Almost a million have been used for structural applications since 1951, when the authoritative specification for high strength bolts was issued by the Research Council on Riveted and Bolted Structural Joints. And since 1955 only three of the 20 buildings over 25 stories erected in New York City used rivets for field connections. These figures come from Edward R. Estes Jr., Research Engineer for the American Institute of Steel Construction who, in a recent talk before the American Standards Association, predicted that in another eight years the rivet may be as much a rarity in shop fabrication as in the field.

This Month's AE Section

AUTOMATIC CONTROLS FOR HEATING AND AIR CONDITIONING, pp. 182-189.

PRODUCTS REPORTS, p. 191. *OFFICE LITERATURE*, p. 192.

TIME-SAVER STANDARDS, Structural Applications of Welded Steel Tubing, pp. 190, 195, 197, 199.

AUTOMATIC CONTROLS for Heating and Air Conditioning

The Basic Devices

Systems Compared

Control Methods in a School

A Sample Specification

Recent Trends

by Arthur L. Spaet, Partner, Slocum & Fuller, Consulting Engineers, New York

In the old days if a room became warm and stuffy, one merely opened the window and shut off the radiator valve. Now, the windows stay closed, except perhaps for cleaning, while automatic controls take charge of compensating for changes in outdoor temperature, wind and sun, and internal loads from people, lights and equipment.

This is not to say that early systems had no automatic temperature controls whatever. However, these controls were usually applied centrally to the system to modify output of heat with variations in outdoor temperature. Their prime purpose was to save fuel. Today the emphasis has shifted to local and individual control of thermal comfort in specific areas.

Perhaps the greatest boost to the development and wider use of automatic controls for thermal comfort was the increased acceptance of air conditioning after the Second World War. Also the growth of multistory buildings after the War brought with it new techniques—the division between perimeter and interior systems, high velocity distribution, dual duct systems—and the pale imperfections of early controls became magnified.

Significant too is the fact that the sophisticated tenant of 1960 is himself both more demanding and more critical in his comfort requirements:

the design and performance criteria for heating, ventilating and air conditioning are written directly into the terms of his lease.

Many modern buildings feel the effect of weather changes much faster than older ones because of more glass and less weight in the exterior walls. Further, there is the distinction between varying conditions at the exterior and the relatively stable thermal conditions in the interior of a building—all of which must be sensed and reacted to by the control system.

Because of solar and electrical loads, it is not uncommon for the refrigeration plant to operate throughout the winter months, making necessary another complex set of gadgets and automatic devices to enable the cooling tower to operate in the heart of winter without the danger of freezing.

Although it is true that many automatic features may be omitted and many localized problems solved by manual operation, heating of outdoor air or unnecessary cooling to overcome some problem of unbalance can waste costly Btu's at a naggingly expensive rate.

It has been estimated that a proper set of automatic controls can save between 10 and 30 per cent of the annual operating cost for a given system. For a building of approximately 150,000 square feet, a 20 per

cent fuel saving could amount to about \$3000 a year. With controls costing about three per cent of the total for the heating and air conditioning installation, this cost could be amortized in six years.

In summary, automatic temperature controls augment the following needs:

- a. Human comfort
- b. Fuel economy
- c. Accurate control of temperature and humidity for industrial applications.
- d. Safety. While this function may not be readily recognized, it includes: shut down of fans in case of fire, stopping a refrigeration condensing unit if there is no water in the system, or preventing steam coils from freezing.

DEFINITION OF AUTOMATIC CONTROLS

In the broadest sense, temperature controls are a subdivision of the very extensive field of instrumentation. As normally conceived in heating and air conditioning design, however, automatic temperature controls include three basic types of devices:

1. A sensing or pilot device.
2. An actuating or motor device.
3. A reading, or dial or indicator device.

Sensing devices may be responsive to air or water temperature, steam pressure, or air velocity, and will

consist of such instruments as thermostats, aquastats, static pressure regulators and similar devices. These are the "eyes and ears" of any control system.

The sensing devices for any system may be all-electric, all-pneumatic, electronic or combinations of all three.

The second group, the actuating and operating devices, are essentially motor-controlled dampers or valves, corresponding to the fingers and muscles of the systems. The "motors" may be hydraulic cylinders, air diaphragms, or compressed air cylinders. If the system is electrically powered, the operators are usually electric motors, frequently with reversible and adjustable speeds, or solenoid actuators.

The third type of equipment, the instrumentation of the system, in addition to thermometers and gauges, can be extended to include such refinements as clockwork mechanisms to start and stop motors, radiant thermometers, hygrometers, draft gauges, two- and three-pen recording controllers, etc.

By the addition of wiring, piping, auxiliary relays, contactors and alarms, the above components are combined into an integrated automatic temperature control system.

All-electric controls are the usual choice for smaller systems. As the number of control devices and control points increases, a break-even point is reached after which pneumatic controls are less expensive.

The reason for this is that when a system becomes larger and more complex, it is far less expensive to interconnect the control elements with pneumatic tubing and pneumatic operators than with electric wire and conduit and electric motors. Packaged air conditioning equipment up to about 50 tons usually falls within the range where electric controls afford optimum economy. Central systems with several zones, from roughly 30 tons or over, are usually controlled most effectively by pneumatic equipment. Note the overlap in the area of about 30 to 50 tons. Above this, the economic advantage is definitely with pneumatic systems, and all large systems are pneumatically operated.

More and more frequently, electric and electronic devices are integrated with pneumatic systems. However if the system has a central air compressor and runs of pneumatic (air) tubing, it is usually classed as pneumatic.

The difference between electric and electronic systems lies in a somewhat esoteric refinement in equipment. In an *electric control system*,

the thermostat sends its signal directly to the damper or valve motor. In an *electronic control system*, the thermostat sends a minute signal to an electronic relay, where the signal is measured and amplified. The relay in turn affects the control over the damper or valve, or over supplementary control circuits. The electronic control equipment may be used to activate any type of electric or pneumatic device, in any of numerous modes or cycles of operation.

Each of the systems previously mentioned is dependent upon an external source of energy. Another type of equipment is the self-contained device which has its own motive power. While self-contained devices have extensive application, they are not used generally where sequence operation is required.

CONTROL SYSTEMS COMPARED

Advantages and disadvantages of the three types of systems, self-contained, electric and pneumatic, are as follows:

SELF-CONTAINED

Advantages

1. Basic and rugged. Simple construction, little mechanism to fail.
2. Low in cost.
3. Skilled labor not required.
4. Independent of power failure.
5. Easy to modify or extend. Controls may be added as needed without regard for existing installation.

Disadvantages

1. Awkward to install where thermostat must be remote from controlled valve. Running the capillary tubing may present an installation problem.
2. Cannot be interlocked. Modern systems require integrated control of valves, motors, dampers.
3. Difficult to repair. Normally, upon failure or damage, it is easier to replace the entire assembly.

ELECTRIC

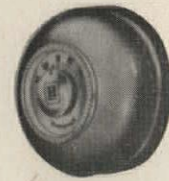
Advantages

1. Low cost on small jobs; on medium size jobs, local electric codes and the contractor's experience can cause relative costs to vary.
2. Sensitive; may be interlocked.
3. Can be installed by any electrician who understands a wiring diagram.
4. Easy to expand.
5. Control circuits use little or no power.
6. Readily adaptable to architectural wiring.

Disadvantages

1. Higher cost on larger installa-

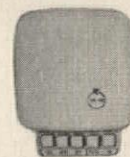
Sensing



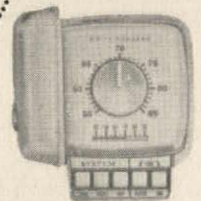
Pneumatic Round Thermostat



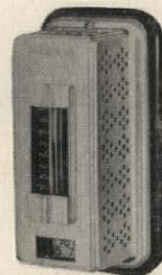
Insertion Humidistat



Electric Heat-Cool Thermostat, Fan Controller



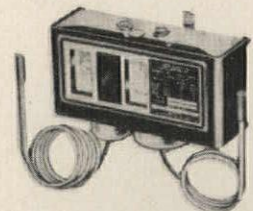
Electric Room Thermostat



Pneumatic Room Thermostat



Pressure Controller Gradual Type



Dual Pressure Controller



Pressure Switch, Mercury Type



Pressure Switch, Bellows type

Control Methods in a School

Control techniques vary from the simple to the complex, from opening and closing a valve on a convector and sequence operation of several in-

terrelated devices of a whole system. These techniques may be classified under three general headings: (1) basic or local space control, (2) basic

outdoor control and (3) medium control. They are illustrated in the floor plan of a hypothetical school and accompanying tables.

System	Provision of Comfort Control	Response to Outside Condition	Response to Inside Condition
1 Basic Space Control	Good	Good	Excellent
2 Space Control w/Outdoor Compensation	Very Good	Very Good	Excellent
3 Space & Medium Control	Good	Good	Excellent
4 Space & Medium Control w/Outdoor Compensation	Excellent	Excellent	Excellent
5 Basic Medium Control	Poor	Poor	Poor
6 Medium Control w/Outdoor Compensation	Fair	Very Good	Poor
7 Basic Outdoor Control	Fair	Excellent	Poor

Table extracted from Manual of Automatic Control; published by Minneapolis Honeywell Regulator Co.

METHOD 1: Basic space control

EXAMPLE: Individual control of classrooms, temperature of each room being regulated by its own thermostat

METHOD 2: Space control with outdoor compensation

EXAMPLE: Individual control of radiant panels in kindergarten; outdoor controller modifying action of indoor thermostat

(METHOD 3 combines the features of 2 and 5. Method 4 combines 2 and 5 plus outdoor compensation)

METHOD 5: Basic medium control

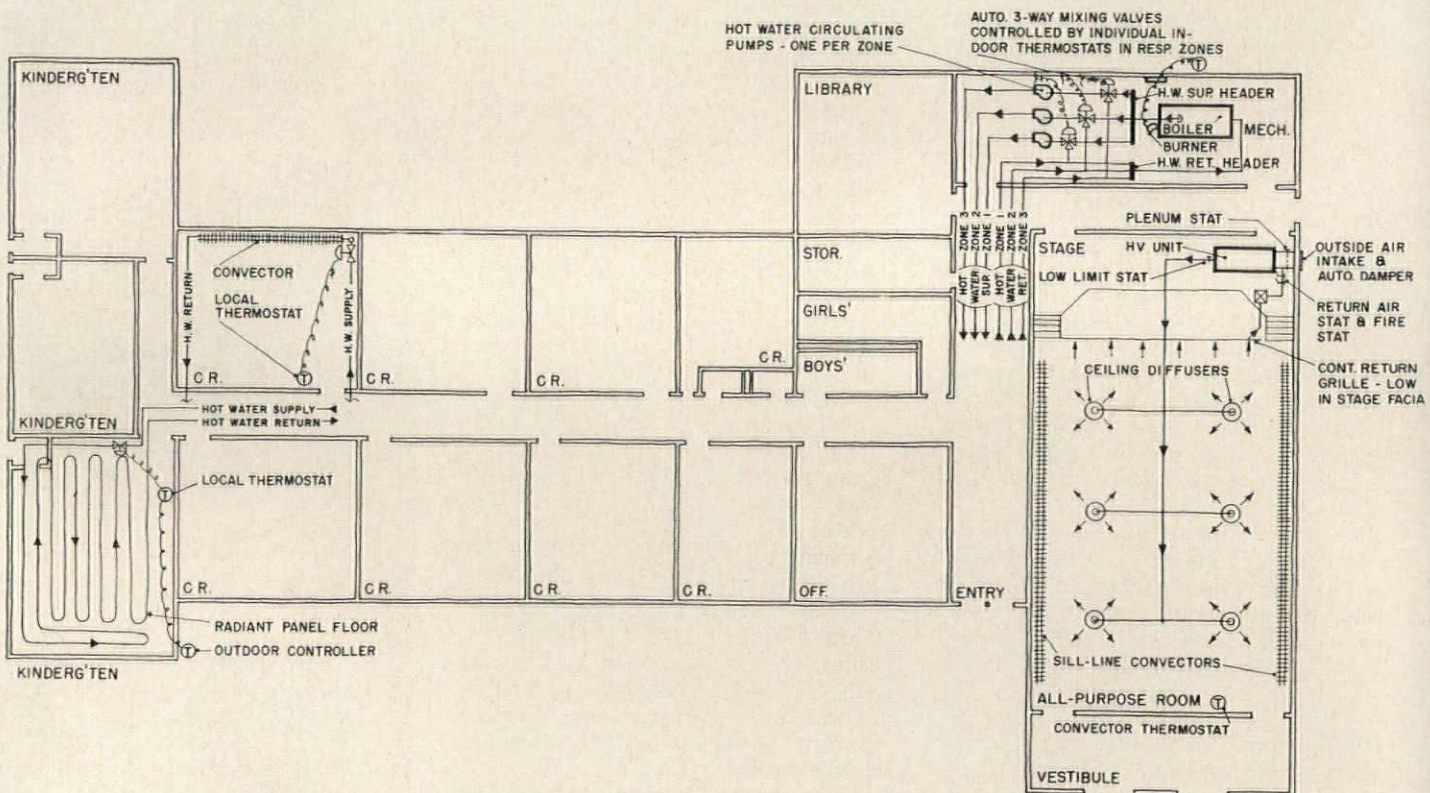
EXAMPLE: HV unit in All-Purpose Room; a discharge air thermostat controls steam or hot water valve

METHOD 6: Medium control with outdoor compensation

EXAMPLE: Supply water temperature to each zone is varied by means of a three-way mixing valve; in addition, an outdoor controller overrides indoor zone thermostats

METHOD 7: Basic outdoor control

EXAMPLE: Outdoor thermostat turns burner on and off. Applicable only to very small schools.



tions. As a rough rule of thumb, where the number of controlled elements exceeds 25 to 40, a pneumatic system will be less costly. In general, item for item, pneumatic devices cost less. It is the initial cost of the pneumatic air compressor that gives electric systems the edge on small installations.

2. Completely dependent upon electric power.
3. Requires skilled labor to service, maintain or modify.

PNEUMATIC

Advantages

1. Low cost on larger installations.
2. Inexpensive indicators available. Small pressure gauges at each device indicate exactly the control demand and the device performance at any inspection. Remote temperature indication is also possible through use of small pressure gauges calibrated to give temperatures directly.
3. May be interlocked.
4. Some reserve of power. In the event of an electric failure, the air storage tank will maintain the system in operation for a period of time until air pressure is depleted.
5. Excellent sensitivity.
6. Adaptable to any building construction.

Disadvantages

1. Higher first cost on small jobs.
2. Requires skill in installing. For complex systems, requires specialized know-how.
3. Less easily expanded. Also in the event of a large addition to a new building, a supplementary air compressor may be required.

WORDS OF CAUTION

A particular control sequence may be achieved by any number of combinations of control equipment. While it is not simple to generalize, there are certain requirements for high quality control which are broadly applicable:

1. A system having constant air volume with variable air temperature is usually superior to a system with variable air volume.
2. A good air distribution system is a must.
 - a. Extend ductwork to all parts of the space. Avoid long air "throws."
 - b. Insulate ductwork running through warm (or cool) spaces.
 - c. Locate supply and return air outlets to avoid short circuiting.
 - d. Several small diffusers are better than one large one.
3. The smaller the individual controlled area, the better the control.
4. Locate thermostats where they

measure a condition truly representative of the space.

5. Proper selection of all equipment, coils, piping, pumps, etc., is essential. All are interrelated.

A frequent source of difficulty is the location or connection of the sensing element so that it does not *directly* sense the needs of the area to be controlled. For example, if a steam valve is controlled only by a sensing device located in the air supply to a room, the device only knows the temperature of the air entering the room. It can never respond to the changing conditions within the room itself.

Conversely, in a large open area with much exposed glass at the perimeter, perimeter radiation *can* be controlled effectively by a sensing element located *outdoors*, since the heat loss at the perimeter will almost always be related directly to the outdoor temperature.

Another precaution: be careful in locating thermostats so that they are not affected by a direct blow of a heating or cooling outlet, the direct rays of the sun, or a similar source of warm or cool Btu's, which will confuse the operating device.

Another difficulty is that all too frequently air distribution systems are not balanced at the individual air outlets. While all components may be carefully installed in accordance with the design drawings, it has been my experience, again and again, that the final adjustment is not made.

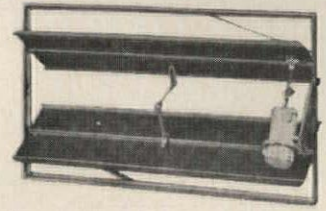
A final word of caution: automatic controls require planned, preventive maintenance. Frequently I have seen systems in which the damper linkage is out of adjustment, thermostats are out of calibration, or not functioning, dampers are blocked in the open or closed position and cannot operate at all, control devices are shut off, or pneumatic tubing has been "temporarily" disconnected, etc.

RECENT TRENDS

Many changes and advances have taken place in recent years in the field of heating and air conditioning. These include the development of large, hermetic type compressors, greater acceptance and use of high temperature hot water, heat pumps, high velocity air conditioning supply systems, snow melting systems, steam absorption refrigeration machines, development of new materials such as polyvinyl chloride piping, a general trend toward higher motor rotating speed and more compact equipment.

Along with the above changes in

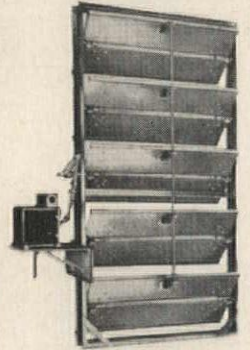
Actuating



Pneumatic Cylinder & Damper



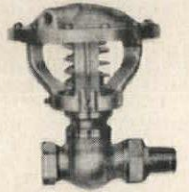
Diaphragm Motor & 3-way Valve



Electric Motor & Louver Damper



Solenoid Operator & Shut-off Valve



Diaphragm Motor & Modulating Valve



Pneumatic Cylinder & Constant Velocity Damper



Electric Motor & 2-Position Valve



Electric Motor & Modulating Valve

heating and air conditioning equipment have come corresponding changes in automatic temperature control.

Here are some of the more prominent changes taking place in control equipment:

1. Miniaturization of instruments such as thermometers, gauges, and transmitters.
2. Increased use of remote instrumentation, gauges, and controls.
3. Factory wired and preset control assemblies.
4. Redesign of equipment for more pleasing and modern appearance.
5. Noise attenuating and pressure reducing boxes for high velocity systems.
6. Data control centers.

MINIATURIZATION OF EQUIPMENT

Along with the increased growth and acceptance of automatic controls and self-regulating devices has come the need for smaller instrument components.

Large gauges and dials of generous proportions were common in early control boards. No self-respecting engineer or contractor who took any pride in his work would install a steam gauge smaller than 10 to 12 inches in diameter, and a shining brass case with an ample and decorative flange was de rigueur. However, as the quantity of gauges and recording instruments increased, the size of the control panel increased accordingly, and the need for small gauges became obvious.

Many of the major suppliers are making available instruments with smaller gauges and dials. Many catalogues today refer to this type of equipment as "miniature" indicators. It is probably that these small type of gauges, with dials approximately three inches in diameter, will soon become standard equipment.

REMOTE MOTOR CONTROLS

While there is still some disagreement among design and operating engineers as to the pros and cons of remote vs local starting of air conditioning motors, there is no doubt that in a large plant or office building, centralized starting and stopping of small and medium-sized motors for the air conditioning equipment has distinct advantages.

This applies to motors up to approximately 50 to 75 horsepower. Larger motors are preferably started locally, with the motor in full sight of the operator.

One reason that the design engineer hesitates before specifying remote starting of motors is the added

cost of the electric wiring and conduit from the central control panel to every remote machine room in the building.

It is now possible, though, to have remote starting and stopping of electric motors *without* interconnecting control wiring. This system, originally developed by IBM, was first applied for the control and correction of clocks from a central transmitter, without the necessity for special control wiring. Corrective impulses at a high frequency are transmitted directly through the 110 volt building power wiring.

Similarly, to start or stop any motor, a high frequency signal is sent through the house wiring from a central control panel. At some remote point, a crystal controlled receiver acts as a relay to actuate a motor control circuit, in response to a signal of a particular frequency. This eliminates the wire and conduit for the usual three wire control circuit between the motor controller and the motor start-stop station.

The advantages of such equipment are dramatically demonstrated in an installation at Fort Ord, California. Hundreds of individual buildings are centrally controlled and scheduled. Signals on a frequency of 5850 cycles per second are superimposed on the existing 60 cycle wiring. If local manual control were attempted, it might take a team of men as many as ten days just to visit each building on the base.

Similar equipment performs a host of electric on-off duties at the new Overseas Arrival Building in New York's International Airport. Fans, pumps, unit ventilators, and area and sign lighting are controlled without special control wiring. It is interesting that not one but six control signal frequencies are used; the signals are transmitted both on the primary as well as on the secondary power distribution systems.

REMOTE READING PNEUMATIC TYPE GAUGES

Previously, requirements for remote temperature readings were met by use of a resistance thermometer and electric wiring between the sensing device, an amplifier, and an indicating or reading device. But by adding suitable wiring and control devices, certain electrically operated remote reading temperature devices permit the additional refinement of remote reset or remote adjustment of temperatures.

A recent application of an old principle permits transmission of room or duct temperatures to remote points by means of pneumatic in-

struments; this eliminates electric wiring, conduit, and electric amplifiers, and substitutes pneumatic control tubing and pneumatic devices. This equipment includes a pneumatic sensing device such as an insertion thermostat. Variations in temperature are transmitted as variations in air pressure, and the remote reading device is a bourdon type pressure gauge, calibrated to read temperature directly.

Another interesting change in the technique of running pneumatic control lines is the use of plastic tubing. Up to this time, pneumatic control tubing was of steel pipe or copper tubing, installed at a relatively slow and tedious pace, one tube or pipe at a time. Today, availability of plasticized or semi-rigid polyvinyl chloride or polyethylene tubing can make the piping instrumentation job go much faster. The tubing is installed in multiple, with many tubes grouped together inside a single protective jacket. Identification is simplified by having the tubes in brilliant and readily identifiable colors. In addition, a flexible armored outer jacket may be used to protect the tubing where protection is necessary.

PREWIRED PACKAGED CONTROL ASSEMBLIES

Complete pre-engineered control assemblies have been used in the generation of steam in large industrial and power applications for many years. The trend toward packaged equipment, and the use of factory-made assemblies and sub-assemblies has now been extended and simplified for application to conventional, relatively small, low pressure steam boilers and to small air conditioning plants.

Formerly, for such a small plant, it was necessary to specify a number of individual relays, controllers, safeties, disconnects, etc., each to be individually mounted and wired in the field. In recent years, it has been our experience that this complex of controls, when connected in the field, would invariably be wired up incorrectly.

The small, low pressure boiler plant in a factory assembled, wired and tested package includes all the necessary breakers, relays, alarms, safeties, timers, gauges, and similar control and recording elements. The only wiring required in the field is that between the terminal strip and the actuating and operating devices.

One result of the development and increased acceptance of electric and electronic type of controllers is that the engineer must become familiar

with electrical components and circuitry, and the requirements of the National Electric Code, as well as with boiler, furnace, and combustion technology and the rest.

CONCEALMENT OF THERMOSTATS

What can be done if, for esthetic reasons, the architect would like to make the thermostat as unobtrusive as possible? He might conceal it as in one installation I saw where a carefully selected oil painting was mounted over a thermostat.

It is not necessary to go to this extreme, however, since there are several other approaches:

1. One way out is to eliminate a thermostat from the interior altogether. It may be possible to locate the "room" thermostat nearby in the return duct, or possibly nearby in a branch return duct in the machine room, or at the air conditioning fan. A word of caution: the best place for a thermostat usually is in the room to be controlled. Remote location of thermostats must be carefully engineered, otherwise awkward control problems can result.

2. A second possibility is to have the engineer give thought during the engineering and design period to the decorative effect of the thermostat. With this in mind, our firm has designed recessed thermostat installations with the thermostat located behind a flush decorative wall plate. A concealed recessed air passage permits convection of room air over the thermostat. This requires considerable technical and artistic skill, and complete cooperation between interior designer and air conditioning engineer; it also can cause certain engineering complications. However, it can be done.

Of course, there have been available recessed instruments for use in vandal-proof installation in mental institutions, but these are still somewhat too awkward and expensive for the average installation.

3. A third possible technique is to aspirate air with a small fan through a sampling tube in order to permit locating the thermostat remotely. It is difficult at best to find an ideal "average" sensitive location for a thermostat in a room, where it will not be affected by sun, draft or supply air outlets or radiators. Aspirating room air through a sampling tube permits the thermostat to be located remotely, in a closet, behind a coat rack, or in any convenient location. Small tube-axial type fans such as are used for cooling of electronic equipment assist in making this method feasible.

CONTROL CENTERS

A touch of glamour as well as increased utility for heating and air conditioning resulted from the development of data control centers. From such centers, overall temperature readings can be taken and adjustments made in the settings of operating devices, thermostats, etc., located at remote points in the building.

Control centers are not new in principle; remote reading multipoint thermometers and centralized gauge boards have been in existence since the very earliest days of instrumentation. However, the addition of a brightly colored, embossed diagrammatic layout of the air conditioning and ventilating systems for a building, with start-stop switches, pilot lights to indicate on-off operation, and temperature control and adjustment devices, all located in one well-lighted and brightly colored graphic display panel, have added a touch of Madison Avenue salesmanship and eye appeal to this type of equipment.

CONTROL IN HIGH VELOCITY SYSTEMS

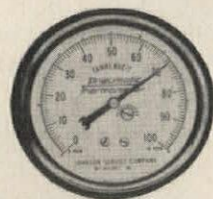
The advent of high velocity, high pressure air conditioning systems has brought about a series of interesting innovations and new techniques. Among these are mixing-attenuating boxes which reduce the high pressure in the main ducts to more conventional pressures, so that the air may be introduced into the room at conventional low velocities. Mixing valves of various sorts mix warm and chilled air in controlled proportions.

Various techniques of applying high velocity supply air include single temperature trunk supply ducts, with local reheat or local cooling coils; or dual duct systems. Extreme caution is necessary in the design of any system using this type of equipment, to make certain that the volume of air supply remains constant over the entire controlled temperature range.

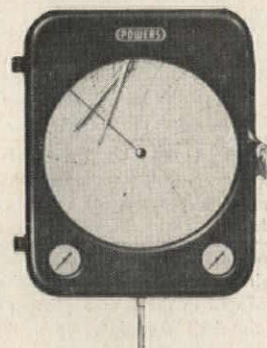
In early installations, constant air volume was achieved by means of static pressure regulators which controlled large air dampers in the trunk ducts or branch mains. This was not too effective; much difficulty was encountered in setting and adjusting such systems.

A more refined approach, which will likely become the accepted method of air quantity control, is to provide local constant volume regulation at each individual outlet, in contrast to the previous technique of central or bulk air volume control.

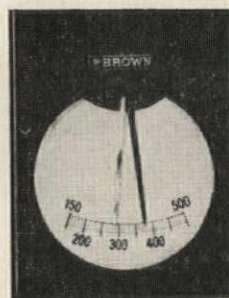
Recording



Remote Pneumatic Thermometer



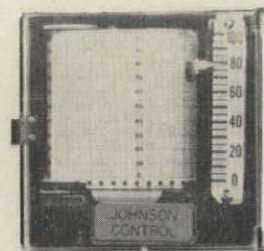
Pneumatic Recording Temperature Controller



Remote Indicating Thermometer



Local Insertion Thermometer

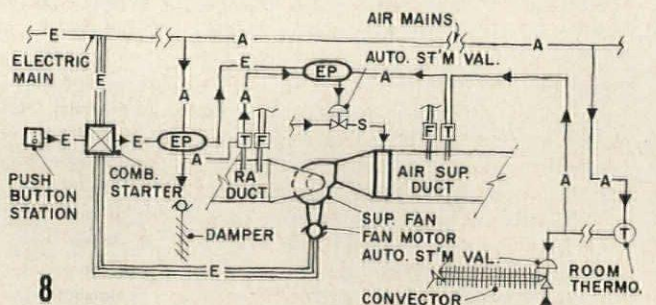
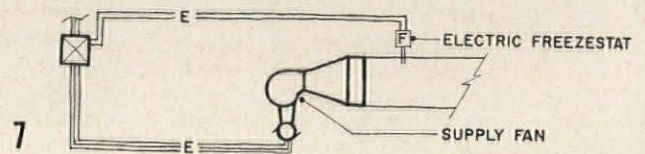
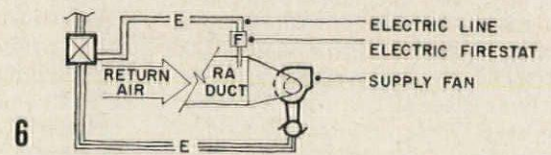
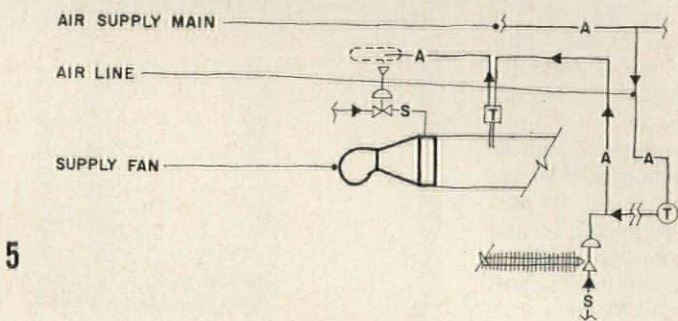
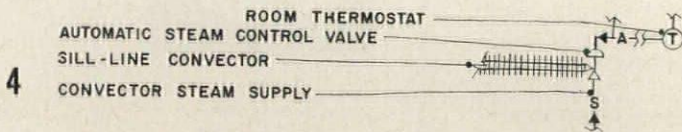
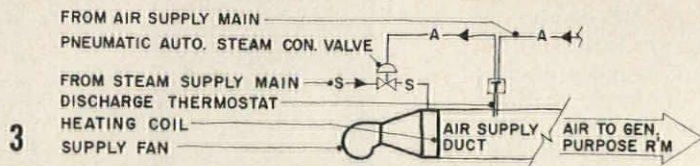
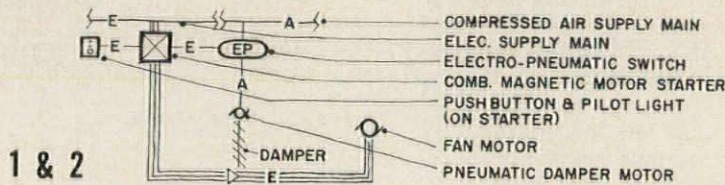


Multipoint Recording Thermometer

Automatic Control Sequence In A School Auditorium

	THE SPECIFICATION	THE EQUIPMENT, CONTROLLING AND CONTROLLED	REMARKS
1	HV-unit shall be started manually, from a surface mounted combination magnetic starter with push buttons and pilot light in cover, located on wall below unit.	Combination magnetic motor starter and push button station; the fan motor.	This is electric control wiring, and not strictly temperature control work. It is noted for information and coordination between the Electrical Sub-Contractor and the temperature controls Sub-Contractor.
2	On HV-unit startup, the minimum outside air damper shall open to admit 25% outside air.	Electro-pneumatic switch, wired into load side of motor power wiring; pneumatic damper motor.	A more common, but somewhat more complex scheme includes modulating outdoor dampers, from a minimum of 25% up to 100% outdoor air.
3	On HV-unit startup, the heating coil shall modulate open to maintain a minimum air discharge temperature of 60 deg. F.	Discharge thermostat in supply air; pneumatically operated steam valve to steam coil.	A room with much glass and sun exposure will require cooling through much of the year. In such case the low air supply limit should be set lower to permit cooling with supply air in suitable season.
4	On a fall in temperature, the steam valves to the sill-line convectors shall modulate open under control of the room thermostat.	Room thermostat. Pneumatic steam valves to sill-line convectors.	
5	When the sill-line convector valves are full open, if the room temperature falls, the steam supply valve to the HV-unit steam coil shall modulate open.	Room thermostat (resets discharge thermostat). Steam supply valve to steam coil.	
6	A manual reset electric firestat located in airstream in return duct to fan shall stop fan in case of fire. Set for 120 deg. F.	Electric return air thermostat; pneumatic switch in motor starter control circuit wiring.	A magnetic motor starter is necessary to accomplish this. Note that these are safety controls, rather than "comfort" controls. Note the overlap between "comfort" controls, "safety" controls, and the "motor" controls.
7	A manual reset electric freezestat located in airstream in fan discharge shall stop fan to prevent freeze-up of steam coil. Set at 50 deg. F.	Same as (6) above.	
8	When the HV-unit is stopped, the outside air damper shall close. A thermostat bulb located in the intake plenum ahead of the fan shall modulate open the steam coil valve to maintain a minimum plenum temperature of 50 deg. F.	Same as (2) above. Plus thermostat located in air intake plenum, plus electro-pneumatic relay.	Outside air will occasionally leak past closed outside air dampers into the intake plenum, and may freeze the heating coil when the system is off. Again, this is a safety control rather than a comfort control.

NOTE: All thermostats and valves are pneumatic, unless noted or specified otherwise.



These diagrams and the control specification are for the small school auditorium 50 by 100 ft shown previously under "Control Methods." Equipment consists of a 4000 cfm heating-ventilating unit and 100 ft of sill-line convectors, together having 200,000 Btu input

General Specification Items

In addition to the specification for a particular control scheme, there are general prefatory paragraphs which apply to the entire system. Thus in addition to the individual control sequences for the various spaces, the complete specification would read as below.

It is of interest to note a problem that must be taken into account in the consulting engineers specifications, in that control work is per-

formed by no less than four subcontractors on any job. By custom of the trades, dampers are furnished by the controls supplier but installed by the sheet metal contractor; automatic valves are installed under the heating piping work, pneumatic tubing is done by a tube fitter in the employ of the controls manufacturer; and electrical work is performed under the aegis of the electrical trade.

GENERAL ITEMS

1. Furnish and install all labor, materials, equipment, and services required for a complete system of temperature controls as shown on the Drawings and as specified.
2. All existing control equipment and pneumatic piping in existing building which is used or moved shall be completely overhauled, put into first class condition, and shall be subject to the same guarantee as the new equipment.
3. Control equipment shall be pneumatically operated, except as specified otherwise, as manufactured by "A," "B" or "C" Company.
4. The control system shall be complete, including all necessary thermostats, relays, manual switches, controllers, control valves, dampers, damper motors, air compressors, moisture eliminators, piping, wiring and all accessories necessary to perform the intended operations as specified.
5. All piping and sheet metal work shall be done by the Heating and Air Conditioning Sub-Contractor. All pneumatic control piping and pneumatic equipment shall be installed by the manufacturer of the automatic controls. All automatic control work, however, shall be supervised by the automatic controls manufacturer, who shall furnish the necessary skilled supervisors as required, during the life of the job.
6. Furnish and install automatic louver dampers at all outside air intakes, at relief louvers and at all fan and gravity discharges to outdoors, and at all recirculating returns, except as noted otherwise on the drawings.
7. At roof type exhaust fans, omit automatic dampers, and furnish factory installed aluminum self-acting gravity dampers, with felted edges for tight closing.
8. All motors, controllers, relays and operating mechanisms shall be so located as to be readily accessible for maintenance. Furnish and install access doors for this purpose.
9. Under all schemes of control, starting the fan shall activate all automatic controls for any one system. When fan is not operating, all respective outside air intake and exhaust dampers shall remain closed.
10. Each supply and exhaust fan shall have a high limit manual reset cutout controller on the suction side of fan, to stop fan in case of fire. Set for 120 deg. F. Company "D" or other approved manufacturer.
11. Each supply fan shall have a manual reset low limit cutout controller on the discharge side of fan, to stop fan to prevent freeze-up of coils. Set for 50 deg. F.
12. Furnish and install two air compressors, each with a compressor receiver, of sufficient size and capacity so that either compressor will be able to

furnish the required air to the control system when operating less than one-third of the time.

13. Each unit shall be complete with an electric motor of ½ hp, with thermal overload protection, combination magnetic starter, factory wired pressure switches, pressure reducing valves, relief valve, air gauges, air intake filter, air intake muffler, refilters, ASME approved tank, all factory mounted integrally on a substantial steel base, and painted one coat shop paint.

14. Furnish and install a compressed air supply line to the centrifugal compressor suction damper, and to the damper controller.

15. The entire pneumatic piping system shall be tested by placing it under 30 psi pressure for 24 hours, with no appreciable drop on the pressure gauge.

16. All-steam heating coil control valves shall be 2½ in. or smaller. Where a larger capacity is required, furnish and install two valves in parallel, arranged to operate in sequence.

17. All modulating dampers shall be of the opposed-blade louver type; all two-position dampers shall be parallel-blade type. Dampers shall have black enamel finish, and shall be equipped with brass bearings or with ball bearings. Blades shall be not more than 10 inches in width, not less than #16 gauge, and frame shall be of welded channel sections.

18. All pneumatically operated valves and damper motors in excess of 20 square feet in face area used in sequence operations shall be equipped with positive positioning devices.

19. All starters, pilot lights, 2-position and modulating controllers, and all accessory equipment, located in any one machine room, shall be mounted on a #16 gauge steel board, securely supported to floor, ceiling, and wall by means of angle iron supports. Paint panel and supports with one shop coat of gray paint.

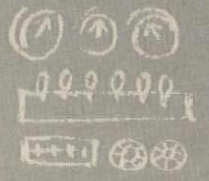
20. Thermostats, unless specified otherwise, shall have concealed adjustment, with red-reading thermometer in cover.

21. Refer to the following paragraphs under this Section of the Specifications for related equipment and work:

- a. Access Doors
- b. Motors; Controllers; Disconnects
- c. Nameplates; Identification Tags; Charts
- d. Sheet metal work

22. Submit wiring and piping diagrams, electric ladder diagrams, control arrangements, and data and dimension sheets for approval prior to any installation. Equipment will not be accepted without identifying nameplates or stencils.

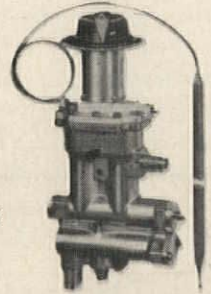
23. U. L. Approval. All electric components of the temperature control system shall have Underwriters' Laboratories approval.



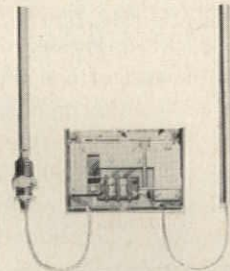
Combinations



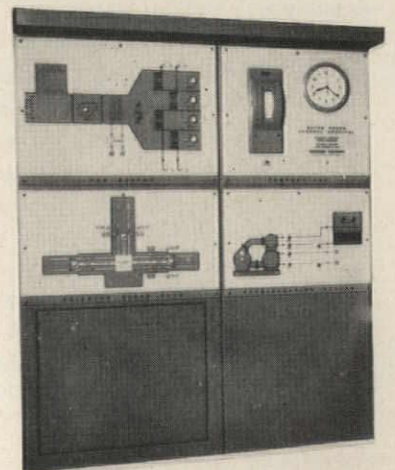
Outdoor Compensated Electronic Heating Controller



Self-Contained Heating-Cooling Thermostatic Selector Valve



Outdoor Compensated Aquastat



Control Center

STRUCTURAL USES OF WELDED STEEL TUBING

In architectural circles, tubular steel structures have for many years been thought of principally in terms of the dramatic space-frame constructions—bridges, towers, exhibition buildings, industrial buildings, et al—so common abroad. With the exception of the pipe column, which can surely be no mystery to any designer, structural uses here have been limited to the quasi-architecture of radio and TV towers, and oil-well drilling masts.

However the relatively recent development and subsequent wide availability of welded steel tubing has meant an increased use of tubular members, particularly since the curtain wall has become firmly entrenched in the architectural vocabulary. Of late, welded steel tubing has been widely used in curtain wall constructions ranging from simple framing for window wall sections on the one hand, to complete load-bearing curtain wall systems (if that is not a contradiction in terms) on the other hand.

