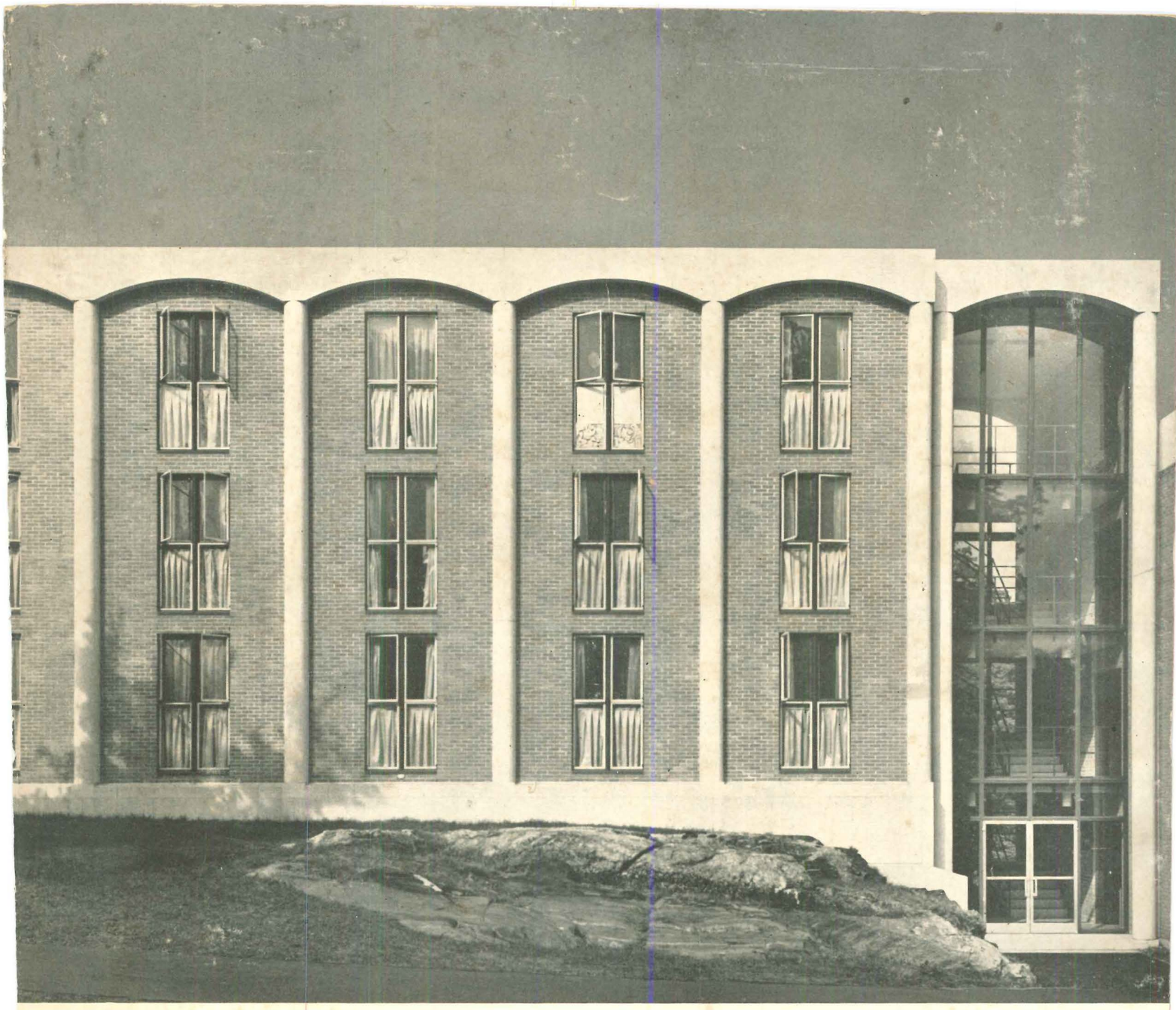


ARCHITECTURAL RECORD

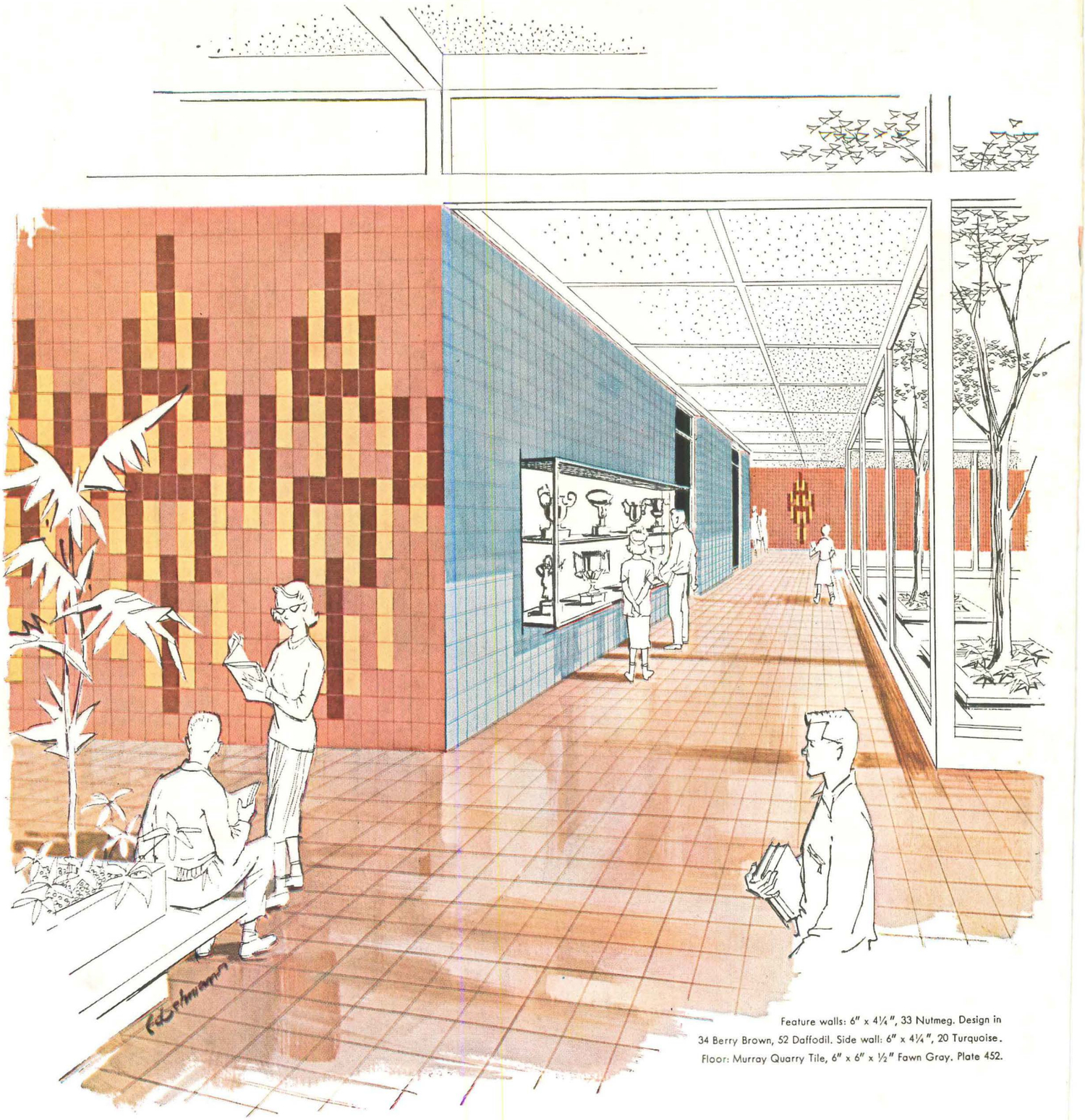
7 JULY 1962

BUILDING TYPES STUDY: SCHOOLS

RECENT WORK OF PHILIP JOHNSON

SAARINEN'S TWA FLIGHT CENTER

FULL CONTENTS ON PAGES 4 & 5



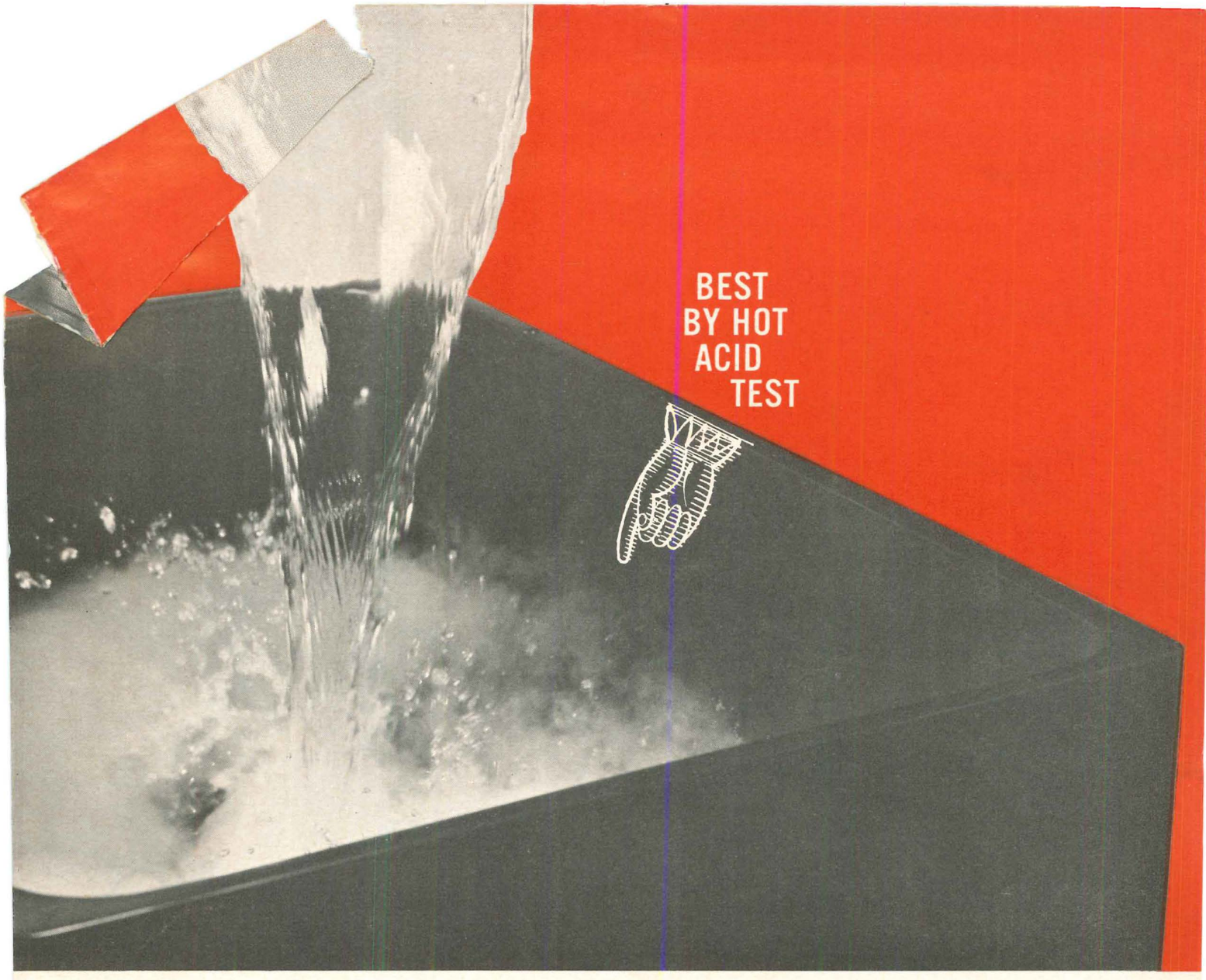
Feature walls: 6" x 4¼", 33 Nutmeg. Design in 34 Berry Brown, 52 Daffodil. Side wall: 6" x 4¼", 20 Turquoise. Floor: Murray Quarry Tile, 6" x 6" x ½" Fawn Gray. Plate 452.

Large size tiles brighten interior design

This modern school corridor suggests how American Olean's larger size ceramic tiles can bring design interest to building interiors. These larger 8½" x 4¼" and 6" x 4¼" wall tiles are ideal for adding bold touches of color and pattern. Set vertically or horizontally, they create a pleasing sense of scale in long corridors and other large areas. They are especially practical from a cost standpoint, too. When used with American Olean's Master-Set® sheet mounting, they can reduce initial installation costs by as much as 25%. Write for Booklet 911, "Design Ideas with Large Size Tile."

CERAMIC TILE
American Olean

AMERICAN OLEAN TILE COMPANY, 1703 CANNON AVE., LANSDALE, PA. • A SUBSIDIARY OF NATIONAL GYPSUM COMPANY

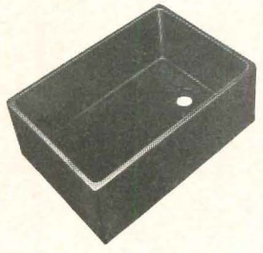


DURCON® LABORATORY SINKS resist the corrosive effects of hot stuff . . . hot or cold! Hot solutions don't affect these handsome black sinks. They don't discolor or stain when handling acids, alkalis, salts, solvents and other laboratory reagents in the toughest kind of service.

Durcon sinks stand up to hard knocks without cracking or spalling. Our tests prove they resist the impacts of a 3-lb. steel ball dropped from heights of 6 to 9 feet . . . far greater abuse than ever encountered in lab service. One-piece construction eliminates troublesome joints and seams that trap liquids and cause seepage. Smooth coved corners and dished bottoms assure complete drainage, easy cleanup. And these sinks are virtually impermeable to liquids.

With all their outstanding features, Durcon sinks cost less than stone and porcelain sinks. And original cost is just the start. Still more savings . . . in freight and installation . . . result because Durcon sinks weigh 60% less than old-style sinks. One man can put a Durcon sink in place without mechanical aids. And save space, too! With a wall thickness half that of stone and porcelain sinks, Durcon sinks fit easily into cramped quarters.

Get all the facts on Durcon Lab Sinks.

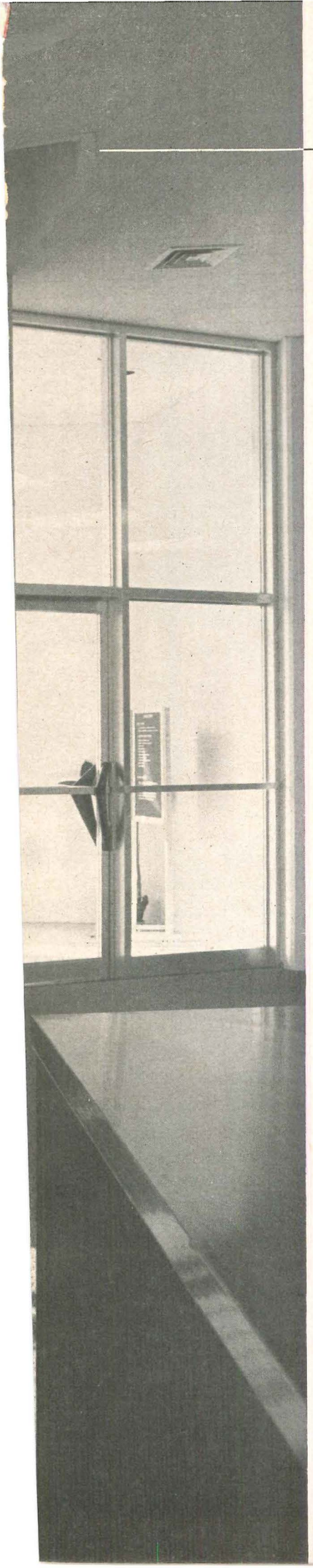


DURCON LAB SINKS give you a complete selection—Table Sinks, End Sinks, Drainboard Sink Units, Double Compartment Sinks, Cylindrical Sinks, Cup Sinks and Troughs . . . in a wide range of sizes.

THE DURIRON COMPANY, INC., DAYTON, OHIO

Represented exclusively in Canada by: SHAWINIGAN CHEMICALS LIMITED, Montreal, Que.; Weston, Ont.; Vancouver, B. C.

DURCO



WHEN YOU DESIGN UNUSUAL ELEVATORS

The experience of Rotary Oildraulic® Elevator engineers can be valuable to you

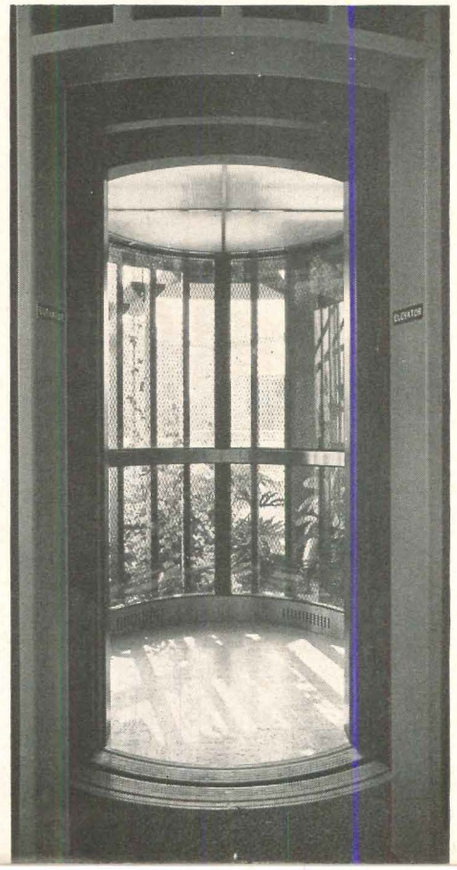
Two features make the elevator in this building unusual: hoistway and cab are round, and both are walled with transparent plastic. Elevator passengers are treated to an unusual view, and the design effect from inside the building or out is exciting.

The opportunity to make elevators beautiful as well as functional—to make them an element that contributes to building design rather than obtrudes on it—is getting deserved attention. Rotary Oildraulic Elevators have been chosen for many distinctive installations and our files of such jobs may be helpful in your planning.

These creative designs are further proof of the versatility of the Rotary Oildraulic Elevator. Because it is pushed up from below by an oil-hydraulic plunger, no machinery penthouse is needed and the elevator is self-supporting. Dependability and economy of operation are unmatched throughout the entire range of vertical transportation from the smallest passenger elevator to freight-carrying giants with capacities of 100,000 lbs. or more.

Field engineers and franchised distributors throughout the United States and Canada are available to help you plan elevators that interpret your designs faithfully and serve the traffic needs of any building to six stories. Look under "Elevators" in your phone book, see Sweet's Files or mail coupon.

Title Insurance and Trust Company, Redwood City, Cal.
Architect: James P. Lockett, Visalia, Cal.
Contractor: Haas & Haynie Corporation, San Francisco
Rotary Oildraulic Passenger Elevator
installed by Moody & Rowe, Oakland



ROTARY OILDRAULIC® ELEVATORS

Rotary® DOVER® passenger and freight

DOVER CORPORATION, ELEVATOR DIVISION
MEMPHIS, TENN.—CHATHAM, ONTARIO

Dover Corporation, Elevator Division
1104 Kentucky, Memphis 2, Tenn.

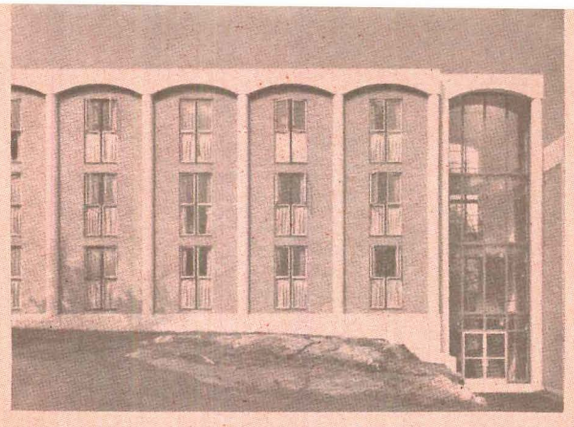
Please send information on Rotary Oildraulic Elevators to:

Name_____

Company_____

Address_____

Architectural Engineering



Cover:

Dormitories at Sarah Lawrence College, Bronxville, N.Y. Philip Johnson, architect. Photograph by Malcolm Smith.

ARCHITECTURAL RECORD July 1962 Vol. 132, No. 1 Published monthly, except May 1962, when semi-monthly, by F. W. Dodge Corporation, a McGraw-Hill Company.

Executive, editorial, circulation and advertising offices: 119 West 40th Street, New York 18, N. Y. Western Editorial Office: 2877 Shasta Road, Berkeley 8, Calif. Office of Publication, 10 Ferry Street, Concord, N. H.; second-class mail postage paid at Concord, N. H.

Subscription rate for individuals in the field served $5.50 per year in U. S., U. S. Possessions and Canada; single copies $2.00, except Mid-May 1962 issue $2.95. Further details on page 6. Postmaster: Please send Form 3579 to Circulation Manager, ARCHITECTURAL RECORD, 119 West 40th Street, New York 18, N. Y.

(National Edition)

ARCHITECTURAL

Record Reports

Architects and Buildings

Authors and Articles

Features

RECORD

CONTENTS

July 1962

Building Types Study 309: Schools

Coming in the Record

CONTEMPORARY CATHEDRAL BORN OF TRADITION

One of the great architectural stories of our time is the story of the design of the new Cathedral to replace the war-devastated Cathedral of St. Michael's in Coventry, England. The memorable account of how his design evolved from his studies of ancient English cathedrals and above all of the ruins of the old cathedral itself was told by the architect, Sir Basil Spence, in a RECORD *article in March 1954. Now the new Cathedral has been completed and dedicated, and the* RECORD *next month will present it in a major architectural feature.*

BUILDING TYPES STUDY: H(M)OTELS

As architects with hotel clients are well aware, there are few building types in which today's requirements are more diverse, change more rapid, or each individual project more special. Next month's Building Types Study will present some expert testimony on current developments and a group of examples as diverse as these developments.

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT and ARCHITECTURE), title ® reg. in U. S. Patent office, © copyright 1962 by F. W. Dodge Corporation, a McGraw-Hill Company. Indexed in Reader's Guide to Periodical Literature, Art Index, Industrial Arts Index and Engineering Index.

Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

SUBSCRIPTIONS: Available only by paid subscription. Publisher reserves the right to refuse non-qualified subscriptions. Subscriptions to Architectural Record solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders forwarded to Circulation Manager, Architectural Record, 119 West 40th Street, New York 18, N. Y. Subscription prices: U. S., U. S. Possessions and Canada: $5.50 per year; other Western Hemisphere countries, to those who by title are architects and engineers, $9.00 per year. Single copy price except Mid-May 1962 issue $2.00; Mid-May 1962 issue $2.95. Beyond Western Hemisphere, to those who by title are architects and engineers, $9.00 per year for 12 monthly issues not including Mid-May 1962 issue. Subscriptions from all others outside U.S., U. S. Possessions and Canada for 12 monthly issues, not including Mid-May issue, $24.00 per year.

CHANGE OF ADDRESS: Subscribers are requested to furnish promptly both old and new address, sending, if possible, stencil impression from magazine wrapper; new postal zone number, if any, should be included. Allow one month for change.

UNCONDITIONAL GUARANTEE: The publisher, upon written request, agrees to refund the part of the subscription price applying to the remaining unfilled portion of the subscription if service is unsatisfactory.

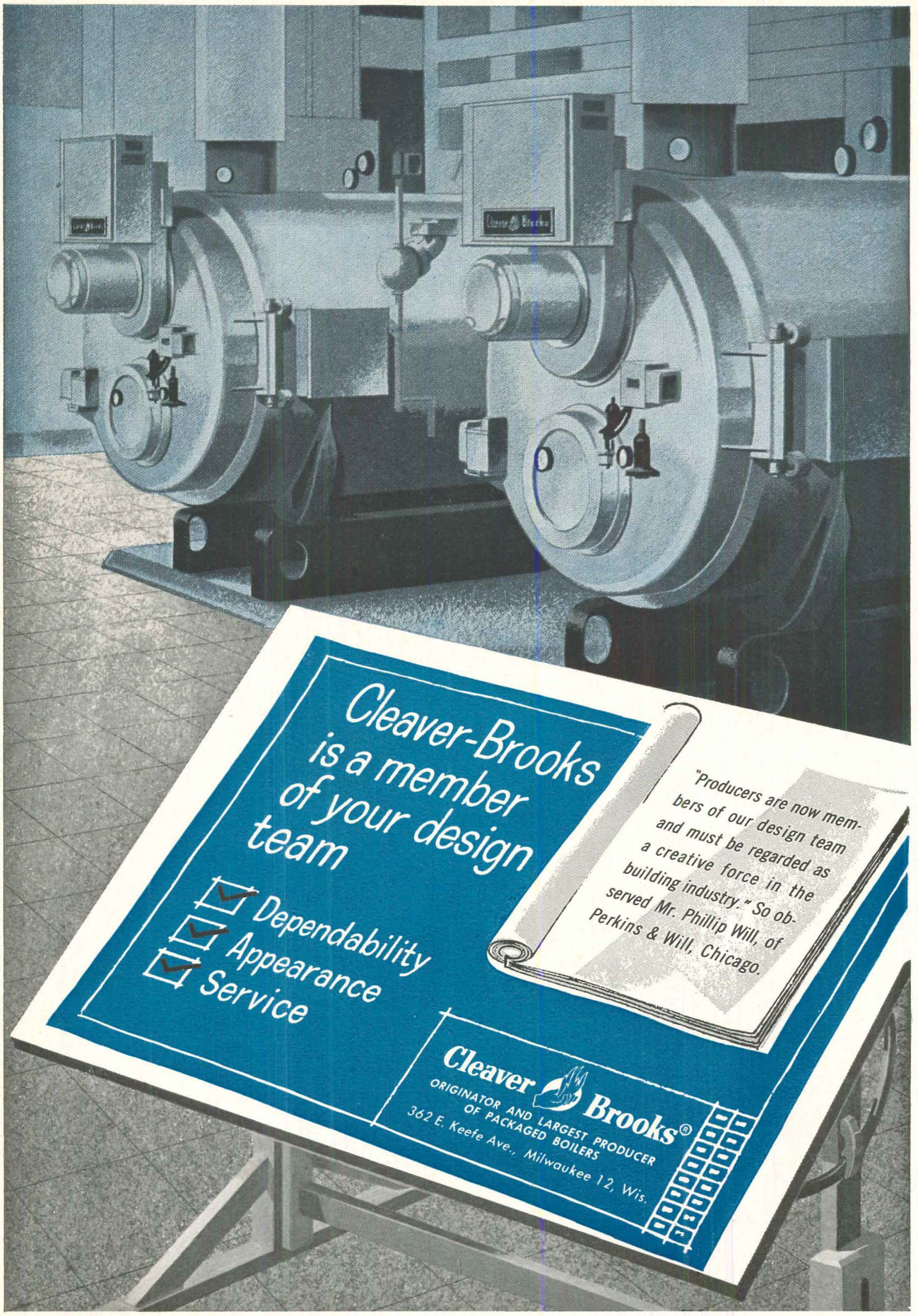
OTHER F. W. DODGE SERVICES: Dodge Reports—Dodge Construction Statistics—Sweet's Catalog Services—Dodge Mailing Service—Home Planners' Digest—The Modern Hospital—The Nation's Schools—College and University Business—Hospital Purchasing File—Chicago Construction News—Daily Pacific Builder (San Francisco)—The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

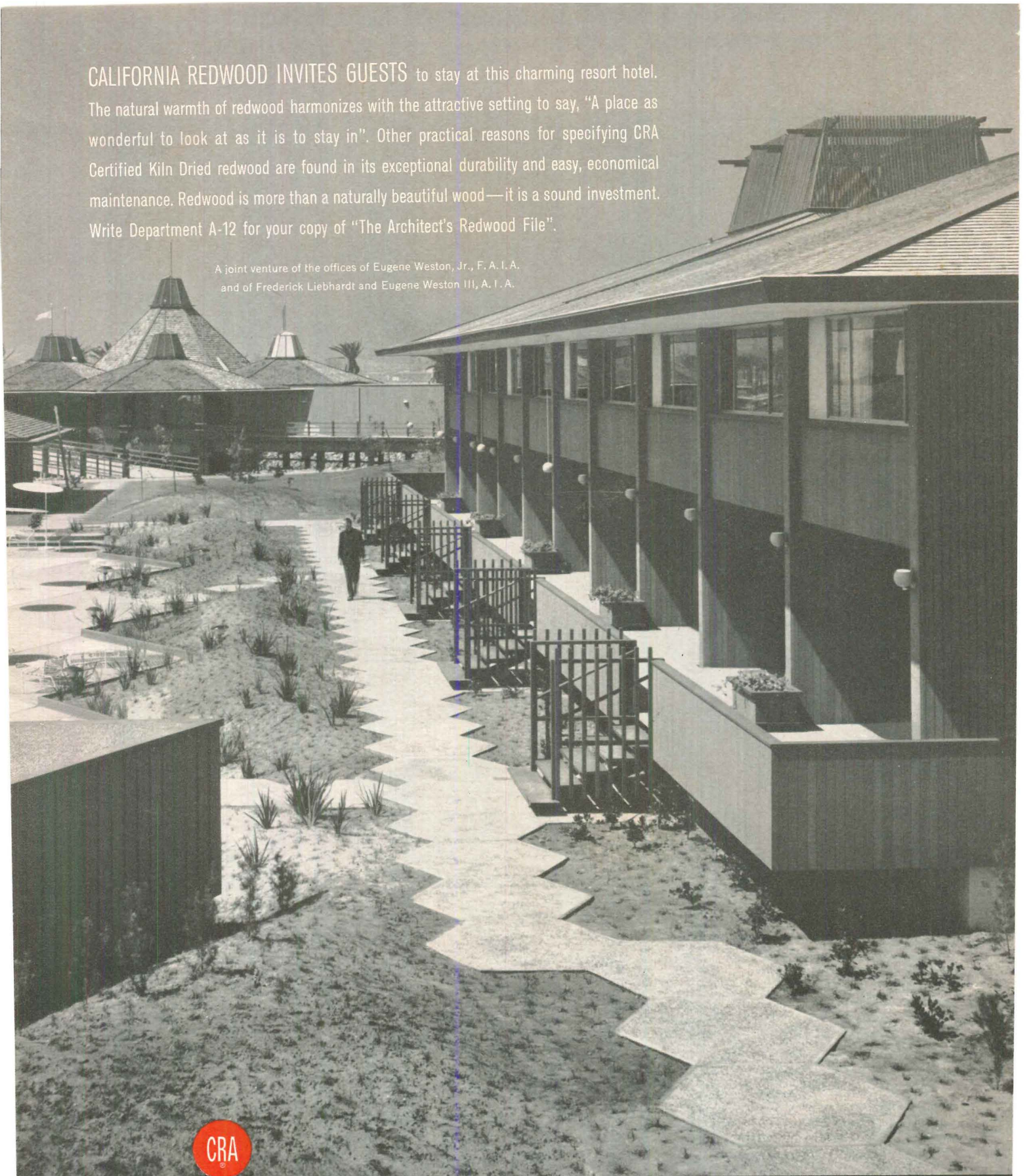
Audit Bureau of Circulation

Associated Business Publications

Staff of Architectural Record

Officers of F. W. Dodge Corporation


Cleaver-Brooks is a member of your design team
Dependability
Appearance
Service
"Producers are now members of our design team and must be regarded as a creative force in the building industry." So observed Mr. Phillip Will, of Perkins & Will, Chicago.
Cleaver Brooks®
ORIGINATOR AND LARGEST PRODUCER OF PACKAGED BOILERS
362 E. Keefe Ave., Milwaukee 12, Wis.



CALIFORNIA REDWOOD INVITES GUESTS to stay at this charming resort hotel. The natural warmth of redwood harmonizes with the attractive setting to say, "A place as wonderful to look at as it is to stay in". Other practical reasons for specifying CRA Certified Kiln Dried redwood are found in its exceptional durability and easy, economical maintenance. Redwood is more than a naturally beautiful wood—it is a sound investment. Write Department A-12 for your copy of "The Architect's Redwood File".

A joint venture of the offices of Eugene Weston, Jr., F. A. I. A.
and of Frederick Liebhardt and Eugene Weston III, A. I. A.

CRA®

All the wonderful warmth of wood is best expressed in redwood

CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO 11

CRA-TRADEMARKED CERTIFIED KILN DRIED REDWOOD

The California Redwood Association coordinates the research, forest management and consumer service activities of these member mills: UNION LUMBER CO. WILLITS REDWOOD PRODUCTS CO. • ARCATA REDWOOD CO. • SIMPSON TIMBER CO. • GEORGIA-PACIFIC CORP. • THE PACIFIC LUMBER CO.

Can He Write?

If you were thinking of hiring a young architect you would not be likely to ask if he had any ability to express himself in words. You would ask: can he draw? It is natural for an architect to express himself with pencil and paper, but what he puts on the paper is not words, of course, but drawings. Drawing is part of the creative process; it is even part of the analytical process.

But the typical failure of architects to be articulate in words is a serious handicap to the profession. There are a few exceptions; architects whose scholarly attainments extend to a command of language and an ability to use it to purpose, especially if they have done serious teaching. But the typical practitioner makes no pretense of writing ability, may even be scornful of it. He makes a point of relying on drawing. But drawing is a communication device largely for other architects; laymen can't follow it, don't get the messages. Drawings do not really tell them what the architect has achieved, do not foster confidence and respect.

How many occasions there are for verbal articulateness! Make a speech to the woman's club. Help a newspaper reporter develop a story. Prepare a brochure. Explain a project to a banker. Create a favorable impression on a new client. Transfer to any lay mind the vision you have of an architectural creation. Add something to the literature of the profession.

An architect is a well educated man in an honored profession, and so must he speak to the world.

His education ought to develop in him some competence in the educated world's medium of expression; yes, even to the point of some literary achievement. I am afraid our American educational system is woefully inadequate, and is slipping backward rather than improving.

I have previously mentioned that English architects seem to have better grounding in the literary arts, and seem to expect to make some contribution to the literature of the field.

But now comes an English architectural educator who bemoans the writing abilities of English students. He is William Allen, principal of the Architectural Association School of Architecture of London. His comments in a recent paper include an idea of how writing might be taught:

". . . Most of our students really know very little about writing and we have not been able to help them much. Fortunately for our self-respect, if not for our charges, we are far from being alone in this predicament.

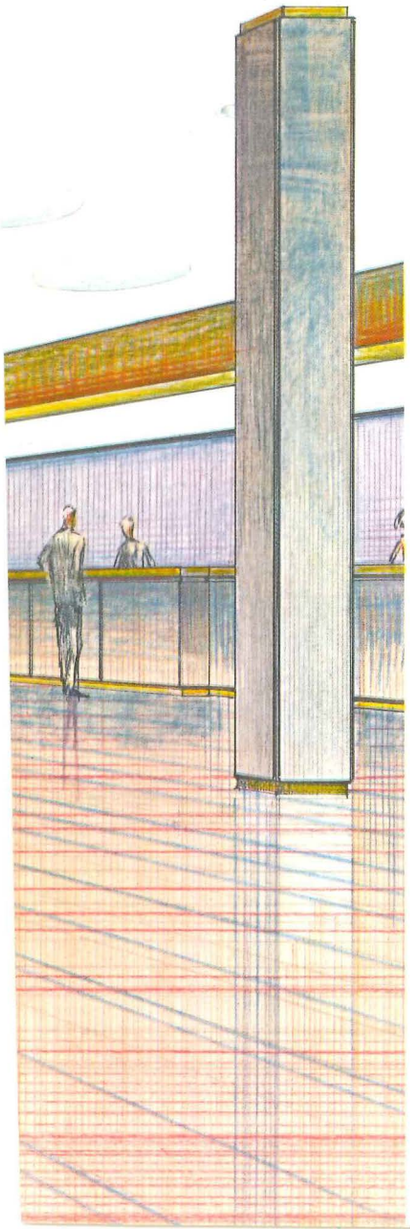
"I have thought a great deal about this matter since coming to the A.A. In my last months at B.R.S. (Building Research Station) I used to wonder what it was that made the biggest changes in people who went there, and it suddenly struck me that it could be the way in which its staff is taught to write. As I thought about it, the system began more and more to resemble in principle the essay writing and criticism that appears to be so great a source of strength in our two oldest universities, and I wondered where its real power lay. I finally concluded that it was not in the cultivation of style, or in mere exercise, but in giving criticism which reveals to the writer the ways in which he is failing to communicate a connected story to the reader; in fact to make an analysis, for it seems that most people . . . begin to raise their own standards as soon as they can see their writing through the eyes of potential readers. In this way writing becomes an aid to learning, and in my experience seemingly a very powerful one."

In private conversations, Mr. Allen has made that last point more positively, and it is probably the most pressing reason why learning to write is necessary for architects. He points out that until you can explain your idea to another person you probably don't have it too well in mind yourself. It is the exercise of organizing it for presentation to another that puts your thought to its final test. When you have it down pat your thesis has probably been improved, and your presentation of it certainly has been.

Emerson Goble

UPWARDS ↑ A FIRE BARRIER; DOWNWARDS ↓ AN AIR DIFFUSER.

That's the job of Armstrong Ventilating Fire Guard Ceilings in this new bank and 7-story office building. A simple combination of the Ventilating Ceiling concept (in which thousands of perforations diffuse conditioned air down into the room below) with a Fire Guard Ceiling (which can resist attack by fire for up to four hours) has added greatly to the comfort and safety of this building. It cut costs, too. Armstrong Ventilating Ceilings need little ductwork and no diffusers; the architect reduced plenum height to a minimum; and the use of Ventilating Fire Guard, instead of sprayed-on fire protection, saved the owner about $25,000.



Armstrong ACOUSTICAL CEILINGS

First in fire-retardant acoustical ceilings

DATA: Armstrong Ventilating Ceilings have been thoroughly lab- and job-tested to assure proper performance; are available in five materials (both tile and lay-in units), including Fire Guard, with three different patterns; are compatible with all conventional supply-air systems; offer considerable savings by cutting supply ductwork, eliminating conventional diffusers; often operate at much lower pressure than duct and diffuser systems. Ventilating Fire Guard offers one- to four-hour rated fire protection for structural members; saves up to 30¢ per sq. ft. by eliminating intermediate fire protection, up to two months' construction time through dry installation; often earns lower insurance rates. For special plenum-engineering data, giving all factors and formulae for the correct design and engineering of this ventilating system, contact your Armstrong Acoustical Contractor or Armstrong District Office. For general information about these Ventilating Ceilings, write Armstrong, 4207 Rock Street, Lancaster, Pa.

Mechanics Exchange Savings Bank Bldg., Albany, N.Y. · Architects: Julius Tauss & A. L. Lewis, Glenmont, N.Y. Consulting Architect & Architect for the Bank: George W. Clark, N.Y., N.Y. · Gen. Contr.: McManus, Longe & Brockwehl, Inc., Albany, N.Y. · Acoustical Contr.: T. J. Bell & Co., Inc., Albany, N.Y. · Owner-Builder: Bernard F. Picotte & Sons

Renderings by Ara Derderian

GUIDELINES FOR URBAN FREEWAY DESIGN DEVELOPED IN JOINT CONFERENCE OF OFFICIALS WITH DESIGN PROFESSIONS

A conference arranged to discuss some of the conflicts in point of view and approach among professional groups and agencies concerned with urban freeway location and design has agreed on some important basic principles of freeway design.

The Hershey Freeway Conference, held June 11-13 at Hershey, Pa., was sponsored by the U. S. Housing and Home Finance Agency, the U. S. Bureau of Public Roads and the Automotive Safety Foundation, with the cooperation of the American Institute of Architects, the American Institute of Planners, the American Society of Civil Engineers, the American Society of Landscape Architects, the American Municipal Association and the Institute of Traffic Engineers.

Architects Are Wanted

In its findings and recommendations, the conference recognized the relevance of urban freeway design to urban design; the fact that every urban freeway presents unique problems requiring custom design, not the "blind application of standards"; and "the fundamental need for teamwork" not only between state highway departments and municipal agencies but among engineers, architects, city planners, landscape architects and other specialists.

"Effective participation in design by these professions," says a summary report of the conference recommendations, "means participation from the very beginning when the first choices as to location, roadway alignments, right-of-way cross sections and structures are being studied. The full realization of the contribution of the design professions cannot be obtained unless this is done."

Freeway Design Principles

Of eight official recommendations of the conference, the longest and one of the most important set forth basic principles to be applied "in the total concept of freeway design." In the words of the conference report, these "elements of design requiring basic consideration" are as follows:

—Freeways should be integrated with other elements of the transportation system, including terminal facilities, arterial street systems, and facilities for vehicle parking and for the movement of pedestrians into the downtown district.

—The freeway design should be in harmony with the existing or proposed land use patterns in the corridor. Where appropriate, the freeway can provide a boundary between different land use activities; in other cases it can be used as a design element to knit together land uses.

—Freeway location and design should take into consideration its visual aspects, from the points of view of both the user and of people in the areas through which it passes. Pleasing or significant views and panoramas often are possible for users of the freeway; a sequence of views, especially of outstanding landmarks, permits the individual to orient himself in the urban area.

The freeway itself should avoid interference as much as possible with other valued aspects of the cityscape. Its design can be enhanced in beauty by maximum simplicity in such appurtenances as guard rails, signs and lighting standards.

—Appropriate planting of right-of-way is important as a means of dust control, noise abatement and the prevention of headlight glare. It can also help to make the city more attractive and blend the freeway into its urban environment.

—Consideration should be given to the possibility of modifying design standards on freeways in the downtown district when greater flexibility in the location and design of the freeway is required for the solution of specific local planning problems.

—Highways should not encroach upon park land unless to do so is a part of a comprehensive official plan to improve the community's economic, cultural and social values. When park land is used, adverse effects should be minimized. If equivalent land is provided elsewhere for park purposes the new land should be part of the planned land use.

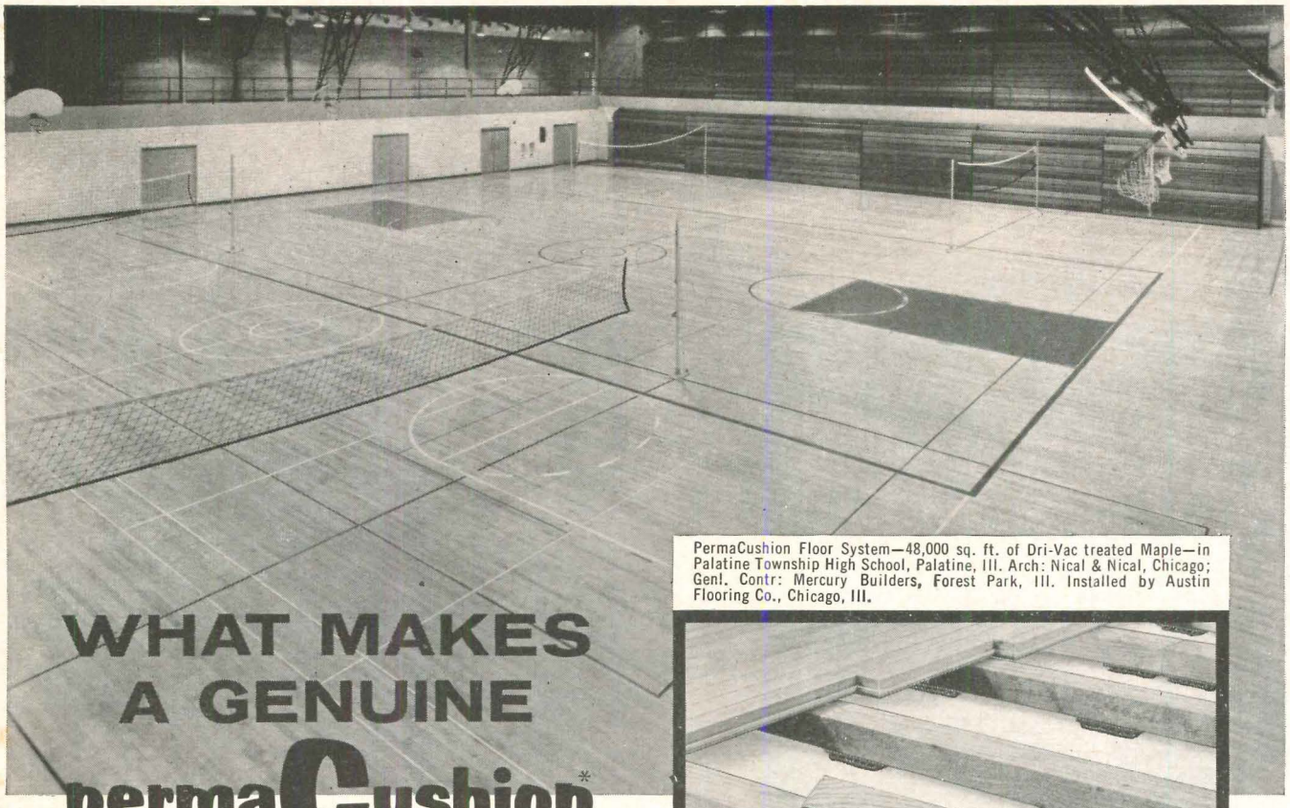
—Particular attention should be paid to the problem of controlling land use adjacent to freeway interchanges, especially with respect to the safety and convenience of freeway users. Another consideration is the encouragement of land uses which can profit most from transportation service provided by the freeway; for example, warehousing or industry.

$18 Billion Job

The conference emphasized the magnitude of the opportunities for urban benefit or damage offered by the Federal highway program, which will ultimately involve construction of 5,200 miles of urban highways at an aggregate cost of over $18 billion. The fact is, as the conference report points out, that "Federal aid for the construction of urban highways will constitute by far the largest form of Federal assistance for urban development."

"Perhaps more important," the report adds, "most of the job is still ahead. Only 1,200 miles, or just under 25 per cent of the urban Interstate mileage has been completed to adequacy for 1975 traffic. Moreover, the Interstate system will provide only a part, perhaps half, of the total urban freeway needs."

A.I.A. Executive Director William Scheick and Director of Public Services Matthew L. Rockwell were among A.I.A. representatives at the conference. These also included Mrs. Cloethiel Woodward Smith of Washington, and Arch R. Winter of Mobile, Ala.



PermaCushion Floor System—48,000 sq. ft. of Dri-Vac treated Maple—in Palatine Township High School, Palatine, Ill. Arch: Nical & Nical, Chicago; Genl. Contr: Mercury Builders, Forest Park, Ill. Installed by Austin Flooring Co., Chicago, Ill.

WHAT MAKES A GENUINE permaCushion* GYMNASIUM FLOOR?

PermaCushion is a combination of *proven* design and construction features. Imitators appear offering substitutes but only *patented* PermaCushion gives you these seven features so vital to durability, economy, beauty and *lasting* resiliency.

DESIGNED with floating sleepers to permit expansion of the flooring without setting up stresses which cause loose nails and flooring separation. Free-floating construction eliminates cupping and buckling with changes in humidity.

RESILIENT PADS attached to the underside of sleepers Designed and compounded of water-proof, non-oxidizing, synthetic rubber, unaffected by heat or cold to provide the correct amount of resiliency. Each pad acts as a bellows, inducing continuous air circulation when floor is in use.

SLEEPERS of select Douglas Fir, cut to uniform four-foot lengths to prevent twisting and end joint separation. DRI-VAC treated with Woodlife to resist moisture, rot, termites, insect and fungi attack.

FLOORING milled from top-quality Northern Hard Maple, world's finest flooring material. Extra thick — $^{33}/_{32}$" — to provide strength and more wearing surface above the tongue, plus an additional area to resist compression.

POWERNAILING at an exact 45° angle, for *maximum* holding power, prevents splitting of flooring and hammer marks.

INSTALLATION authorized *only* by competent, experienced and reputable flooring contractors.

GUARANTEED materials, installation and performance by the contractor and the manufacturer. Double assurance for a trouble-free floor that lasts the life of the building.

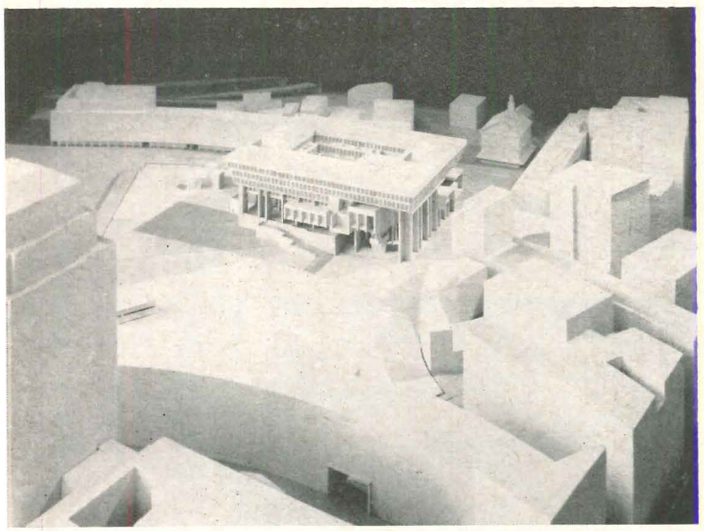
When you specify PermaCushion your client is assured of all *seven* vital floor features. For literature and the name of your nearest franchised installer write Robbins Flooring Company, Reed City, Michigan. Attn: Dept. AR-762.

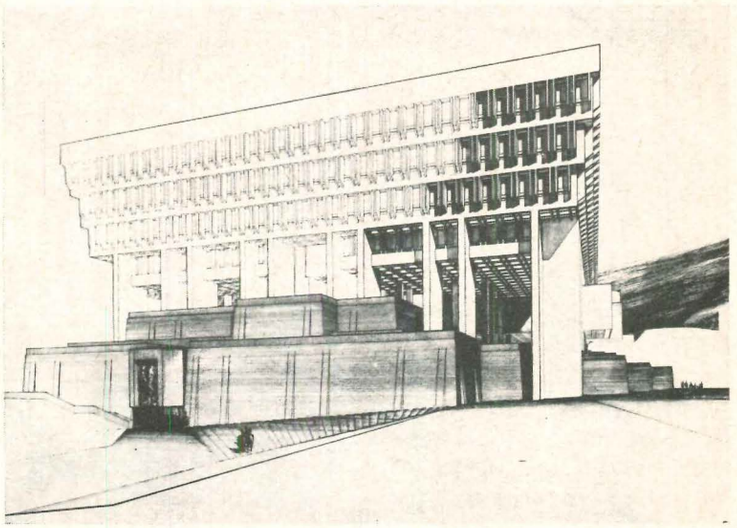
*Trade mark Reg. in U.S. and Canadian Patent Office

ROBBINS

MAKERS OF MODERN MAPLE FLOORS—Subsidiary of E. L. Bruce Company, (Incorporated), Memphis, Tennessee

First Place Winner





G.M. Kallman, Noel McKinnell, Edward F. Knowles
"... dramatically goes beyond functional requirements in its alive and exciting solution ... provides new dimensions in civic space ... daring yet classical architectural statement, contained within a vigorous unified form"

THREE COLUMBIA FACULTY MEMBERS WIN BOSTON CITY HALL COMPETITION

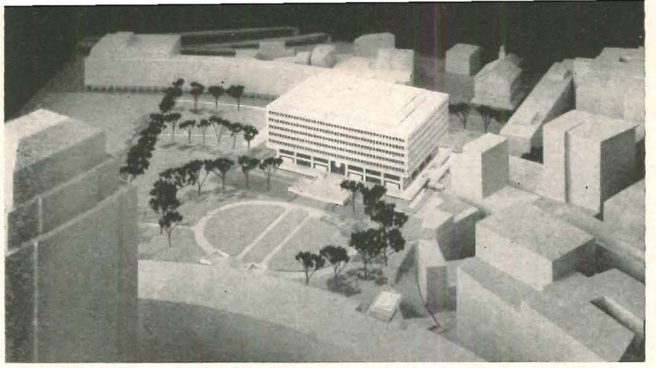
Three faculty members in Columbia University's School of Architecture have been awarded first prize in the design competition for Boston's proposed $20 million city hall, focal point of the multi-million dollar Government Center in that city. They are Gerhard M. Kallman, assistant professor; Noel M. McKinnell, adjunct professor; and Edward F. Knowles, visiting critic. The winning design, which carries $10,000 and an option on an architectural contract, was the jury's unanimous choice from eight final entries narrowed down from the initial 256. Photographs of the first prize winner and the seven other finalists are shown on these pages.

Jury members in this two-stage competition sponsored by Boston's City Hall Government Center Commission were: William W. Wurster, F.A.I.A., San Francisco; Walter A. Netsch, A.I.A., Chicago; Ralph Rapson, A.I.A., Minneapolis; Pietro Belluschi, F.A.I.A., Boston; Harold D. Hodgkinson, board chairman, Wm. Filene's Sons, Boston; O. Kelley Anderson, president, New England Mutual Life Insurance Company, Boston; Sidney R. Rabb, board chairman, Stop & Shop, Boston. Professional adviser was Lawrence B. Anderson, A.I.A., Boston.

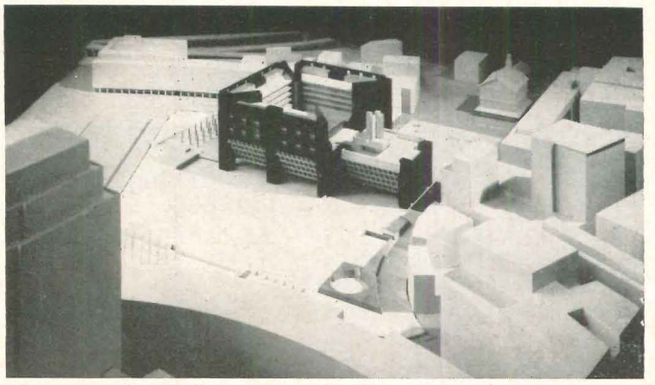
The Commission, which must make its final decision by late July, is not obligated to select the winning design or any of the others submitted. It is said, however, because of the judges' unanimous recommendation, the winning design will be used with some possible modifications. The Commission hopes to begin construction by next spring, with completion set for summer 1965.

As revealed by the winning scale model, the building would be oblong, with nine levels and a height of some 130 ft. The structure would be of cast-in place and precast reinforced concrete, the lower portion featuring sloping terraces and a city plaza of Boston red brick. Each of the building's four sides would differ distinctively from one another, entrances would be on all four sides and a 30-car parking lot underneath. Focal point of the building, which contains some 500,000 sq ft of floor space, would be the center floors housing mayor's office, city council chamber and reference library. Lower floors would contain the busiest city departments; upper floors, administrative offices that handle the least daily traffic.

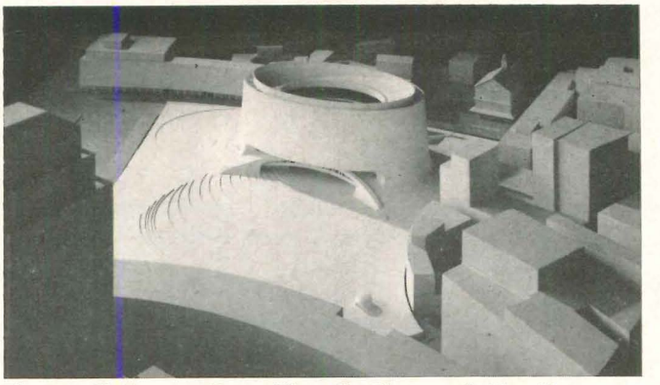
Seven Other Finalists



Wilbert O. Reuter, James Zwack, Lloyd D. Gadau
"Strong axial solution . . . accommodates symbolic and public contact areas about central court . . . efficient floor layout recognized in integration of exposed structural system . . ."

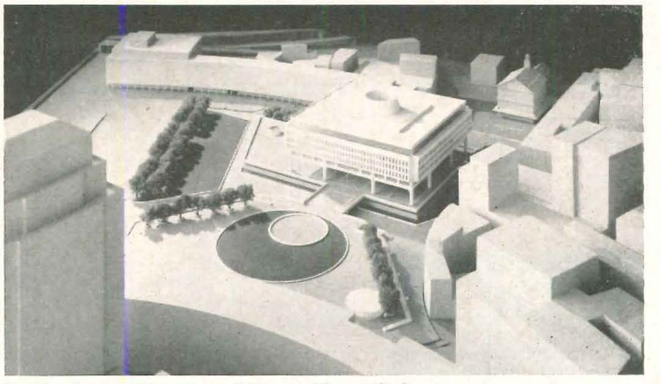


Ehrman B. Mitchell Jr., Romaldo Giurgola, Thomas R. Vreeland Jr.
"One of most highly original, imaginative entries, this poetic solution provides strong, vigorous symbolic solution"

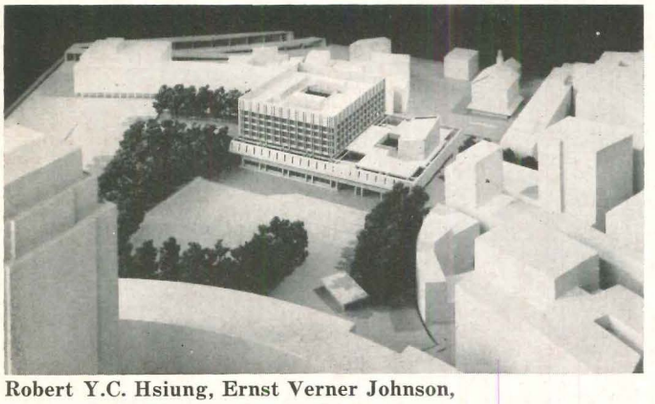


Thomas N. Larson, Peter Woytuk, Thomas C. Van Housen, George E. Rafferty, Richard J. Rafferty
"This solution embraces plaza, structure and symbolic elements into one solo, sculptural statement . . . dynamic"

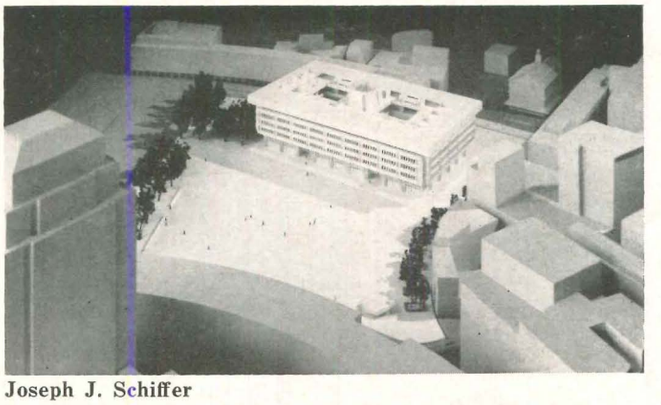
Mrs. Gertrude Lempp Kerbis, Yau Chun Wong, T.C. Chang, Otto G. Stark, Sam C. Sit, C.F. Murphy Associates, Albert Francik, Consultant
"Bold, ingenious structural concept . . . flexible . . . elegant"



F. Frederick Bruck and Ervin Yvan Galantay
"A sound, logical and straightforward solution . . . great clarity within a highly organized structure . . . admirable scale and use of materials"



Robert Y.C. Hsiung, Ernst Verner Johnson, John Paul Ruffing, Arthur E. Waterman
"Functionally . . . demonstrates a clear understanding of overall planning requirements . . . sensitive treatment of plaza"



Joseph J. Schiffer
". . . treats a bold building in a total plaza development which recognizes grandeur of the space . . . solution . . . depends for its scale on modulation of the elevations"

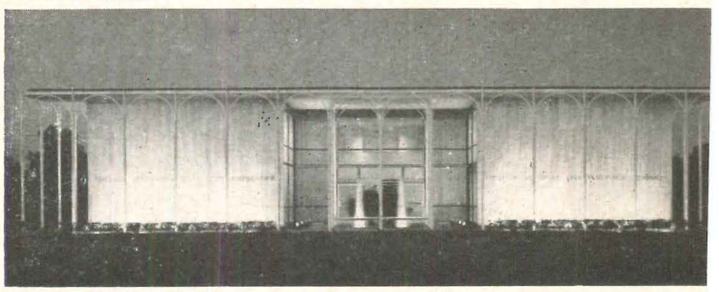
A.I.S.C. AWARDS CITE 14 BUILDINGS

Thirteen architectural firms have received Architectural Awards of Excellence in recognition of outstanding use of structural steel in the third annual award program sponsored by the American Institute of Steel Construction. From a total of 92 entries, 14 buildings were cited, their architects honored for "using steel esthetically in a dimension beyond its use as a basic structural form." Photographs of the buildings are shown on these pages.

Members of the jury were: Robert W. Cutler, F.A.I.A., partner, Skidmore, Owings & Merrill, New York; George Edson Danforth, A.I.A., director, Department of Architecture and City Planning, Illinois Institute of Technology, Chicago; John T. Grisdale, F.A.I.A., partner, Carroll, Grisdale & Van Alen, Philadelphia; William J. LeMessurier of Wm. J. LeMessurier & Associates, Consulting Engineers, Boston; and Julian Whittlesey, F.A.I.A., partner, Whittlesey & Conklin, New York.

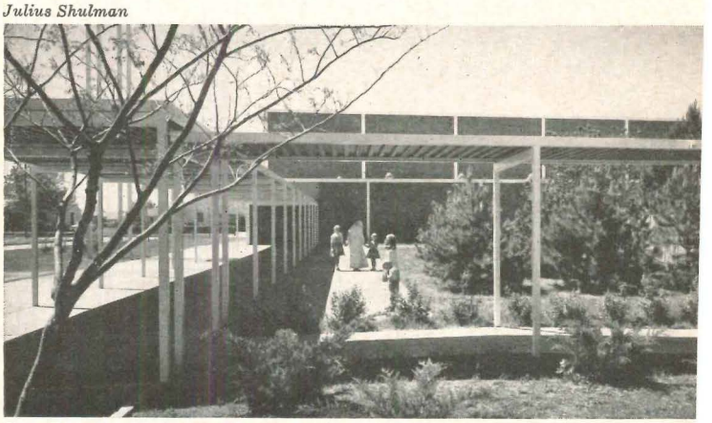
Mr. Danforth, speaking for the jury, said, "The buildings were chosen unanimously by the jurors . . . as outstanding examples of architectural leadership and direction. The winning architects have used standard framing methods in many cases, but they have used them superlatively . . . We find it significant that 50 per cent more entries were received by A.I.S.C. than were entered last year. This indicates a recognition by architects that using steel esthetically is growing in significance."

F. Wilbur Seiders

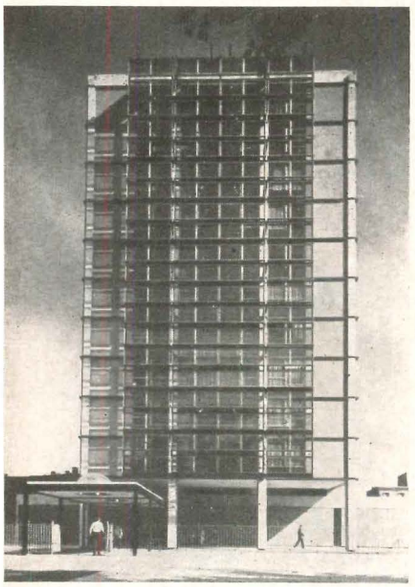


Office Building for Holland Mortgage and Investment Corporation and Fidelity-Southern Fire Insurance Company, Houston, Texas
Architects: Neuhaus and Taylor
Structural Engineer: Vogt and Clous
General Contractor: W. R. Grimshaw Construction Company

Julius Shulman



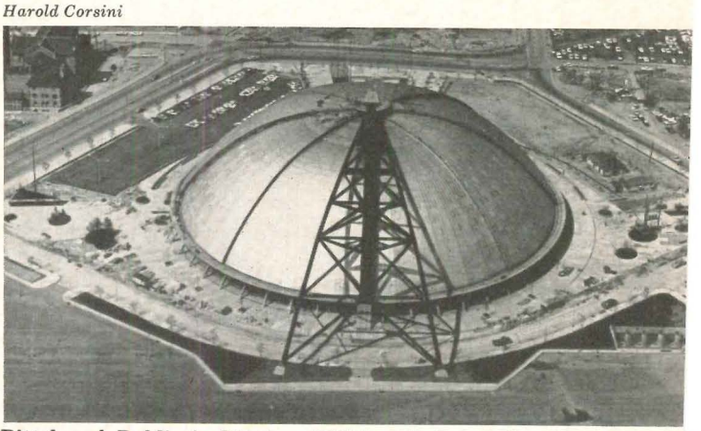
Sts. Peter and Paul Church, Tulsa, Oklahoma
Architects: Murray-Jones-Murray
Structural Engineer: Netherton, Dollmeyer and Solnok
General Contractor: Wickersham Construction Company



Johnson Hall Dormitory
Temple University, Philadelphia
Architects: Nolen & Swinburne
Structural Engineers:
Severud-Elstad-Krueger Assoc.
Gen. Contractor: B. Bornstein

International Building
San Francisco, Calif.
Architects: Anshen & Allen
Structural Engineers: Gould & Degenkolb, Robert D. Dewell
Gen. Contractor: Dinwiddie

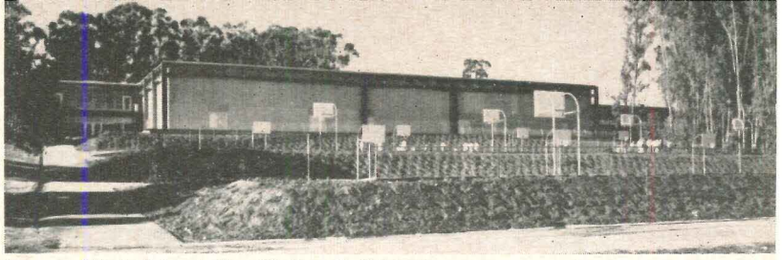
Harold Corsini



Pittsburgh Public Auditorium, Pittsburgh, Pennsylvania
Architects: Mitchell and Ritchey
Structural Engineer: Ammann & Whitney
Owner and General Contractor: Public Auditorium Authority o: Pittsburgh and Allegheny County

Harper Leiper Studios

McAllen State Bank, McAllen, Texas
Architects: Cowell and Neuhaus
Structural Engineer: Harold B. Horton
General Contractor: W. D. Ferguson & Sons

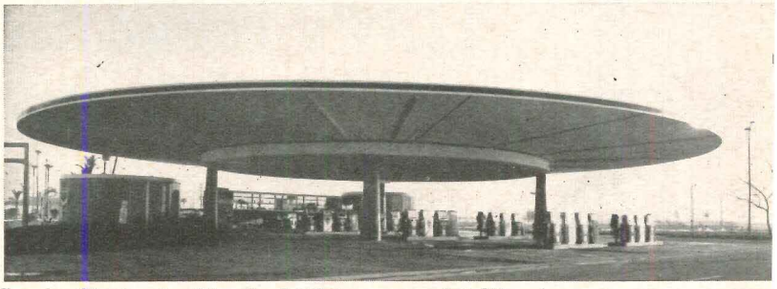


Aragon High School, San Mateo, California
Architects: Reid Rockwell Banwell & Tarics
General Contractor: Rothschild, Raffin & Weirick, Inc.