This is due to several factors, but perhaps foremost among them is the fact that square and rectangular tubing combines the structural efficiency of the hollow, thin-walled section with a trimness of line that integrates well with other architectural elements in a wall section (windows, mullions, partitions) and needs no additional trim and no finish except, if desired, paint. It lends itself to prefabrication and hence to rapid site assembly. It greatly simplifies detailing, particularly of connections. It can be formed to virtually any desired shape. And it competes economically with other materials commonly used for structural supports, curtain wall framing and even mullions. (Details of such applications are given on pages 195, 197, and 199.) Since these qualities will doubtless be used in more, and more varied, applications as architects and engineers become more familiar with welded steel tubing, the following para-

graphs outline those specific properties of the material that have particular bearing on its present (and possible) architectural uses.

HOW THE TUBING IS FORMED

Regardless of the final configuration desired, all welded steel tubing starts out as a coil of flat rolled steel which is fed continuously from the coil to a series of forming rolls that bend the flat stock first into a horseshoe and then into a round tube.

In the case of carbon steels, the formed tubing continues into pressure rolls where it contacts electrodes which conduct current across the butted joint. A welding temperature is produced by the metal's resistance to the flow of current, and a fusion weld of the edges is completed without the introduction of additional metal.

Stainless steel tube leaving the forming rolls also enters pressure rolls, but it then moves under a tungsten electrode which is totally shielded by an inert gas atmosphere. Although an arc weld is made rather than the electric resistance weld used for carbon steels, no welding rod or additional metal is used, so that in both cases the result is a continuous tube with a weld of the same composition as the tube itself.

ITS INHERENT ADVANTAGES

Since tolerances on the flat rolled products used in the manufacture of welded steel tubing are held within extremely close limits, the finished tube has uniform wall thickness and equal strength throughout. (Latent imperfections can be easily detected prior to forming, when both sides of the steel are open to visual inspection.) This, and the roll forming process, insure that the inside and outside diameters of welded steel tubing are, for all practical purposes, concentric about the central axis. This eliminates the need for machine truing and permits the

use of a minimum wall thickness in design, with resultant savings in fabricating costs and weight.

Welded steel tubing can be subjected to all popular fabricating operations, during which the weld area can be treated the same as any other section. Bending is by far the most common form of fabrication, but flaring, flanging, tapering, flattening, beading, upsetting, reducing and even punching are possible as well.

Similar latitude can be used in selecting joining methods. Welding—by any of the conventional processes—is of course the most obvious method, the particular process being determined by the joint design and type of tubing. However, mechanical methods are often used to join welded steel tubes to other forms and materials, including wood.

SHAPES AND FINISHES

Once the round tube has been formed and welded, it can easily be drawn or rolled to a more convenient configuration. Although they cost more than the round shape, square and rectangular tubes are perhaps used more often because the convenience of connecting to flat rather than curved sides offsets the higher cost of the tube stock itself. Special shapes (ovals, hexagons and so forth) are usually made only when mill order runs can be utilized.

The commonly-used carbon steel tubing is suitable for such finishing processes as painting, porcelain enameling and plating; for such metallic finishes as aluminizing and galvanizing; and for plastic coating. Stainless steel tubing, which is often used in spite of its higher cost because it eliminates the need for exterior trim, comes in standard mill finishes—polished, burnished, white pickle, bright anneal and others. In either case, the inside of the tubing can be left exposed.

continued on page 195

Light Gauge Sheet Steel Performs Like Heavy Beams in New Roof System

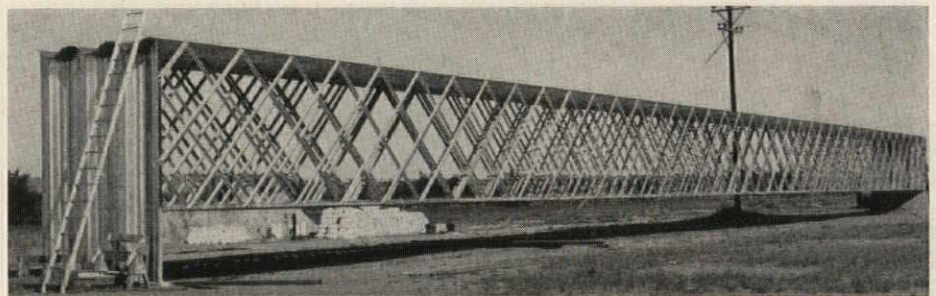
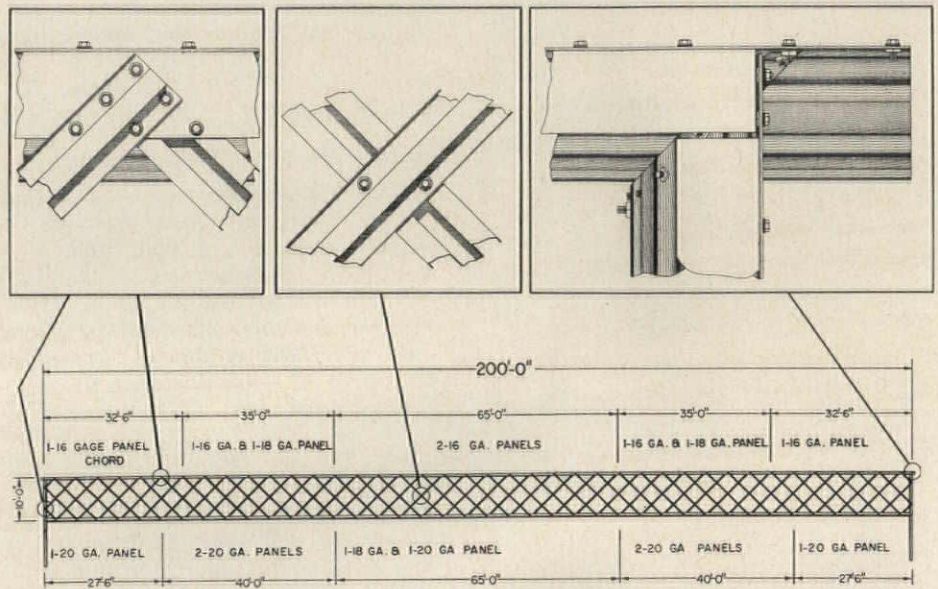
Although it is about 25 per cent lighter than conventional truss roofs, the *Dubl-Panl* roof, a new roof-ceiling construction made up entirely of 13- to 20-gauge sheet steel, can be used without intermediate supports for spans from 40 to 1000 ft. It has only two basic components: channel-grooved panels which, when bolted together, form the upper and lower stressed chords of the roof and also serve as roof and ceiling respectively; and hat-shaped diagonal struts which, when set in rows 41-in. (panel width) apart, transfer vertical loads into axial stresses in the panel-chords. The lateral load is then transferred to walls, so there is no need for lateral bracing.

The precise gauge, shape, spacing and length of the struts are of course determined by the specific span and load requirements, with practical span limitations estimated at 40 to 350 ft for flat roofs, up to 1000 ft for arched roofs, and up to 250 ft for cantilever overhangs. The system can also be used to construct shear walls of virtually any height desired.

According to the manufacturer, a key factor in the development of the new roof system was the discovery that when the struts were bolted together at the intersections, the tension struts prevented lateral deflection of the compression struts, thus making it possible to use l/r ratios far in excess of those normally used for compression members. The efficiency of the *Dubl-Panl* roof is further increased by the elimination of bracing, purlins, sheathing, built-up roofing and other miscellaneous members whose weight would otherwise have to be carried by the system. In recent tests, a 200-ft section (photo right) loaded to 60 psf (twice the design live load) deflected only 7 $\frac{3}{8}$ in. at mid-span. The expected deflection was over 12 in.

The *Dubl-Panl* roof system is also said to offer other advantages:

- 1) The galvanized or aluminized panels and struts give long, service-free life without painting.
 - 2) Insulation, ducts, openings and other accessories are easily installed between the panel-chords before or after erection.
 - 3) Semi-skilled labor and simple erection methods can be used.
 - 4) Less dead load distributed more evenly may permit reduction in wall and footing materials.
 - 5) Channel-ridged panel-chords have inherent acoustical value which can be augmented by insulation.
- Behlen Mfg. Co., Inc., Columbus, Neb.*



Automated Guard System Gives Sure Plant Security

By centrally-locating all building or plant security functions so that they can be supervised by a single guard, the new automated *Electronic Security System* promises to provide better plant protection at less cost. The basic "building block" of the system is a compact control console which contains a two-way intercommunication unit, a closed-circuit television screen, and a number of push button switches that operate gates and security equipment and light up to serve as visual alarms. Surrounding it are sub-system panels that link to the main console a variety of remotely-located detection devices, any or all of which may be incorporated in any given installation. Some of these devices—fire and smoke detector heads, magnetic window and gate switches, TV cameras at entrances, and holdup alarm switches—are fairly conventional. Others, like the electronic noise and motion detectors and a capacitance-type electronic fence that "really works," are new developments. In all cases of alarm, the

guard at the console is warned both visually and audially, and is told the location and nature (fire, intrusion, etc.) of the emergency by indicating lights on the sub-system panels. *Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave. South, Minneapolis 8, Minn.*

more products on page 212



Stem Architectural Veneers

Lists some of the more distinctive woods for architectural veneer paneling, giving information on color, size, source, availability and approximate cost, with side notes on special characteristics. *Chester B. Stem, Inc., Grant Line Rd., New Albany, Ind.*

Inlock Neoprene Structural Gasket

(A.I.A. 17-J) Describes the architectural and cost advantages of the *Inlock* one-piece gasket, and gives test data, cross section information, installation procedure, architectural details and photos of installations, and specification data. Catalog 200, 28 pp. *Wm. A. Reynolds & Co., Inc., 4500 Euclid Ave., Cleveland 3, Ohio* or *Inland Mfg. Div., General Motors Corp., Dayton, Ohio*

Self-Policing Annunciator Systems

Discusses and gives basic engineering data on the operation and application of annunciator systems for various industrial uses. Catalog No. 659, 36 pp. *Scam Instrument Corp., 1811 W. Irving Park Rd., Chicago 13, Ill.*

Heifetz Design Gallery

Catalogs, with photos, dimensional drawings and specifications, a complete line of ceiling pendant lighting fixtures featuring *Rotaflex* plastic diffuser globes. 18 pp. *The Heifetz Co., Clinton, Conn.*

Plaster Construction Systems

Four new booklets—"Membrane Fireproofing," "The Trussteel Stud Partition System," "The Two-Inch Solid Lath and Plaster Partition System," and "The Brace-Tite Lathing System for Suspended Ceilings"—show each plaster construction system via detailed photographs and drawings. *United States Gypsum Co., Dept. 122, 300 W. Adams St., Chicago 6, Ill.**

Semimicro Chemistry Laboratory

... *Equipment* includes several types of student laboratory tables designed for the teaching of semimicro chemistry; a brief description of the semimicro chemistry method and its advantages; lists of semimicro apparatus and glassware required for student use; storage counter assemblies; and six floor plans for combination semimicro chemistry-physics laboratories. 24 pp. *Kewaunee Mfg. Co., 5046 S. Center St., Adrian, Mich.*

Roofing and Waterproofing

... *On Concrete Shell Construction* discusses the general and special requirements for roofing materials for concrete shells, and describes *Addex*

Roof Shield specifications TS-1 and TS-2 for waterproofing and reflective waterproofing respectively. *Addex Research, P.O. Box 3507, Cleveland 17, Ohio*

Conductive Tile Factbook

Contains a folder on various types of ceramic tile recommended for hospital installations; a performance study of a specific installation; and specification information on impervious conductive ceramic mosaic floor tile. Form 228. *Mosaic Tile Co., Zanesville, Ohio**

Store Planning Guide

Includes detail drawings, complete specifications, and photographs of actual installations of the *Vizusell* merchandising and display system. Catalog 450, 84 pp. *L. A. Darling Co., Dept. 450, Bronson, Mich.*

Heating Coils

Describes the construction and operation of *Kennard/Nelson* steam and hot water heating coils, with complete selection and engineering data, and specifications. Bulletin HC-102, 32 pp. *American Air Filter Co., Inc., Dept. PD, 215 Central Ave., Louisville 8, Ky.*

Recessed and Accent Lighting

Catalogs, with illustrations, complete dimensional drawings and accurately calibrated light curves, the *Markstone* line of recessed and accent lighting fixtures for residential and commercial applications. 20 pp. *Markstone Mfg. Co., 1531 N. Kingsbury, Chicago 22, Ill.*

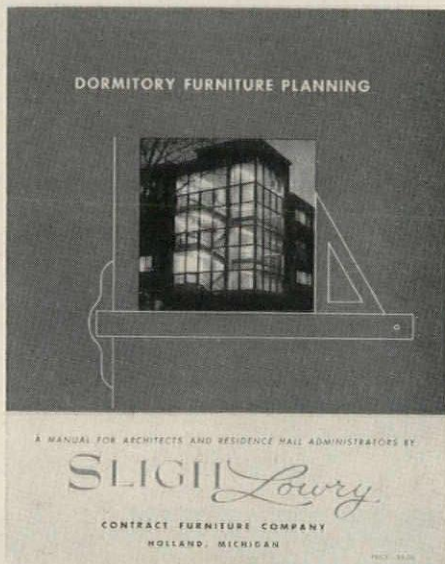
Constants for Designing

... *Continuous Framing Using Cover Plates* (A.I.A. 13-C-2) Two-part study (SSAW Nos. 150 and 151) presents a series of charts for determining stiffness factors, carry-over factors, and fixed-end moments for beams in which there are abrupt changes in the moment of inertia occurring when cover plates are welded to the flanges of an I-beam over part of its length. Reprinted from Bulletin 176 of the Iowa Engineering Experiment Station by *Lincoln Electric Co., Cleveland 17, Ohio*

Functional Drafting

Supplement No. 2 discusses six bases for reducing costs in drafting and design, with special emphasis on planning and equipping drafting rooms. 30 pp. *Kuhlmann Straube Co., Ltd., P.O. Box 358, Oakville, Ont., Canada*

*Additional product information in *Sweet's Architectural File*
more literature on page 240



DORMITORY FURNITURE PLANNING, *A Manual for Architects and Residence Hall Administrators*, provides a detailed guide for planning dormitory rooms and suites "from the furniture up." Separate sections cover minimum furniture requirements in general and the special considerations that affect them; recommended design and construction features; the relative advantages of wood and metal furniture, built-in and freestanding; and suggested specifications for factory-built wood furniture. Of special interest is a collection of perspectives, plans and details of typical room layouts. 40 pp. \$3. *Slight Lowry Contract Furniture Co., 174 E. 11th St., Holland, Mich.*



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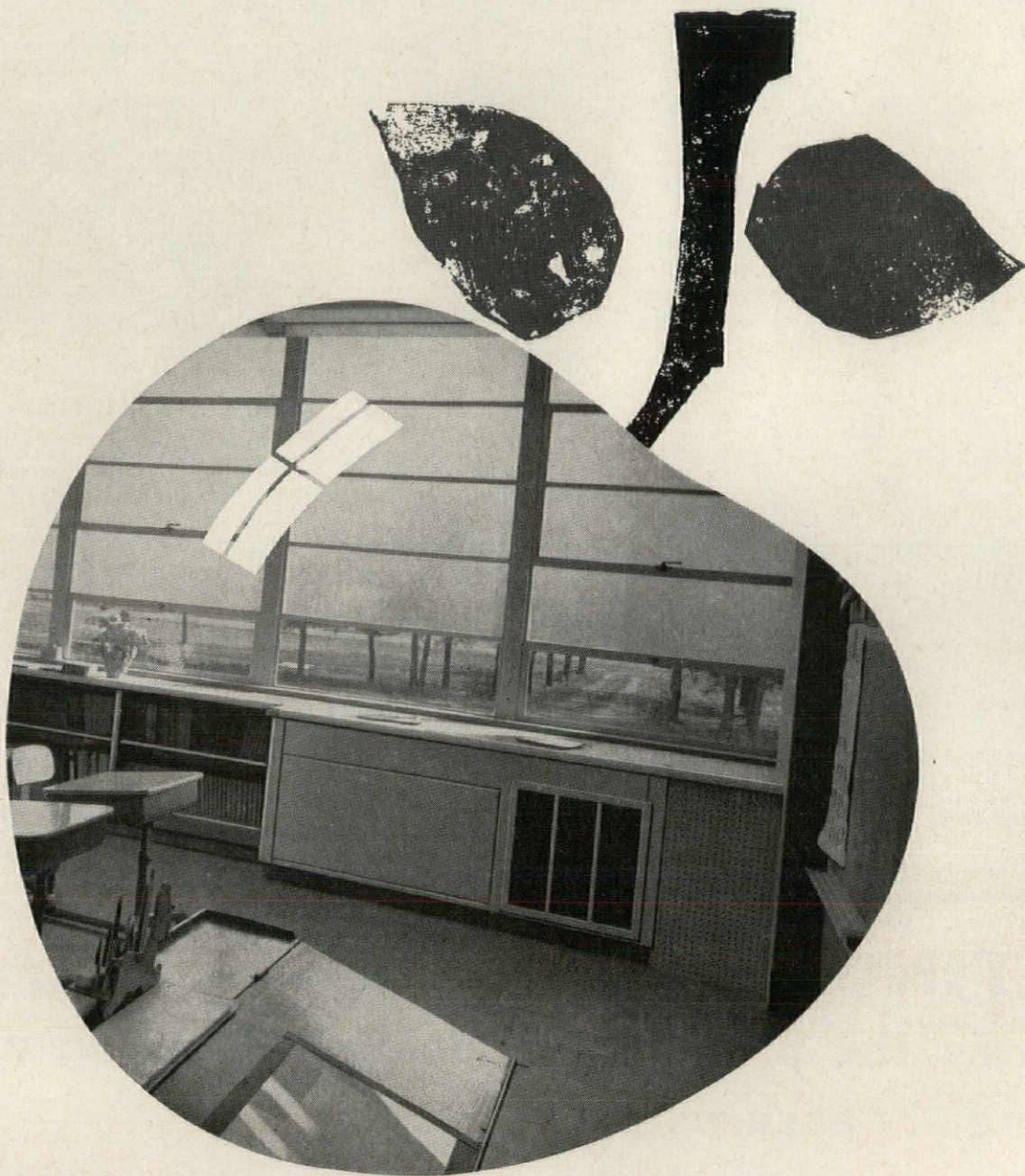
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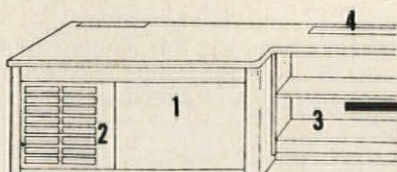




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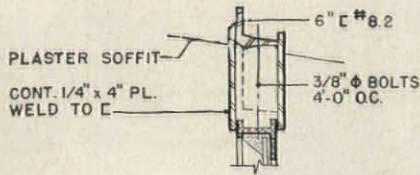
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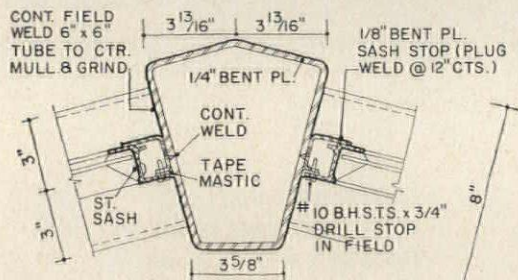


STRUCTURAL USES OF WELDED STEEL TUBING: DETAIL 1

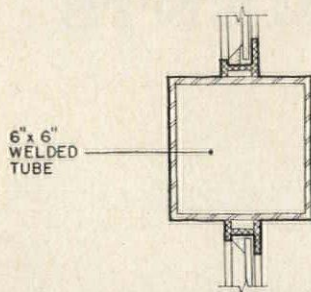
Student Chapel, Valparaiso University, Ind. Architects: Charles Edward Stade & Associates; Associate Architects: M. Dolan & H. Anderson



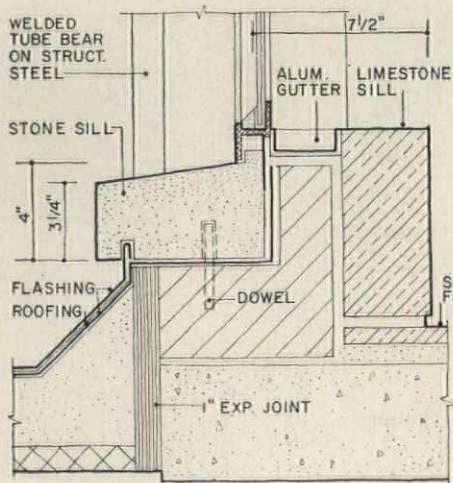
1 HEAD



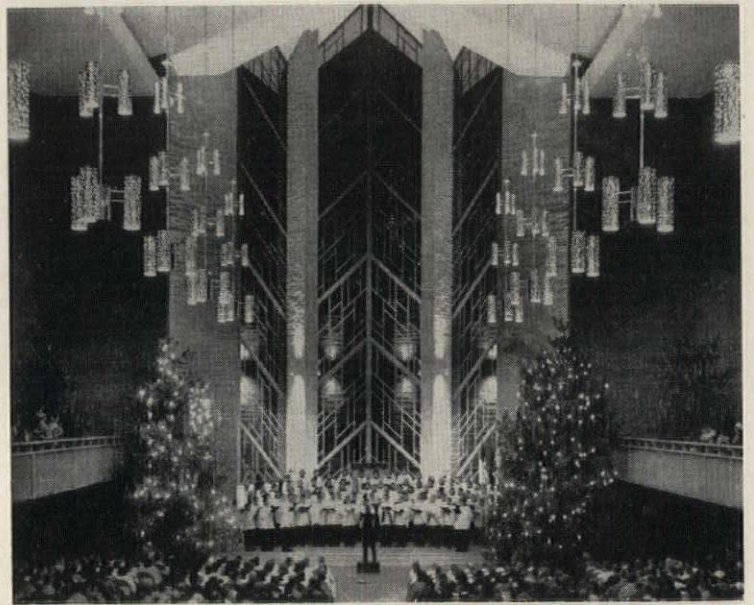
2 VERTICAL MULLION



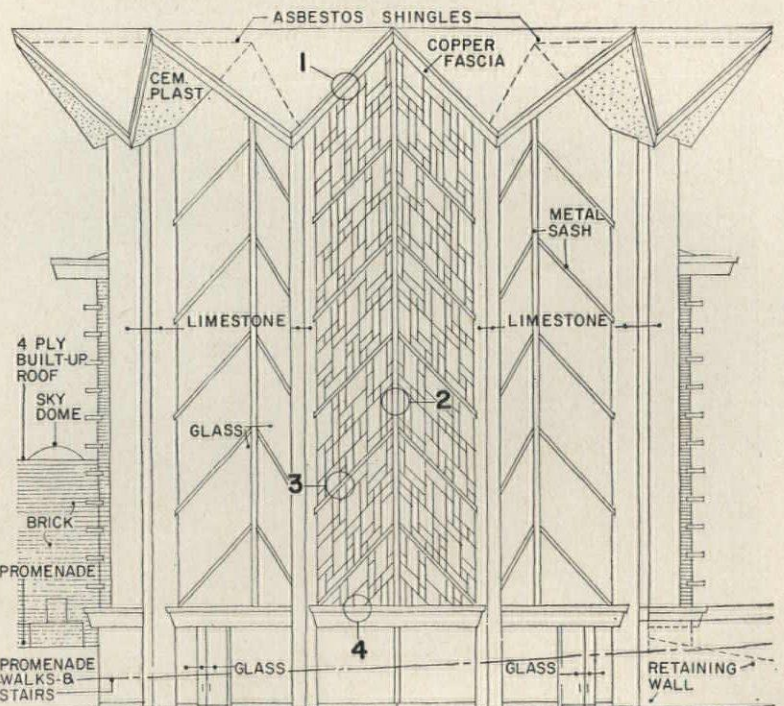
3 DIAGONAL MULLION



4 SILL



Between its radial limestone piers, the polygonal chancel of this student chapel is framed entirely of glazed steel sash set in mullions made of welded steel tubing, with the vertical central mullion in each bay inset slightly to form the apex of a shallow triangle. Welded steel tubing was chosen for the chancel window wall framing after alternate bids had been taken on both wood and stock lally columns. Although the lally columns came in under wood mullions, the architects found that welded steel tubing would give the desired appearance, permanence and strength at a still lower cost. Since it could be formed to any shape, the rectangular vertical mullions originally called for were modified to the slope-sided shape shown here in order to simplify the placing and joining of the diagonal mullions, which would otherwise have had to be double beveled at the ends that meet the center mullions. Although no molding was used, the small bent plates that join the sash to the mullions (see detail) gave a fully weathertight joint.



Lehigh Mortar Cement

"... helps the masons do a good job"



• The Theodore R. McKeldin Library is the latest of several large structures built on the University of Maryland campus by The George Hyman Construction Company. It clearly shows the results of good workmanship and good materials.

In commenting on the beautiful masonry walls of this library, Mr. J. A. Kopson, construction veteran of 50 years and superintendent on this job, had this to say about Lehigh Mortar Cement, "It has excellent strength, good color and its workability helps the masons do a good job."

This is typical of the comments made by users of Lehigh Mortar Cement the country over. So whether your next job is large or small, traditional or modern, you can approve Lehigh Mortar Cement with the assurance that it exceeds the most rigid ASTM and Federal specifications.

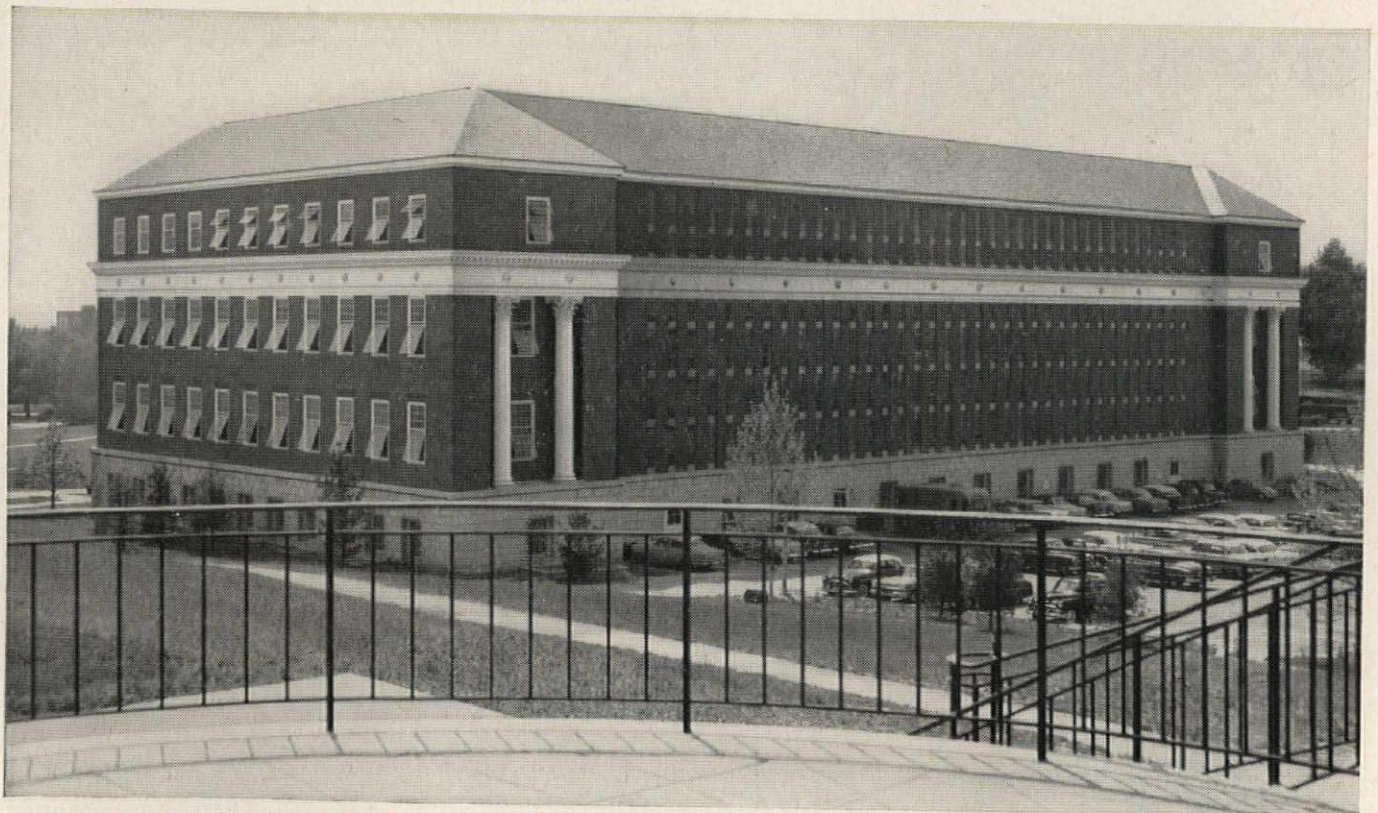
Architect: Hopkins & Burton, Baltimore, Md.

Contractor: The George Hyman Construction Co., Washington, D.C.

Dealer: Hudson Supply & Equipment Co., Washington, D.C.

- LEHIGH MORTAR CEMENT
- LEHIGH AIR-ENTRAINING CEMENT
- LEHIGH EARLY STRENGTH CEMENT
- LEHIGH PORTLAND CEMENT

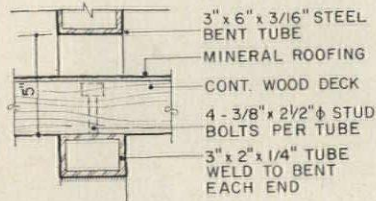
LEHIGH CEMENTS



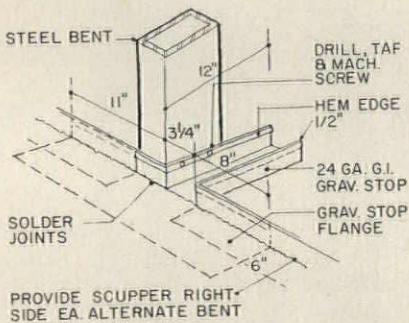
Rear view of Theodore R. McKeldin Library. The building has eight stories and basement. It is approximately 118 x 243 feet.

STRUCTURAL USES OF WELDED STEEL TUBING: DETAIL 2

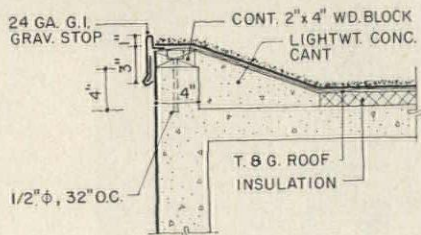
Katz Drug Store, Overland Park, Kansas Architect-Engineers: Kivet & Myer & McCallum



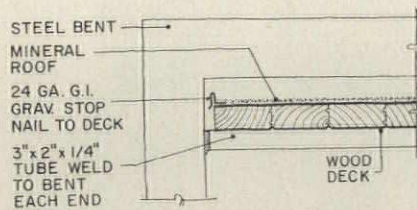
1 SECTION



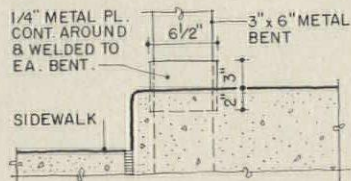
2 DETAIL



3 DETAIL



4 DETAIL

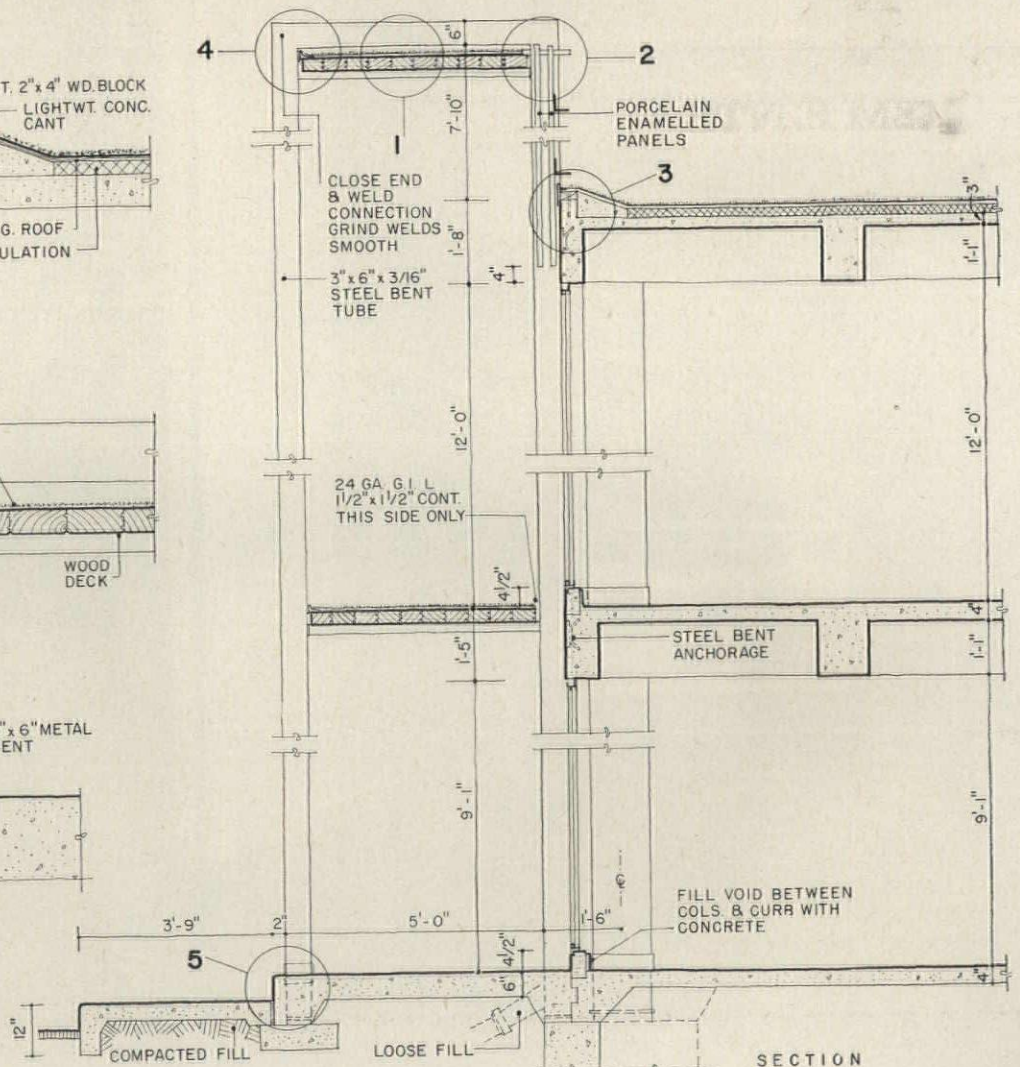


5 DETAIL



L. D. Jones

The two-plus story steel bents striding along the front of this Kansas drug emporium are both a major theme in the design of the building and an economical support system for the large expanse of glass that fronts the main sales areas. Rising about eight feet above roof level, they form a "parapet" from which decorative porcelain panels are hung; and they support the canopy that shelters the street floor arcade. But they also serve as framing for the glass wall. According to the architect, welded steel tubing was chosen for the bents because "there was no other material" that would have given the desired design pattern and economy of structure, as well as incombustible construction. Ease of erection also weighted the scales in favor of tube stock rather than channels welded to form a tube.



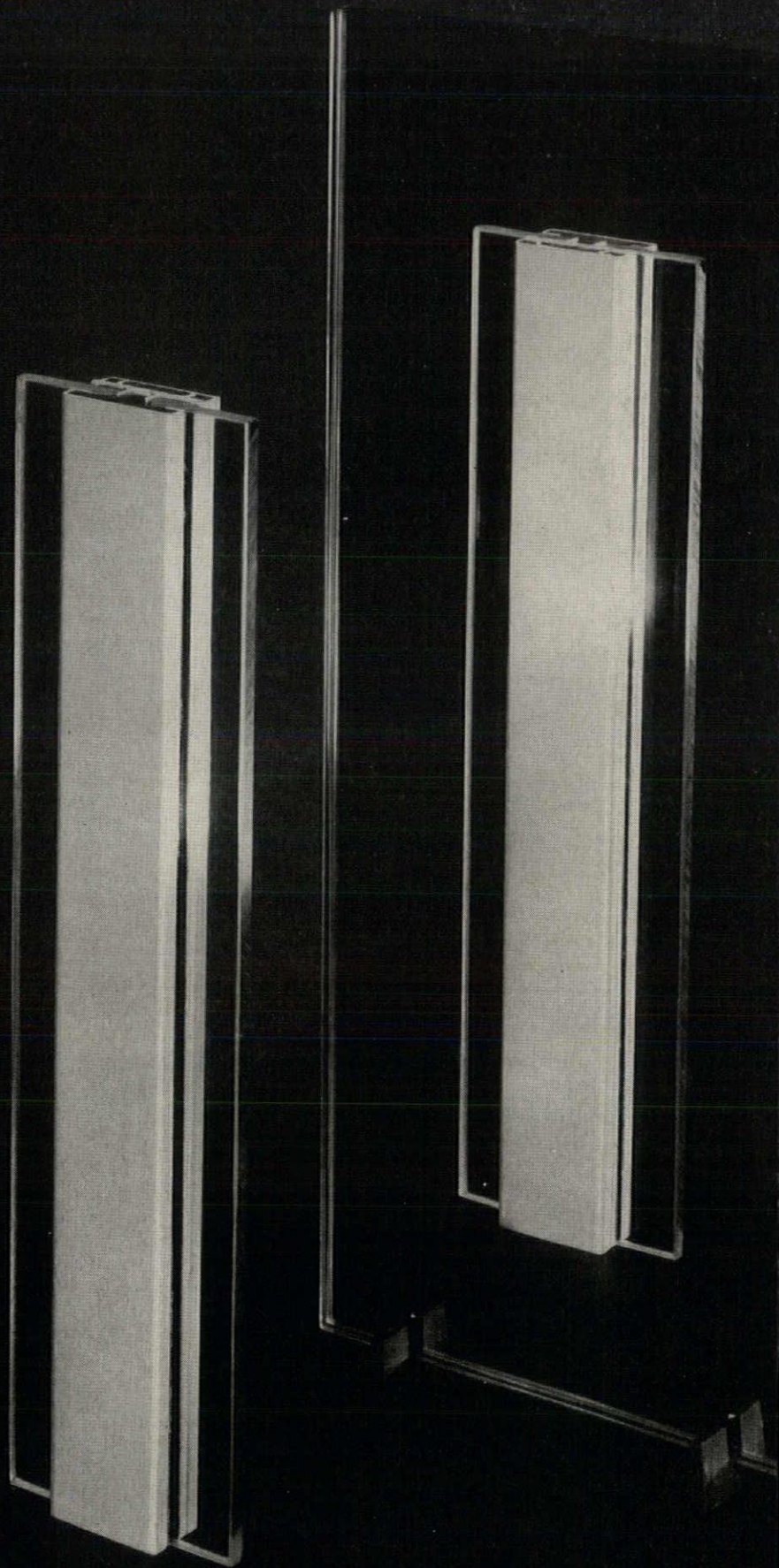
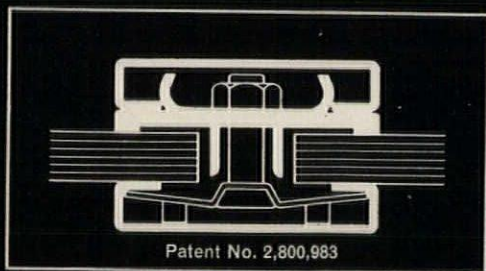
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The mirror reflects it better than we can say it: The PITTCO No. 33 Muntin Bar has stunning simplicity of line because it has no visible fastenings—a result of PPG's constant effort to eliminate visible fastenings wherever possible in PITTCO members.

Consult your PITTCO Store Front Metal Representative for information on complete line of PITTCO glass-holding and decorative metal members, or refer to Sweet's Architectural File—Section 21.



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PITTSBURGH PLATE GLASS COMPANY

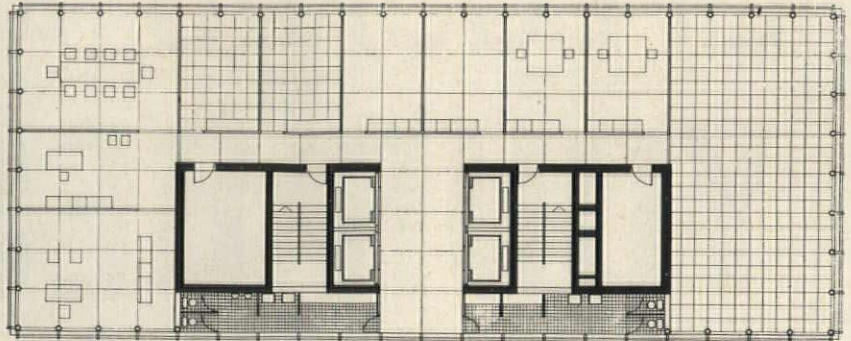
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

STRUCTURAL USES OF WELDED STEEL TUBING: DETAIL 3

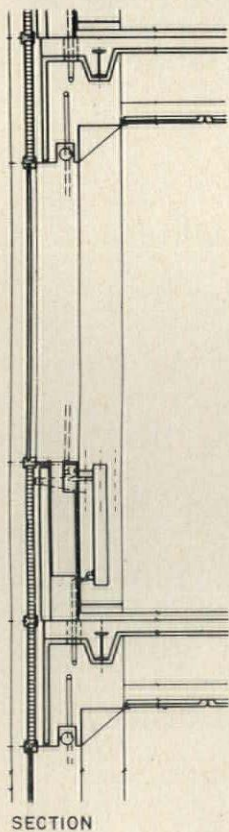
Mannesmann Building Dusseldorf, West Germany Architect: Paul Schneider-Esleben; Engineer: Herberth Knothe



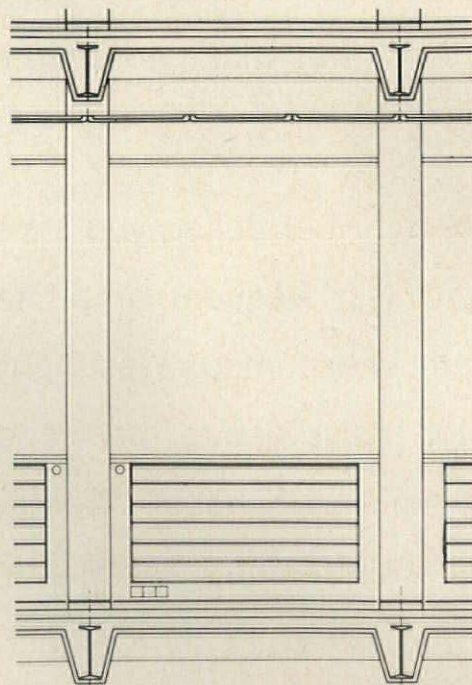
Inge Goertz-Bauer



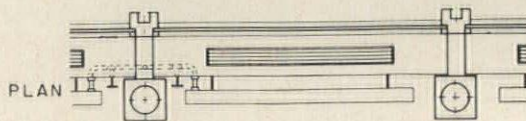
This 24-story building jutting skyward from the bank of the Rhine at Dusseldorf is the administrative headquarters of the Mannesmann AG, West Germany's largest producer of steel tubing. It is also believed to be, logically enough, the first skyscraper in which welded steel tubing is used for the exterior columns. Although much of the building's weight is carried by an interior core of reinforced concrete (see plan above), slender, 6-in. diameter round columns arranged on approximate 6-ft centers around the exterior wall support the perimeter loads of the floor beams and the curtain wall. The columns themselves are supported at first floor level, some 28 ft above the ground, by a perimeter box girder which transmits the loads from the superstructure to twelve socketed stanchions, also made of tubular steel. The curtain wall, which is hung outside the boxed columns as detailed below, consists of anodized aluminum framing members, fixed plate glass, and spandrel and lintel panels of steel plate porcelain enameled in white and blue.



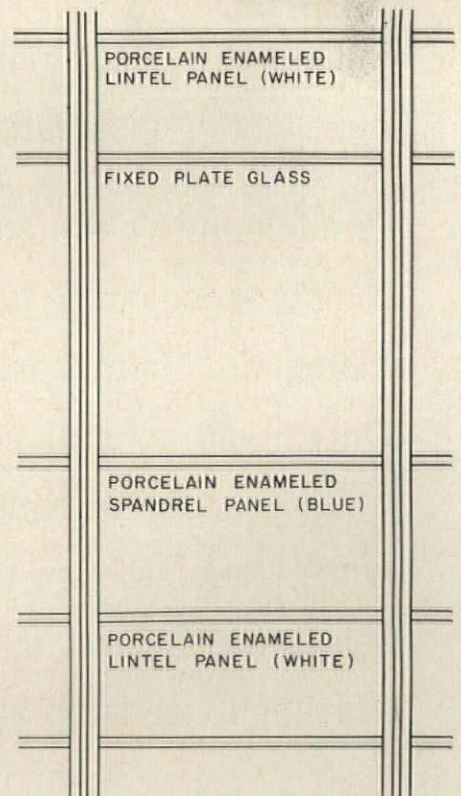
SECTION



INTERIOR ELEVATION



PLAN



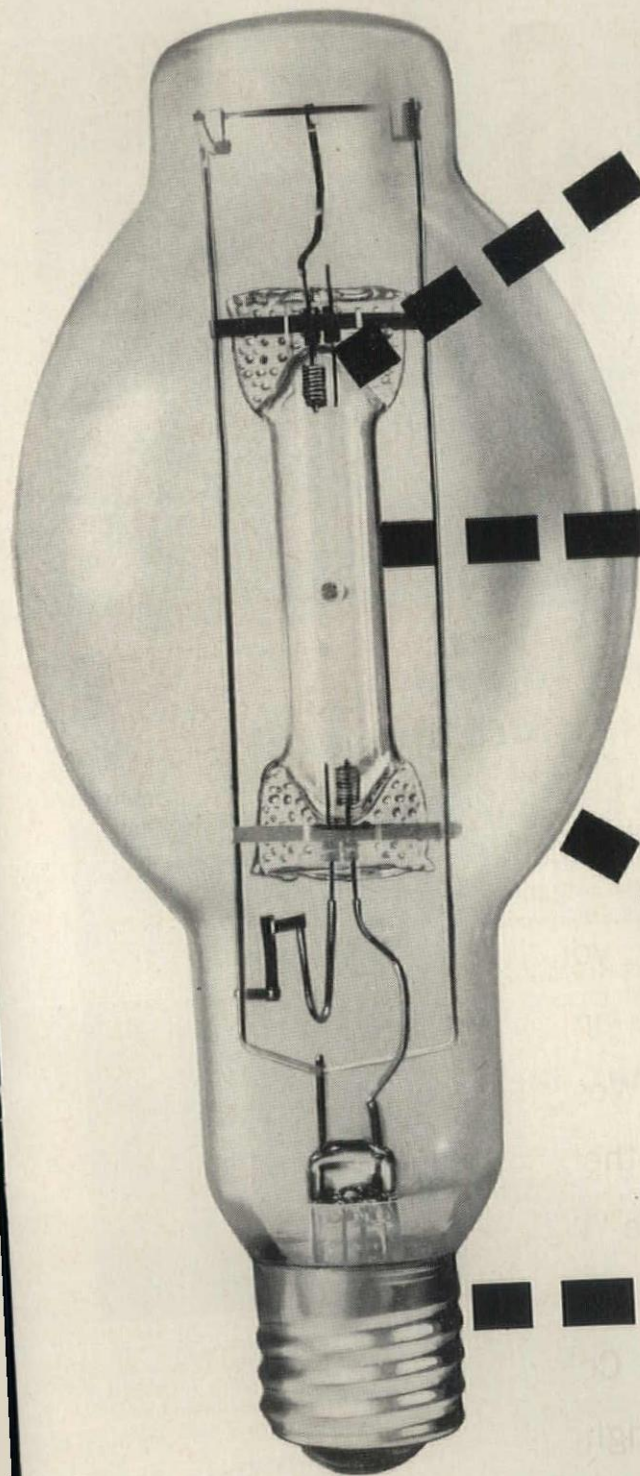
EXTERIOR ELEVATION

EXCLUSIVE WEATHER LIFEGUARD™ ARC TUBES YOUR BEST BUY IN MERCURY LAMPS!

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DUTY™ LAMPS WITH MAKE WESTINGHOUSE



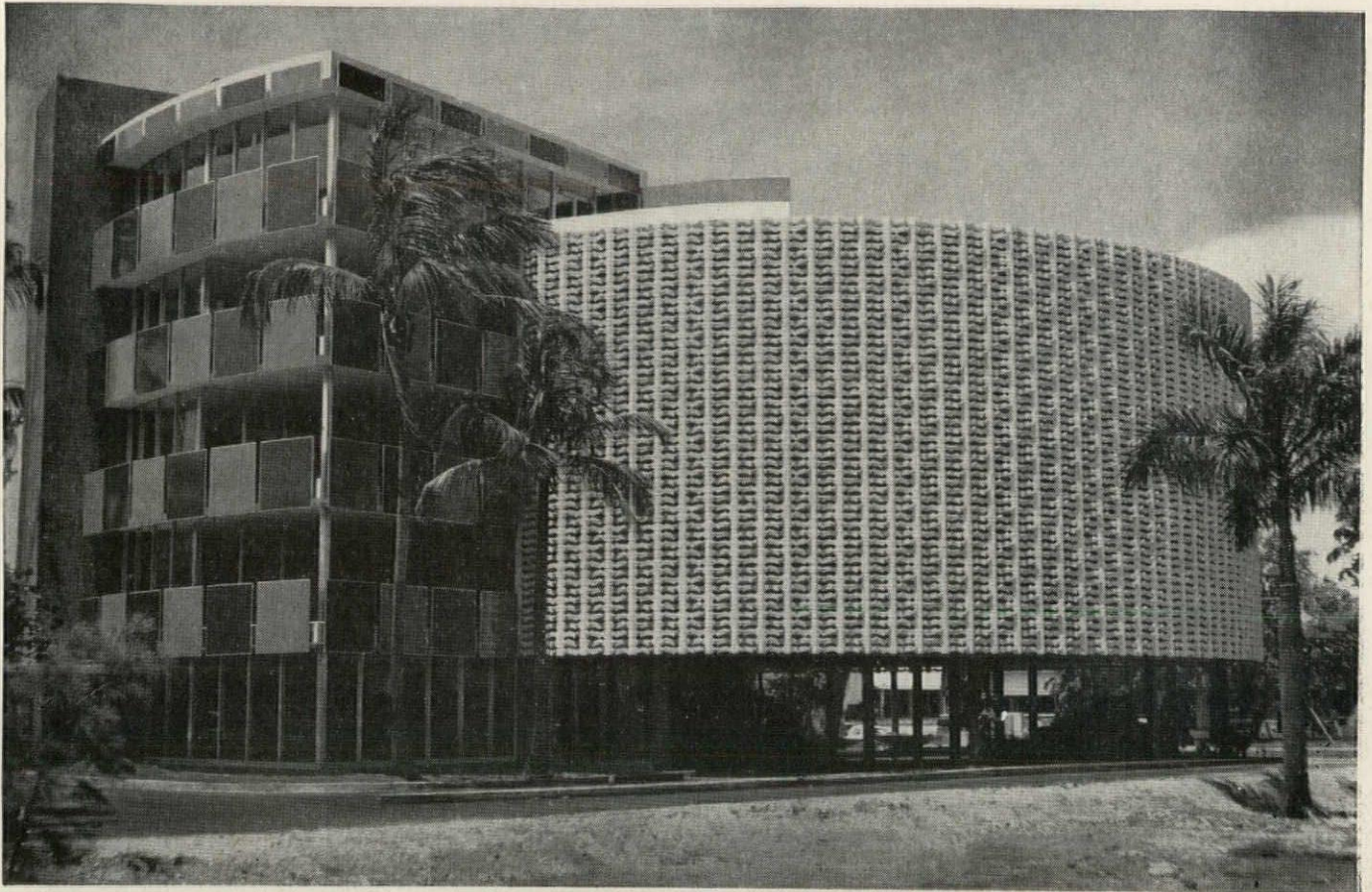
New design electrodes with specially-compounded and locked-in emission material virtually eliminate light-robbing arc tube blackening.

"Lifeguard" arc tube improves lumen maintenance... 85 percent of initial light output after 10,000 hours.

First with "Weather Duty" lamps... fume-proof and moisture-proof, shock-resistant glass.

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How Penmetal helped to make this unusual building even more unusual

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Penmetal products play an integral part in the unusual design. Partitions throughout employ Penmetal hollow metal studs in combination with Hush Clips. These resilient clips hold the lath away from the stud... significantly reducing sound transmission from room to room.

Penmetal's zinc expansion joint was used to panel ground-floor ceilings for protection against plaster cracking. Corner beads are all of special zinc alloy, developed by Penmetal for use in corrosive climates such as this.

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District Sales Offices: Boston, New York, Philadelphia,
Pittsburgh, Chicago, Detroit, Dallas, Little Rock, Seattle,
San Francisco, Los Angeles, Parkersburg, St. Louis

ARCHITECTS:

Polevitzky, Johnson & Associates

GENERAL CONTRACTOR:

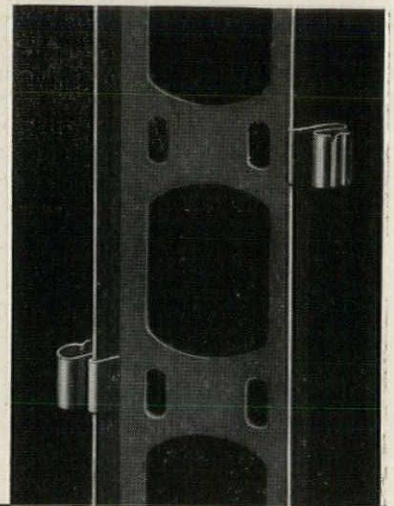
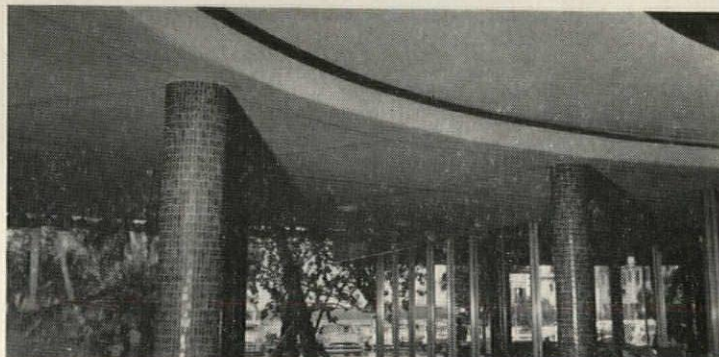
M. R. Harrison Construction Corp.

PLASTERING CONTRACTOR:

Roy L. Willard, Inc.

MATERIALS:

Monnah Park Supply Co., Inc.



Above: Extraordinary sound insulation was obtained through the use of Penmetal hollow studs and Hush Clips. Left: Expansion joint used for ground-floor ceilings.



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Create new dimensions in room decor, new highs in client satisfaction . . . with Eastern's Star Venetian Draperies. Pull a cord, and Eastern's Star draws apart like the finest draperies . . . pull another cord, and "S"-shaped slats rotate for complete control of light, air and privacy.

Custom-made to your specifications, versatile Eastern's Star Venetian Draperies fit any opening . . . as draw draperies, window walls, room dividers, even closet doors. Available in many color combinations, too . . . with an exclusive dirt-resistant finish to reduce maintenance to a minimum.

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Makers of acoustical systems and drapery hardware



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Eastern Products Corp.,
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Please send detailed information on
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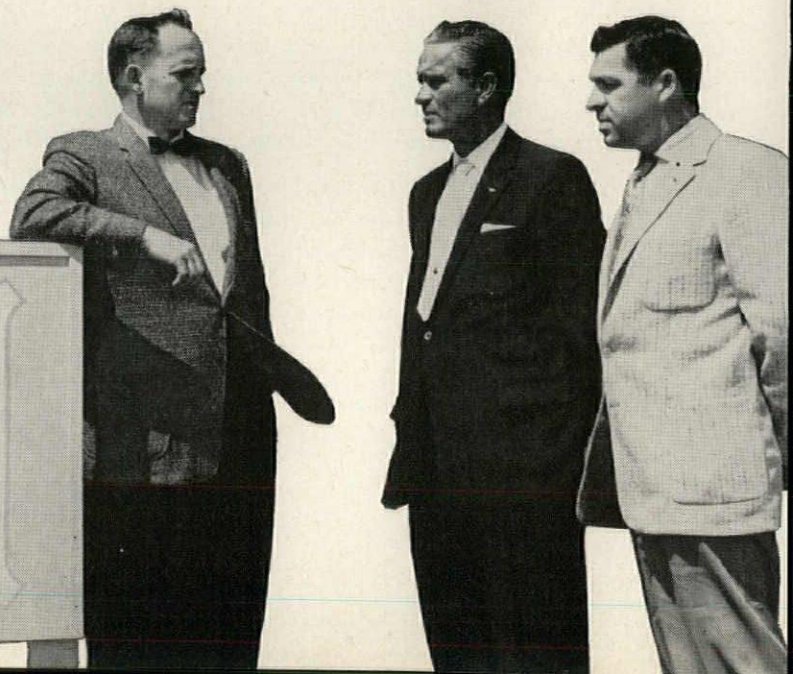
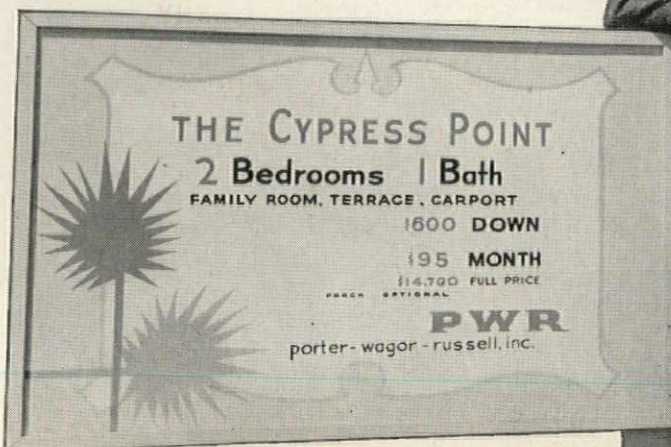
STATE

A model home in the Porter-Wagor-Russell, Inc. building project, Palmetto Country Club Estates, located near Miami, Florida. Inside plaster corners are reinforced with Keycorner lath for higher crack resistance.



"Our best selling homes are lath and plaster

Mr. Wagor, in front of one of his firm's model homes, talks over the advantages of Keycorner reinforcing lath with William Duncan, owner of the Duncan Plastering Company, Coral Gables, Florida, (right) and E. C. Faircloth, Keystone Steel & Wire Company building specialist, (center).





reinforced with **KEYCORNER LATH**[™]

... Porter-Wagor-Russell, Inc., leading Florida home-builders

"Reinforced-lath and plaster interiors are a big sales feature in our homes," reports Mr. F. B. Wagor, partner in the Porter-Wagor-Russell, Inc., builders of the large Palmetto Country Club Estates near Miami. "Best of all, it actually costs less to reinforce inside corners with Keycorner lath. You add value because of the high crack resistance and lower maintenance. Prospects are delighted with the lasting beauty of plaster. The hidden value of Keycorner reinforcement strengthens each sale."

Wherever Keycorner lath is used, it gives stronger corner reinforcement at less cost. Tests show that crack resistance of plaster corners is almost doubled as compared to other corner reinforcement.*

The pre-shaped, 4-foot lengths of Keycorner

fit into corners quickly and neatly. Keycorner can be nailed or stapled. Plaster flows in and around the open mesh design of Keycorner to assure a complete bond. Keycorner lath, packed 1,000 feet to a carton, is galvanized.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois, Makers of Keycorner • Keymesh[®]
• Keystrip • Keywall • Welded Wire Fabric • Nails

**Please send me additional information
and test reports on Keycorner reinforcing lath.*

Name _____

Company _____

Address _____

City _____ State _____

Product Reports

continued from page 191

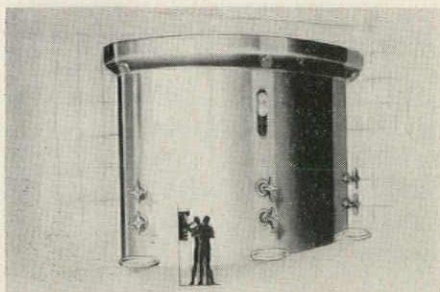
Insecticidal Alkyd Wall Paint

Kil-Sect, a new alkyd wall finish that incorporates a powerful insecticide (DDD), safely and thoroughly insect-proofs any area in which it is used. Although silverfish, roaches, and other pests are killed on contact with the painted surface, the paint is harmless to pets and people. It is also scrubbable and odorless, and comes in a wide range of colors. *Public Information Div., Consolidated Paint & Varnish Corp., 505 Fifth Ave., New York 17, N. Y.*



Fold-Away Drawing Table

A portable, fold-away drawing table from the Netherlands, the *Rista Kappa*, is especially useful where space is at a premium. When collapsed, it is only 48½ in. high and 4 in. wide. When opened, the telescopic tubes used for the frame instantly give a precise adjustment to any desired position at varying heights. The lightweight unit, which can be put up and folded away again in just a few seconds, weighs only thirty pounds. *The Netherlands Trade Commission, 551 Fifth Ave., New York 17, N. Y.*



Wall Mounted, Multi-Person Shower

A new wall mounted, multi-person shower is provided with two or three adjustable shower heads, soap trays and control valves so that one set of piping connections serves two or three shower facilities with each bather having individual control of water volume and temperature. Particularly suitable for narrow rooms, it is self-contained and assembled for mounting at any desired height. The

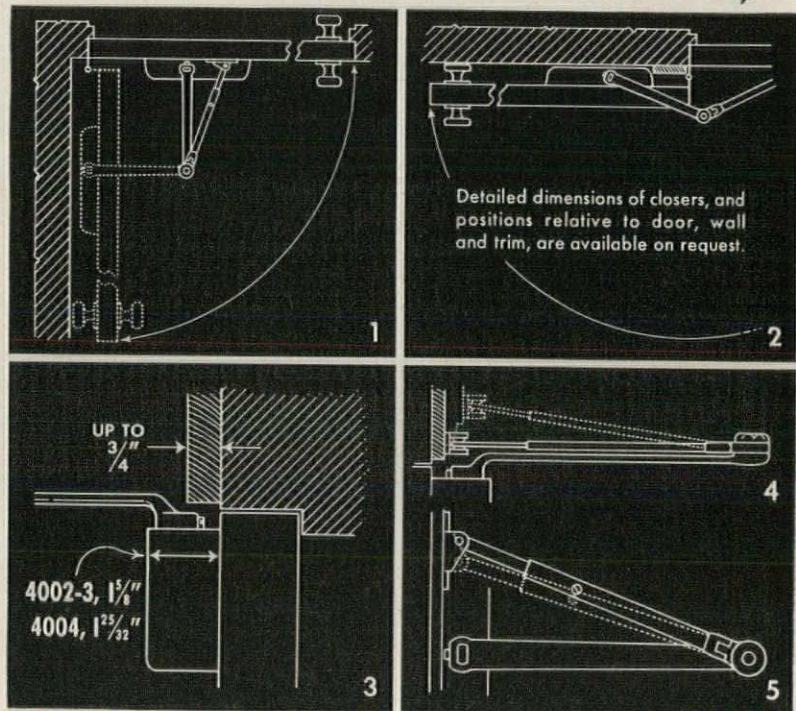
enclosing panel, cornice and cover are made of stainless steel or pressed steel vitreous-enameled and finished in white or colors. *Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee 1, Wis.*

Sprayed Rigid Foam Insulation

A new development in sprayed rigid polyether-based urethane foams is expected to bring important advances in the fields of insulation and corrosion control. The foam is self-adhering and can be sprayed on a vertical surface without sag or runs,

using appropriate spray equipment with a catalyst spray gun instead of the expensive positive displacement pumps required before. Its advantages include thermal efficiency up to twice that of conventional insulations, ease and speed of application on all kinds of surfaces, chemical and weather resistance, and modest equipment cost. The new foam was developed by the Wyandotte Chemicals Corporation; the techniques and equipment for spray application by *The DeVilbiss Co., Toledo, Ohio*

more products on page 221



APPLICATION DETAILS

for the LCN "Smoother" Closer for Interior Doors
Shown on Opposite Page

As Demonstrated in Drawings Above:

1. The LCN "Smoother" takes less space than most doorknobs between door and wall.
2. Degree of door opening possible depends mostly on type of trim and size of butt used.
3. Arm of LCN "Smoother" is formed to avoid conflict with almost any conventional trim.
4. Joints in arm and shoe make it easy to vary the height of shoe as needed for beveled trim.
5. Power of closer is increased or decreased by simply reversing position of shoe.

May we send a descriptive folder? Or a complete LCN Catalog, if you like? Address

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario



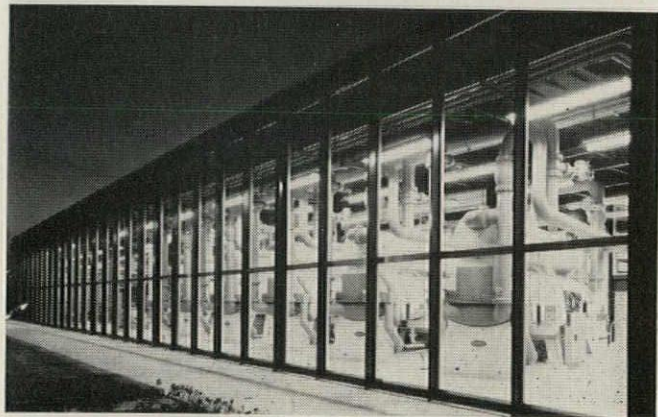
Modern Door Control by *LCN* "SMOOTHEE" DOOR CLOSER

ADMINISTRATIVE AND RESEARCH CENTER, INTERNATIONAL MINERALS
& CHEMICAL CORPORATION, SKOKIE, ILLINOIS

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

Perkins & Will
Architects-Engineers



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These Carrier Automatic Absorption machines, largest units of their type, use heat energy to obtain chilling... operate from the same gas-fired boilers which heat the airport in winter.

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Architect: Skidmore, Owings & Merrill.
Consulting Engineers: Seelye, Stevenson, Value and Knecht



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Carrier Absorption units use plain water as the refrigerant. No prime mover is required, only low-pressure steam or hot water. Seasonally idle boilers can be put to use on year 'round paying basis... and with gas as the boiler fuel, operating costs are cut to a minimum.

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RUBBER and VINYL SEALS

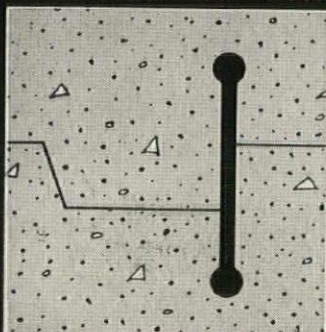
FOR MASONRY JOINTS

Water Seals for cast-in-place construction joints between concrete footings and walls, walls and floor slab, wall section and wall section, and floor slab and floor slab.

Sealing Gaskets for use between sill and coping stones, brick and stone wall panels, masonry wall panels and structural steel members.

Sealing strips for control joints in block constructed walls . . . watertight seals with an inherent, permanent liveliness for use in Michigan and Besser Control Joints.

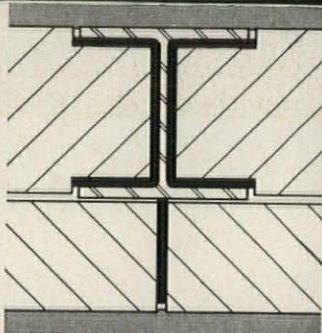
RUBBER or VINYL WATERSTOPS



Williams Waterstops are made from Natural Rubber Stock and designed for maximum effectiveness in any type of cast-in-place construction joint. They will bend around corners, and will not crack or tear from shear action. Tensile Test: 3990 lbs., Elongation Test: 650%. Available in rolls up to 80 feet in length. Field splicing is simple. Williams Waterstops can also be furnished in Vinyl or Neoprene for industrial uses where resistance to oil and other injurious wastes is desirable.

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WEATHERTITE for CONTROL JOINTS

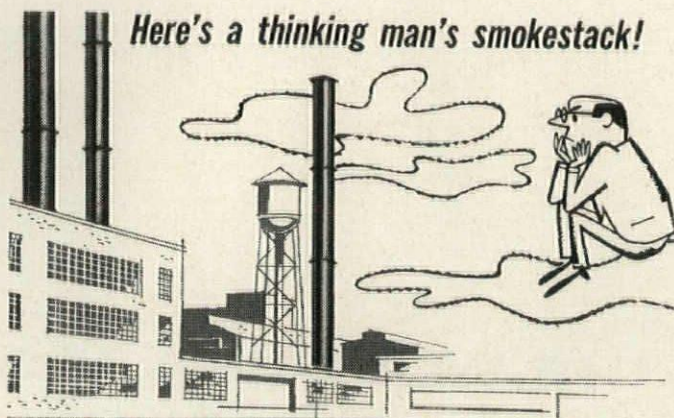


Weatherite is a specially shaped, nonporous, expanded Polyvinyl Chloride strip which provides multiple, continuous contact surfaces when compressed, and thereby produces the positive pressure contact seal in standard control joints in block constructed walls. Weatherite is available in two types to meet all requirements. Type "R" is made especially for use in Michigan Control Joints; Type "RB" is made especially for use in Besser Control Joints.

See Sweet's Files, or Write for Information.

WILLIAMS EQUIPMENT and SUPPLY CO.

456 W. Eight Mile Rd., Hazel Park, Michigan



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Realty Co., Inc.,
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Architect:
Kelly & Gruzen
New York, N. Y.

Electrical Engineers:
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New York, N. Y.

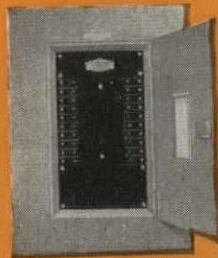
Electrical Contractor:
Cucinell Electric Co.
Yonkers, N. Y.

S. Klein Dept. Store
Yonkers, New York

Typical Frank Adam equipment that controls
electric power for S. Klein's new Yonkers store!

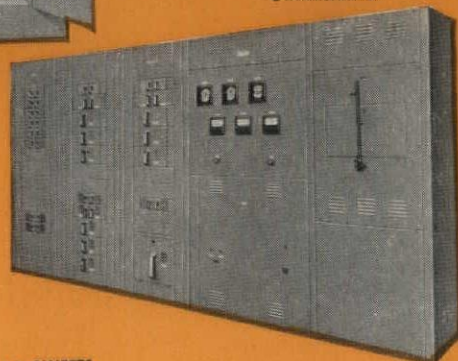


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Mahon METAL CURTAIN WALLS



Maintenance Hangar for American Airlines located on the Detroit Metropolitan Airport. Mahon Metal Curtain Walls in blue porcelain finish were employed, in this instance, with natural brick to produce an attractive exterior. Wall Plates of the same material painted gray were employed to face the large hangar doors.

Architects & Engineers:
Giffels & Rossetti

General Contractor:
A. J. Etkin Construction Co.

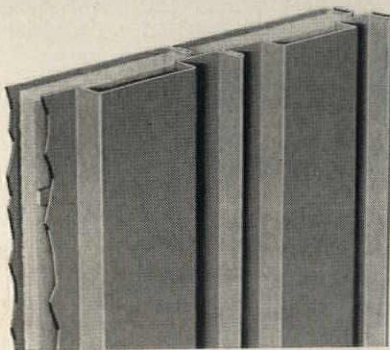


Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

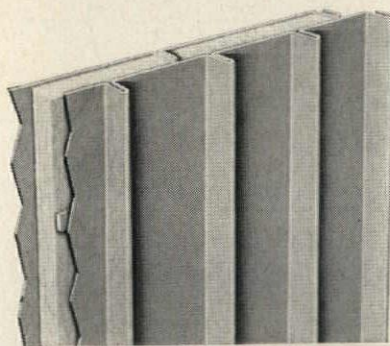
in Bright Metal or Colored Porcelain Produce Clean, Attractive Exteriors!

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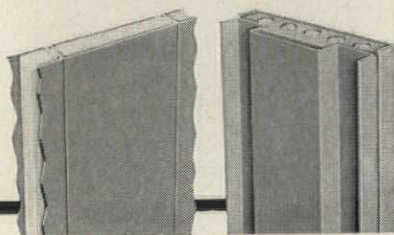
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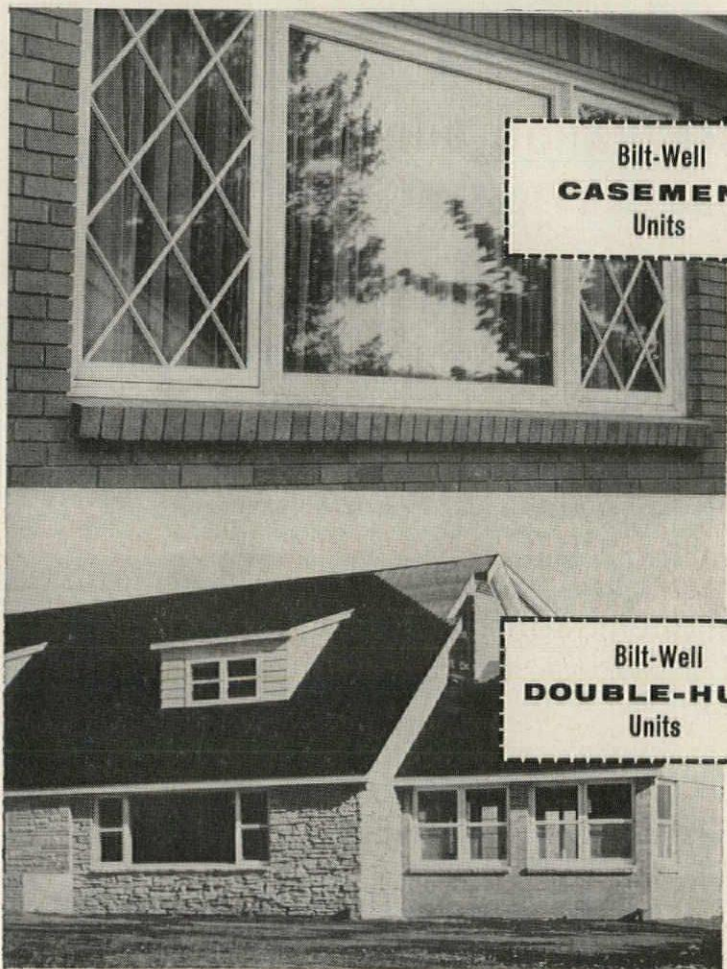
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- Rolling Steel Doors (Standard or Underwriters' Labeled)
- M-Floors (Electrified Cellular Steel Sub-Floors)
- Long Span M-Decks (Cellular or Open Beam)
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- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel—Fabrication and Erection
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☆ For INFORMATION See SWEET'S FILES
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**Unitized Construction keeps
BILT-WELL Window costs low!**

This unique patented joining method results in a saving over the old continuous head and sill method—in a stronger assembly—in a permanent watertight joint—in greater latitude of fenestration.

Specify the newly engineered BILT-WELL WINDOW UNITS

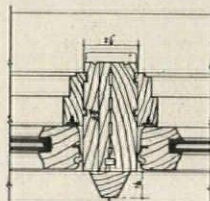
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Casements, and
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window Units have
this exclusive
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This patented feature permits an unlimited number of single units to be joined in multiple horizontal groupings.



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JOINED—UNITIZED SILL

Look for these BILT-WELL Features

- 1. DISTINCTIVE HARDWARE**
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Super double-hung windows



Super-hold

with ingenious sash-holding device for budget homes.



Super-lift

with fingertip operation for medium priced homes.



Super-therm

with double insulating glass for custom built homes.

Casement Windows



Sleek, trim, double-weather-stripped casements with concealed hinges and hardware. Unitized sill permits side-by-side installation in long ribbons.

Awning Windows



New releasable hinge permits removal of sash for easy cleaning. Lever, jointed bar, rigid bar or gear operator available. Use these windows as casements, awning, hopper or fixed sash.

Kitchen Cabinets



Beautiful, streamlined cabinets of Ponderosa Pine, all water repellent treated for dimensional stability, with pine or birch doors and drawer fronts. Cabinets come in 3" modules to fit any size kitchen. Wide choice of accessories.

Storage Walls



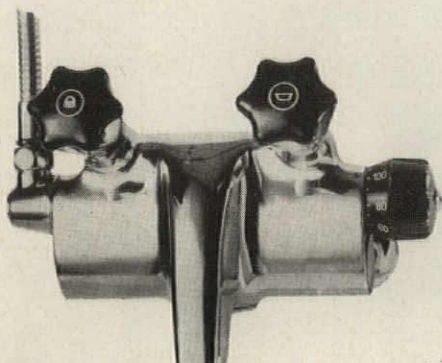
Economical and practical arrangements of door and drawer units form complete storage walls. Easy to install in out-of-the-way corners for additional storage, too.

BILT-WELL Products

by CARADCO, INC.

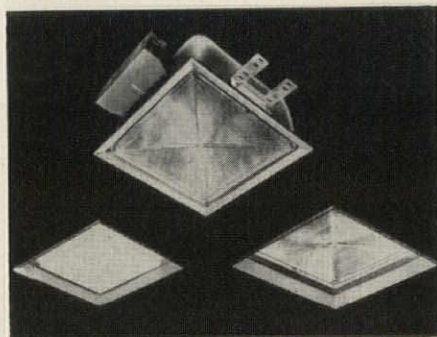
Dubuque, Iowa

Product Reports



Combination Bath and Shower Unit

A new bath and shower combination features an exposed flexible shower arm that remains fixed for showering, but slides out of its swivel socket for use as a hand spray or for shampooing. The exposed arm also eliminates built-in piping, and opening of the wall when repairs are necessary. The two faucets shown on the unit operate independently, one controlling the flow to the tub, the other to the shower. Both are thermostatic mixing valves which automatically maintain the water temperature (35 to 180 degrees F) set on the control dial, thus eliminating wastage of hot water, manual regulation of the taps, and all danger of scalding. *Simix Co., 45 West 81st St., New York 24, N. Y.*



Recessed Incandescent Lens Boxes

The *Uni-Frame* line of recessed incandescent lens boxes now includes a 10-in. box (100 to 150w lamps) in addition to the original 12-in. (200 to 300w lamps) model. Both can be fitted with either a lens or a glass diffusing bowl, and with several types of outer frames and optional splay trims to make a total of 24 possible combinations. Of rigid, seamless construction, the *Uni-Frame* requires no plaster frame and can even be installed in concrete ceilings. A one-piece aluminum reflector adds to its lighting efficiency. *Day-Brite Lighting, Inc., 6260 N. Broadway, St. Louis 51, Mo.*

more products on page 228

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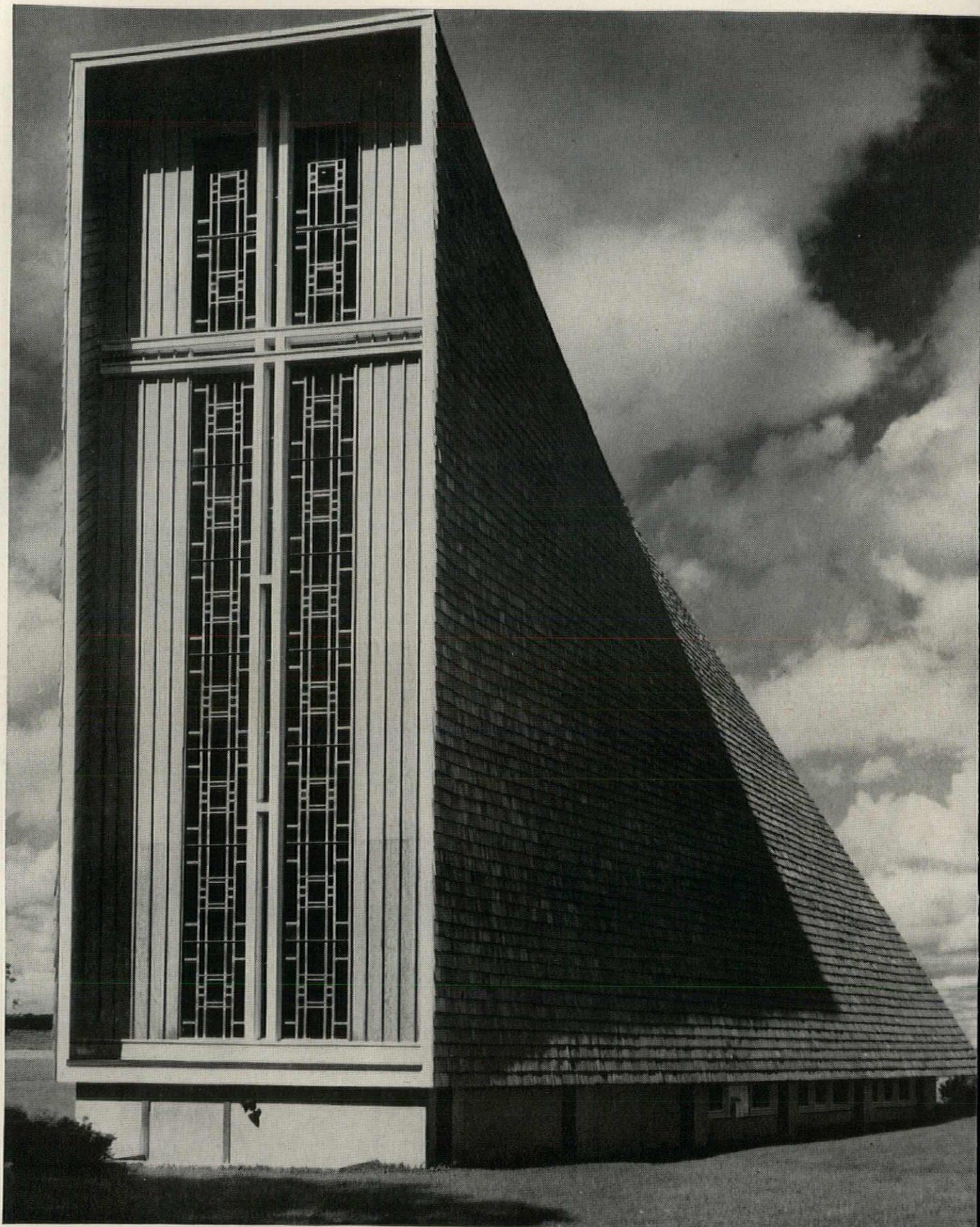
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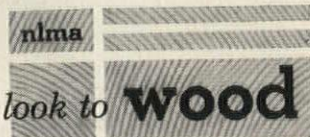
St. Luke's Church, Camilus, (near Syracuse), New York—a beautiful example of advanced wood technology put to use in church architecture. Here laminated hyperbolic paraboloid construction made possible this dramatic application of the ancient Christian symbol of the triangle. Sargent, Webster, Crenshaw and Folley, architects.