Alexandre Georges

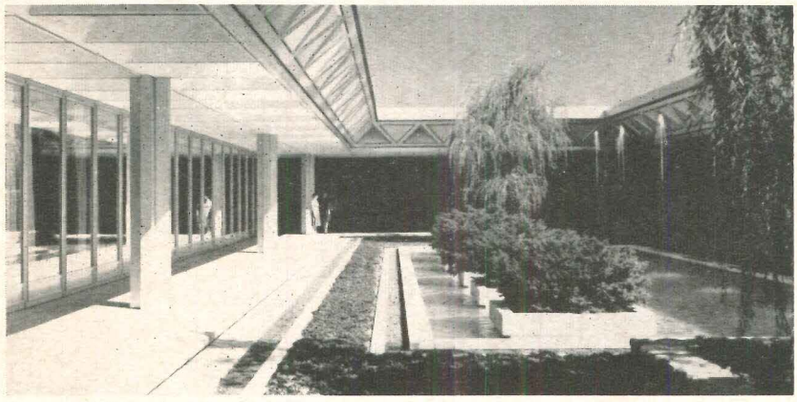
Philip Drill House, West Orange, New Jersey
Architects: Davis, Brody and Wisniewski
Structural Consultants: Wiesenfeld, Hayward & Leon
General Contractor: Max Drill, Inc.

Sheedy & Long

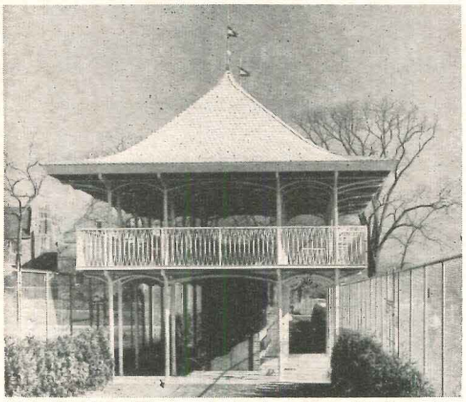


Service Station for Standard Oil Company of California,
Los Angeles, California
Architects: Charles Luckman Associates, coordinating architects, with Welton Becket & Associates, and Paul R. Williams & Associates
Structural Engineers: Richard R. Bradshaw, Inc., S. B. Barnes
General Contractor: Miller & Miller

© Ezra Stoller Associates



General Offices for the Upjohn Company
Kalamazoo, Michigan
Architects: Skidmore, Owings & Merrill
General Contractor: O. W. Burke Company

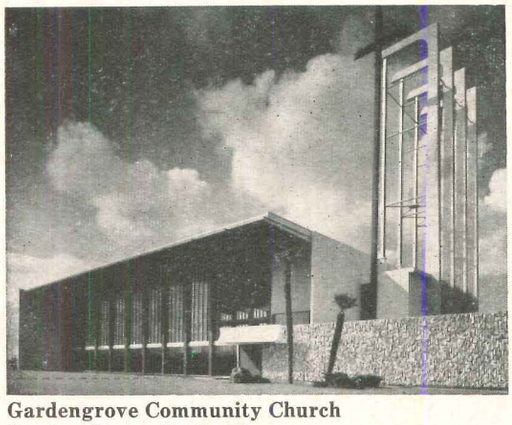


Tennis Pavilion at Princeton University
Princeton, New Jersey
Architects: Ballard, Todd and Snibbe
Structural Engineer: Peter W. Bruder
General Contractor: Matthews Const. Co.

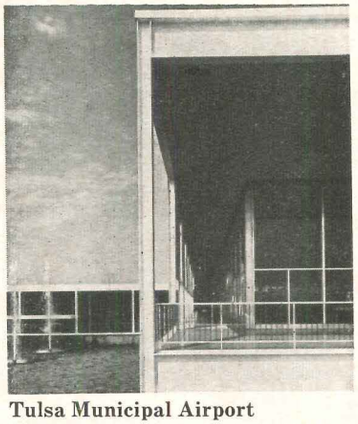
Joseph W. Molitor

Gateway Number Four, Pittsburgh
Architects:
Harrison & Abramovitz
Structural Engineer:
Edwards & Hjorth
Gen. Contractor: George A. Fuller

Amir H. Farr



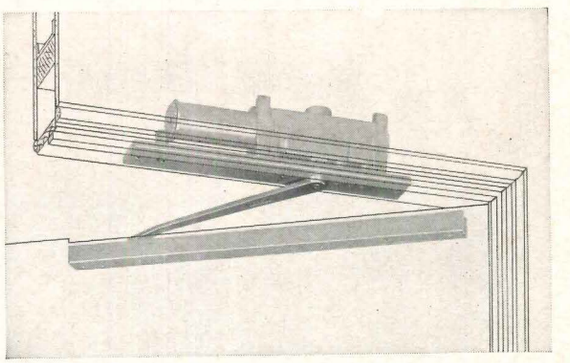
Gardengrove Community Church
Garden Grove, California
Architects: Richard J. Neutra and Associates
Structural Engineer: Eugene Birnbaum
General Contractor: John E. Snyder



Tulsa Municipal Airport
Terminal Building, Tulsa, Okla.
Architects: Murray-Jones-Murray
Structural Engineer:
David R. Graham and Associates
Gen. Contractor: W.R. Grimshaw

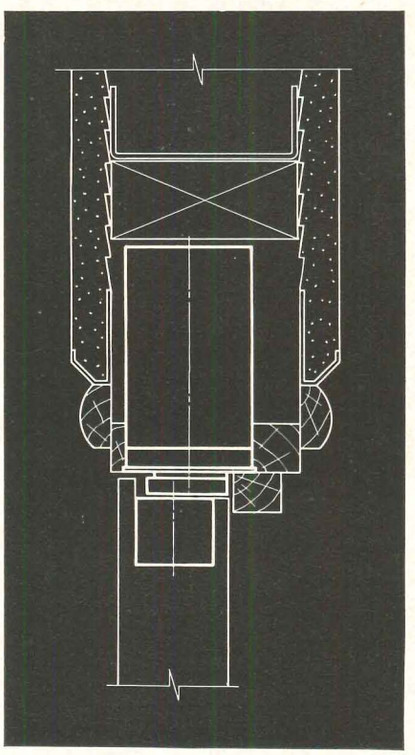
Announcing
LCN's New, Compact Overhead Concealed Door Closer
SERIES 2000

For some time architects have wanted an overhead concealed closer big enough to handle medium and large doors, yet small enough to fit into a very limited space. The desire is natural; fulfillment has been difficult.



Door Control Machinery Must Be Rugged To Perform Well in Hard Service

For several years LCN has been developing and testing a new series of closers concealed in the head frame with track in top of door. They resemble former LCN types, but employ interior design factors which cut drastically the space requirement for the closer. They are now being introduced.



Series 2000 Closers Are Practical in Size and Cost

LCN's new door closers are lower in cost and take much less room overhead than the preceding 200 series. They fit into relatively thin partition walls and structural members. They are but 3⅝″ high and 2$\frac{1}{16}$″ wide. With door closed the arm is entirely hidden, yet in most cases no cut in the frame stop is required. The door may open 180°, and is preferably hung on butts, of which the largest suitable size is 5″ x 5″.

These closers are fully hydraulic (as are all LCNs) with adjustable back-check to restrain violent opening of the door. Closing and latching speeds are separately adjustable, with the spring also adjustable. Operation is remarkably uniform, winter and summer, thanks to a highly stable LCN hydraulic fluid.

High Grade Materials Used Throughout

Although compact in design, the 2000 series door closers are made for heavy duty and long service. Here quality is largely hidden. Springs are made of the finest heat treated alloy spring steel, and should outlast the closers. Cylinders are of high strength, wear resistant iron. Parts subjected to greatest wear are of hardened alloy steel. The track roller has a sealed ball bearing and a silent Nylon tire.

Send for Special Folder on 2000 Series

For further details, with door capacities and installation drawings, we invite you to write for Folder 2000.

LCN CLOSERS, PRINCETON, ILLINOIS

A Division of Schlage Lock Company

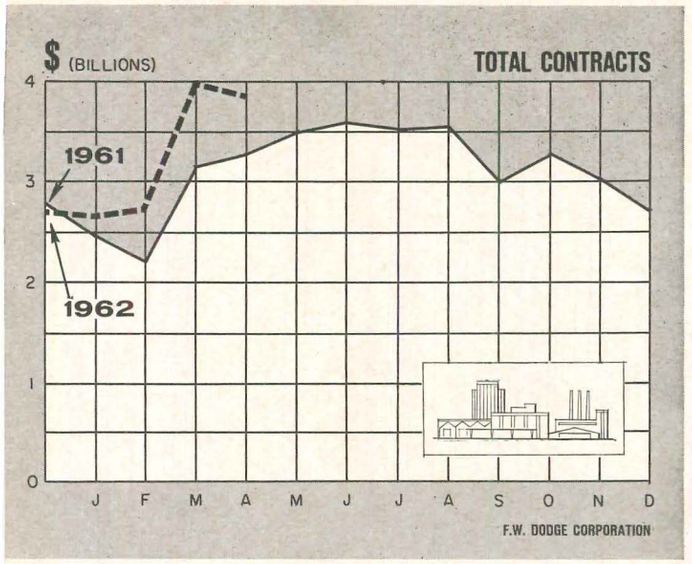
Canada: LCN Closers of Canada, Ltd., P.O.Box 100, Port Credit, Ontario

LCN's New, Compact Overhead Concealed Door Closer

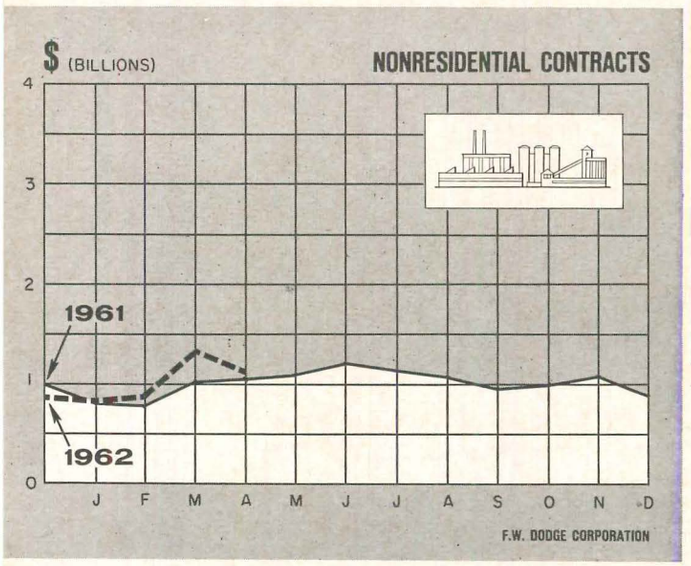
SERIES 2000

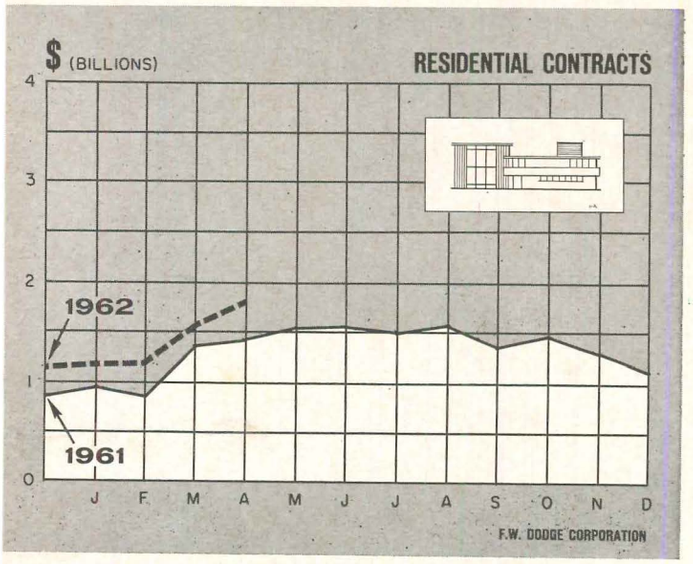
LCN CLOSERS, PRINCETON, ILLINOIS

See Opposite Page for Brief Description



Total contracts include residential, nonresidential, heavy engineering contracts





UPTREND SEEN THROUGH 1962, 1963 OUTLOOK MAY IMPROVE

AT THE START of the year, some very dire predictions were being made about the prospects for school building in 1962. Principally because of the markedly lower level of school bond approvals in 1961, the construction outlook was characterized by some as "disastrous." We did not share in that thinking then, for reasons outlined previously, and subsequent events have cast much more doubt on such a pessimistic view. The dollar volume of contracts for educational buildings, as reported by F. W. Dodge Corporation, actually reached a record high for the first four months of 1962, three per cent ahead of the comparable period last year. Although the volume of floor area represented by these contracts did slip slightly from year-earlier levels, this hardly merits the lugubrious tone of some estimates of 1962 activity.

FOR THE REMAINING months of 1962 we expect the current percentage gain in dollar valuation of educational building contracts to be maintained. Floor area should at least match the 1961 physical volume, perhaps edging above it by one or two per cent. School construction accounts for almost a quarter of all nonresidential building, and, naturally, any forward impetus in this area would be most helpful.

AS IMPORTANT as the school market is for the construction industry, most observers these days have their eyes glued on another market which has developed acute indigestion during the last two months. The immediate question is just what the current plunge in stock prices will do to new construction. And the *probable* answer is "relatively little impact" for the short term. True, some higher-priced new housing may be deferred by families feeling the pinch of substantial "paper losses" in stock values. But with personal incomes from salaries, wages, interest, etc., continuing to rise and with a remarkable easiness in the mortgage market, home building as a whole should maintain most of its present momentum through the fall. Furthermore, there is no indication of any cutback in business investment plans for 1962. Both commercial and manufacturing building contracts have been moving at a good clip this spring and are expected to continue so doing in the months immediately ahead. The incentive to invest in new plants and equipment is being bolstered by still expanding industrial production and the promise of tax revisions. Government-owned construction, of course, should not be affected by stock market conditions over the short-run.

THUS WE ANTICIPATE that both construction activity and the over-all economy will stay in a rising trend over the rest of this year. Furthermore, the outlook for 1963 may be improving. It had been assumed by many that some sort of recession next year was inevitable, partly because of the two to three year cyclical pattern which has developed in the postwar period and partly because of the modest pace of the present recovery. Now, the increasing likelihood of a major income tax cut in early 1963 makes a recession forecast more questionable.

EDWARD A. SPRAGUE, *Economist*
F. W. Dodge Corporation
A McGraw-Hill Company

Shown Here: DECOR PANEL COLUMNS

BORDEN ARCHITECTURAL DECOR PANELS

Now Borden brings a new building component to the architect—durable light-weight aluminum panels which can be custom-styled in an infinite variety of forms and designs. For example, the extruded type shown here can be had with design punchings of squares, circles, ovals or combinations of curves and straight lines.

The new Architectural Decor Panels by Borden are an extremely flexible medium, allowing the architect a rare freedom of expression in designing facades to blend with the nature of the building, its setting, and the preferences of his client. The dramatic effects achieved with this new material are being discovered daily; additionally, these panels are unexcelled for sturdiness, economy, ease of handling and installation, and ventilation.

Not limited to facades, the Borden Architectural Decor Panels are used as interior partitions, grilles, window guards, stair rails, doors, entryways, sunshades, and are especially adaptable in the refacing of existing buildings.

Write today for our folder on Borden Architectural Decor Panels.

another fine product line of

BORDEN METAL PRODUCTS CO.

MAIN OFFICE: 822 GREEN LANE, ELIZABETH, NEW JERSEY • *Elizabeth 2-6410*

PLANTS AT: LEEDS, ALABAMA; UNION, NEW JERSEY; CONROE, TEXAS

Construction Cost Indexes

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

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

NEW YORK

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1949	243.7	240.8	242.8	246.6	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	274.9	271.8
1952	278.2	274.8	271.9	265.2	262.2
1953	281.3	277.2	281.0	286.0	282.0
1954	285.0	278.2	293.0	300.6	295.4
1955	293.1	286.0	300.0	308.3	302.4
1956	310.8	302.2	320.1	328.6	324.5
1957	318.5	308.3	333.1	345.2	339.8
1958	328.0	315.1	348.6	365.4	357.3
1959	342.7	329.0	367.7	386.8	374.1
1960	351.6	337.2	377.7	395.8	380.6
1961	362.5	343.0	398.2	422.4	397.0
February 1962	367.1	344.6	410.2	436.9	409.2
March 1962	367.1	344.6	410.2	436.9	409.2
April 1962	369.0	346.8	411.0	437.5	410.0
	% increase over 1939				
April 1962	198.8	183.3	214.5	228.0	215.1

ATLANTA

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
1953	223.0	224.6	221.3	221.8	223.0
1954	219.6	219.1	233.5	225.2	225.4
1955	225.3	225.1	229.0	231.5	231.8
1956	237.2	235.7	241.7	244.4	246.4
1957	241.2	239.0	248.7	252.1	254.7
1958	243.9	239.8	255.7	261.9	262.0
1959	252.2	247.7	266.1	272.7	273.1
1960	259.2	253.3	274.7	282.5	278.8
1961	256.7	249.7	275.8	284.5	275.8
February 1962	259.9	252.9	279.7	288.9	278.0
March 1962	259.9	252.9	279.7	288.9	278.0
April 1962	261.3	254.7	280.0	289.1	278.4
	% increase over 1939				
April 1962	202.8	206.5	194.4	196.8	194.0

ST. LOUIS

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS, OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
1953	263.4	256.4	259.0	267.0	259.2
1954	266.6	260.2	263.7	273.3	266.2
1955	273.3	266.5	272.2	281.3	276.5
1956	288.7	280.3	287.9	299.2	293.3
1957	292.0	283.4	295.2	307.1	302.9
1958	297.0	278.9	304.9	318.4	313.8
1959	305.4	296.4	315.0	329.8	323.9
1960	311.4	301.0	322.2	337.2	329.2
1961	315.1	302.0	329.0	346.8	332.2
February 1962	319.6	305.1	337.2	356.5	338.3
March 1962	319.6	305.1	337.2	356.5	338.3
April 1962	320.8	306.3	338.7	357.7	339.5
	% increase over 1939				
April 1962	191.1	186.3	185.3	198.6	185.3

SAN FRANCISCO

PERIOD	RESIDENTIAL Brick	RESIDENTIAL Frame	APTS., HOTELS OFFICE BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Concrete	COMMERCIAL AND FACTORY BLDGS. Brick and Steel
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
1953	255.2	257.2	256.6	261.0	259.7
1954	257.4	249.2	264.1	272.5	267.2
1955	268.0	259.0	275.0	284.4	279.6
1956	279.0	270.0	288.9	298.6	295.8
1957	286.3	274.4	302.9	315.2	310.7
1958	289.8	274.9	311.5	326.7	320.8
1959	299.2	284.4	322.7	338.1	330.1
1960	305.5	288.9	335.3	352.2	342.3
1961	308.7	290.2	345.1	362.9	350.2
February 1962	310.8	291.4	350.4	368.2	354.0
March 1962	310.8	291.4	350.4	368.2	354.0
April 1962	313.2	294.2	352.0	369.4	355.4
	% increase over 1939				
April 1962	196.6	196.3	199.8	203.0	205.1

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

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

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

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

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

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

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

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

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

Hertzka & Knowles and Skidmore, Owings and Merrill, associated architects.

250,000 sq. ft. of super-tough Goodyear vinyl flooring cuts maintenance cost for Crown Zellerbach

To cover more than a quarter million sq. ft. in San Francisco's new Crown Zellerbach building, the architect chose Goodyear Vinyl Floor. Today, after three years of heavy foot traffic, the choice looks better than ever.

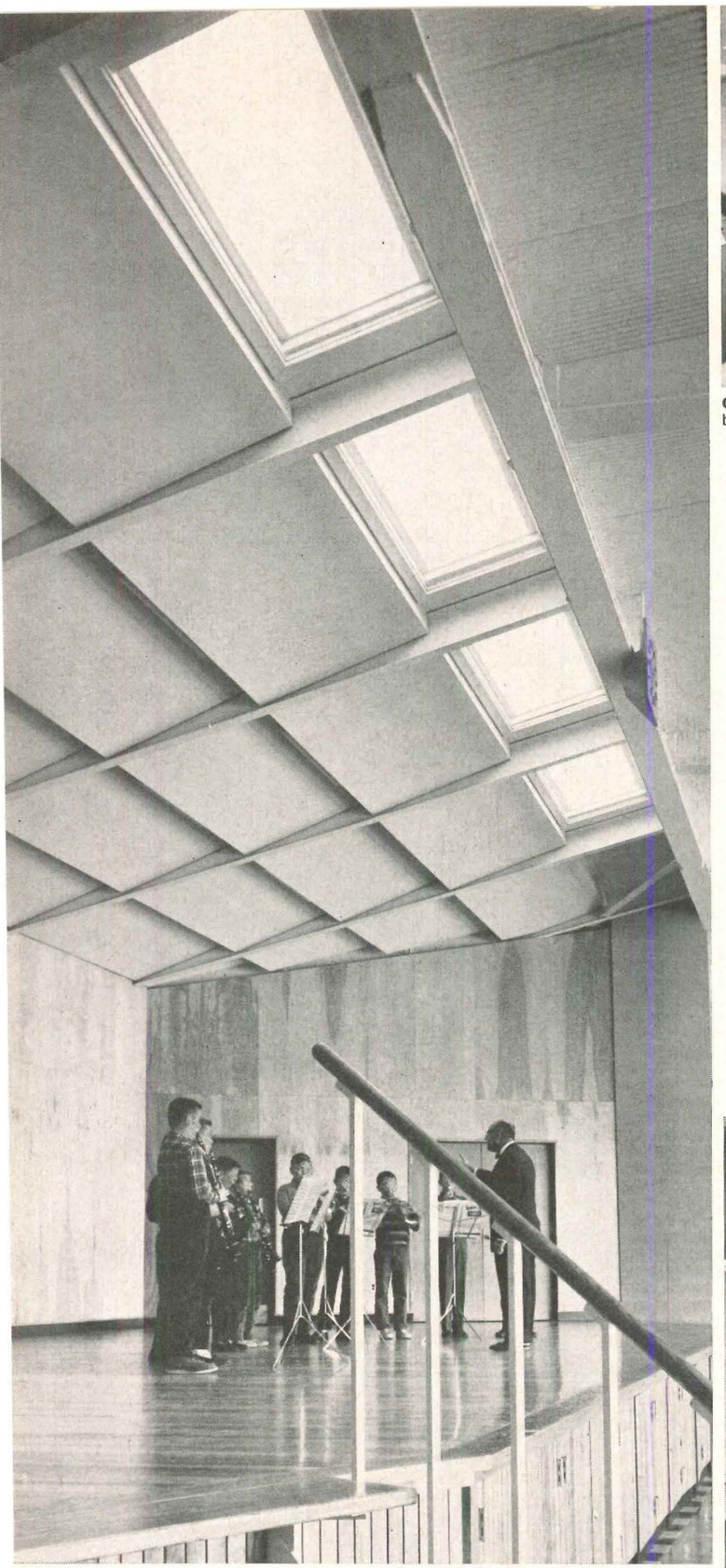
Goodyear Vinyl can actually pay for itself in maintenance savings! Because it is so tough and wear-resistant, it doesn't require wax. Machine cleaning and regular polishing with a commercial buffer are all it takes to maintain high-luster beauty.

You'll find all these qualities in new economy-priced DeLuxe True Vinyl Flooring by Goodyear. It's homogeneous. The solid vinyl quality—and the pattern—go all the way through.

Available in new multiple marbleized colors. In ⅛" gauge for commercial and heavy traffic use and in 1/16" for light traffic areas. For specifications, see your nearest Goodyear Floors Distributor, or write: Goodyear, Flooring Dept. S-8111 Akron 16, Ohio.

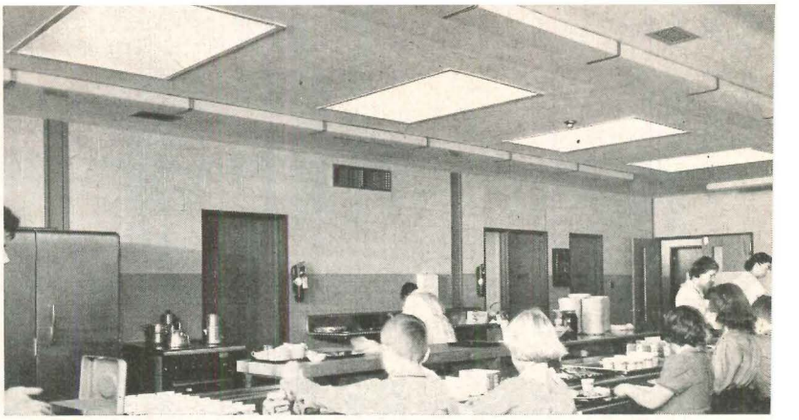
GOODYEAR

FLOORING PRODUCTS



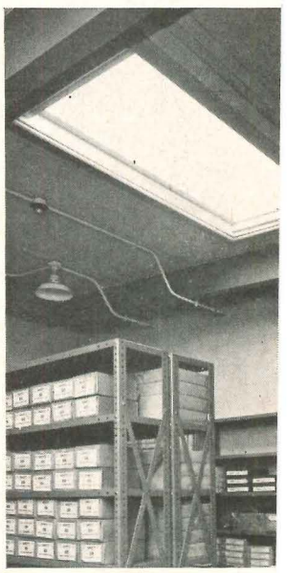
Hemenway School, Framingham, Mass. Architects: M. A. Dyer Assoc.

AUDITORIUM. Four 28" x 52" Twin Dome® skylights dramatically focus attention on this wide stage by flooding it with evenly diffused, glare-free daylight. Shades have been installed to darken stage if necessary.

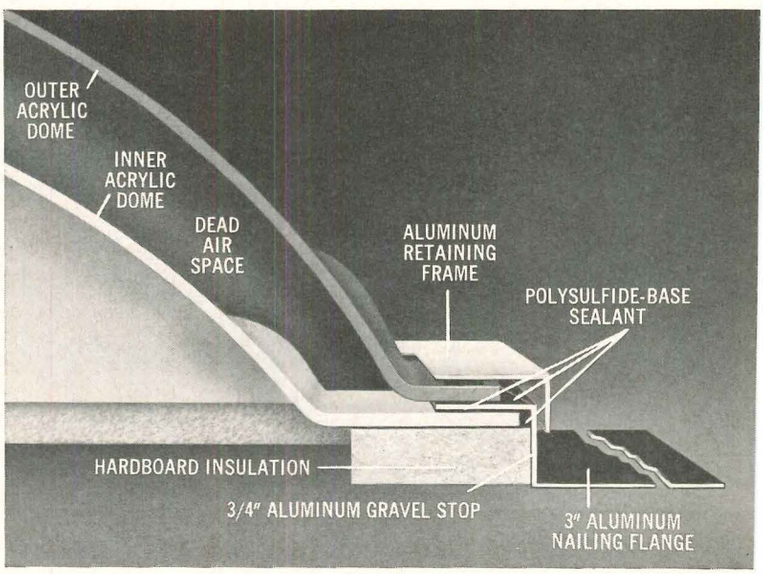


CAFETERIA. Twin Dome skylights brighten working and serving areas with natural daylight, pleasing to both students and kitchen staff. Electricity costs are reduced because lights are not on during the day.

NEW TWIN DOME® SKYLIGHT INSULATES AS IT DAYLIGHTS



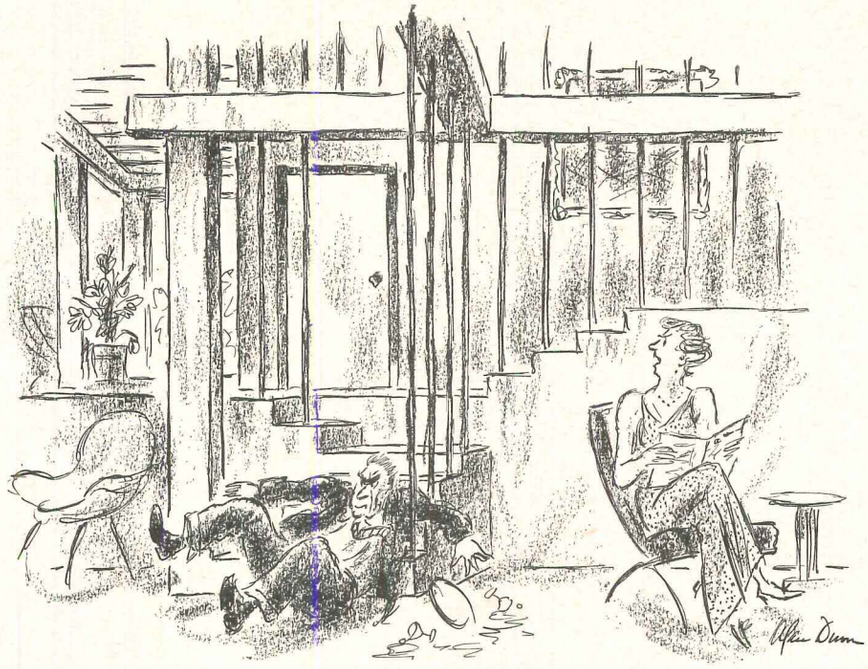
STOREROOM. A single Twin Dome skylight lets plenty of light into this windowless storeroom. Natural daylight opens up otherwise dark shelves, makes labels easy to read.



...GUARANTEED AIRTIGHT, WATERTIGHT, PERMANENTLY. 157 self-flashing Twin Dome® acrylic skylights bring evenly diffused, glare-free daylight into many areas of this school, including classrooms, without risk of heat gain, heat loss or condensation. The first totally proven, permanently sealed, dome-within-dome design maintains a constant 0.57 U-factor. Twin Dome skylights are guaranteed watertight and airtight. ■ A complete range of 19 self-flashing and curb-mounted sizes enables the architect to blend Twin Dome units with any roof or building design. A choice of clear, white-translucent or dense white inner and outer acrylic domes permits control of light levels. All Skydome units including the Twin Dome models are shatter-resistant, weatherproof and maintenance-free. The self-flashing unit can be installed in 15 minutes. ■ For full details, see Sweet's Architectural File 20a/Wa or write:

WASCO SKYDOME® ACRYLIC SKYLIGHTS

AMERICAN CYANAMID COMPANY CYANAMID BUILDING PRODUCTS DIVISION, 5 BAY STATE ROAD, CAMBRIDGE 38, MASS.



—*Drawn for the* RECORD *by Alan Dunn*

"John, you aren't conforming to the structural logic!"

U. S. ADOPTS OFFICIAL STATEMENT OF GUIDING PRINCIPLES FOR FEDERAL ARCHITECTURE

Over-All Redevelopment of Pennsylvania Avenue Also Proposed, Advice of "Nation's Finest Architects" to Be Sought in Planning

In a document with the unlikely title of "Report to the President by the Ad Hoc Committee on Federal Office Space," the nation last month acquired for the first time in its history a public architectural policy. The statement of it, which occupies one page of a 16-page report, is headed "Guiding Principles for Federal Architecture," and President Kennedy has transmitted it to all Federal agencies concerned with building construction as official policy, asking for a progress report in a year.

The statement (text on page 26) specifically rejects the idea that good design is somehow optional, or separate from the provision of office space, and asserts that design "must provide visual testimony to the dignity, enterprise, vigor and stability of the American Government" as well as "efficient and economical facilities for the use of Government agencies."

In the first of three major policy points, the statement also asserts that "major emphasis should be placed on the choice of designs that embody the finest contemporary American architectural thought. Specific attention should be paid to the possibilities of incorporating into such designs qualities which reflect the regional architectural traditions of that part of the nation in which buildings are located. Where appropriate, fine art should be incorporated in the designs, with emphasis on the work of living American artists."

Point No. 2 warns against development of an official style ("design must flow from the architectural profession to the Government, not vice versa"), suggests competitions might be held and recommends "as a rule" seeking advice of "distinguished architects" before important design contracts are awarded. It also asserts that "the government should be willing to pay some additional cost to avoid excessive uniformity in design of Federal buildings."

Finally, the statement says that "the choice and development of building site should be considered the first step of the design process."

Architects to Advise on Pennsylvania Avenue Project

The architectural policy statement had been expected (AR, May, pages 25 and 28) as part of the Federal office space report; but the report contained a major surprise of great interest and significance to architects. This was the proposal (text on pages 26 *et seq.*) for the over-all redevelopment of Pennsylvania Avenue to make it *"the* great thoroughfare of the City of Washington," returning to the intent of capital planners from L'Enfant forward that Pennsylvania Avenue from the Capitol to the White House should be "the 'grand axis' of the city as of the nation."

Federal Architecture

continued from page 25

The National Capital Planning Commission was recognized in the report as being the appropriate agency to have the central responsibility for planning the redevelopment, but "to fulfill this responsibility," the report declared, "it will be necessary for the Commission to engage the services of a number of the foremost architects of the nation: nothing less than the very finest, established talents available will be sufficient."

President Kennedy was expected to appoint an advisory committee including several architects to consult with Mrs. James H. Rowe, chairman of the National Capital Planning Commission, on the most effective means of achieving the objectives set forth in the report.

Goals for the "Grand Axis"

Objectives for the redevelopment were set forth in the Federal office space report, which found the great opportunity for creative redesign of the whole avenue in prospects of early rebuilding of large decayed areas.

The report has this to say about goals: "The Pennsylvania Avenue project should be regarded as a continuation of the work on the Federal Triangle which began a generation ago. In this instance, however, the effort should involve a partnership between the Government and private enterprise. A primary object of the redevelopment of the Avenue should be to emphasize the role of the Capitol itself as the center of the city. For this reason care should be taken not to line the north side with a solid phalanx of public and private office buildings which close down completely at night and on week ends, leaving the Capitol more isolated than ever. Pennsylvania Avenue should be lively, friendly and inviting, as well as dignified and impressive."

Secretary of Labor Arthur J. Goldberg headed the "Ad Hoc Committee on Federal Office Space" which produced the report and his well-known interest in the arts and cultural matters generally were apparently responsible for broadening the scope of the committee's concern. Other members of the committee were Secretary of Commerce Luther H. Hodges, Director of the Bureau of the Budget David E. Bell, Administrator Bernard J. Boutin of the General Services Administration and Timothy J. Reardon Jr., Special Assistant to the President.

TEXT: "GUIDING PRINCIPLES FOR FEDERAL ARCHITECTURE"

In the course of its consideration of the general subject of Federal office space, the committee has given some thought to the need for a set of principles which will guide the Government in the choice of design for Federal buildings. The committee takes it to be a matter of general understanding that the economy and suitability of Federal office space derive directly from the architectural design. The belief that good design is optional, or in some way separate from the question of the provision of office space itself, does not bear scrutiny, and in fact invites the least efficient use of public money.

The design of Federal office buildings, particularly those to be located in the nation's capital, must meet a two-fold requirement. First, it must provide efficient and economical facilities for the use of Government agencies. Second, it must provide visual testimony to the dignity, enterprise, vigor, and stability of the American Government.

It should be our object to meet the test of Pericles' evocation to the Athenians, which the President commended to the Massachusetts legislature in his address of January 9, 1961: "We do not imitate—for we are a model to others."

The committee is also of the opinion that the Federal Government, no less than other public and private organizations concerned with the construction of new buildings, should take advantage of the increasingly fruitful collaboration between architecture and the fine arts.

With these objects in view, the committee recommends a three-point architectural policy for the Federal Government:

1. The policy shall be to provide requisite and adequate facilities in an architectural style and form which is distinguished and which will reflect the dignity, enterprise, vigor, and stability of the American National Government. Major emphasis should be placed on the choice of designs that embody the finest contemporary American architectural thought. Specific attention should be paid to the possibilities of incorporating into such designs qualities which reflect the regional architectural traditions of that part of the nation in which buildings are located. Where appropriate, fine art should be incorporated in the designs, with emphasis on the work of living American artists. Designs shall adhere to sound construction practice and utilize materials, methods and equipment of proven dependability. Buildings shall be economical to build, operate and maintain, and should be accessible to the handicapped.

2. The development of an official style must be avoided. Design must flow from the architectural profession to the Government, and not vice versa. The Government should be willing to pay some additional cost to avoid excessive uniformity in design of Federal buildings. Competitions for the design of Federal buildings may be held where appropriate. The advice of distinguished architects ought to, as a rule, be sought prior to the award of important design contracts.

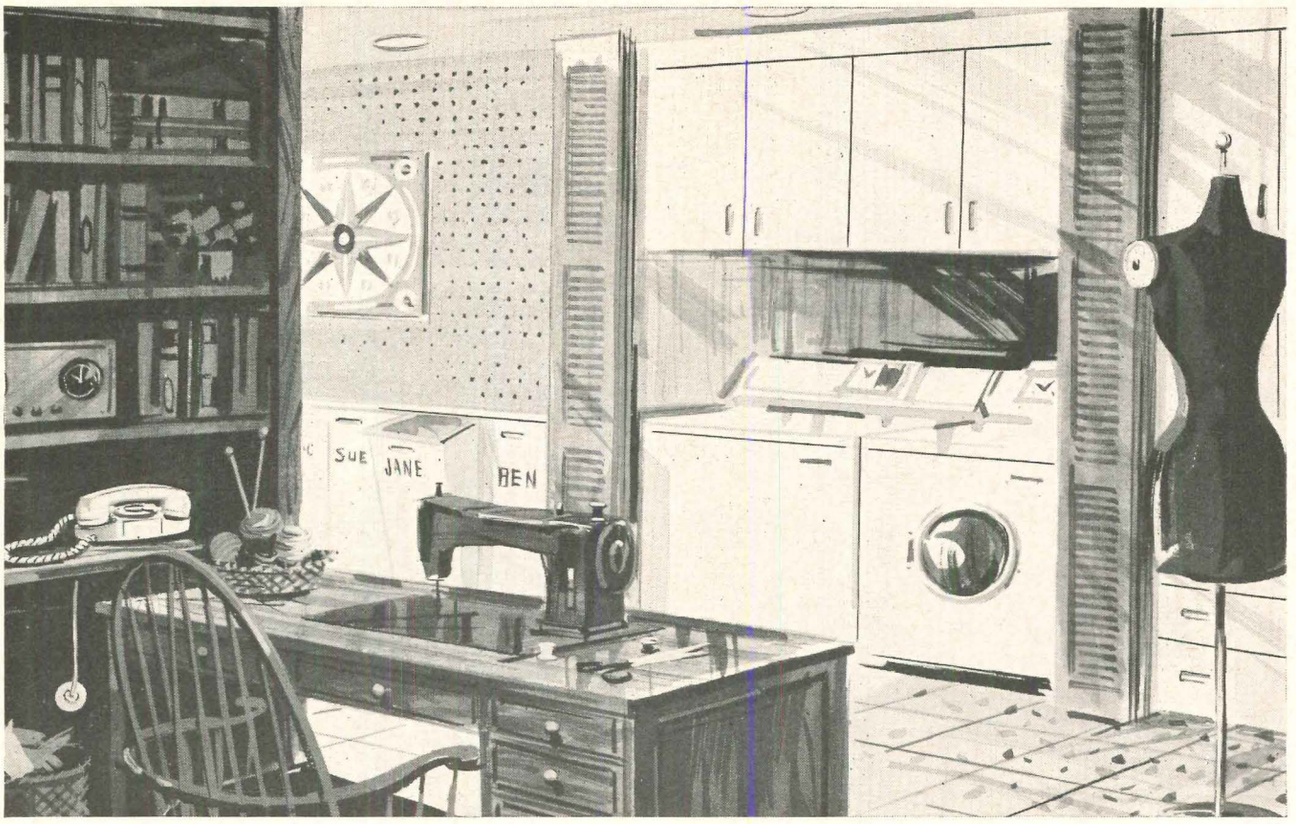
3. The choice and development of the building site should be considered the first step of the design process. This choice should be made in cooperation with local agencies. Special attention should be paid to the general ensemble of streets and public places of which Federal buildings will form a part. Where possible, buildings should be located so as to permit a generous development of landscape.

TEXT: "THE REDEVELOPMENT OF PENNSYLVANIA AVENUE"

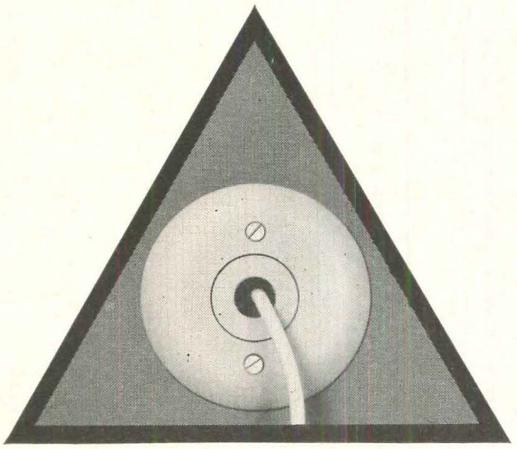
One of the distinctive features of the American Republic is that from the earliest days the Nation's capital has been located in an area set apart for that special purpose. No one visiting Washington can fail to recognize that the Government established here in the 18th Century was something new in the world, and that the men who created it were fully conscious of the great enterprise on which they had embarked.

The plans for the City of Washington, as drawn for the first President by Major Charles Pierre L'Enfant, began with the location of the principal buildings of the new Government and the great avenues that would connect them. The "grand axis" of the city, as of the Nation, was Penn-

continued on page 244



▲ The Princess phone enhances the sewing nook in this recreation-utility area. For help in telephone-planning your homes, call your local Bell Telephone Business Office. See Sweet's Light Construction File, 11c/Be, for other residential telephone installation ideas.



DESIGN *for telephone convenience. Specify built-in telephone outlets and wiring concealed within walls. You provide for a family's future telephone needs, protect interior beauty of homes...you make homes more livable, more salable.*

Bell Telephone System

Oak Hall. *In this 165-unit, 12-story building each apartment has its own central air handling unit with ducted air distribution. The same gas-fired boilers that supply hot water to these units for heating also supply steam to operate a 400-ton capacity Carrier Absorption unit which delivers chilled water for cooling.* ***Architect:*** *Alonzo H. Gentry;* ***Consulting Engineer:*** *Massaglia & Associates.*

How to make apartment air conditioning a more attractive investment

Regency House. *Individual, thermostatically controlled, fan-coil room units provide year-round air conditioning in this 134-unit, 20-story luxury apartment. Each unit is supplied with hot or chilled water from a central plant where gas-fired boilers that supply heat, also provide steam to operate the 300-ton capacity Carrier Absorption unit for cooling.* ***Architects:*** *Tanner-Linscott & Associates;* ***Consulting Engineer:*** *James Dukelow.*

Parkway Towers. *Each apartment in this 160-unit, 12-story building has its own central air conditioning unit with ducted air distribution. Chilled or hot water is delivered to each unit from a central plant where a 350-ton capacity Carrier Absorption unit provides cooling with steam from the same gas-fired boilers used for heating.* ***Architects*** *(and mechanical designers): Herbert E. Duncan Associates.*

Visit the spectacular Gas Pavilion at the Seattle World's Fair.

Plan your next building with Gas-powered Carrier Absorption Refrigeration. *Cases in point: 3 new Kansas City, Missouri apartments. 3 different owners, architects, engineers. Same problem: How to include year-round air conditioning offering better returns on investment. Solution: Compared cooling systems. Found Gas-powered Carrier systems out front for estimated owning and operating costs. Reason: Carrier Gas units are steam-powered by the same gas-fired boilers that supply heat. And gas has no equal for low-cost, trouble-free air conditioning. Before you plan your next building, get all the facts. Call your Gas Company. Or write Carrier Air Conditioning Company, Syracuse 1, New York* ***For heating and cooling...Gas is good business***

AMERICAN GAS ASSOCIATION

when standard hardware doesn't meet the need...

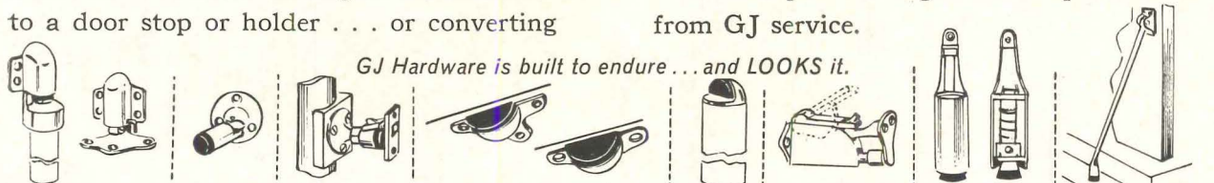
this man knows where to get ENGINEERED ADAPTATIONS

Where a job situation requires unusual application or function . . . this man knows he can go beyond his catalog. He knows he can turn to door control specialists for custom-engineered hardware made to meet his special problem.

In many cases, only a slight adaptation is needed . . . such as adding an extension to a door stop or holder . . . or converting a floor model for head jamb application. At other times a radical innovation is indicated.

Beginning with the contribution of his local Glynn-Johnson representative—backed by administrative, engineering and manufacturing cooperation — this man expects and gets the help he needs from GJ service.

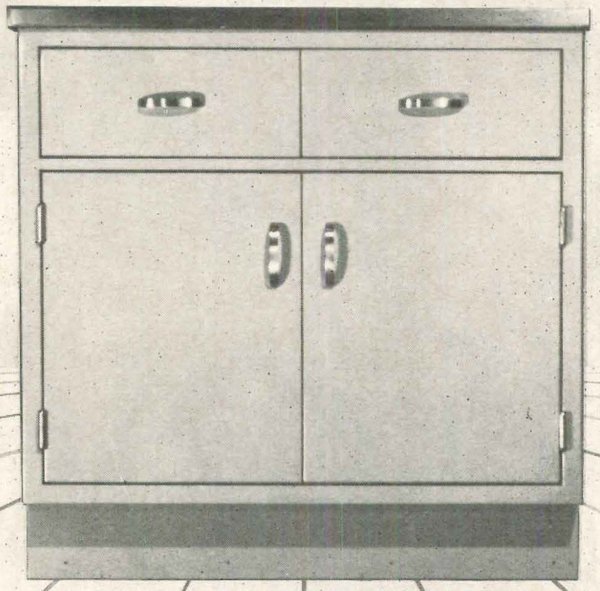
GJ Hardware is built to endure . . . and LOOKS it.

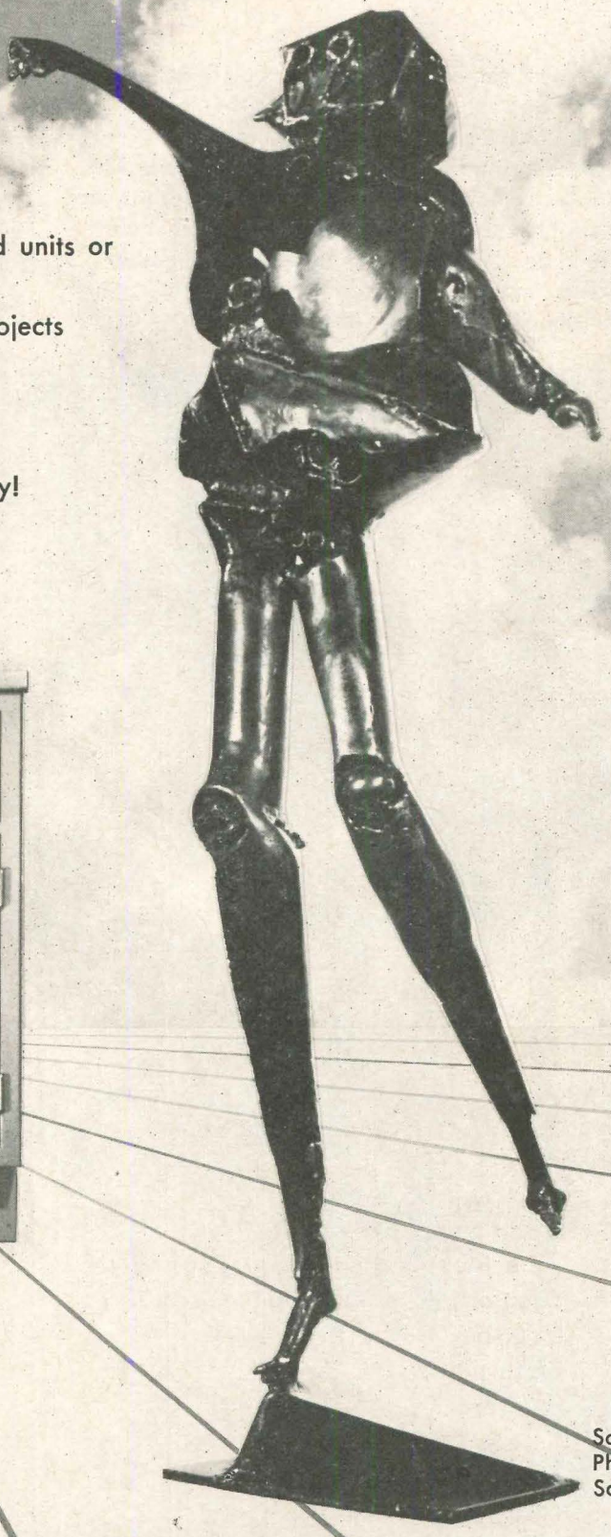


GLYNN · JOHNSON CORPORATION / 4422 no. ravenswood avenue • chicago 40, illinois

Functional or fiction . . .

. . . extreme techniques! **Function** is essential in Hospital Casework. Remco provides this function in a wide range of standard units or custom designed modules. Over 40 hospital projects completing in 1962 chose Remco . . . quality casework . . . the most for your money!





Sculpture by
Philip John Evett
San Antonio

Remco

HOSPITAL CASEWORK

101 New Laredo Highway, San Antonio 11, Texas

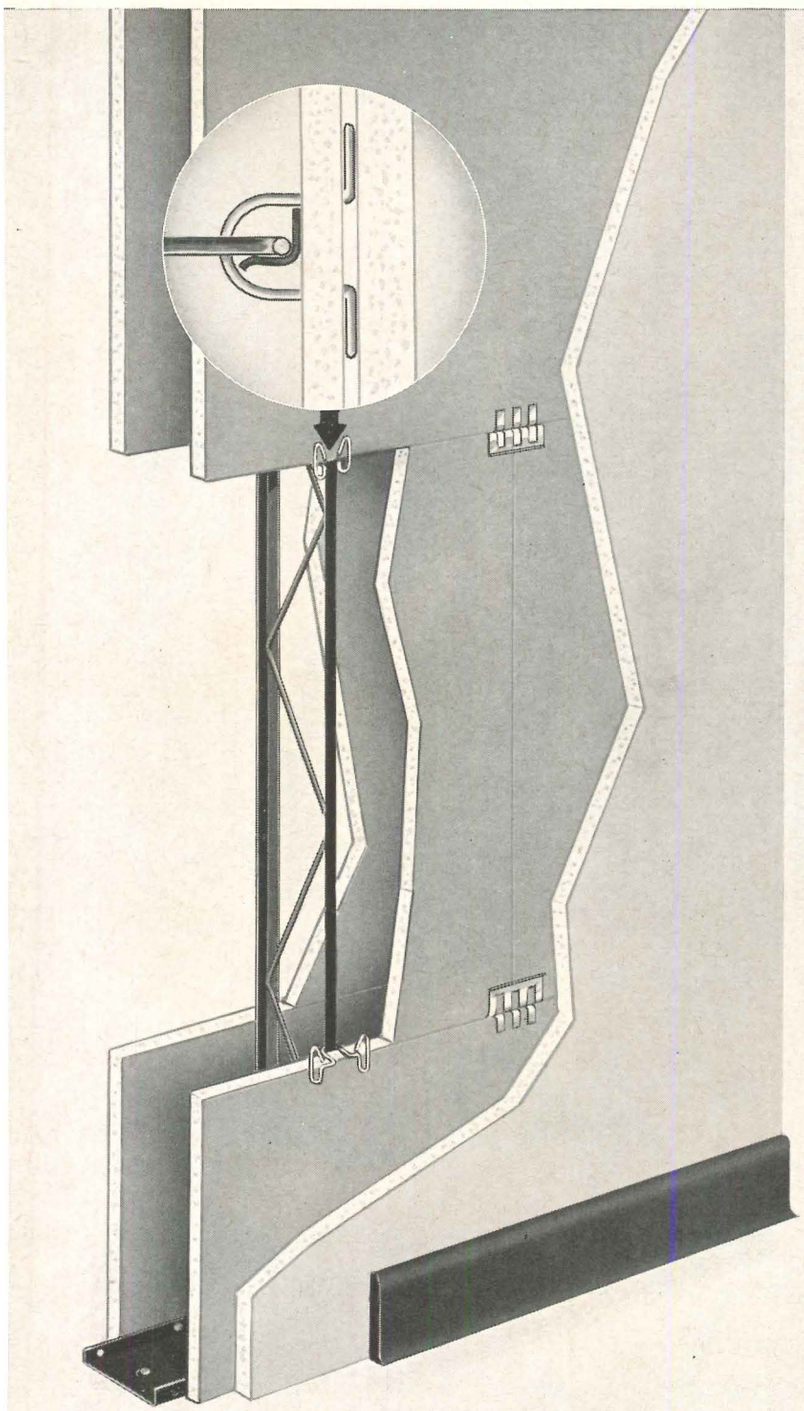
Write for our new Casework Manual No. 620. It will save you time.

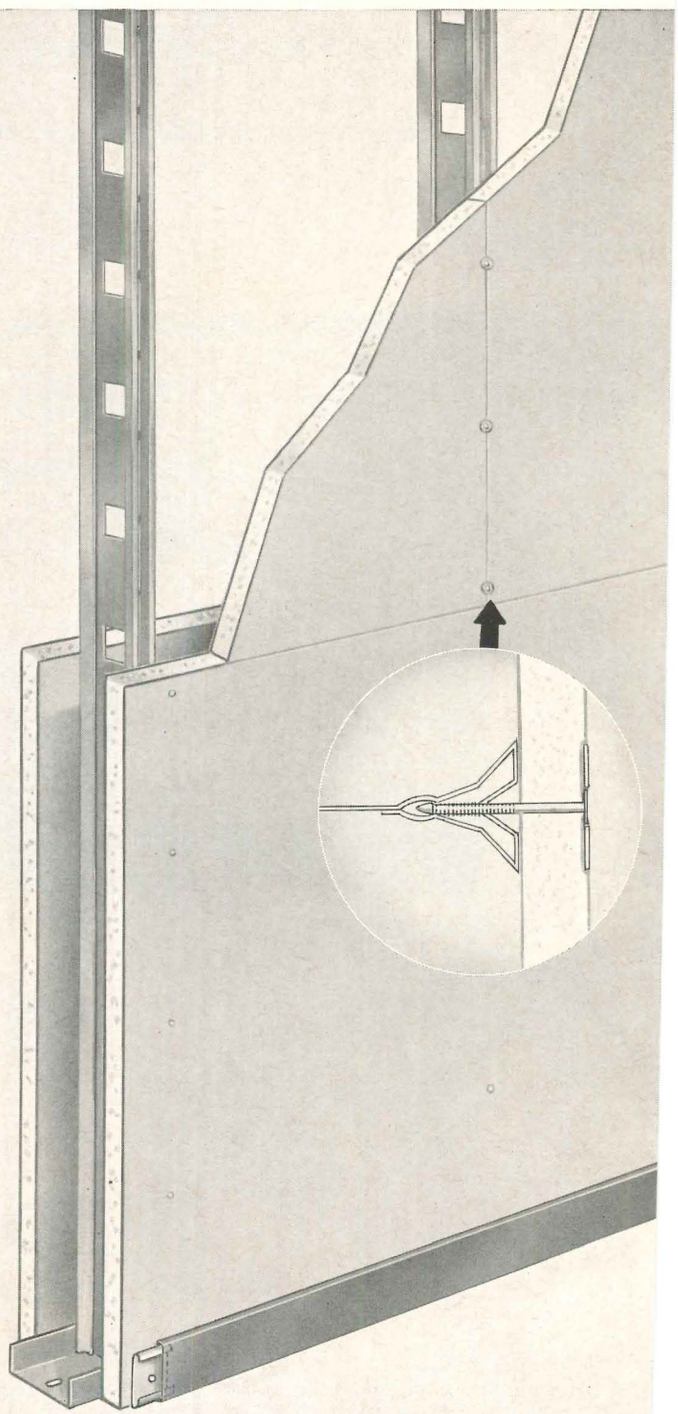
Gold Bond®

gives you a better way

Example: Gypsum Wallboard and Holostud
Forms a strong, lightweight, aircraft-type wall structure. Three simple clips make the application of 2-foot-wide Gypsum Backer Board easy. The finish layer can be Durasan or Regular Wallboard with treated joints. The result—a nonbearing wall you can be proud of... with a good sound-transmission loss rating, too! You can recommend it with confidence, for all components are Gold Bond.

Example: New Nailable Steel Stud
This system gives you the flexibility of either single- or double-layer wallboard construction. Note the unique patented "socket", *inside* the stud. This gives double clinching action that holds the ratchet-type nails with a vise-like grip. Three Gold Bond stud sizes too... 2½", 3¼" and 4" that are easily anchored in place by crimping the track. This nonbearing wall will give up to a 2-hour fire rating.

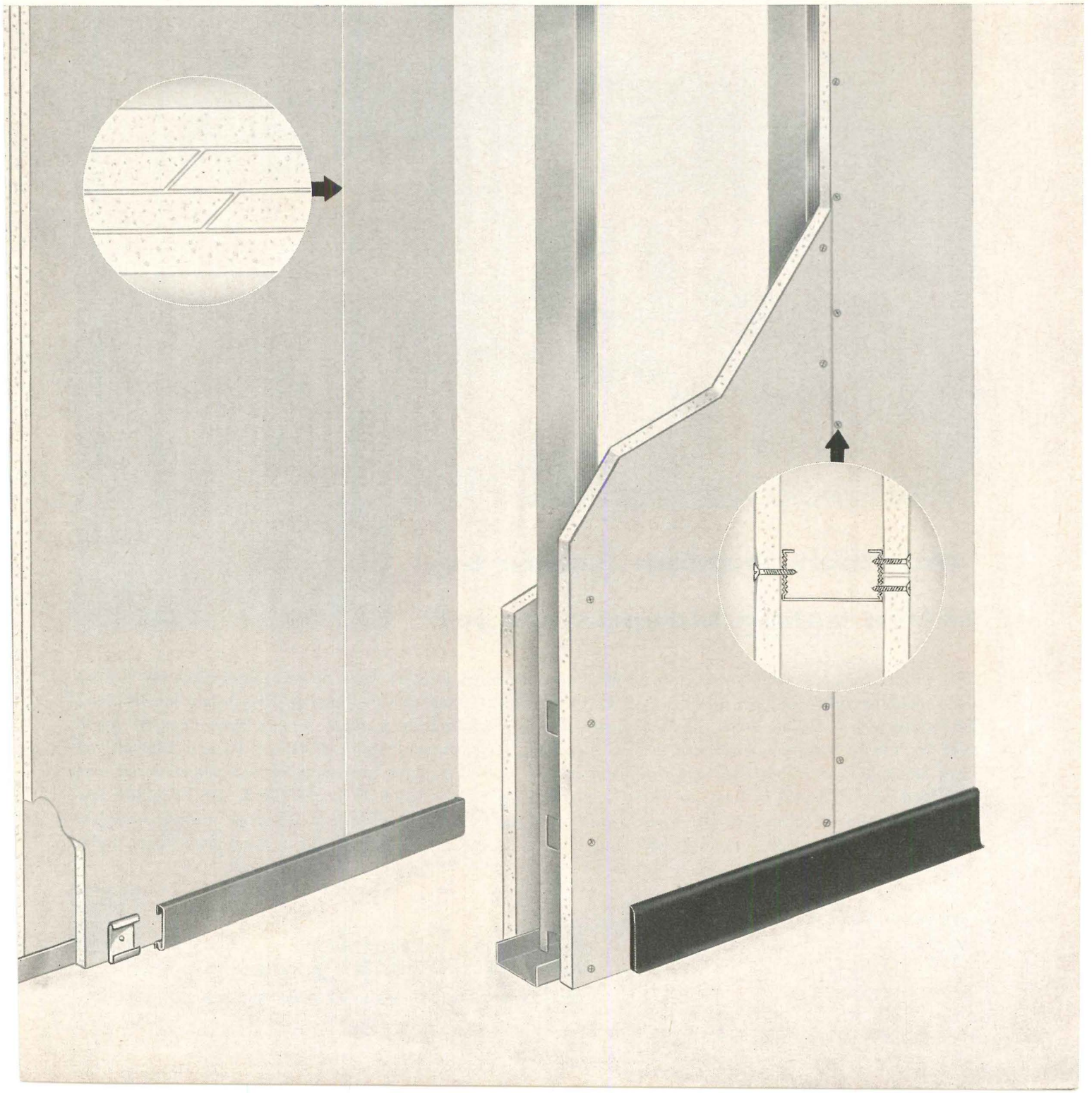




with walls...

Example: The 2″ Solid-Partition System
You just can't build a 2″ Solid Gypsum Partition better *or* less expensively than with Gold Bond components. Here's why: This 1″ Gypsum Coreboard, with patented interlocking joints, is the only base to which you can laminate REGULAR ½″ gypsum wallboard and get a full 2-hour fire rating. Ask your Gold Bond representative for details about this system . . . and how it can increase your profits.

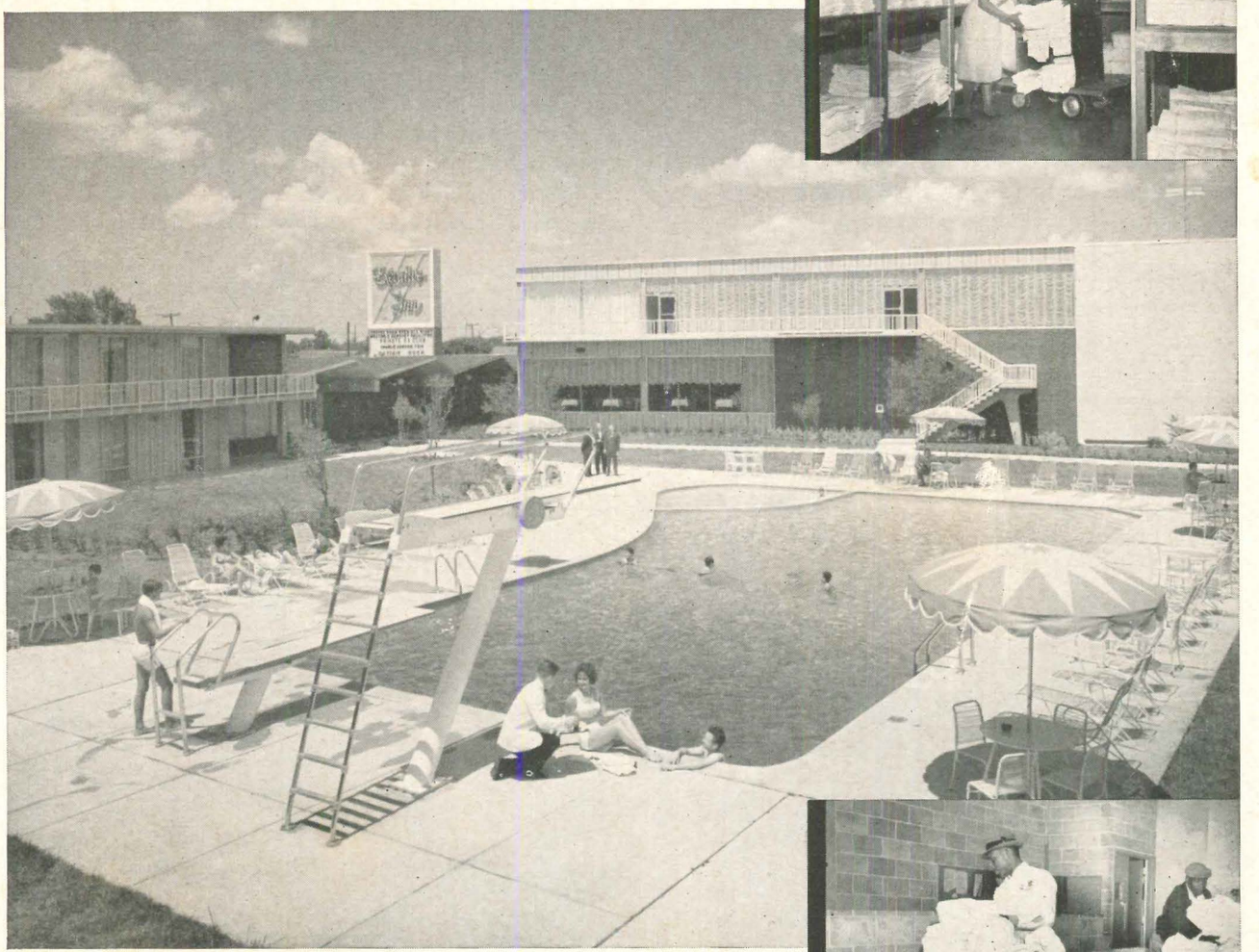
Example: New Drywall Stud and Screw System
The studs in this system are of steel for noncombustibility, ribbed for stiffness, pierced for routing utilities, galvanized for rust resistance. Just slip studs into the combination floor and ceiling track . . . friction holds them in place. Self-boring, corrosion-resistant screws attach the wallboard; single or double layer. This is a trouble-free, weight-saving system. Try it!
National Gypsum Company, Buffalo 2, N. Y.