Design should never be the servant of material—
for new answers...look to WOOD

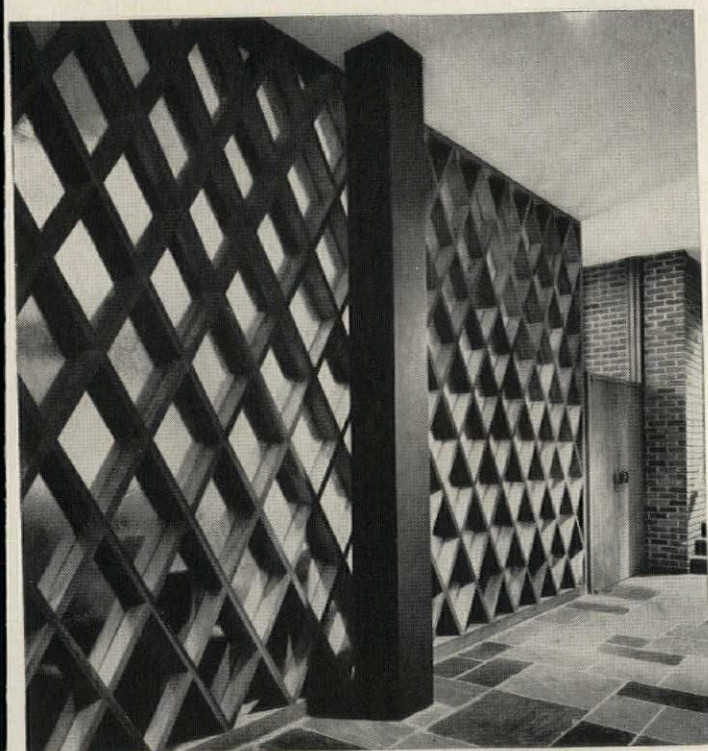
What matters creativity—unless materials at hand can translate the blueprint into reality? Wood can modestly boast of its versatility, of its close association through the centuries with the highest aspirations of architects and craftsmen alike. It is no less true today! Thanks to the new technology of wood, laminated beams and other products undreamed-of ten years ago are making way for a new era of structural sophistication. Add to this the new work in wood preservatives, the new opportunities in exterior and interior colors, finishes and textures—you have what

amounts to a *new* material whose only design limit is your imagination! For more information on designing with wood, write to:

NATIONAL LUMBER MANUFACTURERS ASSOCIATION
Wood Information Center, 1319 18th St., N.W., Washington 6, D.C.



for freedom of design, look to

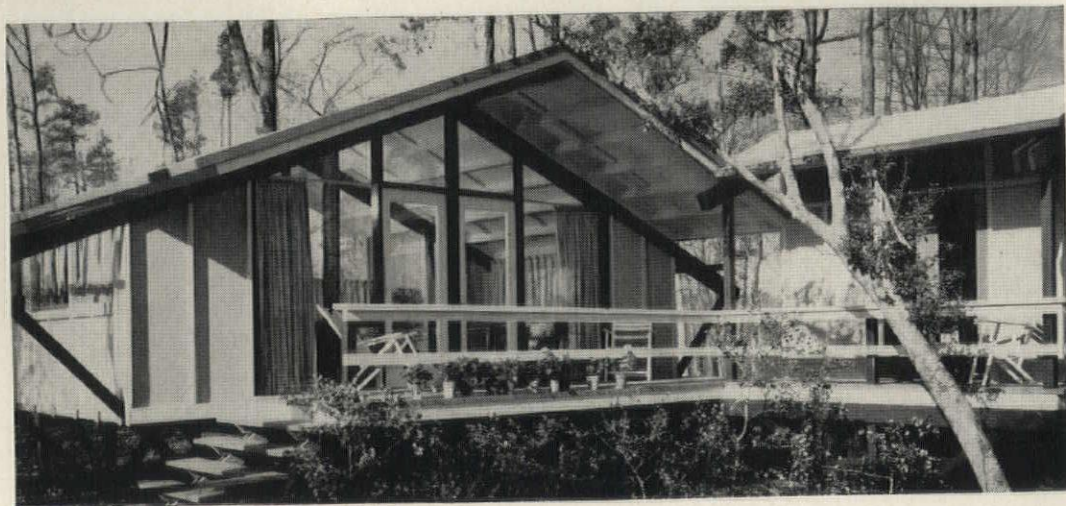


Architect Percival Goodman wanted a dramatic entrance screen for Temple Beth El in Providence, R. I. Egg-crate wood wall has insets of stained glass, provides rich shadow patterns and luminous color.



When design calls for unobtrusive elegance, wood is the natural choice. Here neutral hardwood paneling creates a handsome backdrop for objects of art in a private home. Philip C. Johnson, architect.

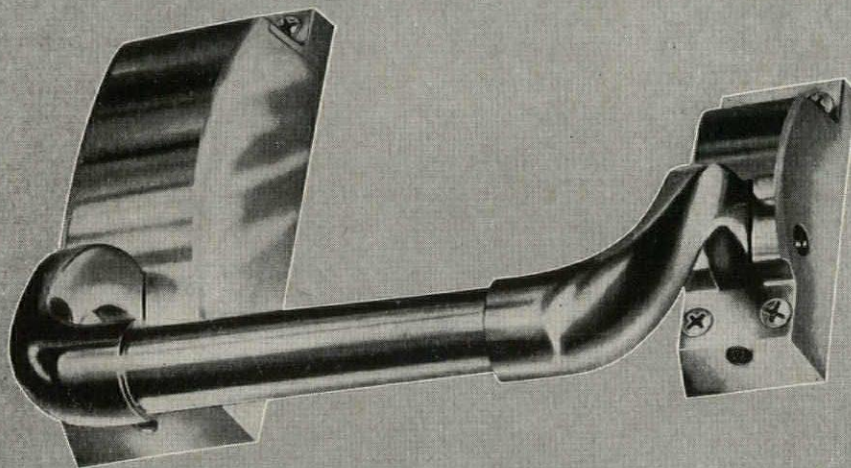
Wood handles a double function in the design of this airy, weekend house. Imaginative hung construction was used to take advantage of wood's structural strength, and at the same time create a strong design pattern that gives distinction to a limited-budget project. George Matsumoto, architect.





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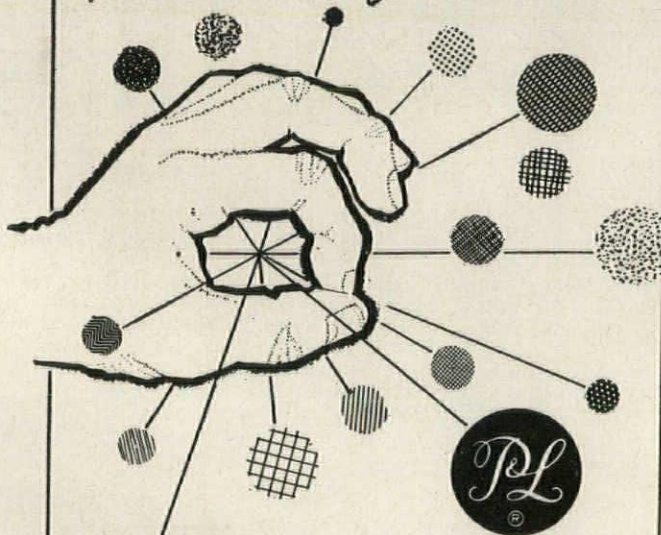
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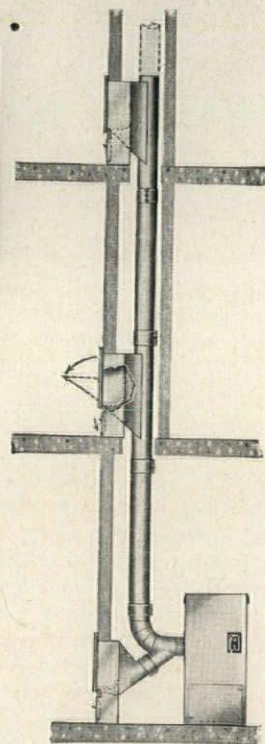
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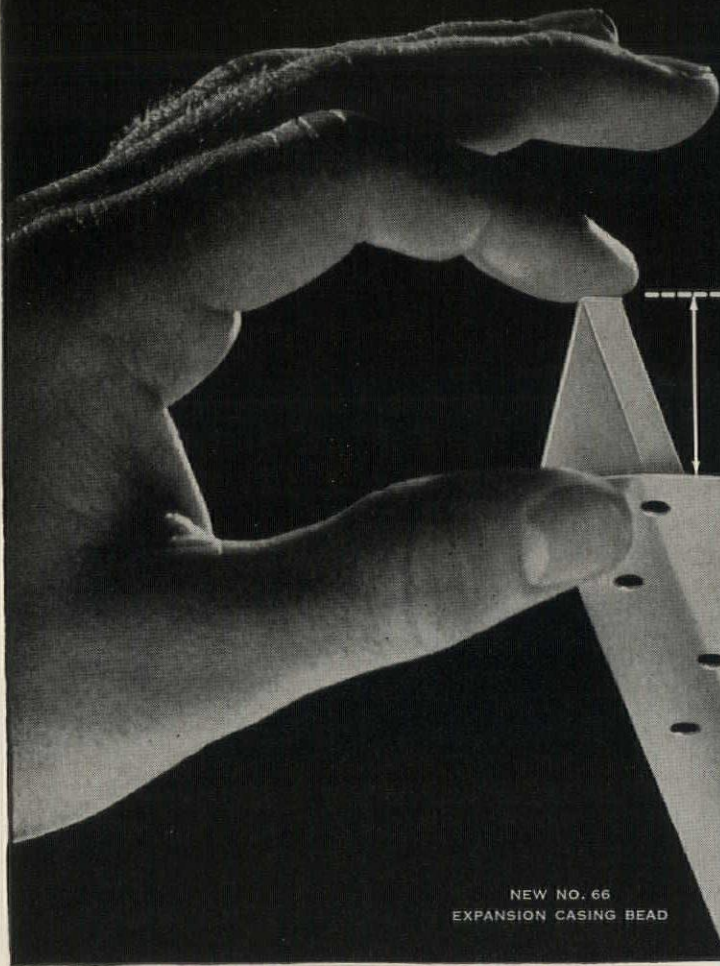
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Catalog 202 shows all the Milcor Casing Beads. Write for your copy.

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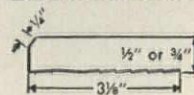
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INLAND STEEL PRODUCTS COMPANY

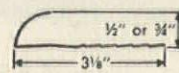
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ML-37

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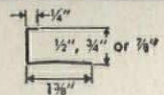
Fully described
in Sweet's,
section 12a/1n



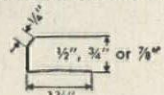
NO. 60
EXPANSION



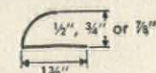
NO. 4
EXPANSION



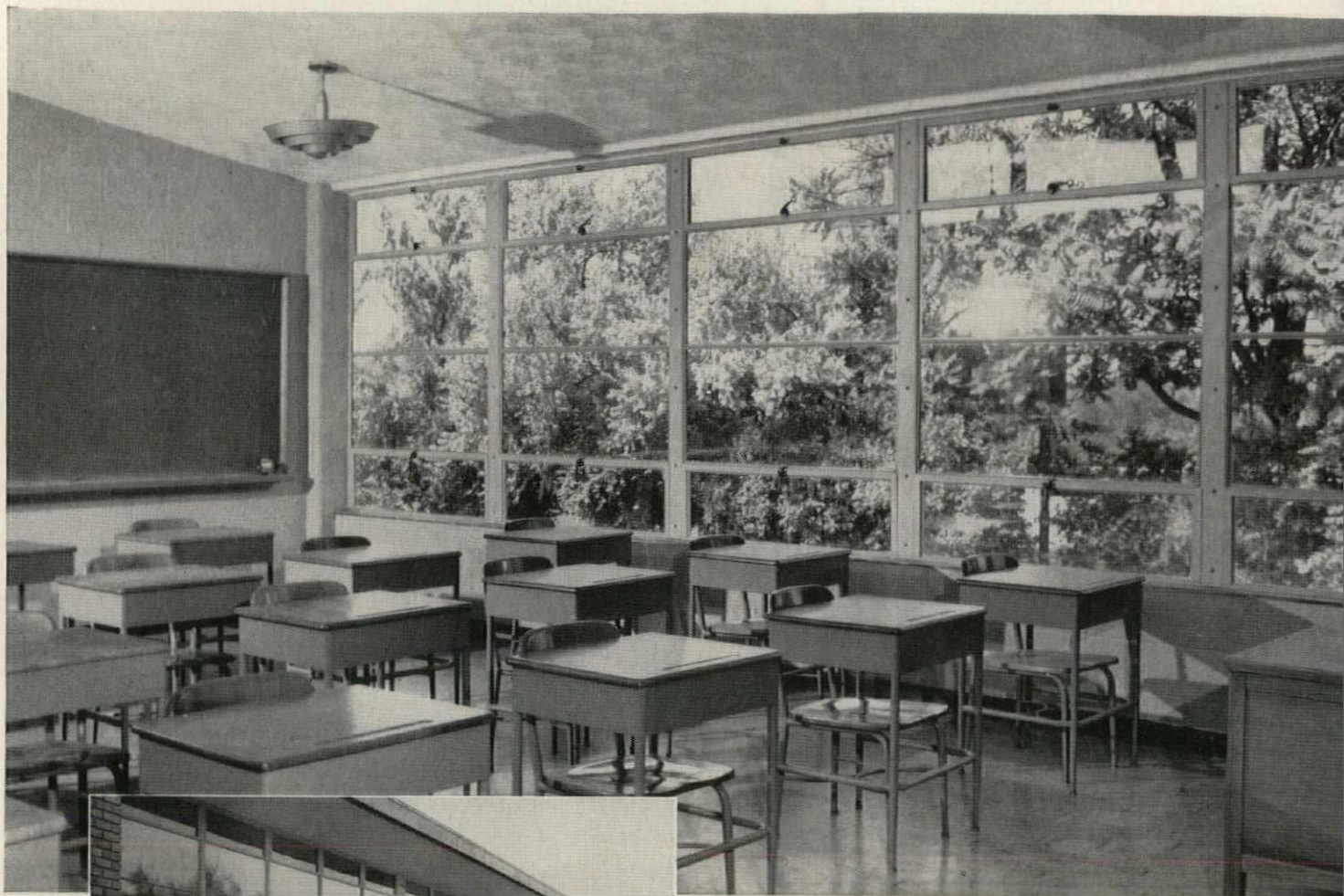
NO. 65
SHORT FLANGE



NO. 60
SHORT FLANGE

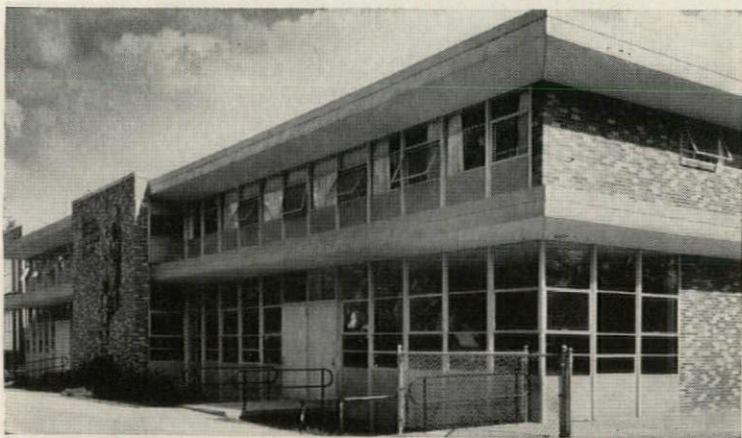


NO. 13B
SHORT FLANGE

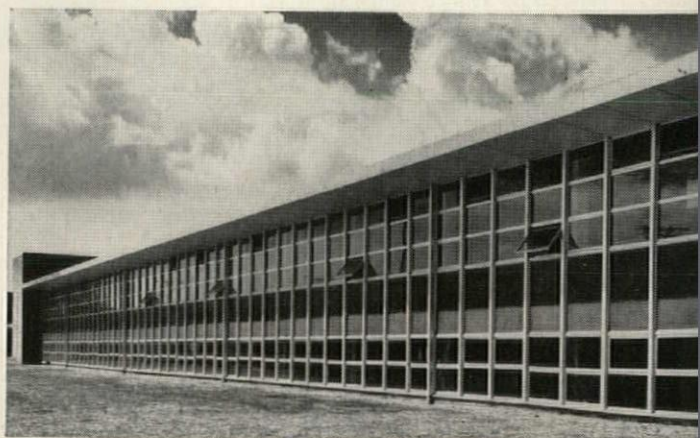


High school classroom at Holy Ghost Fathers Mission Seminary, Ann Arbor, Michigan. Completed in 1950. Notice how desks are placed close to *Thermopane* windows.

Exterior view of high school at Holy Ghost Fathers Mission Seminary. This 16-classroom unit cost \$16.46 per sq. ft. but construction cost included a heating plant designed to serve adjacent seminary building and chapel.



St. John the Baptist Elementary School and Convent Building, Ypsilanti, Mich. Completed in 1953. Construction cost \$10.68 per sq. ft. even with *Thermopane* in all windows.



Our Lady of Sorrows High School, Farmington, Mich., has *Thermopane* throughout. This 20-classroom unit was completed in 1956 at a cost of \$12.66 per sq. ft.

Thermopane[®] is a necessity... in low-cost schools!



Charles D. Hannan
Architect
Farmington, Mich.

Take the school buildings designed by Architect Charles Dominic Hannan. Twenty-five of them have large window areas glazed 100% with *Thermopane* insulating glass.

Construction cost for these schools averaged less than \$11.62 per sq. ft.

"Insulating glass has many advantages," says Architect Hannan. "It permits us to open up classroom walls to the view without discomfort to students . . . to flood classrooms with natural daylight . . . and to muffle distracting outside noise."

ECONOMIC NECESSITY

"Some people consider double-glazing a luxury. I don't. It's an economic necessity when you figure the fuel it saves. Take the St. John the Baptist Elementary School. It has eight classrooms. We figure that the *Thermopane* windows save 20,043,000 B.T.U. per classroom per season.

"If you show clients figures like that, they're happy to go along with you. When we were designing the high school for Our Lady of Sorrows Parish, heat savings computed for *Thermopane* were so impressive our client was glad to pay \$3,500 extra for it."

MORE USABLE FLOOR SPACE

"Here's another thing. Classroom population is growing so fast, we can't keep up with it. The classrooms we designed to accommodate 35 pupils are now holding as many as 50. That means shoving rows of desks next to the windows where students would feel chilly if it weren't for the double-glazing.

"I started using insulating glass in schools in 1946. I've been using it ever since — a total of about 7,500 units. In all those years, less than a dozen units have had to be replaced. School

children aren't as rough on glass as some people think they are."

Charles Hannan practices what he preaches. The windows in his own home, and in his offices, are glazed with *Thermopane*.

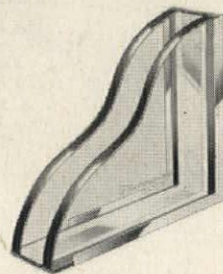
For technical information on *Thermopane*, consult Sweet's Architectural File 26-A, or call your L·O·F Distributor or Dealer (listed under "Glass" in the Yellow Pages). Or write to Libbey-Owens-Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.

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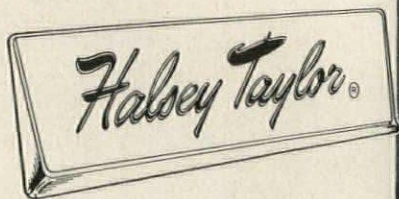


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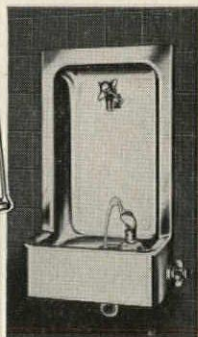




ROMANCE AT THE COOLER? Could be..we don't know about that. All we do know is that all across the country folks are in love with Halsey Taylor fountains. And rightly so, because whether it's a stainless steel fountain or a new Wall-Mount cooler, architects, plumbing contractors and building owners know if it's Taylor-made, it's dependable and health-safe! *The Halsey W. Taylor Co., Warren, Ohio*



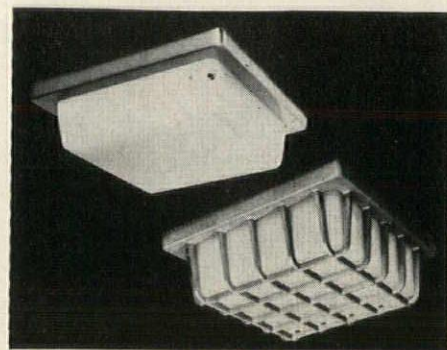
169



It's only natural to select Halsey Taylor stainless steel fountains to harmonize with modern interiors, in banks, office buildings and commercial structures.

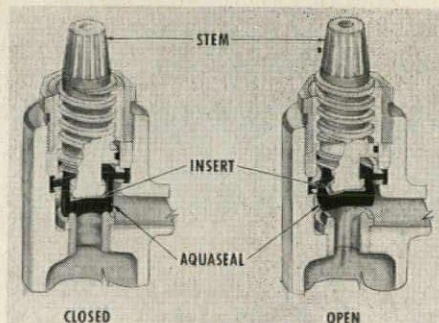
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Product Reports



Vaportight Lighting Fixture

The new 43-88 line of surface mounted lighting fixtures for indoor and outdoor use features cast aluminum construction with an anodized finish for permanence against corrosive elements. The units come with an impact-resisting carrara glass diffuser gasketed in a hinged trim for easy relamping and maintenance, and are supplied with a cast aluminum junction box, gasket and screws for a vaportight seal at the conduit entry. For added protection against abnormal abuse, they can also be had with an integral guard, as shown above. *McPhilben Lighting, Inc., 1329 Willoughby Ave., Brooklyn 37, N. Y.*



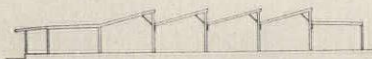
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The new *Aquaseal* faucet valve replaces the conventional seat washer with a diaphragm principle of water control. All moving parts are outside the flow area, and there is no seat washer wear, a common cause of leaks and dripping in ordinary fittings. Instead, a stainless steel insert in the valve acts as a bearing plate against which the stem operates. Rotation of the stem releases tension in the valve, which is then opened by the normal water pressure. For closure, the non-rotating *Aquaseal* is merely compressed against the seat, eliminating all friction. Another advantage of the design is that foreign particles are easily dislodged by the water flow when the valve is opened. *American-Standard Plumbing & Heating Div., 40 W. 40th St., New York 18, N. Y.*

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Space provided: manufacturing section of 250' x 280'; warehouse of 250' x 220'; covered truck loading dock 75' x 220'; covered railroad loading dock 20' x 500'. *Structural framing:* glulam beam-and-column bents for manufacturing section, offices and loading docks; glulam timber trusses of 125-foot span for warehouse section. *Exterior walls:* ribbed aluminum siding over timber framing. *Interior walls:* ply-

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Glulam timber beam-and-column bents provide 40' x 250' clear span bays with roof of sawtooth contour for clerestory lighting. Construction is as simple and economical as flat roof beam arrangements.

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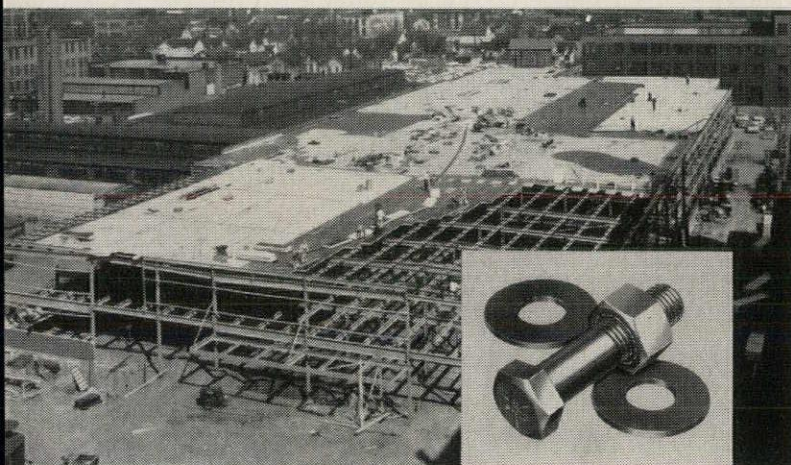
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*Chicago's smart, new Executive House
Hotel boasts all-stainless exterior*

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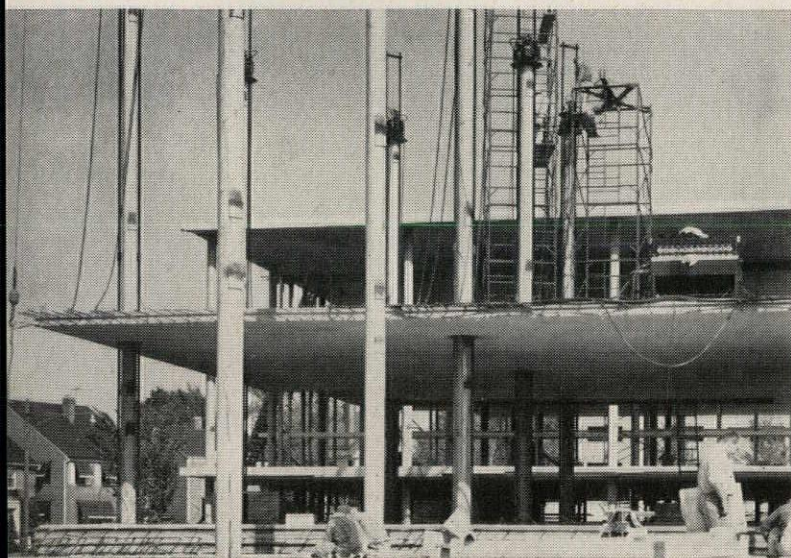
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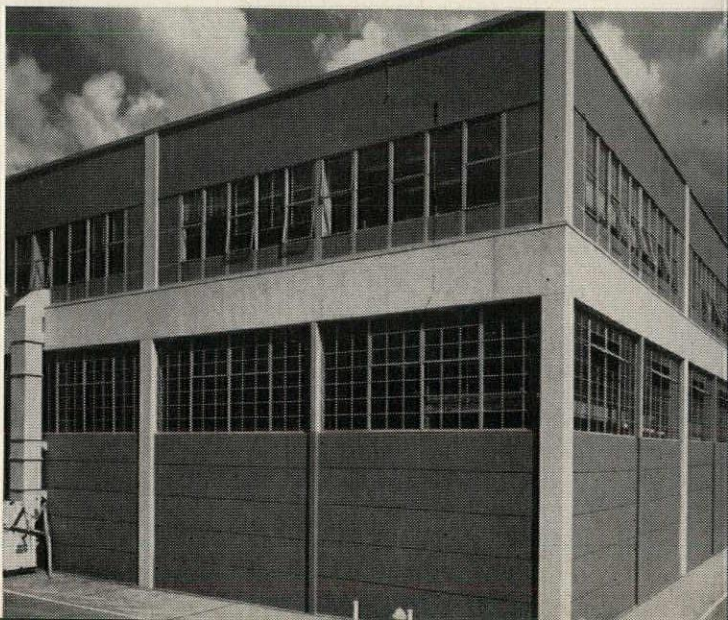


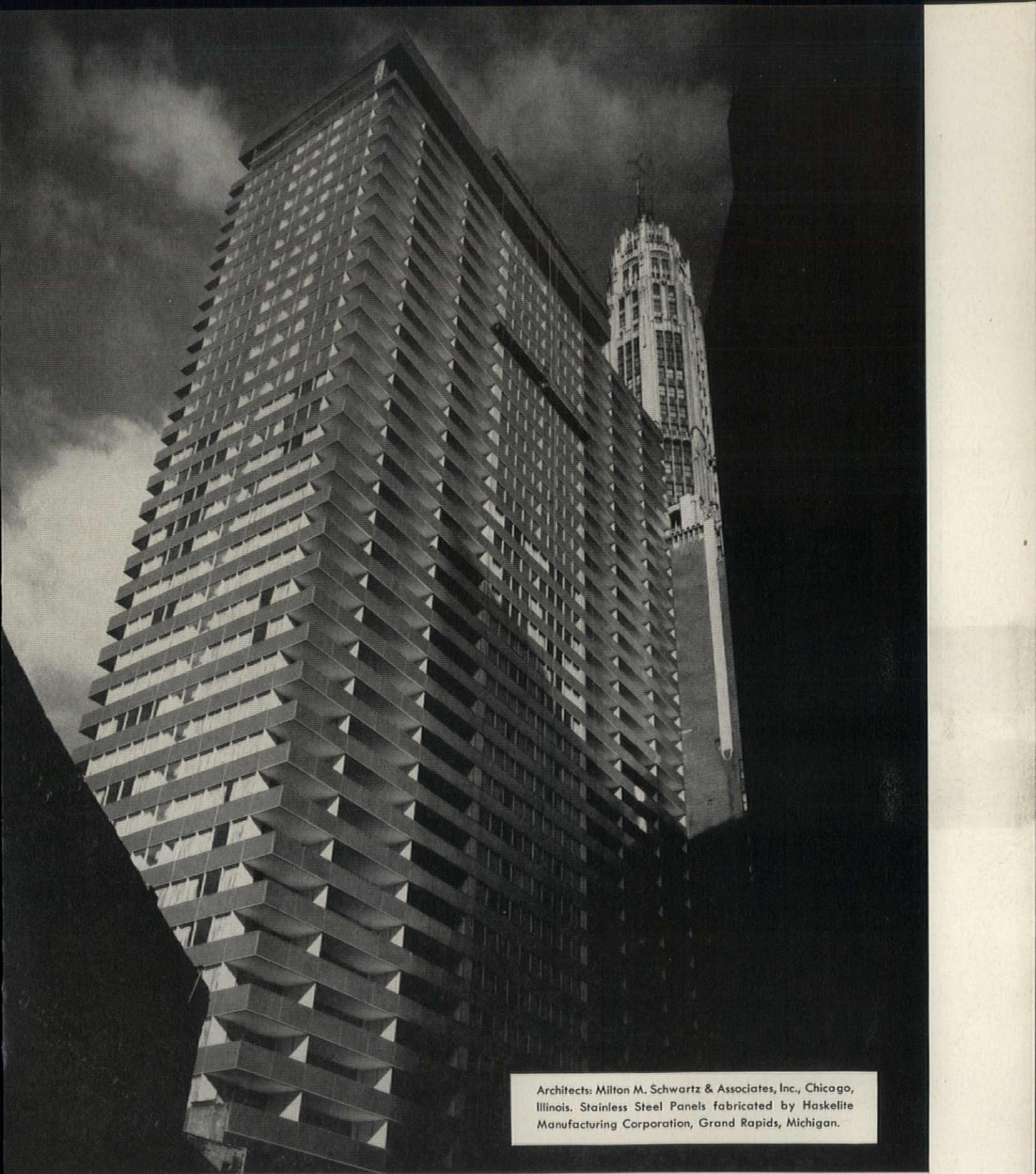
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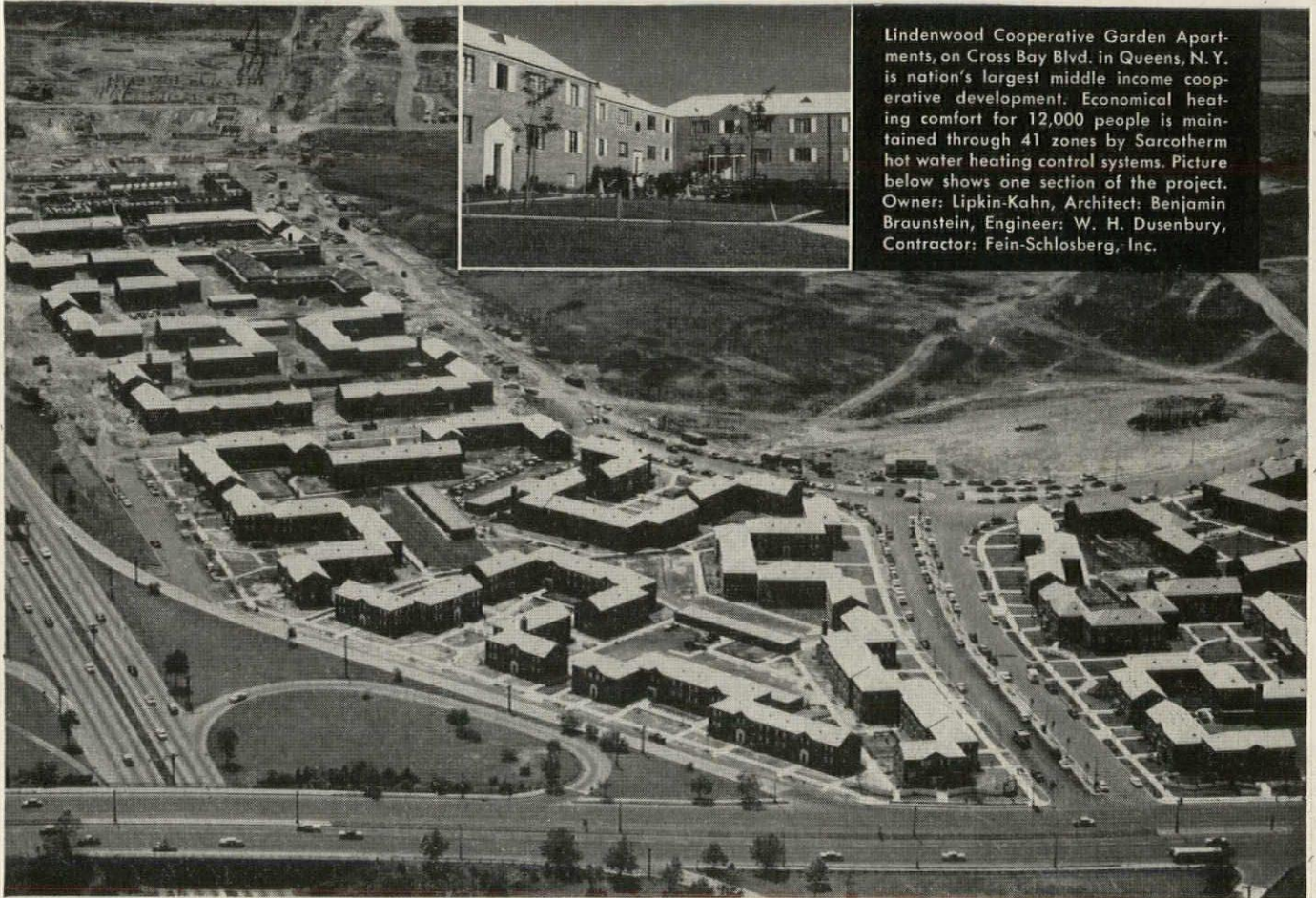
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Lindenwood Cooperative Garden Apartments, on Cross Bay Blvd. in Queens, N. Y. is nation's largest middle income cooperative development. Economical heating comfort for 12,000 people is maintained through 41 zones by Sarcotherm hot water heating control systems. Picture below shows one section of the project. Owner: Lipkin-Kahn, Architect: Benjamin Braunstein, Engineer: W. H. Dusenbury, Contractor: Fein-Schlosberg, Inc.

\$40,000,000 PROJECT MAINTAINS EVEN, ECONOMICAL HOT WATER HEATING WITH SARCO THERM CONTROL SYSTEM

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An outdoor bulb, sensitive to change in outdoor temperature, controls a 3-way mixing valve, which regulates the temperature of the hot water supply to the system, in accordance with outdoor temperature changes. For example, at an outside temperature of

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635 Madison Avenue, New York 22, N. Y. • Plant: Bethlehem, Pa.*

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THE three books at the left are a "must" for anyone who is interested in good masonry construction. One describes the type of *workmanship* recommended to secure dry brick walls. The second describes the *specifications* recommended to secure dry brick walls. The third describes the type of workmanship recommended for *good concrete-block walls*.

Each of these books has been endorsed by foremost authorities. Each has received a citation of merit from the Producers' Council and the American Institute of Architects. Each is fully illustrated, clearly written. Each contains a wealth of really valuable information.

These books are *not* advertisements for our product, Brixment. They are published and made available to members of the building trades solely as an industry service. Mail the coupon, *today*, for your free copies.