Executive Inn DALLAS

Architect: JACK CORGAN AND ASSOCIATES, Dallas

Linen Supplier: DALLAS LINEN SERVICE, Dallas



"Our linen problem had to be solved before blueprint stage!"

"After considering all the alternatives we decided upon linen supply service," said Mr. Jack Sweet, Manager of the Executive Inn, Dallas, Texas. "This eliminated the need for a large investment in laundry facilities and saved valuable income-producing space in this area of high land values. We did not have to invest in a large quantity of linens of every description or allow for extensive storage space. Then, too, there was no drain on managerial time . . . no need for additional staff."

Motels in every range and size throughout the country have found that the linen problem is best handled by a specialized linen supply service. How about the buildings you're designing? Have you and your clients considered how linen supply service can cut costs, save space, and speed efficiency? Check your local linen supplier today for full details. He stands ready to assist you in every way. He's listed in the Yellow Pages under "Linen Supply" or "Towel Supply."

FREE DESIGN GUIDES!

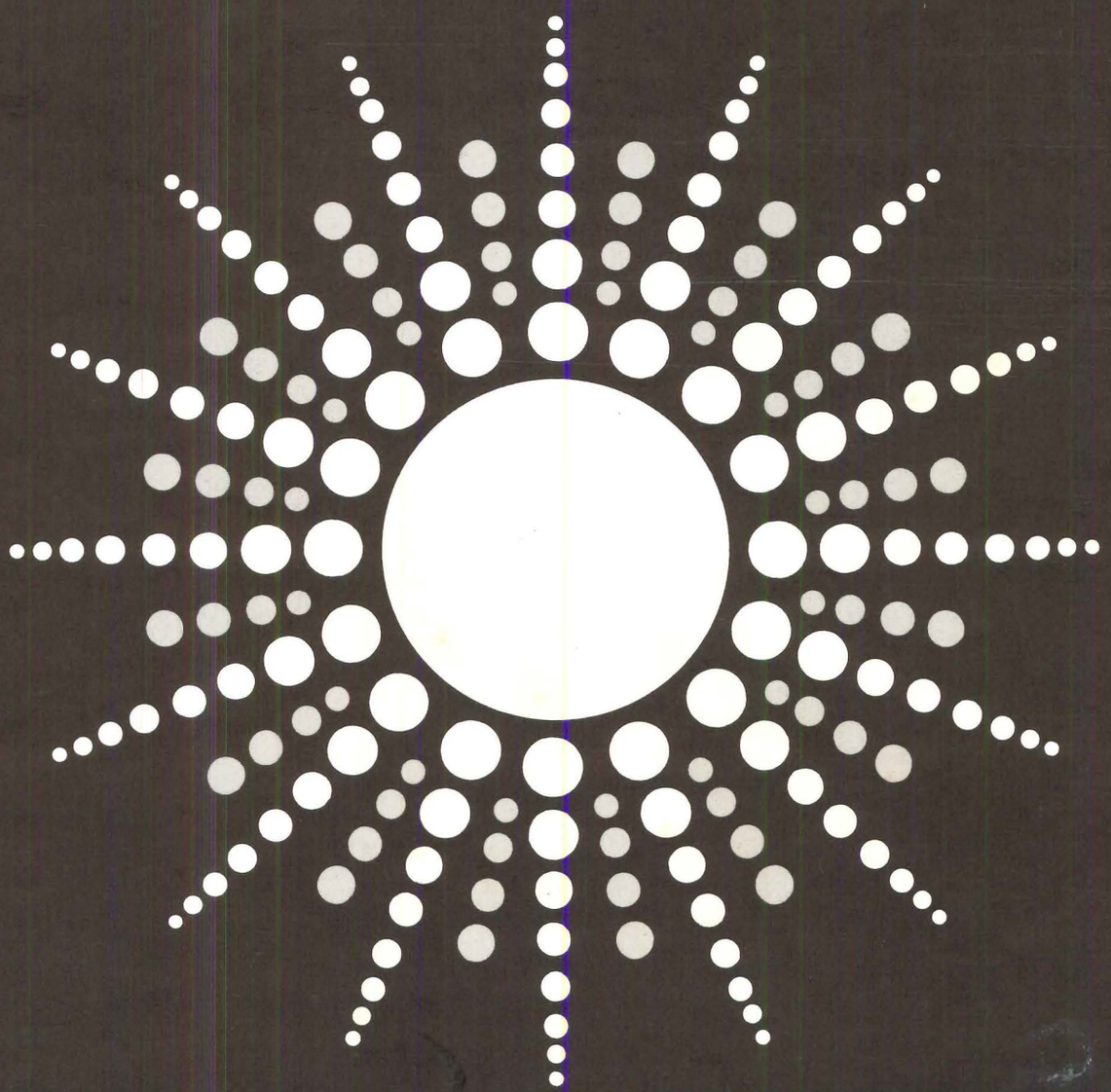
They give case histories and suggestions for providing more efficient linen supply service in motels, schools, restaurants and hospitals.

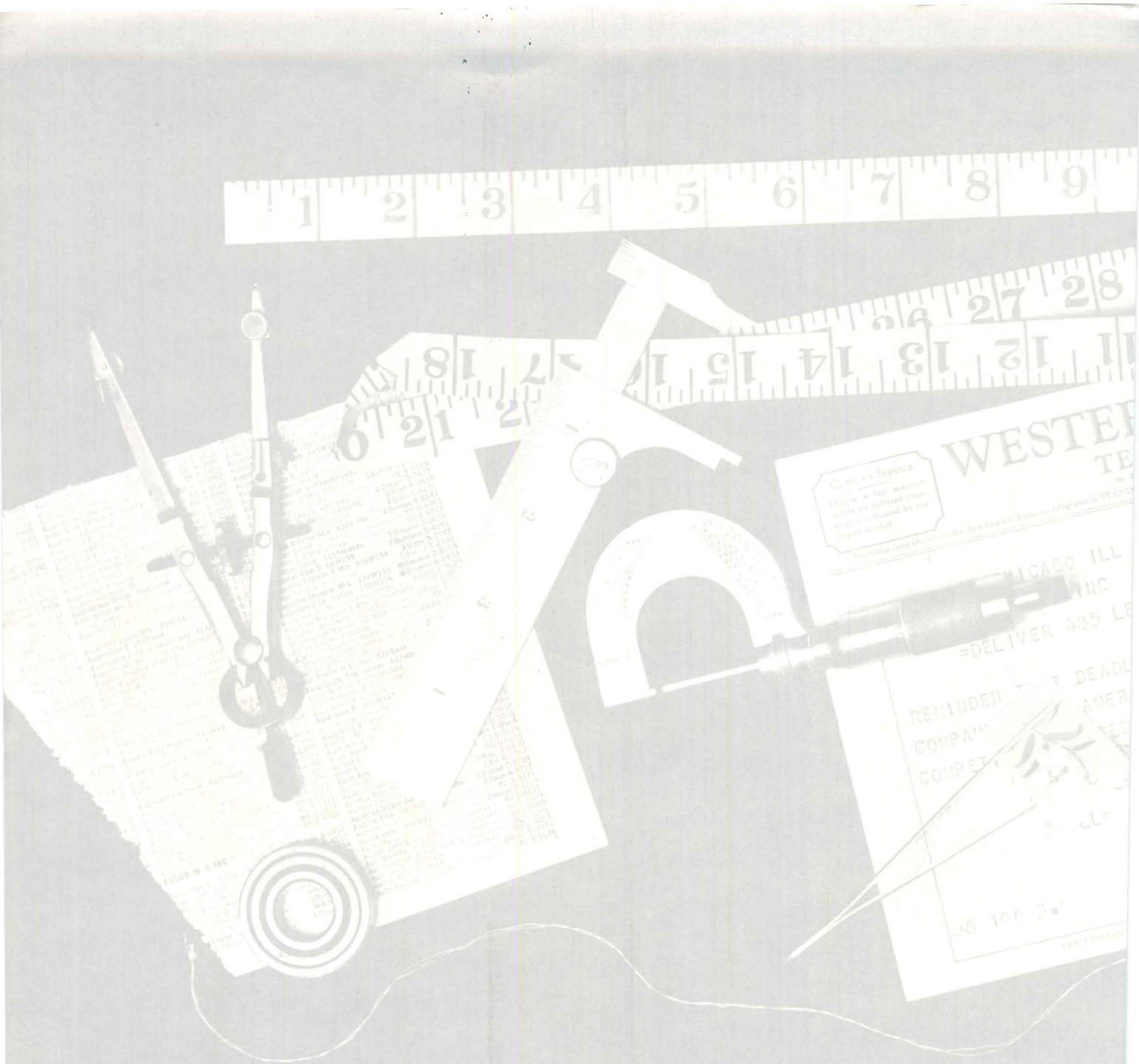
SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY

Linen Supply Association of America

and National Cotton Council • 22 West Monroe Street, Chicago 3

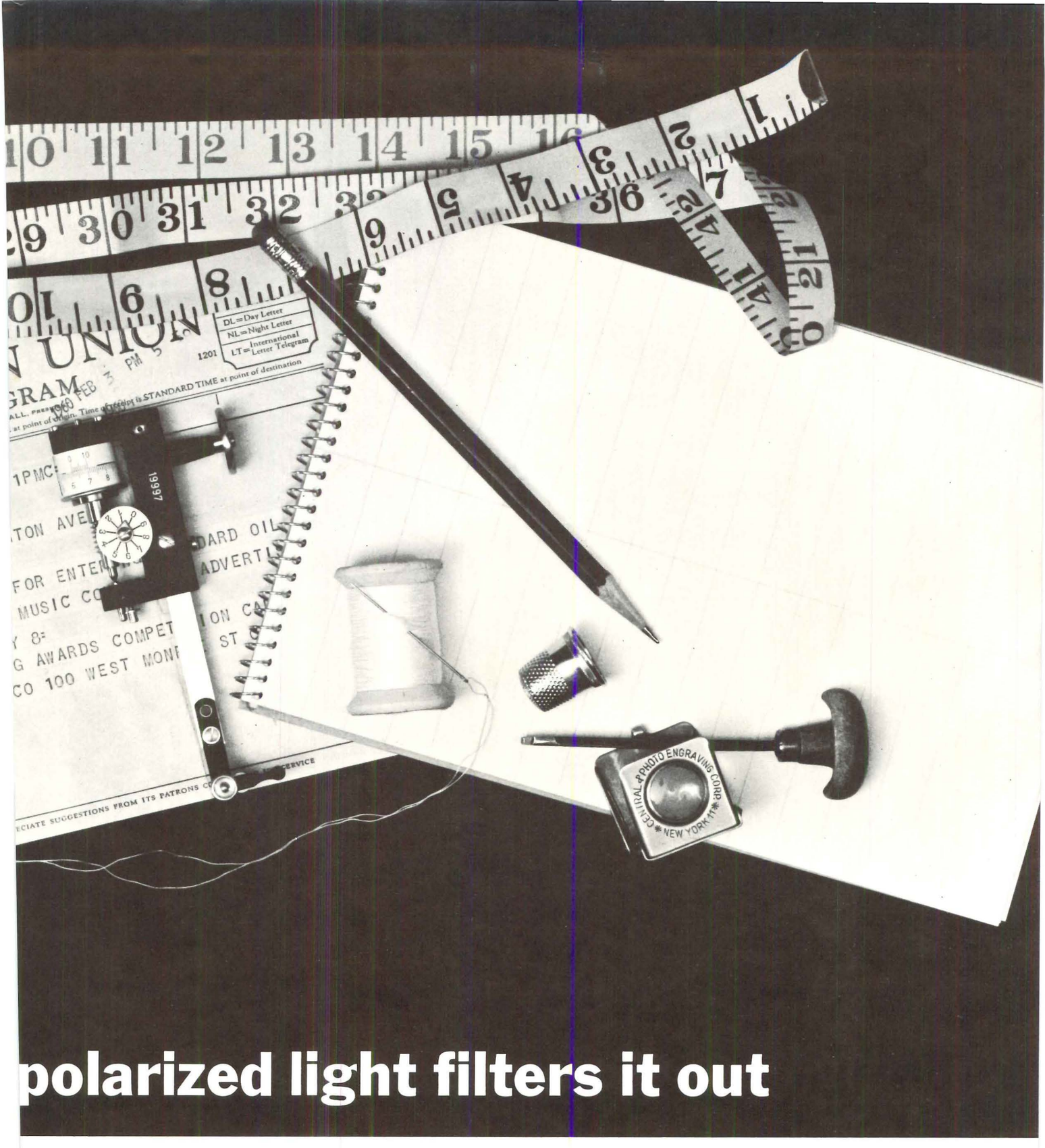
Announcing an exciting new breakthrough in lighting





Glare makes eyes work harder...

The reflected glare
of this area
printed with
aluminum ink
suggests the
glare of work
areas under
non-polarized
light



polarized light filters it out

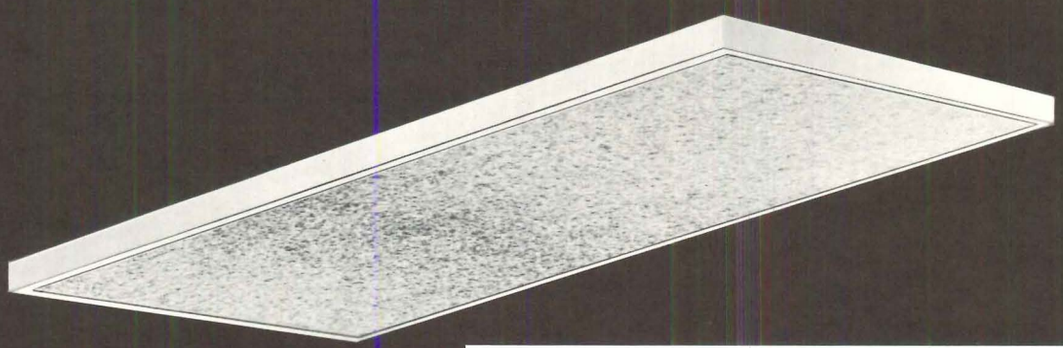
When light enters work areas through Fiberglas* Polarizing Light Panels, reflected glare is substantially reduced. Contrasts are sharper, colors truer, and worker efficiency is increased. These benefits have been verified scientifically by extensive tests conducted for the Illuminating Engineering Society. Give your clients the most advanced improvement in interior illumination. Specify fixtures with Fiberglas Polarizing Light Panels. And if you would like a demonstration, or new literature, just ask your Fiberglas representative, or write: Owens-Corning Fiberglas Corp., Dept. PLP, 717 Fifth Avenue, New York 22, N. Y.

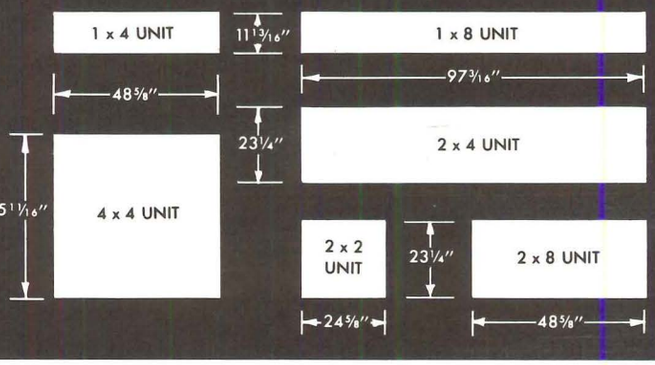
OWENS-CORNING
RESEARCH
pioneers new ideas in

OWENS-CORNING
FIBERGLAS
T.M. REG. U.S. PAT. OFF.

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

FIBERGLAS* POLARIZING LIGHT PANELS AVAILABLE IN THESE DAY-BRITE FIXTURES



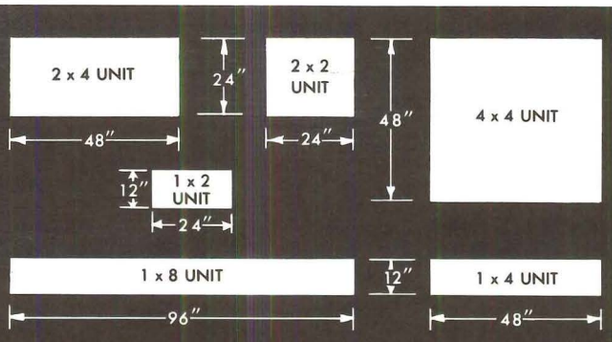


DAYLUME®

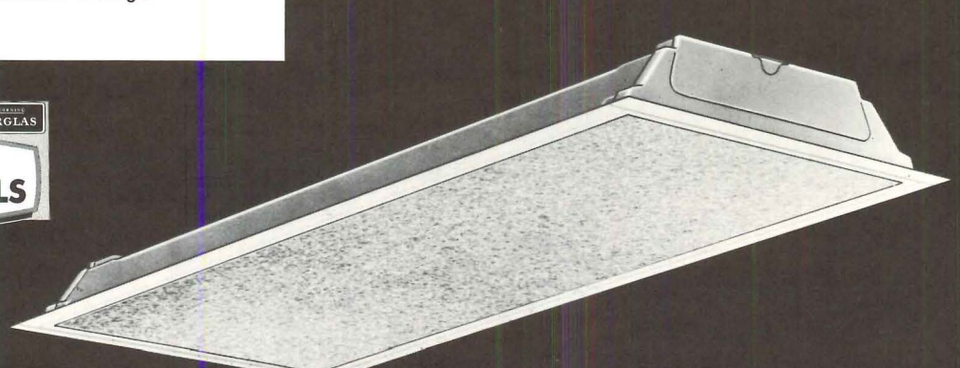
Modern surface elements in a wide variety of sizes. Slim profile and easy installation make Daylume the ideal choice where recessed lighting may be preferred but is not possible due to structural or budget limitations.

TROFFERS AND MOBILEX®

Shallow dimensions in Day-Brite's recessed 12" wide Troffer and 24" wide Mobilex allow greater freedom of placement under space limiting structural and mechanical elements. Can be installed in all types of plaster and acoustical ceilings.

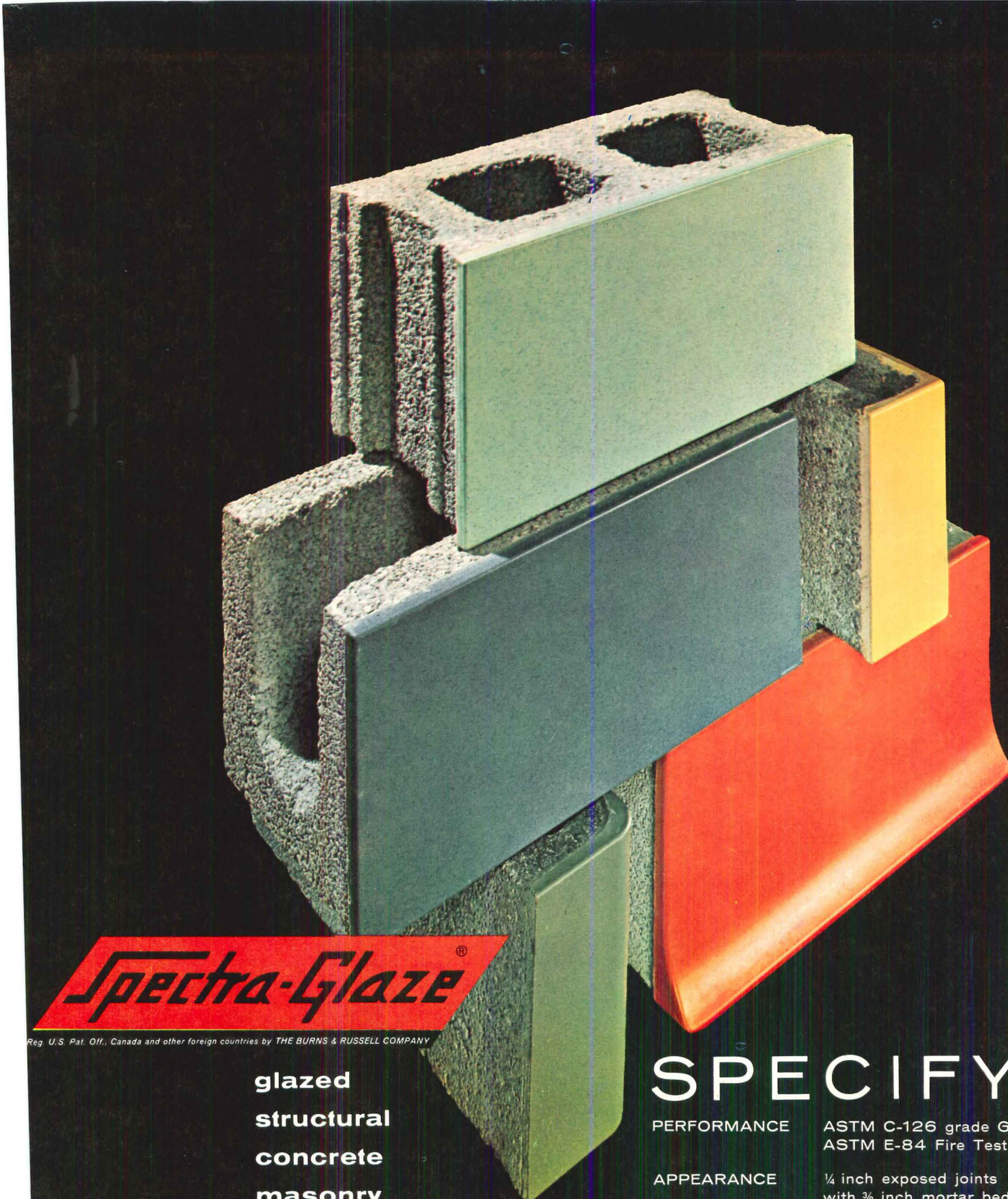


POLARIZING 45 LIGHT PANELS
FIBERGLAS
DAY-BRITE



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

DAY-BRITE LIGHTING, INC. • St. Louis, Mo. • Tupelo, Miss. • Santa Clara, Calif.



Spectra-Glaze®

Reg. U.S. Pat. Off., Canada and other foreign countries by THE BURNS & RUSSELL COMPANY

glazed structural concrete masonry units

SPECIFY

PERFORMANCE	ASTM C-126 grade G ASTM E-84 Fire Test
APPEARANCE	¼ inch exposed joints with ⅜ inch mortar bed
BY NAME SPECTRA-GLAZE	for ECONOMY inherent in block construction

The only glazed concrete block internationally manufactured in 27 locations to a single code of quality control standards.

Ⓢ SEE SWEET'S CATALOG 4g/Bu for details or write direct:

The Burns & Russell Company

Box 6063 Baltimore 31, Maryland

Area Code 301, 837-0720

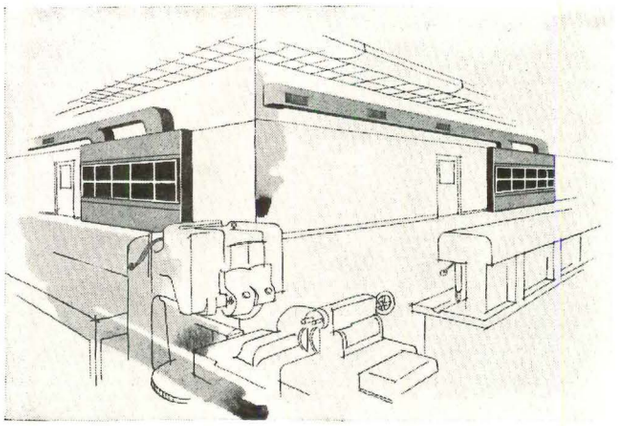
4 of many ways to use versatile Carrier Commercial Weathermakers

. . . available in 25, 30, 40 and 50 ton models—water, air or evaporative cooled!

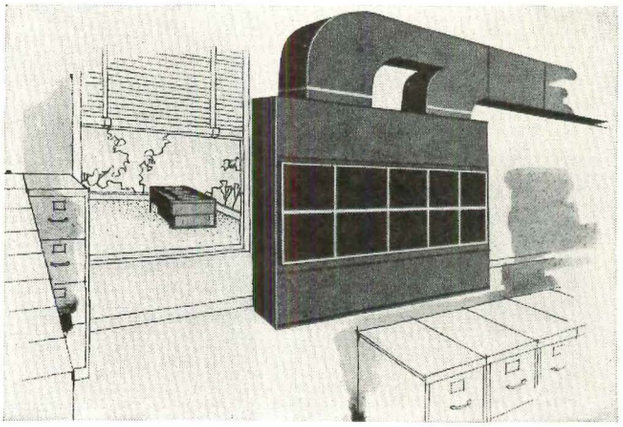
Carrier 41E Weathermakers* are designed for air conditioning large stores, offices and plants. Because they require less floor space per ton of capacity than any other comparable units and because of the flexibility of fan arrangement, they are adaptable for a great number of applications – regardless of a building's age, shape or condition. These Weathermakers may be installed indoors, in-the-space or outdoors.

Each of these heavy-duty models will provide all of the air conditioning functions—cooling, heating, dehumidifying, ventilating, filtering and circulating. Installed as single units or in multiples, they offer the advantages of low installation cost and low operating cost. For information, call your Carrier dealer, listed in the Yellow Pages. Or write Carrier Air Conditioning Company, Syracuse 1, New York.

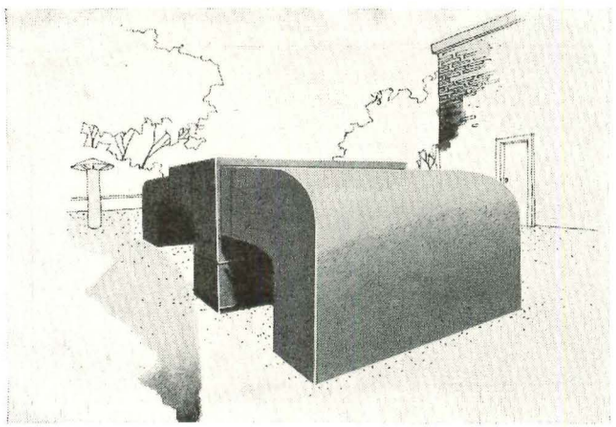
Reg. U. S. Pat. Off.



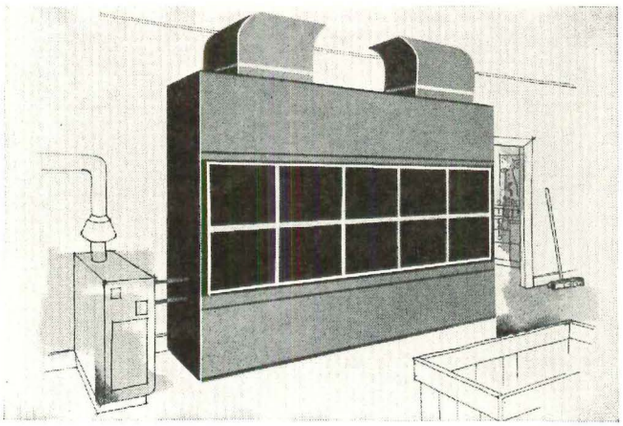
1. Weathermakers can be combined in many ways to fit various situations. Here, large units with short runs of ductwork handle a big manufacturing area, while another unit may handle the factory office space.



2. Where water is scarce or costly, there are Weathermakers that use no water at all. The air-cooled condensers can be located outside—on a roof or on the ground—in a horizontal or vertical position.



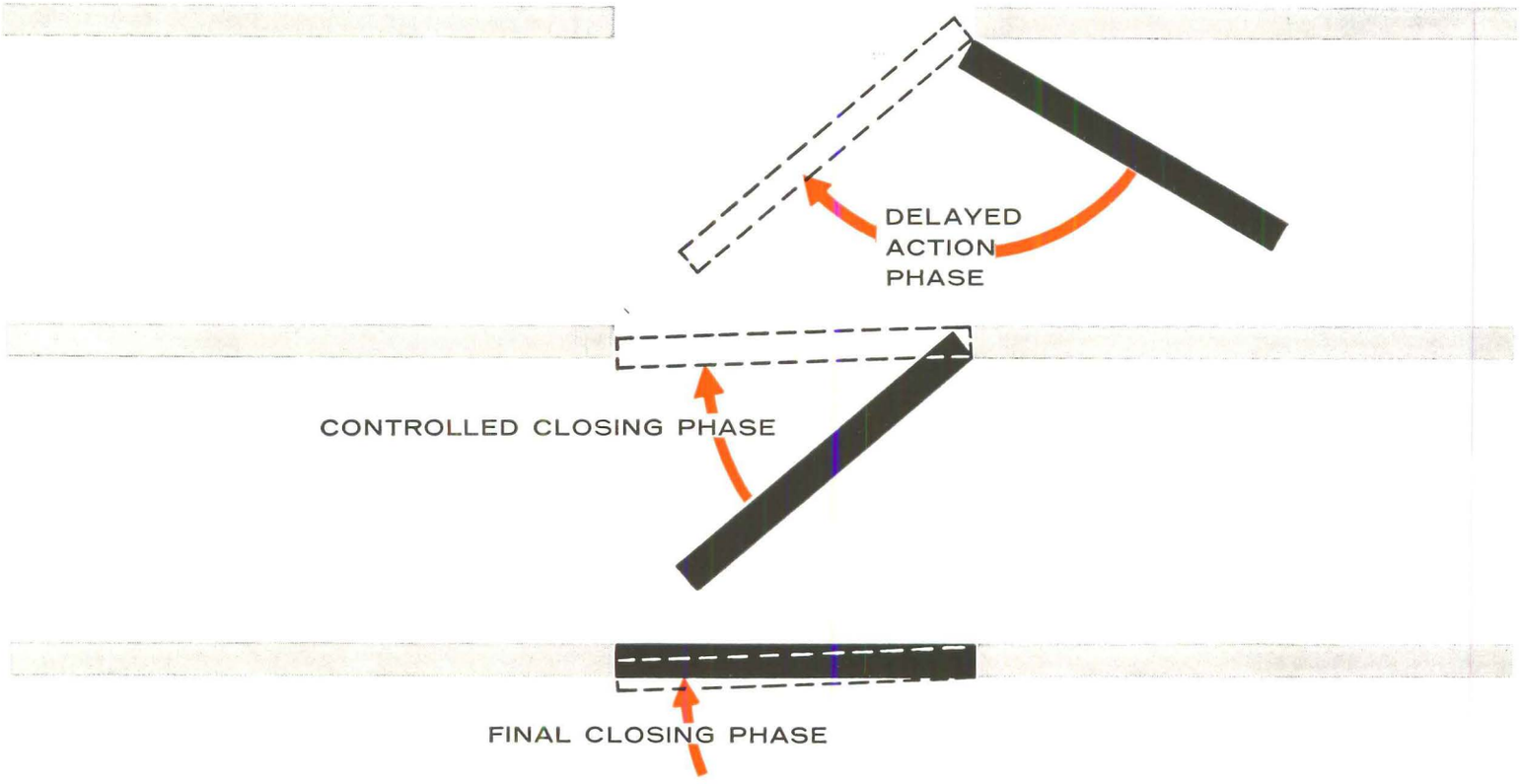
3. Another property of the 41E is durability. Galvaneal steel with baked enamel finish provides the ultimate in durability. A weatherproofing kit is available where an outdoor location is desired.



4. A 41E Weathermaker can provide heat in winter, too, by simply adding a special heating coil. Steam or hot water can be used from any source, or a small self-contained boiler can stand alongside the unit.

Carrier Air Conditioning Company

Delayed Action door control

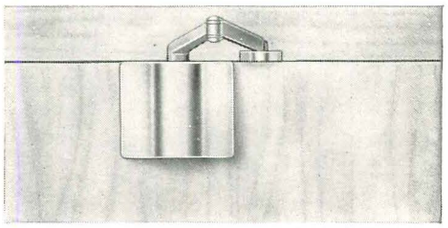


Famous CORBIN SERIES "400" CLOSERS . . . with selective DELAYED ACTION CONTROL

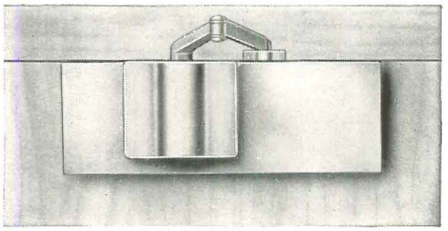
Where *positive* door control is essential, CORBIN SERIES "400" DOOR CLOSERS offer the ultimate in design features. Precision valving insures smooth, silent closing. Even extra-heavy doors, or doors subject to strong drafts, close *tight* . . . without a whisper!

The "400" features precision-timed valve system that controls the door-closing cycle as desired. DELAYED ACTION control valve permits door to remain open for a brief period, *as pre-selected*, before the closing action starts.

Available in surface and full mortise types . . . for corridor, cafeteria, auditorium, classroom, office, lab, hospital and institutional room doors . . . wherever silence, controlled action and positive closing are required. Prime coat or metallic finishes. Write for literature.



FULL MORTISE APPLICATION
—only 1¾" projection



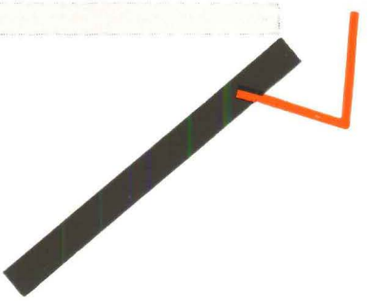
SURFACE APPLICATION
—less than 3½" projection

It pays to make it CORBIN—throughout!

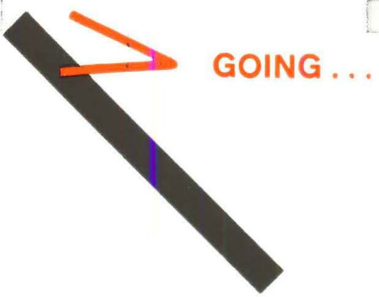
CORBIN®

P. & F. CORBIN DIVISION
THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

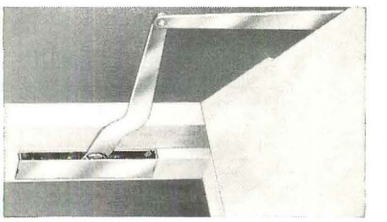
Concealed door control



GOING . . .



GOING . . .



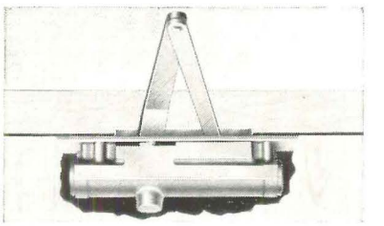
FULLY CONCEALED APPLICATION
—including both closer and arm

GONE . . . completely concealed

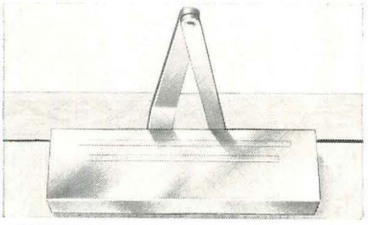
CORBIN SERIES "500" DOOR CLOSERS are compact, unobtrusive . . . styled to blend attractively with modern room decor. The COMPLETELY CONCEALED Model "500" hides both closer *and* arm. You see only trim, clean lines to complement today's smart styling.

CORBIN-engineered valving provides positive closing and latching. Silent, smooth performance. Hold-open setting for any point up to 180°. *Identical* locations on all interior and exterior doors—both wood and metal—for fast "production-line" installation.

Series "500" Closers are available in surface, mortise and fully concealed types . . . for doors in schools, hospitals, commercial establishments, institutions, offices . . . wherever silence, controlled action and positive closing are essential. Prime coat or metallic finishes. Write for literature.



MORTISE-APPLIED MODEL "500"
—with closer concealed



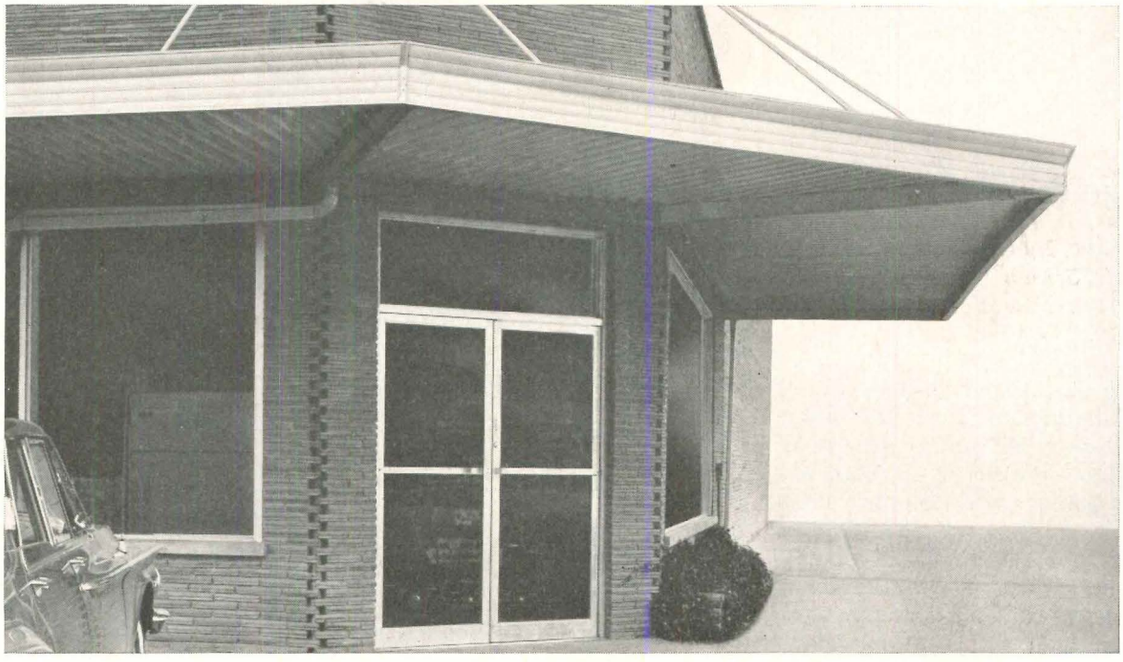
SURFACE-APPLIED MODEL "500"
—blends harmoniously
with all interiors

It pays to make it CORBIN—throughout!

CORBIN®

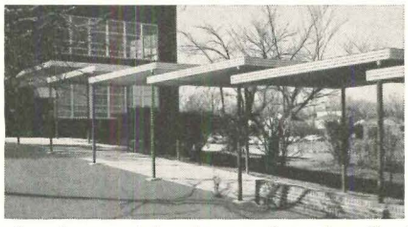
P. & F. CORBIN DIVISION
THE AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

THE NEW WAY TO PUT UP A GOOD FRONT



Forget the old massive approach of steel and concrete – with lots of "dead load." Use light, strong structural aluminum in this completely new approach for marquees, store fronts, walkways, canopies: the H-D Portiko.

It looks great. Initial cost is low. It's an integrated roofing system that you can custom-style to meet your most exacting specifications.



How's this for design versatility: You can select from six different types of facia, from a slim 4½" straight face to a big 11½" high facia with a bevelled extender to give a cornice effect. All facias are slotted to retain color trim aluminum strips in an almost unlimited range of color combinations.

Projections? Up to 16 feet without supports. Up to 24 feet with supports. Widths are unlimited. You can use overhead or a wide variety of upright supports. Aluminum panels are available with either baked enamel or mill finish. Facias, either anodized or mill finish.

We will be happy to send you the H-D Portiko 1962 Architects' Catalog, or have one of our representatives call. Write: Bridgeport Brass Co., Hunter Douglas Division, 30 Grand Street, Bridgeport 2, Conn.

H-D portiko®

Drawing by Gordon Cullen
—from *Townscape*

Design for Towns

TOWNSCAPE. *By Gordon Cullen. Reinhold Publishing Corporation, 430 Park Ave., New York 22. 315 pp., illus. $10.*

Wasting little time on just words (his introduction runs less than seven pages), Mr. Cullen gets right to business—townscape—by illustrating his points with some few hundreds of drawings and photographs.

"If I were asked to define townscape," he says at one point, "I would say that one building is architecture but two buildings is townscape." Readers who have followed Mr. Cullen's articles on this subject in the British journal, *Architectural Review,* will recognize this as too narrow a definition altogether: townscape is anything as large as a middle-sized town (London, by this definition, is many townscapes), or anything as small as a fireplug.

Although he never explains why he chooses the term "townscape" rather than the more familiar city planning, one of Mr. Cullen's reasons for this distinction may be to remove himself from older definitions of the latter. He certainly does not display much interest in Baroque planning, let alone Beaux Arts planning. He gets no kick from monotony, however rhythmical, let alone "featureless" modern projects. His approach might be called English picturesqueness intellectualized. The intimate scale, the walking distance, the vivid, or even incongruous, detail which many American tourists treasure among their memories of England are basic to Mr. Cullen's approach. This approach is so inclusive as to be almost indefinable, but it can perhaps be indicated by quoting a few headlines: Closure, Legs and Wheels, Outdoor Publicity Trees Incorporated, Here and There (or This and That); and a few subheads: Mystery, Animism, and Taming with Tact.

In addition to general observations on townscape, Mr. Cullen has included analyses of existing towns and some design proposals of his own.

The drawings, as might be expected, since they were done by Mr. Cullen, are excellent; the photographs are handsome; the writing is amusing; and the entire performance is absorbing.

Paperbacks

LOUIS SULLIVAN. *Prophet of Modern Architecture. By Hugh Morrison. W. W. Norton & Company, Inc., 55 Fifth Ave., New York. 320 pp., illus. $1.95, paperbound.*

Hugh Morrison's biography on Sullivan, copyrighted in 1935, has become an acknowledged classic. Subsequent biographers may have disagreed with a few of his conclusions, but without doubt they have benefitted from his research, and, just as undoubtedly, enjoyed his good writing. The book is now available for $1.95.

ENGLISH CATHEDRALS. *By John Harvey. B. T. Batsford, Ltd., London published in U.S. by W. W. Norton Company, Inc., 55 Fifth Ave., New York. 188 pp., illus. $1.50 paperbound.*

This is a reprint of an earlier general history of English cathedrals, describing them chronologically in terms of design, decoration and building history. The photographs, even in small reproductions, are excellent.

LEARNING TO LOOK. *By Joshua C. Taylor. Phoenix Books, The University of Chicago Press, 5750 Ellis Ave., Chicago. 152 pp., illus. $1.95, paperbound.*

Based on material covered in the University of Chicago's required course in humanities, this "introduction and handbook" covers the fundamentals of "seeing"—composition, color, perspective—as well as simple explanations of the technical aspects of the visual arts—painting, sculpture, architecture, and the graphic arts. It is clearly designed to be used in conjunction with further illustration and discussion.

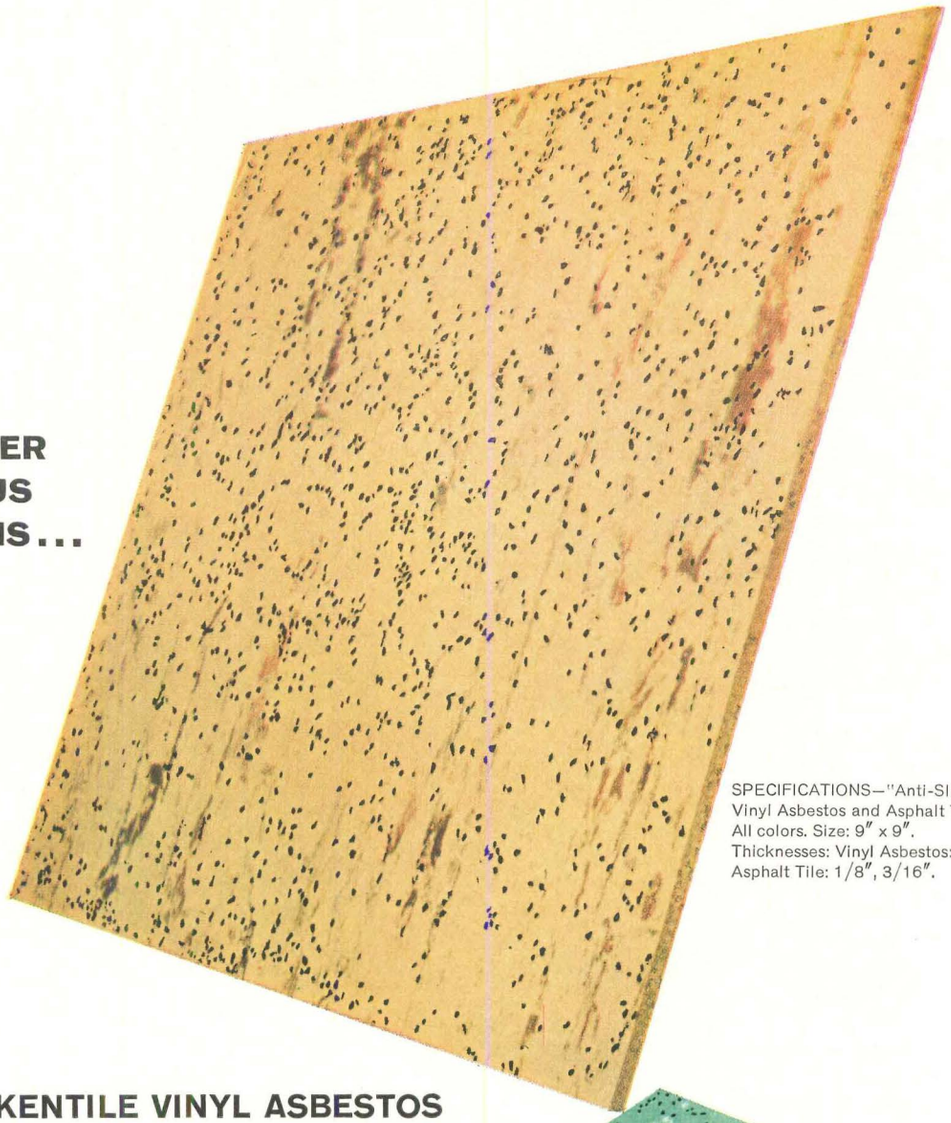
Hotel Design

HOTELS, RESTAURANTS, BARS. *By W. S. Hattrell and Partners. Reinhold Publishing Corporation, 430 Park Ave., New York 22. 146 pp., illus. $16.*

This is a concise, yet thorough, discussion of the specific principles bearing on the design of hotels (and motels), restaurants and bars. Photographs of exteriors and interiors of hotels from 19 countries illustrate the text. Information sheets give circulation plans, bedroom-block floor plans from hotels shown and mini-

continued on page 62

FOR RAMPS AND OTHER HAZARDOUS LOCATIONS...



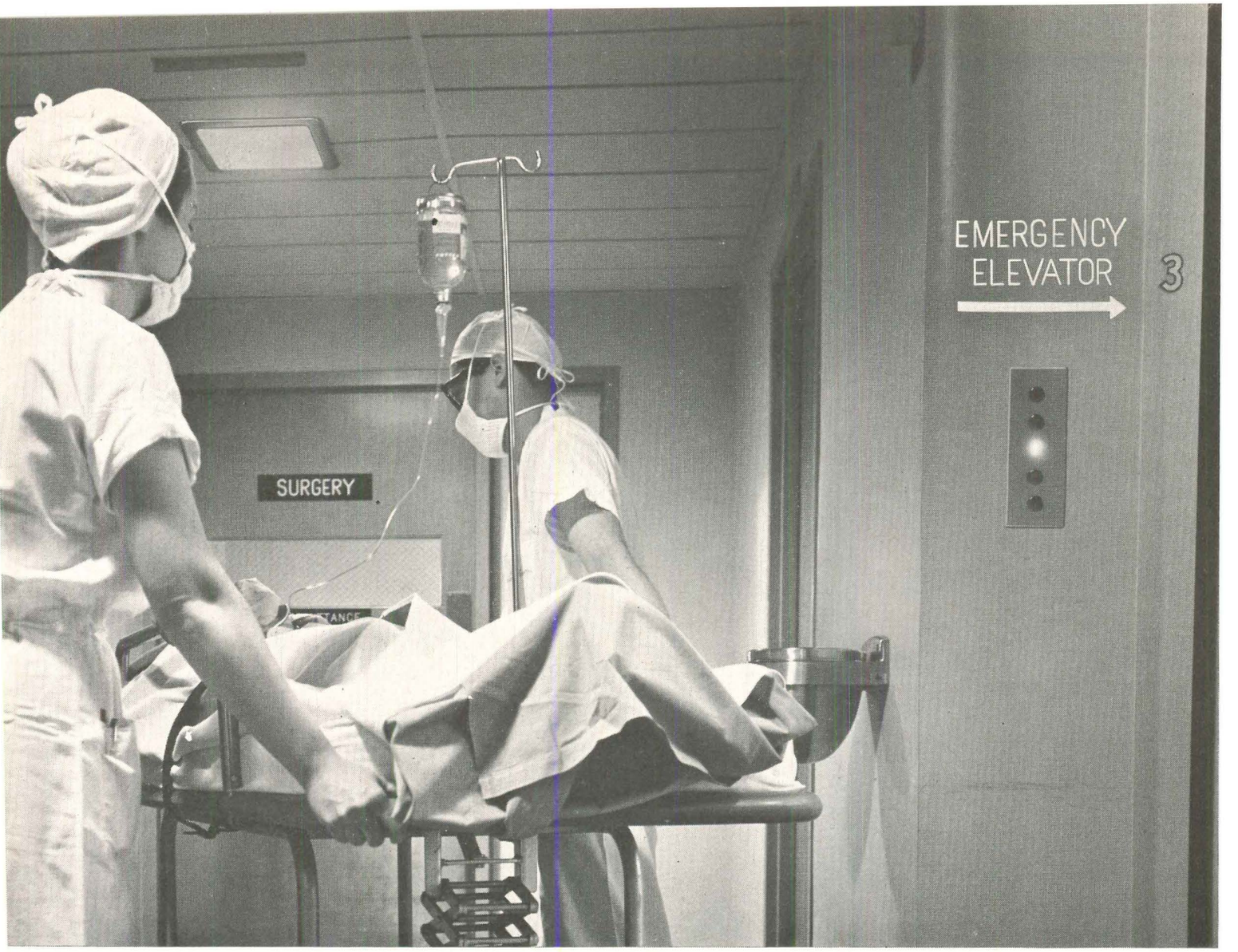
SPECIFICATIONS—"Anti-Slip" Vinyl Asbestos and Asphalt Tile. All colors. Size: 9" x 9". Thicknesses: Vinyl Asbestos: 1/8"; Asphalt Tile: 1/8", 3/16".

"ANTI-SLIP" KENTILE VINYL ASBESTOS AND KENTILE ASPHALT TILE

Kentile puts tile...and style...on a firmer-than-ever footing. Skid-resistant chips embedded into the tile at the factory add greater grip to "Anti-Slip" Kentile Vinyl Asbestos and Asphalt Tile. Available in all Vinyl Asbestos and Asphalt Tile colors, "Anti-Slip" Tile makes for unbroken color schemes where "Anti-Slip" meets regular tile. Call your Kentile Representative or consult Sweet's File.

KENTILE FLOORS

Visit the Kentile® Showroom in these cities: New York, Philadelphia, Cleveland, Atlanta, Kansas City, Torrance, Calif.



LIFE OR DEATH IS A MATTER OF MINUTES HERE

A moment's delay, a tragedy. Some hospitals today are amply protected against sudden power losses in Surgery, Obstetrics and Emergency. But the few minutes lost between floors in a stalled elevator, or the jostling ride up a flight of darkened stairs on a stretcher could be too much for a patient hanging on to a wisp of life.

This tragedy can't happen at Lutheran General Hospital in Park Ridge, Illinois. One of its elevators is on the hospital's emergency power circuit which in turn is connected to a 300 KW Caterpillar D353 Diesel Electric Set. When a power failure occurs, the Cat standby unit automatically picks up the entire emergency load in just six seconds. Patients are hardly aware of the dimming lights.

Whether the emergency lasts for six seconds or 24 hours, the dependability of Cat Electric Sets helps turn the crisis into routine procedure.

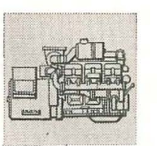
Today the problem for the architect-engineer-contractor team engaged in hospital construction is not standby power, but how much power is needed to cover every emergency requirement. Minimum requirements for the modern hospital include at least one maximum-rise elevator in every building, operating, delivery and emergency rooms, nurseries, epidemic wards, blood bank and bone bank refrigeration equipment, all psychiatric patient areas, x-ray, incubators, iron lungs, nurses' call systems, intercoms, stairways designated as fire exits, and all corridors leading to exits.

How big a standby unit will meet these exact load requirements? How reliable is it? Does it have the correct voltage and frequency characteristics? Or the safest wiring arrangement? Will the unit fit into the space available? These are vital questions in the engineering of a modern emergency power installation. The man to help solve these problems is the Caterpillar Dealer in your area. He has a practical knowledge of the modern, diesel-powered standby unit and the skill and experience to help you complete installations that will meet every emergency requirement.

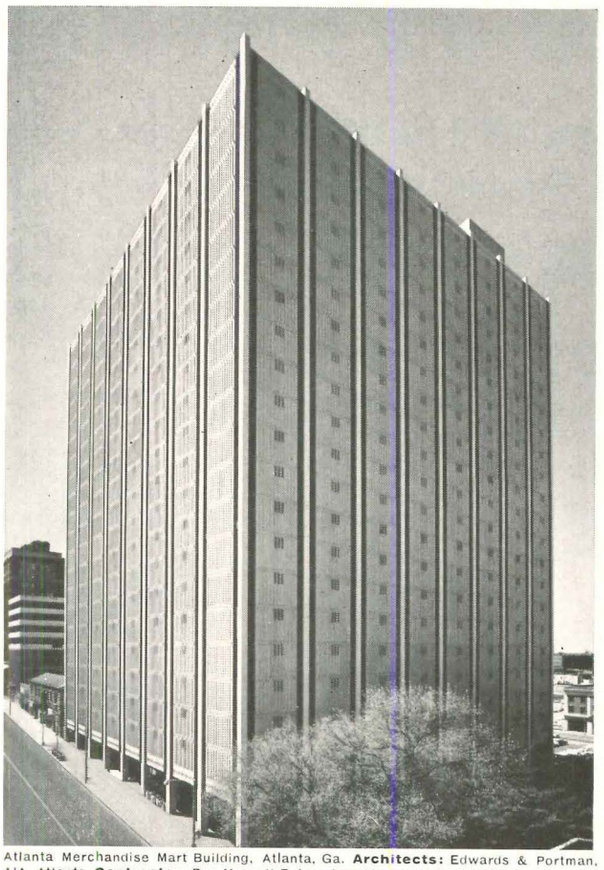
And of course he has the most complete line of diesel-powered and natural gas powered emergency standby power units available today—ranging from 30 KW to 600 KW as single units. The next time you start a hospital project, call him. He's listed in the Yellow Pages. Or write direct.

CATERPILLAR

ENGINE POWER



Engine Division, Caterpillar Tractor Co., General Offices, Peoria, Illinois • Caterpillar Americas Co., Peoria, Illinois • Caterpillar Overseas S.A., Geneva • Caterpillar of Australia Pty. Ltd., Melbourne • Caterpillar Brasil S.A., São Paulo • Caterpillar Tractor Co. Ltd., Glasgow • Caterpillar of Canada Ltd., Toronto • Caterpillar France S.A., Grenoble



Atlanta Merchandise Mart Building, Atlanta, Ga. **Architects:** Edwards & Portman, AIA, Atlanta. **Contractor:** Ben Massell Enterprises (Consolidated Realty Investments, Inc.,) Atlanta. **Structural Engineer:** Jack K. Wilborn, Atlanta. **Precast Concrete Panel Manufacturer:** "Mo-Sai" by The Mabie-Bell Company, Greensboro, N. C

EDWARDS & PORTMAN, AIA,

selected reinforced precast white concrete for the curtain walls of this 23-story skyscraper, largest commercial building in the Southeast. The 2,000 1½-ton sandwich panels were made with ATLAS WHITE portland cement and exposed quartz aggregate... with fins of finer quartz to create changing shadow patterns as the sun moves across the Georgia sky. Averaging 5′ 7½″ by 11′ 3½″, the interlocking panels are welded to steel angles and bolted to the concrete framework. In cross section, the panels have 1¾″ of white concrete, 1½″ of rigid insulation, and another 1¾″ of concrete. □ More architects are recognizing the structural as well as the decorative qualities of precast concrete. It can be cast in many sizes, shapes, colors and textures. □ For specfic details, consult your local precast concrete manufacturer. □ For literature, write Universal Atlas, 100 Park Avenue., New York 17, N. Y.

Universal Atlas Cement
Division of
United States Steel

"USS" and "ATLAS" are registered trademarks WF-57

COMPLETELY AIR CONDITIONED SCHOOL

Cooling AND Heating At A Cost Comparable To A Conventional Central Heating System

Each classroom has its own individual Norman Heating, Ventilating and Cooling System For Complete Room Comfort Control

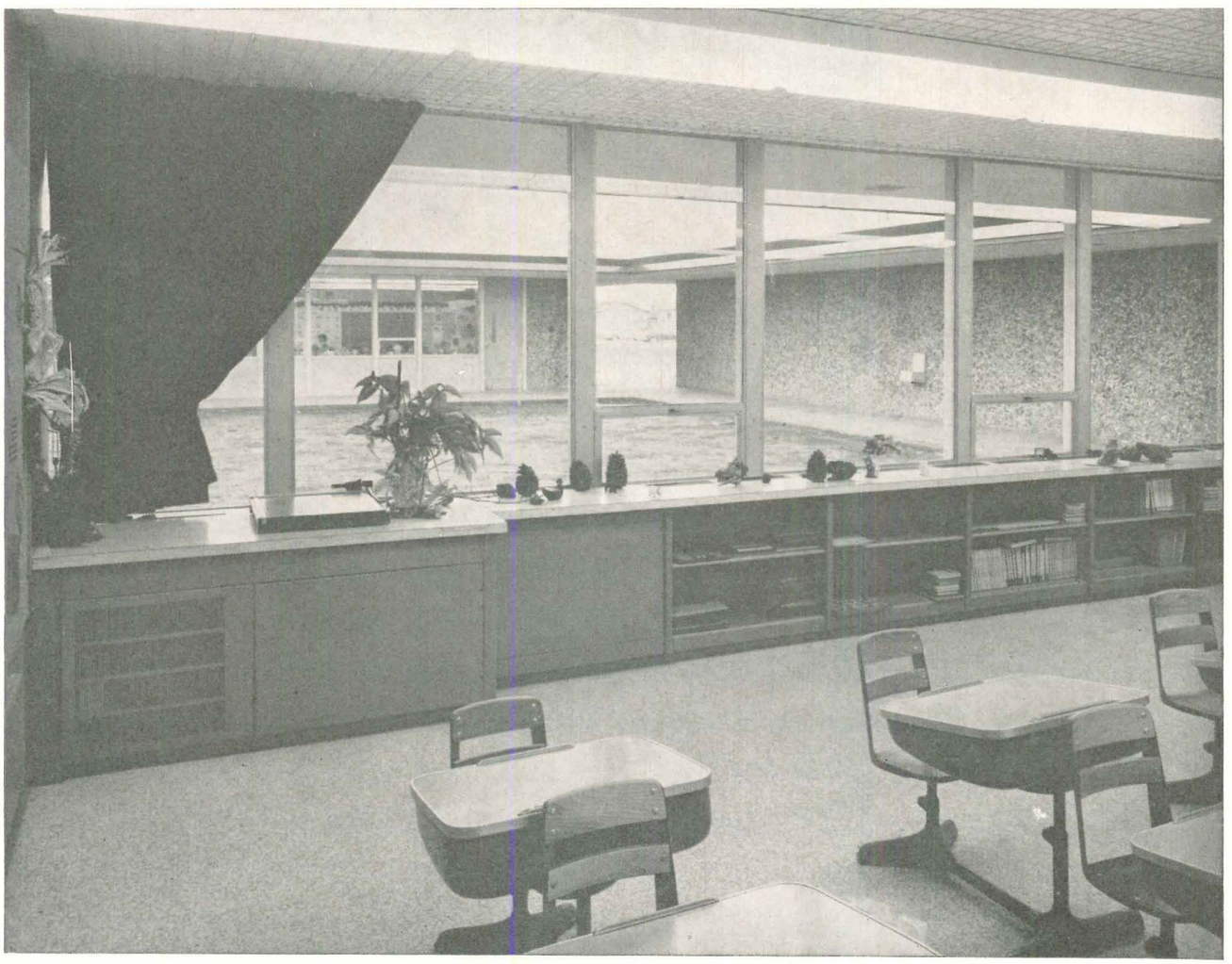
Norman Schoolroom Systems offer the bonus benefit of air conditioning. By designing this school around Norman Classroom Packages, it is completely air conditioned for year-round comfort. Yet the cost compares favorably with a conventional central heating system alone.

Each of the 12 classrooms has its own Norman Heating, Ventilating and Cooling System with Util-i-Duct bookshelf sections providing efficient air distribution. Three-ton air cooled condensing unit for each room is mounted on the roof, eliminating any noise in the classroom.

No costly extra building space for a central heating plant. No duct tunnels or pipe trenches. No chimney required. Future expansion is simplified. Just install a Norman individual classroom unit as each new room is added. And Norman flexibility permits air conditioning at the time of original installation or at a later date, if preferred.

Want to see the complete facts and figures on this completely air conditioned Fairbanks Elementary School, and descriptive literature on Norman Systems? Write today.

Norman®
DIVISION OF
JOHN J. NESBITT, INC.
1152 Chesapeake Ave., Columbus 12, Ohio



Fairbanks Elementary School: *Del Paso Heights, Sacramento County, Calif. Henry H. Kossow, Superintendent* ■ Architects: *Carter Sparks and Donald Thaden, Sacramento* ■ Engineer: *Leonard S. Stecher, Sacramento* ■ Contractor: *Emergency Refrigeration, Sacramento*

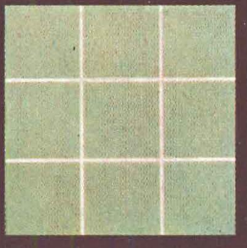
Stylon CERAMIC TILE
IN THE WEST: REDONDO

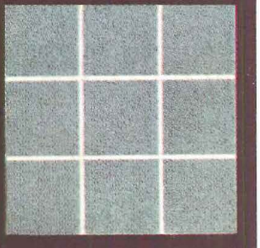
now...the elegance of glazed mosaics

with the installation advantages of conventional tile

Stylon creates two new interior tiles! Glazettes and Crystalettes, available **only** from Stylon, capture the charm of mosaics without laborious setting. How? By scoring conventional 4¼-inch tiles into 9-tile squares . . . far easier to handle, and mounted on sheets, faster to install. Remarkably durable, bright-glazed Glazettes and crystal-glazed Crystalettes come in fashion colors that harmonize with all other Stylon ceramic tile colors.

SPRINGTIME HARMONY of blues and greens in new bright and crystal glazed mosaics glamorize this 10′ x 16′ master bath. Floor, Ice Green Crystalettes; tub floor, Regency Blue Crystalettes. Right wall, Surf Green Glazettes; behind sink, Regency Blue Glazettes; rear tub wall, Light Blue glazed wall tile. Counter, Ice Green Crystal Glaze. Design by the Stylon Design Department. Tile Installation by Bruno Ferroli.





In this handsome master bath, Crystalettes, Glazettes and every other piece of tile is Stylon Premier Grade, individually hand-selected for absolute flawlessness. Do **your** bathroom designs full justice with ceramic tile that has Stylon's exclusive controlled quality and ease of installation. Send for folder on 36 Complete Coordinated Color Schemes . . . created by Stylon and famed color consultant Lee Childress to aid in your selection and creative use of color in ceramic tile.

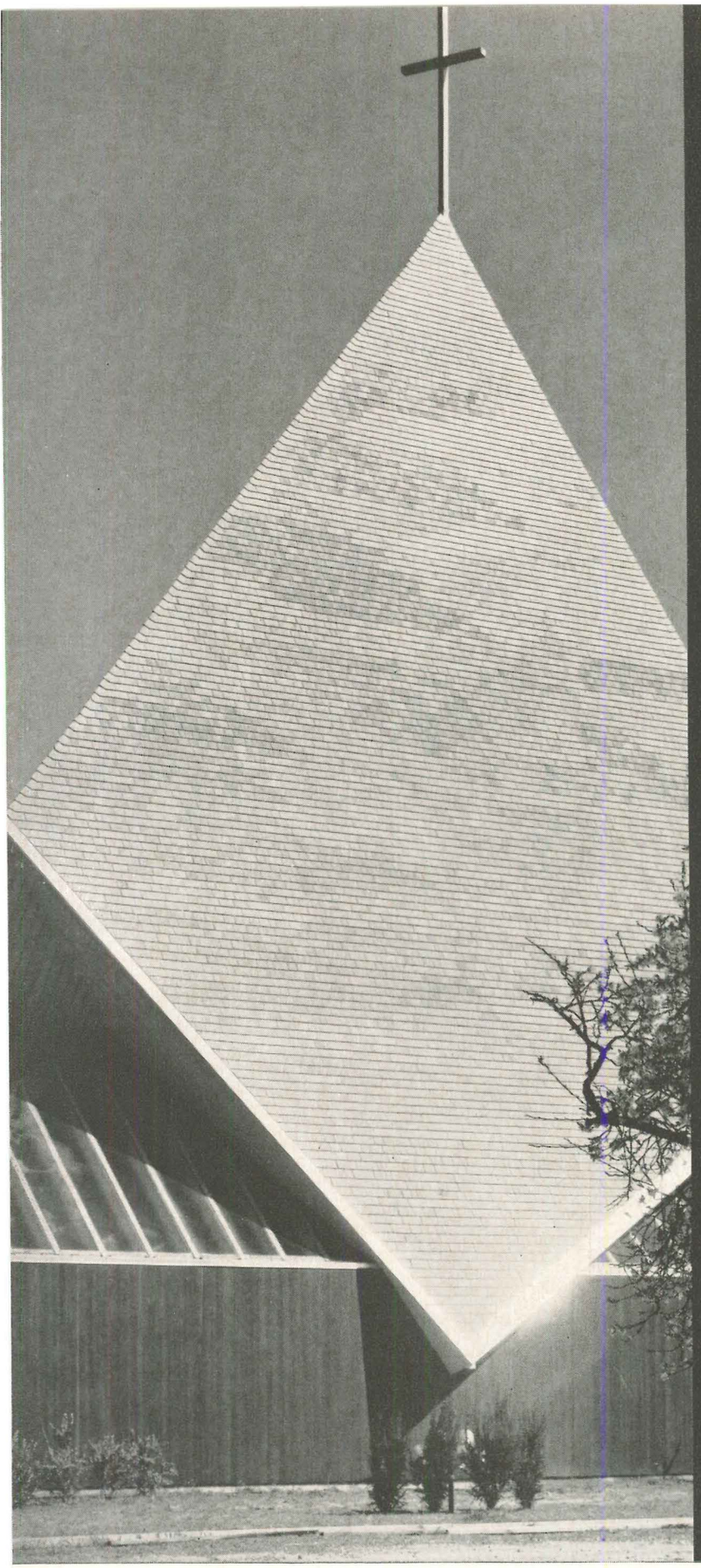
STYLON CORPORATION • MILFORD, MASS.

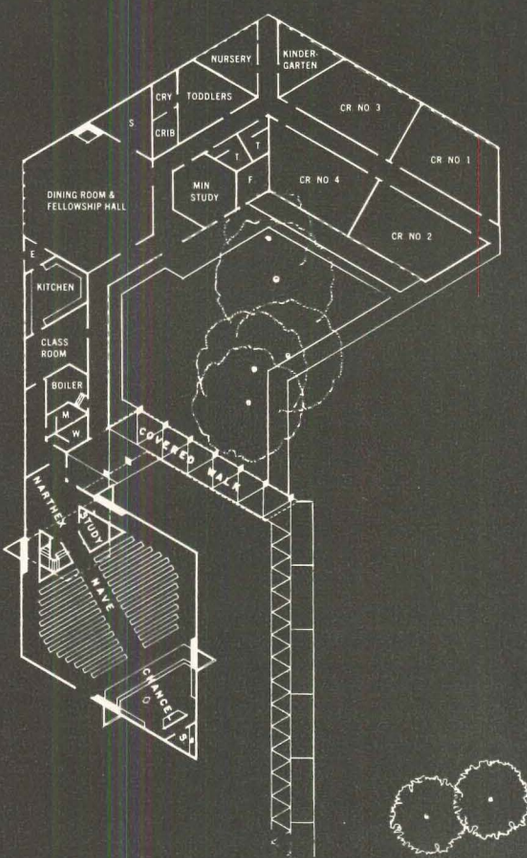
Stylon Corporation • Dept. AR-2, Milford 1, Mass.
Please send me: ☐ Crystalettes and Glazettes Folder
☐ Stylon's Coordinated Color Planner

Name.....

Address.....

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



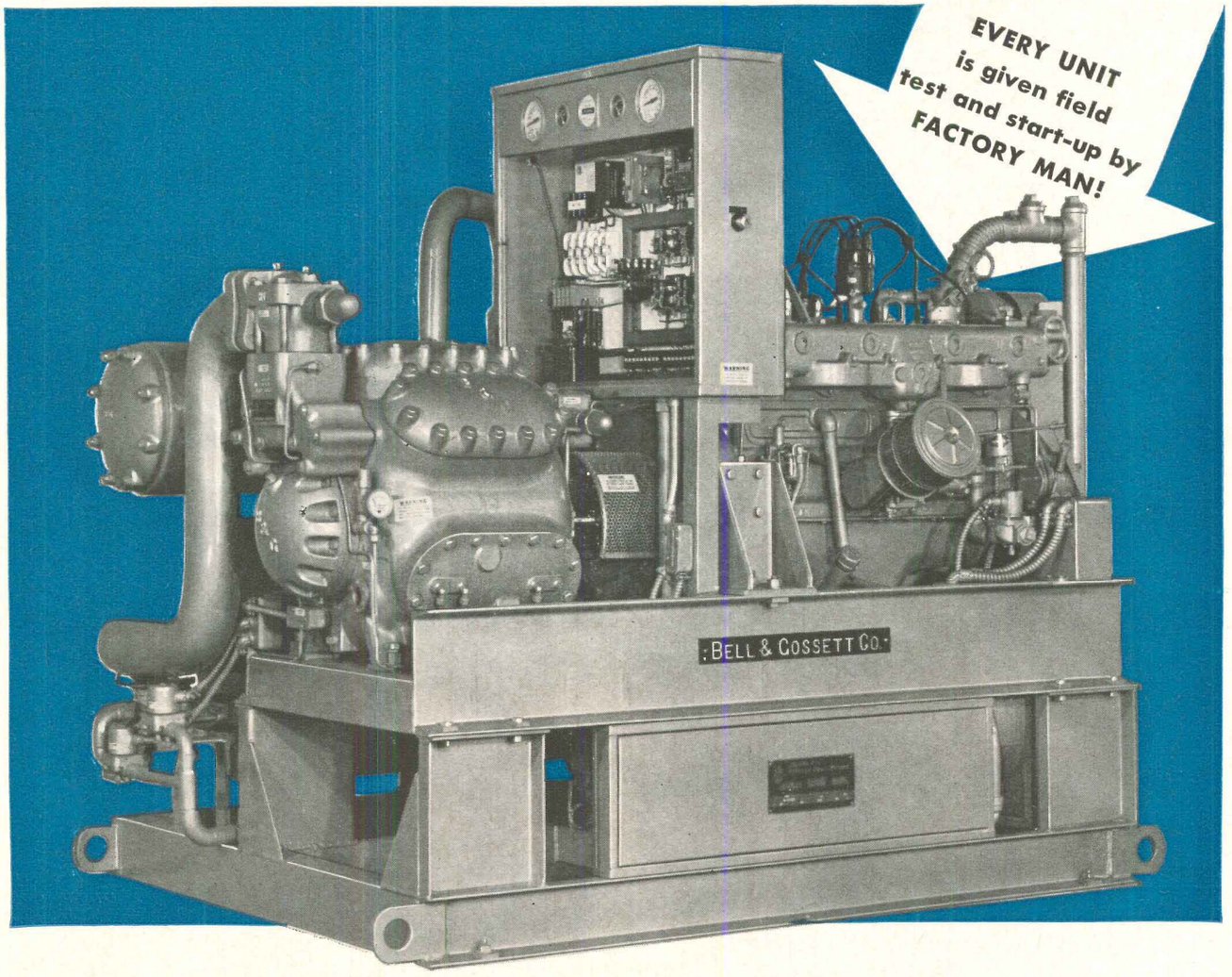


The First Congregational Church of Milwaukie, Oregon / Architect: Warren Weber, A.I

The articulate expression of Red Cedar Shingles

This is an unique material. No imitation roofing matches its natural color, texture and line. Remarkably storm and wind-resistant, it ages gracefully, in fact gains character with the years. If you would like complete information about applications and specifications for this classic material, write: Red Cedar Shingle Bureau, 5510 White Building, Seattle 1, Washington, or 550 Burrard Street, Vancouver 1, B.C.

RED CEDAR SHINGLES



NOW *GAS ENGINE POWERED...*

B&G Package Liquid Coolers, Condensing Units and Engine Compressors are now available as "package" units powered by integral gas engines. These are the only units with all major components (except the engine) *designed, built and guaranteed by one manufacturer.*

B&G gas powered units are equipped with an industrial type, low speed gas engine developed for minimum oil and fuel consumption. The engine operates at a maximum of 70% of rated horsepower, for longer life and minimum maintenance.

Additional power plant features include an engine oil auxiliary tank that permits 2000-hour operation without adding oil...automatic and adjustable engine warm-up... 100% no-load start at each start-up...automatic choke...capacity control effected by automatically varying engine speed in addition to varying the B&G compressor unloading.

A particularly outstanding feature of all three units is the compressor, an achievement in advanced design and precision manufacture. All compressors have *one* bore—a few interchangeable parts service all units.

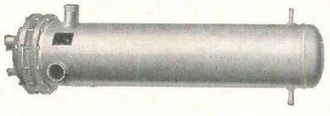
B&G "package" cooling units incorporate many special features as standard equipment which in competitive units are "extras" or are simply not available. Send for descriptive literature.

BELL & GOSSETT
COMPANY

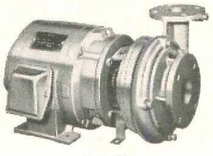
Dept. HE-32, Morton Grove, Illinois

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

A FULL LINE OF REFRIGERATION AND AIR CONDITIONING "PACKAGES" AND COMPONENTS

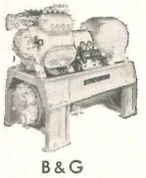


B&G Evaporator



B&G
Centrifugal Pump

B&G Condenser



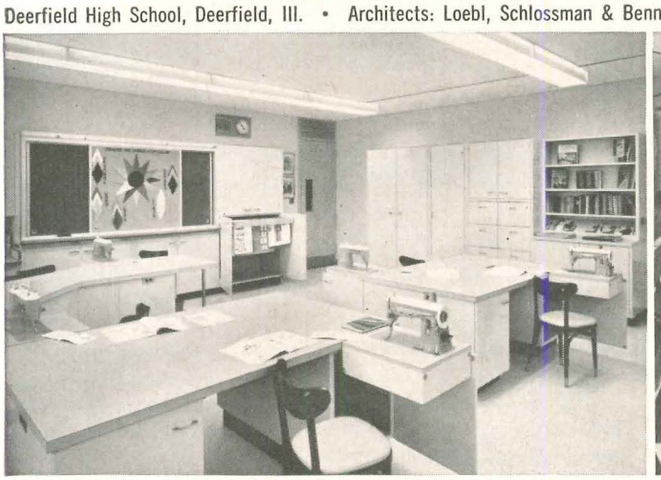
B&G
Condensing Unit

teaching *is easier...* learning *is fun*

FOODS

in custom-designed classrooms by St. Charles

Deerfield High School, Deerfield, Ill. • Architects: Loebl, Schlossman & Bennett, Chicago • St. Charles Representative: I. P. Rieger Co., Bellwood, Ill.



CLOTHING

CLOTHING

Both teacher and pupils work so much better in a St. Charles *custom-designed* school installation. That's because beauty and durability are built into every piece of St. Charles equipment along with the quality that brings long-range economy. And, of course, St. Charles *flexibility* means that each installation meets the individual teaching need. If you're planning new classrooms — or remodeling old ones, check to see how much more you get with St. Charles — the ultimate in quality school equipment.

Write for free catalog: "St. Charles Custom School Storage Furniture." Available at request on your letterhead, St. Charles Manufacturing Co., Dept. ARS-**7**, St. Charles, Ill.

St. Charles

CUSTOM SCHOOL STORAGE FURNITURE

School Storage Furniture for Food, Clothing, Science Labs • Arts & Crafts • Elementary Classrooms

Required Reading

continued from page 52

mum space requirements for each detailed area in a hotel.

W. S. Hattrell and Partners is a large British architectural firm which has worked extensively for caterers and brewers. The book, printed in Britain, includes some British nomenclature. J. R.

For the Aging

CENTERS FOR OLDER PEOPLE. *The National Council on the Aging, 49 W. 45th St., New York 36. 120 pp. $2.*

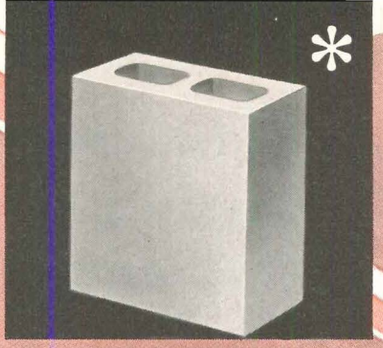
Based on the findings of the Project on Standards for Centers and Club Programs for Older People, this Report is divided into two sections. The first covers the general problems to be solved in establishing and maintaining community centers for the aging. The second section concerns itself with general standards—space facilities, safety, lighting and acoustics—to be met in the design of these centers. It also includes check lists for space planning.

The report was written by the Project Director, Jean M. Maxwell, on behalf of the two large committees involved. Funds for the study were provided by a two-year grant from Frederick and Amelia Schimper Foundation.

The Adams Abroad

ROBERT ADAM AND HIS CIRCLE. *By John Fleming. Harvard University Press, Cambridge, Mass. 394 pp., illus. $7.50.*

Discussion of architecture is, of course, unavoidable in a biography of the Adams brothers. This book, however, is primarily a study of their social and cultural education in Italy, as revealed by their letters. The author, in his introduction, announces plans for a subsequent volume to deal with the influence of these travels on their work. In the meantime, this book will interest mainly scholars and those readers who, apart from architecture, are interested in learning how the Grand Tour was "done" in the more leisurely 18th century.



12 INCH HIGH

There's an exciting **new** size block!

12 inch high concrete block can:

- further enhance the beauty and design of concrete masonry
- greatly enlarge the scope of wall design possibilities
- greatly reduce wall volume costs
- retain the traditional advantages of permanence

Architects, contractors, and block producers are reporting enthusiastic acceptance of the high quality, uniform texture, and pleasing design of 12 inch high blocks produced by Stearns Electromatic block machines. Contact Stearns for the nearest supply source.

* Modular sizes:
3⅝" to 11⅝" widths,
11⅝" to 23⅝" lengths.

STEARNS
MANUFACTURING COMPANY · INC
ADRIAN • MICHIGAN

COMPLETE CONCRETE PRODUCTS PLANT EQUIPMENT

How Bastian-Blessing helped Southland Lanes attract 30% more business

Open Operation of Snack Bar Achieves Two Goals

"We aimed at (1) delivering our food orders in the fastest possible time, and (2) we planned doing this work with a minimum of personnel," says Mr. F. P. Collins, President of Southland Lanes, Inc., of Lexington, Kentucky. "We achieved both goals, and we are now netting a cost savings over a conventional restaurant operation that is paying off the cost of our Bastian-Blessing equipment in twelve months time."

Careful planning resulted in a unique open design for free access without doors or enclosures to build impulse sales and accommodate maximum customers during peak periods without traffic jams. This free flow, with the snack bar in full view of customers at all times, nets Southland about 30% more business.

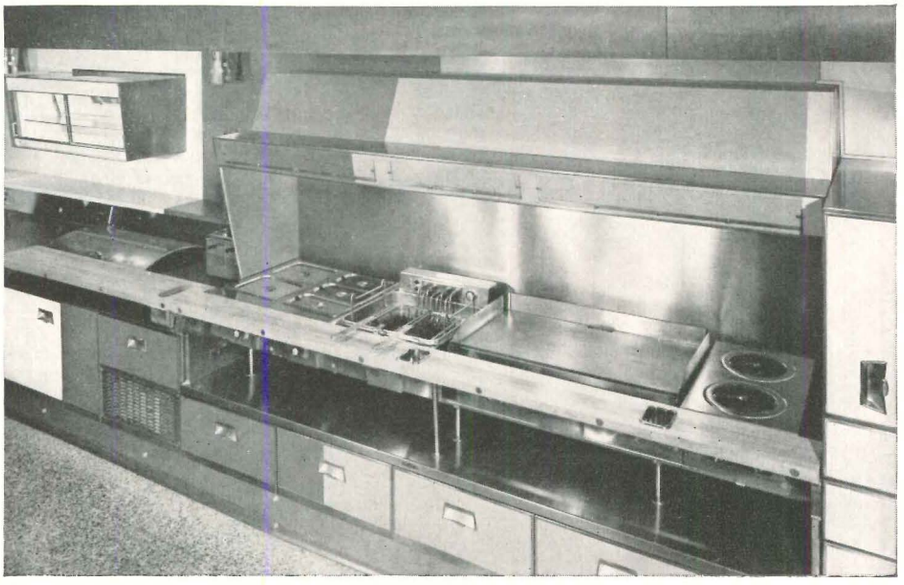
Winning first award in the Kentucky A.I.A. 1961 design contest was a natural outcome of the careful planning that went into every detail of this outstanding recreational facility. Interior decor is striking and colorful, enhanced by the attractive, smartly styled Fiesta equipment in harmonizing colors contributing substantially to the attractiveness of food presentation.

Write for Brochure F-100 for further information about FIESTA food service equipment.

BASTIAN-BLESSING

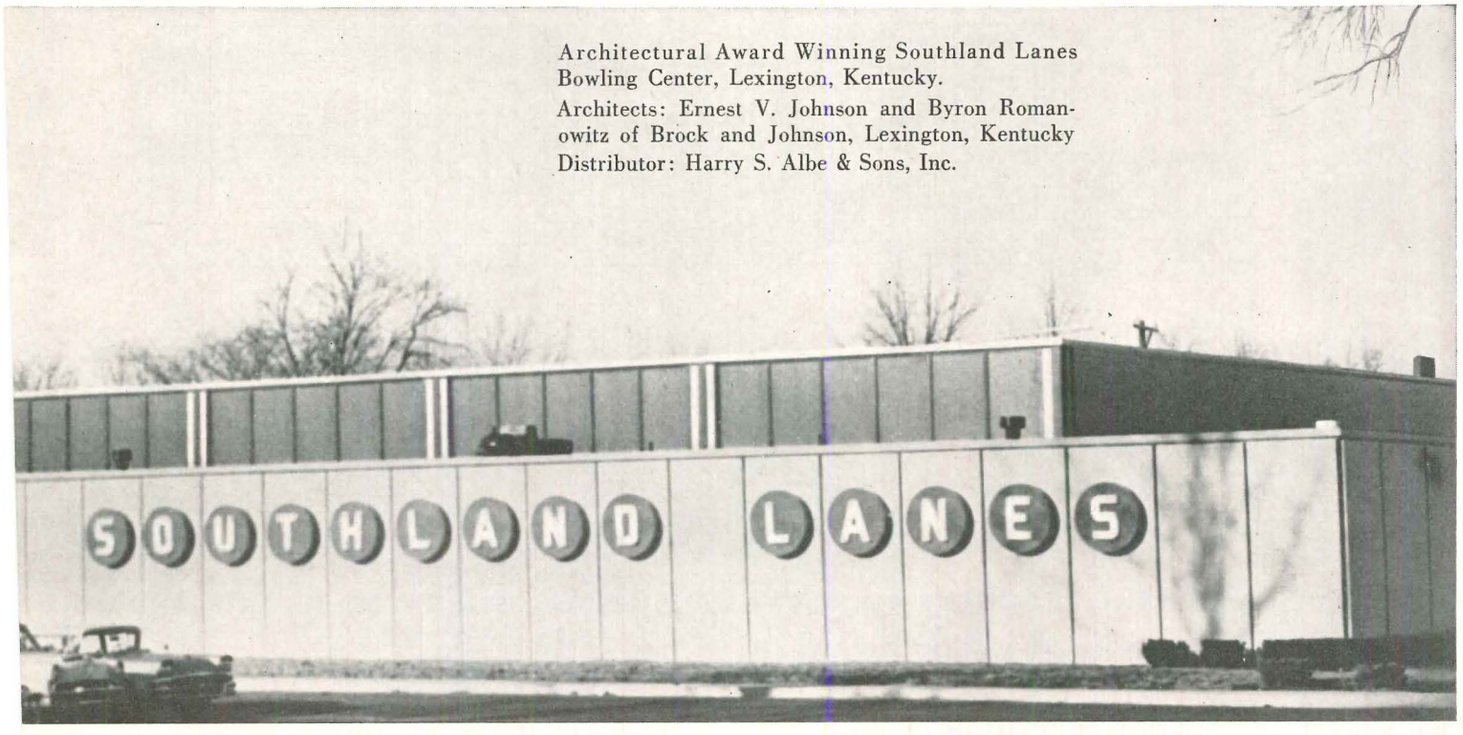
4201 West Peterson Avenue, Chicago 46, Illinois, Dept. 4-G.
World's largest manufacturer of Fountain-Food Service Equipment

Planned for efficient use of space and labor, the snack bar utilizes Fiesta equipment selected to keep waste motion to a minimum. A Fast-Serv® fountain with Flomatic® beverage dispensing station installed at the front counter provides fast "one-finger" service of soft drinks. All Fiesta equipment has quick-and-easy operating magnetic action doors, recessed handles, hair-line joints and the many other labor and cost saving features incorporated in the years-ahead design of Bastian-Blessing fountain-food service equipment.



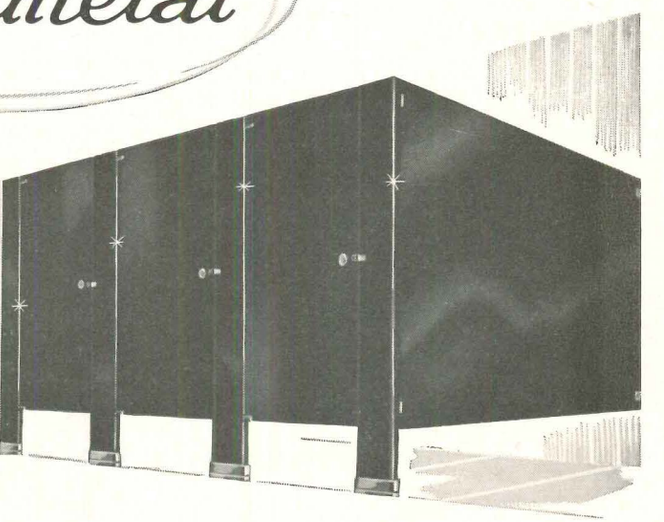
Fiesta back bar equipment faced with colorful plastic laminates harmonizes with the surrounding decor of the concourse . . . provides a fast-service, high-turnover "open" operation to invite sales. The griddle stand, designed for compactness and fast operation, has refrigerator, shelving, and sandwich units integrated within easy reach of the griddle man. Pass-thru Viewmatic® display case is kept replenished from the kitchen to save steps.

Architectural Award Winning Southland Lanes Bowling Center, Lexington, Kentucky.
Architects: Ernest V. Johnson and Byron Romanowitz of Brock and Johnson, Lexington, Kentucky
Distributor: Harry S. Albe & Sons, Inc.



Sanymetal®

LET'S DISCUSS PAINT

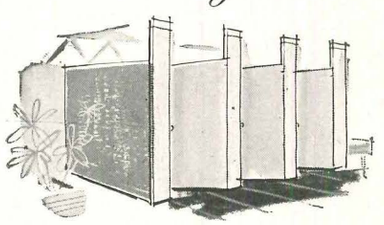


It takes the right combination of steel, steel coatings and paints to assure a long maintenance-free finish on toilet partitions. Independent laboratories have just concluded extensive tests on the new acrylic paints. The chart below tells the story . . . longer . . . far longer life . . . new beauty and low, low maintenance are all assured when you specify the right combination . . . hot dipped galvanizing under hard, baked-on acrylic paint . . . another development from Sanymetal . . . the leading producer of quality toilet partitions.

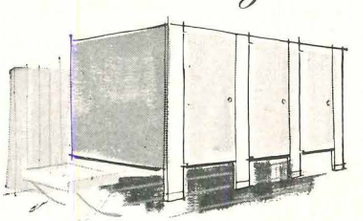
TEST	TYPE PAINT	TYPE STEEL COATING	
SALT SPRAY (20% Solution at 100°F.)	ALKYD-AMINE	ELECTROLYTIC	
		HOT-DIP GALV.	
	ACRYLIC	ELECTROLYTIC	
		HOT-DIP GALV.	
HUMIDITY (100% H. at 100°F.)	ALKYD-AMINE	ELECTROLYTIC	
		HOT-DIP GALV.	
	ACRYLIC	ELECTROLYTIC	
		HOT-DIP GALV.	
WATER SOAK (Immersion at 105°F.)	ALKYD-AMINE	ELECTROLYTIC	
		HOT-DIP GALV.	
	ACRYLIC	ELECTROLYTIC	
		HOT-DIP GALV.	
SYNTHETIC URINE	ACRYLIC	HOT-DIP GALV.	NO EFFECT
STAIN RESISTANCE	ACRYLIC	HOT-DIP GALV.	NO EFFECT (LIPSTICK, NAIL POLISH, CRAYON, HAIR OIL)
MAR RESISTANCE	ACRYLIC	HOT-DIP GALV.	EXCELLENT
ABRASION RESISTANCE	ACRYLIC	HOT-DIP GALV.	VERY GOOD (14 MILLIGRAMS LOSS • 1000 GRAM LOAD • CS-10 WHEEL)
HARDNESS	ACRYLIC	HOT-DIP GALV.	VERY GOOD (H—2H TEST)

Note: Complete test data available upon request.

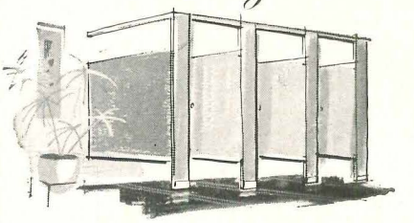
Century



Normandy



Academy



THE SANYMETAL PRODUCTS CO., INC. • 1689 URBANA ROAD • CLEVELAND 12, OHIO

AN URBAN SCHOOL DESIGNED BY PERKINS & WILL, ARCHITECTS
SPONSORED BY THE PHILIP CAREY MFG. COMPANY

PERKINS & WILL DESIGNS THE SCHOOL OF THE CITY

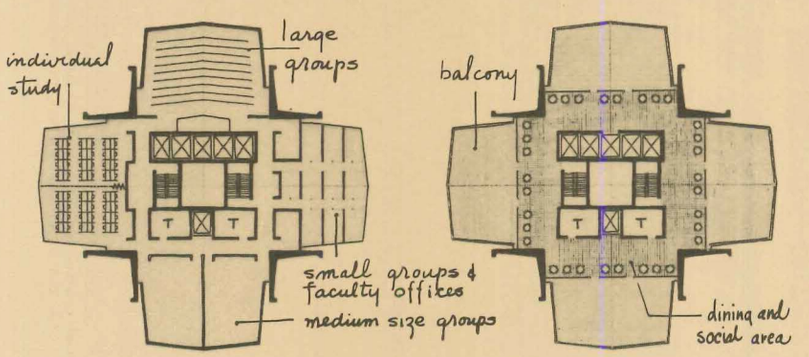
The city generates this exciting high school and community college.

Six compact school units, each on four floors for 480 students, are arranged vertically in a tower. The commons floor of each school group is served by its own elevator. In the low-rise building, and underground, are spaces for the specialized facilities which serve all six schools . . . administration, large assemblies, physical education, laboratories and shops, utilities and parking.

As in skyscraper office buildings, services for this urban school tower are concentrated in a central core with surrounding space open and flexible to accommodate the varied and changing educational program needs of today and tomorrow.

The tower, symbol of the city, identifies the school as a center for both student and adult. It occupies only 2 acres of valuable land.

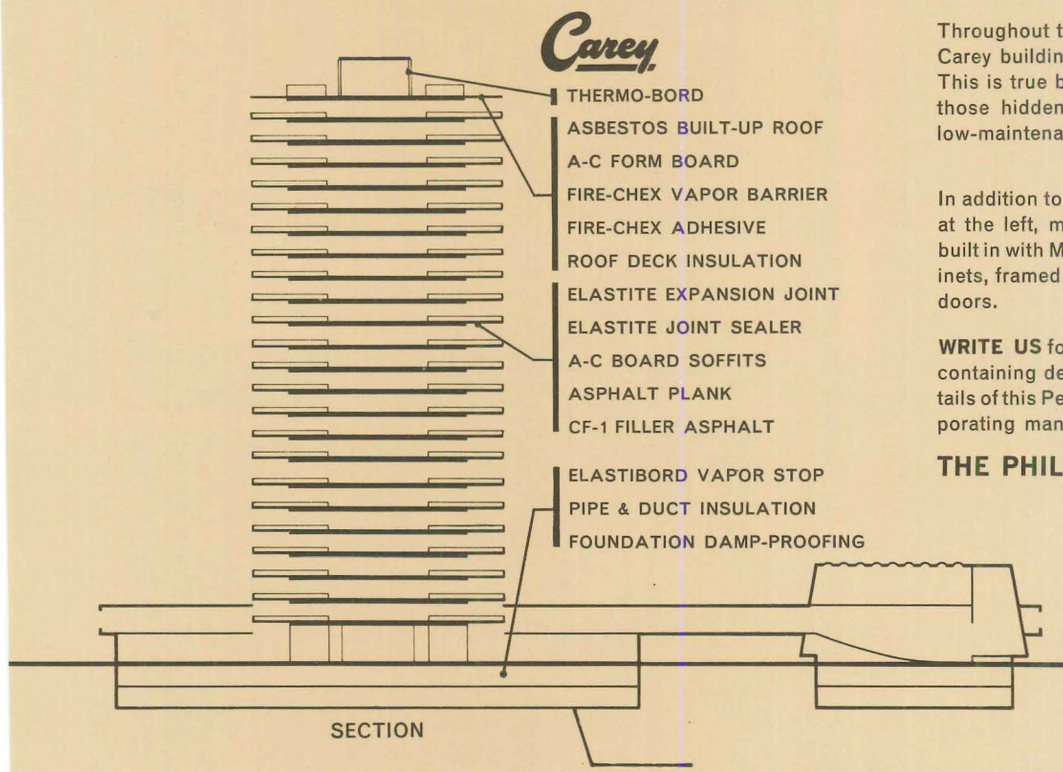
Perkins & Will partner, Charles William Brubaker, A.I.A., suggests that this design will prove a thought-provoking challenge to all school space concepts based upon today's widespread 50-acre suburban school.



INSTRUCTION FLOOR COMMONS FLOOR

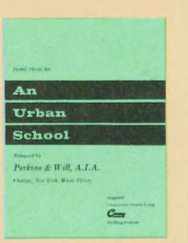
The Philip Carey Mfg. Company is delighted to sponsor the presentation of this design prophecy to the architectural and educational professions. It is surely a stimulating key to the solution of a major problem faced by many of our cities. As they progress to better use of expensive urban land, architectural thinking of this high order can give real meaning to urban revitalization.

Throughout this school structure, many well-known Philip Carey building products can be specified with assurance. This is true both on the visible structural surfaces and in those hidden areas which determine the long life of a low-maintenance building.



SECTION

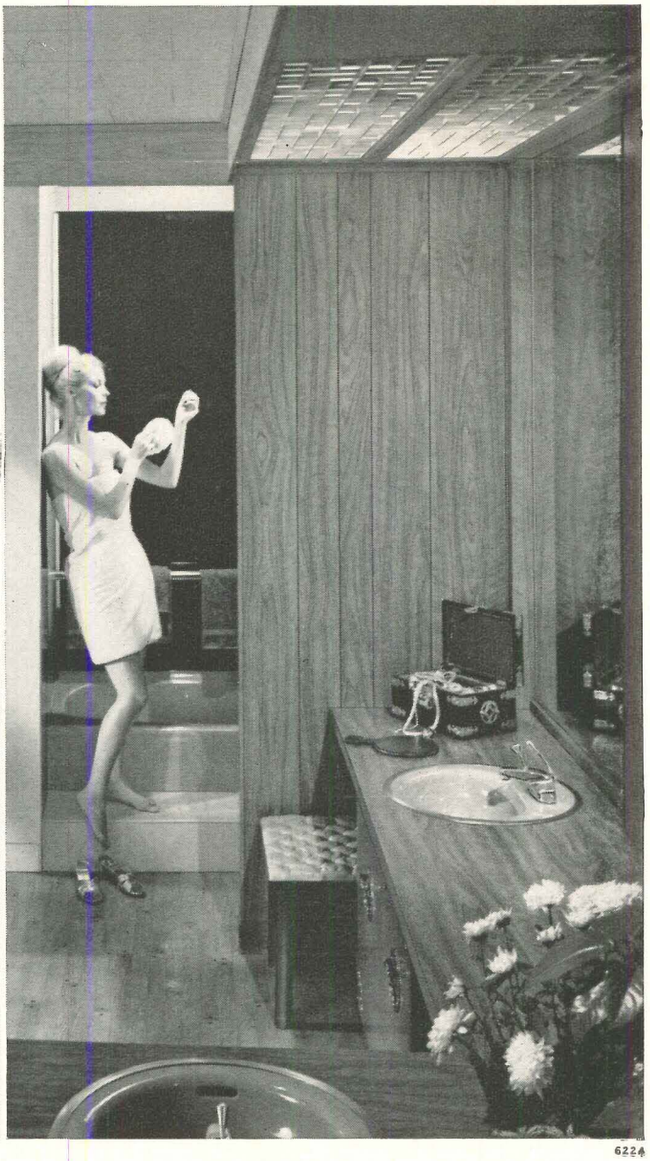
In addition to the Carey products listed at the left, much convenience can be built in with Miami-Carey bathroom cabinets, framed mirrors and steel access doors.



WRITE US for your personal file folder containing developed construction details of this Perkins & Will project, incorporating many Carey materials.

THE PHILIP CAREY MFG. COMPANY
CINCINNATI 15, OHIO

Carey®



6224

Create beautiful kitchen and bathroom interiors with versatile wash-and-wear Marlite paneling

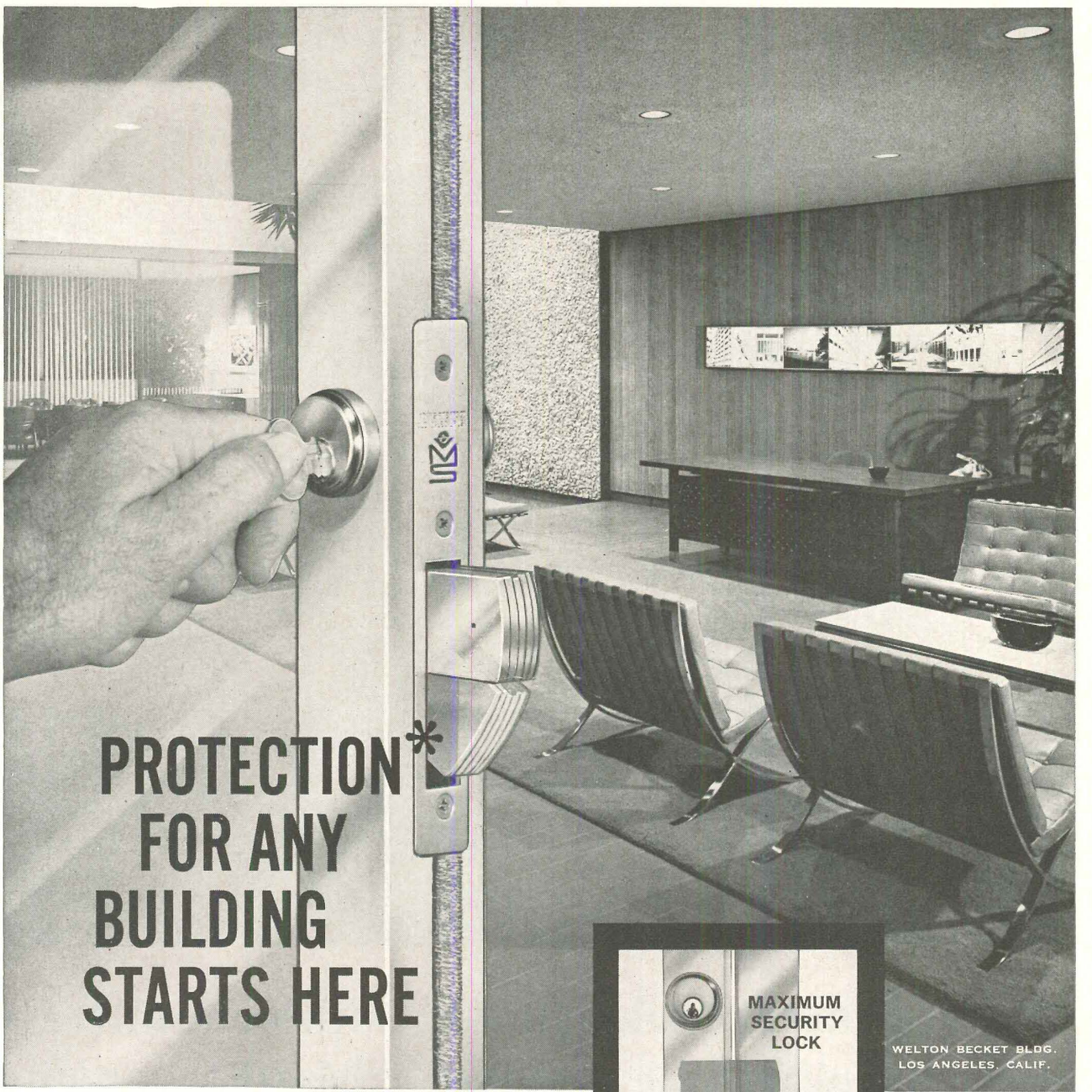
Marlite is the ideal wall and ceiling material for kitchens and bathrooms—new or remodeled. With Marlite, you can give your clients durability, beauty, easy maintenance. The soilproof baked finish of this practical "wear without care" paneling resists heat, moisture, stains, dents. The impervious surface quickly washes clean; stays like new for years. And Marlite means more satisfied clients, yet it saves you time and finishing costs.

What's more, the Marlite line of beautiful colors, patterns, and authentic Trendwood reproductions fits any color scheme or decor. And Marlite panels are quickly installed over old walls or new framing to complete your projects sooner. Get full details from your building materials dealer, consult Sweet's File, or write Marlite Division of Masonite Corporation, Dept. 705, Dover, Ohio.

Marlite®
plastic-finished paneling

ANOTHER QUALITY PRODUCT OF MASONITE® RESEARCH

MARLITE BRANCH OFFICES AND WAREHOUSES: 204 Permalume Place N.W., Atlanta 18, Georgia • 18 Moulton Street, Cambridge 38, Mass. • 4545 James Place, Melrose Park, Illinois (Chicago) • 8908 Chancellor Row, Dallas 7, Texas • 1657 Powell Street, Emeryville, California (Oakland) • 3050 Leonis Blvd., Los Angeles 58, California • 39 Windsor Avenue, Mineola, L. I. (New York) • 2440 Sixth Avenue So., Seattle 4, Washington



The Adams Rite MS* lock is designed specifically for narrow-stile glass entrance doors. Its long pivoted bolt provides a measure of protection that cannot be duplicated by any other lock in this type of a door. The MS bolt is housed vertically when retracted. Unlike the conventional lock bolt, its length is not restricted by the narrow width of the door stile. The MS bolt swings upward into a horizontal locked position with one clean sweep of laminated steel. As much of the 3″ bolt is retained in the locking stile as is projected into the opposite door or jamb. When glass entrance doors are used, do not take the lock for granted. Start where building protection counts, always specify Adams Rite MAXIMUM SECURITY.

* MAXIMUM SECURITY

WRITE TODAY FOR COMPLETE DETAILS AND NEW CATALOG

ADAMS RITE
MANUFACTURING COMPANY
540 West Chevy Chase Drive, Glendale 4, California

Interiors by Charles Anna Marsh

For above doors specify four 3' 0" x 8' 0" Colonial

Memo: to the person* with a closed mind about Metal Closet Doors.

(*who is losing money by missing rentals or sales, and opportunities for construction savings, by not using Float-Away Metal Closet Systems)

Open your mind by taking a fresh look at Float-Away Closet Systems—name the problem; see how Float-Away has solved it.

Only Float-Away assures you of all these problem-solving features:

UNLIMITED FLEXIBILITY–Any width, any height

WARP PROOF–Dimensionally stable under all conditions

RUST PROOF–Zinc coated and bonderized 24 gauge steel

INSTALLATION SAVINGS–Hardware complete and pre-assembled

PAINT SAVINGS–Superior prime coat may be left for later redecoration

TRIM SYSTEM–All trim furnished–no door frames necessary

SHHH–Unique sound-proofing system

CONSUMER APPEAL–Full access, wall to wall, floor to ceiling—extra storage—perfect answer for apartments or homes

Write for 12-page catalog and architectural tracing details.

FLOAT-AWAY DOOR COMPANY
1173 Zonolite Road, N. E.
Dept. A.R.-762, Atlanta 6, Georgia

25-STORY OFFICES UNDER WAY FOR BANCO POPULAR IN PUERTO RICO

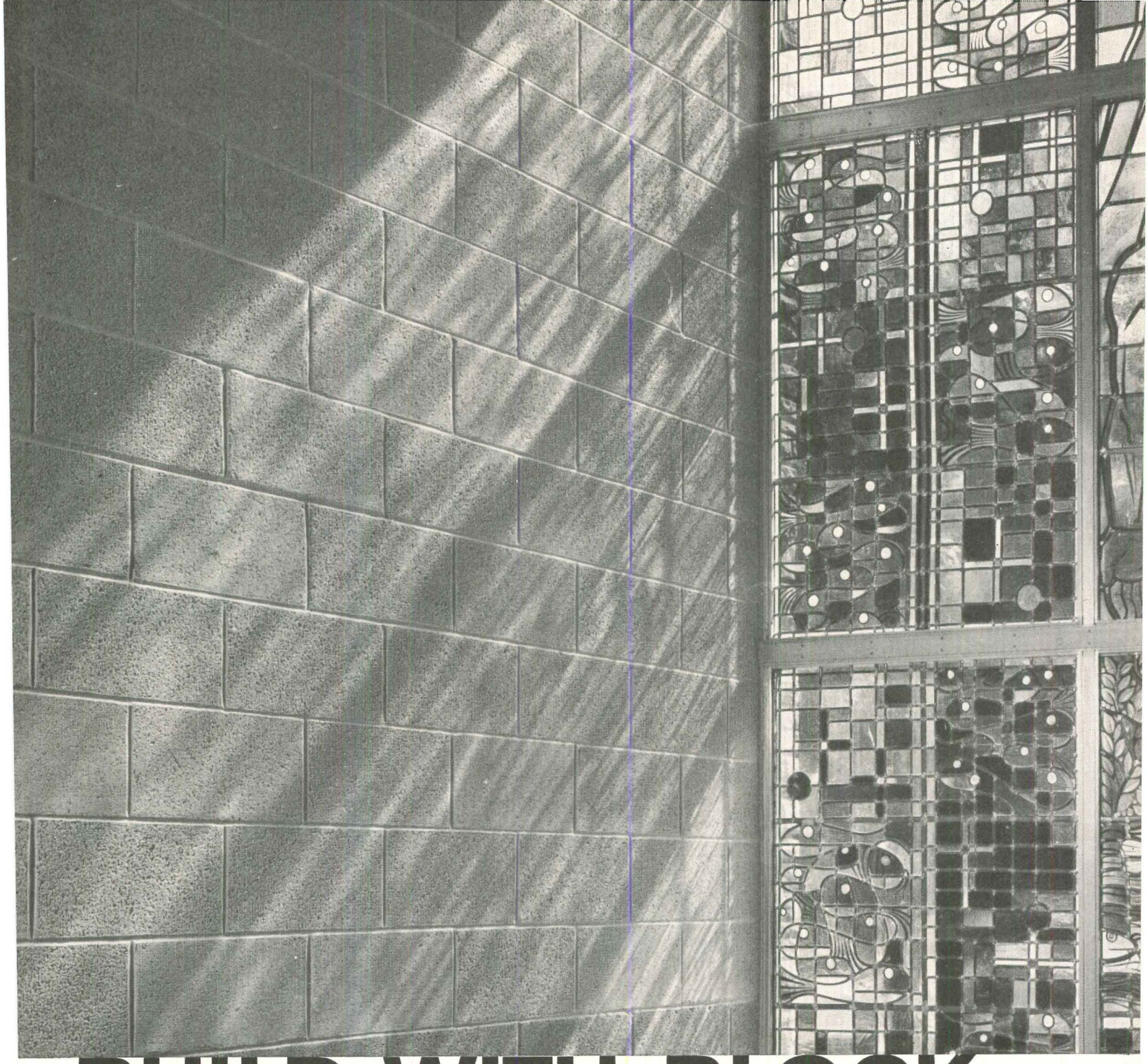
Integrated services were a prime requirement in the design of the 25-story headquarters building for the Banco Popular de Puerto Rico, now under construction in San Juan. Architect is Chauncey W. Riley; structural engineers are Throop & Feiden; mechanical engineers, Tizian Associates.

Public restaurant service, a complete shopping center, parking facilities for 1,000 cars with servicing also available, and full provision for electronic computer installations and radio broadcasting equipment are features of the building.

The lower four floors are designed to house facilities for functions central to Banco Popular's 19 offices. They include executive and departmental offices, electronic computer accounting installations, a printing plant and an employes' club with dining and entertainment facilities as well as an auditorium to seat 300.

Tenant spaces, like the bank's, are provided with radio broadcasting equipment for private use and are designed to accommodate computer installations.

Structure is reinforced concrete designed to withstand major earthquake and hurricane stresses. Shear walls are used at ends of the tower structure to absorb lateral stresses, minimizing interior bracing and reducing floor thicknesses. Year-round air conditioning is provided.



BUILD WITH BLOCK

and build for keeps

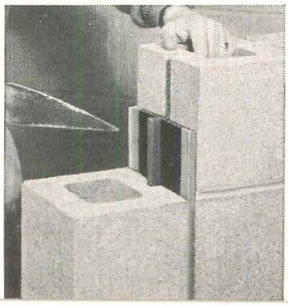
Nothing's a better-looking building investment than the modern concrete masonry wall. Nothing's sounder—especially when reinforced with Dur-o-wal, the engineered steel rod reinforcement with the trussed design. Can more than double flexural wall strength, outfunctions brick-header construction. Write for new 44-page test report concerning the effectiveness of Dur-o-wal tied construction.

DUR-O-WAL®

Masonry Wall Reinforcement and Rapid Control Joint

DUR-O-WAL MANUFACTURING PLANTS

- Dur-O-waL Div., Cedar Rapids Block Co., **CEDAR RAPIDS, IA.**
- Dur-O-waL Prod., Inc., Box 628, **SYRACUSE, N. Y.**
- Dur-O-waL Div., Frontier Mfg. Co., Box 49, **PHOENIX, ARIZ.**
- Dur-O-waL Prod., Inc., 4500 E. Lombard St., **BALTIMORE, MD.**
- Dur-O-waL Inc., 1678 Norwood Ave., **TOLEDO, OHIO**
- Dur-O-waL of Ill., 260 S. Highland Ave., **AURORA, ILL.**
- Dur-O-waL Prod. of Ala., Inc., Box 5446, **BIRMINGHAM, ALA.**
- Dur-O-waL of Colorado, 29th and Court St., **PUEBLO, COLO.**
- Dur-O-waL Northwest Co., 3310 Wallingford Ave., **SEATTLE, WASH.**
- Dur-O-waL of Minn., 2653 - 37th Ave., So., **MINNEAPOLIS, MINN.**
- Dur-O-waL Ltd., 789 Woodward Avenue, **HAMILTON, ONTARIO, CANADA**



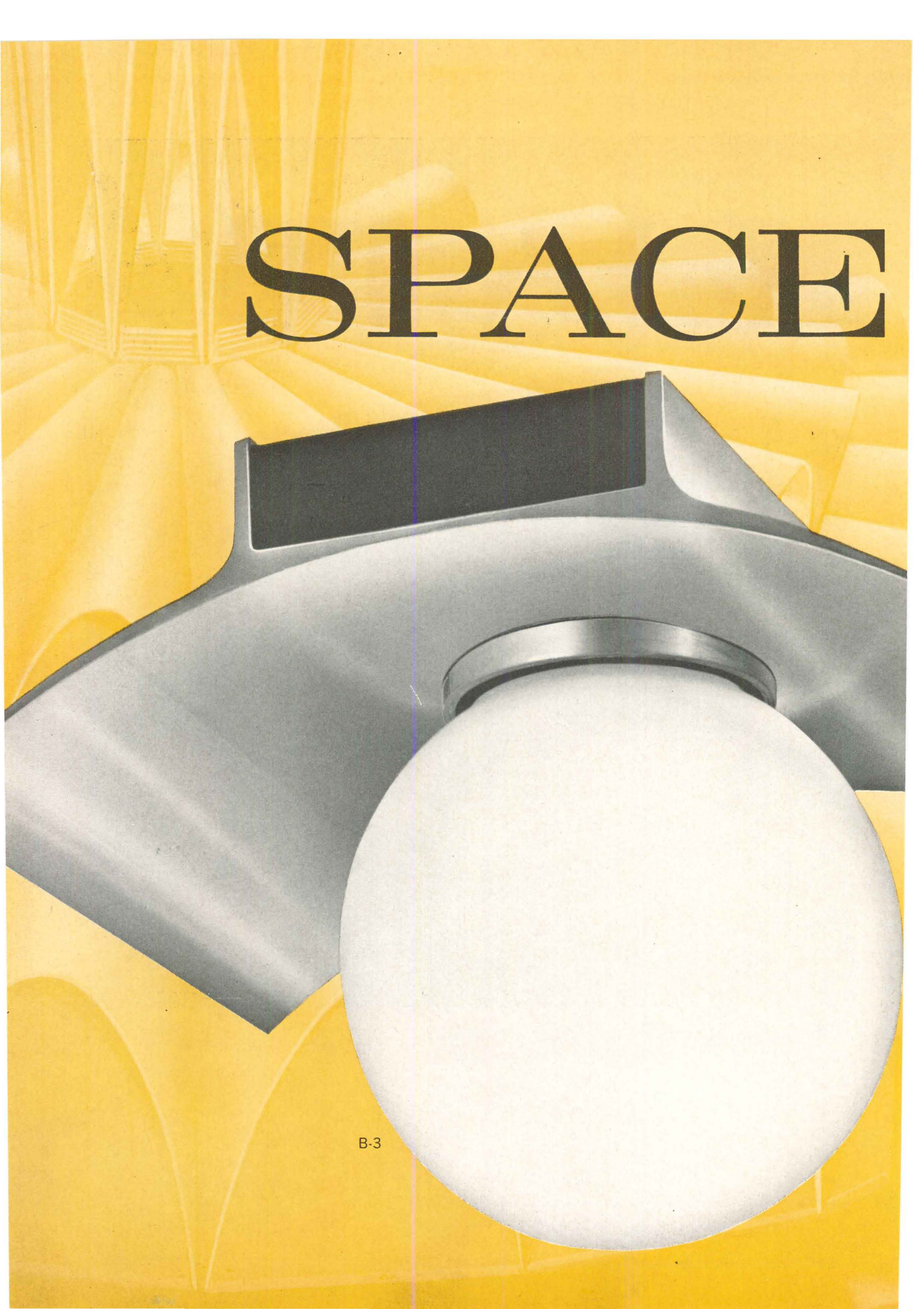
Strength with flexibility—the two basic factors for a repair-free masonry wall are assured by these engineered companion products. Dur-o-wal reinforcement, top left, increases flexural strength 71 to 261 per cent, depending on weight Dur-o-wal, number of courses, type of mortar. The ready-made Rapid Control Joint, beneath with its neoprene compound flange flexes with the wall, keeps itself sealed tight.

*ESCAL-AIRE is a trademark of the Otis Elevator Company

THINK BRILLIANTLY! With the new ESCAL-AIRE. In magnificent tradition-breaking interiors. ☐ Then dream on. Picture balustrades that are crystal clear. Light. Airy. Or intriguingly translucent. Tinted. Textured. Sparkling. ☐ Handrail colors? Pick them from a rainbow. ☐ The new tradition-breaking ESCAL-AIRE can vanish into its setting. Or be subtly inspiring. Or boldly scintillating. ☐ As your imagination fancies. ☐ The premiere of the ESCAL-AIRE? In the new NEW YORK HILTON at Rockefeller Center and SAN FRANCISCO HILTON Hotels.

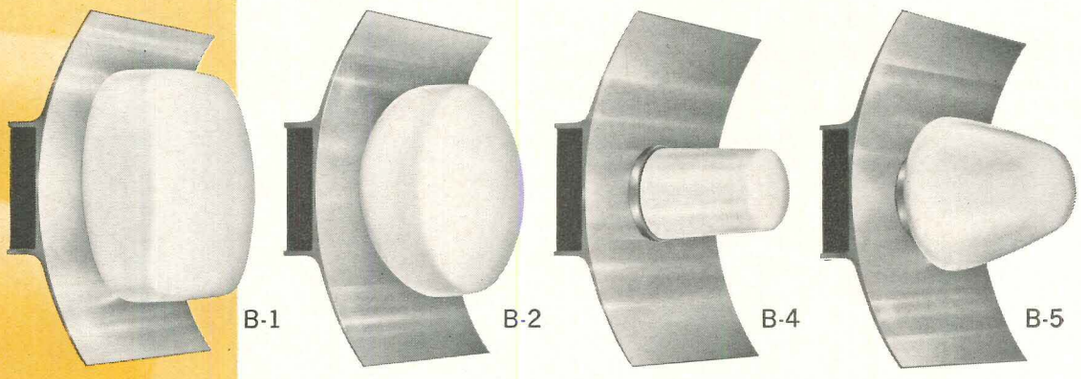
OTIS ELEVATOR COMPANY
260 11th Avenue, New York 1, N. Y.
Offices in 448 cities around the world

SPACE



SHAPES

from the new lighting line by EMERSON-PRYNE



NEW LINE! Over 515 styles, types, fronts and finishes. Everything from recessed to pendants!

NEW IDEAS! Like the beautiful Space Shapes previewed here. Sculptural forms in extruded anodized aluminum. Versatile brackets for wall or ceiling (indoors or out).

NEW CATALOG! Complete specification data. Full-color photos. Everything organized for quick reference.

WIN A CARIBBEAN CRUISE FOR TWO—
ENTER THE BIG EMERSON-PRYNE "SPACE SHAPES" LIGHTING CONTEST.* ALL THE ANSWERS ARE IN THE NEW CATALOG.

*Open only to qualified specifying architects and engineers.

MAIL COUPON NOW!

EMERSON ELECTRIC, Dept. AR-7
8100 Florissant Ave.,
St. Louis 36, Mo.

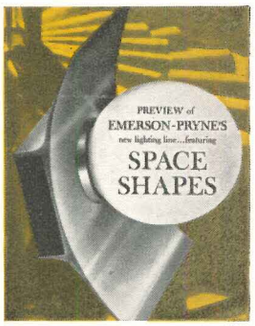
PLEASE RUSH ...
Emerson-Pryne "Space Shapes Preview" Brochure.

Name_____

Firm_____

Street_____

City_____ Zone____ State_____



EMERSON ELECTRIC

BUILDER PRODUCTS GROUP

EMERSON ELECTRIC • EMERSON-PRYNE • EMERSON-IMPERIAL • EMERSON-RITTENHOUSE

Lightweight Jamolite® plastic door offers easy, one-hand operation in hospital kitchen.

Lightweight, attractive ***JAMOLITE***® doors speed service, improve appearance in hospital installation

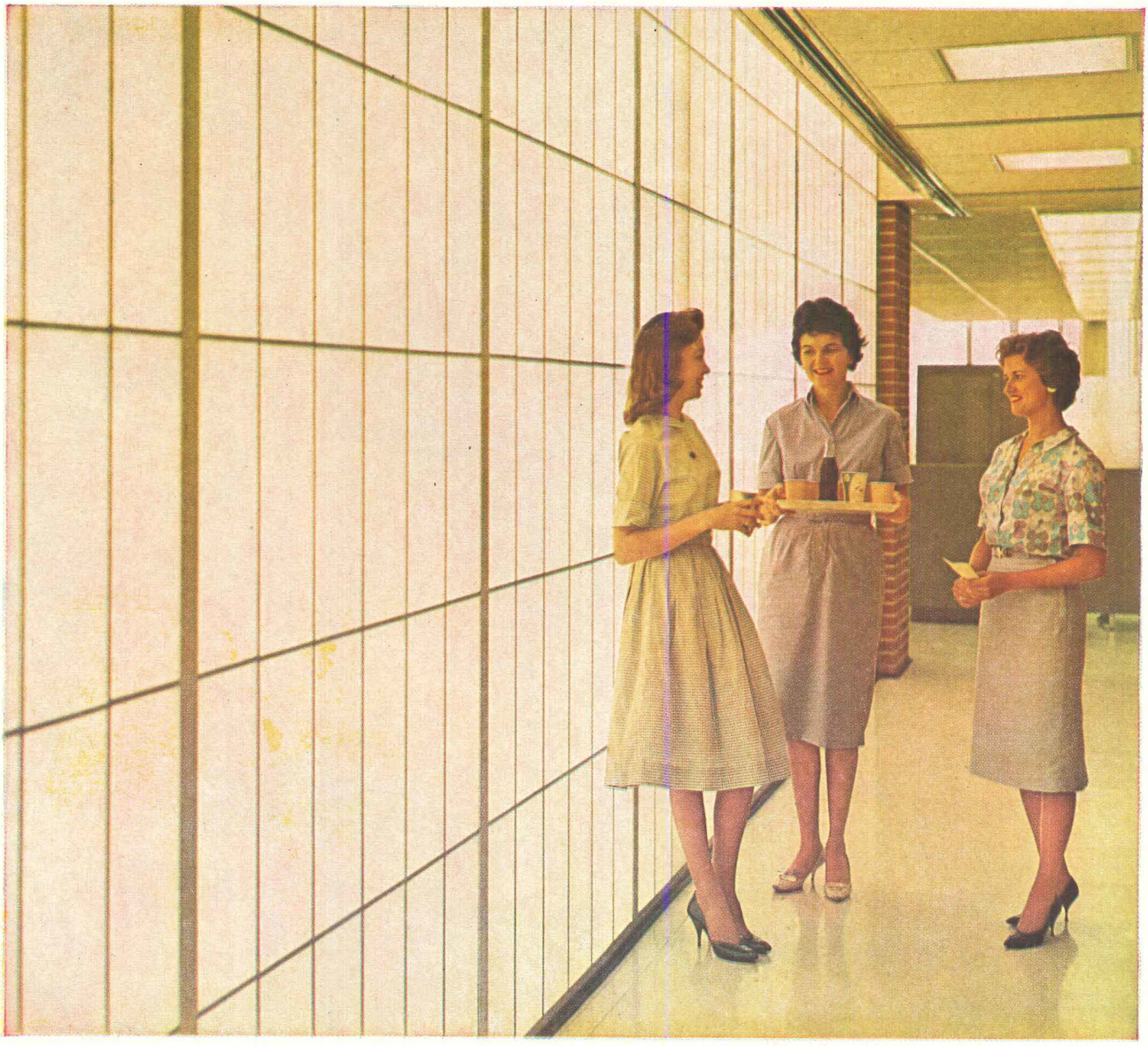
JAMOLITE doors are available in white and four colors to harmonize with any interior.

BRIGHT, CLEAN SURFACES of Jamolite all-plastic doors make these lightweight doors the ideal choice for hospital service. At the Washington County Hospital, Hagerstown, Maryland, five Jamolite doors are demonstrating these advantages over heavy, thick doors of other materials:

- better appearance
- easier cleaning
- new light weight
- easier opening and closing
- superior insulating
- easy installation

Get complete details on these flush-fitting plastic doors by writing to Jamison Cold Storage Door Co., Hagerstown, Md.

JAMISON
COLD STORAGE DOORS



Fiberglas® reinforced panels made with 100% LUCITE® acrylic sirup retain original color, gloss and light transmission far longer than other reinforced translucent panels

Scientific tests show that panels made with 100% LUCITE acrylic sirup retain 98% of their original gloss after 2,000 hours in the Atlas Weather-Ometer. After three years of exposure in South Florida, acrylic panels show no appreciable change in color and a maximum loss of light transmission of only 11%. ■ On the other hand, "modified", "light stable", or other conventional panels fade severely after only 1,000 hours in the Weather-Ometer. They lose much of their gloss and they suffer a loss in light transmission of 30% to 60% in South Florida tests. ■ Be sure to specify panels made with 100% Du Pont LUCITE acrylic sirup. For more information, mail the coupon at right.

DU PONT REG. U.S. PAT. OFF. POLYCHEMICALS DEPARTMENT

Better Things for Better Living . . . *through Chemistry*

E. I. du Pont de Nemours & Co. (Inc.), Dept. AR-7
Room 2507L, Nemours Bldg., Wilmington 98, Delaware.

☐ Please send more information on acrylic panels.

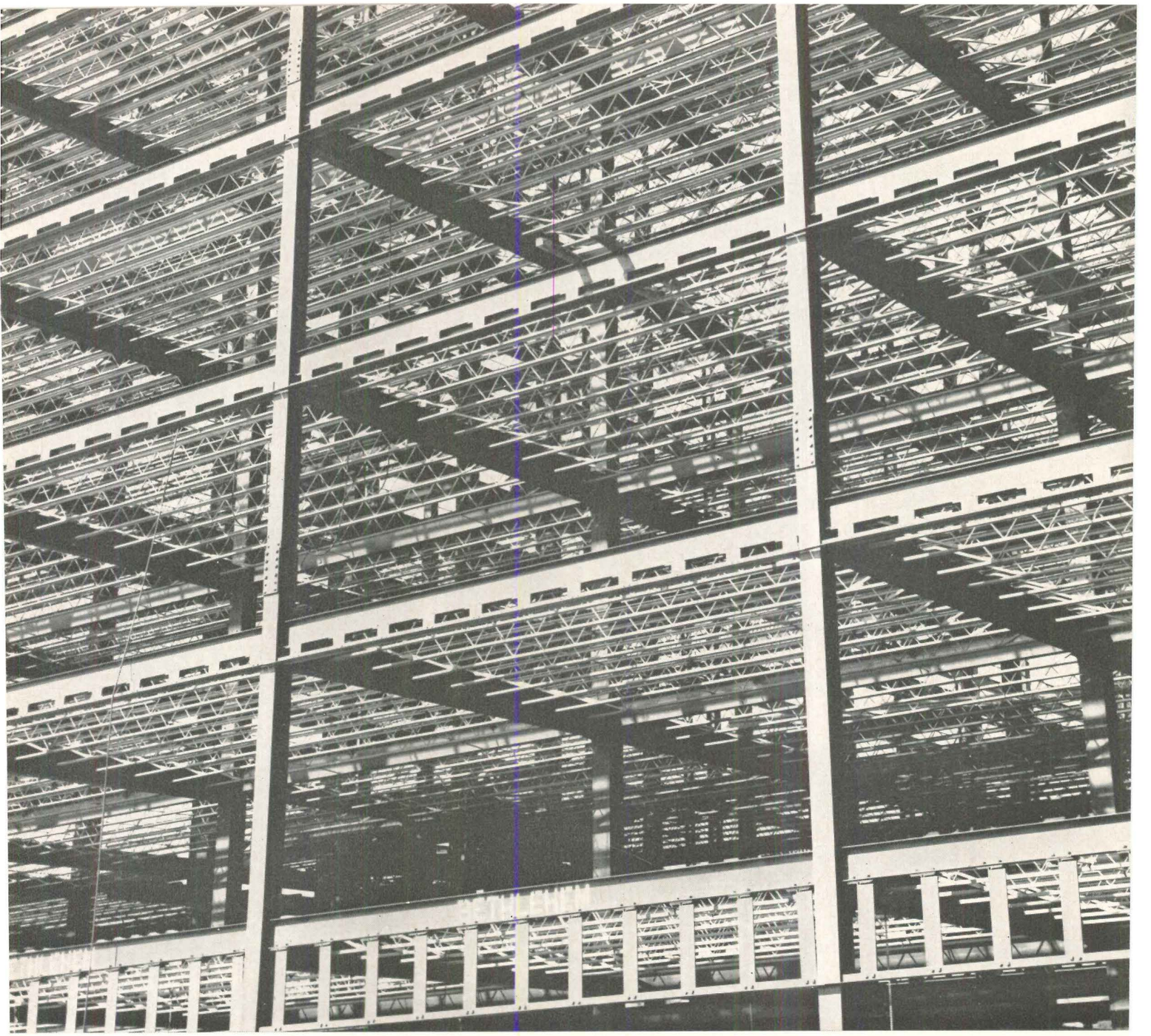
☐ Please ask a panel manufacturer to call on me.