LOUISVILLE CEMENT COMPANY, LOUISVILLE, KY.
Manufacturers of
BRIXMENT FOR MORTAR

Louisville Cement Company—Dept. AR-3
Second and Walnut Streets, Louisville 2, Kentucky

Gentlemen:

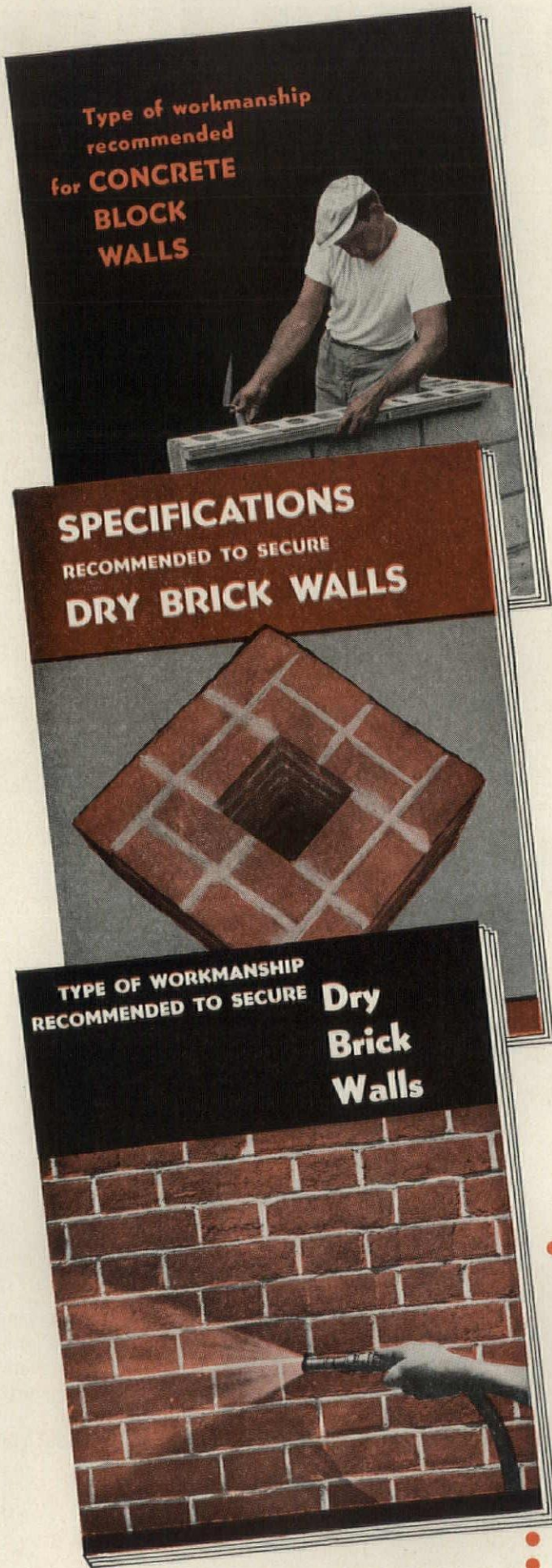
Without cost or obligation, please send me a copy of each of your three books on masonry construction.

Name _____

Firm _____

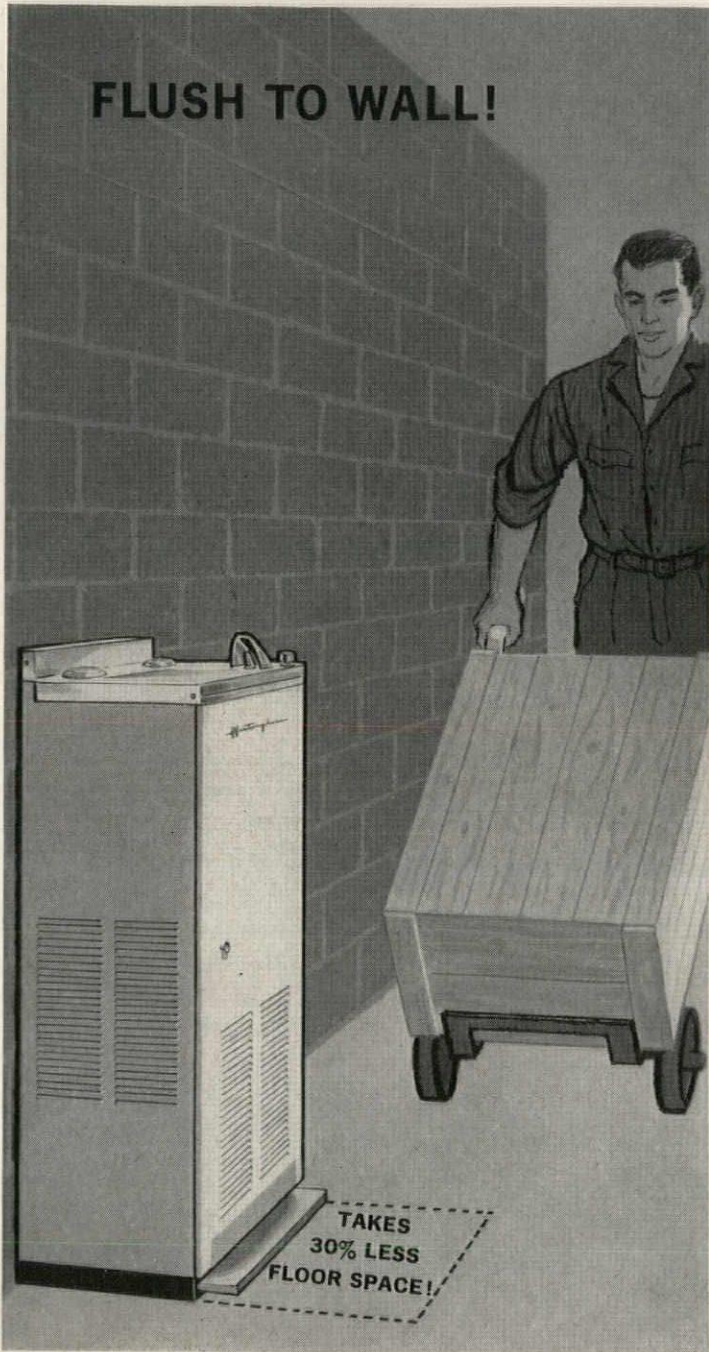
Street _____

City _____ State _____



NEWEST, NEATEST IDEA

FLUSH TO WALL!



NO UNSIGHTLY PLUMBING—IT'S CONCEALED INSIDE! Nothing juts out behind to collect dirt or mar clean appearance. As a result, instead of usual 18" to 22", this Westinghouse cooler extends only 12½" from the wall—leaves passageways clear for traffic, handtrucks. New "slip" connections inside make installation far faster and simpler, too.

ON THE WALL!



SO MODERN, SO NEAT—SO EASY TO CLEAN UNDER! Slim and smart looking, this Westinghouse model fits compactly on the wall, out of the way. Completely eliminates dirt-catching areas . . . simplifies floor cleaning. Doubles as a kiddie-cooler when mounted on the floor . . . measures just 31" high, just right for schools, etc.

IN WATER COOLERS!

IN THE WALL!



FITS IN 6 $\frac{3}{8}$ " SPACE—SERVES SEVERAL FOUNTAINS! Meets the move to "built-ins!" Just 6 $\frac{3}{8}$ " slim, yet delivers as much cold water as other units requiring double the space! 5- and 10-gal. capacities, interchangeable as needs change. Serves several fountains on the same or other floors. Mounts in or on wall, under counter, etc.

WESTINGHOUSE WALL LINE

Exclusive Westinghouse Water Coolers end unsightly plumbing and wasted space . . . help keep your buildings smart and functional!

Architects have hailed the Westinghouse "Wall Line" as today's biggest news in water coolers—and with good reason! Its exciting "clean look" matches perfectly the clean, functional style of today's architectural designs. Gone is old-fashioned dirt-catching exposed plumbing—it's concealed inside. Gone is wasted space in offices and corridors—these new coolers fit compactly *against . . . on . . . or in the wall!* What's more, you've a choice of 3 completely different types that allow you maximum flexibility of style and location. Get the full story. Mail the coupon today—or call your Westinghouse Water Cooler Distributor. He is listed under "Water Coolers" in your Yellow Pages.

YOU CAN BE SURE...IF IT'S

Westinghouse

Write for more information on new WESTINGHOUSE WALL LINE
— MAIL COUPON NOW! —

Westinghouse Electric Corp.
Columbus, Ohio

GENTLEMEN:

Please send more information on your new Westinghouse "Wall Line" Water Coolers.

NAME _____

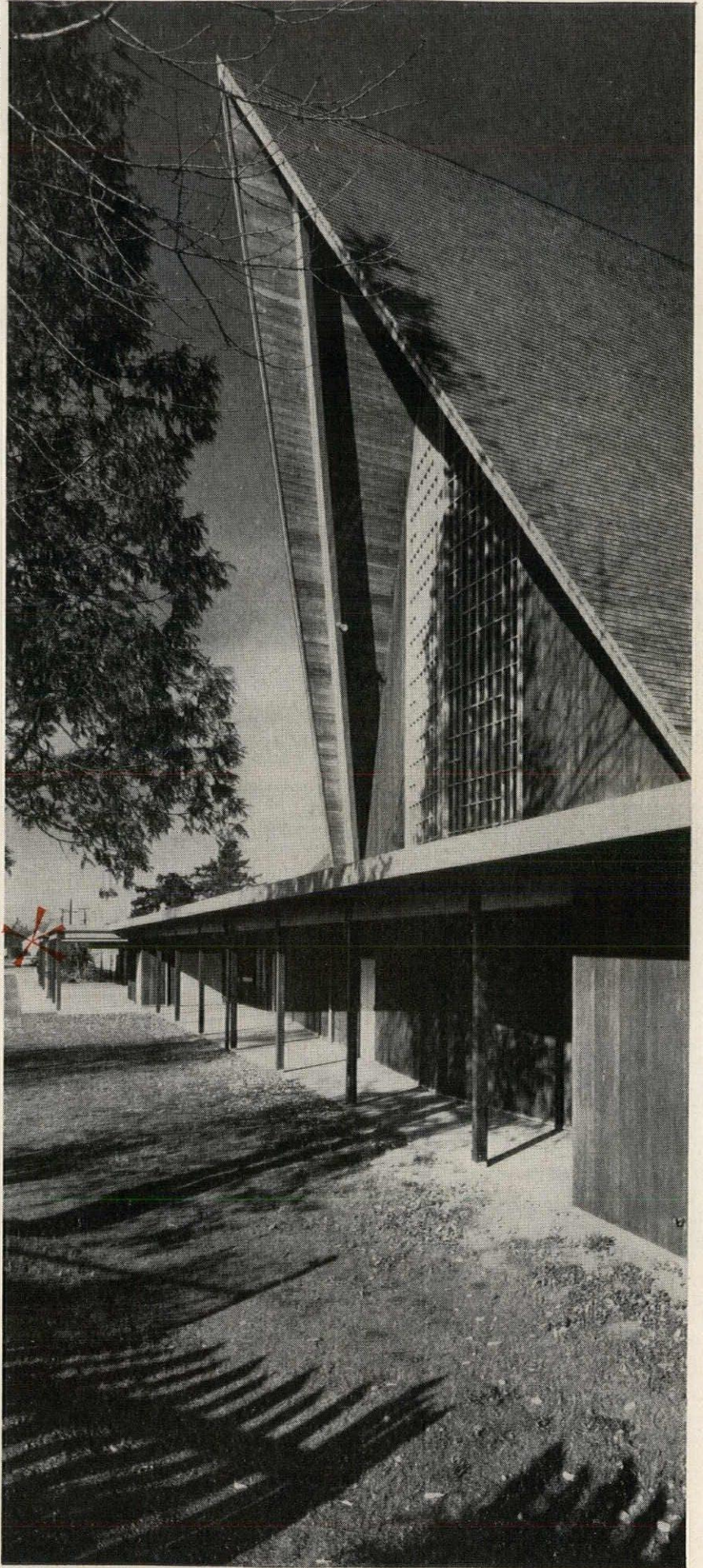
NAME OF COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

AR-1

Architects: Stewart & Richardson, A.I.A.




MODERN DESIGN USES

WEST COAST LUMBER

Douglas Fir, West Coast Hemlock, Western Red Cedar

Towering lines give an air of spiritual power to the design of this modern church. The forceful, extended roof utilizes West Coast lumber's construction versatility. This and other components of the finished building gain in appearance from the natural warmth and beauty of lumber . . . the living material only a step away from its natural form. Here is an expression of design freedom at its finest. Use the wide variety of grades and species of versatile West Coast lumber to achieve *your* design objectives.

For detailed information concerning West Coast Lumber, write:

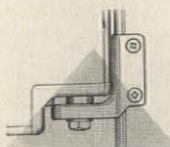
 WEST COAST LUMBERMEN'S ASSOCIATION

1410 S. W. Morrison St., Portland 5, Oregon

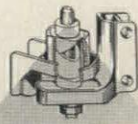
WEIS

NEW Points of Superiority

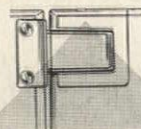
Newest is the unique application of a die-formed stainless steel cap, which during fabrication is permanently locked on corners of all WEIS panels and doors.* Corner welding and grinding operations (which destroy rust-protective undercoatings) have been completely eliminated. WEIS corners now have maximum protection against corrosion . . . and have uniformly perfect contours for maximum eye-appeal. This is but one of the many points of superiority you provide with a WEIS installation.



Nylon cam gravity bottom hinge



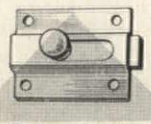
Exposed view of bottom hinge construction



Nylon bearing top-hinge



Combination keeper and bumper



Spring-tension slide bar latch

Send coupon for catalog and name of nearest representative

Henry Weis Manufacturing Co., Inc.
Dept. K-2101, Weisteel Bldg. Elkhart, Indiana

Gentlemen: Please send new catalog of your Weis toilet compartments.

name _____

address _____

city, state _____

Please have representative call.

*Patent applied for

Tectum is
Now Silicone
Treated for
Water Repellency

*A Report from Tectum
Research and Development*

Tectum is *now* water repellent. Every fiber in the composition of Tectum building materials is now treated with *Fiberguard*. This is not a mere surface treatment; the new *Fiberguard* process coats each fiber throughout the board with a specially formulated protective silicone. This outstanding product improvement is the result of three years intensive research by Tectum's Research and Development Department.

Here's What It Means To You, Mr. Architect: *Capillarity is virtually eliminated*; water migration is limited to exposed areas only. The inherent advantages of Tectum's insulating, acoustical and structural properties are now doubly protected. The hazards of inclement weather are sharply reduced during erection and the possibility of interior staining in later years due to roof leaks is greatly minimized. Result — greater client satisfaction.

And For You, Mr. Contractor, A Real Bonus: Improved Tectum offers added protection against roof deck damage. If sudden showers dampen the

unfelted edges of Tectum deck or if water leaks around unflushed roof openings, only the immediate exposed area is affected. Naturally, good practice dictates that proper precautions be taken in material storage and handling, but the hazard of possible staining from weather exposure is now effectively minimized. In case of roof leaks, water will drip vertically through the porous deck enabling you to quickly locate the source of the problem. Best of all there is practically no capillary migration laterally around the point of the leak. And, here is the big news; *the new improved Tectum doesn't cost one cent extra*. The price remains the same.

The Fiberguard silicone treatment is colorless, and odorless — does not change the natural color of the factory finished material. None of the inherent values including insulation and sound absorption are affected, and the weight remains the same. The general attractive appearance of the product is unchanged. The improved Tectum may be painted with oil or water base paints.

For complete details on this new manufacturing achievement — How Tectum board is now even better for roof decks, form plank and the many special applications as a structural insulating and acoustical material — see your Tectum representative at the first opportunity, or write the General Offices in Columbus, Ohio. Find out how laboratory tests have proved the advantages of the new *Fiberguard* repellent; how three years of testing and perfecting have developed an even finer Tectum for your building projects.

**IMPROVED PRODUCT —
NEW VALUE — SAME COST**

Remember, Tectum has more inherent benefits as a roof deck material than any other product on the market.

Structural	Rot and Termite
Insulative	Resistant
Acoustical	Factory Finished
Noncombustible	Tongue and
Dimensionally	Grooved or
Stable	Rabbeted
Light Weight	Beveled
Decorative	(Exposed Edge)
Light Reflective	Felt Backed

**and NOW has
Water Repellency with Fiberguard**



TECTUM CORPORATION
GENERAL OFFICES
535 East Broad Street, Columbus 15, Ohio

Tectum®

14 *Special* RAYNOR DOORS

*Specified for
American River Junior College
Trades and Industry Building
Auto Shop,
Sacramento, California*



ARCHITECTS:	Barovetto and Thomas
CONTRACTOR:	Erickson Construction Co.
SPONSORING CONTRACTORS:	Heller — Campbell — Erickson — Lawrence
DOORS BY:	Valley Overhead Door Co. Carmichael, California

The eye appeal and versatility of Raynor Doors highlight the circular design of the American River Junior College Auto Shop shown above.

The perfection with which Raynor Doors so completely create the desired effect and meet the exacting specifications of outstanding architectural designs such as this, is accomplished through *Raynor Advanced Sectional Door Engineering Know-How*. Built complete under one roof, Raynor Doors embody only the finest materials available . . . employ construction features such as exclusive "Graduated Seal" . . . three-way stress construction . . . heavy-duty galvanized hardware and "Lifetime Guaranteed" Dorlux panels.

Whatever your specific design problem may be, the Raynor Engineering Department will provide the correct solution. *Contact your nearest Raynor Distributor or write direct.*



RAYNOR MFG. CO.

Dixon, Illinois Hammonton, New Jersey



Office Literature

continued from page 192

School Room Cabinets

(A.I.A. 35-C-12) Gives photos and elevation drawings of a complete line of cabinets for domestic science classrooms, food laboratories and sewing rooms, with detailed specifications and typical classroom layouts. 18 pp. *School Room Cabinet Div., Kitchen Maid Corp., Andrews, Ind.**

Color Guide

. . . to *Architectural Porcelain Enamel* (A.I.A. 15-M-1) Shows 47 widely-used colors which have been incorporated in new standardized industry-wide color system. All have minimum Grade A acid resistance, stability and reproducibility in low gloss finish within commercial tolerances. *Architectural Div., Porcelain Enamel Institute, 1145 Nineteenth St., N. W., Washington 6, D. C.*

Stud Welding Fasteners

Describes the stud welding system; details standard designs; and gives complete engineering data and specifications on stud welding fasteners. 48 pp. *KSM Products, Inc., Merchantville, N. J.*

Metal Conduit and Tubing

Revised American Standard specifications cover zinc-coated rigid steel conduit (C80.1-1959), enameled rigid steel conduit (C80.2-1959), and zinc-coated electrical metallic tubing (C80.3-1959) used as raceways for wires or cables of electrical systems. All three standards also cover appropriate fittings, and give tables of dimensions and weights, coatings, and identification as well as test and inspection procedures. 80¢ each. *American Standards Assn., Dept. PR 104, 70 East 45th St., New York 17, N. Y.*

Safety Switch Catalog

(A.I.A. 31-D-42) Offers dimensions, capacities, voltages and horsepower ratings for complete line of light, standard, and heavy duty safety switches. 8 pp. *Frank Adam Electric Co., Main P. O. Box 357, St. Louis 66, Mo.**

Luminous Ceilings

(A.I.A. 31-F-21, 39-B-1) Details complete line of luminous ceilings, along with commonly used lighting elements and correlated lighting fixtures. 8 pp. *Luminous Ceilings Inc., 3701 N. Ravenswood Ave., Chicago 13, Ill.**

**Additional product information in Sweet's Architectural File*

AUTOMATIC FIRE VENTING...



GOOD DAYLIGHTING DESIGN, TOO

Wasco Pyrodomes® could be the difference between a small, localized fire and a conflagration. Pyrodomes combine an acrylic Wasco Skydome with a thoroughly tested, heat-activated spring mechanism to assure automatic heat, smoke and gas venting should fire occur*. Made by the originators of the Skydome, this combination of year-in, year-out Daylighting with emergency fire venting is another example of Wasco's endless search for better daylighting products. See details on Pyrodomes and Wasco's complete line in Sweet's Architectural File 20a/Wa or write

*Wasco has also developed a flat aluminum Pyrovent® for building areas that do not require daylighting



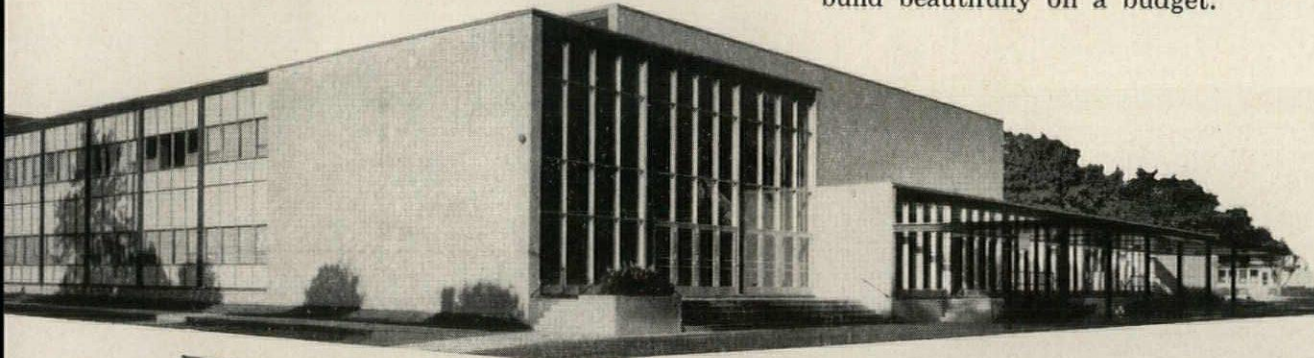
WASCO PRODUCTS, INC., 5 BAY STATE ROAD, CAMBRIDGE 38, MASS.
IN CANADA: WASCO PRODUCTS (CANADA) LTD., TORONTO 15, ONTARIO

windows without lintels doors without jambs...

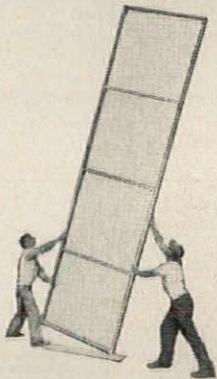
WATERTOWN BUILDS A BEAUTIFUL SCHOOL ON A BUDGET

MARMET Curtain Wall is engineered in many ways to hold down your building cost per square foot . . . without sacrificing character of design or quality of materials.

The cost of installing and "plumbing" many individual frames for windows and doors common to other types of fenestration is saved. Assembly of wall sections is also simplified for savings in erection costs. With Marmet Curtain Wall, Watertown was able to build beautifully on a budget.

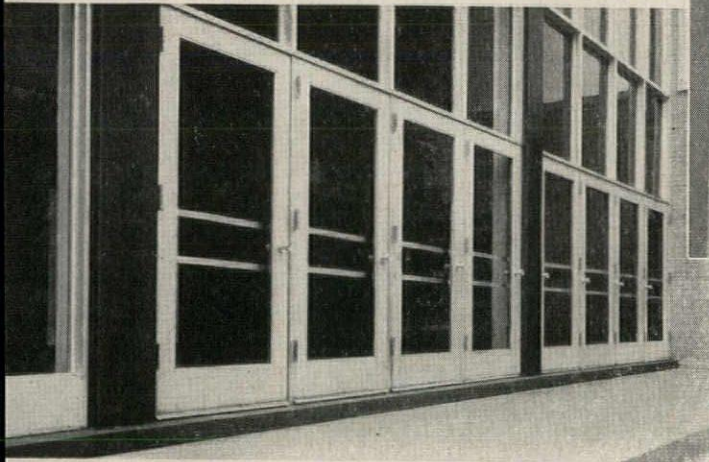
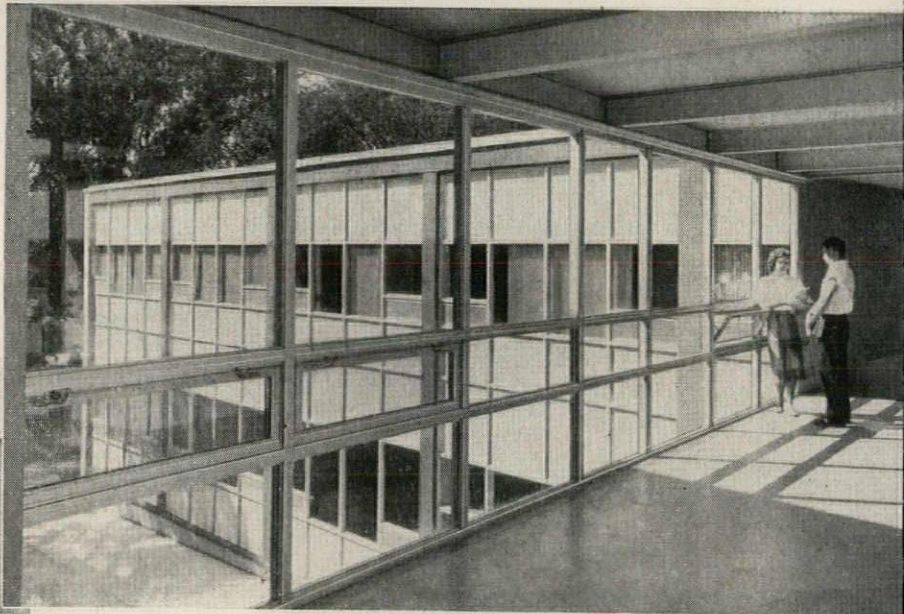
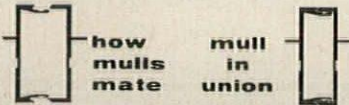


*Watertown High School
Watertown, Wis.
Architect:
Durrant & Berquist
Madison, Wisconsin*



Series 6442-43 for 1 story or multi-story gridwall structures

Large interlocking grids with mating vertical mulls $4\frac{1}{2}$ " or 6" deep for varying shadow lines can quickly be erected by two men. Mortise and tenon type joints are connected with bolts, carefully concealed by the glass race. Special expansion joints are employed at the proper intervals.



Notice how the doors in the entrance at left are hung right in the curtain wall section without requiring special, separate framing.

MARMET series 1000 doors are fabricated with tubular sections, bolted and "thru-welded" at each corner leaving no exposed screws, only a neat hairline joint. The doors' handsome appearance is further enhanced by a snap-on, extruded aluminum glazing bead.

Whatever your next curtain wall requirement may be, MARMET'S four different series, including the new insulated 8442 series (in which condensation and/or frost shall form on the glass before forming on the metal) provide beautiful window wall for every purpose . . . all engineered to achieve a more effective result at lower erection cost. For successful execution of your next job . . . specify MARMET.



the man from MARMET

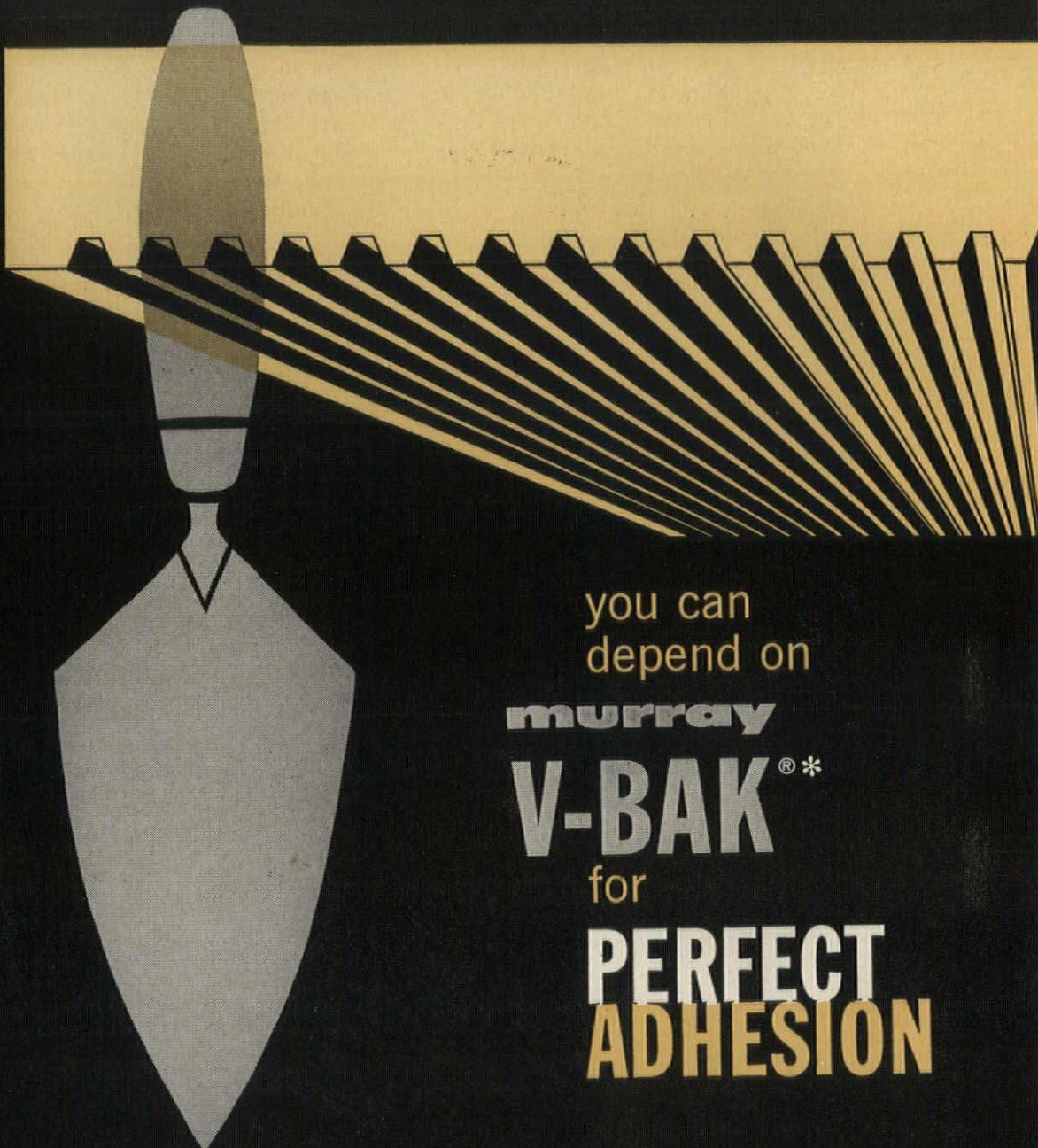
When any unusual site conditions require special technical assistance, the MARMET field engineer is available on 24 hour call to expedite job progress. If you need technical help or information in addition to that supplied by your local MARMET representative . . . write or phone for complete details on this service.

For additional specifications on the complete line of MARMET products — consult Sweet's Catalog File No. 170 or write to MARMET for Catalogs 60-wc and 60-d. Mar.



MARMET CORPORATION

300-P Bellis Street • Wausau, Wisconsin



you can
depend on

murray

V-BAK^{®*}

for

**PERFECT
ADHESION**

When you are looking for economical, long lasting floors specify Murray V-Bak Quarry Tile. V-Bak provides 23.5% more bonding surface and requires 56.5% less bonding material.

Let us explain in detail!



murray TILE COMPANY INC., LEWISPORT, KY.
DIVISION OF AMERICAN OLEAN TILE COMPANY

V-Bak Quarry Tile gives you all these features:

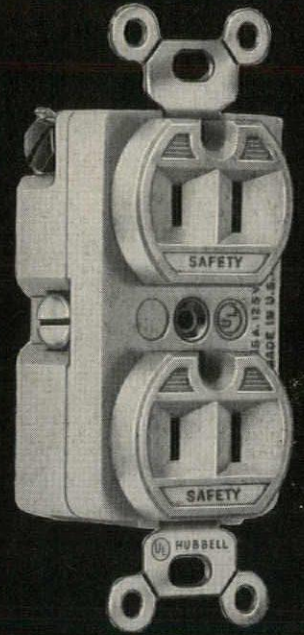
1. Perfect adhesion
2. Uniform size
3. Uniform color
4. Even texture
5. Smooth surface
6. Low maintenance
7. Lasting service

A.I.A. File No. 23-A-1

*PAT. PEND.



NOW THEY'RE BOTH



SG-62-I (Safety Grounding)
Duplex Receptacle
15 ampere, 125 volt

Listed by Underwriters'
Laboratories, Incorporated

**EXTRA
SAFETY FOR**
HOMES
SCHOOLS
NURSERIES
HOSPITALS
SANITARIA
PRISONS
WORKSHOPS
GARAGES

SAFE

NEW HUBBELL **TWINSAFE**

SAFETY GROUNDING RECEPTACLE

- PROVIDES GROUNDING PROTECTION FOR USERS OF ELECTRICAL TOOLS AND EQUIPMENT
- SHUNTS CURRENT HARMLESSLY AWAY FROM OBJECTS INSERTED IN SLOTS BY CHILDREN

Only Hubbell "TWINSAFE" provides these 2 Safety Features

FIG. 1.—A slot for grounding power tools and appliances equipped with plugs having U-shaped grounding blade.

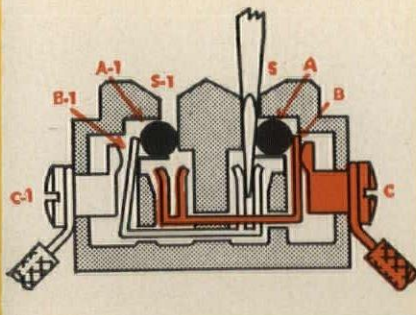
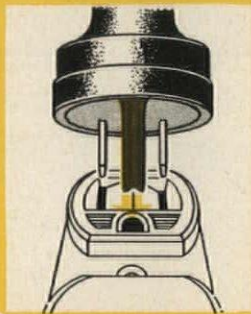


FIG. II.—Internal construction that shunts current harmlessly away from inserted metallic objects. Red indicates parts carrying current.

You will find *two* safety features in the new Hubbell "Twinsafe" receptacle that are combined in no other convenience outlet today:

A U-shaped grounding slot that instantly grounds power tools and appliances equipped with any standard grounding cap, as in Fig. 1.

A design that permits current to flow out through the slots only when both blades of a standard cap are firmly in place.

If, as shown in Fig. 2, a metal object thicker than 0.031" is inserted in one slot, it causes fibre insulating disc *A* to press against spring *B*, causing *B* to touch *C*, which is the power supply. But instead of the power's flowing to clip *B*₁ which the inserted object is touching, "Twinsafe" construction shunts the power harmlessly to the opposite slot. (Note that, on the side of the idle slot, spring *B*₁ is not touching power supply *C*₁ because disc *A*₁ is not pressing against it.

Protection is complete even if a child tries to insert both points of a hairpin in the two slots at once. The insulating discs are so positioned as to make entry difficult. Furthermore, for the discs to be moved enough to establish the internal electrical contact, the inserted object must be more than 0.031" thick—which the leg of a hairpin is not.

The Hubbell "Twinsafe" receptacle SG-62 for 15-ampere, 125-volt current costs only a trifle more than ordinary equipment, but it is worth many times the difference in added safety and peace of mind. In schools, mental institutions, hospitals, prisons, and similar structures, use of "Twinsafe" is practical insurance against tragic accidents.

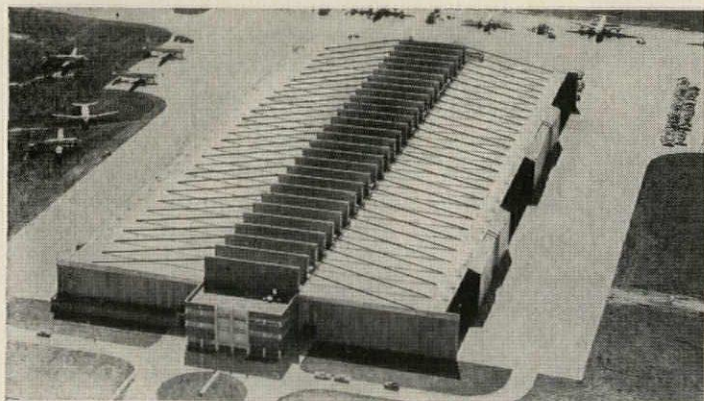
"Twinsafe" receptacles fit standard outlet boxes and are installed by qualified electrical contractors.

For complete information see Sweet's 31 b/Hu, or write

HARVEY HUBBELL, INCORPORATED

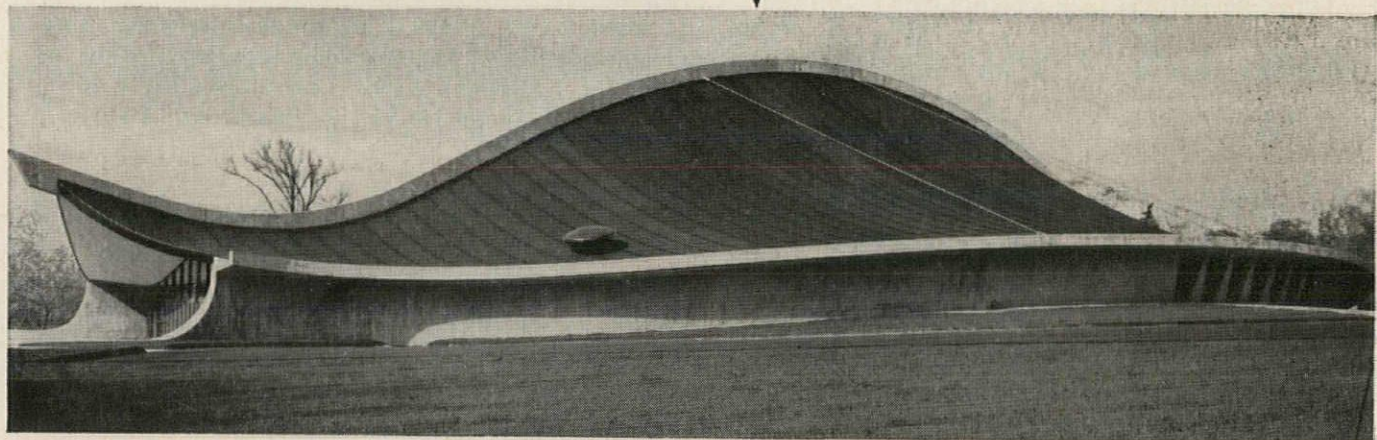
BRIDGEPORT 2, CONNECTICUT IN CANADA, SCARBOROUGH, ONTARIO

UTICA MEMORIAL AUDITORIUM, N. Y. Architects: Gehron & Seltzer, New York City • Associate Architect: Frank C. Delle Cese, Utica • Consulting Engineer: Dr. Lev Zetlin, New York City • Contractor: Sovereign Construction Company, Ltd., Fort Lee, N. J. • Roof Supporting Structure, Including Cables, Furnished and Erected by Roebling



TWA HANGAR - MID-CONTINENT INTERNATIONAL AIRPORT, KANSAS CITY • Designed by Burns & McDonnell, Kansas City • Ammann & Whitney, Consulting Engineers, New York City • Contractors: MacDonald-Creighton, St. Louis and Nashville • Cables by Roebling

YALE UNIVERSITY'S - DAVID S. INGALLS ICE HOCKEY RINK, NEW HAVEN • Architect: Eero Saarinen and Associates, Bloomfield Hills, Michigan • Consulting Engineers: Severud-Elstad-Krueger, New York City • Contractor: George B. H. Macomber, Boston and New Haven • Cables by Roebling




Hockey, Planes, Buses and Inventories . . . the suspended roof covers them all with unobstructed beauty

The suspended roof beautifully wedges aesthetics and practicality. This daring and down-to-earth design and construction technique has literally "spread its wings" over a number of different structures as to the dollars and cents benefit of its builders as well as to the delight of its observers.