NAME_____ POSITION_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____



Owner-builder: Rocks Engineering Company; architect: Donald H. Drayer; structural engineer: Heintzman & Clifton; steelwork: Bethlehem Steel Company

Apartment's steel frame plus steel joists weighs only 8.87 psf

Building No. 1 of River Tower Apartments, Alexandria, Va., is 9-stories tall, steel-framed, with an area of 183,000 sq. ft. Total steel tonnage checks out at 8.87 psf—a much better than average "light" load.

Steel frame erected in 22 days

Steel erection was completed in 22 working days, and the extreme accuracy of the frame drew praise from the masonry contractor. Construction is warp- and sag-proof, fire-resistant, easily added to. This structure contains 247 tons of Bethlehem steel joists and 567 tons of Bethlehem ASTM A-36 structural shapes.

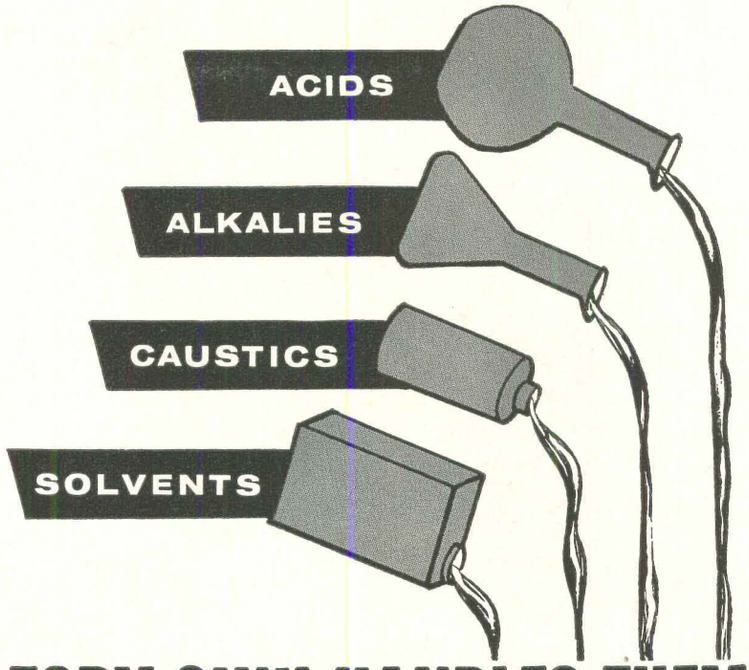
Call or write our nearest sales office for full details on Bethlehem open-web steel joists (hot- or cold-formed chords). We'll be glad to discuss the advantages of steel framing with you. Perhaps we can show you how modern steels save weight and cost, with strength to spare.

Steel *for Strength . . . Economy . . . Versatility*

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

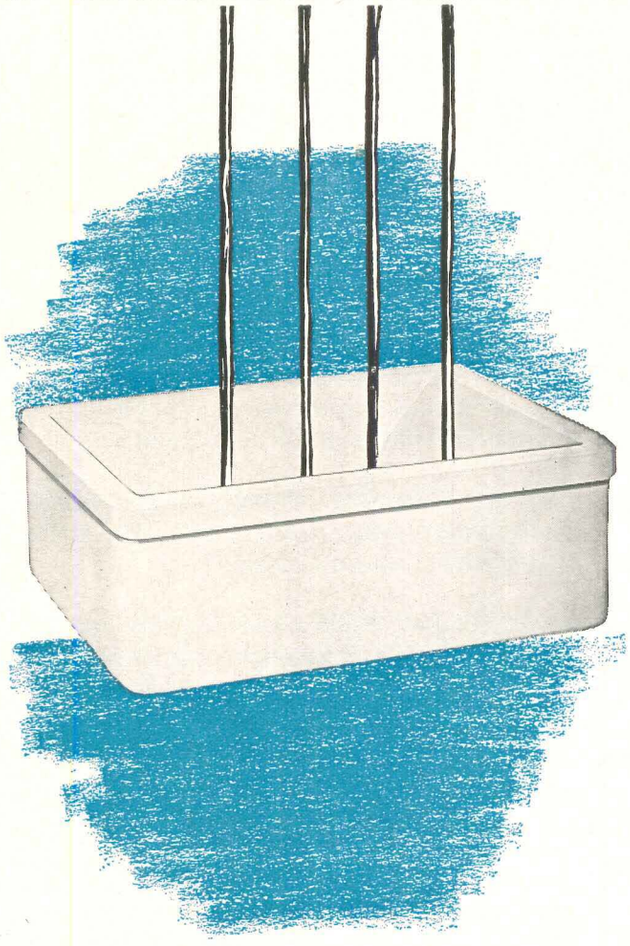
BETHLEHEM STEEL



ONE "U.S." LABORATORY SINK HANDLES THEM ALL!

The wider range of corrosives encountered in modern laboratory service makes this basic advantage of the "U. S." Chemical Porcelain Sink more important than ever! Solid, non-porous chemical porcelain handles *all* corrosives safely . . . hot or cold, weak or concentrated . . . eliminates any need for installing special sinks to handle special corrosives. In laboratories equipped with "U. S." sinks there is no concern about which sink takes which corrosive. No need to consult "chemical resistance" charts. Less chance for costly errors.

"U. S." Chemical Porcelain Laboratory Sinks provide practical answers to today's laboratory requirements. They are unsurpassed in time-proven durability. Their hard, smooth, "mist gray," "surf-green" or sparkling white glazed surfaces are easiest to clean, can't absorb stains or odors, never need honing or scouring. Mechanically strong and rugged, superior heat-shock resistance for carefree maintenance.



Our new Bulletin L-10 gives complete details, illustrates more than 50 standard sizes and many styles. Call your Laboratory Furniture Dealer or write direct.

CHEMICAL CERAMICS DIVISION

U. S. STONEWARE
AKRON 9, OHIO

108G-3

U.S.C. RECEIVES GRANT FOR STUDY ON HOME-BUILDING

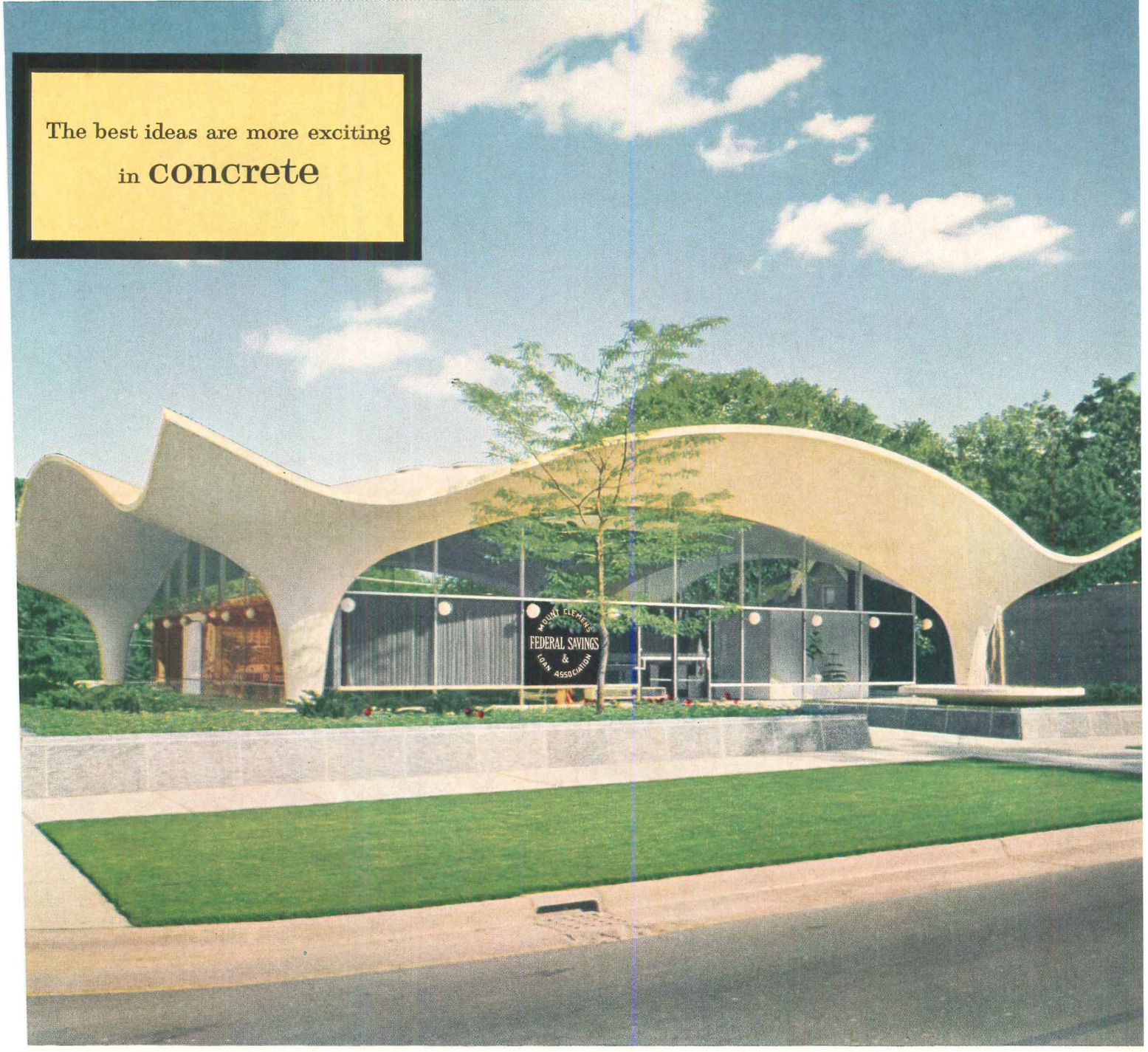
The National Science Foundation has awarded the University of Southern California a grant for the study of Los Angeles' single-family home-building industry which seeks to find a pattern to aid America's builders in meeting the challenge of increased housing demands.

The research, already underway and to be completed in an estimated two years, is directed by Dr. Arthur L. Grey, head of U.S.C.'s graduate program in City and Regional Planning, and by Dr. Gordon W. Bertram, currently associate professor of economics, Los Angeles State College.

Explaining the reasons for the study, Dr. Grey said, "Economists generally rate the housing industry as low in productivity, in comparison with the mechanical industries. We expect to investigate the efficiency of the local homebuilding industry because it has consistently out-produced all other metropolitan areas in the matter of the single-family residence. Furthermore, the Los Angeles' homebuilding industry has for the last decade been either first or second in the nation in the total number of all types of dwellings erected."

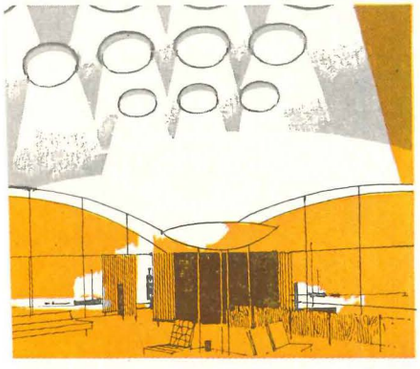
The U.S.C. investigation, the researchers say, will check closely into the performance of the Los Angeles homebuilding industry from two directions: characteristics of the industry itself as they apply to production and economic factors of the area as they apply to the industry. The importance of the research, according to Drs. Grey and Bertram, can be measured by these statistics: the 14 million substandard dwelling units in America is greater than the total housing output of the last ten years; a million dwellings per year must be built to accommodate the estimated 65 million increase in population over the next 20 years; an estimated 700,000 to one million dwellings wear out each year; hundreds of thousands more must be replaced because of fire and demolition for freeways, highways, school and other public building sites; present homebuilding production allows a margin of only about 300,000 units toward replacements necessary.

The best ideas are more exciting in **concrete**



Mount Clemens Federal Savings and Loan Assn., Mount Clemens, Mich. Architect: Meathe, Kessler and Assoc., Inc., Grosse Pointe, Mich. Photo by Baltazar Korab.

Soaring shell roof that lets the daylight through



ıg span of concrete shell roof permits spacious, ımn-free interior, with ceiling 23½ feet high at center. 21 skylights piercing the thin shell ıte dramatic light patterns.

They cast it in a single day for the new Mount Clemens Federal Savings and Loan Building. 52 truckloads of ready-mixed concrete placed in one continuous operation form the 96-foot-square roof of this spectacular new building. Four corner columns, flaring out to match the curve of the roof, provide its only support. The building rests on a raised platform faced with attractive precast panels made with white cement and exposed quartz aggregate. The spacious interior is enclosed by walls of aluminum and glass. Circular skylights molded right into the concrete roof give complete daylight over the entire business floor.

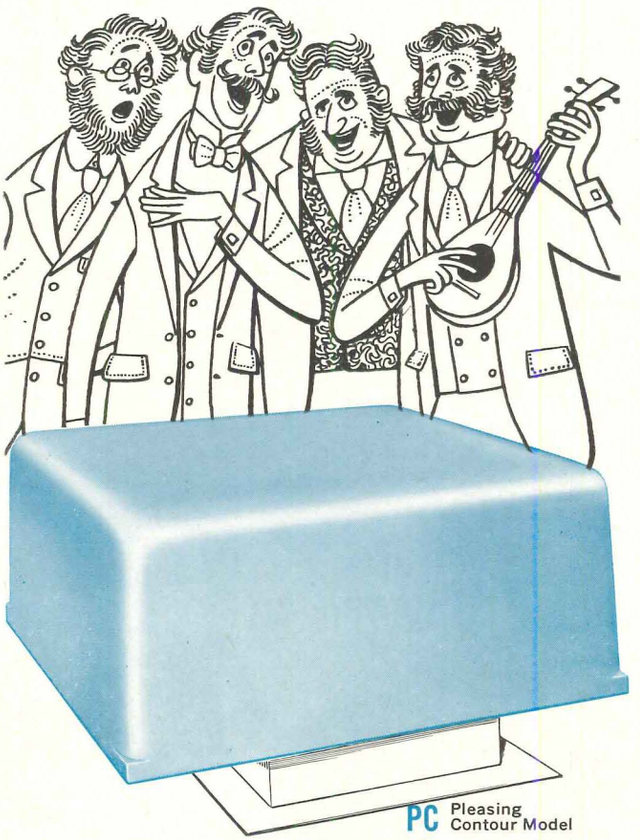
The complete freedom of form possible only with concrete inspires architects everywhere to seek imaginative new designs for buildings of all types and sizes

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

DAVIDSON

Roof-Top Harmony



Fiberglass Housings are available in 12 sealed-in colors (special colors to order).

Now you can harmonize your roof-top ventilating units with the overall structural colors and tones of the building itself. Example: Units can be a BOLD Chinese Red or "blend right into the roof" with Pearl Gray.

Davidson fiberglass housings are strong, durable, fire-resistant and maintenance-free. They deaden sound and withstand heat, cold, moisture and fumes.

Available for wide range of Hyduty Fans.

For complete data, write:

DAVIDSON FAN CO.

Dept. 3, 213 California St., Newton 58, Mass.

In Canada: Preston, Phipps Inc.,
940 Ogilvy Ave., Montreal

Please include name of your engineer when inquiring so we can send you both complete data.

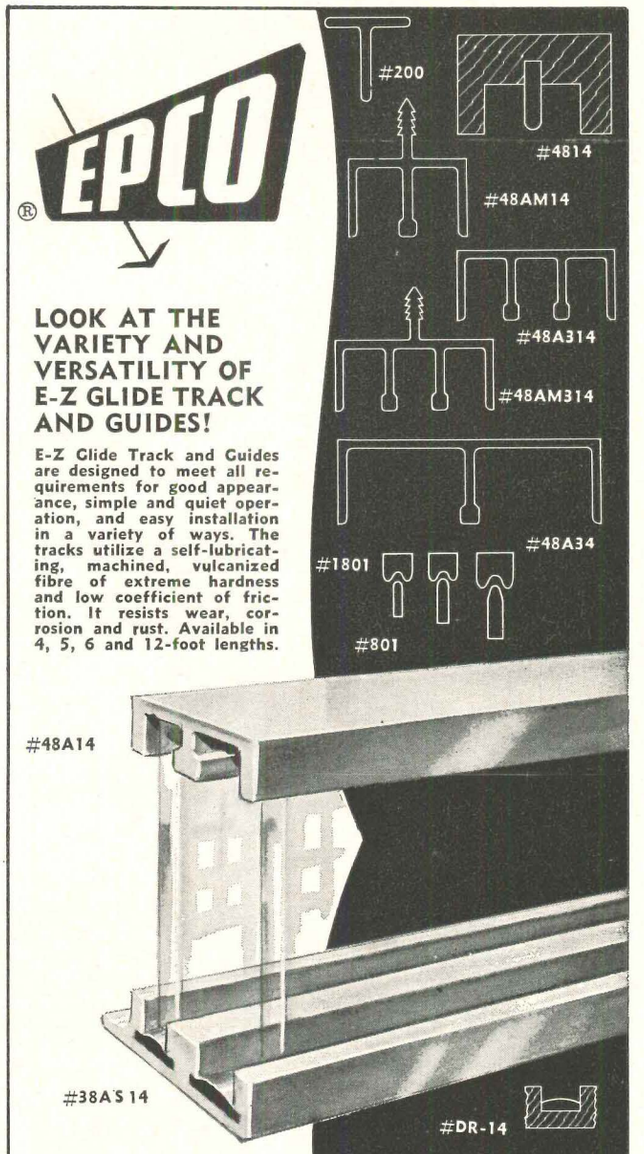
The Original Manufacturer of Roof Fans — Founded 1915

Member AMCA

EPCO®

LOOK AT THE VARIETY AND VERSATILITY OF E-Z GLIDE TRACK AND GUIDES!

E-Z Glide Track and Guides are designed to meet all requirements for good appearance, simple and quiet operation, and easy installation in a variety of ways. The tracks utilize a self-lubricating, machined, vulcanized fibre of extreme hardness and low coefficient of friction. It resists wear, corrosion and rust. Available in 4, 5, 6 and 12-foot lengths.



#200 T-guide of ext. alum.
#4814 guide, wood with fibre divider
#48AM14 ext. alum. guide
#48A314 ext. alum. guide
#48AM314 ext. alum. guide
#48A34 ext. alum. guide for ¾" doors
#1801 fibre glides, 2 to door
#801 fibre track, into kerf
#48A14 ext. alum. guide
#38AS14 ext. alum. track
#DR-14 fibre track for ¼" panel, fits into preformed groove
#3814S fibre track for ¼" panel
#3814 fibre track, ¼" by-passing panels
#811 ext. alum. track, fibre insert. Use with #1801 or #2801 glides on ¾" doors
#821 ext. alum., fibre insert. Use with 1801 or 2801 glides on ¾" doors.
#38SW14 ext. alum. track
#38A14 ext. alum. track, fibre inserts for ¼" panels
#38AM14 ext. alum. track
#38AM314 ext. alum. track, fibre inserts for ¼" panels

Free 32-page Catalog on all EPCO track, pulls and magnetic catches available on request.

THE ENGINEERED PRODUCTS CO.
P.O. BOX 108 - FLINT, MICHIGAN - PH. CE 9-8689

7/16"

Weyerhaeuser CRAFTWALL hardwood paneling

- Most dependable hardwood paneling on the market today
- 75% thicker for direct application to studs
- Structurally guaranteed, in writing, for life
- A choice of 11 luxurious hardwoods in 2 distinctive stylings

Crystal House apartment building, Miami Beach, Florida
Architect: Morris Lapidus, Harle & Liebman, New York–Miami–Washington, D.C.
Contractor: Robert L. Turchin, Inc., Miami Beach, Fla.

Visual drama in GLASS

GLASS
sets the stage for many architectural moods

Glass is a medium of architectural expression with almost limitless adaptability to imaginative design concepts. It is inherently beautiful, and it is versatile in form. Glass may be transparent or opaque, textured or smooth; in colors, tints, white and black.

And the beauty of glass is ageless. It resists the attack of time and the elements—and of obsolescence as well.

The illustrations on these pages show how versatile glass can be. They demonstrate how glass may be used to achieve harmony between symbolic expression and down-to-earth serviceability.

Entranceway at the Crystal House

PLEASANT, INVITING . . . A warm and friendly welcome is extended by this all-glass entranceway, which includes two 3/4-in. tempered plate glass doors. Extra strong, these durable doors beckon the eye with an unobscured view. PPG products shown here include—HERCULITE® Doors and Polished Plate Glass.

Pittsburgh Glass . . . a basic architectural material.

Seaside view of the Crystal House

EXPANSIVE, FRIENDLY . . . The opaque, green glass spandrels and the soft, green-tinted clear glass in the window areas combine to add a richness of color harmony to this strikingly handsome apartment house. The economical temperature and glare control afforded by the heat-absorbing window glass adds to interior comfort and beauty as shown below . . . reduces air conditioning costs, too. PPG products shown here include—Vision areas: SOLEX® Heat-absorbing, Glare-reducing Glass. Spandrels: Peacock Green SPANDRELITE® Glass, Polished Surface.

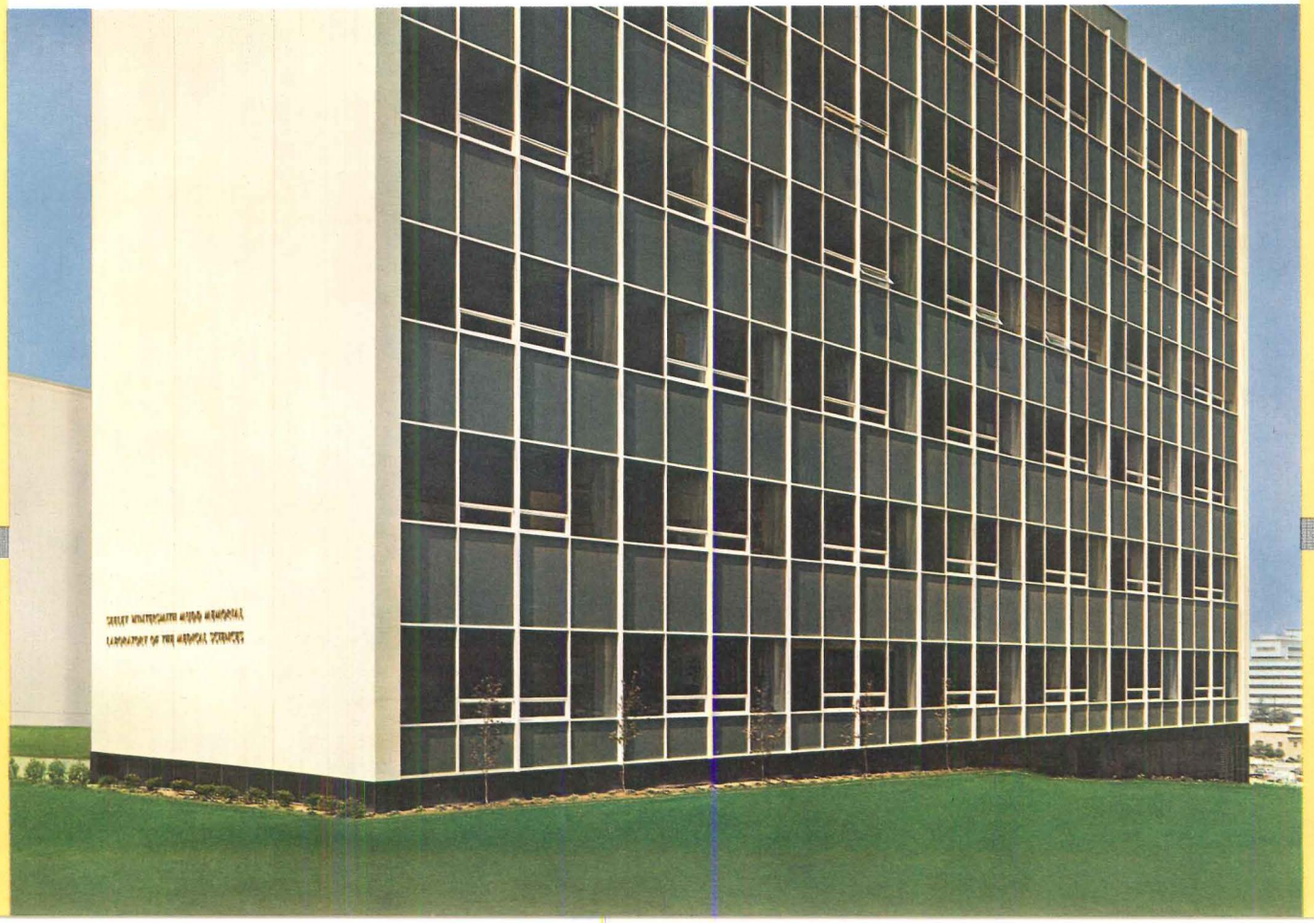
Australian Mutual Provident Society Building, Sydney, N.S.W., Australia. Architect: Peddle, Thorp and Walker, Sydney. General Contractor: Concrete Constructions Pty., Ltd., Sydney. Glazing Contractor: Frank G. O'Brien Ltd., Sydney. Curtain Wall Contractor: Chubb's Australian Co., Ltd., Sydney.

SPECTACULAR, ELOQUENT. . . The gold color and twill surface of the glass spandrels give this 28-story building vitality and grandeur. The ceramic custom-gold color will not fade because it is permanently fused to the back of the glass. And PPG heat-strengthened glass spandrels will never warp, pit or corrode. PPG products shown here include—Spandrels: Gold SPANDRELITE® Glass.

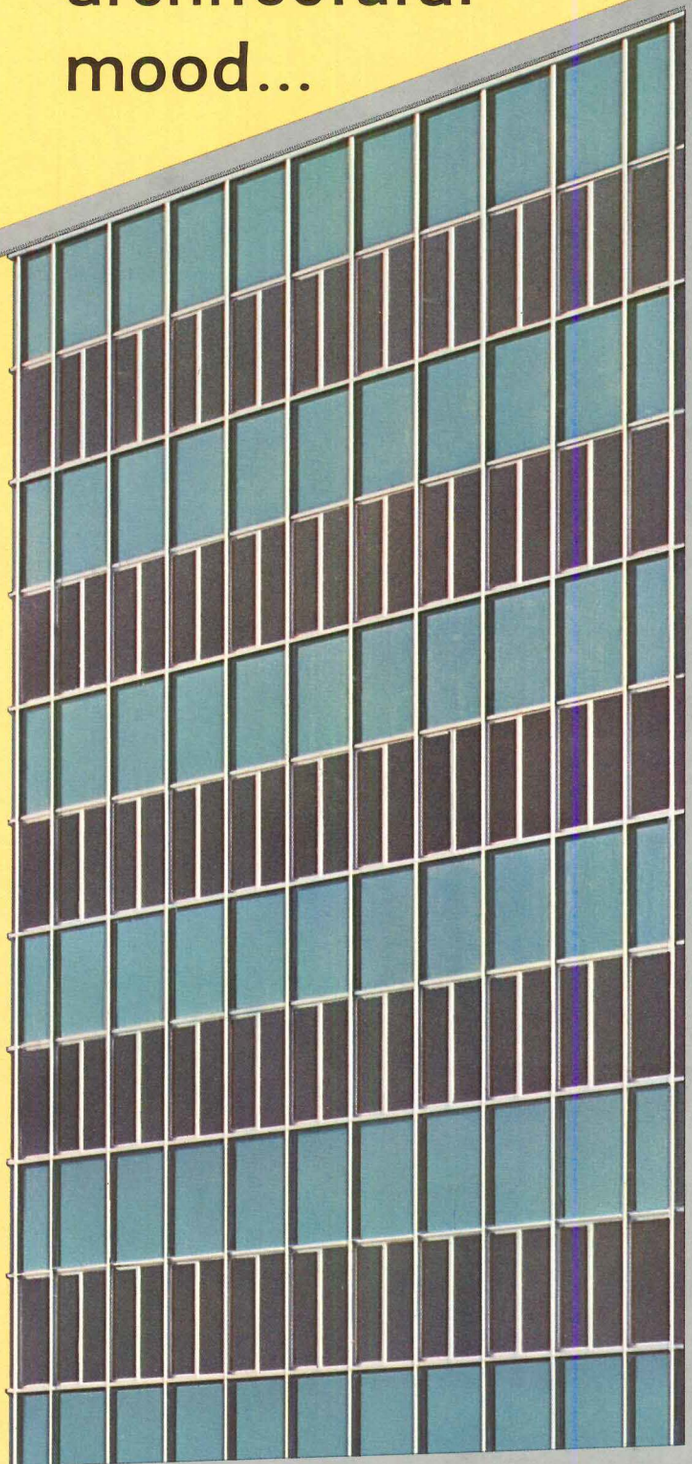
Pittsburgh Glass . . . a basic architectural material.

Seeley Wintersmith Mudd Memorial Laboratory of the Medical Sciences, and Paul Stilwell McKibben Hall, part of The Medical Center at Los Angeles' University of Southern California. Flewelling and Moody, architect-engineers, Los Angeles, California.

DELIBERATE, PRECISE . . . The façade pictured above—which required no vision areas—is completely sheathed with heat-strengthened, charcoal-colored opaque glass. On the opposite wall (shown below) where vision areas were required, the uniform appearance is preserved with the combined use of charcoal-colored glass spandrels and softly tinted gray plate glass in the vision areas. PPG products shown here include—Spandrels: Charcoal Gray SPANDRELITE® Glass, Polished Surface. Vision areas: SOLARGRAY® Heat-absorbing, Glare-reducing Plate Glass.



To complete the architectural mood...



PITTCO®
Curtain-Wall Framing Systems

To bring you almost unlimited potentialities for creating distinctive designs, there are four completely integrated PITTCO® Metal Framing Systems. To provide greater freedom for achieving dramatic architectural effects, the related components of the 82X system come in aluminum, bronze, or stainless steel. The all-aluminum mullions and muntins of the 900 series are interchangeable. You will find the widest variety of rolled and extruded components—sash, jambs, sills, facing moldings, division bars—to suit any architectural style.

PITTCO curtain-wall systems are specially designed to protect against varying conditions of weather, as well as provide rugged and durable framing. Precisely engineered components form tight-fitting joints which are sealed with a flexible compound. Glass is dry set, with or without Neoprene glazing channels, depending on the system selected. A unique weep-vent system provides effective condensation drainage and spandrel ventilation.

For complete information about PPG products, call your local PPG Architectural Representative or consult Sweet's Architectural File —Section 3e, 7a, 13e, 16a, 16e, 19e, 21.

Pittsburgh Plate Glass Company, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

PPG products shown include: Framing system: 900 series PITTCO® Architectural Metal. Spandrels: Marine SPANDRELITE® Glass, Polished Surface. Vision areas: PENNVERNON® GRAYLITE(TM) Glare-reducing Glass.

PITTSBURGH PLATE GLASS COMPANY

Paints · Glass · Chemicals · Fiber Glass
In Canada: Canadian Pittsburgh Industries Limited

Geneva

BEST ANSWERS THE CABINET AND CASEWORK NEEDS OF THE CHURCH KITCHEN

DURABLE — Constructed of steel, Geneva cabinets have the stamina to withstand the severe abuse church kitchens are normally subjected to.

LOW MAINTENANCE — An important consideration to every church. Studies prove Geneva's low maintenance cost.

ATTRACTIVE COLORS . . . EXCLUSIVE FINISH — New and attractive GENEVA Impasto textured cabinet finish is winning wide popularity. Easy to clean, durable, stain and mar resistant and available in eight attractive colors. Retains its original beauty for years.

WIDEST CABINET SELECTION — Permits tailoring a Geneva kitchen to practically any area—economically.

EXPERIENCED ASSISTANCE — A Geneva factory-trained representative will be happy to advise you on the best kitchen arrangement for your needs. Gevena has thousands of church installations throughout the country.

Geneva KITCHENS

GENEVA MODERN KITCHENS
Division of Acme Steel Company

GENEVA MODERN KITCHENS
Department AR 7-62, Geneva, Illinois
Please send literature on Geneva Church Kitchens.

Name_____

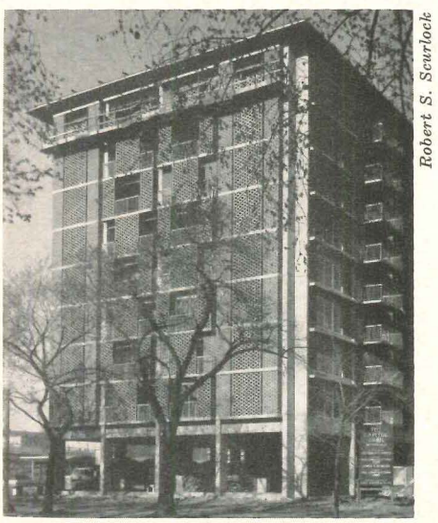
Address_____

City_____ Zone_____ State_____

MASONRY GROUP NAMES WINNERS: APARTMENT AND ARENA STAGE

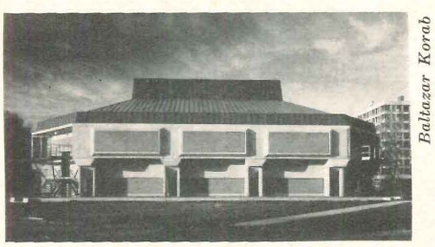
Two architectural firms have won First Place in the Second Annual Architectural Awards Program, sponsored by the Masonry Institute, Inc., Washington, D. C. They are: Saterlee and Smith, Architects, Washington, D.C., for the design of the Capital Park Apartments Section III of the S.W. Redevelopment Area in Washington; and Harry Weese and Associates of Chicago for the Arena Stage, Washington. Joseph Miller of Brown, Chapman, Miller & Wright, Washington, won an honorable mention for the Agudas Achim Synagogue, Alexandria, Virginia.

Making the awards for "excellence in architecture through the employment of unit masonry" was a jury consisting of Paul Schweikher, dean, School of Architecture, Carnegie Institute of Technology, and Percival Goodman, professor of architecture, Columbia University. Buildings eligible were completed within the last four years in the Washington, D.C. area.



Robert S. Scurlock

First Place: Capitol Park Apartments. Architects: Saterlee & Smith. General contractor: HRH Const. Corp.; masonry contractor: Anthony Izzo Co.



Balzar Korab

First Place: Arena Stage. Architects: Harry Weese and Associates. General and masonry contractor: John Tester & Son, Inc.

Robert G. Lautman

Hon. Mention: Agudas Achim Synagogue. Architects: Joseph Miller, Brown, Chapman, Miller & Wright. General and masonry contractor: Cannon Const.

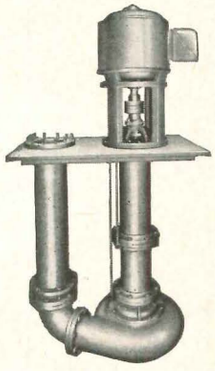
"from Chicago"

A complete line of Vertical Enclosed Shaft Non-Clog Pumps

FOR HEAVY DUTY PUMPING OF SEWAGE, SUMP AND STORM WATER, CONTAINING SOLIDS

Chicago pumps are durably built units featuring micrometer ball bearing adjustment of rotating elements, tongue and groove registering, and oversized bearings. The Chicago two port non-clog impeller remains in natural hydraulic balance thruout the pumping cycle. All impellers are also dynamically balanced.

Manufactured by Chicago Pump, with over 52 years of unequaled experience in the design and manufacturing of non-clog pumps. Backed by a reputation for excellence in design and outstanding service to its thousands of satisfied customers. Write for Bulletin 124-G.



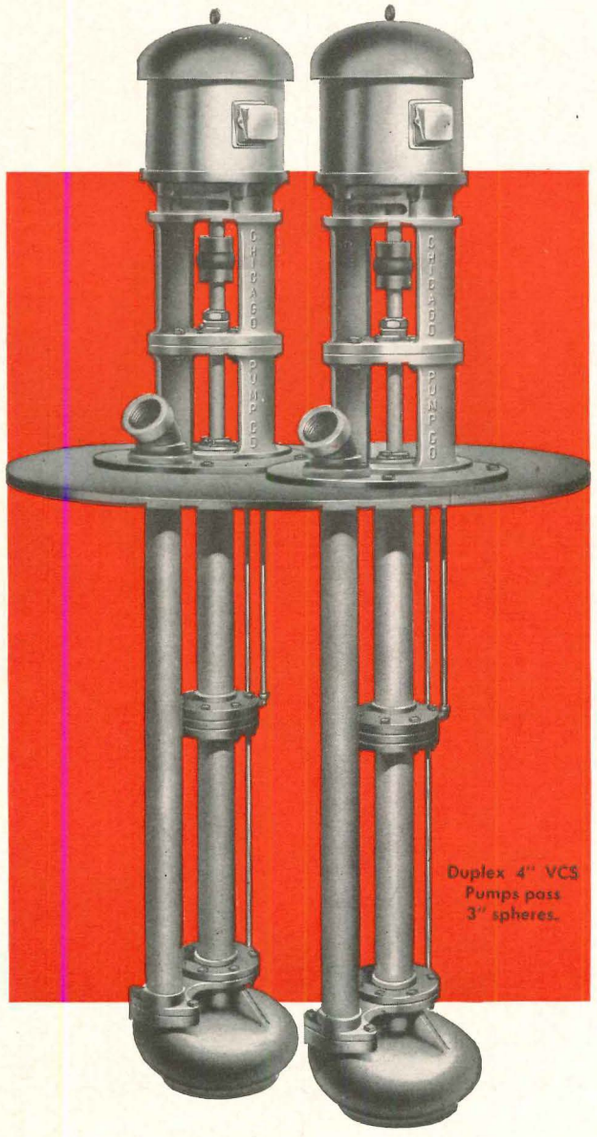
10" VCS Pumps pass 5" spheres.

HIGHER CAPACITY VCS PUMPS

Pumps range from 4" thru 10" discharge size available for single or duplex installation. All pumps incorporate the same high grade materials and machined tolerances for extended life.

EXCLUSIVE SEALTRODE

"Sealtrode", sealed electrode floatless pump controller is a dependable control for any installation. Electrodes cannot become coated or insulated with grease, oil, soap or solids. Elements never corrode as they are sealed from the liquid being pumped.



Duplex 4" VCS Pumps pass 3" spheres.

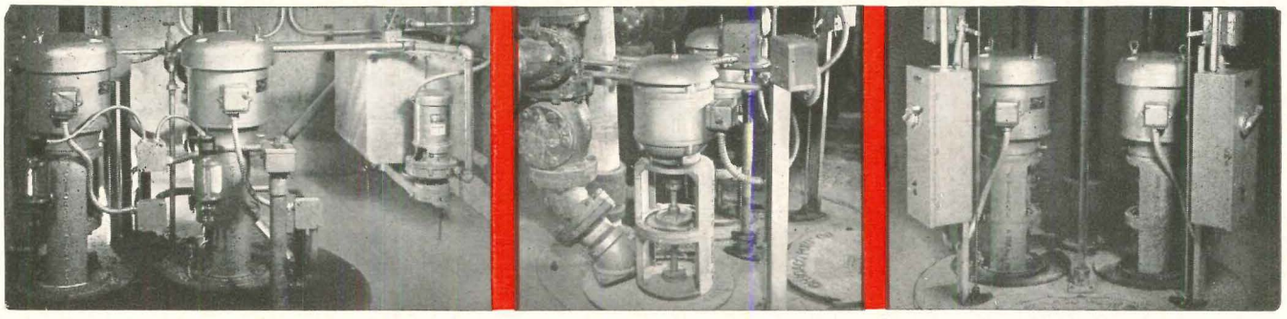
Capacities: 50 to 5000 GPM
Heads to 105 feet.

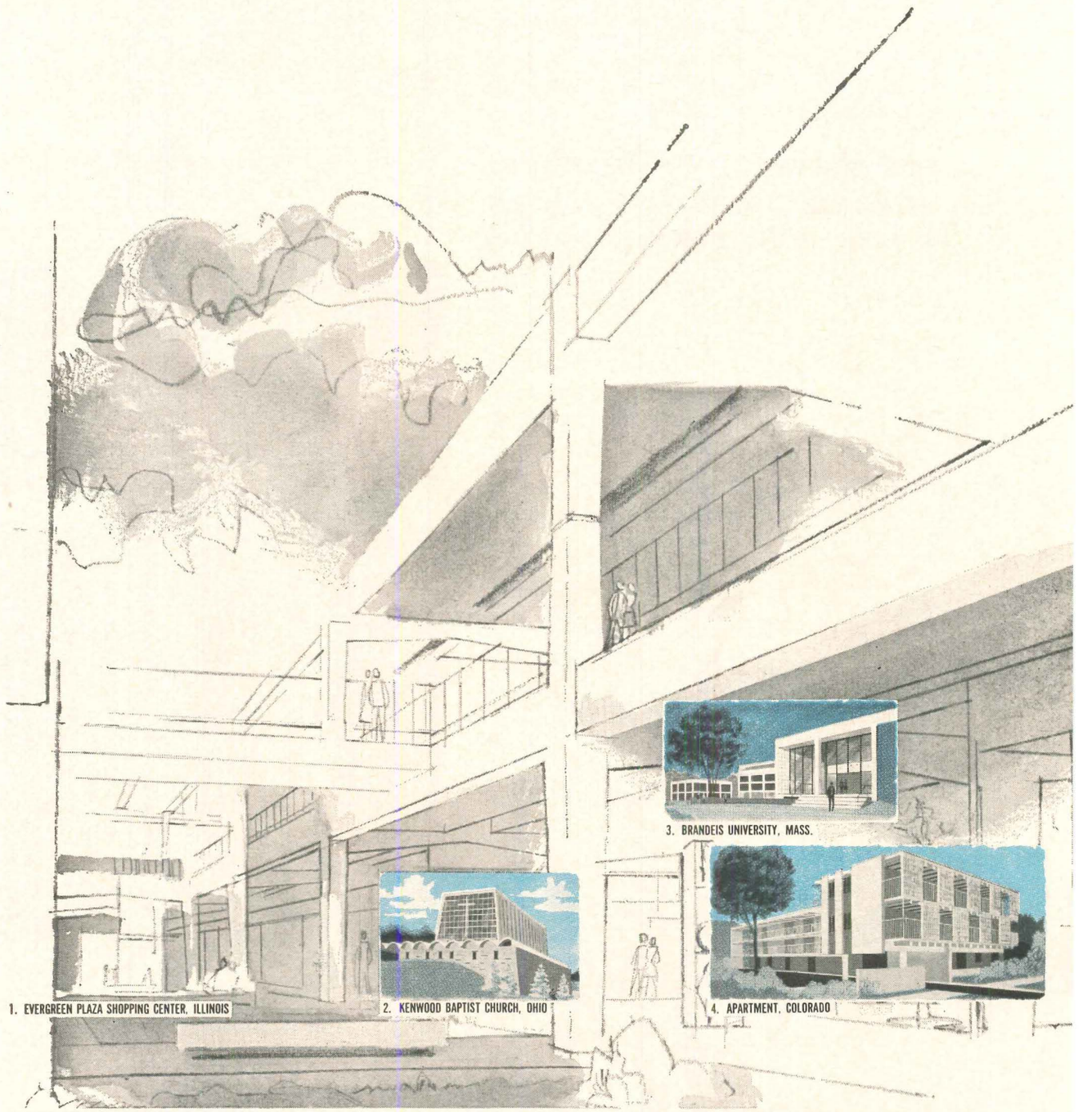
fmc CORPORATION

HYDRODYNAMICS DIVISION

CHICAGO PUMP

® 622M Diversey Parkway • Chicago 14, Illinois





1. EVERGREEN PLAZA SHOPPING CENTER, ILLINOIS

2. KENWOOD BAPTIST CHURCH, OHIO

3. BRANDEIS UNIVERSITY, MASS.

4. APARTMENT, COLORADO

ARCHITECTS—STRUCTURAL ENGINEERS: 1. Skidmore, Owings & Merrill 2. Potter, Tyler, Martin & Ross 3. The Architects Collaborative—Simpson, Gumpertz and Heger 4. Leon Brin, AIA 5. Hobart D. Wagner, AIA — Ketchem & Konkel 6. Minoru Yamasaki & Associates — Ammann & Whitney

PRESTRESSED CONCRETE *combines two basic materials to give you the best of both*

For plant-produced, quality controlled prestressed concrete, consult the PCI Active Member nearest you:

ARIZONA Arizona Sand & Rock Co., Prestress Division, Phoenix • United Materials Inc., Phoenix

CALIFORNIA Basalt Rock Co., Napa • Ben C. Gerwick, Inc., San Francisco • Concrete Conduit Company, Div. Martin-Marietta Corp., Colton • Delta Prestressed Concrete, Inc., Florin • Rockwin Prestressed Concrete, Los Angeles • San Diego Prestressed Concrete, San Diego • Wailes Precast Concrete Corp., Sun Valley

COLORADO Bullen Concrete Products, Pueblo • Prestressed Concrete of Colorado, Denver • Rocky Mountain Prestress, Englewood

CONNECTICUT C. W. Blakeslee & Sons, New Haven

FLORIDA Capitol Prestress Co., Jacksonville • Dura-Stress, Inc., Leesburg • Florida Prestressed Concrete Co., Inc., Tampa • Juno Prestressors, Inc., West Palm Beach • Lewis Manufacturing Co., Inc., Miami • Meekins-Bamman Precast Corp., Hallandale • Prestressed Concrete, Inc., Lakeland • Southern Prestressed Concrete, Pensacola • R. H. Wright, Inc., Fort Lauderdale

GEORGIA Augusta Concrete Products Co., Inc., Augusta • Martin-Marietta Corp., College Park • Leap Structural Concrete, Inc., Atlanta • Macon Prestressed Concrete Co., Macon

HAWAII Concrete Engineering Co., Honolulu

ILLINOIS Martin-Marietta Corp., La Grange • Crest Concrete Systems, Lemont • Material Service, Chicago • Midwest Prestressed Concrete Co., Springfield • Precast Building Sections, Chicago

INDIANA Martin-Marietta Corp., Lafayette • Shute Concrete Products, Richmond

IOWA A & M Prestress, Clear Lake • Austin Crabbs Inc., Davenport • Midwest Concrete Industries, West Des Moines • Prestressed Concrete of Iowa, Iowa Falls • C. W. Shirey Co., Waterloo

KANSAS Russell Ralph Co., Topeka • Sunflower Prestress, Inc., Salina • United Prestress Co., Wichita

LOUISIANA Belden Concrete Products, Inc., Metairie • Prestressed Concrete Products Co., Inc., Mandeville • Mid-State Prestressed Concrete, Inc., Alexandria

MASSACHUSETTS New England Concrete Pipe Corp., Newton Upper Falls • Northeast Concrete Products, Inc., Plainville • San-Vel Concrete Corp., Littleton

MICHIGAN Lamar Pipe and Tile Company, Div. Martin-Marietta Corp., Grand Rapids • Precast Industries, Inc., Kalamazoo • Price Brothers Co., Livonia • Superior Products Co., Detroit

MINNESOTA Cretex Companies, Elk River • Prestressed Concrete Inc., St. Paul • Wells Concrete Products Co., Wells

MISSISSIPPI F-S Prestress, Inc., Hattiesburg • Grenada Concrete Products Co., Grenada • Jackson Ready-Mix Corp., Jackson

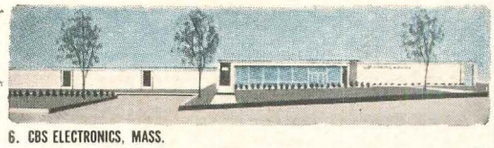
MISSOURI Carter-Waters Corp., Kansas City • Missouri Pres-Crete, Inc., Overland

NEBRASKA Nebraska Prestressed Concrete Co., Lincoln • Wilson Concrete Co., Omaha

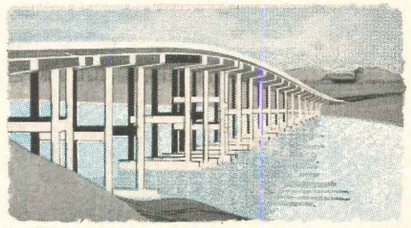
In almost every kind of structure today, architects and engineers use prestressed concrete for visual design qualities as well as structural qualities. In it they find the warmth, texture, plasticity, light and shadow to create buildings that appeal to human beings. A true Twentieth Century material, prestressed concrete meets economies demanded by the needs of today: reliable delivery...ease and simplicity in field construction...longer spans for fewer columns...adaptability...elimination of fireproofing, finishing or painting...absolutely controlled quality at low cost made possible by plant manufacture. An organized industry is eager to give you help in designing with precast **PRESTRESSED CONCRETE**

9. FIRST NATIONAL BANK, HAWAII

10. PARKING GARAGE, NEW JERSEY



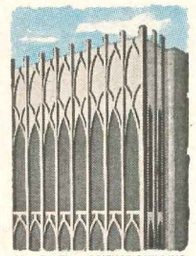
6. CBS ELECTRONICS, MASS.



8. PETALUMA RIVER BRIDGE, CALIFORNIA

5. COMMUNITY PLAZA SHOPPING CENTER, COLORADO

7. O'HARE INTERNATIONAL AIRPORT, CHICAGO



11. FEDERAL SCIENCE BUILDING, CENTURY 21 EXPOSITION, SEATTLE

7. Naess & Murphy 8. State of California Div. of Highways, Bridge Dept. 9. Lemmon, Freeth, Haines & Jones—Alfred A. Yee & Associates, Inc.
10. Gage & Martinson 11. Minoru Yamasaki & Associates—Narimore, Bain, Brady & Johanson—Worthington, Skilling, Helle & Jackson

WRITE FOR YOUR FREE COPY OF **"PRESTRESSED CONCRETE—APPLICATIONS AND ADVANTAGES"**
PRESTRESSED CONCRETE INSTITUTE
205 WEST WACKER DRIVE, CHICAGO 6, ILLINOIS

PRESTRESSED CONCRETE INSTITUTE

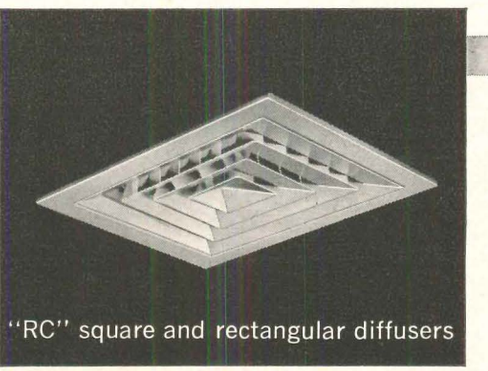
NEW HAMPSHIRE Structural Concrete Corp., Laconia
NEW JERSEY Camco Concrete Corp., Vineland
NEW MEXICO Martin-Marietta Corp., Albuquerque
NEW YORK Martin-Marietta Corp., New York City • Martin-Marietta Corp., Syracuse • Frontier Dolomite Concrete Products Corp., Lockport • Raymond International, Inc., New York
NORTH CAROLINA Arnold Stone Co., Greensboro • Concrete Materials, Inc., Charlotte • North Carolina Products Corp., Raleigh • Piedmont Construction Co., Winston-Salem
OHIO Martin-Marietta Corp., Columbus • Concrete Masonry Corp., Elyria • Concrete Pipe Co. of Ohio, Cleveland • Marietta Concrete, Div. Martin-Marietta Corp., Marietta
OREGON Builders Supply Co., Medford • Empire Pre-Stress Concrete of Oregon, Portland • Ross Island Sand & Gravel, Portland
PENNSYLVANIA Martin-Marietta Corp., Norristown • Dickerson Structural Concrete Corp., Youngwood • Eastern Prestressed Concrete Corp., Line Lexington • Formigli Corp., Philadelphia • New Enterprise Stone & Lime Co., Inc., New Enterprise • Pennsylvania Prestress, Inc., York • Schuylkill Products, Inc., Cressona • Turbotville Block Co., Turbotville
SOUTH CAROLINA Martin-Marietta Corp., Columbia • Ballard-Rice Prestressed Corp., Greenville
TENNESSEE Martin-Marietta Corp., Memphis • Knox Concrete Products, Inc., Knoxville • Nashville Breeko Block Co., Nashville
TEXAS Anchor-Wate Co., Houston • Atlas Structural Concrete, El Paso • Crowe-Gulde Prestressed Concrete Co., Amarillo • Span, Inc., Dallas • Texas Concrete Co., Victoria • Texas Quarries, Inc., Austin
UTAH Utah Prestressed Concrete Co., Salt Lake City
VIRGINIA Alexandria Prestressed, Inc., Alexandria • Shockey Bros., Inc., Winchester • Southern Block & Pipe Corp., Norfolk • Virginia Prestressed Concrete Corp., Roanoke
WASHINGTON Associated Sand & Gravel Co., Everett • Central Pre-Mix Concrete Co., Spokane • Concrete Technology Corp., Tacoma
WISCONSIN Concrete Research, Inc., Waukesha • Prestressed Concrete Products Corp., Verona • West Allis Concrete Products Co., Milwaukee • Eau Claire Stresscrete, Inc., Eau Claire • F. Hurlbut Co., Green Bay
PUERTO RICO Pacadar Prestressed Beams Corp., San Juan
CANADA **Alberta:** Con-Force Products Ltd., Calgary • **British Columbia:** Graybar Precast Ltd., Westminster • Superior Concrete Products Ltd., North Vancouver • **Manitoba:** Building Products & Coal Co., Ltd., Winnipeg • Supercrete Ltd., St. Boniface • **New Brunswick:** Joseph A. Likely Ltd., St. John • **Newfoundland:** Lundrigan's Concrete Ltd., Corner Brook • **Nova Scotia:** L. E. Shaw Ltd., Halifax • **Ontario:** Murray Associates Ltd., Toronto • Ontario Stress-Crete Ltd., Burlington • Pre-Con Ltd., Brampton • Ryan Builders Supplies Ltd., Windsor • Schell Industries Ltd., Woodstock • Standard Prestressed Structures Ltd., Maple • Toronto Cast Stone Co. Ltd., Toronto • Wilson Concrete Products Ltd., Belleville • J. M. Wright Ltd., North Bay • **Quebec:** Francon Ltd., Montreal • Pressure Pipe Ltd., Montreal

This advertisement sponsored by PCI Active Members

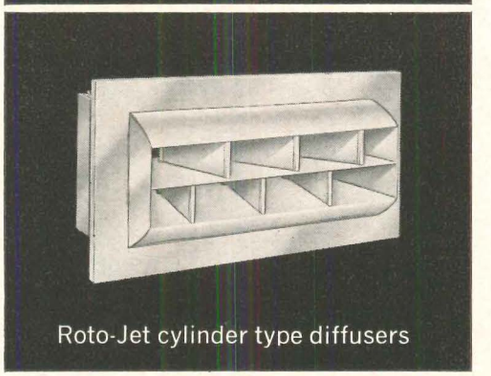
The Exciting Aluminum

AGITAIR® SERIES

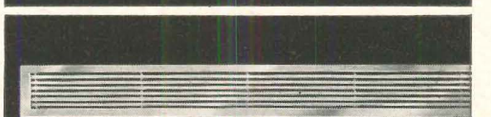
Combining Creative Design with Excellent Air Handling



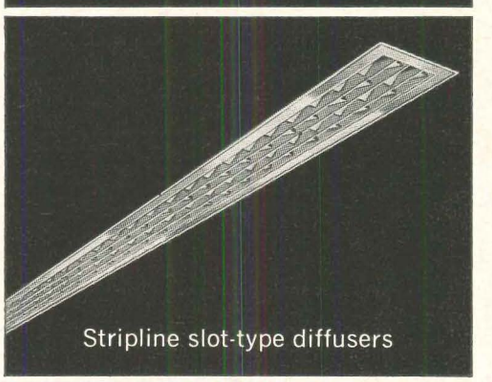
"RC" square and rectangular diffusers



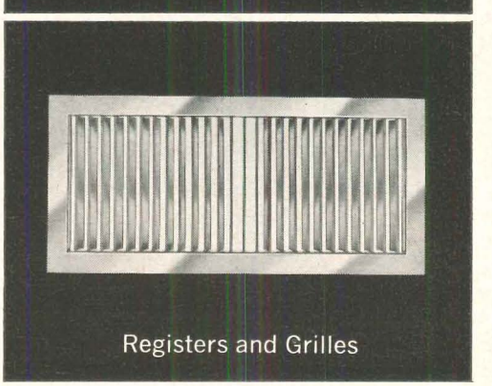
Roto-Jet cylinder type diffusers



Decoraire continuous grilles



Stripline slot-type diffusers

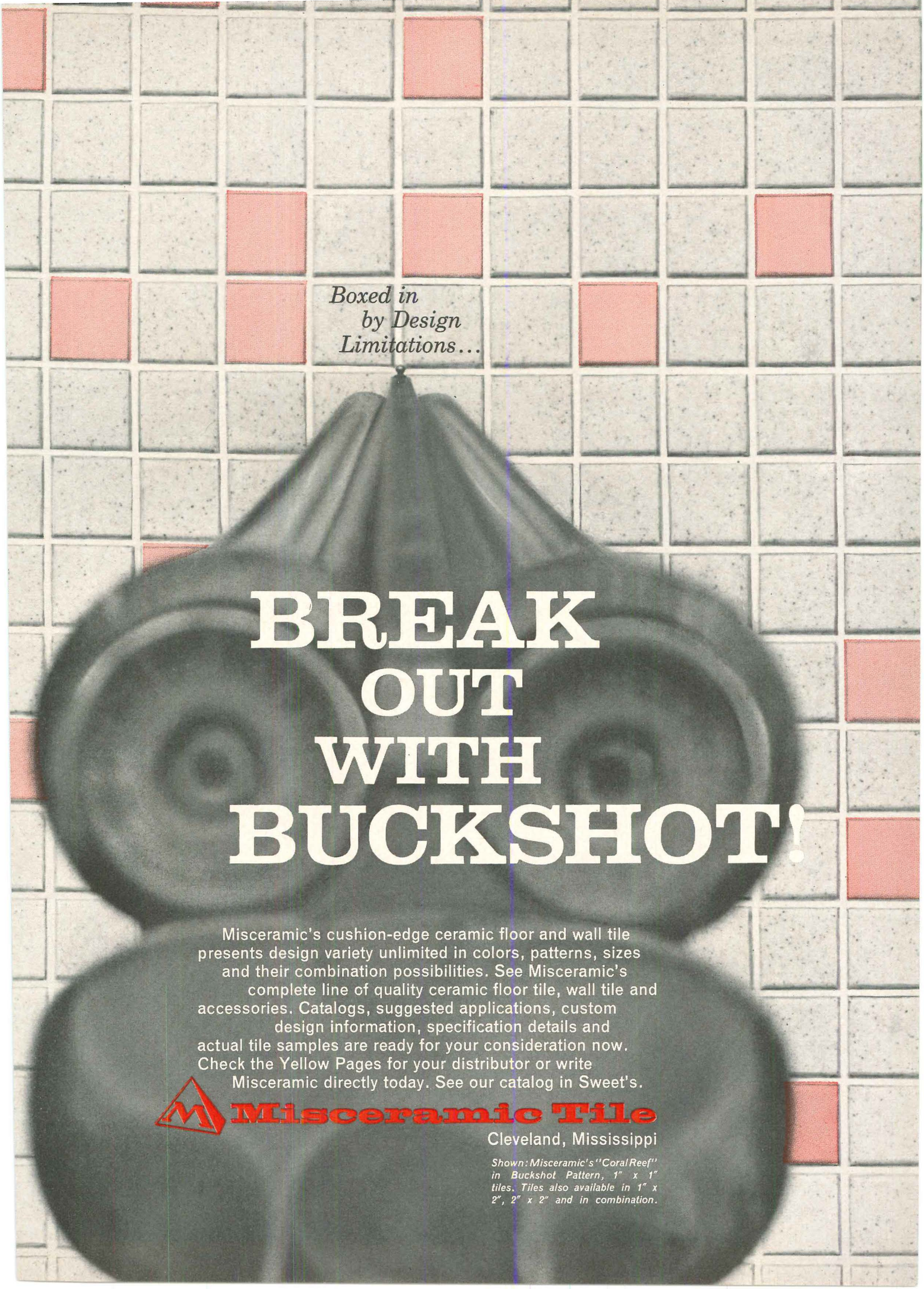


Registers and Grilles

This series of aluminum AGITAIR Air Diffusers, Grilles and Registers presents a choice of designs to match any decorative scheme. Practical engineered features of these items assure warranted air handling performance to meet the most common or unusual application requirements.

Your local Air Devices Inc. representative will be pleased to recommend the correct type and size best suited for each application. If you prefer, write for catalog.

AIR DEVICES INC.
185 Madison Avenue
New York, New York



Boxed in by Design Limitations...

BREAK OUT WITH BUCKSHOT!

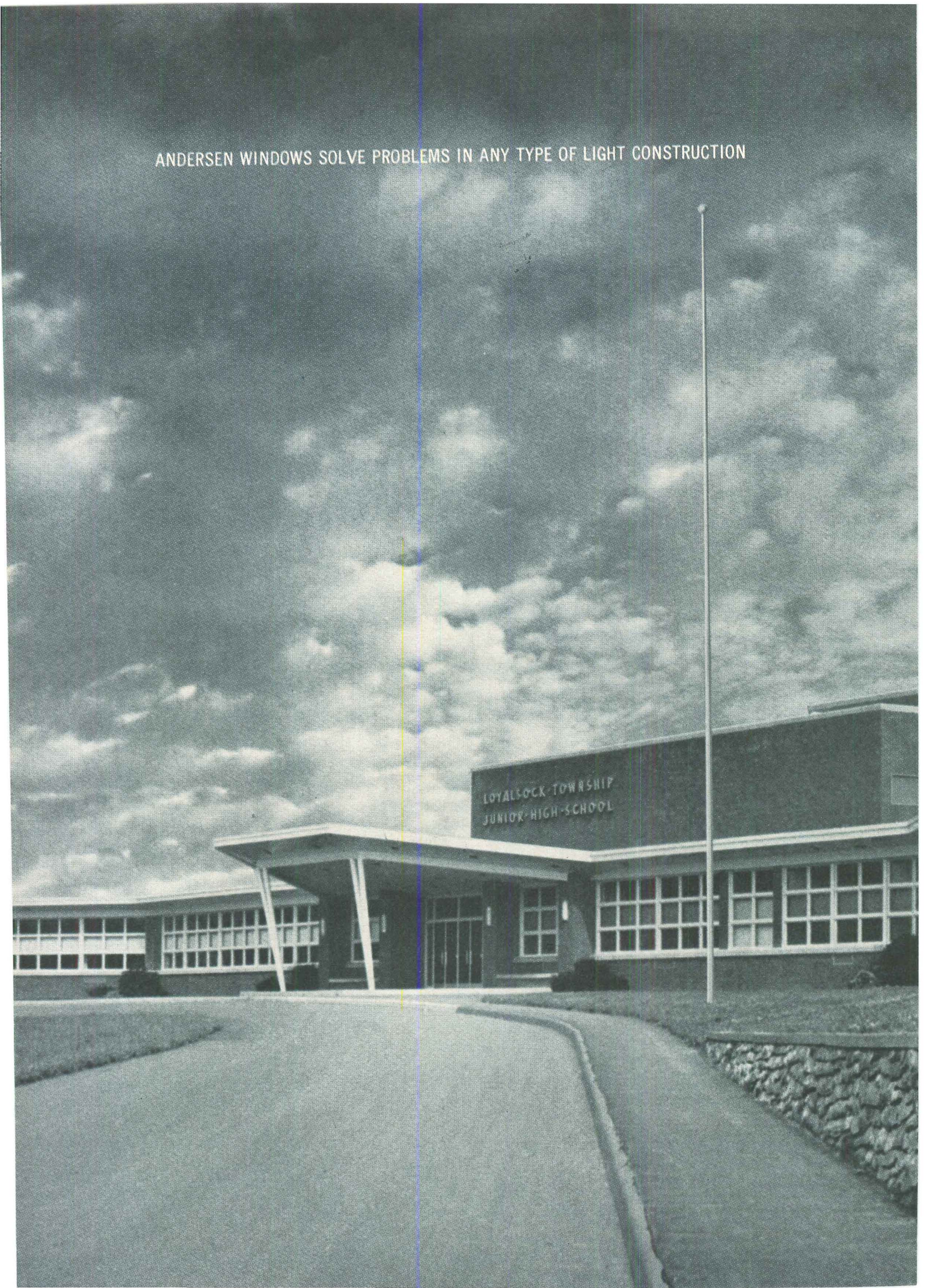
Misceramic's cushion-edge ceramic floor and wall tile presents design variety unlimited in colors, patterns, sizes and their combination possibilities. See Misceramic's complete line of quality ceramic floor tile, wall tile and accessories. Catalogs, suggested applications, custom design information, specification details and actual tile samples are ready for your consideration now. Check the Yellow Pages for your distributor or write Misceramic directly today. See our catalog in Sweet's.

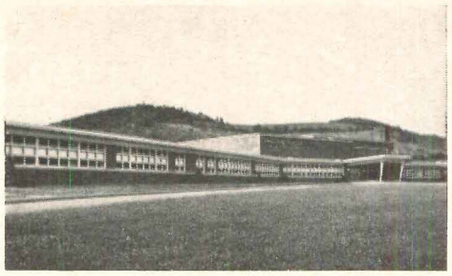
Misceramic Tile

Cleveland, Mississippi

Shown: Misceramic's "Coral Reef" in Buckshot Pattern, 1" x 1" tiles. Tiles also available in 1" x 2", 2" x 2" and in combination.

ANDERSEN WINDOWS SOLVE PROBLEMS IN ANY TYPE OF LIGHT CONSTRUCTION





Loyalsock Township Junior High School
Williamsport, Pennsylvania
Architect: John Boodon

Ribbons of windows develop exterior character for this new school

Architect John Boodon specified Andersen Flexivents® for adequate glass area, ease of ventilation, effective insulation

Extensive bands of Andersen Flexivents help Loyalsock Township Junior High School in Williamsport, Pennsylvania function as an efficient, versatile educational plant.

These Flexivents are stacked three high to provide all the natural illumination desired. They open to almost 90°—quickly and easily—to bring in desired ventilation, even in a rain storm.

On cold days Andersen Flexivents save on heating bills. They have the natural insulating qualities of wood—*plus* weathertightness that is 5 times industry standards. With the amount of glass area in a school this size, fuel savings can be substantial—more than enough to take care of maintenance.

Andersen Windows are available in seven different basic types: Casement, Glider, Pressure Seal, Beauty-Line, Strutwall*, Basement and Flexivent. And each of these types comes in sizes to suit any building need.

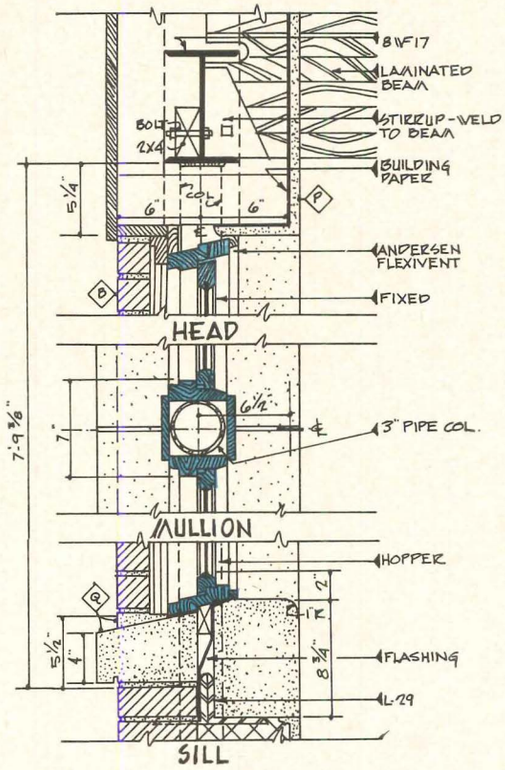
Check Sweet's File, and contact your distributor for Tracing Detail File. Andersen Windows are available from lumber and millwork dealers throughout the United States and Canada.

* TRADEMARK OF ANDERSEN CORPORATION

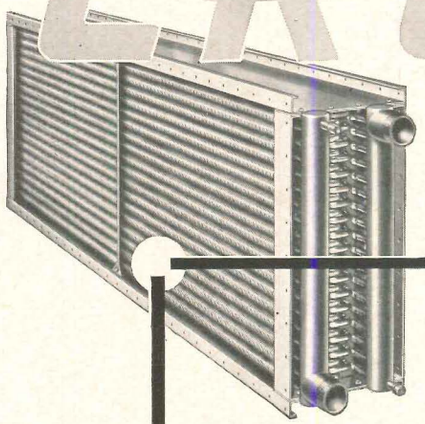
Andersen Windows

ANDERSEN CORPORATION • BAYPORT, MINN.

America's most wanted windows



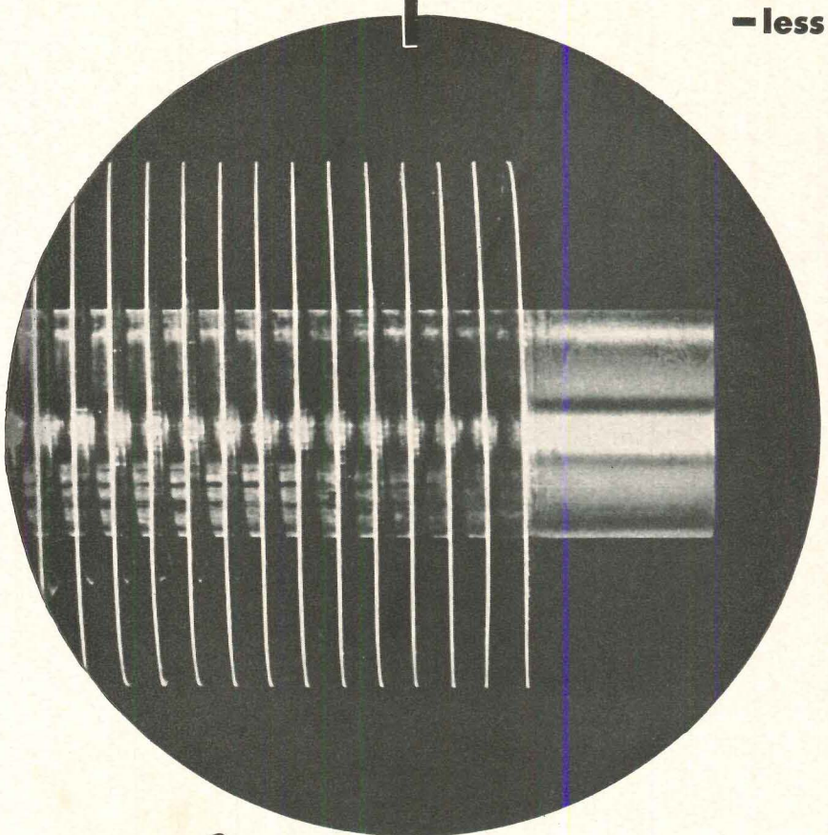
AEROFIN



Smooth-Fin Coils offer you:

Greater Heat Transfer
per sq. ft. of face area

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



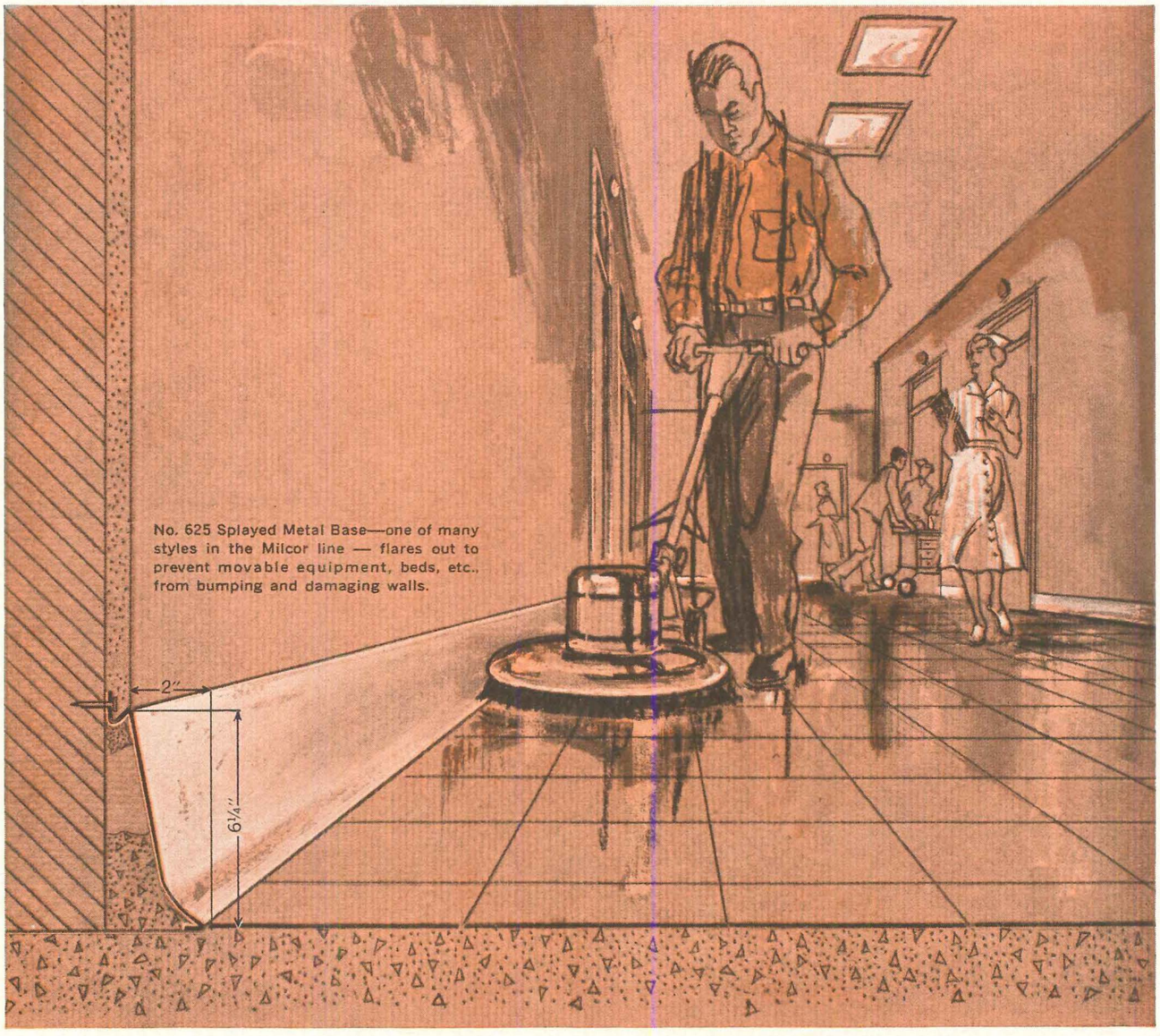
Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high and the use of high air velocities highly practical. Tapered fin construction provides ample tube-contact surface so that the entire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

AEROFIN CORPORATION

101 Greenway Ave., Syracuse 3, N.Y.

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

ENGINEERING OFFICES IN PRINCIPAL CITIES



This trim can take it! Milcor Metal Base provides the durability and impact resistance of steel at an installed cost competitive with other materials. It's ideal for hospitals, schools, and other public buildings — any area where heavy, careless traffic is a constant threat to weaker products. It's easily installed in plaster or masonry walls. The Milcor Interior Metal Trim line also includes window stools, cove moulds, picture moulds, and chair rails. All are now available through building supply dealers. See Sweet's, section 12a/In, or write for catalog 202.

Member of the Inland Steel Family **MILCOR®**

Milcor Metal Lath and Trim Products

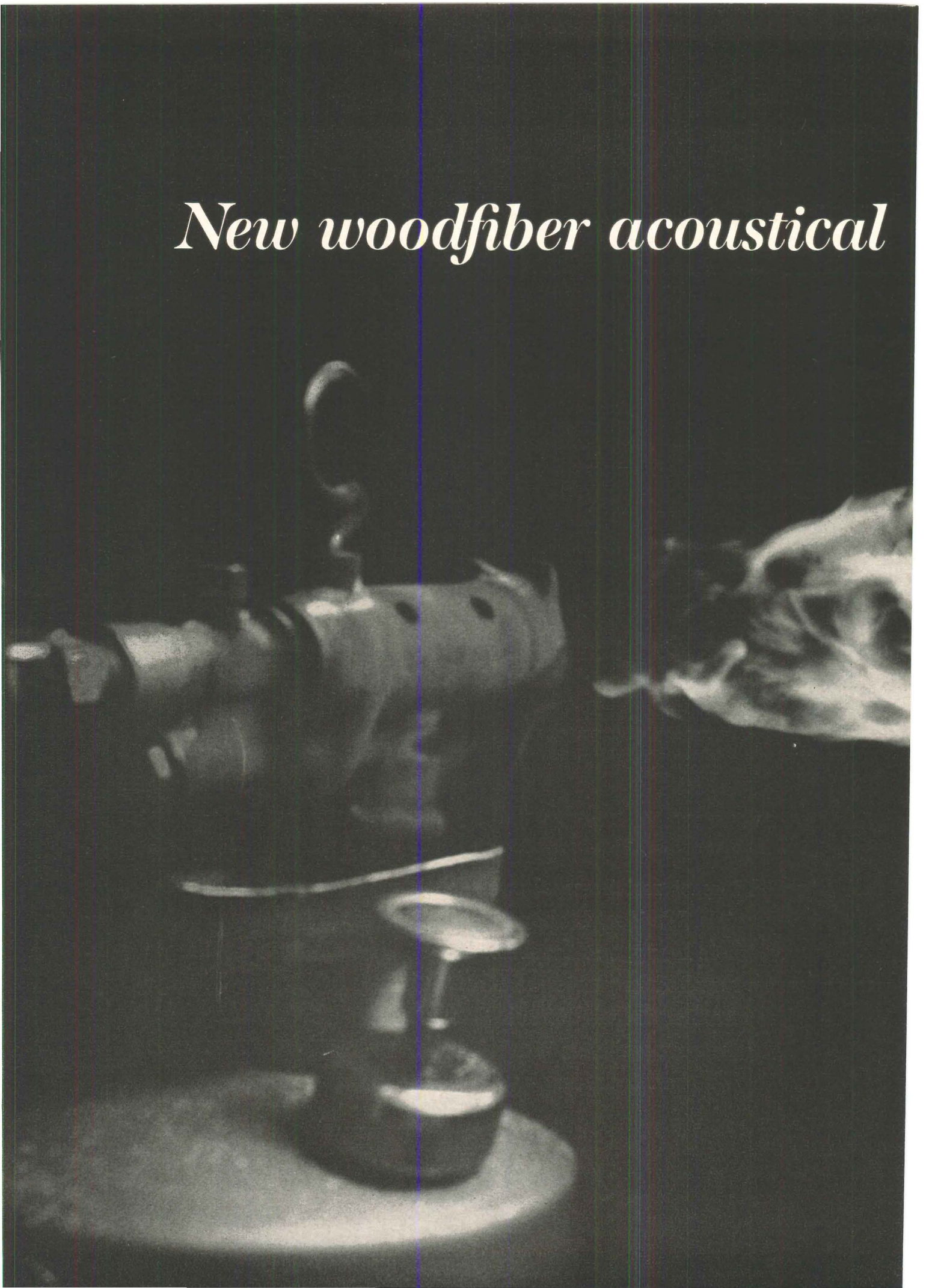
METAL LATH • CORNER BEADS • CASING BEADS • CHANNELS • STUDS • PARTITION SYSTEMS • ACCESS DOORS • WINDOW STOOLS • METAL BASES

Inland Steel Products Company

DEPT. G-4033 W. BURNHAM ST., MILWAUKEE 1, WISCONSIN

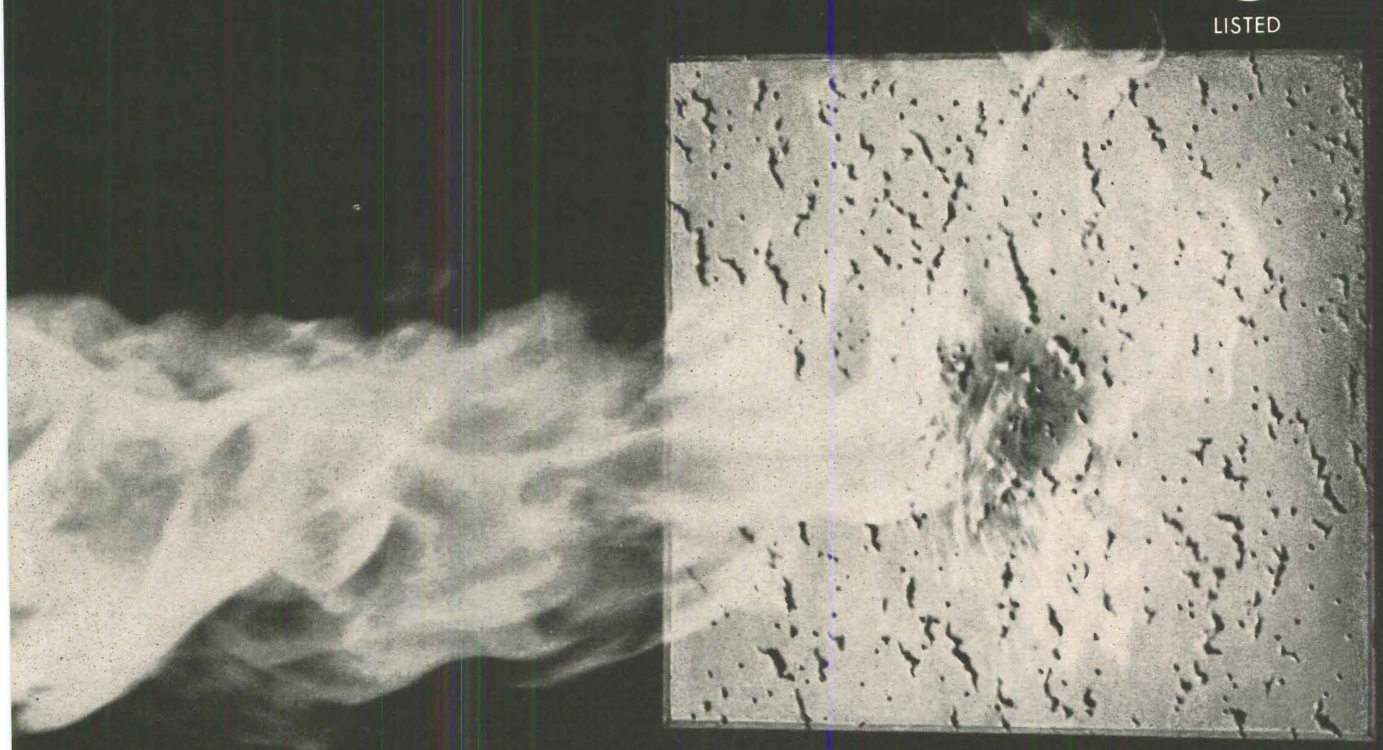
BALTIMORE 5, BUFFALO 11, CHICAGO 9, CINCINNATI 25, CLEVELAND 14, DETROIT 2, KANSAS CITY 41, MO., LOS ANGELES 58, NEW YORK 17, ST. LOUIS 10, SAN FRANCISCO 3

New woodfiber acoustical



tile that can't spread fire

UL LISTED



First time ever! Incombustible tile safety at "woodfiber tile" prices!

Underwriters' Laboratories, Inc., inspects and labels Simpson PCP ceiling tiles. Like mineral tile, Simpson PCP has a Type 1 flame spread rating of less than 25.

In many ceiling installations PCP woodfiber tiles are now replacing mineral tiles that cost up to 50% more.

Pyro-Chem Protection is an exclusive Simpson process. Not just a surface treatment, every fiber throughout the tile is impregnated with special PCP fire-proofing chemicals.

Simpson PCP Acoustical tiles are not only safe and economical, they are acoustically efficient: NRC ratings up to 70. Room-to-room attenuation factors average 37.6-41.5 db. Available in 4 beautiful Forestone® sculptured textures and 2 perforated designs.

Check the Yellow Pages under "Acoustical" for your nearest Simpson Certified Contractor. Or write today for PCP samples and detailed information.

Simpson

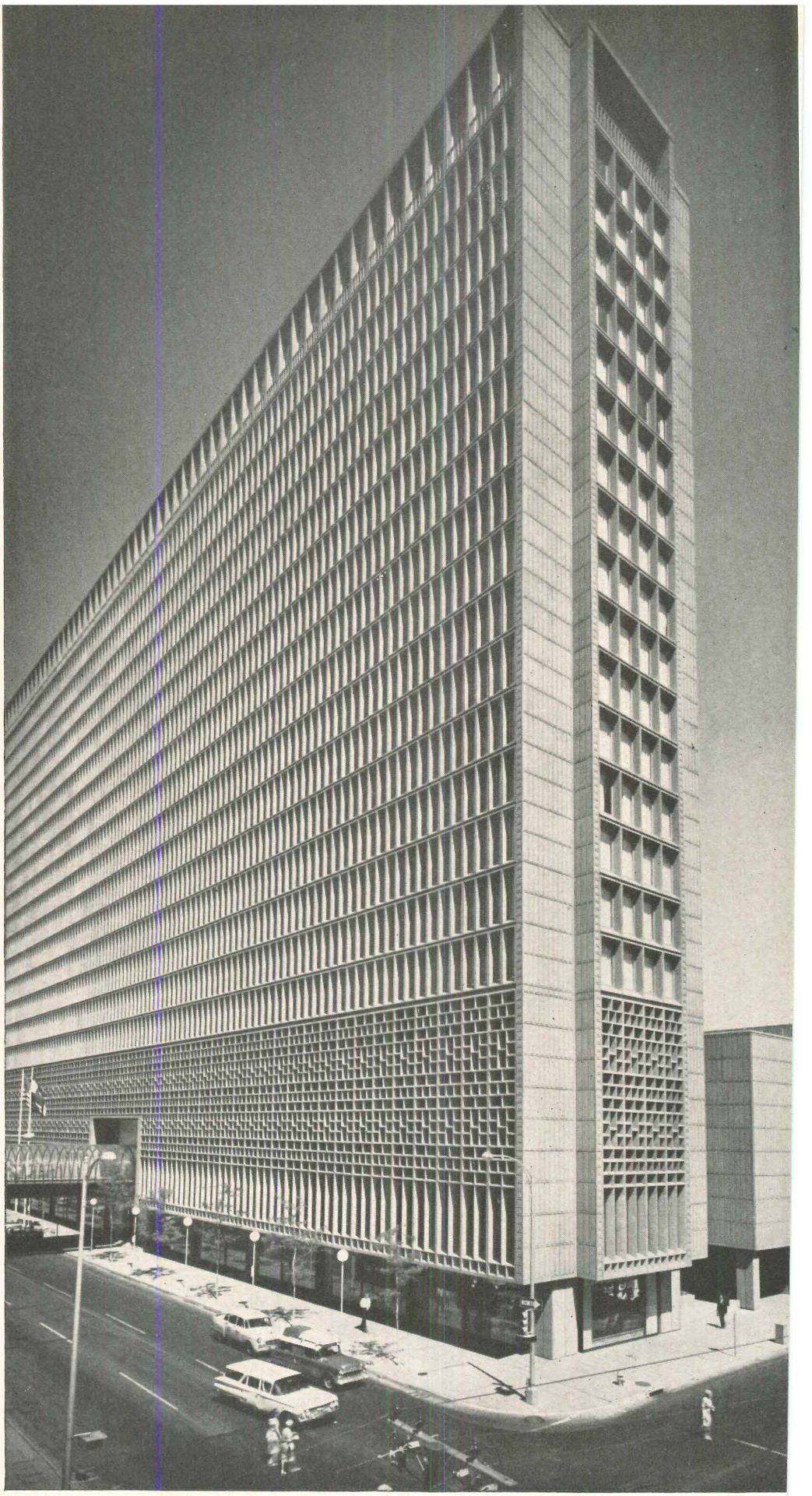
PCP

PYRO-CHEM PROTECTION

SIMPSON CERTIFIED Simpson ACOUSTICAL CONTRACTOR

Simpson Timber Company, 2086-4 Washington Building, Seattle 1, Washington

WHO LOOKS AT THE ROOF?



No one has to look at the roof of this award-winning building (AIA Award of Merit, 1961), because a Ruberoid roof was applied.

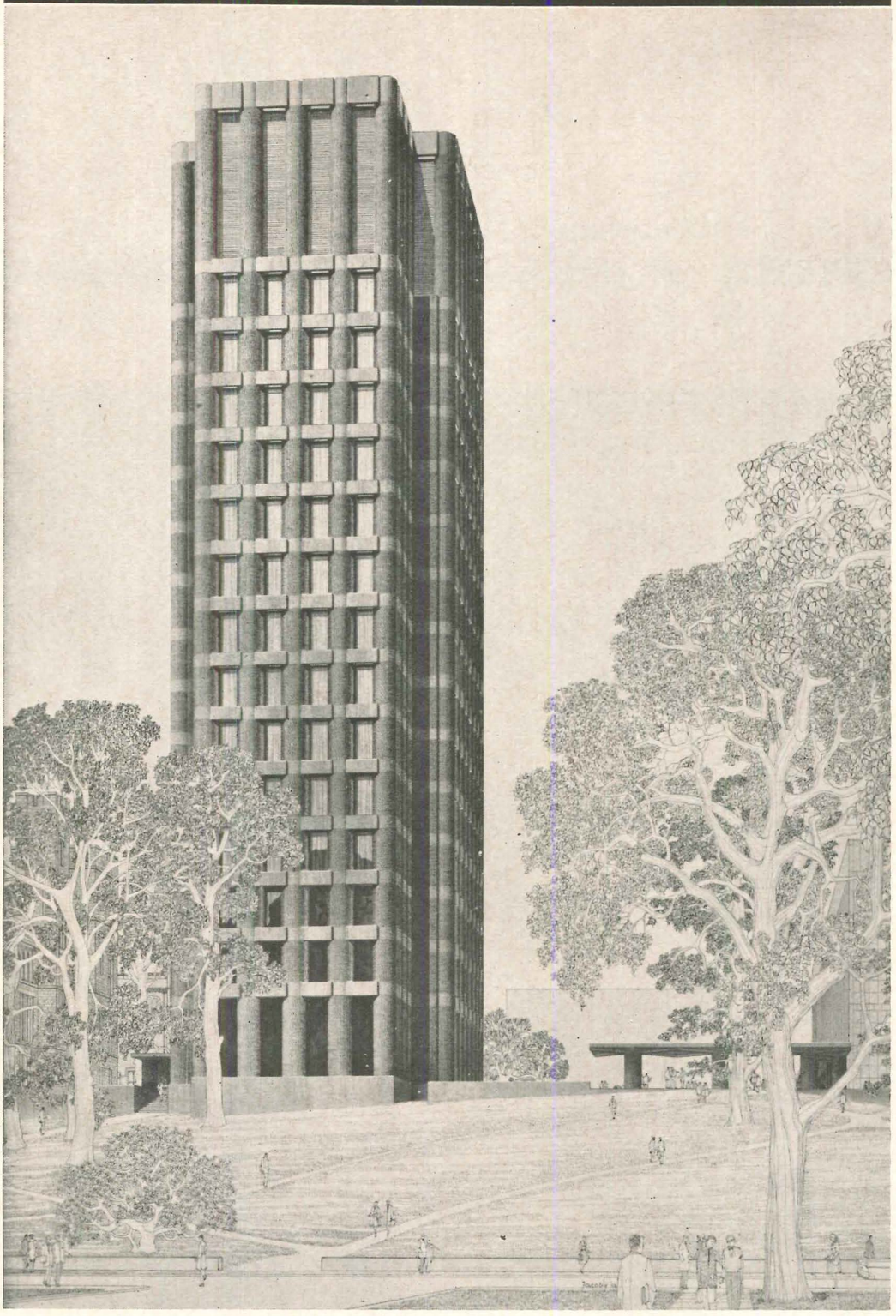
A Ruberoid roof, expertly built-up with Ruberoid special roofing bitumen, by an approved Ruberoid roofer, assures years of weather-tight, maintenance-free service.

Look up to the finest in roofing on your next project. Specify Ruberoid!

For your copy of the industry's most complete built-up roofing specification catalog. Write: The RUBEROID Co., 733 Third Avenue, New York 17, N. Y., or refer to Sweet's File 8A-RU.

RUBEROID®

DENVER-HILTON HOTEL, DENVER, COLORADO
Architect: I. M. Pei and Associates
Roofing Contractor: Asphalt Products Company
Ruberoid Specifications: Special Roofing Bitumen, Asphalt Felt, gravel surface

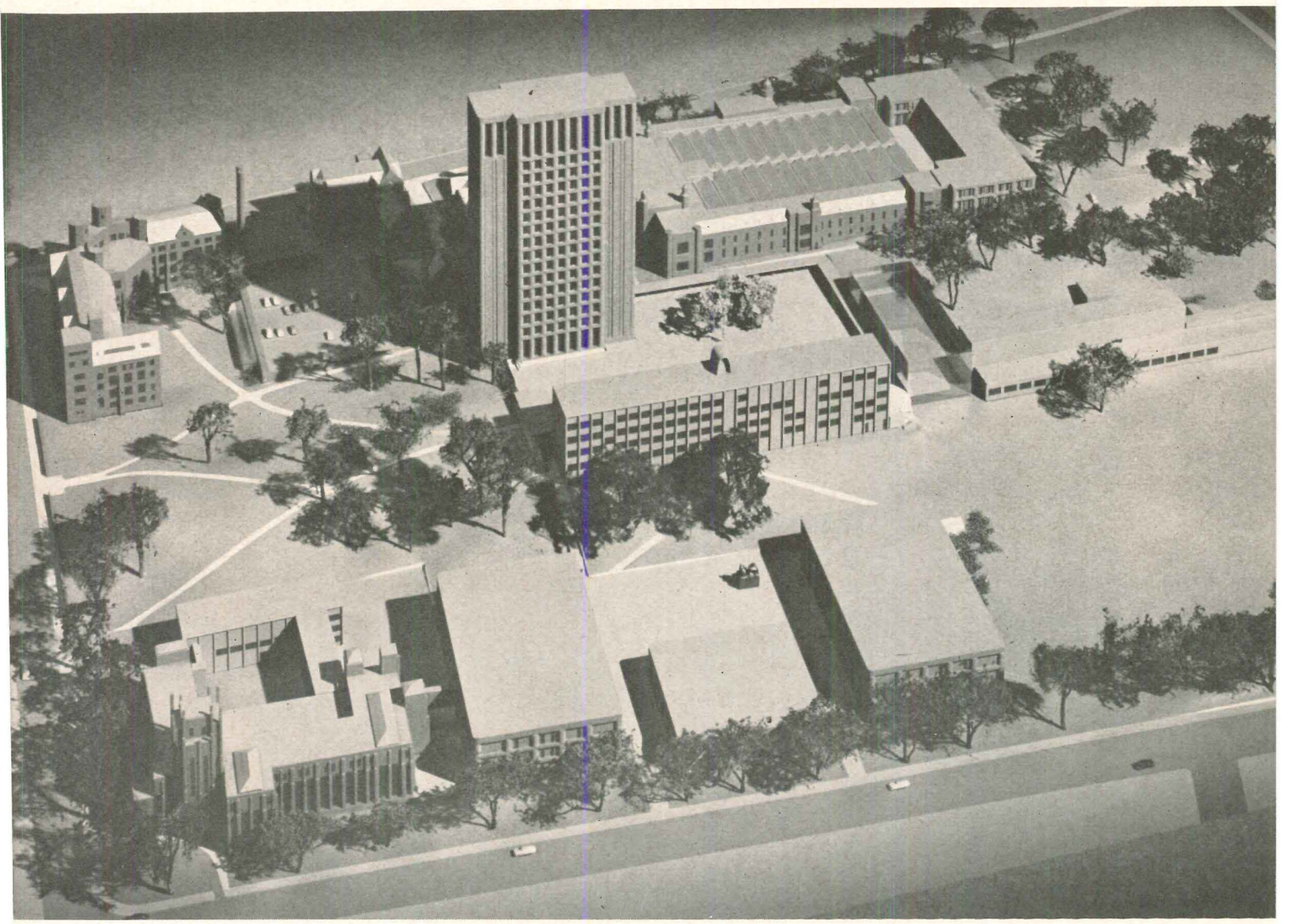


Recent Work of
PHILIP JOHNSON

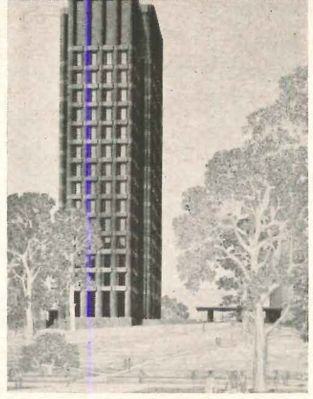
"There is only one absolute today and that is change. There are no rules, surely no certainties in any of the arts. There is only the feeling of a wonderful freedom, of endless possibilities to investigate, of endless past years of historically great buildings to enjoy."—*Philip Johnson, December, 1961*

Recent Work of Philip Johnson

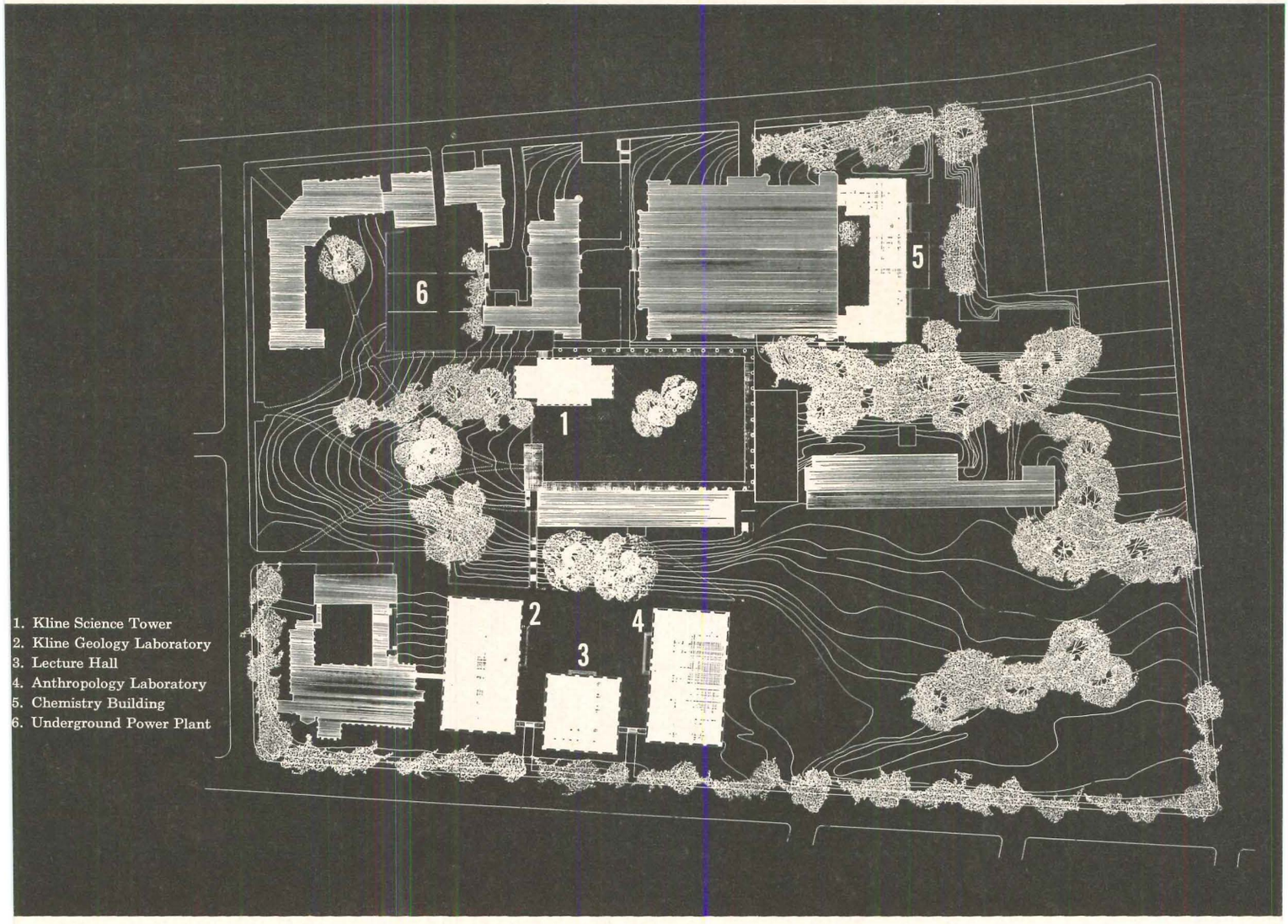
KLINE SCIENCE CENTER, YALE UNIVERSITY, NEW HAVEN



Six new buildings will be built to form the Kline Science Center at Yale, according to present plans. Architect Johnson says of them, "The most important is the tall Kline Tower, housing primarily biology, which will dominate a new arcaded courtyard. This is much in Yale tradition, characterized by towers rising from courtyards; also, it forms a focal point for all the buildings in the square. The development of the exteriors with drum-like columns and extended, stone-faced beams organizes the façades—both high- and low-rise—into strong patterns that contain the functional but otherwise more or less haphazard patterns of the windows."

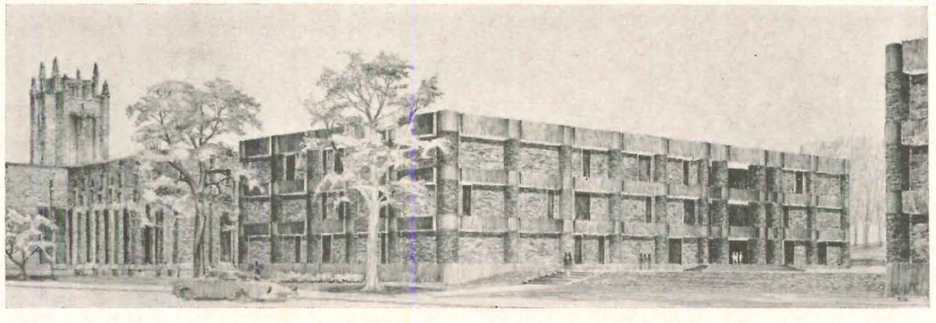


1



1. Kline Science Tower
2. Kline Geology Laboratory
3. Lecture Hall
4. Anthropology Laboratory
5. Chemistry Building
6. Underground Power Plant

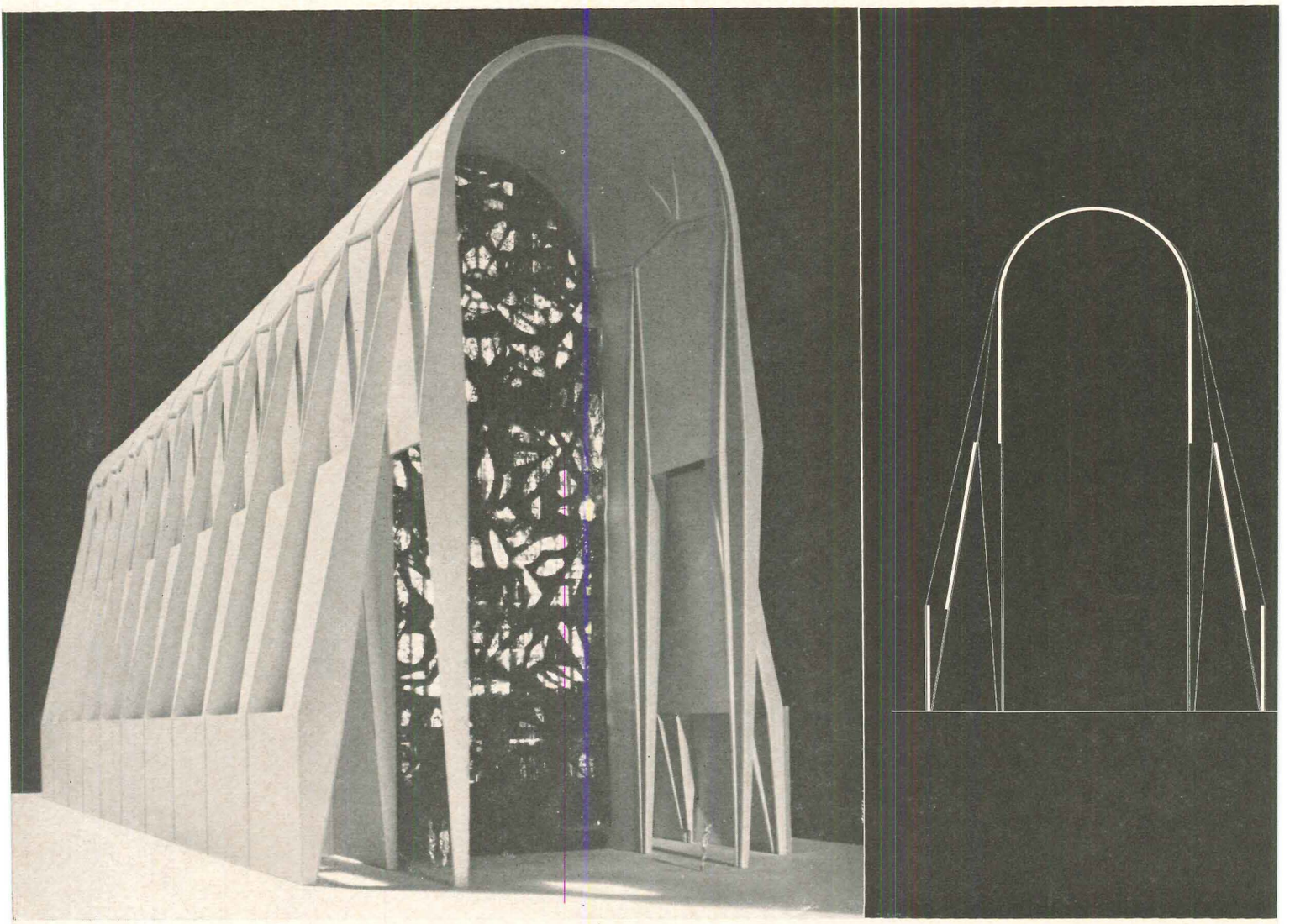
Louis Checkman photos



2

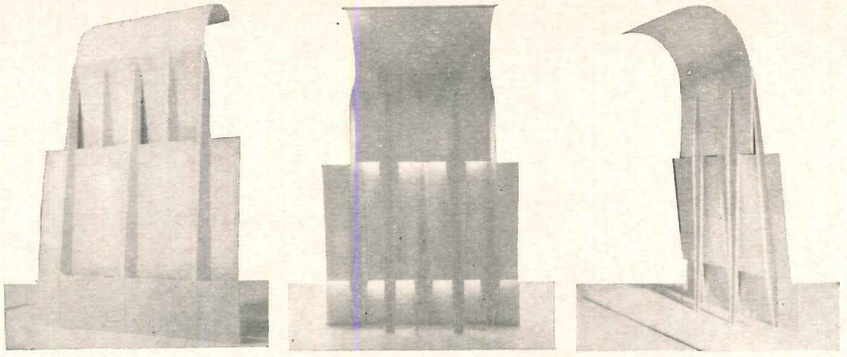
Recent Work of Philip Johnson

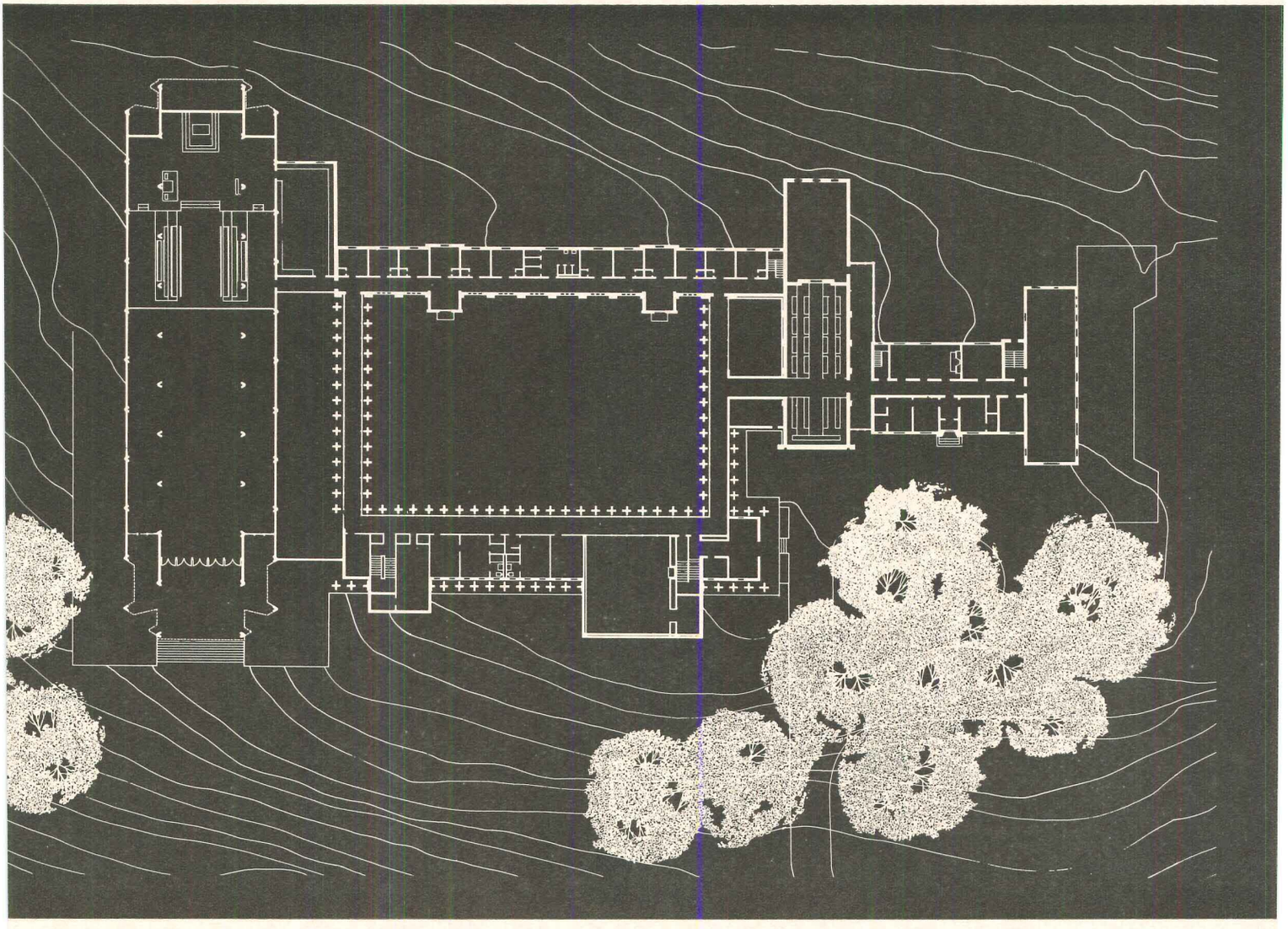
ST. ANSELM'S ABBEY, WASHINGTON, D. C.

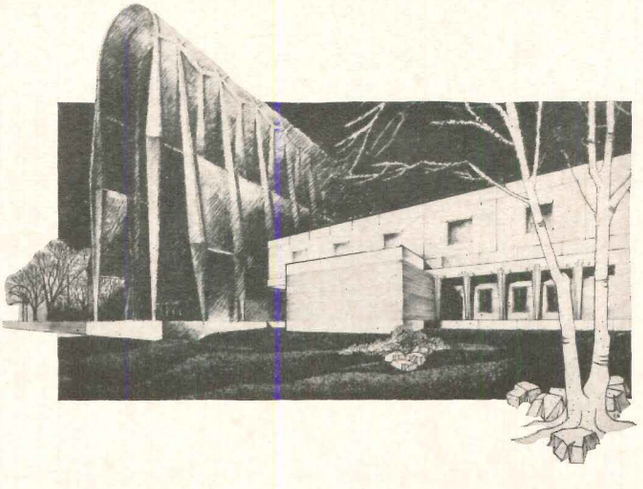


Shields

Architect Johnson says, "The concept is clearly traditional; an abbey church designed for the liturgy of the monks. The historical prototype might be Cluny, with its stress on the long processional way. The means, however, are completely of our day. Two points might be made. Especially unusual is the alternation of buttress and column, emphasizing the processional rhythm, creating side aisles, and acting as wind-bracing. The other important element is daylighting, which comes in through concealed slots between the variously canted side walls. This will afford an eerily diffused glow that should enhance the religious effect."

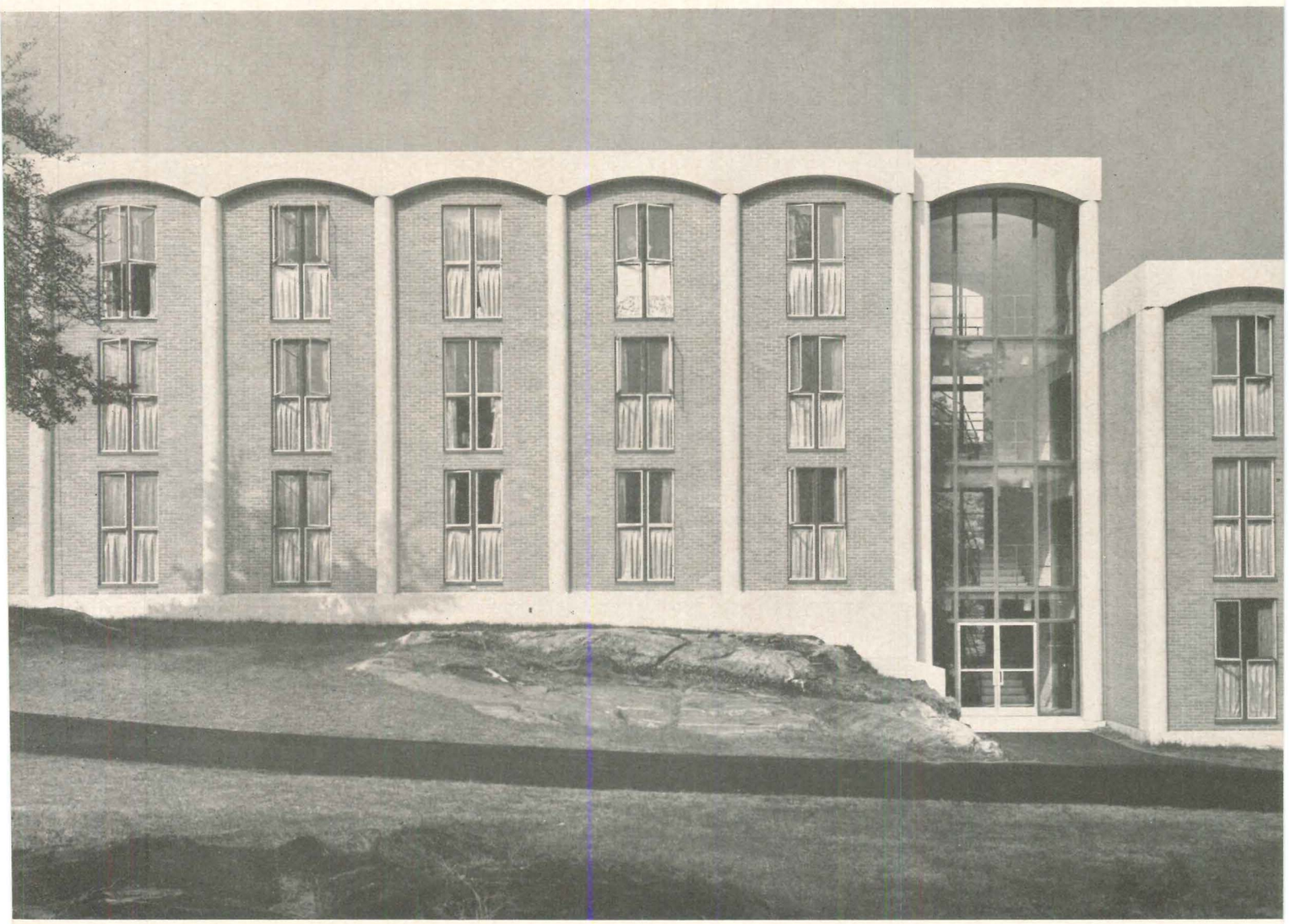




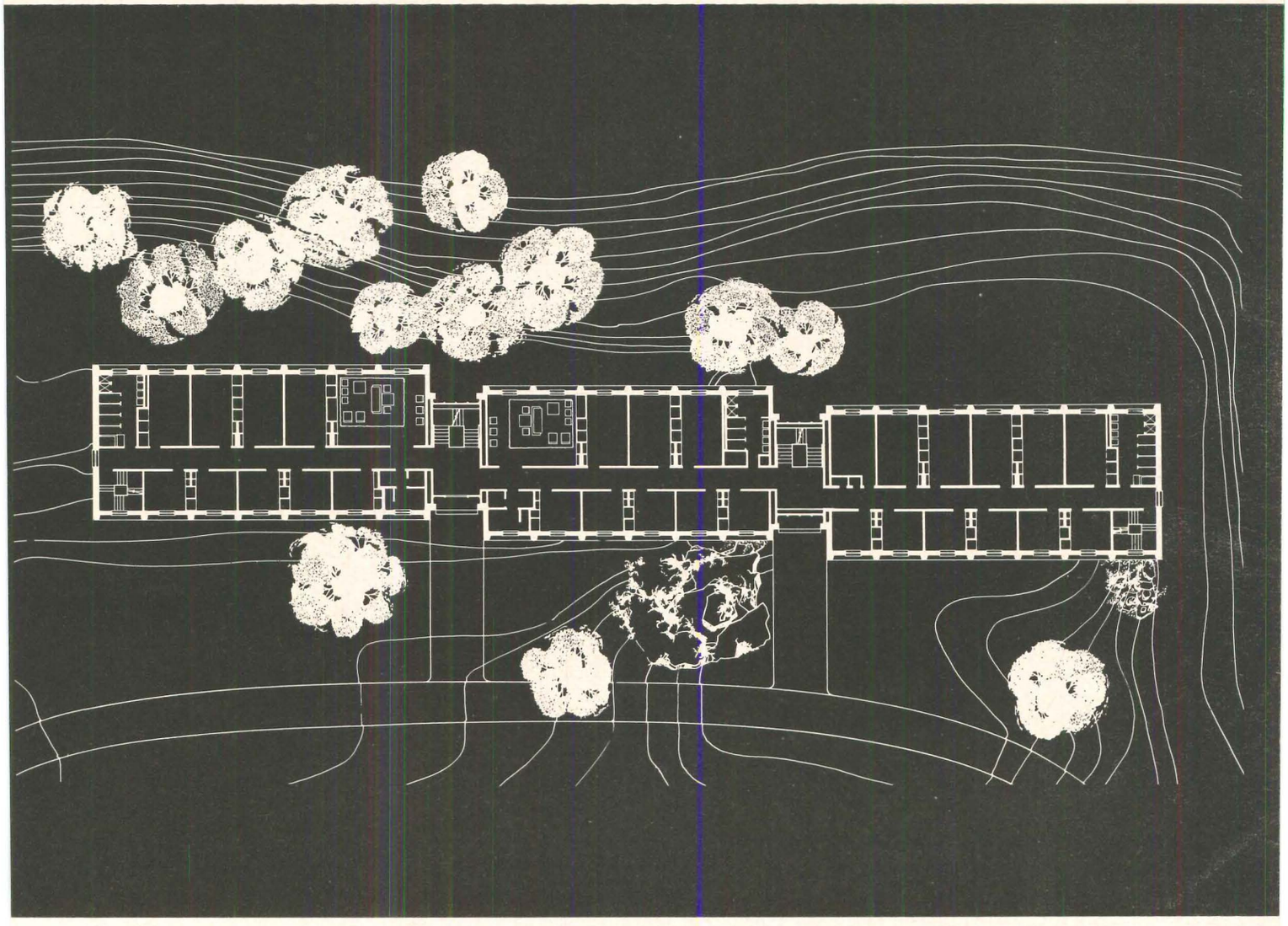


Recent Work of Philip Johnson

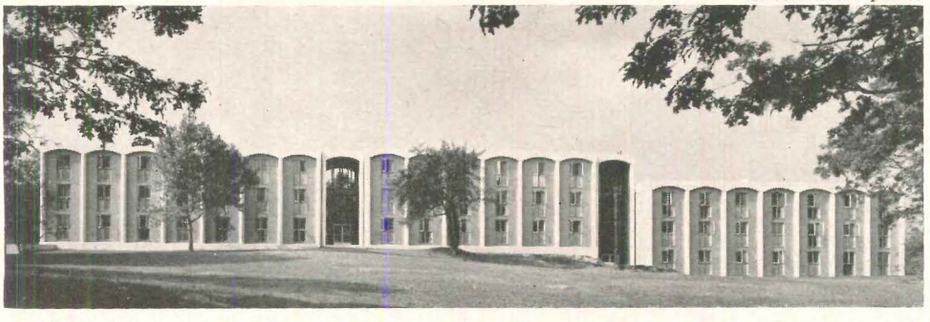
DORMITORIES AT SARAH LAWRENCE COLLEGE, BRONXVILLE, N. Y.



Housing a total of about 150 girls, these three new dormitory units at Sarah Lawrence are of a soft pink brick and smooth white precast concrete, stepped down an existing slope and linked by glass-enclosed stair halls. The vertical fenestration pattern—consisting of three double squares of casements—is emphasized and pulled into unity by the nicely proportioned concrete overstructures of projecting columns and shallow-arched entablatures. There was no requirement for large general lounges; the program called instead for a living room and kitchen in each unit at ground level, with lounges (one for every eleven girls) on upper floors.

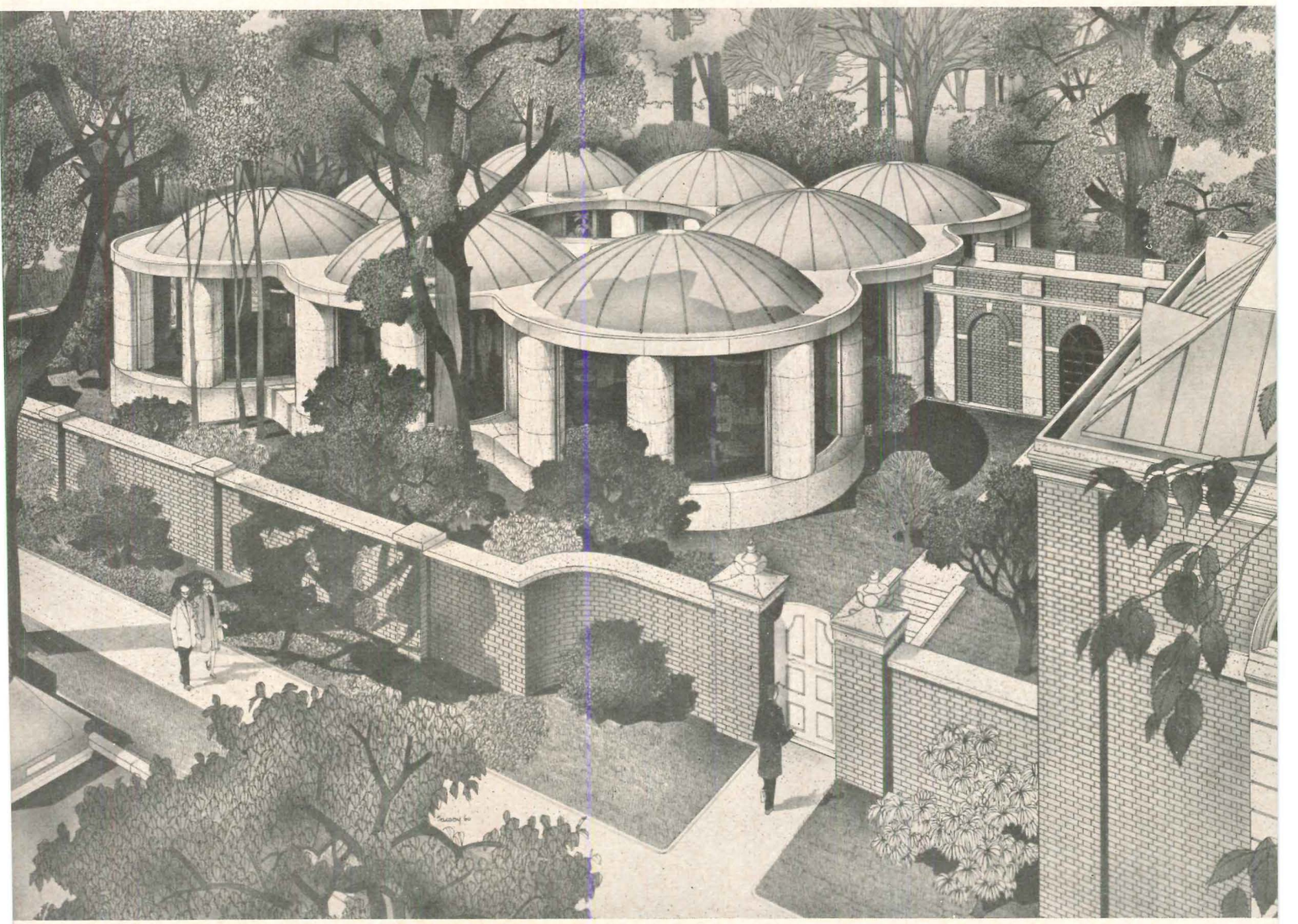


Malcolm Smith photos

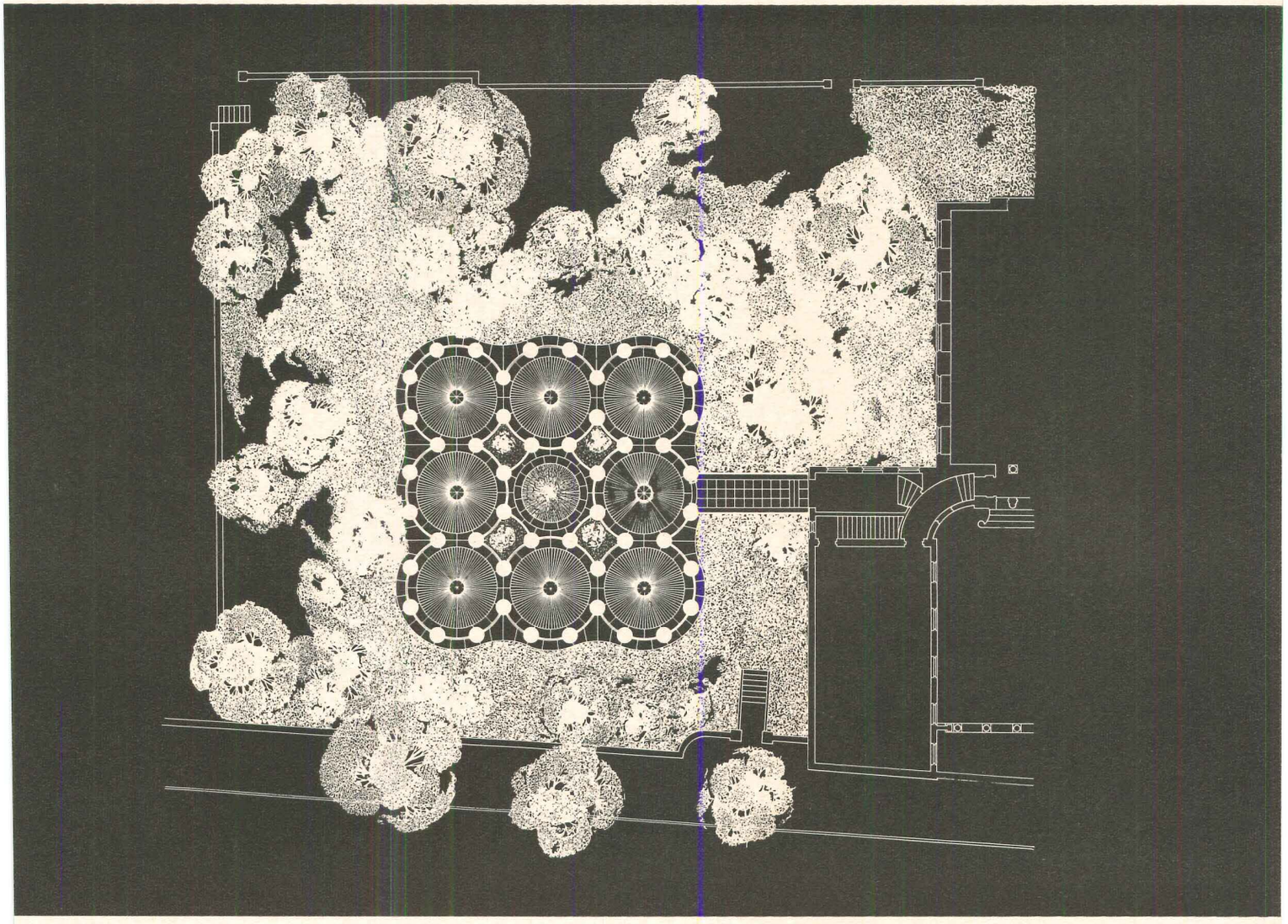


Recent Work of Philip Johnson

DUMBARTON OAKS WING, WASHINGTON, D. C.