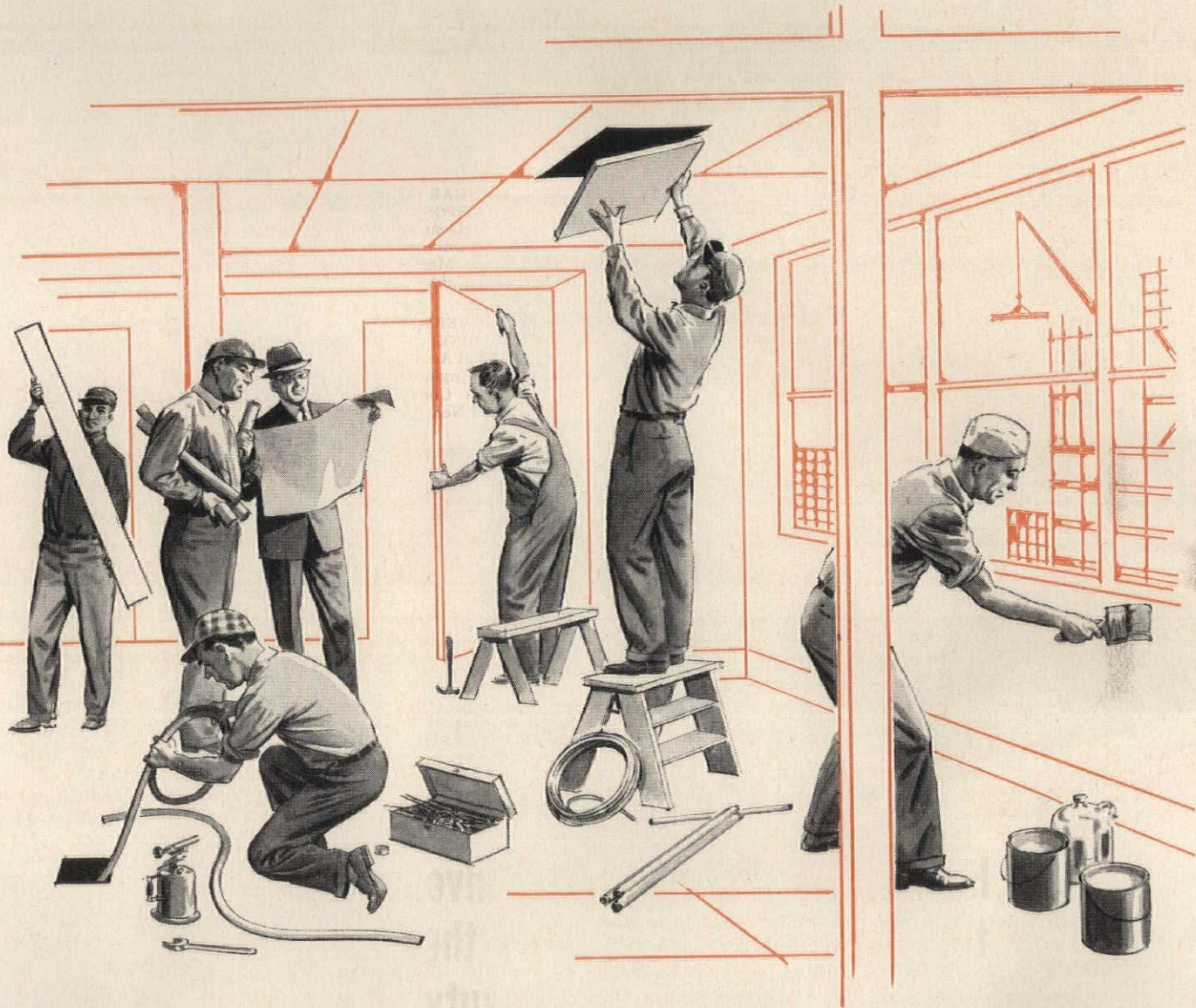
Terminals, sports arenas and warehouses are currently enjoying the *unimpeded* scope of movement and view afforded by the roof that needs no columns. Material, man and events *move* under the suspended roof with an ease heretofore unknown. Trucks can turn, planes can be serviced and "every seat in the house" is a vantage point under the suspended roof.

Shown here are a few of the examples of what architects and builders are doing with the suspended roof. We at Roebling seriously invite your inquiries on *any* phase of the suspended roof or other types of suspension systems. Our history includes suspension bridges of every description, tramways, guyed towers and ski lifts. Any means of communication to Roebling's Bridge Division, Trenton 2, New Jersey, will bring you a wealth of material.


ROEBLING 



Branch Offices in Principal Cities
John A. Roebling's Sons Division • The Colorado Fuel and Iron Corporation

Now from Corbin a master key system that says "no" to the construction key once the owner takes over!



NEW CORBIN CONSTRUCTION KEY SYSTEM . . . for building crews, a Corbin

construction master key.  For the owner, a complete Corbin master key system.

 After building is finished and the owner uses his key 

locks are reset automatically. Construction master key is obsoleted. No need to change

lock cylinders! No need to call in construction

master keys! For complete details on this im-

portant security development, write . . .



P. & F. CORBIN DIVISION
THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT



... Feel the
Cushioned Flex of
END GRAIN GYM FLOORS

*Cross cut blocks from yellow pine "2 x 4s" — factory treated and scientifically interlocked into flexible strips ranging from two to eight foot lengths.

if you haven't seen a Jennison-Wright gym floor "in action", you've got a real treat coming. They provide everything expected from an ordinary wood floor plus a lot of extras . . . extras derived only from END GRAIN construction.* They're **SPLINTER PROOF** and extremely **DURABLE**; thus safer, easier to maintain and more economical too.

When present floors need replacing or if new gyms or shops are anticipated, ask for a demonstration. Jennison-Wright representatives welcome the chance to show these unique and beautiful floors "in person" so you can "Run on it . . . and feel the cushioned flex of end grain floors.

THE JENNISON-WRIGHT CORPORATION, TOLEDO 9, OHIO

**JENNISON
WRIGHT**

**FLEXIBLE STRIP
END GRAIN FLOORS**

On the Calendar

January

- 12-15 16th Annual Technical Conference, Society of Plastics Engineers—Conrad Hilton Hotel, Chicago
- 14-15 15th Annual Short Course in Residential Construction, sponsored by University of Illinois Small Homes Council—Building Research Council—University of Illinois, Urbana-Champaign
- 17-21 16th Annual Convention and Exposition, National Association of Home Builders—Conrad Hilton and Sherman Hotels and The Coliseum, Chicago
- 25-28 11th Plant Maintenance and Engineering Conference and Show—Convention Hall, Philadelphia

February

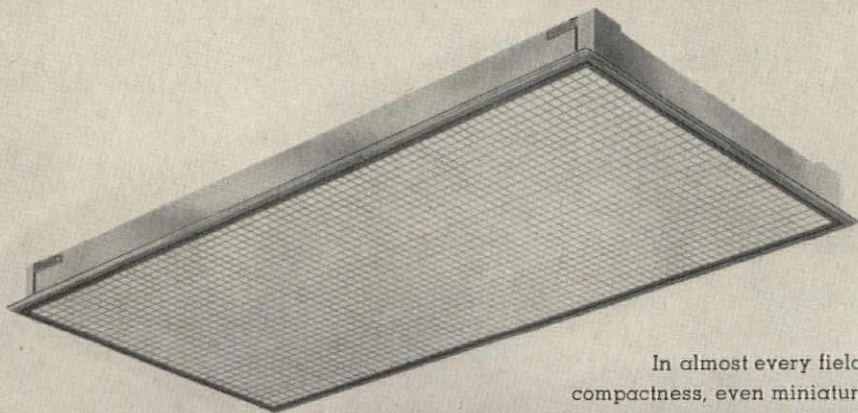
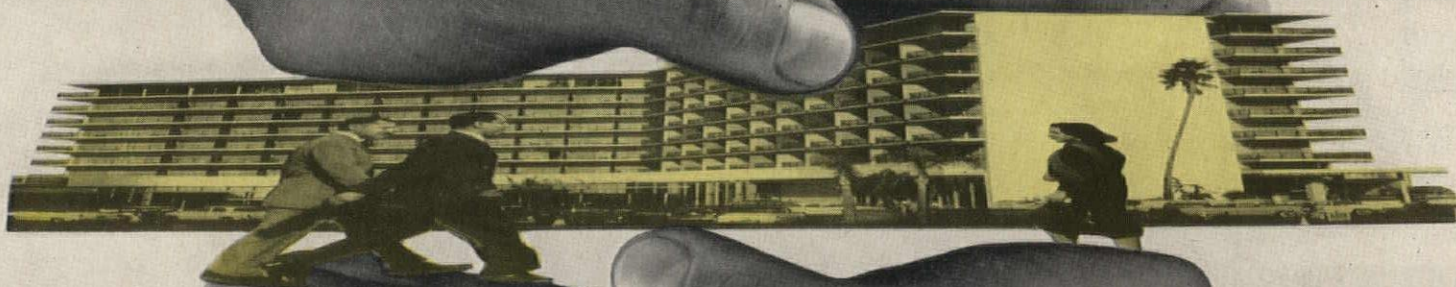
- 1-4 Semi-Annual Meeting, American Society of Heating, Refrigerating and Air Conditioning Engineers—Baker Hotel and Memorial Auditorium, Dallas
- 1-4 First Instrument-Automation Conference and Exhibit of 1960, sponsored by Instrument Society of America—Rice Hotel and Sam Houston Coliseum, Houston
- 18-20 Winter Meeting, National Society of Professional Engineers—Broadview Hotel, Wichita, Kan.
- 22-27 Banff Session '60, Architecture and Structure—Banff, Alberta, Canada

March

- 6-9 Fifth National Electrical Industries Show, sponsored by Eastern Electrical Wholesalers Association—The Coliseum, New York
- 7-11 National Convention (first of three in 1960), American Society of Civil Engineers—New Orleans
- 13-14 Annual Convention, National Housing Conference—Statler-Hilton Hotel, Washington
- 14-17 56th Annual Convention, American Concrete Institute—Commodore Hotel, New York

continued on page 264

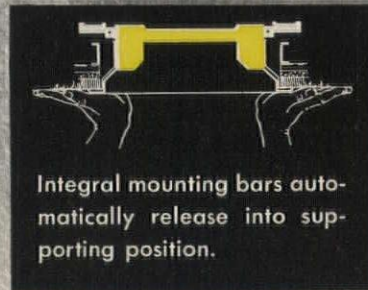
It's the year
for compact lighting too!



In almost every field, compactness, even miniaturization, is the trend. In lighting, the most compact recessed fixture designed to fulfill optimum illumination standards is the SHALLOBEAM. This ultra-shallow system is so compact and so self-contained an electrician simply lifts it from the carton and snaps it into the ceiling opening.

Modular in concept, nominal 1' x 4', 2' x 4' and 4' x 4' SHALLOBEAMS may be included in the same ceiling plan. A recessed depth of only 4 1/4" permits installation in ceilings with restricted overhead. Exclusive "I-Beam-like" die-castings and die-formed parts assure unsurpassed sturdiness and precision alignment. A large selection of diffusing and light control mediums are available to meet specific illumination tasks. No visible hinges or latches mar SHALLOBEAM'S clean, architectural appearance. For the most compact lighting with the most extensive versatility and lasting quality specify and install SHALLOBEAM.

Write for bulletin D-107



Integral mounting bars automatically release into supporting position.

SUNBEAM LIGHTING COMPANY

777 East 14th Place, Los Angeles 21, California

3840 Georgia Street, Gary, Indiana



Photo by Julius Schulman

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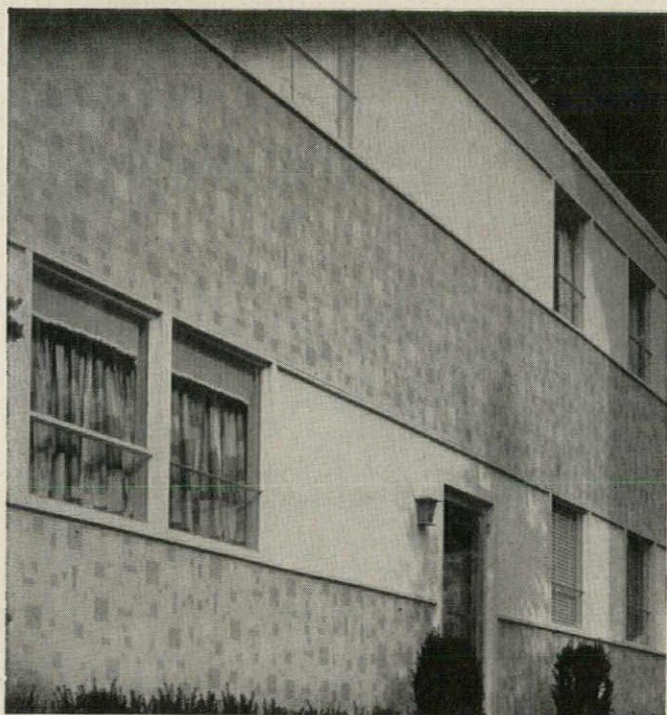
See Altec's product listing in Sweet's Catalog Architectural File (17e/AL), 1960 Edition.

* American Communications Corp.
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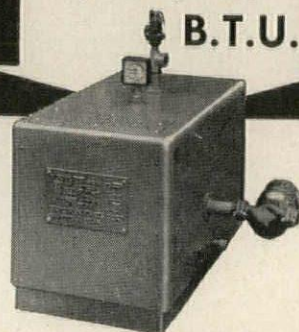
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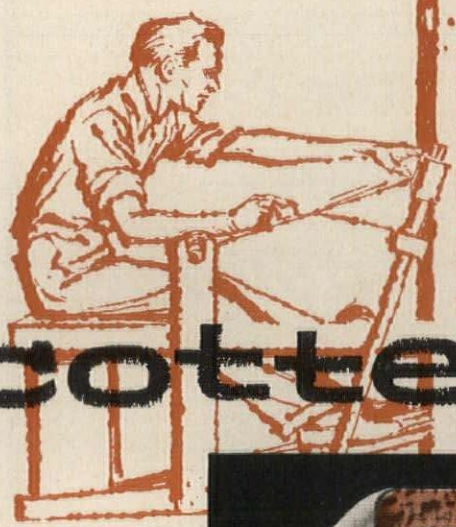
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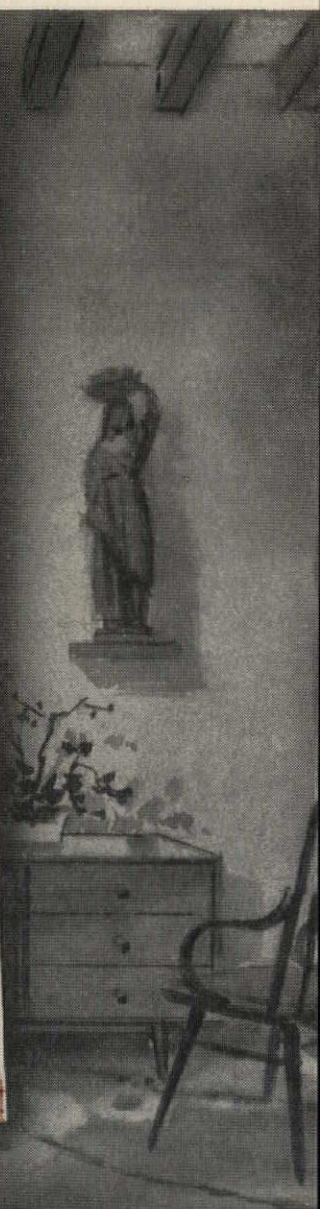
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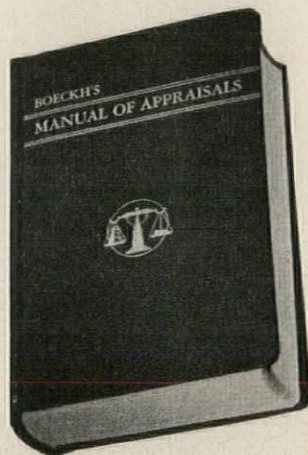
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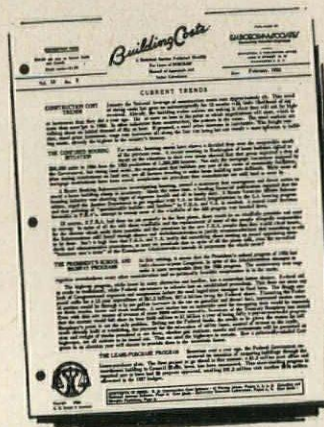


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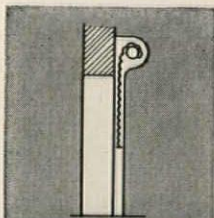


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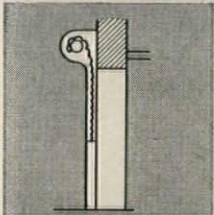
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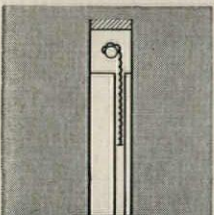
Kinnear Rolling Doors



Mounted on inside wall; coils above the doorway.



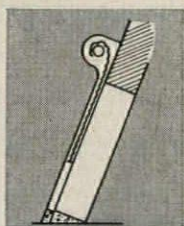
On outside wall; leaves all ceiling space clear.



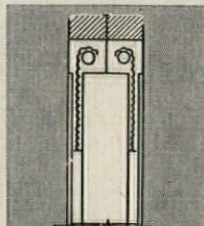
Hood under lintel or concealed in the wall.



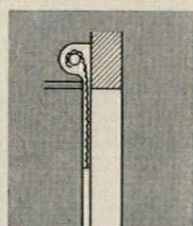
Horizontal mounting (ventilator, observatory or similar openings).



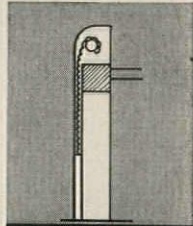
Sloping doorway (as for hoppers, chutes, etc.).



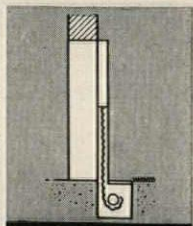
Kinnear Steel Rolling Fire Doors on either side of wall.*



Hood above roof or upper floor (no headroom needed).



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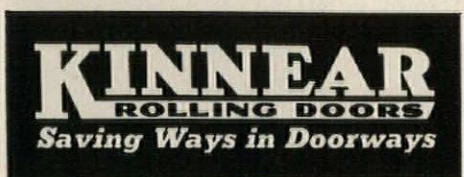
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Office Notes

Offices Opened

Omer J. De Bever & Associates, Consulting Electrical Engineers, has been established at 2872 Rowena Ave., Los Angeles 39. Mr. De Bever formerly was chief electrical engineer for Charles Luckman Associates.

Francis E. Telesca, A.I.A., has opened an office for the practice of architecture in Miami. He formerly was chief architect for Rader & Associates.

Victor M. Villemain, R.A., consultant in site planning and landscape architecture, has opened an office at 157 W. 57th St., New York 19.

Firm Changes

Henningson, Durham & Richardson, consulting engineers and architects in Omaha and Colorado Springs, announces that Louis A. Cutler, A.I.A., has joined the Omaha staff.

A. M. Kinney Associates, Architects & Engineers, announces that Roy C. Neumann has been named deputy director of architecture. Also, A. M. Kinney, Inc., Consulting Engineers, announces that Richard M. Larimer has been appointed assistant to the president and will represent the firm in Columbus, Ohio. Both firms are at 2912 Vernon Pl., Cincinnati 19.

New Addresses

Puckett & French, Architect and Engineer, 600 E. Fourth St., Big Spring, Texas.

Skidmore, Owings & Merrill (San Francisco office), 1 Bush St., San Francisco.

Correction

The RECORD regrets that one credit was inadvertently omitted on page 212 of the October issue in the story on the Philip Morris Research Center (Ulrich Franzen, Architect). Decoration was by: Thalhimers Industrial Sales Corp.

more news on page 270



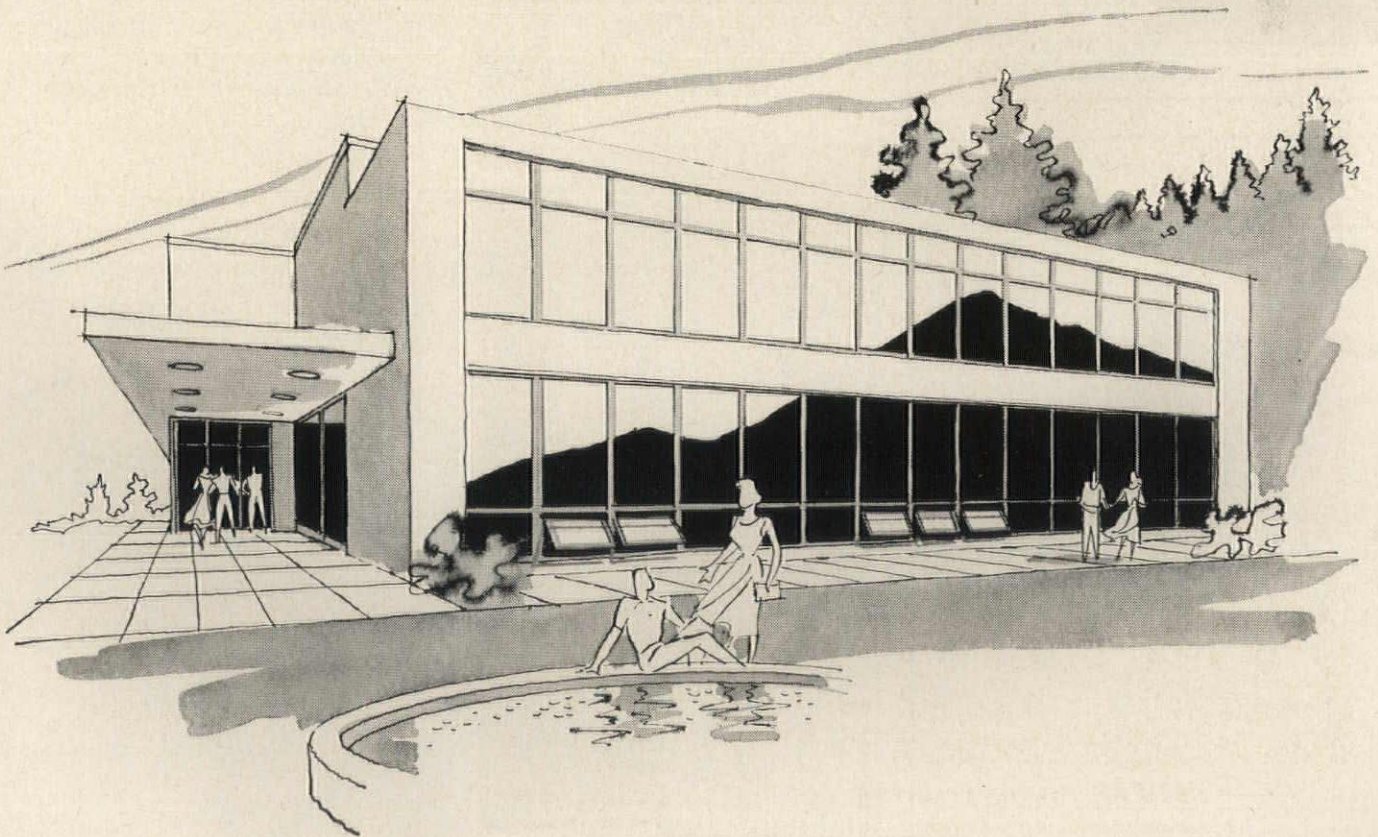
mp windows

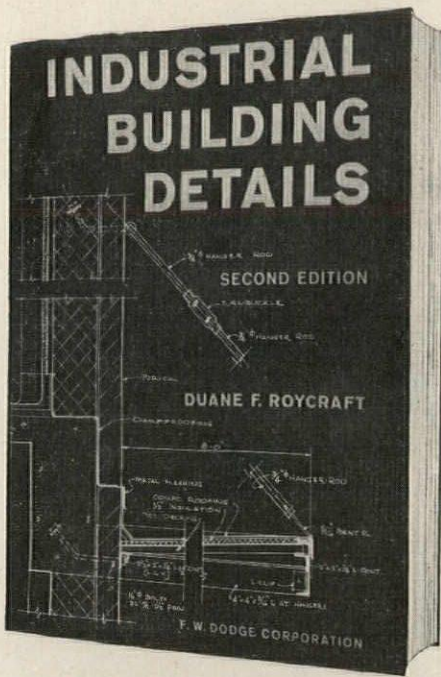
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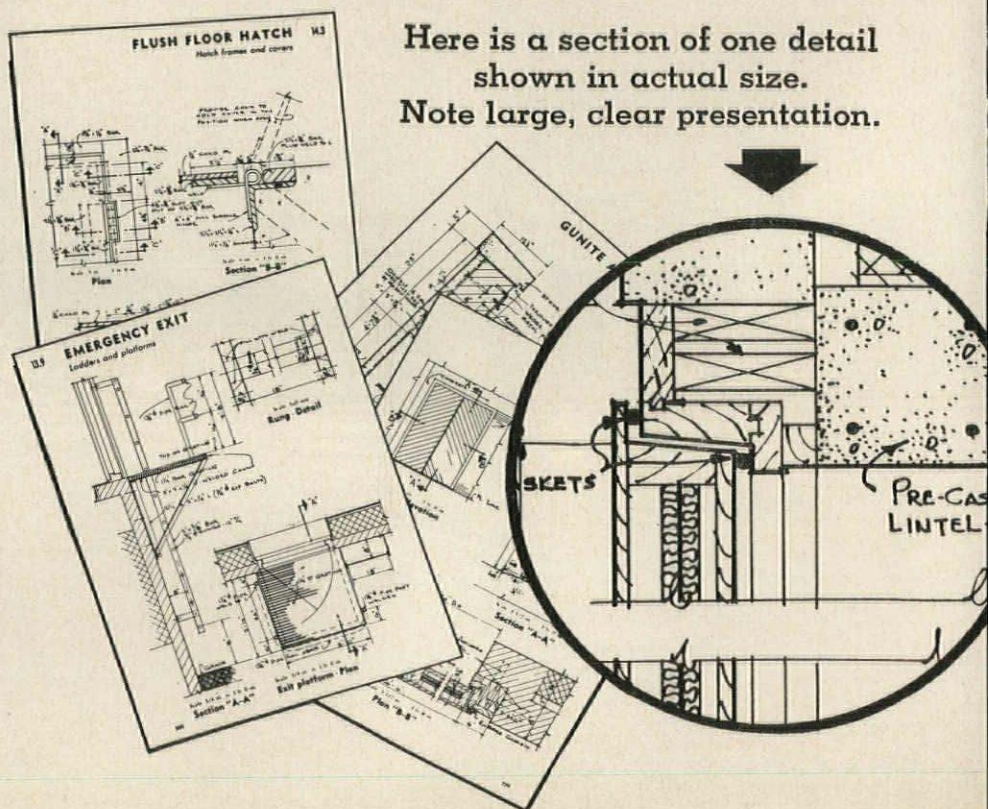
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Payment enclosed

Here is a section of one detail shown in actual size. Note large, clear presentation.



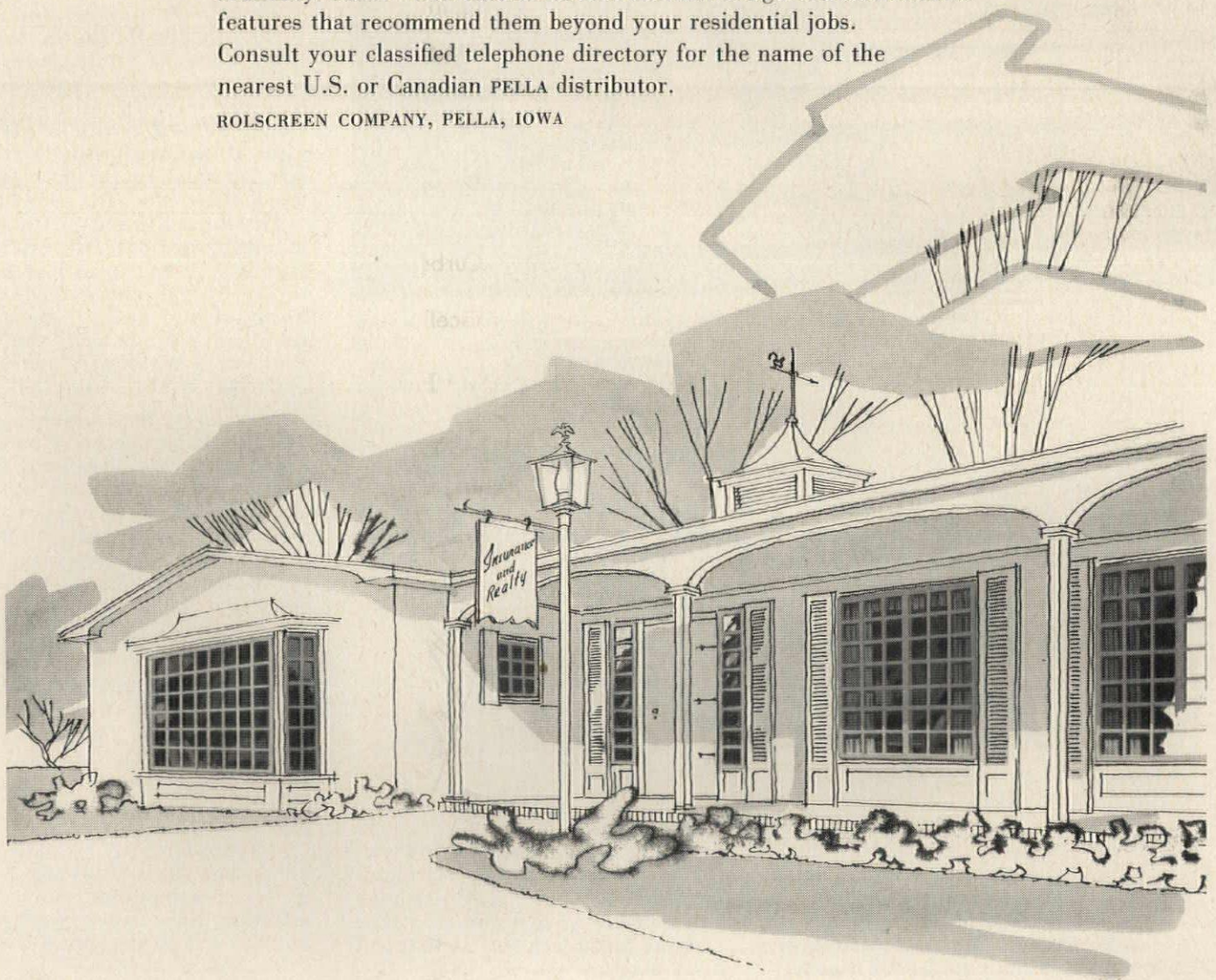


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accent colonial office building

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Pittsburgh Fab-Form, available in lengths up to 28 feet, 3 inches with $\frac{5}{8}$ -inch corrugation, is handled easily on steel joists by one man at St. Regis Church and School in Trafford, Pa. Contractor H. Justin Brown & Son, Mt. Lebanon, Pa., reported it took four men just one day to lay 10,800 square feet of Fab-Form. Fab-Form was sold and engineered by W. N. Dambach, Inc., Pittsburgh, Pa. Architect: Ermes Brunettini, A.I.A., Verona, Pa.

New Fab-Form by Pittsburgh Steel Cuts Floor and Roof Slab Costs, Gives Greater Length and Width

Fab-Form, a brand new addition to Pittsburgh Steel Products' line of quality construction products, builds in savings of materials and erection time for concrete floor and roof slabs.

New Fab-Form—longest and widest corrugated, permanent steel form for slabs poured over joists—reduces the number of end and side laps through its 32-inch cover width and extra length.

In addition, Fab-Form has an exclusive new welding method that is literally a snap.

Fab-Form is fabricated:

- In standard lengths, plus other lengths up to 28 feet, 3 inches—twice as long as most others.

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- With deepest corrugation—a full $\frac{5}{8}$ -inch—of any standard steel centering.

- Plain or Bonderized with an exclusive baked-on duPont red oxide primer that provides weather protection and serves as an excellent primer base for further painting of exposed underside. Fab-Form's special protective finish prevents water stain or "white rust."

Fab-Form's uniform strength comes from high-tensile (90,000 to 100,000 psi), 27 gage, cold rolled steel sheet.

- **Ideal for School**—One of the first construction jobs in which Fab-Form was used was the new St. Regis Church and School in Trafford, Pa. Architect for the job was Ermes Brunettini, AIA, Verona, Pa. More than 33,000 square feet of Fab-Form supports three-inch concrete floor and roof slabs set on steel joists.

Thomas A. Laboon, job superintendent for H. Justin Brown & Son, general contractors from Mt. Lebanon, Pa., said that the deeper corrugations in Fab-Form helped make a stronger slab. Pittsburgh Steel's six-inch square mesh made of No. 6 gage wire was used for reinforcing.

Fab-Form's speed of installation also impressed Mr. Laboon. He said that it took four men just one day to lay 10,800 square feet of Fab-Form on roof joists. After sections were laid, welders using the unique Fab-Form Welding Washer Stick made plug welds to every other joist.

- **Easy as A, B, C**—Welders found using the exclusive Fab-Form Welding Washer Stick unusually simple. Pittsburgh Steel developed the unique stick so that each welder bent up the end washer on the stick, made his plug weld and snapped off the washer—in just seconds. This eliminates fumbling in heavy gloves for individual washers. Next, mesh was installed and the slab was poured.

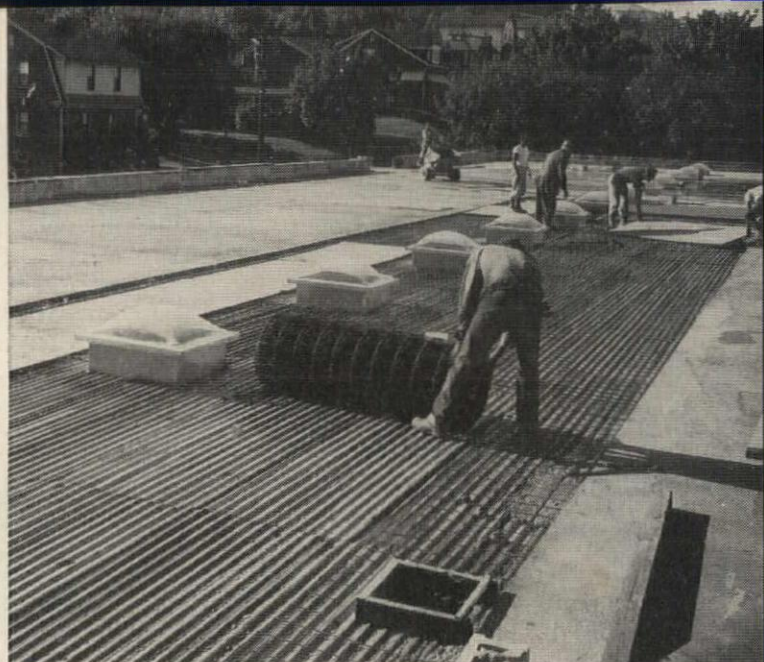
"Everything came out exactly right with no scrapped material," said Mr. Laboon in commenting on the economy of Fab-Form. "The side and end-lapping worked out exactly right.

"On top of that," he added, "you know that when Fab-Form is down you have a material that will take a beating from men tramping on it, buggies and even rough weather.

"Later, after the slab is poured,



Deepest corrugation, $\frac{3}{8}$ -inch, of all standard steel centering is available with Fab-Form. Job Superintendent Thomas A. Laboon, left, shown with Pittsburgh Steel Products Salesman C. W. Bainbridge Jr., said deep corrugation helped make a stronger slab.



Rugged Fab-Form, longest and widest corrugated steel centering for concrete floor and roof slabs on the market, easily supports a three-inch slab. Fab-Form saves material and erection time.

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Write today for literature or, better yet, contact the nearest Pittsburgh Steel Products sales office listed here.



Pouring is no problem with Fab-Form. Here a buggy has rolled over Fab-Form without damaging the material. Six-inch square mesh made of No. 6 gage wire is from Pittsburgh Steel, too.



Exclusive Fab-Form Welding Washer Stick reduces installation time. After the end washer on the stick is bent up, the welder makes a plug weld and snaps off the washer. Then mesh is installed and slab is poured.

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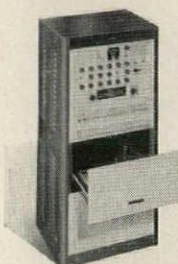
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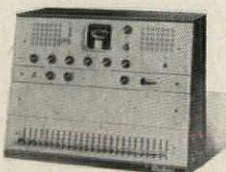
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Washington Topics

continued from page 60

put to rest by action of the A.I.A. Board of Directors at their Portland session in November.

The Board adopted as Institute policy a statement which encouraged "an extension to private works, wherever possible, of such retained percentage procedures as now prevail on Federal public works. Such retained percentages would be at the rate of 10 per cent until 50 per cent of the job is completed, after which there shall be no additional retainage, provided that the work has proceeded to the satisfaction of the architect and/or owner."

This is essentially what the objecting groups had been seeking. An early November meeting at the Octagon in Washington brought the construction interests together to discuss the problem. The general contractors, subs and credit men, along with some other segments, outlined their views, and the A.I.A. spokesman promised that the subject would be considered at the annual fall board meeting in Portland.

Milestone for Plastics Seen In New FHA Release

What a Manufacturing Chemists Association official called "the first official recognition on a national scale" of a plastic material for flashing building joints against water penetration was effected in a recent materials release by the Federal Housing Administration on Dow Chemical Company's Saraloy 400 elastic flashing. The substance was described as a black thermoplastic flexible sheet composed of saran polymer, carbon black, and suitable plasticizers and stabilizers. The nominal thickness is 1/16 in.

FHA set up the following controls for use of the material in valley, through-wall, cavity wall, masonry veneer base, vent and chimney flashing and in parapet walls and under copings:

1. Installation must be in accordance with the producer's instructions for each specific use.

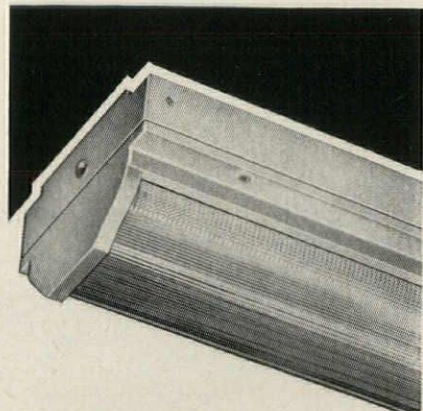
2. Lap must be provided in accordance with manufacturer's recommendations.

3. Sealing of joints shall be in accordance with manufacturer's instructions.

4. Changes in the design, composition or application instructions shall void the suitability of this product for the intended uses as outlined.

William Demarest Jr., director of Plastics in Building for M.C.A.,

continued on page 282



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THE FIRST ANNUAL COMPETITION had as its premise "BETTER LIVING FOR THE MIDDLE INCOME FAMILY". A quarter section site of 160 acres adjacent to a new industrial park was chosen as typical of sites now being developed throughout the country as tract housing.

The architectural profession was given the challenge of developing this property as "A PLACE TO LIVE AND REAR A FAMILY". Many significant solutions were presented which, it is hoped, will result in improvement of tract development.

The Second Annual Competition extends the challenge to the architectural profession for the next important element of family living—"EDUCATION FOR YOUTH AND ADULT—RECREATION FOR ALL THE FAMILY".

Many communities are struggling with the problem of bond issues successively added to the community tax burden as the continued pressure of educational needs forces the sometime reluctant community into action. These educational taxes added to the taxes required for other needed and desirable community facilities, such as parks and recreation, cumulate in an economic drain on the middle income house owner. There is therefore a daily growing problem of solving the overall community needs on a long range basis of physical planning and financial funding.

Last year's winning design provided for neighborhood community facilities at its core with safe pedestrian access. The local school authority has felt that the 614 dwelling units provided warrant an elementary school at the core of the development and has taken independent steps to achieve this. However, Junior High School, High School and Community College facilities will eventually be needed for the large residential growth in the surrounding territory.

While short of the ideal and limited by existing controlling factors a definite attempt has been made by the Municipal Government to establish suitable zoning conditions for future growth. Through a collaborative effort of community and industry, a generous tract of land has been made tentatively available for community education and recreation needs subject to demonstration of its suitability and financial feasibility under a long range bonding program.

Hot controversy and concern exists in the community as to the validity of current educational techniques and the need for a stiffer educational approach to match the technical demands of the space age. The rising cost of modern educational plants has been very strongly challenged. It has been decided to retain a firm of architects to prepare a feasibility study of the use of the above tract of land for education and active and passive recreation, and to submit preliminary plans for the first projected

element of construction, a Junior High School.

You are the hypothetical architect

THIS IS THE PROGRAM: Overall development of the 280 acre site with integration of the following facilities:

1. Junior High School for 2,000 students.
2. High School for 2,500 students.
3. Community College (2 years) for 1,200 students.
4. Active and passive recreation for a rapidly growing satellite community providing greatest flexibility and sustaining revenue potential within the limitations of available land.
5. Adult use of educational and associate athletic facilities to the greatest extent possible without sacrifice of prime function.

The existing county road will be restricted for local access but the substantial volume of traffic engendered by the proposed community facilities shall be considered, including the problem of safe access to the site from the rapidly growing residential area to the southwest.

The overall study need be developed only to the extent necessary to demonstrate general site planning and functional integration or juxtaposition of facilities for maximum usage at minimum overall cost.

The Junior High School shall be developed in sufficient detail as to demonstrate educational objectives, plan organization, architectural character and general type of construction. Anticipated construction cost shall be given as a lump sum for the building only, excluding site development beyond a line five (5) feet from the building. Cost per square foot of gross area and cost per pupil shall be stated.

To permit uniformity of cost factors the local conditions shall be considered the U.S. Average of 535, as published in Engineering News Record Building Cost Index, listed below.

A typewritten analysis stating the educational objectives considered and developed in the solution shall be incorporated in the submission together with any other pertinent data which the Contestant may wish to present for the consideration of the Jury.

"I believe that only through education can we meet the many challenges and problems of today. How to provide the necessary physical facilities, without sacrificing educational quality and imposing too-heavy tax burdens, is a problem weighing heavily on every community. It is hoped that this competition will stimulate practical, workable solutions to this great challenge and develop a closer collaboration between the architect, educator and private citizen."

SEYMOUR MILSTEIN, President

MASTIC TILE DIVISION • THE RUBEROID CO.

STATISTICS AND CLIMATOLOGY

BUILDING COST INDEX DEC. 25, 1958 ENGINEERING NEWS RECORD

Atlanta	472	Los Angeles	530
Baltimore	542	Minneapolis	553
Birmingham	493	New Orleans	494
Boston	542	New York	609
Chicago	562	Philadelphia	569
Cincinnati	515	Pittsburgh	595
Cleveland	533	St. Louis	563
Dallas	469	San Francisco	533
Denver	532	Seattle	484
Detroit	574	Montreal	449
Kansas City	533	Toronto	472

AVERAGE TEMPERATURE IN °F.

	MAX.	MIN.
January	42	7
July	88	68
Extremes	109	17

PREVAILING WINDS

January	NE
July	NW
Average	12 mph

HUMIDITY — 8 AM

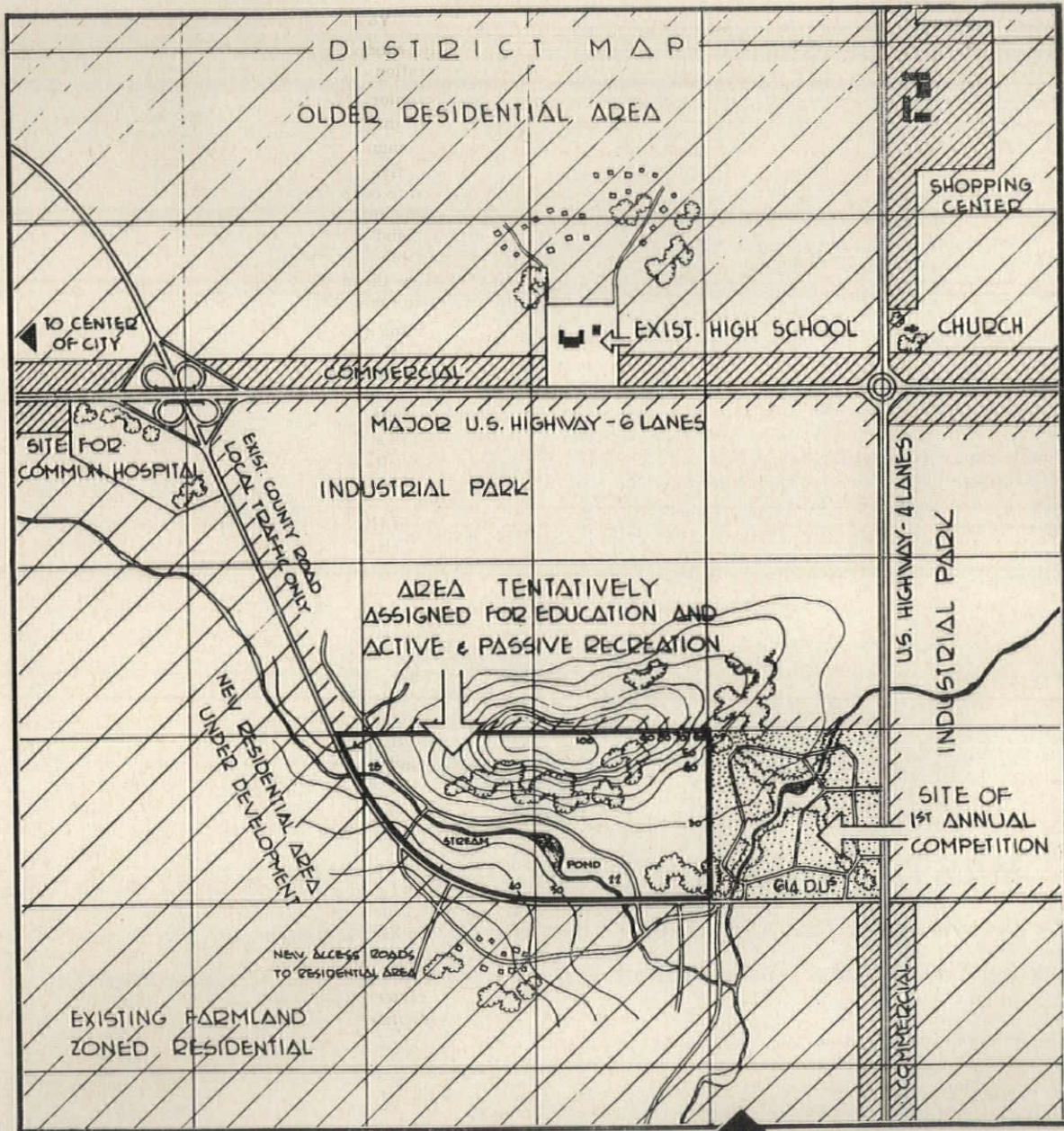
January	80%
July	75%
Normal	50%

PRECIPITATION

Normal	39.34" Annual
Sunshine Frequency	45%
Daytime Cloudiness	50-55%
Cloudy Days	40%
Winter Sunshine	30%
Summer Sunshine	65%
Dense Fog	5%

The RUBEROID Co.

design competition



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method of submission

EACH SUBMISSION SHALL consist of not more than three 30x40 illustration boards, used vertically, of sufficient weight to permit handling and display. Drawings shall be in black and white suitable for reproduction. For uniformity in judging, the overall site plan shall be drawn at the scale of 1" equals 200'. Typewritten information, schedules, etc. may be applied to front of illustration boards. There shall be no projecting lettering or other materials. Each board shall have a thin card mounted face inward on the back with gummed tape, bearing the Contestant's name (or names, if a joint submission), address, and school or office affiliation; a statement signed by the Contestant(s) that this particular submission has not been previously submitted in any other competition; the name of the individual or individuals to whom award check is to be made payable and address of the individual to whom it is to be mailed if award is made for the submission. If the contestant is an undergraduate student he will so indicate on the back of the submission.

Submissions shall be addressed to Mastic Tile Division, The Ruberoid Co. and delivered to The Architectural League of New York, 115 East 40th Street, New York 16, New York, not later than 12 Midnight on June 30, 1960. Submissions will be returned by prepaid registered mail wherever possible. However, the sponsor cannot assume responsibility for loss or damage to entries. Exhibit, reproduction and publication rights are reserved by the

sponsor for a period of one year after award.

Submissions will be numbered in order of receipt and each will be anonymous until the Jury has judged the entries which are identified by number only. The Jury shall have full and final power in the selection of all entries for award. By taking part in this program the Contestant(s) agree(s) that he shall have and make no claim against the Jury, any member thereof, the sponsor, the endorsing institutions, on account of anything that may be done or omitted to be done, except for awards made to him. The mailing of the check payable in the amount awarded to the name or names given on the original entry shall constitute full payment of the award.

Notification of awards to entrants will be made by the sponsor as soon as practicable after judging is completed, and payment of award as above shall also be made as soon as practicable.

The sponsor has not set any restrictive conditions as to materials, method of construction, or design classification.

It is hoped that the results of this competition will awaken community interest toward long range growth planning.

NOTE:

It is felt that the problem of distribution of answers to questions may cause inequities among contestants. Therefore the contestants should rest on their own judgment of the problem as stated.



MASTIC TILE DIVISION • The RUBEROID Co.

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ENTRANTS ARE REQUESTED TO REGISTER PRIOR TO MAY 15, 1960

MASTIC TILE DIVISION • The RUBEROID Co.
P.O. Box 128, Vails Gate, N. Y.

I intend to enter the Second Annual Design Competition.

Please send me _____ additional copies of the program for the design competition.

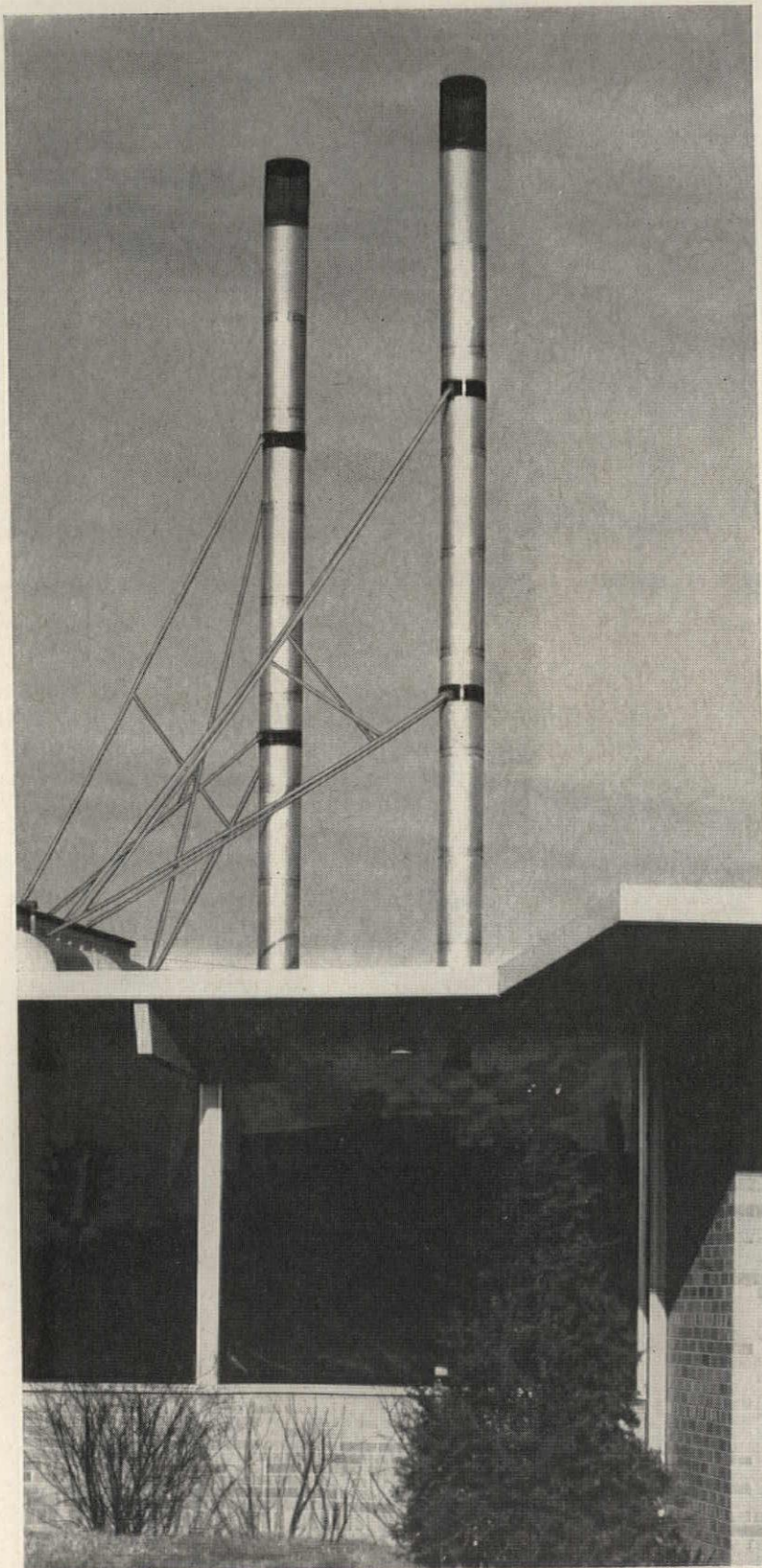
Name _____

Firm or School _____

Address _____ City _____ Zone _____ State _____

ADDITIONAL ENTRIES ARE AVAILABLE FROM THE MASTIC TILE DIVISION • THE RUBEROID CO., THEIR REPRESENTATIVES AND DISTRIBUTORS.
APPROVED BY THE COMMITTEE ON COMPETITIONS OF THE AMERICAN INSTITUTE OF ARCHITECTS

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Firm

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City Zone State



Citizens State Bank, Oklahoma City, Oklahoma. Three Ceco products were used to help achieve a dramatic architectural effect here. The products were Reinforcing Steel, Wire Mesh and Open-Web Steel Joists. Architect: Bailey-Bozalis-Dickson and Roloff; Contractor: Secor Building Company, Incorporated.

CECO'S WIDE LINE = SAVING IN TIME + FREEDOM IN DESIGN

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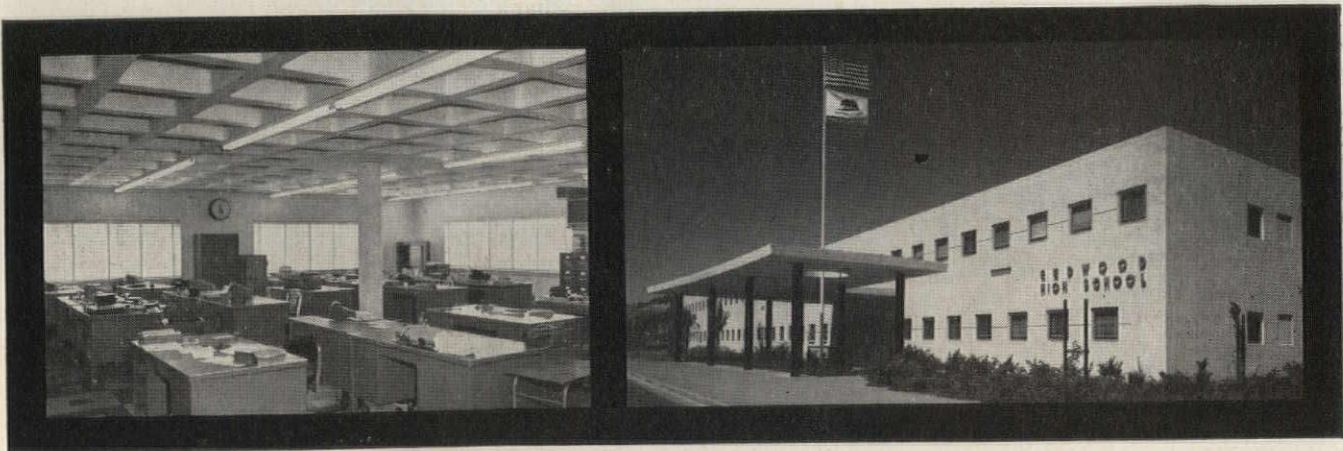
Steelforms / Concrete Reinforcing / Steel Joists / Metal Roof Deck / Windows, Screens, Doors / Cecoframe Buildings / Metal Lath

TOTAL MANUFACTURING FOR THE BUILDING INDUSTRY FROM RAW TO FINISHED PRODUCTS

HERE ARE **2** ARCHITECTURAL EFFECTS ACHIEVED IN BANK BUILDINGS THROUGH USE OF CECO PRODUCTS



Bank of Commerce, Washington, D.C. Here's an example of concrete joist construction through use of Ceco Steelforms. Concrete was reinforced with Ceco Rebars. Ceco 200-B Aluminum Double-Hung Windows provide adequate daylighting and weathertight protection. Architect: Corning & Moore; Contractor: Standard Construction Company, Inc.



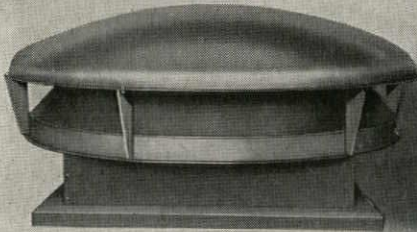
Ellis Truck Terminal, Indianapolis. Exposed waffle ceiling created with Steeldomes. Other Ceco products: Aluminum and Steel Windows, Hollow-Metal Doors, Steel Joists, Steel Roof Deck, Reinforcing Steel and Welded Wire Fabric. Architect: Monical & Wolverton; Contractor: Bugher Construction Co.

Redwood High School, Larkspur-Corte Madera Area, Marin County, California. In this handsome school building the architectural needs were met by four Ceco products: Reinforcing Steel Bars, Open-Web Steel Joists, Cedor Centering and Ceco Metal Windows. Architect: Gromme, Mulvin & Priestley; Contractor: Midstate Construction Co.

Two Top Allen

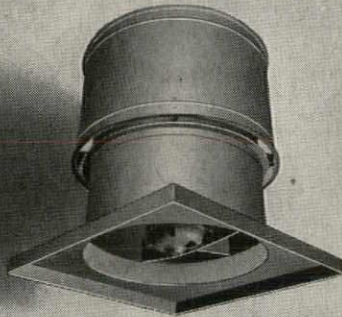
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Here are two widely-used roof fans, typical of Allen engineered ventilation for modern structures and industrial uses:



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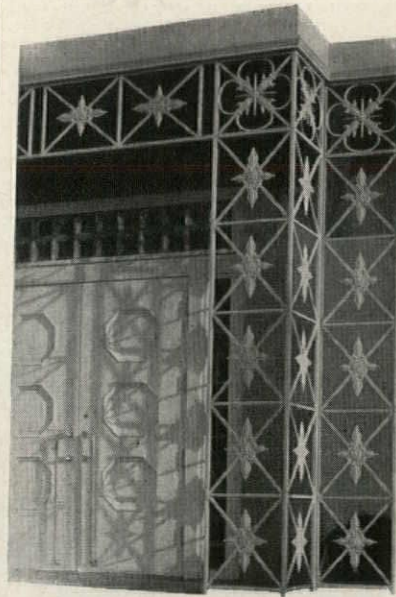
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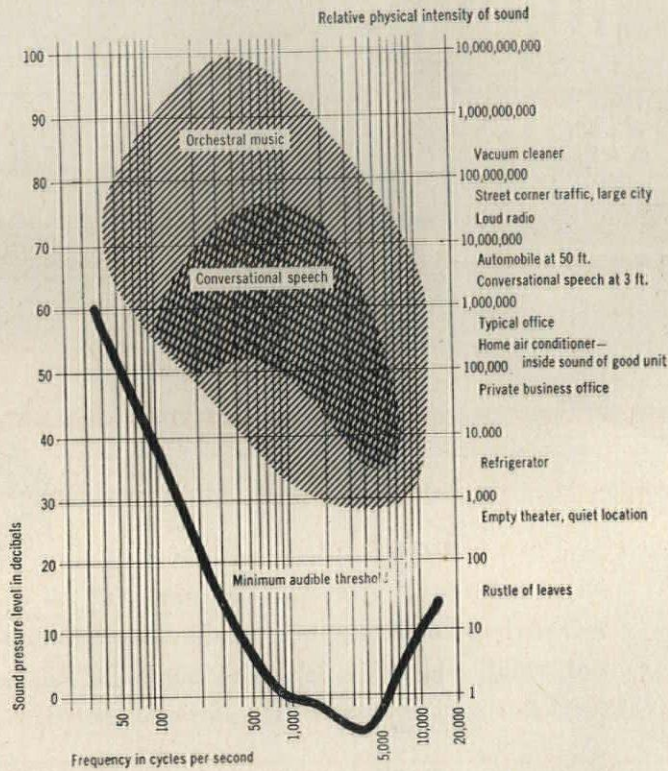
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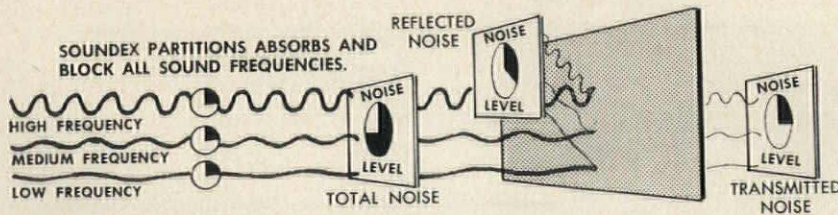
Sidewall
Quartzoid
Sprinkler

What architects should know about office sound control problems...and



The elements which make sound energy difficult to control are the almost friction-free medium of air, and the tremendous range of the human ear as a sound receiver. Since most speech and typical office machine sounds fall within the area of maximum ear sensitivity (600 to 6,000 cycles), proper control within this range is a major element in increasing worker efficiency and reducing office fatigue. The noise level of a room can be measured in terms of decibels, the smallest amount of sound the human ear can detect. Most offices have a rating of between 40 and 80 decibels. The job must be analyzed to see what type of sound problem exists. If noisy machines annoy people in the room, then the problem is one of soaking up the noise or *sound absorption*. If the problem is to stop the sounds that originate in the room from going into the next room, then it concerns *transmission*, and walls, rather than partitions, must be installed.

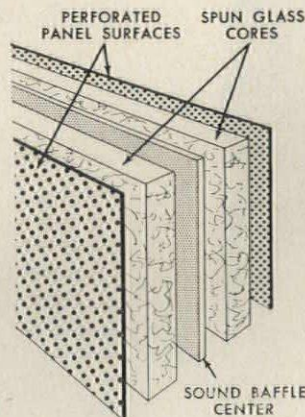
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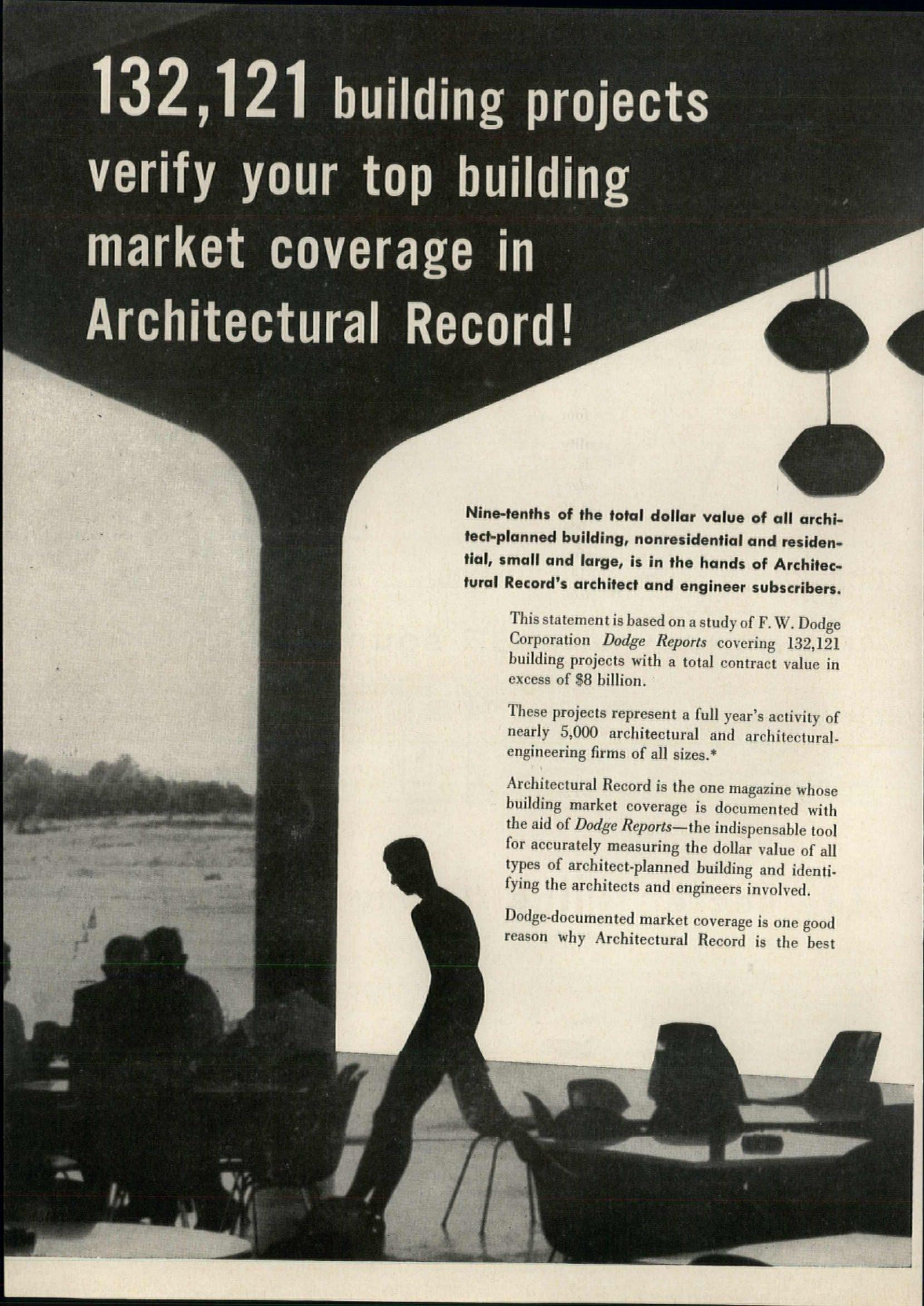
Nine-tenths of the total dollar value of all architect-planned building, nonresidential and residential, small and large, is in the hands of Architectural Record's architect and engineer subscribers.

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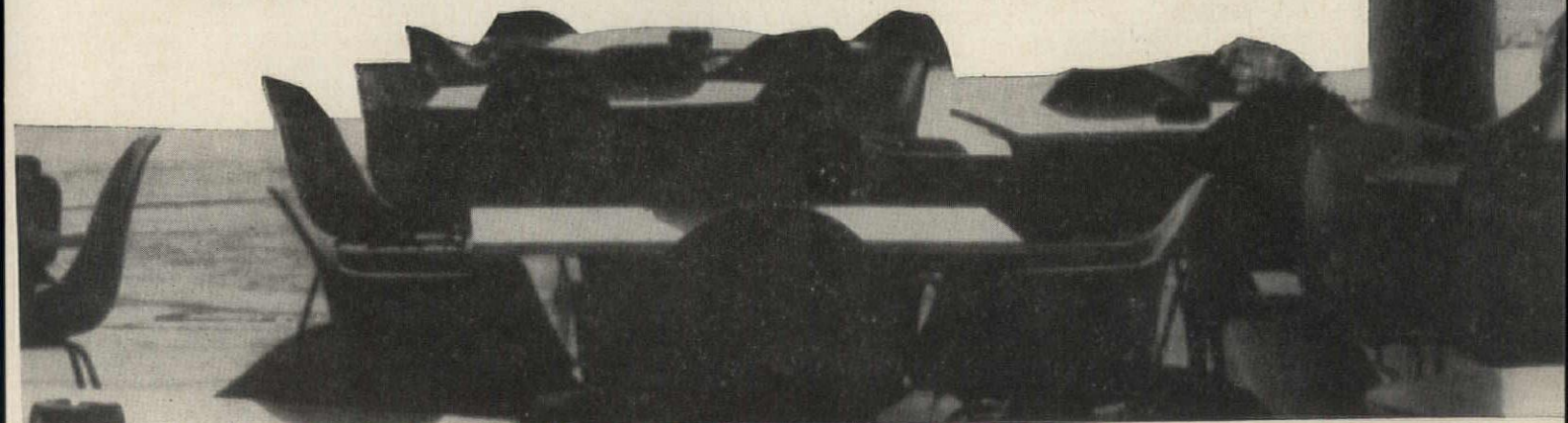


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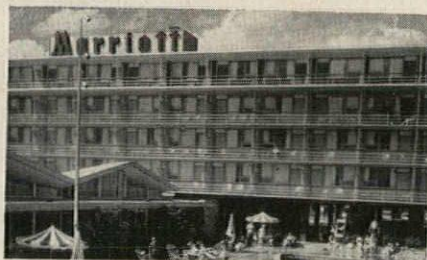
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Washington Topics

continued from page 270

trade group of raw plastic producers, regarded the move as one of considerable importance in the adaptation of plastics to construction. Mr. Demarest told ARCHITECTURAL RECORD: "The great significance of this development lies in the fact that this approval represents, to my knowledge, the first official recognition on a national scale of a nationally distributed organic plastic, flexible material for flashing exposed building joints against water penetration. Metals have traditionally been the accepted materials for this important function."

Cooperation on Preservation Urged in New Report

Among nine recommendations made recently by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments was one urging that sites of exceptional value in non-public ownership should be included in the long-range National Park System plan. It was indicated the Board felt these sites were suitable for and needed by the NPS to round out its interpretation of American history.

The new guidelines concerning the preservation of historic sites and buildings under the National Survey emphasized that historical preservation in the U. S. should be a cooperative effort of Federal, state and local governments, patriotic organizations and civic-minded groups, and that the Federal government should not attempt to administer all significant historic sites throughout the nation.

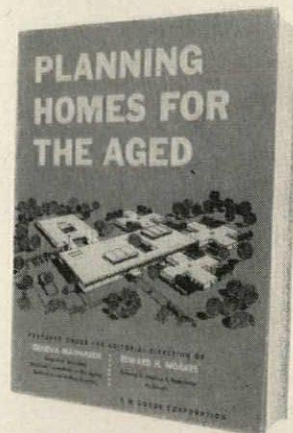
The Board said that the Federal government should not seek ownership of exceptional historical and archeological sites already held in public or semi-public ownership, but instead should give encouragement to the state, municipality, or organization in its preservation efforts.

Huge Investment Need Seen for Water Resource Development

The Business and Defense Administration (Department of Commerce) estimated that a capital investment of nearly \$171 billion would be required to develop needed water resources in the U.S. by 1975. The long-range forecast was based on projected population growth, industrial expansion and anticipated higher living standards.

The report said that the required outlay would approximate the accumulated value of investments in these resources since 1970.

**Authoritative treatment of
a special building type . . .**



PLANNING HOMES FOR THE AGED

by Geneva Mathiasen
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Here, in one volume, is the first comprehensive planning guide on the problems of designing and building homes for the aged and infirm. Anyone contemplating such construction, on any scale, will benefit from consulting this new book first.

An expert in problems of the aging and a noted institutional architect jointly edited PLANNING HOMES FOR THE AGED. Their purpose was to provide written and graphic guidance to those responsible for the physical planning of such homes. They achieve this aim through an interesting, authoritative text and practical, contemporary designs.

In addition, useful appendices give pertinent population data, building cost information, and an exhaustive bibliography for research. The text is fully indexed for easy reference to specific details.

Underlying this wealth of practical details and designs is much new thinking on principles, methods, and ideas which are applicable to all types of homes. General hospitals, chronic disease hospitals, homes for the aged (both profit and non-profit), nursing homes, and other related institutions are all covered by the important material presented here for the first time. Architects, owners and administrators of such institutions, as well as government health and welfare bureaus, can immediately benefit from the valuable assistance given in this new book.

119 pages, 8 3/4 x 11 1/8", clothbound,
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office building
designed
with
the future
in mind

YOU CAN BE SURE... IF IT'S **Westinghouse**

Exterior view of new home offices of Bankers Life Insurance Company of Nebraska, in Lincoln. Two different lighting systems are provided for the building, one for day and periphery lighting for night.



Bankers Life Building designed for comfort, convenience, economy and expandability

The home office building of Bankers Life Insurance Company of Nebraska, in Lincoln, was planned and constructed to provide maximum efficiency and future expansion. It incorporates many ideas which resulted from a study of other home office insurance buildings throughout the country, plus a careful study of the company's operation and plans for future growth.

Careful consideration was given to the selection of easily maintained materials for efficient maintenance and low operating costs. This was accomplished through use of permanent materials which require no painting, such as Westinghouse decorative Micarta® surfaces; large areas of ceramic tile; terrazzo floors; glare-reducing, heat-absorbing glass; movable walls; changeable fixtures and complete flexibility of heating, lighting and communications facilities.

COVER PHOTO: Westinghouse Mainliner recessed fluorescent luminaires light the spacious stair wells which are finished with ceramic tile and terrazzo stairs. Shown here are C. E. Pickering, Westinghouse Construction Specialist; W. F. Sterbens, Wesco Omaha; J. P. Anderson, James P. Anderson Company, Consulting Engineers; J. O. Unthank, Unthank and Unthank, Architects; R. W. Changstrom, Branch Manager, Wesco, Omaha; P. J. Assenmacher, President, Assenmacher Construction Company, General Contractor; and T. G. McBride, Sales Manager, Market Planning, Wesco, Pittsburgh.

One of the most important considerations in planning and construction of the building was the selection of an adequate electrical distribution system and the electrical comfort and convenience components such an electrical system made possible. Westinghouse was specified throughout for the distribution system, lighting, elevators, motors and controls. The expandability inherent in the building itself is ample for the present electrical needs and provides for 100% future electrical expansion.

(contd.)

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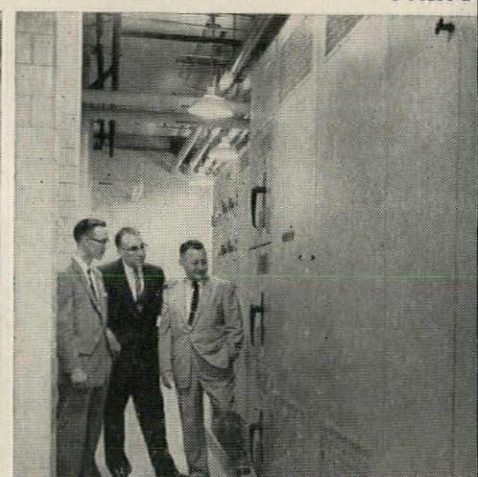
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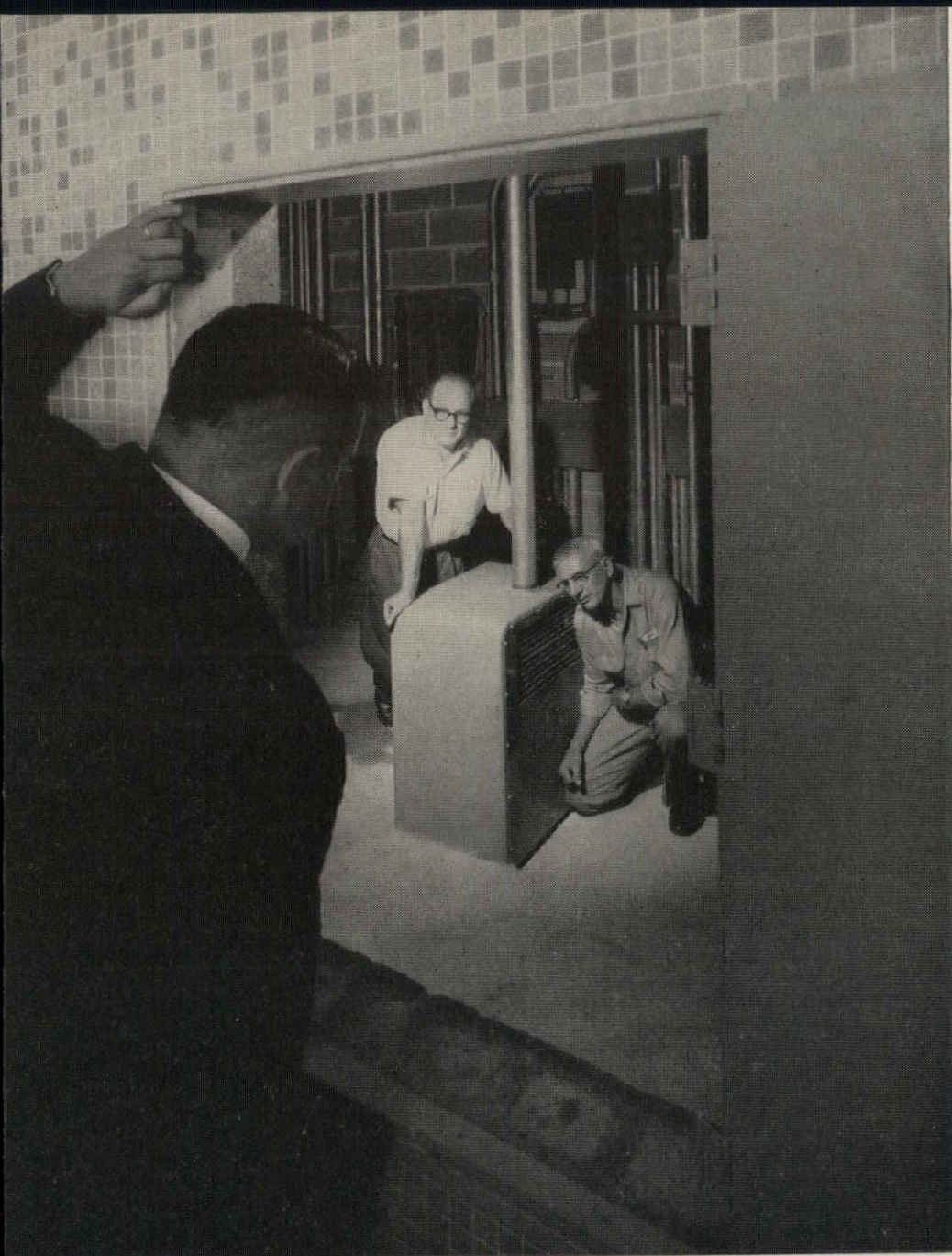
View of one of the scientifically planned work areas where the latest equipment is combined with planned use of space to make work easier and more productive. Complex electronic equipment necessary for accurate computations and record keeping requires special facilities including auxiliary air conditioners and humidifiers.



Office areas are illuminated with Westinghouse Mainliner recessed fluorescent luminaires. Modern functional furniture made with durable Westinghouse Micarta laminates was designed and built by Herman Miller of Zeeland, Michigan.



C. E. Pickering, J. O. Unthank and J. P. Anderson are shown in front of Westinghouse 1500-kva dry-type ASL power center. This power center steps incoming voltage down from 5 kv to 277y/480 for distribution through three Type DB-50 air circuit breakers.

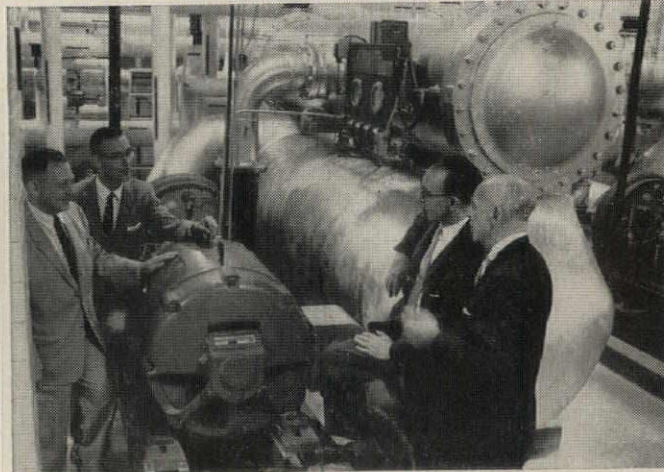


W. F. Sterbens looks through the only opening of central ventilator-power duct shaft located in immediate office area of each floor. A compact 75-kva Westinghouse Type DT-3 dry-type transformer steps down voltage at point of utilization feeding underfloor duct. K. W. Bell, Building Superintendent, and Jacob Dietrich, Building Engineer, check noise level of transformer which must be inaudible to operate in office area. Size was also a prime consideration in fitting transformer through available opening. Only a Westinghouse DT-3 dry-type transformer combined small size, 75-kva rating and guaranteed silence.

J-94136-3



Jacob Dietrich, Building Engineer, Bankers Life of Nebraska; A. J. Whitmer, President, ABC Electric Company, Electrical Contractors; and W. F. Sterbens operate pushbutton of one of the combination Life-Line® starters in the motor control center portion of the 1500-kva power center. This control center feeds, protects and controls all motors and feeder circuits in mechanical equipment room.



One of two Westinghouse 200-hp Life-Line motors which drive compressors in air conditioning system. Westinghouse motors from 1 to 200 hp were specified for all auxiliary equipment drives. Having a single source of supply simplifies maintenance and spare parts problems for operating equipment. Discussing the installation are J. P. Anderson; C. E. Pickering; J. O. Unthank; and Harold Stebbins, Vice President, Bankers Life of Nebraska.