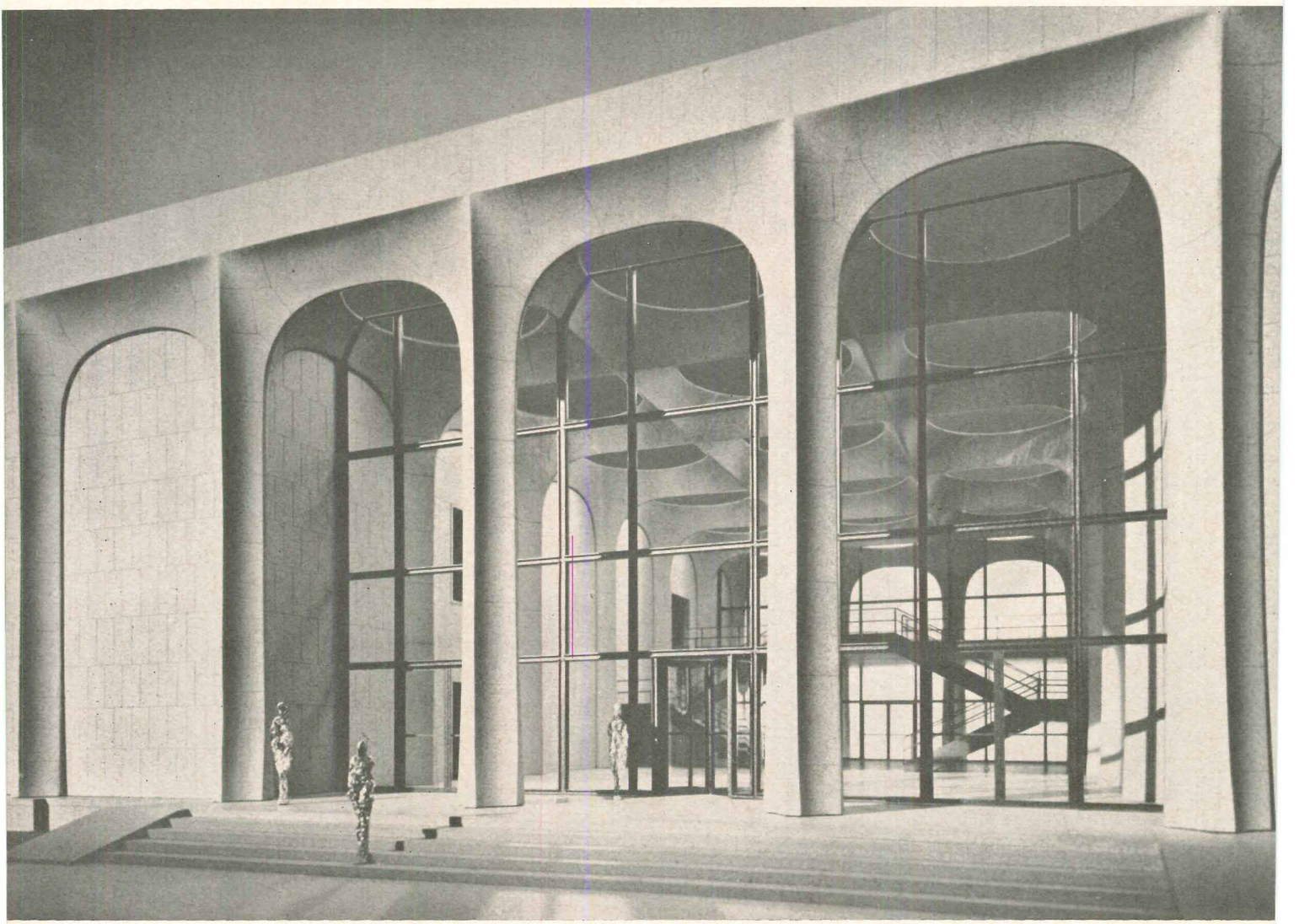


This new wing to the Dumbarton Oaks Museum is now under roof and will be finished this fall. Its design has a Byzantine flavor—in keeping with its Pre-Columbian collection of artifacts, ceramics, jewelry, etc.—and consists of a complex of eight low domes on a regular three-by-three pattern of circles. The ninth, or central, circle of this pattern was left open for a fountain. Each circular space thus has a strong sense of scale and a positive identity with the garden. Planting is brought directly against the glass infilling to make visible walls of solid greenery and create, as the architect describes it, a "green museum."

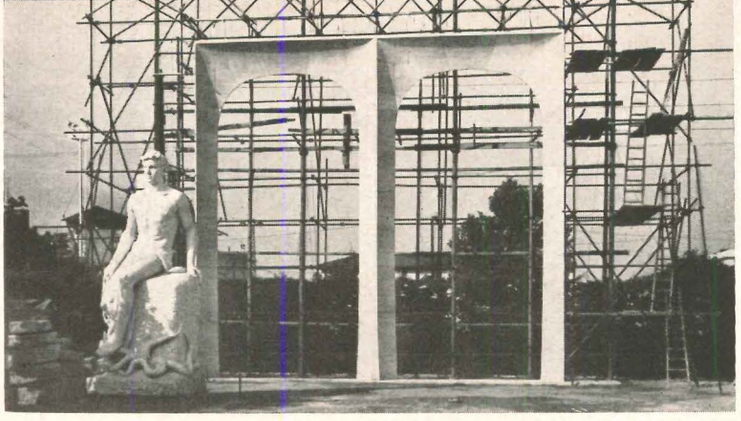


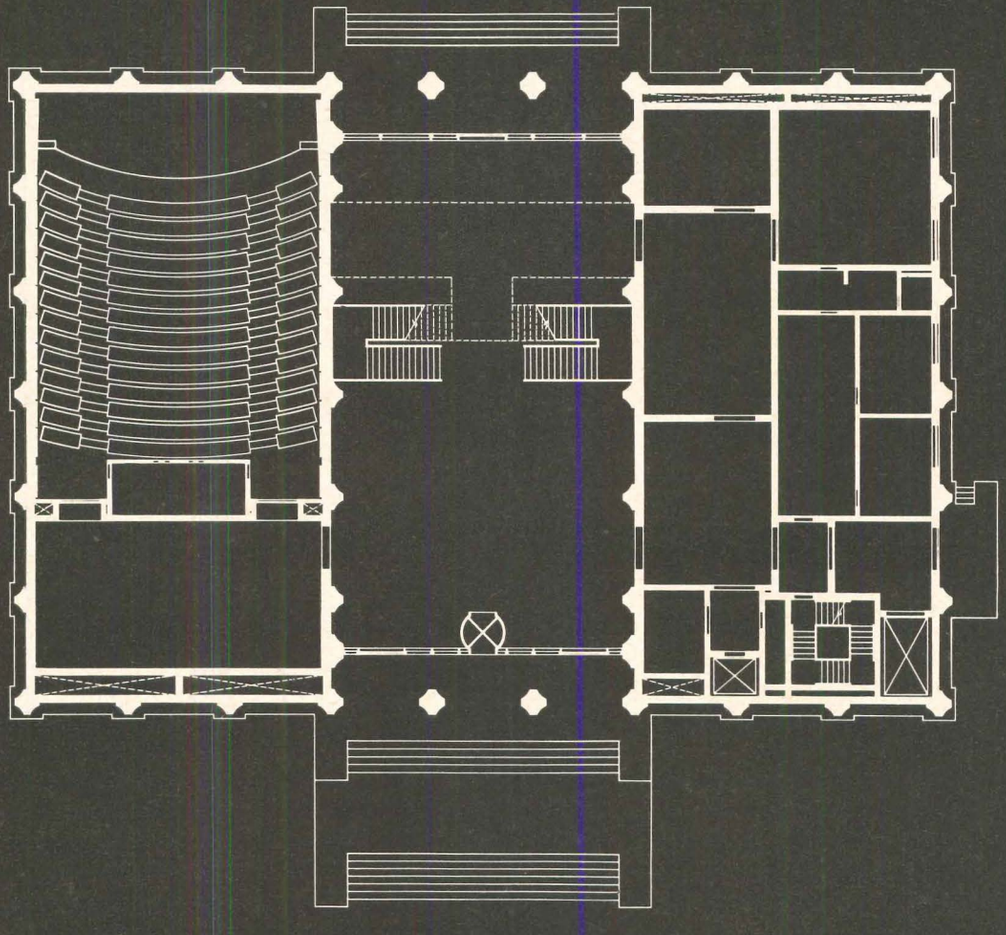
Recent Work of Philip Johnson

SHELDON ART GALLERY, UNIVERSITY OF NEBRASKA, LINCOLN



This university art gallery will house and display a collection of modern paintings, and provide also an auditorium and the necessary offices, work rooms, etc. There will be a garden for sculpture in the rear. The symmetrical building, now being built, will consist of a series of gracefully tapered pier forms terminating in shallow arches. This exterior pattern will carry through the interior and knit the whole into a powerfully unified plastic statement. The piers and arches will be of travertine, hand carved in Italy. The top photo on the opposite page shows a full-size mockup, made to study the modeling for light and shade.

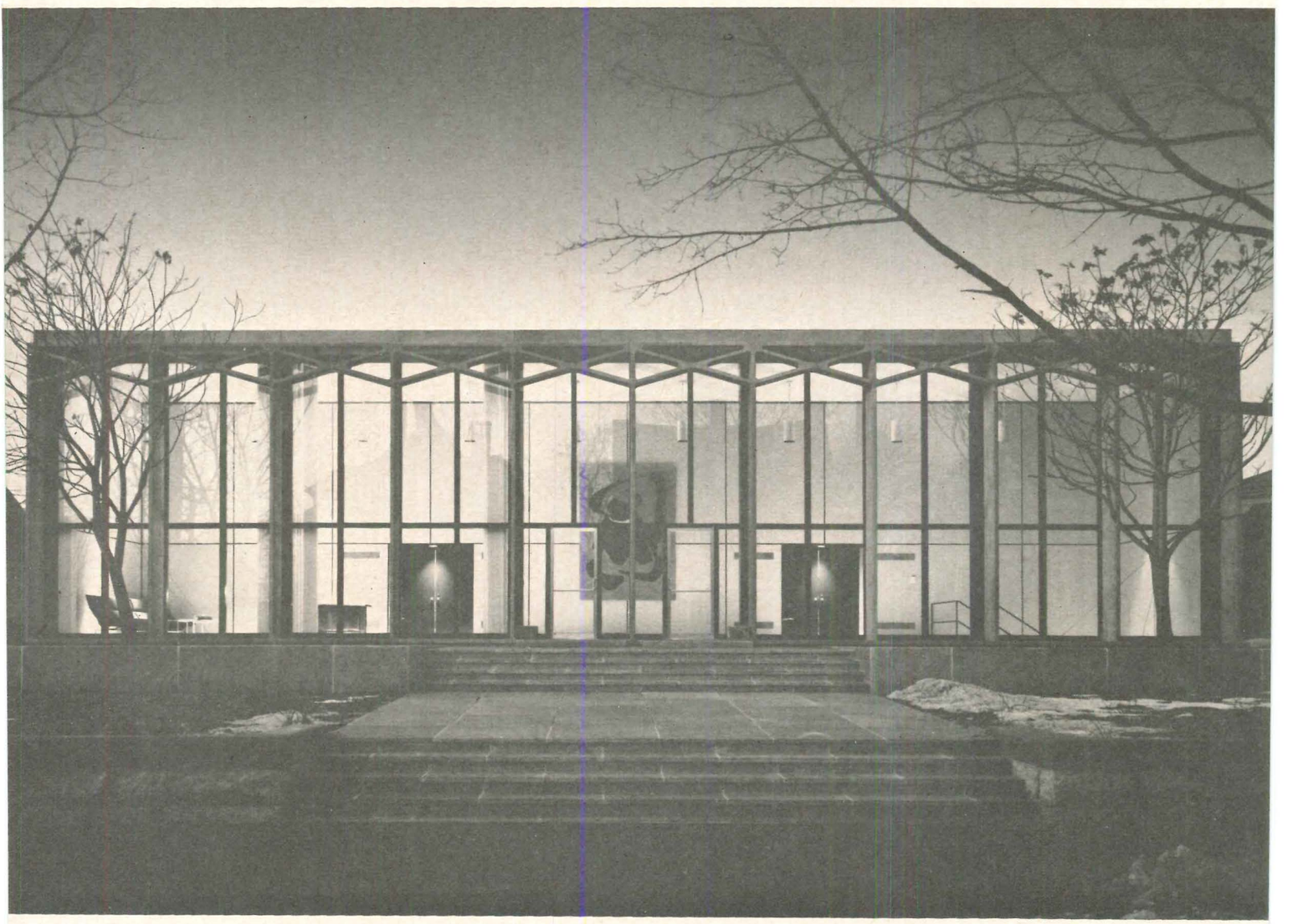




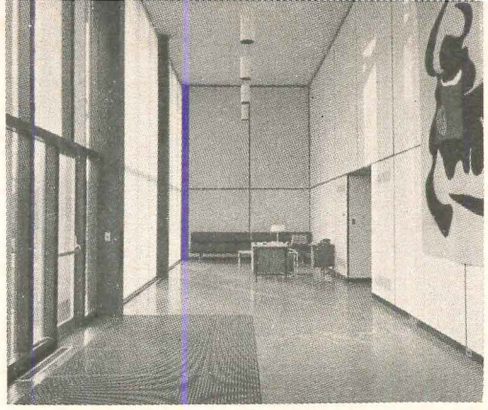
Louis Checkman photos

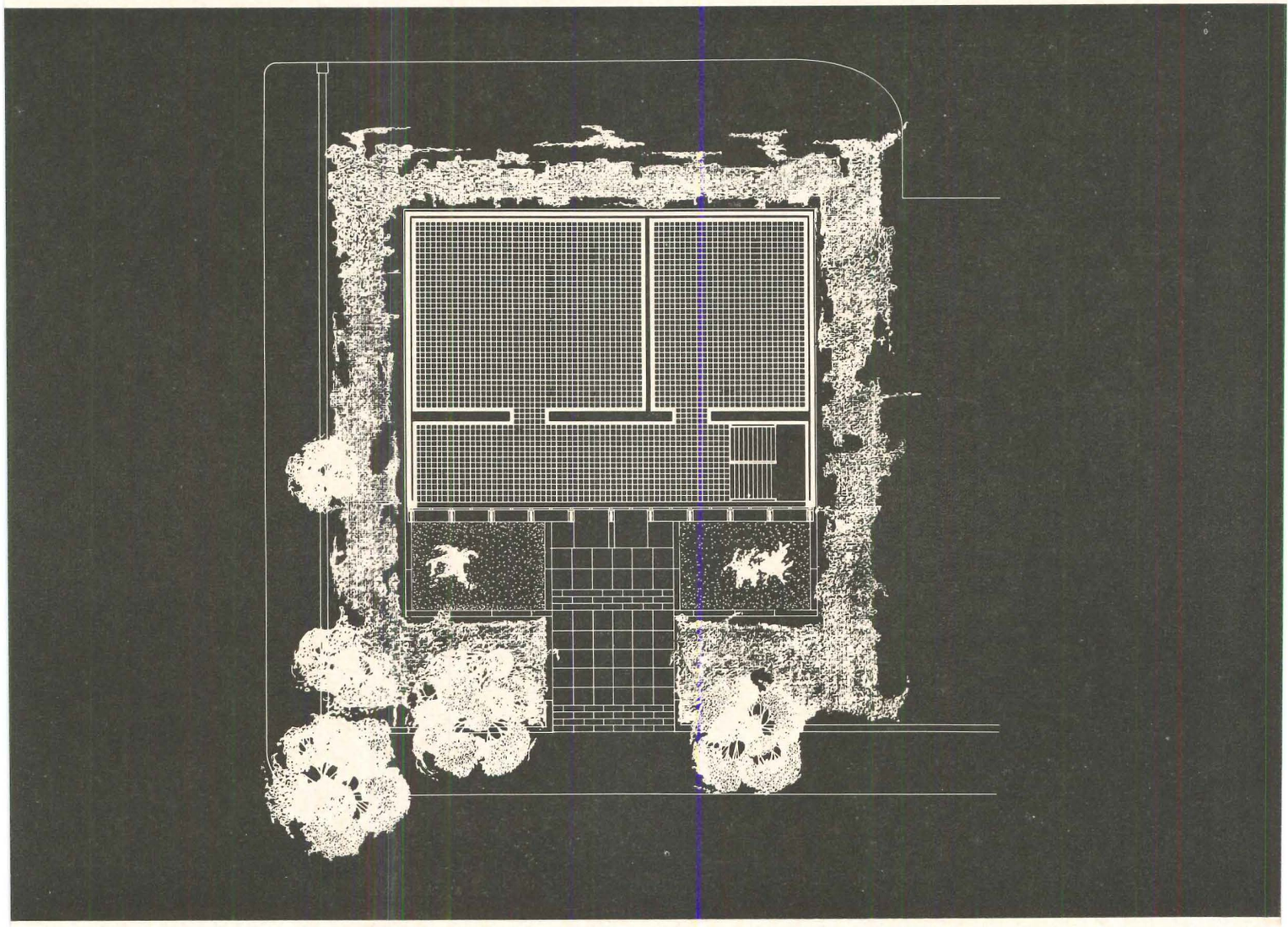
Recent Work of Philip Johnson

COMPUTING LABORATORY, BROWN UNIVERSITY, PROVIDENCE, R.I.

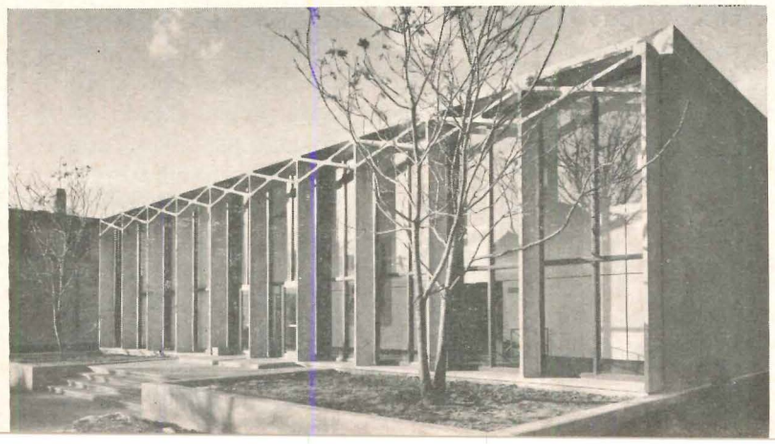


Of this center for applied mathematics and research, architect Johnson says, "I conceived the computing center as a *porticus*—a porch—to emphasize its importance as a technical center, its unique setting in the city, and its dignity as a memorial to Thomas J. Watson Sr. Though Neo-Classical in concept, the materials and design of the columns are of today. Only precast stone could have been used to form the X's of the entablature; only plate glass could render the porch useable in the New England climate. Red granite chips were used as exposed aggregate in order to harmonize the new center with the 19th Century which surrounds it."



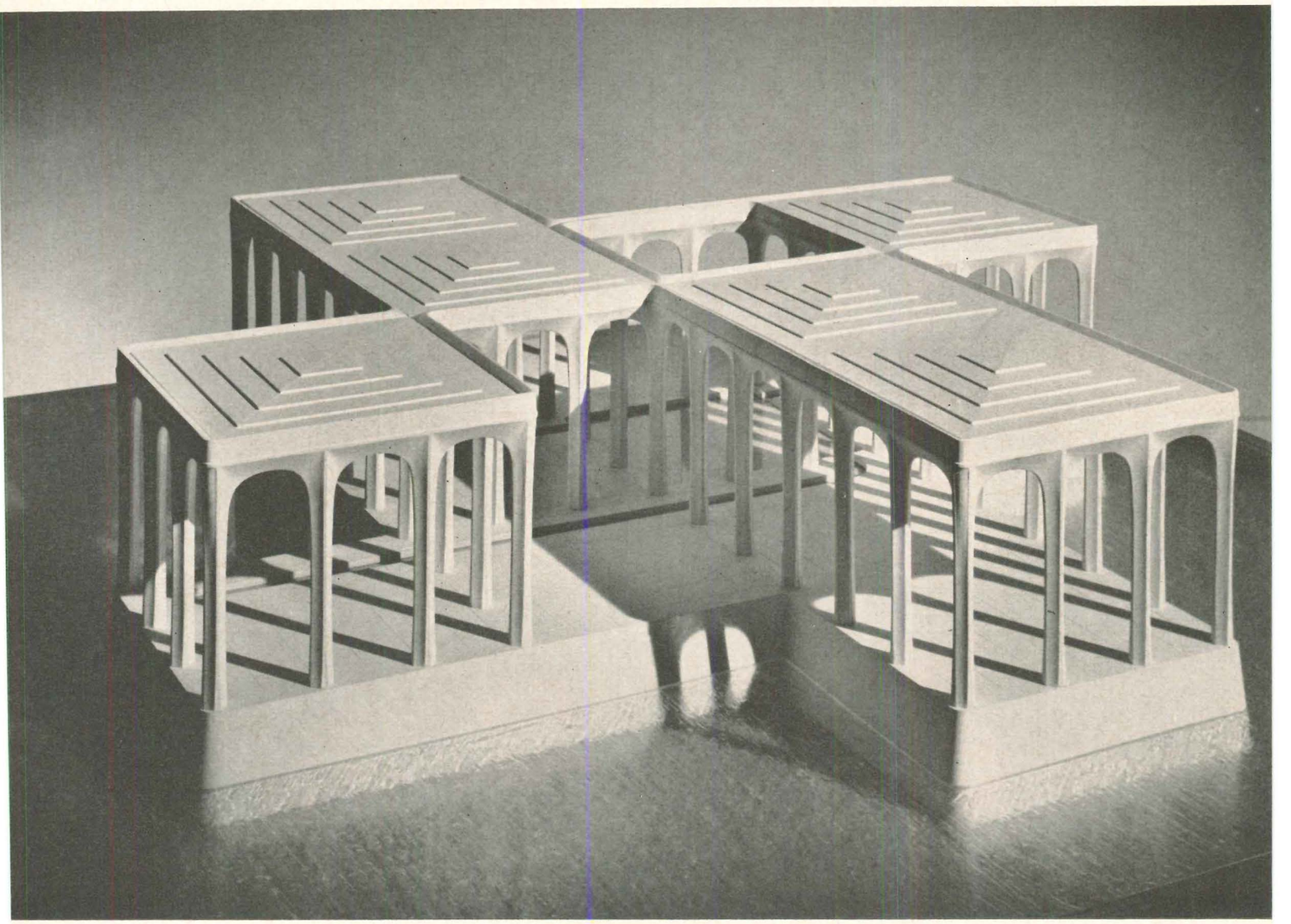


Alexandre Georges photos



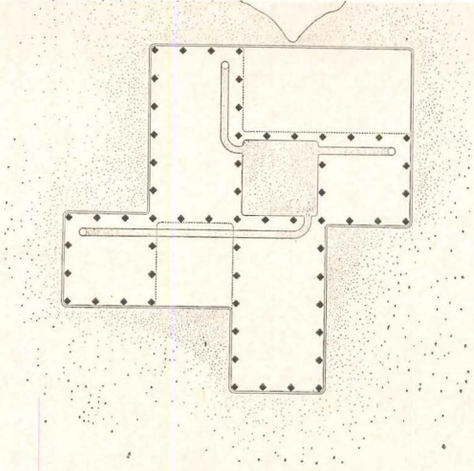
Recent Work of Philip Johnson

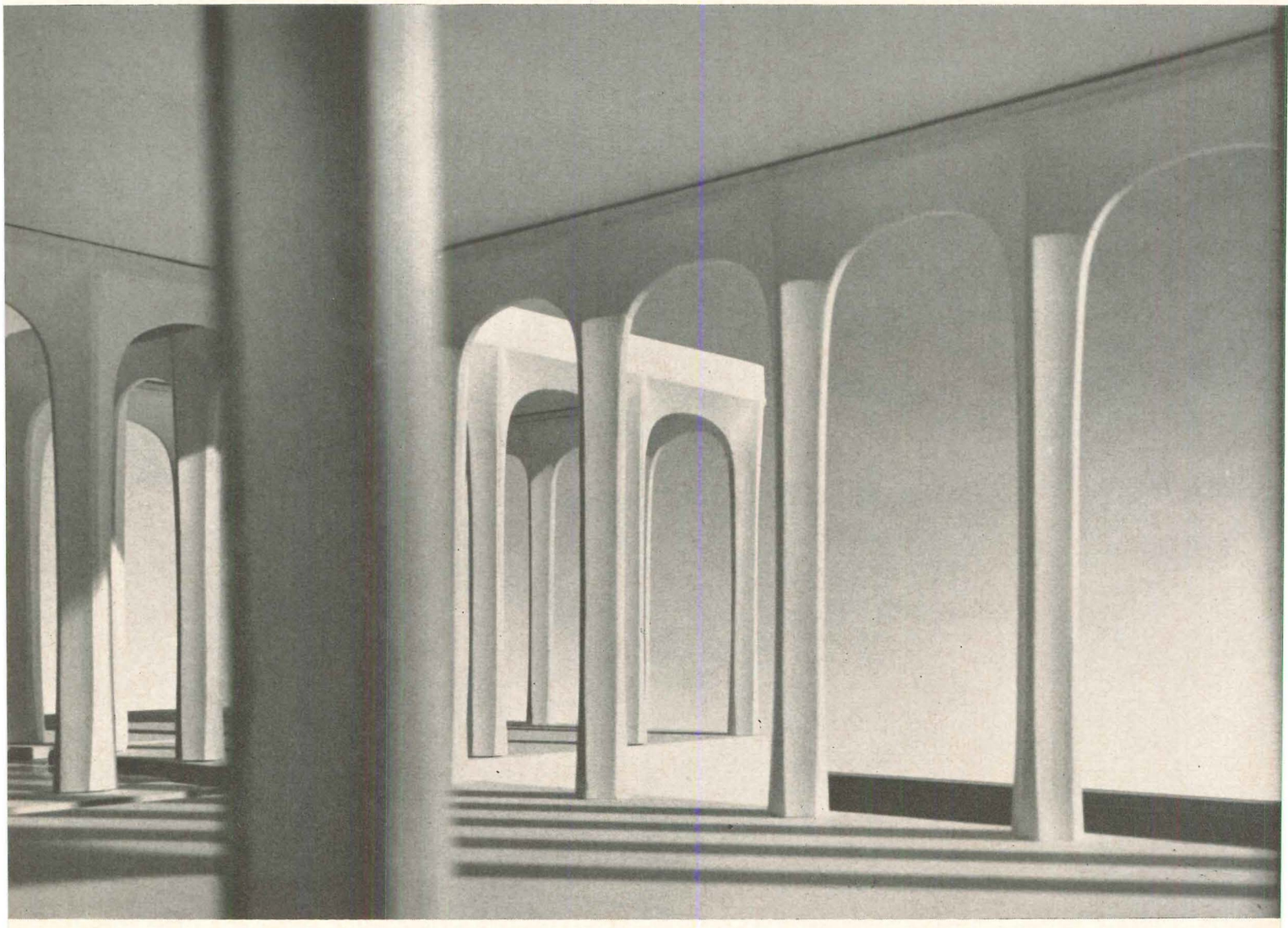
PHILIP JOHNSON PAVILION, NEW CANAAN, CONN.



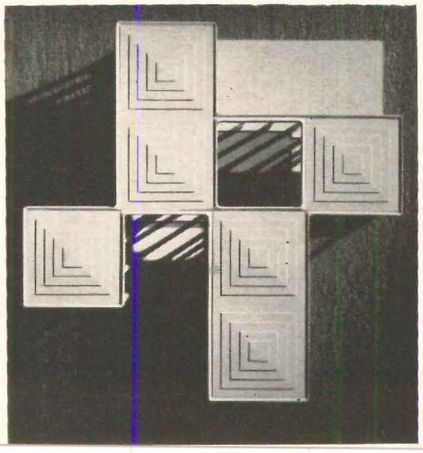
This pavilion, of sand-blasted precast concrete, is now under construction, and will be the newest element in the Philip Johnson residence in Connecticut. It will truly be a "pavilion in a lake," and the only dry land in a recently man-made pond—about 100 ft in length—located down the slope from the famous glass house.

Described by the architect as a "fun thing," the pavilion makes an amusing play on scale, and is a *tour de force* of sophisticated, precast whimsy. It is one-half size, with six-foot ceilings and columns less than three feet on centers! Johnson says, "It will make you feel like a giant, or possibly a dwarf—who knows?"



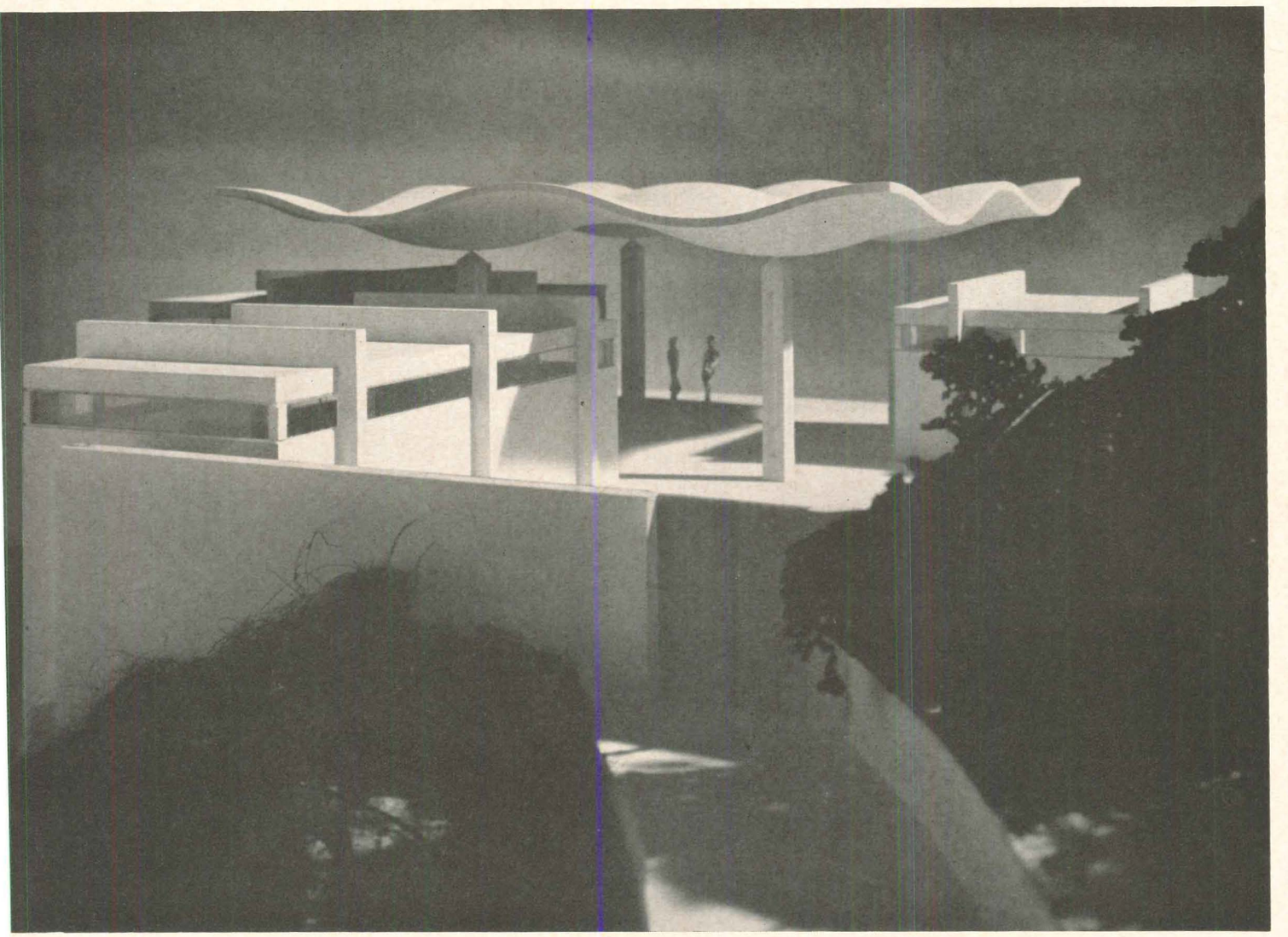


Louis Checkman photos



Recent Work of Philip Johnson

BOISSONAS RESIDENCE, CAP BENAT, FRANCE



Louis Checkman

This residence—located on a hilltop overlooking the Mediterranean—centers on a quarry-tiled podium, 42-ft square, which is protected from the Riviera sun by a concrete parasol floating lightly overhead on four columns. The gracefully undulating parasol is reminiscent of a banner rippling in a breeze, and is square in plan, recalling the shape of the podium below and the 25-ft square living room. Three elements comprise the house; they impinge upon and are linked by the podium, which is reached by way of a gravel forecourt. These elements, framed by perimetric concrete bents, house the areas for living, dining, and sleeping.

Photos © Ezra Stoller Associates

SAARINEN'S TWA FLIGHT CENTER

The soaring concrete sculpture of Eero Saarinen's Idlewild building seeks to express the excitement of air travel

ARCHITECTS:
Eero Saarinen and Associates

STRUCTURAL ENGINEERS:
Ammann & Whitney

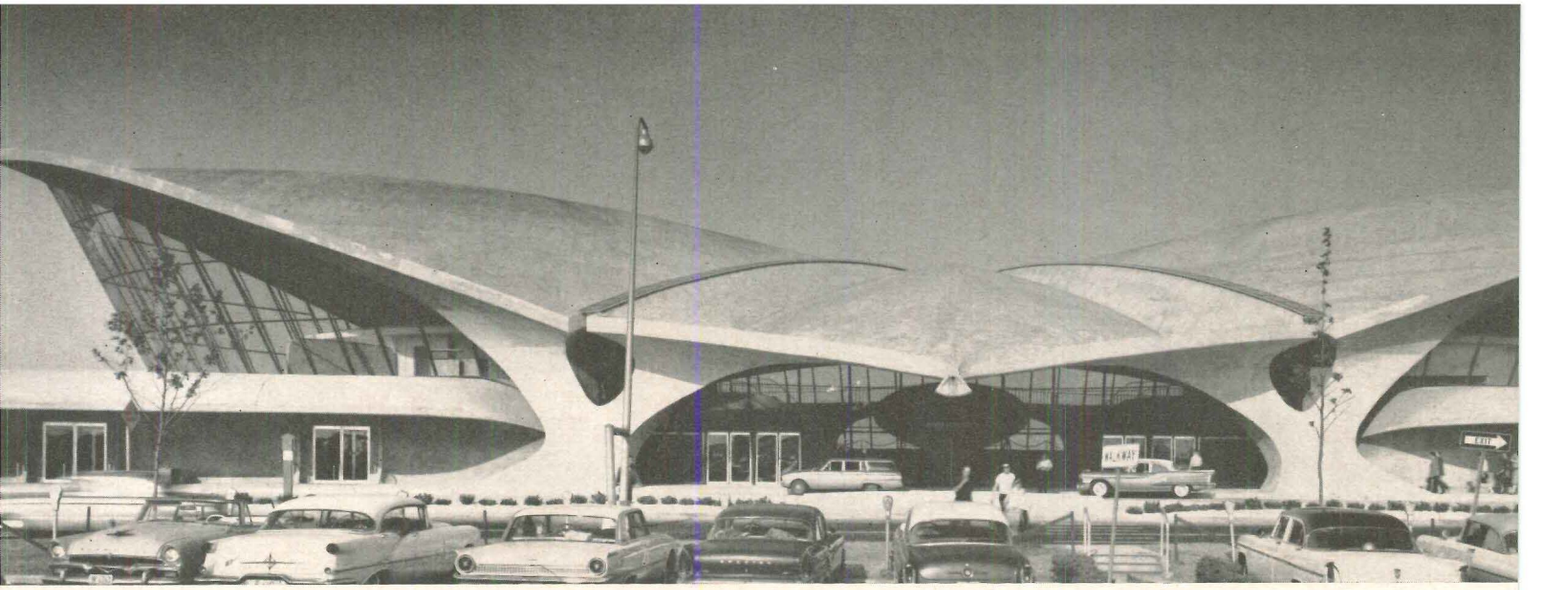
MECHANICAL ENGINEERS:
Jaros, Baum and Bolles

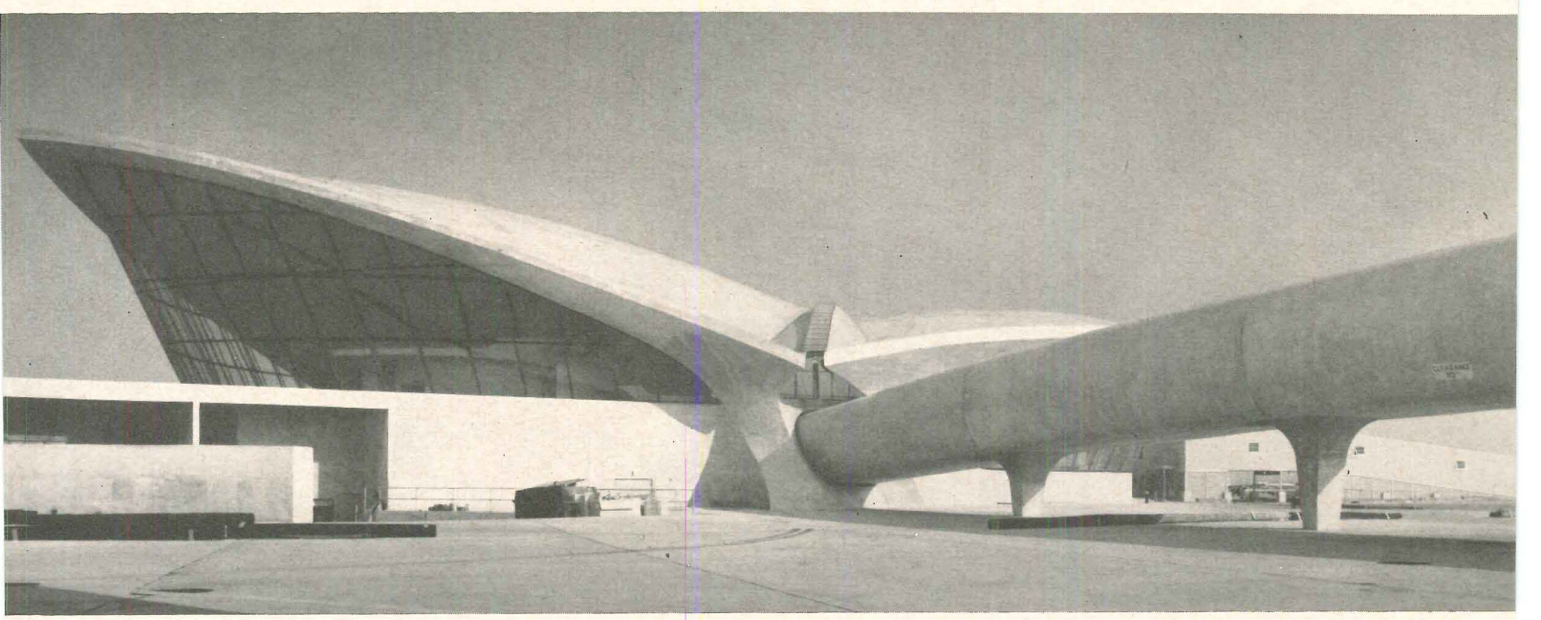
LIGHTING CONSULTANT:
Stanley McCandless

ACOUSTICAL CONSULTANTS:
Bolt, Beranek and Newman

CONTRACTOR:
Grove, Shepherd, Wilson & Kruge, Inc.

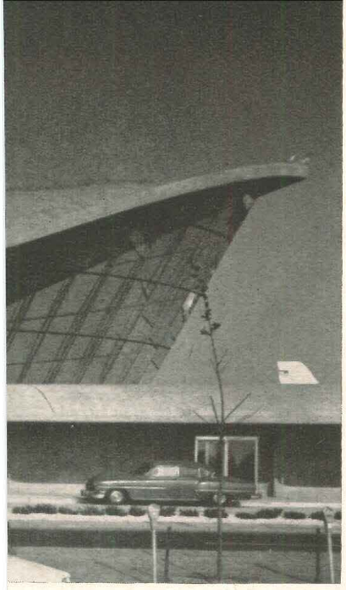
At the time when the work on his now completed TWA Flight Center was under way, Eero Saarinen said of the design, "The challenge of TWA was twofold. One, to create within the complex of Idlewild a building which would be distinctive and memorable . . . one which could relate to the surrounding buildings in mass but still assert itself as a dramatic accent. Two, to design a building in which the architecture itself would express the excitement of air travel . . . in which the architecture would reveal the terminal, not as a static enclosed place, but as a place of movement and transition." The completed building stands as witness to how well Saarinen succeeded in meeting the two greatest challenges he saw in its design. The soaring concrete sculpture of the great arches surely meets any man's criteria for distinction and drama, for excitement and dynamics. And the great space under the soaring roof should achieve Saarinen's wish to provide a building in which "the human being felt uplifted, important and full of anticipation."

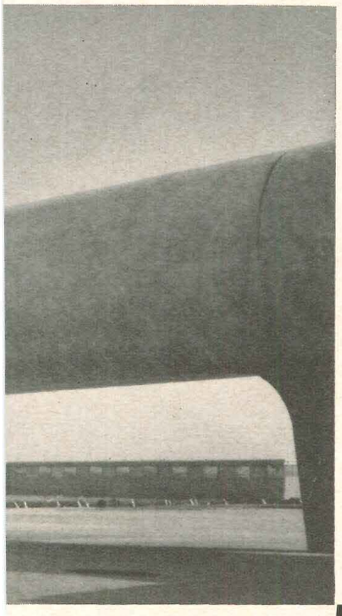


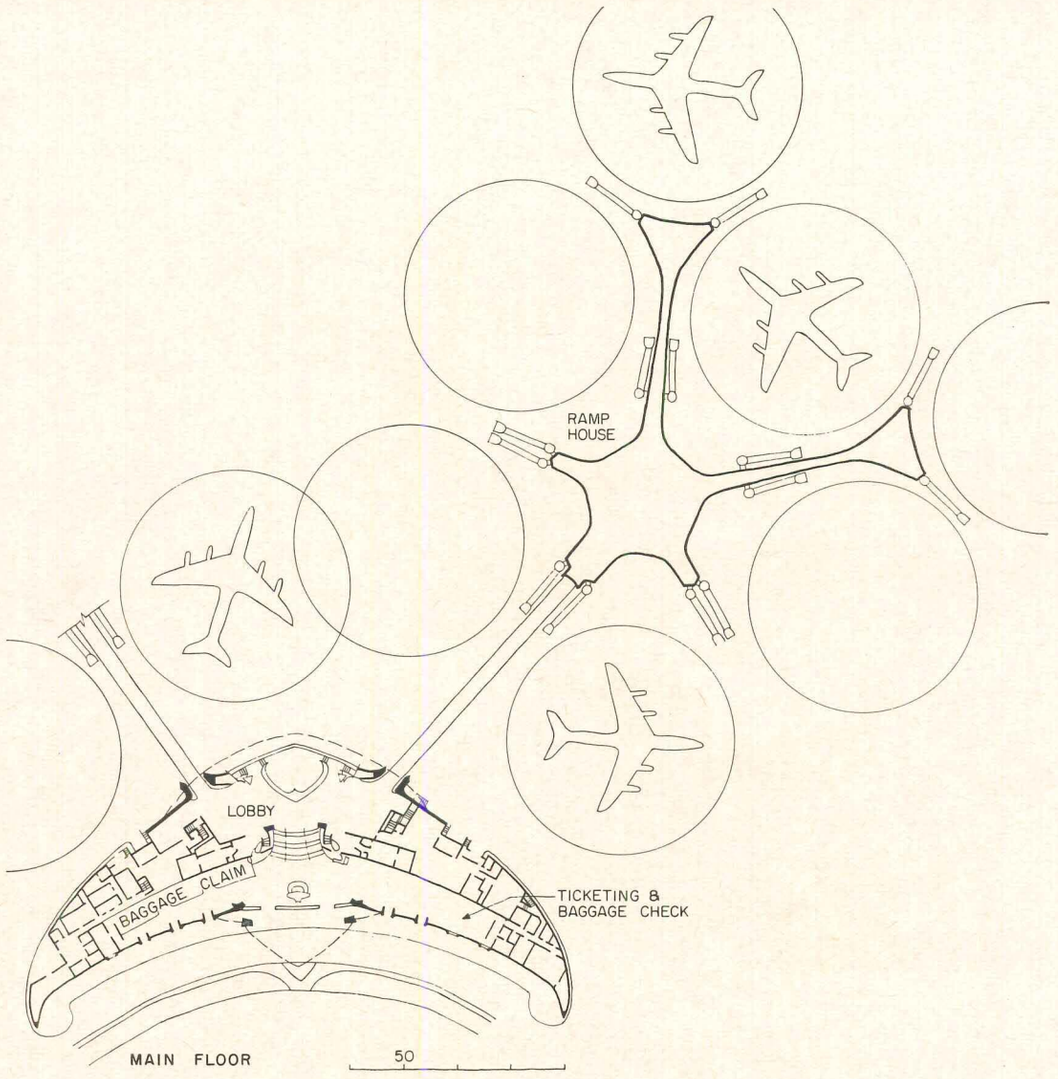


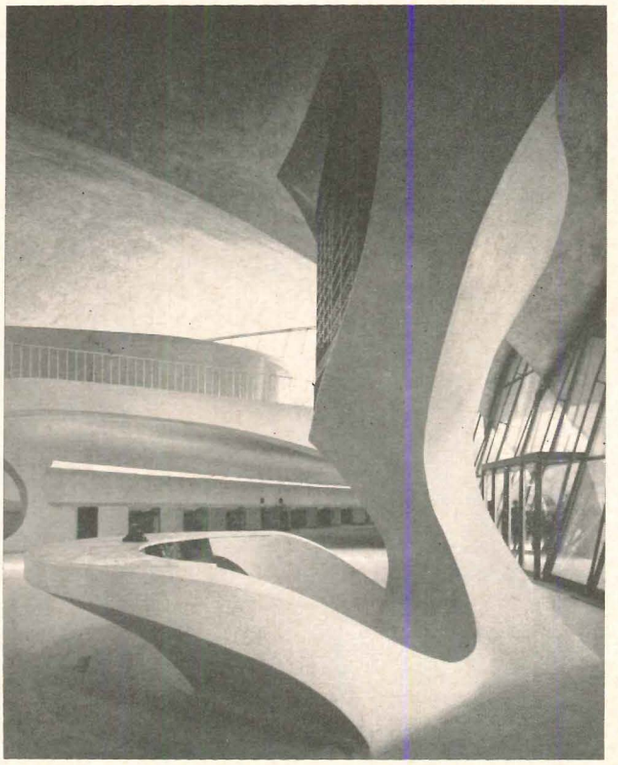
TWA Flight Center, Idlewild

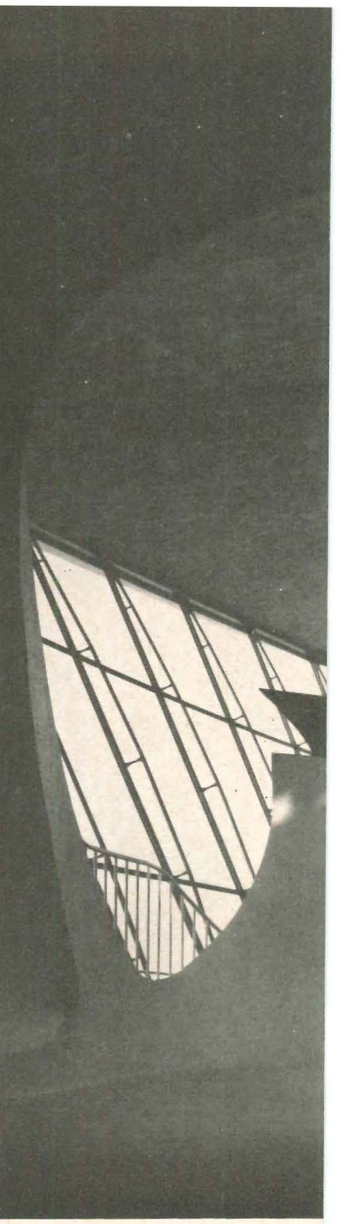
The main building of the TWA Flight Center consists of four concrete shell vaults resting on four Y-shaped columns. Each of the shells is separated from each of the others by a skylight band. The two large shell vaults soar up from the supporting members; the smaller ones are held down and subordinated to the sweep of the larger shell vaults. At either side of the main building is located a one-story wing curved in plan to conform to the master plan of Idlewild; one wing contains facilities for ticketing and baggage checking for outbound passengers, the other the inbound passenger baggage claim area. Passengers may enter the building from ground transportation or depart the building directly in front of one of these areas. Moving from the closed-in and low-roofed wing areas, passengers enter the great vaulted space of the main hall. Here movement is up and down the steps of flowing stairways, to and from the restaurants and other areas on the second level and the tunnel leading to the aircraft, and always through a great and continuously changing curvilinear space.

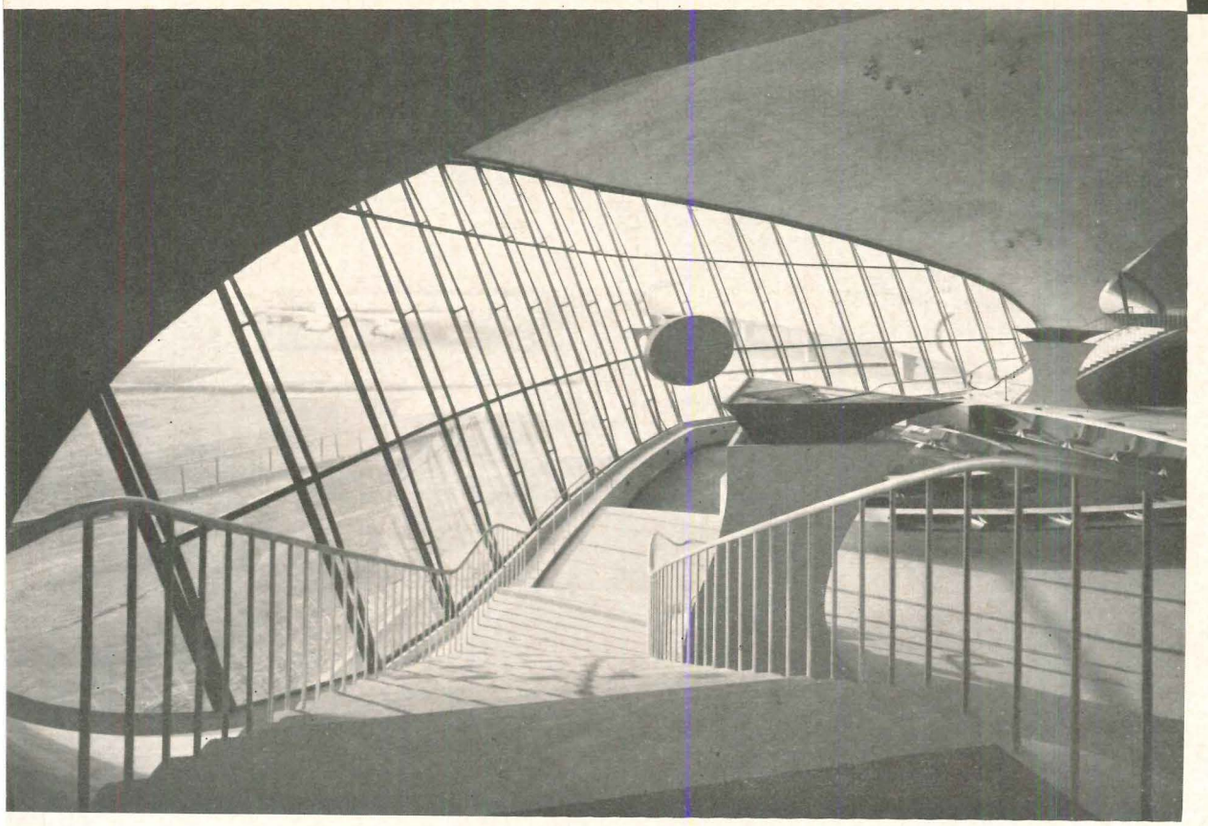


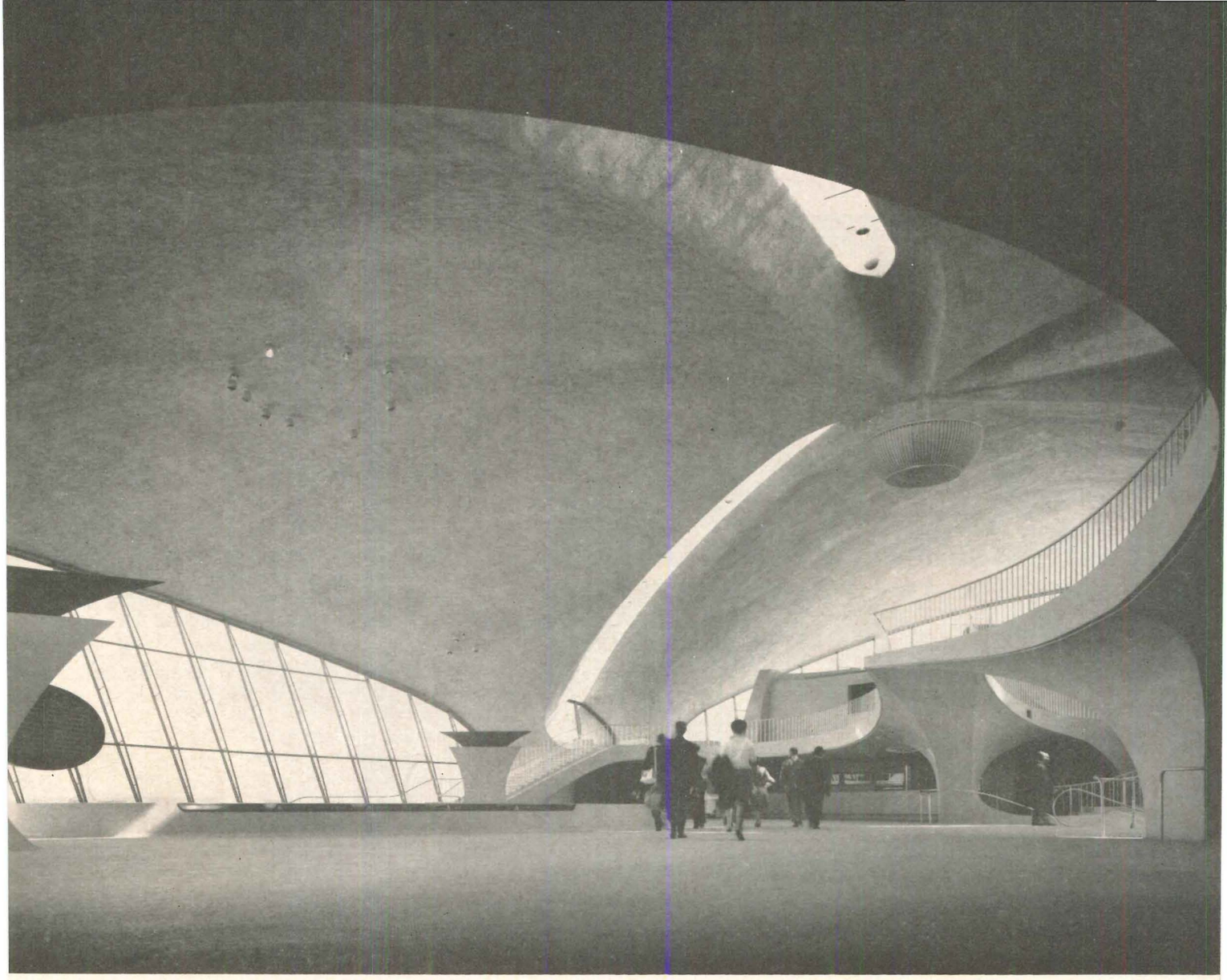



RAMP
HOUSE
LOBBY
BAGGAGE CLAIM
TICKETING &
BAGGAGE CHECK
MAIN FLOOR
50



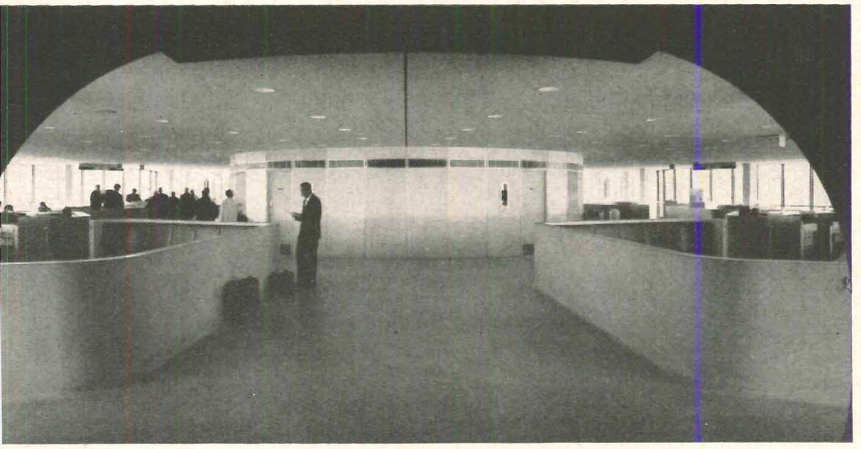


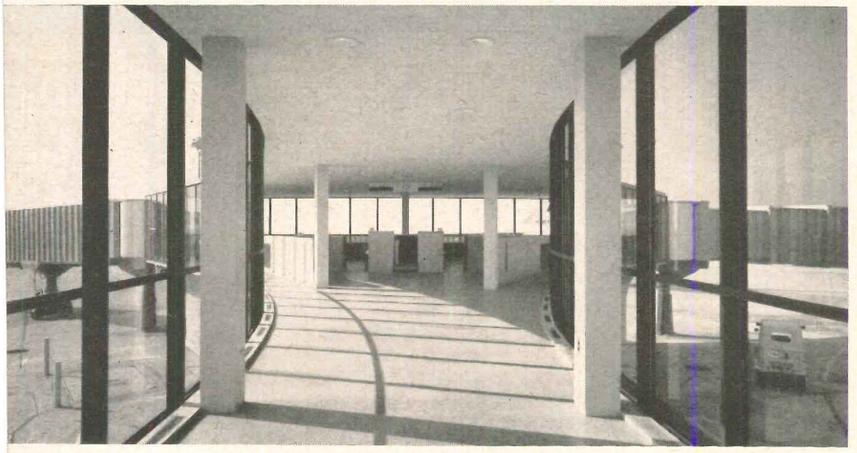




TWA Flight Center, Idlewild

Of the interior spaces of the building, Eero Saarinen said, "Having determined the basic form of the building, our next challenge was to carry the same integral character throughout the entire building so that all of the curvatures, all of the spaces, and all of the elements would have one consistent character. As the passenger walked through the sequence of the building, we wanted him to be in a total environment where each part was the consequence of another and all belonged to the same form-world." In the illustrations may be seen the results of the attention paid to this concept. Beneath the curved forms of the great shell vaults, each smaller element repeats the curvilinear theme yet varies the theme. The information booth and flight board shown at the left and the ticketing wing behind it, the shape of the heating and air conditioning outlet shown at the left in the illustration above and the interior bridge at right, the sweep of the curtain wall and stairs shown in the view on the left—all of these elements follow in their design Saarinen's objective.





Ramp House

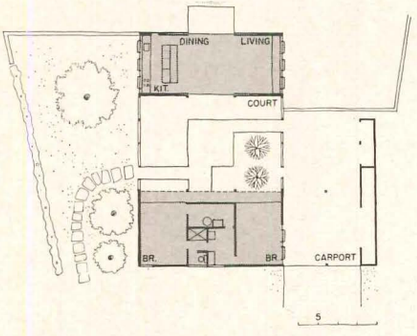
In the TWA Flight Center, passengers board aircraft or disembark via telescoping passenger loading bridges. These connect the aircraft with the ramp house or one of its two departure lounges as shown in the plan on page 131. All passenger activities are on the second level of the ramp house and departure lounges, leaving the ground level free for aircraft servicing and operations procedures. On top of the ramp house is located the TWA control tower from which aircraft operations of the airline are directed. A second ramp house will be constructed when passenger volume has grown enough to warrant it.

Left, top: passengers approach the ramp house through a tunnel raised off the ground to permit ground ramp traffic to flow under. At the center of the ramp house is a service core. *Left, middle:* within the ramp house are located waiting areas and departure lounges. In the background is entrance to the tunnel connecting with main building; at right is the service core. *Left, bottom:* approaches from ramp house to departure lounges are through glass enclosed corridors.

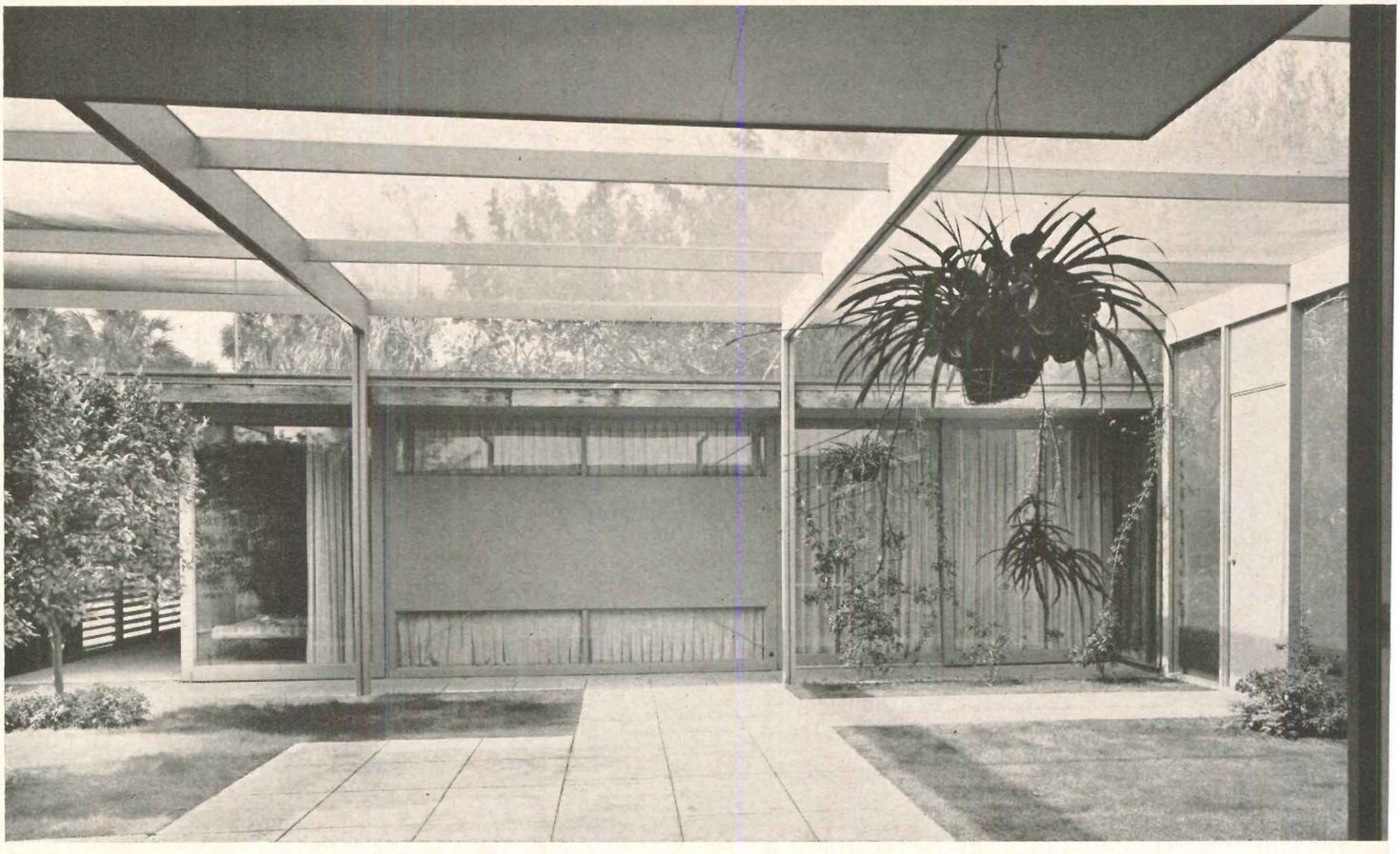
Additional information on the TWA Flight Center is included in the September 1961 issue of ARCHITECTURAL RECORD.