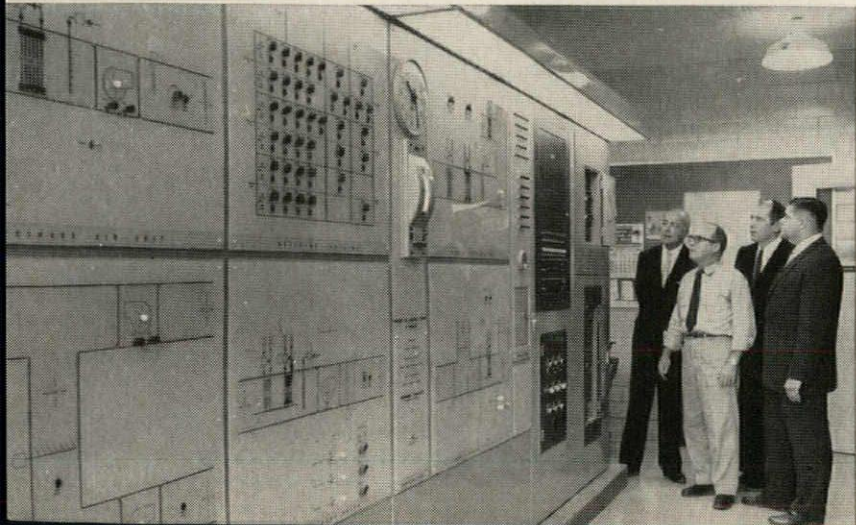


Harold Stebbins, C. E. Pickering, A. J. Whitmer, G. R. and J. O. Unthank are shown on one of the Westinghouse Selectomatic®-Automatic elevators which are traffic controlled to match, automatically, elevator service to traffic demand.



Jacob Dietrich views Westinghouse PRECIPITRON®, the Electronic Air Cleaner which removes up to 95% of all dirt particles, smoke and pollen in the air circulating throughout the building. This improves working conditions and also protects employe's health. The PRECIPITRON traps microscopic particles that cause streaks, smudges, damage to interior furnishings and office equipment, thereby reducing cleaning and maintenance costs.

This Supervisory Data Center in the Bankers Life Building is an electronic service board which registers temperatures and humidities throughout the building and automatically operates interior and exterior lighting, air conditioning and heating and even automatically turns on the sprinkling system for the landscaped grounds. Harold Stebbins, K. W. Bell, A. J. Whitmer and W. F. Sterbens inspect two Westinghouse NPLAB lighting panelboards included in the central control board.



Building designed for comfort, convenience, economy and expandability (contd.)

The planners and builders also recognized that, by specifying Westinghouse, they would enjoy the economics possible when buying from a single source of supply and later being able to minimize maintenance spare parts inventory, replacement and expansion problems.

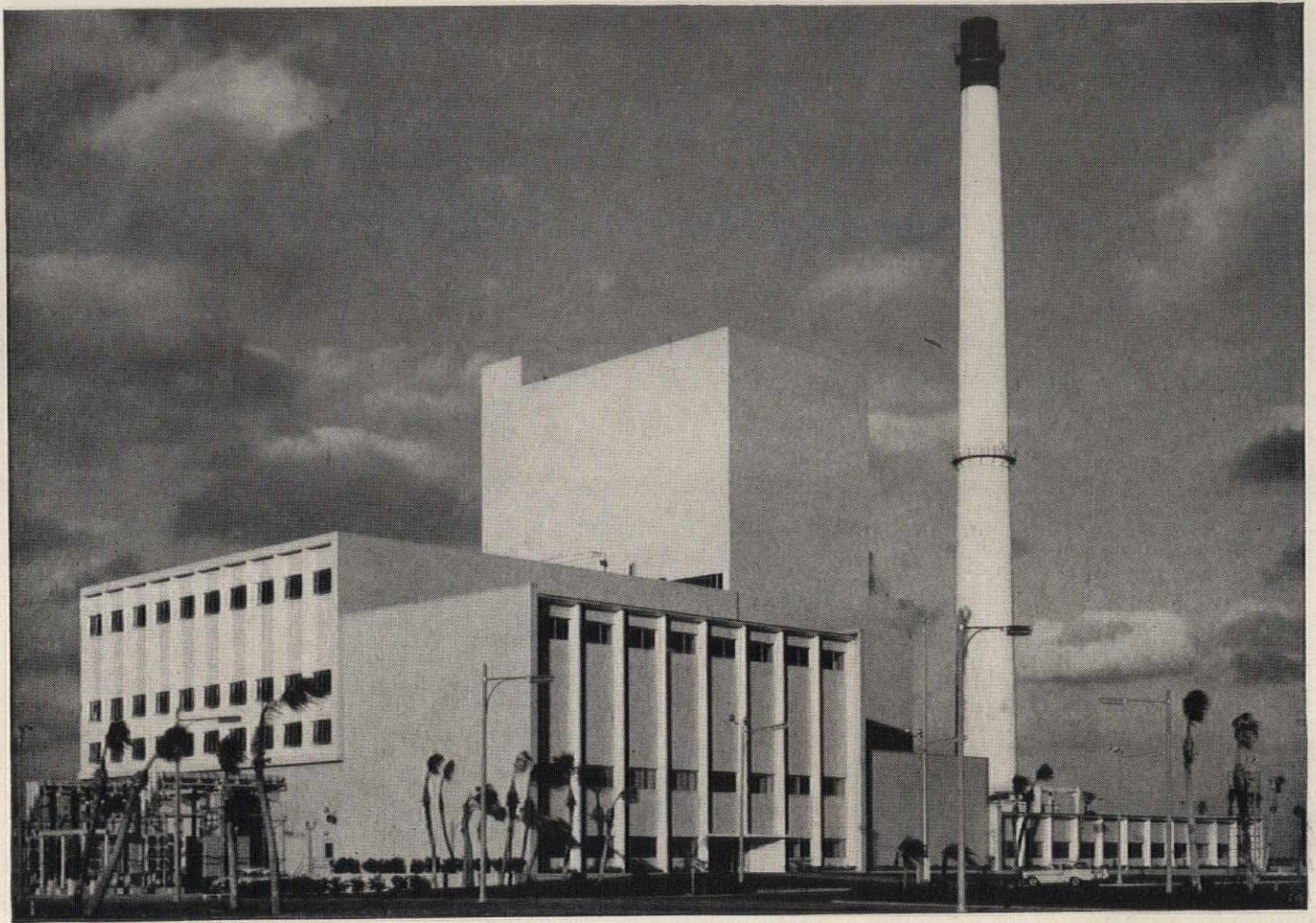
Westinghouse welcomes the opportunity to work with you in finding the best solutions to your own special electrical requirements. Call the Westinghouse Construction Specialist nearest you, or write to Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.

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 CONSULTING ENGINEER: James P. Anderson Company, Omaha, Nebr.
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FLORIDA POWER CORPORATION
WEEDON'S ISLAND**

ST. PETERSBURG, FLORIDA

Black & Veatch — Engineers

Ceramic Veneer, in white for piers and jambs and in buff for sills and coping, was specified for this new power plant. Unit sizes are 20" x 24" x 1 1/4", and also special shapes.

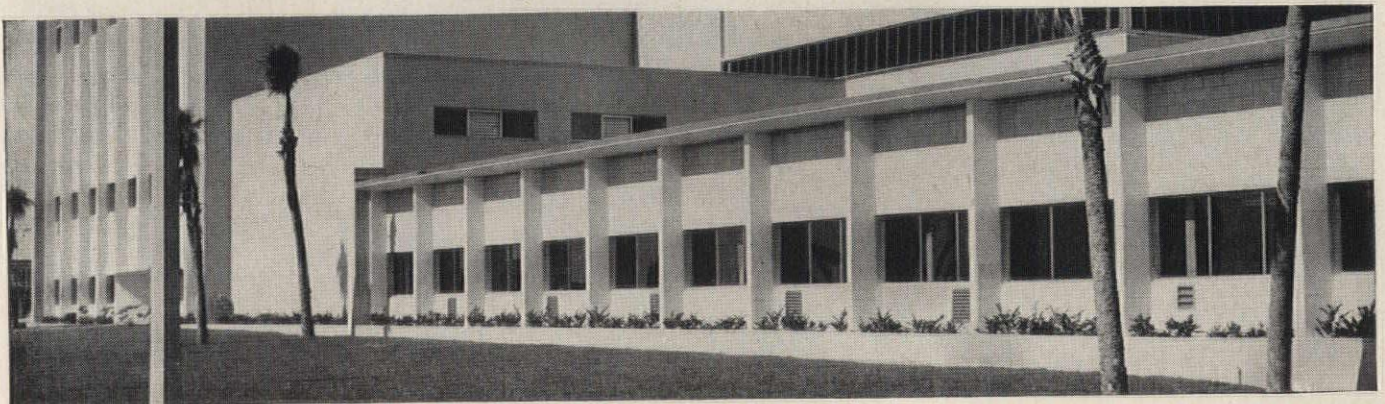
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10 E. 40th St., New York 16, N. Y.
Plant at Perth Amboy, N. J.

Ceramic Veneer assures lasting color and beauty—it's self-cleaning

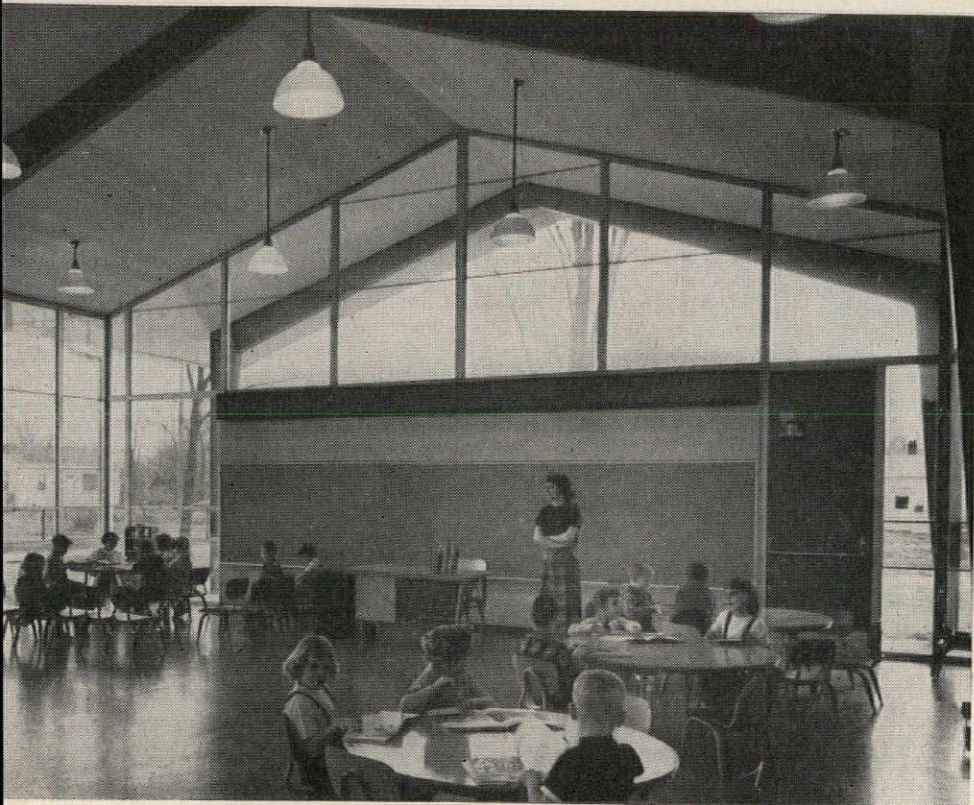
Dirt, grit and grime have little effect on the fire-glazed finish of Ceramic Veneer. Exterior treatments—plain surfaces, polychrome panels or sculpture—need only normal rainfall to keep clean and colorful. Interiors of this modern architectural terra cotta need only soap-and-water washings to retain their original richness and beauty indefinitely. Besides minimum maintenance, Ceramic Veneer offers other important advantages—moderate initial cost, ease of installation, and proved permanence. Consider, too, that Ceramic Veneer, in units large or small, is custom-made precisely to your specifications and you can choose from a spectrum-rivaling range of colors. For complete data on how well Ceramic Veneer can fit into your plans, write today. Without charge we will gladly furnish construction detail, data, color samples, estimates and advice on preliminary sketches involving use of Ceramic Veneer.





Gompers Jr. High School, Joliet, Ill. Architects: Skidmore, Owings & Merrill, and Levon Seron, Associate Architects, Chicago. TOP AWARD

Award-winning schools feature



Gordon Road Elementary School, St. Clair Shores, Mich. Architects: Wakely-Kushner Associates, St. Clair Shores.

"HOMELIKE ATMOSPHERE"

"Selection and use of materials and good relationships contribute to the pleasing total effect. A friendly, homelike atmosphere," said the jury.

Fenestra Acoustical Building Panels were used in this school. These lightweight, high-strength steel panels combine structural roof and finished interior ceiling *built-in acoustical* treatment. They replace *five* different materials with *one* metal building unit, erected in *one* operation, by *one* trade.

BUILT-IN FIRE PROTECTION

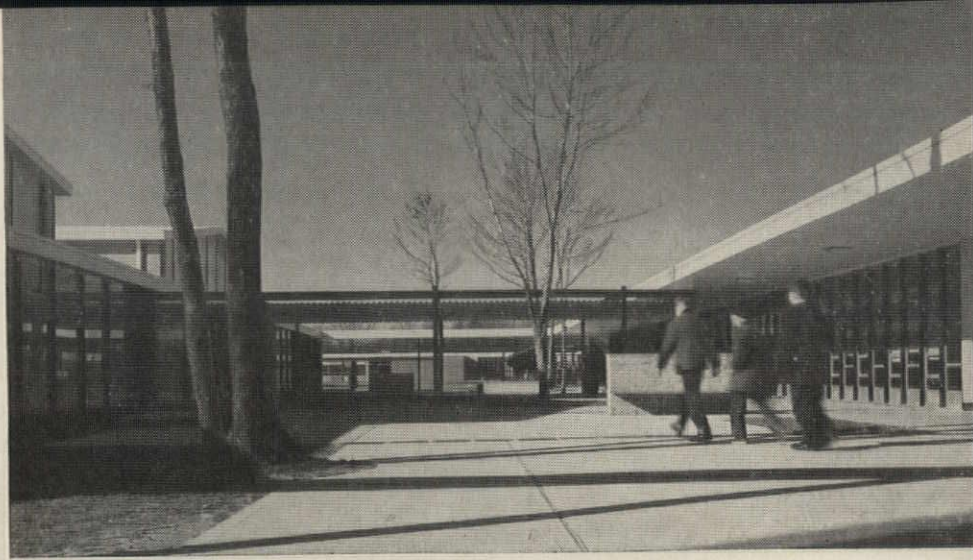
Fenestra Hollow Metal Doors deter spread of fire, particularly when equipped with closers that have a special fusible link. In the presence of heat, these links melt, causing open doors to close automatically. An excellent, low-cost precaution for doors opening on stairwells. Doors bearing Underwriters' Seal of Approval also available. When you specify or buy Fenestra, you get a *complete* package—door, frame, hardware, machined and fitted at the factory. Ask the Man from Fenestra to help with your selection.

SHOWCASE FOR NATURE

Top award was given to Skidmore, Owings & Merrill, and Levon Seron, Associate Architects, for the school at left, with this jury's comment: "Well executed, orderly and logical space arrangement. Nice respect for the natural amenities which contribute greatly to the complement of a crisp building. Scale and placement of courts give effective relief to internal spaces."

Fenestra Steel Windows played a big role in creating these comments. They also contributed to keeping original costs down—and will save further through lower operative maintenance, as nothing stands up like steel in hard service.

Four of 1958's eight Top Award winning schools*, one Honorable Mention and one Special Features school used Fenestra building products. *Awarded by School Executive magazine.



Sweetbriar Elementary School, Smithtown, N.Y.
Architects: Ketchum and Sharp, New York City. SPECIAL FEATURES

SALT, SUN, SOUND AND SAVINGS

Four Fenestra products went into this school: Fenelite Steel Windows because they resist salt-air corrosion and do not require painting; Porcelain Curtain Wall Spandrels (above and below glass "vision strips" in classrooms) to eliminate glare and expensive overhangs; "D" Acoustical Panels which combine structural units, acoustical treatment and finished ceiling, all in one; and a special 10-ft. light-weight cantilever side-entrance canopy. For the gymnasium roof especially, Fenestra's large 60 sq. ft. "D" Panels speeded erection, saved labor costs.

fine products from *Fenestra*
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PRODUCT INFORMATION

Fenestra Incorporated
AR-1, 2252 East Grand Blvd., Detroit 11, Mich.

Please send me complete information on the products checked below:

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- Fenestra Hollow Metal Doors
- Fenestra Acoustical-Structural Building Panels
- Fenestra Curtain Walls



Name _____

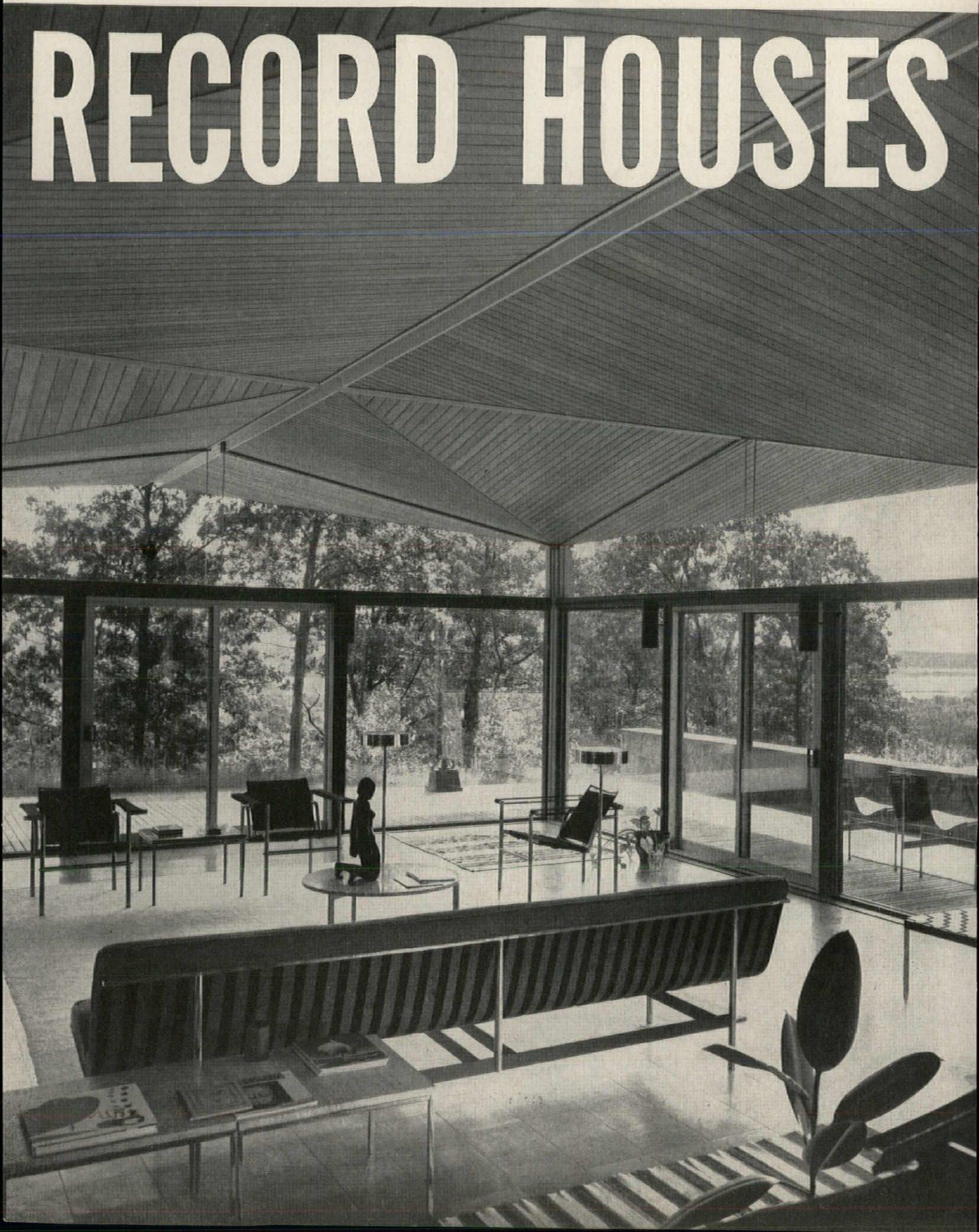
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Coming in mid-May... **fifth annual** yearbook of America's

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OF 1960

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"Finest collection of contemporary houses in a periodical."

Towers House
Architect: Ulrich Franzen
Photographer: Robert Damora

In mid-May Architectural Record will again publish its exciting one-volume selection of the year's finest architect-planned houses.

Twenty houses, chosen from hundreds of top quality candidates, will be presented to Record's architect and engineer subscribers and—through the nation's bookstores—to house builders and buyers.

These houses, designed by twenty different architects, some famous, others whose work will appear for the first time in the architectural press, range from low budget to luxury design. They were custom planned for both individual owner and merchant builder clients.

Superb photographs—many in full color—and expertly drawn plans and details will reveal the distinctive merits of individual Record houses. Concise text will explain how each house is constructed and equipped . . . *how it successfully serves the entire family.*

"Record Houses of 1960" will also feature:

- Articles by leading authorities on latest developments in *structure, interior design, mechanical equipment, lighting.*
- *New Products for the Quality House . . .* plus advertised product information on 1960's newest materials, equipment and furnishings from America's foremost manufacturers in the field.

Architects have hailed "Record Houses" annuals as handy references, trend indicators, valuable aids for selling clients, and *an inspiration!*

"Record Houses of 1960" promises to be all of these things and more—a *delight to read* for everyone interested in quality house design.

Architectural Record subscribers will receive "Record Houses of 1960" in addition to the regular May issue. The house building and buying public will buy it, complete with advertised product information, in leading bookstores coast to coast.

RECORD HOUSES OF 1960

"the standard of quality house design"

ARCHITECTURAL RECORD

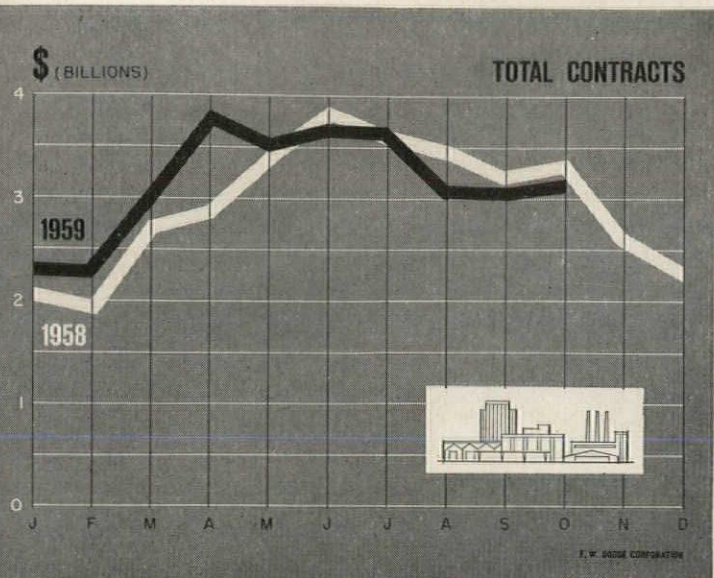
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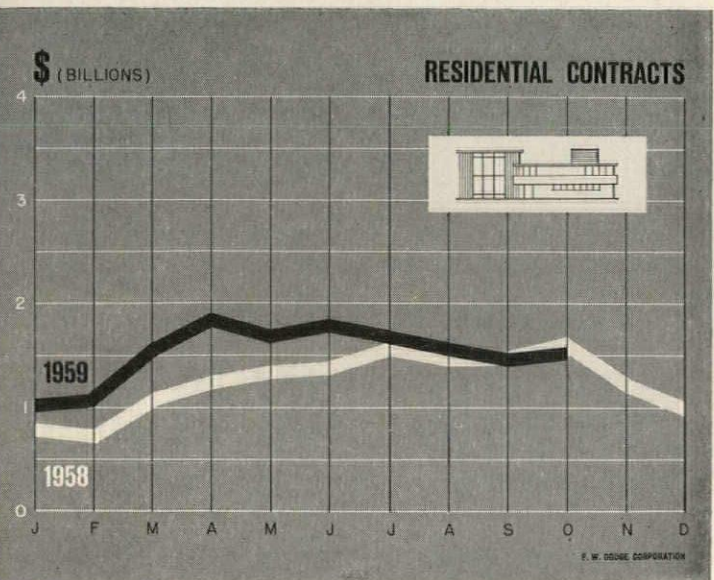
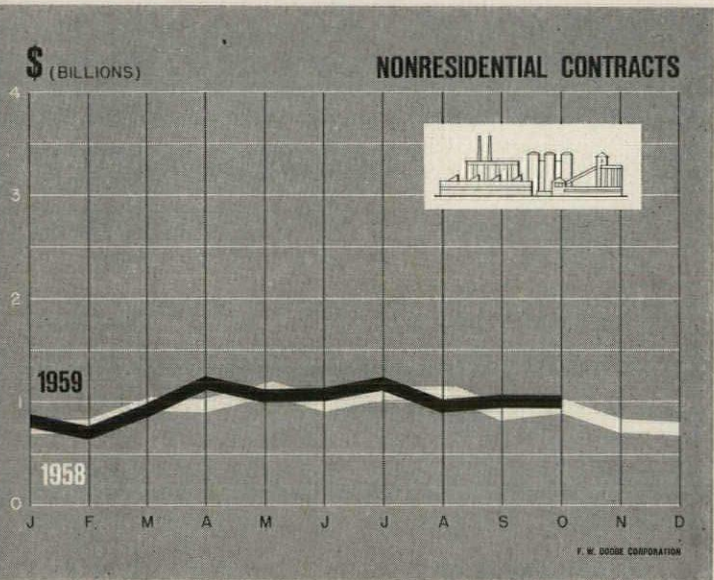
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Current Trends in Construction



Total contracts include residential, nonresidential, heavy engineering contracts



IT SEEMS highly appropriate that the RECORD is beginning 1960 with a BT Study of industrial buildings, because this segment of construction promises to be the boomiest part of the industry for the next couple of years. Elsewhere in this issue we pointed out that contract awards for industrial buildings in 1960 are expected to run some 20 per cent above the 1959 level. Later information which has just become available indicates that the gradual upturn evident in recent months turned into a real boom in November. It is quite possible, as we said in the Dodge outlook statement for 1960, that the 20 per cent estimate will turn out to be too low. We hope it is; if we must err (and who, in the forecasting business, doesn't?) we prefer to err on the side of conservatism.

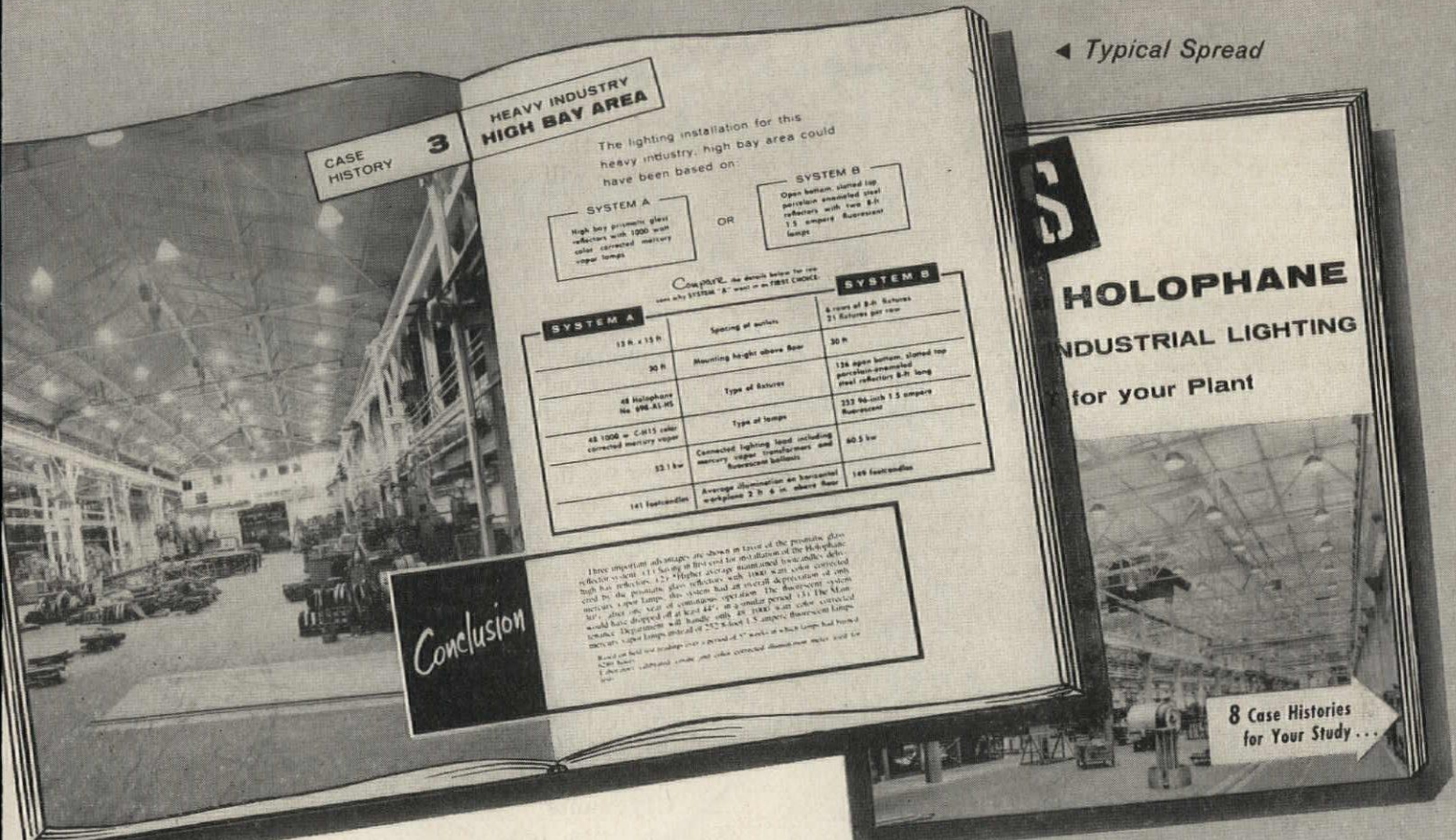
THE NEW FACTORIES, warehouses and research facilities which come under the broad heading of this building type will be quite generally scattered throughout the nation. One reason for this, which is not widely known, is that industrial development has become a highly organized profession in the past couple of decades. Nearly every part of the country has industrial advantages to offer, in terms of transportation, labor supply, natural resources or just plain space. Localities can now call upon expert help in selling these advantages, in the form of professional industrial development staffs of chambers of commerce, railroads, utilities and consulting firms. Companies looking for suitable sites can call on the same resources, plus their own development staffs in many cases. As a result, few suitable spots are overlooked, and a true decentralization is taking place.

ONE SIDELIGHT of the intense interest of communities in attracting new industry should be noted. The typical community wants "desirable" industries—preferably research facilities, industrial training centers, small electronic plants, and the like. Unfortunately, there are relatively few of these. Some communities will have to make room for the heavier industries, or do without. Objections to heavier industry may be based on economic grounds, but probably just as often the fear of industry has its roots in esthetic considerations. Architects probably can't do much about the economics of industrial employment, but they have demonstrated time and again that nearly any kind of industrial operation can be attractively packaged. And between them, architects and engineers have, by good design, been able to eliminate many of the more undesirable features of even the most obnoxious industries. By making industrial buildings good neighbors, they have contributed greatly to the broad dispersion of industry through the land, and have eased the task of locating the enormous investment in new plants which is just getting under way.

RESIDENTIAL NOTE: Some friends of ours have just built a very attractive one-story house whose design, to our inexpert eyes, doesn't seem to fit any of the types we've ever heard of. So we asked them what it was. "We don't exactly know," they said, "but we like to think of it as sort of a low chalet."

GEORGE CLINE SMITH
Vice President and Economist
F. W. Dodge Corporation

This New Book Presents the **FACTS** about HOLOPHANE Mercury Vapor Lighting for Industrial Plants



◀ Typical Spread

CASE HISTORY 3
HEAVY INDUSTRY HIGH BAY AREA

The lighting installation for this heavy industry, high bay area could have been based on:

- SYSTEM A** OR **SYSTEM B**
- High bay prismatic glass reflectors with 1000 watt color-corrected mercury vapor lamps
 - Open bottom, slanted top prismatic enameled steel reflectors with two 8-ft 1.5 ampere fluorescent lamps

Compare the details below for use with SYSTEM A or B as FIRST CHOICE.

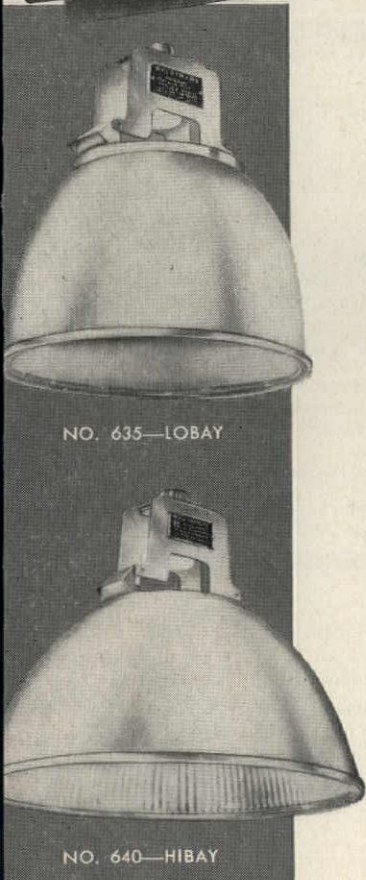
SYSTEM A		SYSTEM B	
12 ft. x 18 ft.	Spacing of fixtures	4 rows of 8-ft fixtures	21 fixtures per row
30 ft.	Mounting height above floor	30 ft.	
48 Holophane No. 635-LOBAY	Type of fixture	126 open bottom, slanted top prismatic-enameled steel reflectors 8-ft long	
48 1000-watt color-corrected mercury vapor	Type of lamp	333 96-inch 1.5 ampere fluorescent	
53 kw	Connected lighting load including mercury vapor transformers and fluorescent ballasts	40.5 kw	
141 footcandles	Average illumination on horizontal workplane 2 ft. 6 in. above floor	148 footcandles	

Conclusion

Three important advantages are shown in favor of the prismatic glass reflector system. (1) Saving in first cost for installation of the Holophane high bay reflectors. (2) Higher average maintained footcandle delivery for the prismatic glass reflectors with 1000-watt color-corrected mercury vapor lamps. The system had an overall depreciation of only 30% after one year of continuous operation. The fluorescent system would have dropped off at least 40% in a similar period. (3) The 48 Holophane reflectors will handle with 48 1000-watt color-corrected mercury vapor lamps instead of 333 96-inch 1.5 ampere fluorescent lamps. It would have had one-third the number of lamps and one-third the number of ballasts.

8 Case Histories reviewed... in this publication demonstrate the superiority of HOLOPHANE LOBAY® and HIBAY® prismatic glass reflectors with color-corrected mercury vapor lamps... Each case-report covers an actual installation in one of the nation's leading plants. It includes analysis of illumination data with references to mounting heights, spacing, lamps, footcandles, etc... Comparisons with other types of lighting systems are tabulated... In every instance, the results prove that Holophane mercury vapor lighting systems produce the most efficient, economical and serviceable illumination for today's industrial plants.

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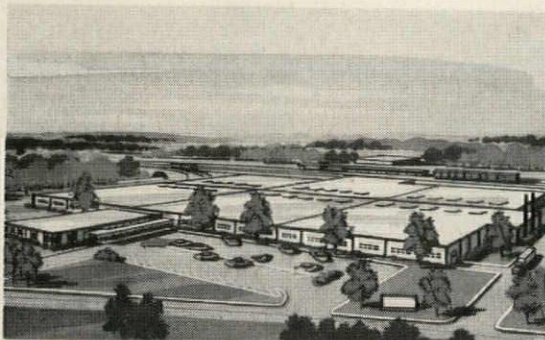
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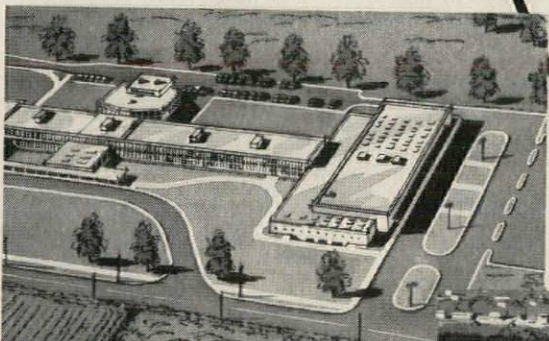
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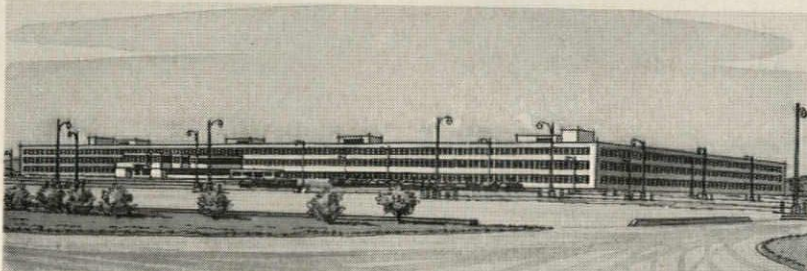


Ferry Morse Seed Co., Fulton, Ky. Zonolite concrete 2" thick over galvanized metal deck. Area involved 253,000 sq. ft. Substantial cost savings over competitive systems. Arch.: Thomas Faires & Assoc., Memphis, Tenn.; Gen. Contr.: Forcum-Lannom; Applicator: Drury Tile & Plastering Co., Cape Girardeau, Mo.



J. Frank Faust Junior High School, Chambersburg, Pa. Roof area 78,000 sq. ft. Arch.: Lawris & Green, Harrisburg, Pa. Gen. Contr.: R. S. Mowrey & Sons, Carlisle, Pa.; Roof Applicator: Nitterhouse Concrete Products Co., Chambersburg, Pa.

Janaf Shopping Center, Norfolk, Va. Zonolite concrete poured over galvanized metal for roof decking. Arch. & Cons. Engrs.: Lublin McGaughy & Associates, Norfolk, Va.; Gen. Contr.: Shopping Centers Construction, Inc., Pittsburgh, Pa.; Applicator: W. F. Magann Corporation, Portsmouth, Va.



Finance Center, Fort Benjamin Harrison, Lawrence, Ind. Zonolite concrete poured over existing deck to provide positive drainage to sumps, plus added insulation of deck. Arch.: Ralph Manning, Post Engineer; General Contr.: Brown & Kerr, Evanston, Ill.



Shoppers Haven Shopping Center, Pompano, Fla. Zonolite concrete over galvanized steel deck. Roof area, 120,000 sq. ft. William Vaughn, Arch., DeBritt & Assoc. Engr. Roof deck sub-contractor: Commercial Roof Decks, Inc.

Remember—

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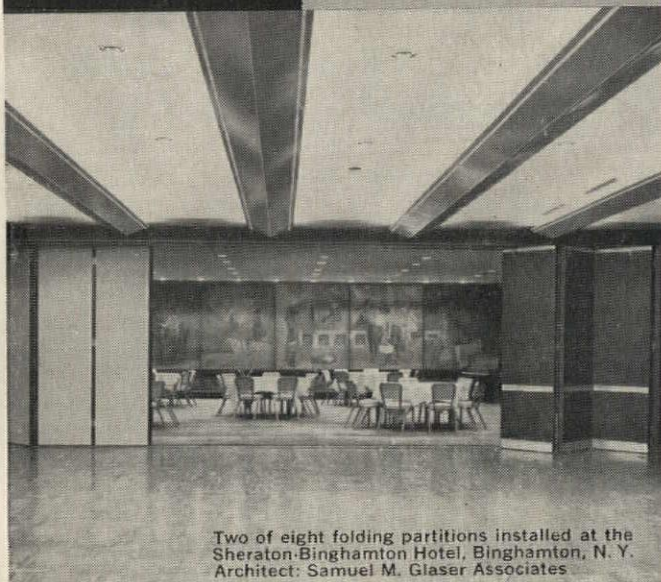
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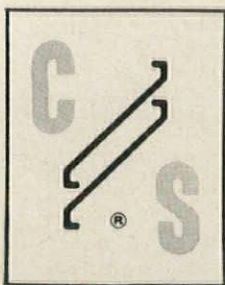
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