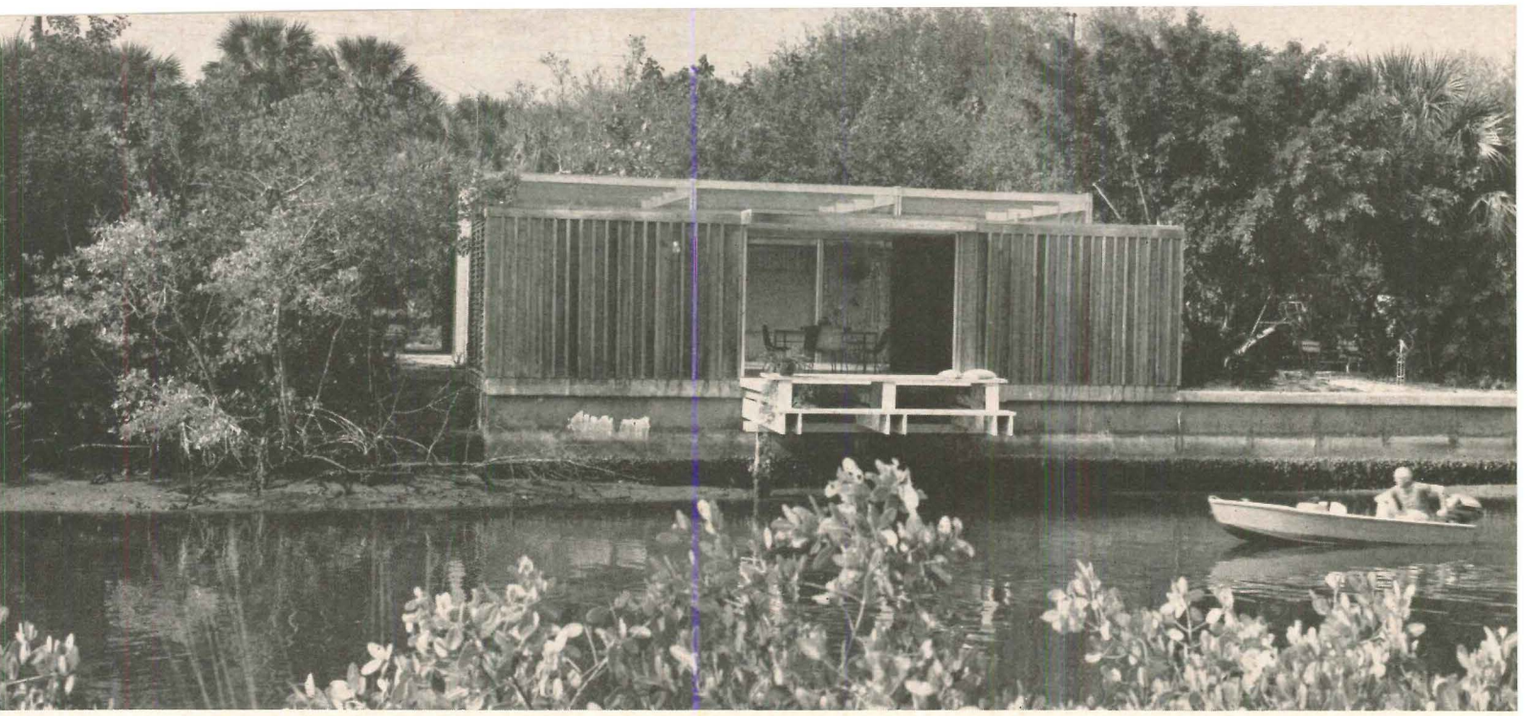
A TWO-PART BUDGET HOUSE IN FLORIDA

Architect Edward Seibert's expandible house for his own family

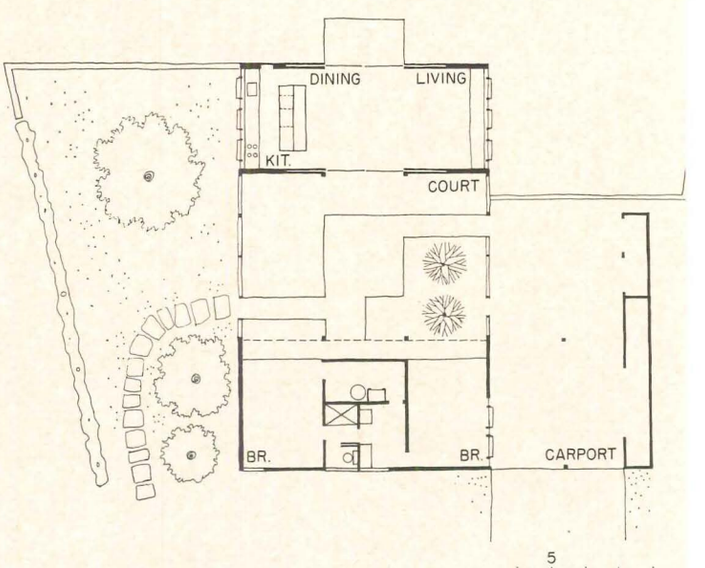


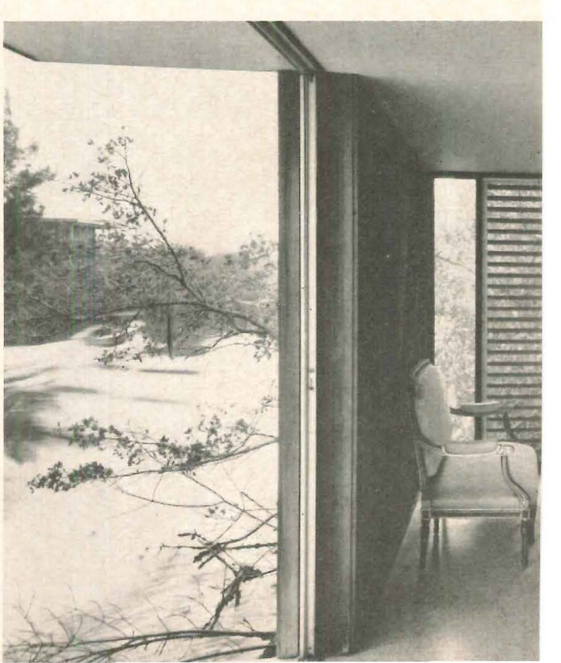
Joseph W. Molitor photos

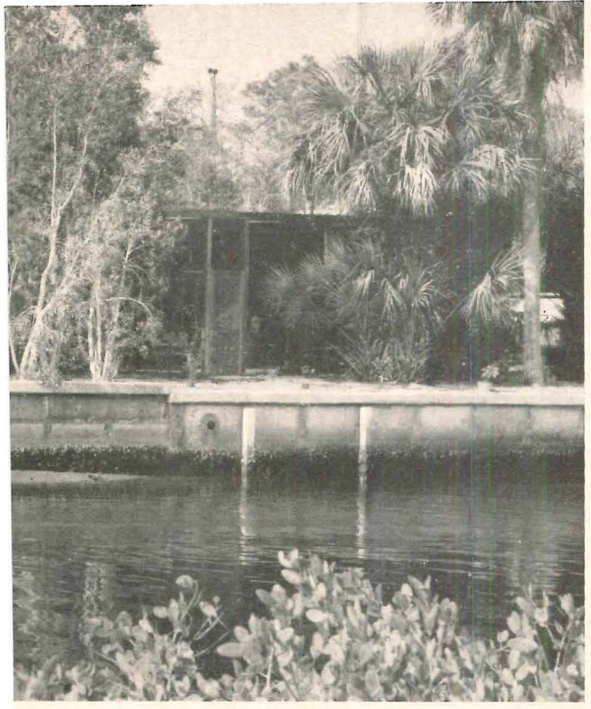




ARCHITECT AND OWNER: *Edward J. Seibert*
LOCATION: *Siesta Key, Sarasota, Florida*
CONTRACTOR: *Frank S. Thyne, Inc.*







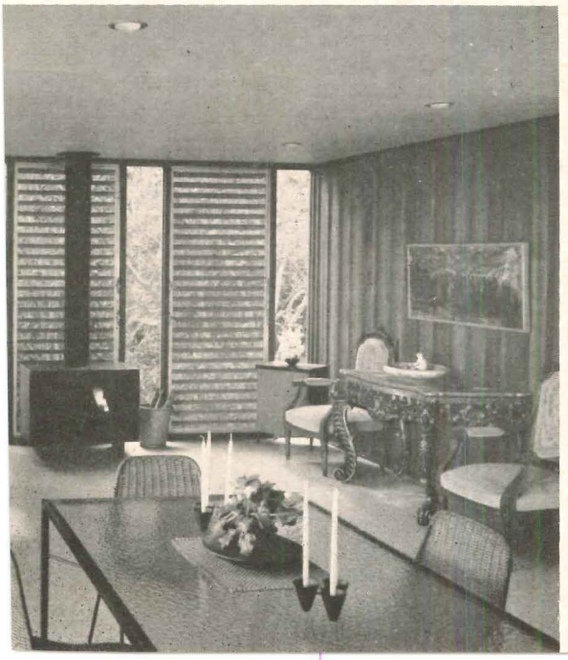
Living wing and bedroom wing are linked by a screened court

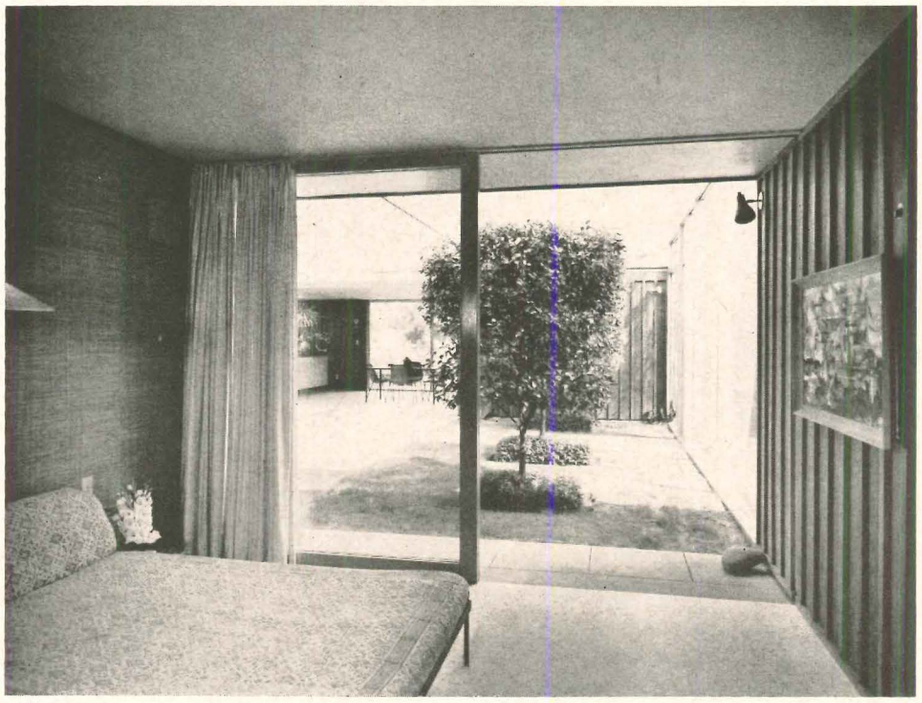
This interesting little house was designed by the architect to be built in a series of additions. The first unit (now the bedroom wing) was built as a minimum low-cost house with full facilities: the present dressing room was then a kitchen, with the room adjoining it serving as a living area; the big closet was then a hall, with a small closet on the bathroom side.

The second stage added the present living room and kitchen (called "the entertainment wing"), and the screened court in between. A third stage added the carport. Still to come is a dining room on the cantilevered terrace over the canal. The screened area serves as entrance court, and as an outdoor living room for most of the year.

The foundations for the house are slabs on grade, with structural frames of southern yellow pine. Siding inside and out is 1-in. board-and-batten redwood, left unfinished. Floors are monolithic terrazzo throughout. The roof is built up over ½-in. plywood on 2 by 6 joists; ceilings are ¼-in. plywood. Drywall partitions are used in the bedroom wing. Sliding glass doors and jalousie sash provide ample ventilation. Electric space heaters are used in both wings.

The kitchen arrangement in the "entertainment room" is an interesting one for a small house. All major fixtures and appliances are concealed in cabinets along the back wall; a marble top island counter acts as work and serving space. This counter has a small bar sink with a removable marble "lid."





The Edward J. Seibert house

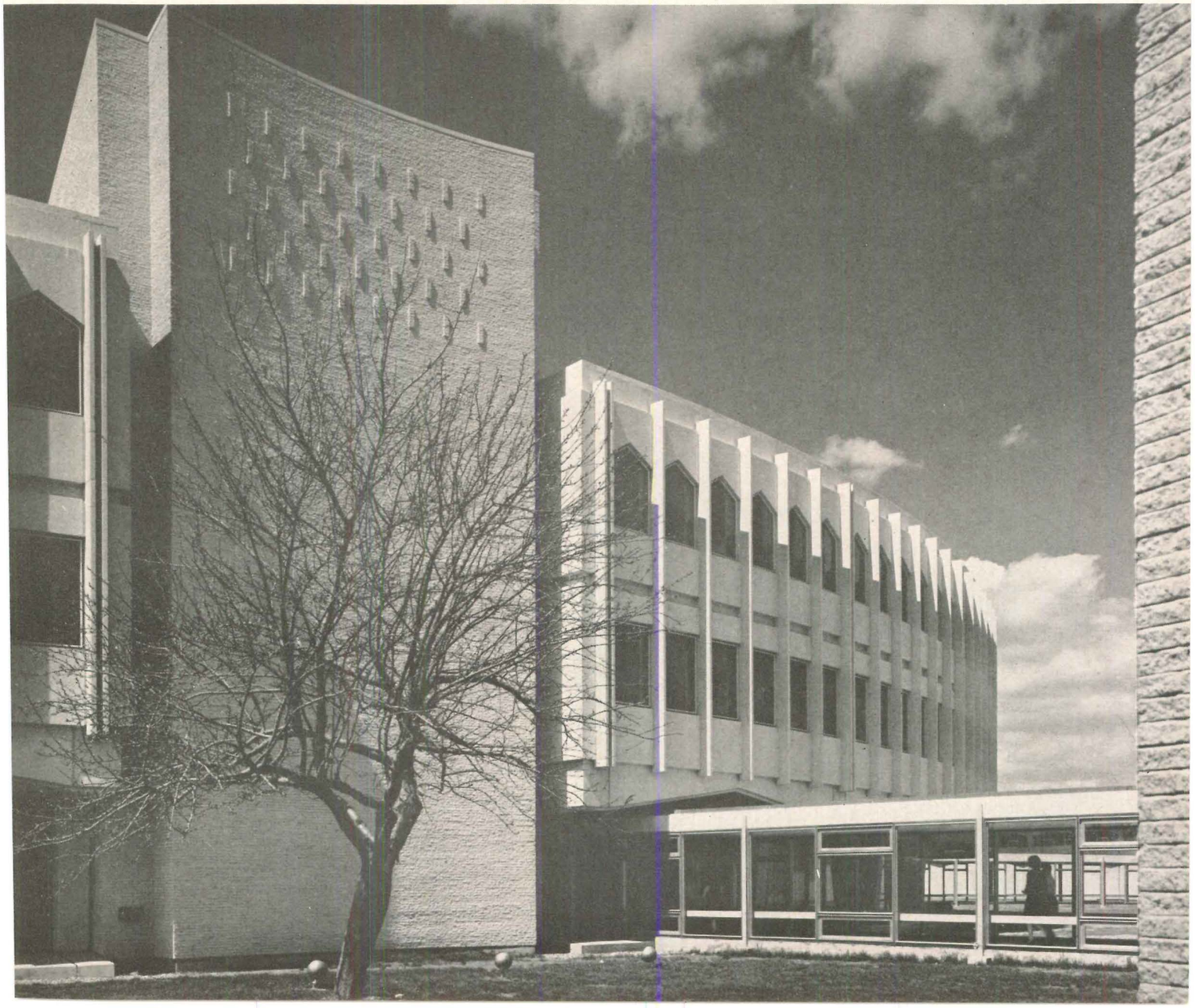
An amazing amount of spaciousness is provided in this small house by the use of simple finishes and by window walls opening on the private court. The house was quite inexpensive, and functions quite well as a place to live and entertain for Mr. and Mrs. Seibert and their daughter.

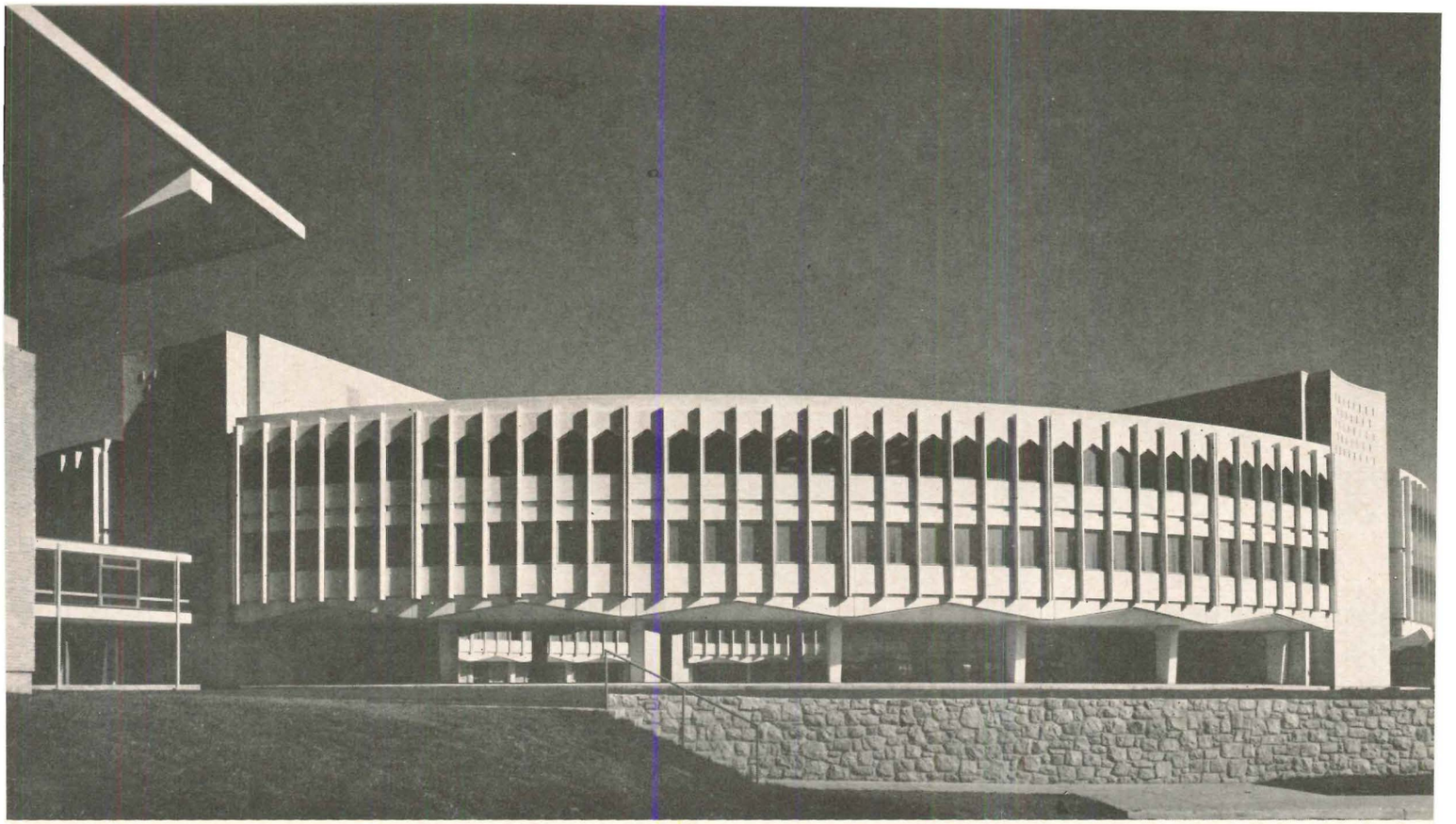
The living area and its open kitchen (photo below) can provide quite an air of elegance for parties and buffet suppers, with the screened court serving to accommodate a large number of guests

CIRCLE PLAN UNIFIES CHURCH OFFICES

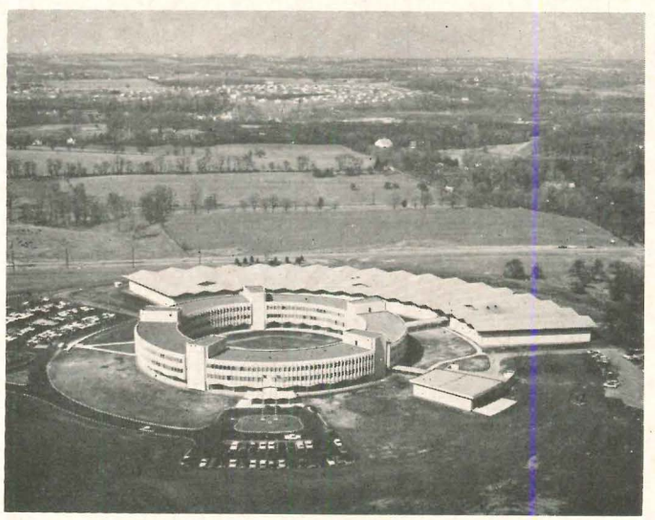
Six autonomous agencies of the American Baptist Convention achieve unity with equality and independence in circular building by Vincent Kling

Lawrence S. Williams photos





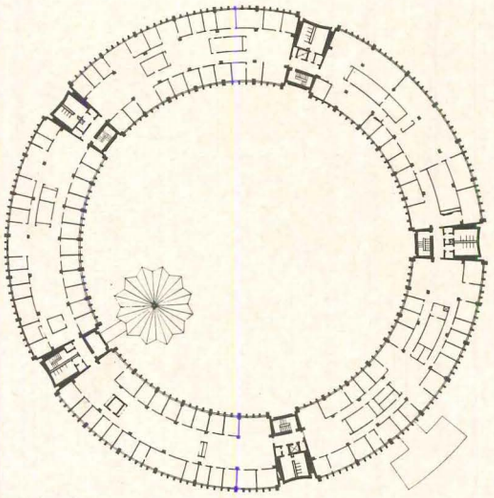
National Offices, American Baptist Churches
Valley Forge, Pennsylvania
ARCHITECT: *Vincent G. Kling*
STRUCTURAL ENGINEERS: *McCormick-Taylor Associates*
MECHANICAL & ELECTRICAL ENGINEER: *A. Ernest D'Ambly*
GRAPHIC ARTS PLANT CONSULTANT: *William Tiernan*
FOOD SERVICE CONSULTANT: *Arthur W. Dana*
CONTRACTOR: *Turner Construction Co.*



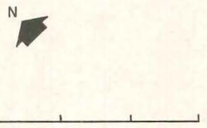
The architects of this building complex have brought together all of the individually incorporated and autonomous agencies of the American Baptist Convention in a building that preserves the independence of each agency while unifying the group as a whole. All of this with great dignity, esthetic appeal, and appropriate symbolism.

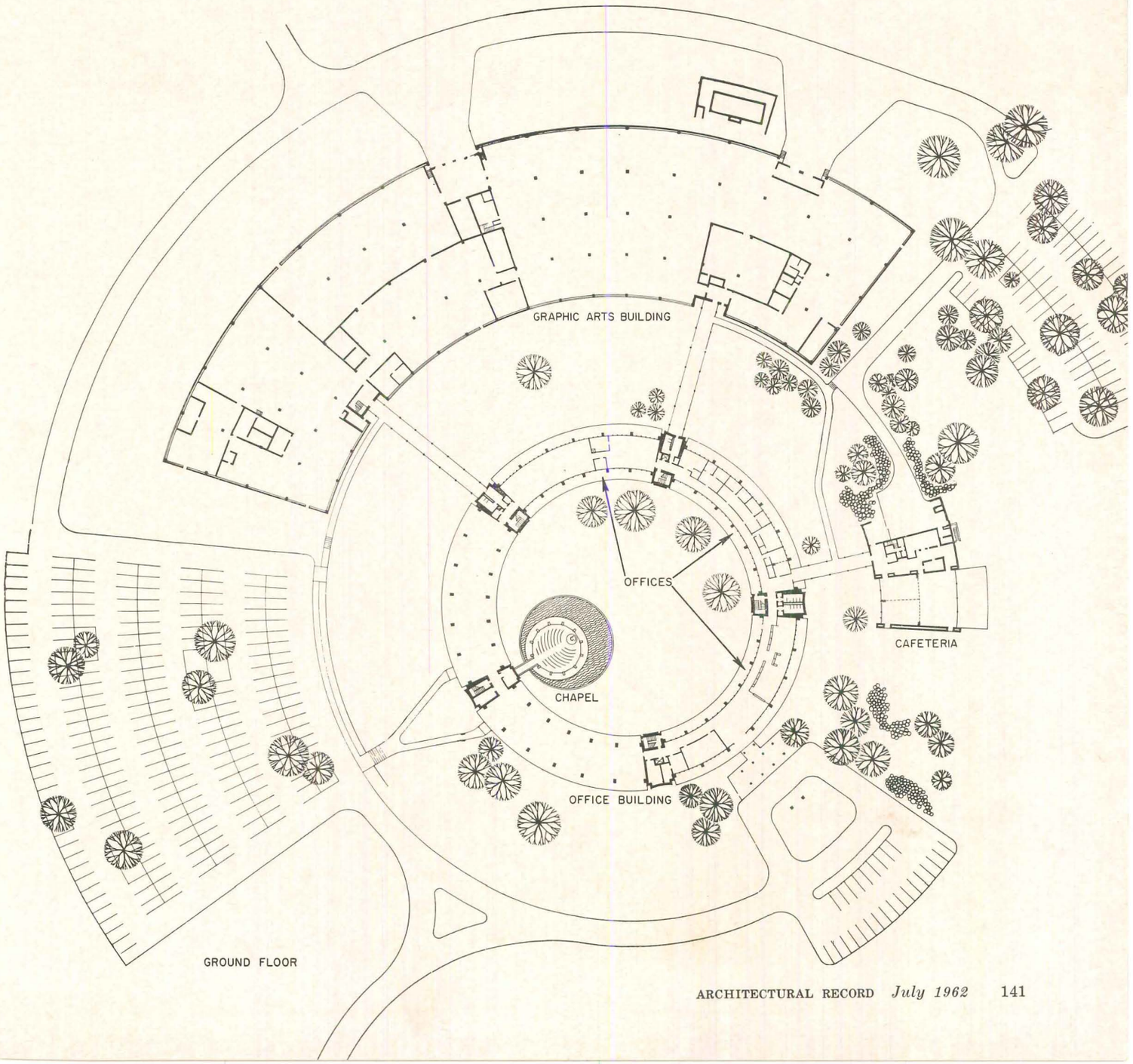
The major element of the complex is the circular ring building, three-stories high, that houses the main offices. Within the ring of this building, the chapel will some day rise. Behind it is the large Graphic Arts building with its complete and modern printing facilities; to one side is the cafeteria which is also used for conferences and meetings. The main building is divided into five segments by five vertical service cores containing stairs, toilet rooms, storage, and similar areas. The service core towers serve to separate the sections of the building occupied by the various agencies thus making positive divisions between them while unifying them by their positions in the ring.

Symbolically, the circular building represents the philosophy of the denomination that occupies it—unity of purpose and the dissemination of the message of the church in all directions. The auxiliary and service functions—printing and cafeteria—are placed outside the ring. The chapel when constructed will rise above all else symbolizing the spiritual aspects.

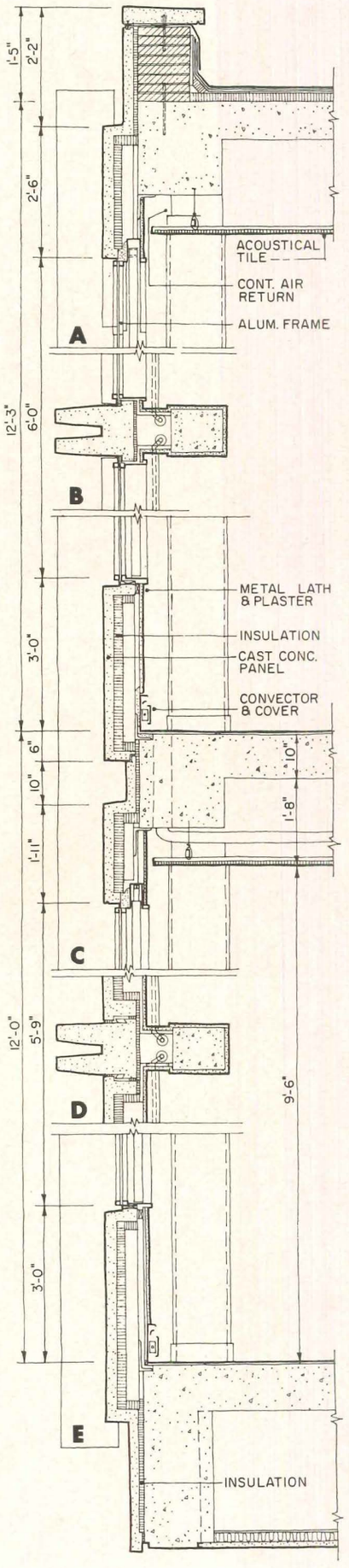


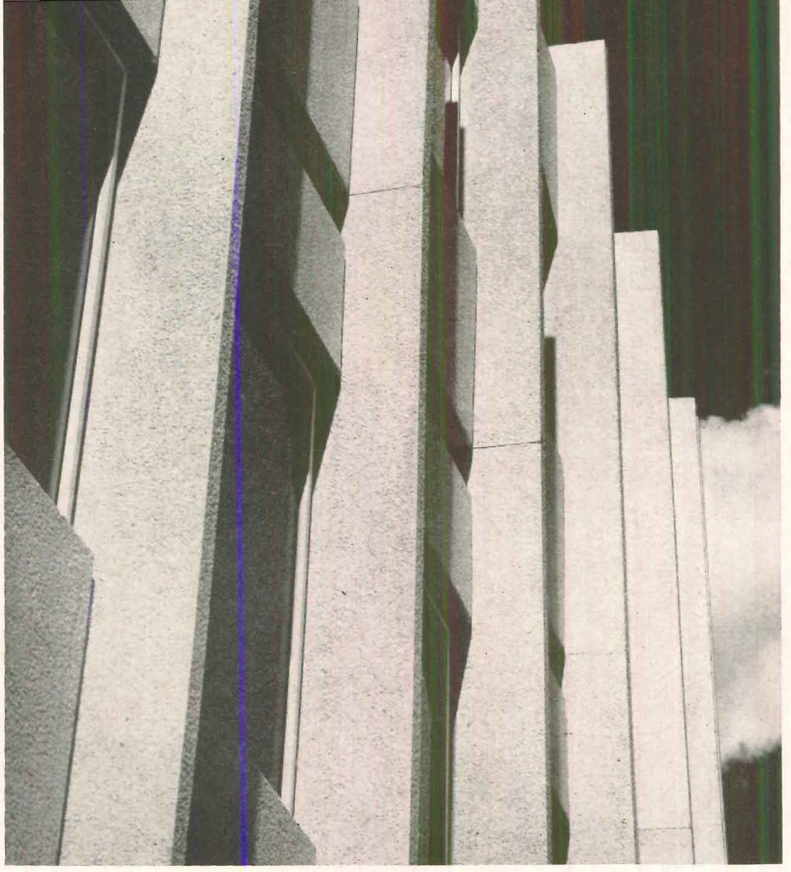
SECOND FLOOR - OFFICES
(THIRD FLOOR SIMILAR)



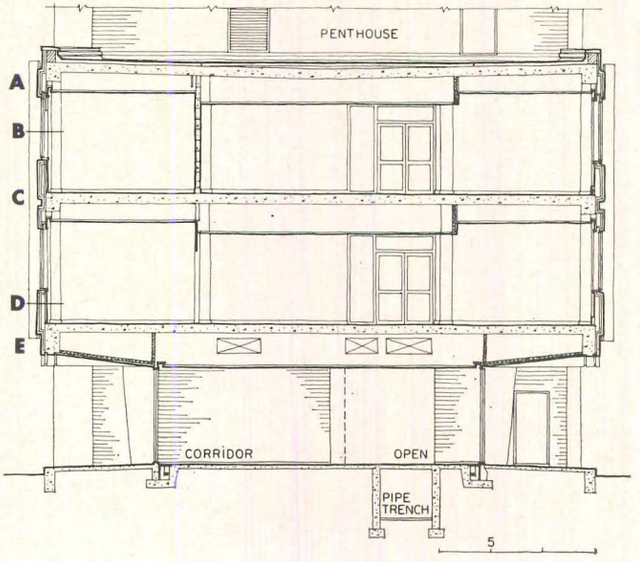


American Baptist National Offices

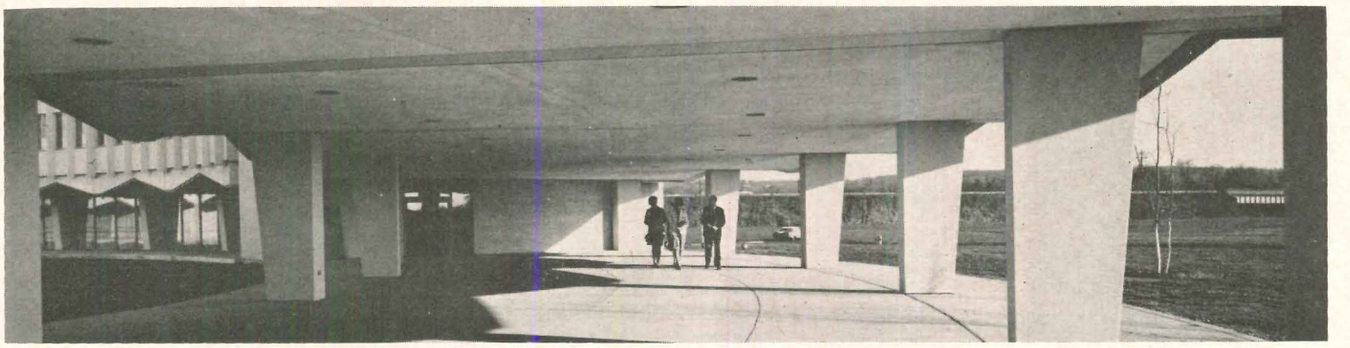




As shown in the illustrations and details, the exterior of the circular main building is composed of precast concrete curtain walls with glare-reducing glass in fixed aluminum frames. The concrete panels and mullions are surfaced with exposed quartz aggregate of medium coarseness. The whiteness of the aggregate, along with the crisp neatness of the arrises and the near-perfection of both surfaces and arrises contribute much to the architectural success of both the wall and the building itself. Each one-module wide, two-story high, curtain wall unit was cast in several pieces as shown in the wall section. Story-high mullions were first bolted to anchors in the concrete building frame. Panels were then hung in place on the building frame, adjusted dimensionally, calked, pointed, cleaned, and sprayed with silicone waterproofing. The transverse section through the main building gives some indication of its construction, reinforced concrete frame with splayed ground floor columns carrying cantilevered floors above



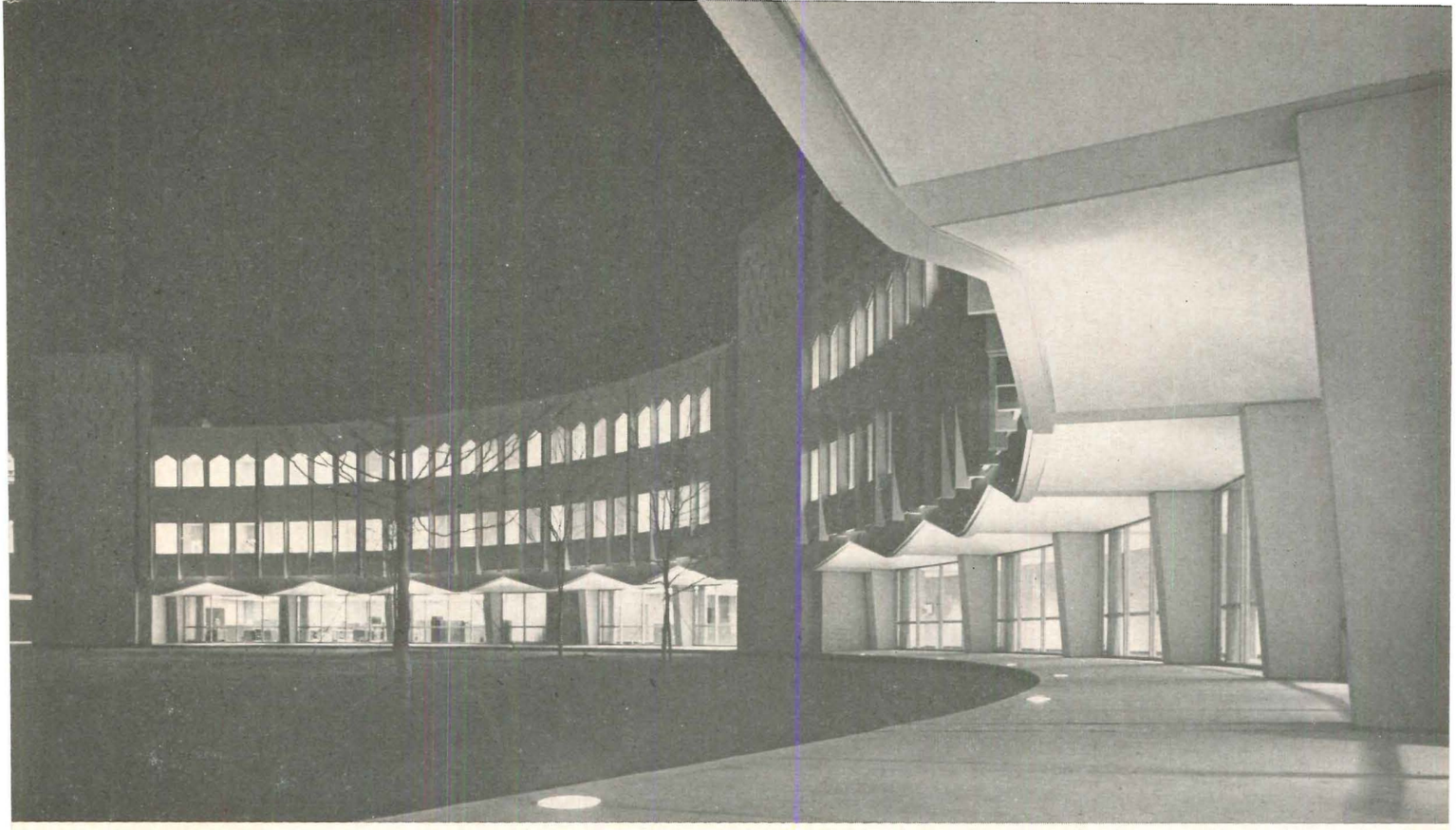
American Baptist National Offices



Splayed columns in main building arcade

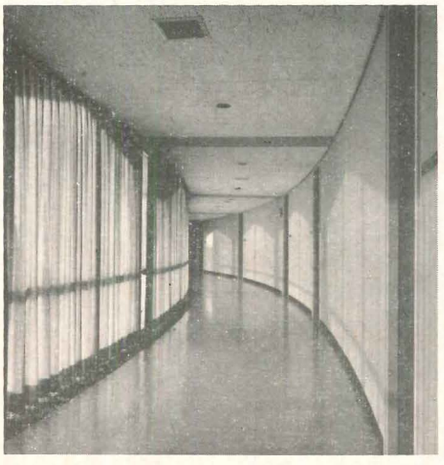
Ground floor reception area

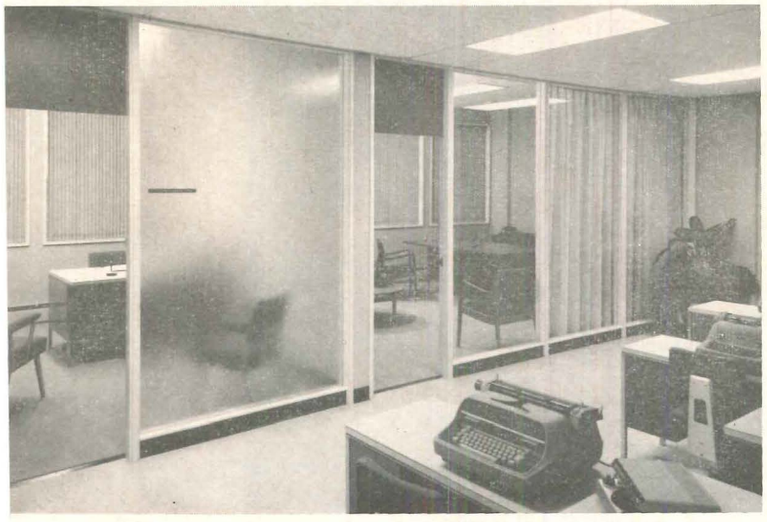
Office area and interior corridor



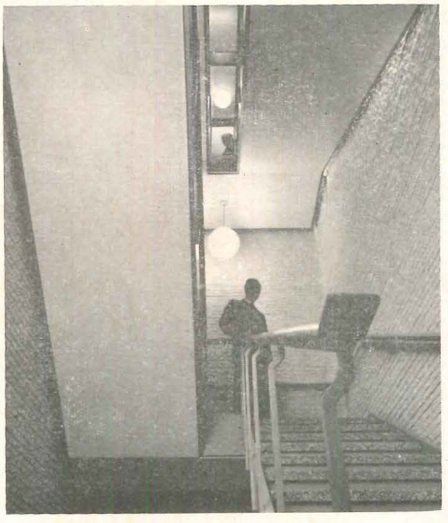
The ground floor of the main building is devoted to a large entrance lobby, library, central data processing and accounting section, a bookstore, and maintenance offices, with two-fifths of the area left open. Principle offices of the various agencies occupy both second and third floors and are separated by the service towers. Interiors are by the architects. Basic colors are warm whites and grays, with deep accent colors establishing an identity for the agency occupying each segment of the ring.

Ceilings throughout are acoustical tile; floors are vinyl asbestos with carpeting in most private offices. Partitions are generally plastered 3-in. gypsum block. All windows on second and third floors are shaded by blue-gray fabric vertical blinds



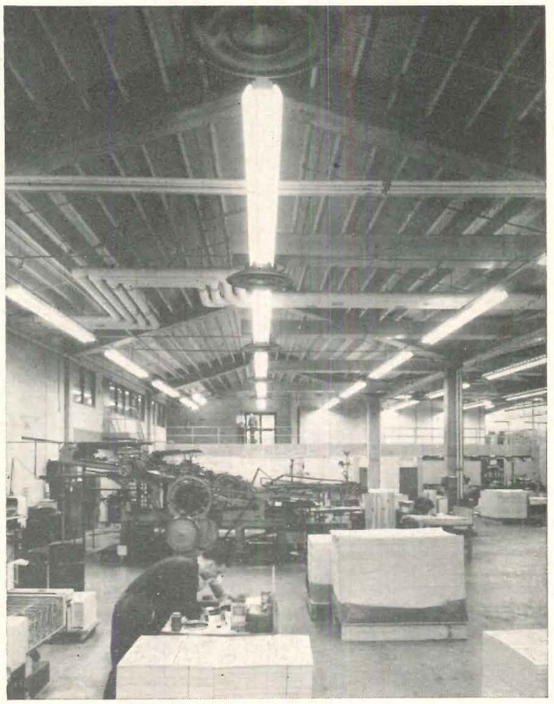


Typical private offices



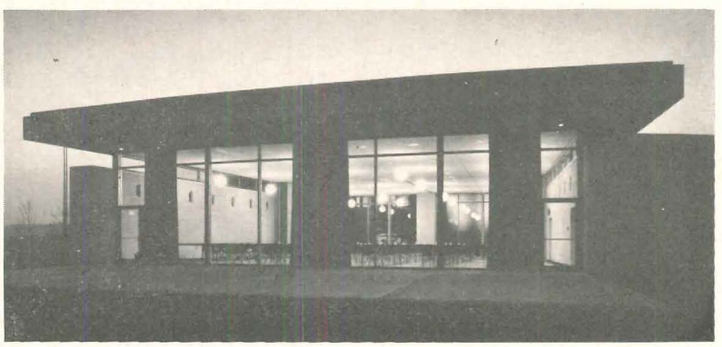
Stairwell and main corridor

GRAPHIC ARTS BUILDING—Exterior

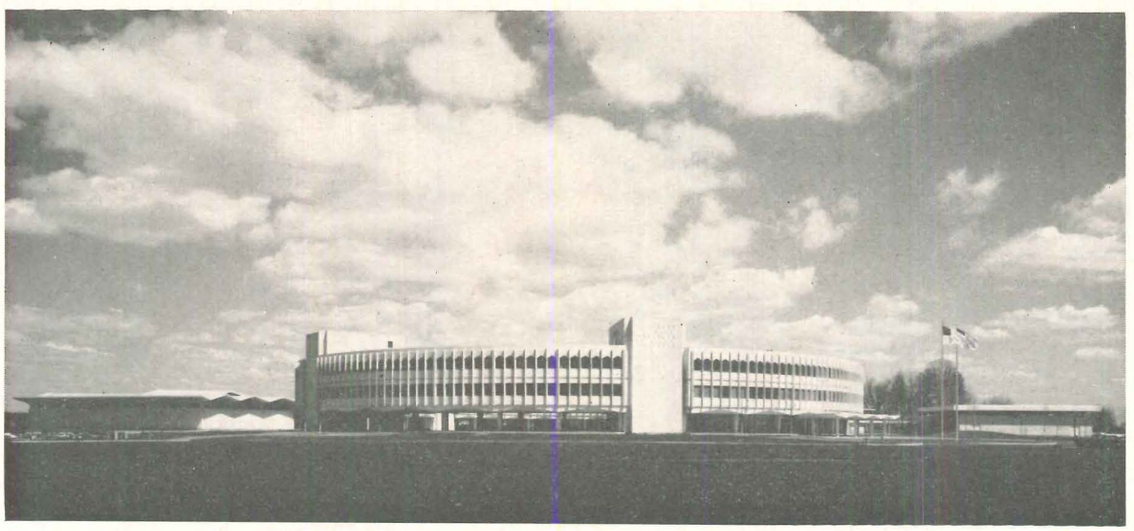


Interior

An important element of the Baptist National offices complex is the 113,000 sq ft Graphic Arts building which contains complete facilities for printing and publishing activities of the church. Its structure is concrete frame with cavity walls and split brick on the exterior. The one-story cafeteria doubles as a conference center and may be subdivided for smaller group meetings. The cafeteria has walls of the same split brick used for the Office and Graphic Arts building; its structure is rigid steel frame



CAFETERIA



GRAPHIC ARTS MAIN BUILDING CAFETERIA

BUILDING TYPES STUDY 309

®

SCHOOLS

The planning concepts which have followed in the wake of new educational thinking for schoolhouses, have set off a chain reaction of often radically new designs: open plans, folding partitions to add flexibility, "domed" campus plans, varied size spaces, and so on. But along with the advantages of the plans come new technical problems—and paramount among these is the problem of acoustics. This study includes four articles dealing with this aspect, along with a group of singularly well planned and handsome new schools

Library, Walpole, Mass., School; Shepley, Bullfinch, Richardson & Abbott, Architects

THE SOUND OF CHANGE IN THE AMERICAN SCHOOLHOUSE

by Jonathan King, secretary and treasurer of Educational Facilities Laboratories, Inc., Ford Foundation

Even aside from students, there are a number of acoustically troublesome things coming into the American schoolhouse today. Most of these acoustical problems stem directly from changes. First, changes from the old ways of doing things academically. Second, from the changeability we are incorporating into our buildings because we are now beginning to recognize change as a constant.

The old school was easy acoustically. It was primarily a series of cells, most of them the same size, surrounded by a sea of masonry, covered by an acoustical ceiling; and with the exception of the gymnasium, cafeteria, auditorium, or some combinations thereof, that was it. But education is on the move today, and the masonry cells are getting in its way. So out they go and in their stead are some acoustical problems.

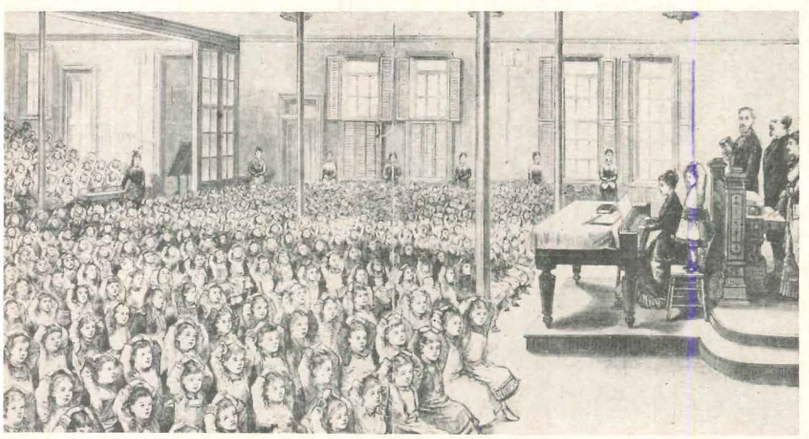
In brief the changes which have created these problems are: first, in the high school, more collegiate programs are being adopted all across the United States. Many of these

are based upon the recommendations of the National Association of Secondary-School Principals' Commission on Staff Utilization, usually called the Trump Commission after J. Lloyd Trump, its Boswell and executive secretary. These programs lead us away from the equal-sized classroom boxes and toward lecture rooms, seminar rooms, and independent study areas.

Second, *team teaching,* at the elementary level requires a fluid arrangement of pupils and teachers, shifting periodically. Sometimes these groups are larger than the typical class of 30, often smaller. They require varying degrees of acoustical opacity.

Third, students are learning from machines as well as from teachers and books. More audio-visual mechanisms are in use today. Television, language laboratories, various projection and amplification systems, all of which produce acoustical problems.

Fourth, a word about independent study, one of the most praised and least practiced educational virtues which make up the new order today. Independent study demands real estate in which students can study independently. The schoolhouse has always been designed for groups; where and how space can be provided for individuals is still very much in debate. One thing is clear, it must be better than the space allotted in the traditional old library and it must also be more than a carrel or stall somewhere in the hall. In general, our only contribution to the individual in the schoolhouse is a little tin box known as a locker which desecrates the hall, creates noise and is not designed to accommodate the needs of the average student.



A divisible auditorium, circa 1880

To move rapidly from the problems to the solutions, what are some of the things being done about these programs? First of all less walls or no walls are one proposed solution. There are those who question the degree of acoustical privacy needed to surround an academic group. Caudill, Rowlett and Scott have designed a number of schools involving less than complete walls around various areas of the school. How do these work? It depends. It depends primarily on the adaptability of the people. But why the comparative acoustical privacy of a well-designed restaurant would not successfully serve for some academic areas is not entirely clear.

Another approach, somewhat less unconventional, particularly to those who have been involved in office building design, is the notion of movable walls. Movable in the sense that without major effort or expense walls can be disassembled and reassembled in accordance with the changing nature of the program which they are to enclose. John Lyon Reid has done pioneering work in this field, particularly in a series of loft plan high schools which he has designed for San Mateo County in California, just south of San Francisco. The Hillsdale High School was the first of these. The interior partitions, with very few exceptions, are movable in order to accommodate whatever reasonable changes the future holds. Reid is sophisticated enough to know that we cannot build the school of tomorrow today, as is so often suggested, nor can we remodel tomorrow for the day after tomorrow. How do these schools work? The district goes right on building them, indicating a high degree of acceptance.

Reid has taken a significant step forward—at least hopefully it's forward—in his newly planned loft school for Andrews, Texas. Walls will be more easily movable since they are not completely fitted to the floor and ceiling as they are in Hillsdale and the other San Mateo schools. This, combined with an acoustical flooring material and a luminous ceiling, makes for substantially easier internal alteration. To quote John Lloyd Reid: "Education is a . . . fluid activity. A fluid might be said to take the shape of its container. If that is true, I think we might say that the container should change its shape when required."

A third solution has been the introduction of operable walls with substantial acoustic value. There is nothing new about operable walls and nothing new about their existence in schools. They were very common in the middle of the 19th Century. What is new is that there are operable walls now which offer substantial sound transmission loss between the spaces they separate. These acoustically opaque walls enable the school to vary its spaces, at will and at once, a number of times during the day without effort or administrative upheaval. And thus the school is permitted to serve more truly its purpose: the accommodation of instruction.

The alternative to these possibilities is to build more schoolhouse per student. This poses but one problem. The cost of a schoolhouse is by the square foot. The colleges have for many years built with a variety of spaces, each comparatively permanent within the buildings. An examination of college space utilization has shown that the typical small college uses its instructional space 40 per cent of the time during which instruction is being offered

and uses its laboratory space 25 per cent of this time. In the typical high school instructional space is used about 80 per cent of the time the school is open for business. Obviously, to follow the lead of our colleges is not economically feasible.

On May 13th of this year, Boulder City, Nevada, dedicated a new instructional center, a subdivisible auditorium. According to the superintendent of schools, it will save having to build five classrooms. This auditorium, unlike most which yawn empty 90 per cent of the time, can be used for large group instruction throughout the day. High performance operable walls separate two 100-seat sections from the 300-seat central body of the auditorium. The combination of high ambient sound level and the high performance walls make it possible to teach American History in one of the rear sections and English in the other while the band practices on the stage.

The two most difficult problems we face in solving the problems of school acoustics which derive from developing the kinds of flexible instructional space outlined above are, people and things. The first and most difficult of these is people. People are inconsistent, unpredictable, greedy for quality and performance and (at least in schoolhousing) short of money. On a recent visit to some of the schools in Montgomery County, Maryland, I examined an operable wall between two classrooms in one elementary school. My concern was whether this wall actually provided sufficient sound transmission loss to facilitate their program. Surprisingly, the wall was not closed and, as a matter of fact, never had been closed, or at least was closed very rarely. They had no problems running classes side by side.

The teachers who worked in this three-room cluster talked quietly and worked together. This latter point is most important. Teachers who consider the classroom their castle and work alone with their flock will not be made happy by the sounds of their colleagues and their colleagues' students drifting into their rooms. Teachers who work together in teams do not appear to resent the sound of another part of the group and their colleagues nearly so much, if at all. Neither do the students rebel at such noise leakage. However, I have been in open plan schools with conventional self-contained classroom programs and they don't seem to function properly at all. But in Montgomery County, in this team teaching complex, walls seemed superfluous. Almost any simple prediction of people's reactions to acoustics will have a number of exceptions.

The second major problem today and one we can do something about more easily is things—such things as operable walls, movable walls, and other acoustically important factors. That the marketing situation in this rapidly developing field is chaotic is, perhaps, to be expected. But it will soon become intolerable. The relationship between manufacturer's specifications for sound transmission loss, often based on laboratory test data from recognized and honorable laboratories, and field test data on the same product are more casual than causal. One of the most astonishing bits of data I recently examined was a field test of noise reduction data through an operable wall. The data indicated that the wall was performing precisely as the manufacturer had suggested it would.

The acoustical engineers, building materials manufacturers, architects, and others concerned with this problem should make a major effort to police this field to the point where an architect can place some value on transmission loss data for walls in advance of installing them.

Such steps forward in acoustical planning as the *Speech Privacy Design Analyzer,* developed by Bolt, Beranek & Newman, depend on reliable functional data. The data collected includes some proprietary claims that have little relationship to ordinary field data and consequently can invalidate the whole process. This is not said in an effort to criticize Bolt, Beranek & Newman who have obviously not been in a position to test every product involved in enough installations to establish the necessary data.

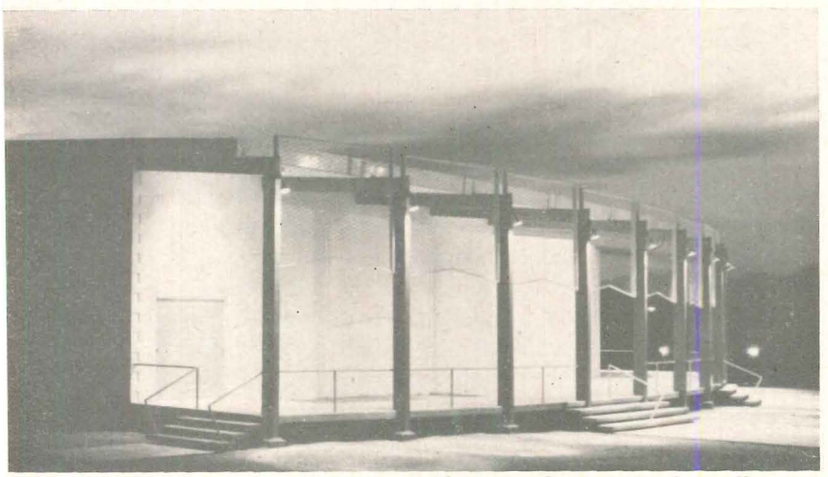
Another factor of substantial importance to the acoustics of any school space is the floor. There has been a growing interest in and acceptance of acoustical flooring. Such flooring is ordinarily known in other circles as carpeting. For many years our carpeting manufacturers have been selling their wares on the basis of prestige and image. Wall-to-wall carpeting is as much a sociological term as a description of something to walk on. One manufacturer describes his product as "those heavenly carpets." This makes it difficult to sell this flooring material in a schoolhouse since very little that is "heavenly" is generally introduced into schools; except in the way of religious instruction. However, putting acoustical absorption under foot rather than overhead has important value for reducing unwanted and unnecessary sound by eliminating floor-instigated noise and consequently lowering the general tone and tenor of conversation and discussion within the building.

Savings, particularly in maintenance, can help offset the initial cost of carpeting. In any event, for years many architects have considered acoustics as only something stuck to the ceiling, and this gives them the alternate possibility of putting it on the floor.

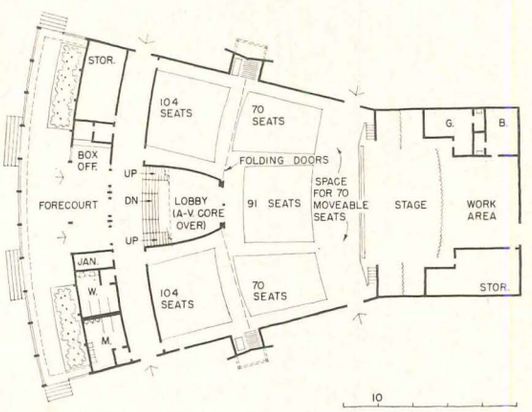
Having identified a number of problems and some attempted solutions, I would like to emphasize again that all of these changes in the field of school buildings are troublesome. They are troublesome to the architect, they are troublesome to the school administrator, and they are particularly troublesome to the acoustical consultant; but if they contribute to a better educational program, it is worth this trouble. Trouble is the price of change.

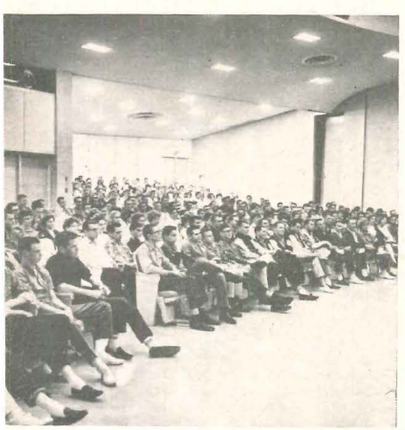
BOULDER CITY, NEVADA BUILDS ITS DIVISIBLE INSTRUCTION CENTER

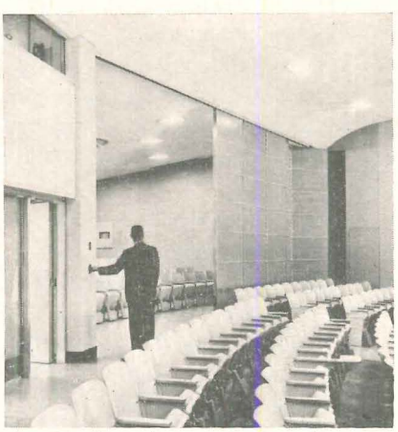
Condensed from a forthcoming report compiled by Margaret Farmer for Educational Facilities Laboratories, Inc.



The high school auditorium divides into three parts for fuller use. Status report: "It works"







Detail of folding partition dividing room (see ARCHITECTURAL RECORD, November 1959)

The building does everything expected of it as an auditorium—and perhaps a little more, thanks to a built-in gallery and the audio-visual workshop. The first step toward making it work equally well as an instruction center was taken when the core enclosing the lobby and audio-visual room was placed at the hub of the seating area, where it physically defines the three teaching sub-sections within the total space: the broad seating area in front of the core, and the smaller seating areas on either side of it . . .

So the second step toward converting the auditorium into a full-time instruction center was to complete the physical separation between the three roughly defined subdivisions by providing fourth walls that could be quickly drawn across the front of the alcoves to give them the visual and acoustic privacy of completely enclosed lecture halls. Since acoustic privacy was the biggest hurdle, acoustical consultants Bolt Beranek and Newman were brought in, with some assistance from E.F.L., to guide architects Zick and Sharp in spelling out realistic requirements for the operable walls, and in planning other aspects of the building so as to give the walls as sympathetic an acoustic environment as possible . . .

It was felt that the simultaneous presence of music and speech in adjacent spaces would not be frequent enough or of long enough duration to justify the extra cost of walls capable of meeting the more stringent requirements for isolating music. . . .

In the case of Boulder City's auditorium a perfume, or more precisely an ambient sound, could be introduced through the year-round air conditioning system. The trick was to keep the constant hum from the air distribution devices at a level high enough to blur any unwanted speech sounds that chanced to slip through the partitions between subdivisions, but low enough not to interfere with the intelligibility of sounds originating within the subdivisions themselves. The masking noise also had to be kept at a level that would permit speech emanating from the stage to be heard clearly from the back rows of the opened auditorium.

This last restriction, however, could be eased by using the amplifying system provided for reproducing canned sound—film soundtracks, recordings, and broadcasts—to reinforce the voices of speakers when necessary. So the air conditioning system could be planned to produce an ambient sound level high enough so that the noise reduction specifications for the operable walls could be relaxed slightly—thus reducing the cost of the walls—without relaxing the over-all requirements for acoustic privacy between the auditorium's subdivisions.

Even with these built-in assists from the relative infrequency of co-existent music and speech, and from the masking murmur of the air conditioning, the acoustic standards set up for the subdividing partitions were high. The acoustical consultants suggested that the walls should provide minimum sound

reductions ranging from 29 decibels at the low end of the critical frequency spectrum to 35 decibels at the high end; and the architects later not only upped these sound reduction requirements to specified minimums of 40 and 50 decibels, but also increased the spread of the frequency range deemed critical for speech isolation. Freely translated, the final specification demanded that walls light enough to be easily movable provide as much acoustic privacy as solid 4-in. brick walls weighing 40 pounds per sq ft.

The operable partitions chosen to fill this bill are king-size folding doors suspended from overhead tracks that stretch across the openings of the two rear alcoves. The doors are made up of 3-in. thick rigid panels, each 4-ft wide by 14-ft 4-in. tall, which are joined by continuous hinges similar to those used on pianos. When the partitions are open, they nest in special outside pockets which were provided to prevent the thick bundles formed by the stacked panels from jutting into the side aisles of the auditorium.

To convert one of the alcoves into a self-sufficient lecture hall takes two minutes. The completely automatic operation is triggered by turning a key in a tiny control panel mounted on the face of the lobby core. The key, which starts the small electric motor that drives the door along its overhead track, is held in the "close" position while the door moves out of its pocket and snakes across the opening to butt against the core wall. When the partition is fully extended, a limit switch automatically cuts off the drive motor to start up the pneumatic system to seal the door.

The same process in reverse retracts the door and opens the lecture room to the rest of the auditorium. The control key is turned to "open"; the pneumatic seals are released; and the motor-driven pulley draws the panels back in a series of accordion folds until the door is tucked neatly away in the waiting pocket . . . The pneumatic sealing system that makes the operable wall installation at Boulder City relies on a series of inflatable gaskets to provide an airtight pressure seal around the doors.

The horizontal joints at top and bottom of each door are sealed by an inflatable gasket which is buried in a floor trench and covered by a flush metal plate. When the door is closed and the pneumatic sealing operation begins, the gasket swells so that it lifts the metal plate through the gap which was left between floor and door to permit the panels to move freely along the track. The increasing pressure of the gasket against the plate then pushes the entire door upward until a similar gap above the panels is also closed, and the resilient strips of neoprene rubber which are mounted on the bottom edges of the panels and the lower edge of the ceiling track are compressed enough to ensure a tight seal.

The gaskets at each side of the door opening are housed in a vertical channel and capped by an unobtrusive strip of neoprene rubber set flush with the wall. As air is pumped into the hollow gaskets after the door is in position, the gaskets inflate, squeezing the resilient neoprene against the edges end.

Sound leakage through the vertical seams between panels is blocked by backing each hinge with a continuous strip of neoprene which is firmly clamped to the edges of the adjacent panels. While the panels are stacked for storage, these neoprene strips fold out to form smooth, rounded hinge covers. But as the door begins to close, the flexible strips pleat themselves into M-shaped gaskets, which the panels pinch together until the gaskets are compressed enough to provide the necessary acoustic seal at inter-joints.

Because this pressure sealing system prevents noise from leaking around the panels, the performance of the operable walls can ultimately be measured by how much noise leaks through the panels. The panels themselves were specially constructed to provide the required degree of sound reduction without exceeding the weight limit imposed by the need for fast, economical operation. Each consists of a steel frame wrapped around a multi-layered sandwich whose ingredients include, reading from back to front of the auditorium: vinyl coated steel, sheet rock, acoustic filler, more sheet rock, another sheet of steel, layer of acoustic filler, and perforated enameled steel.

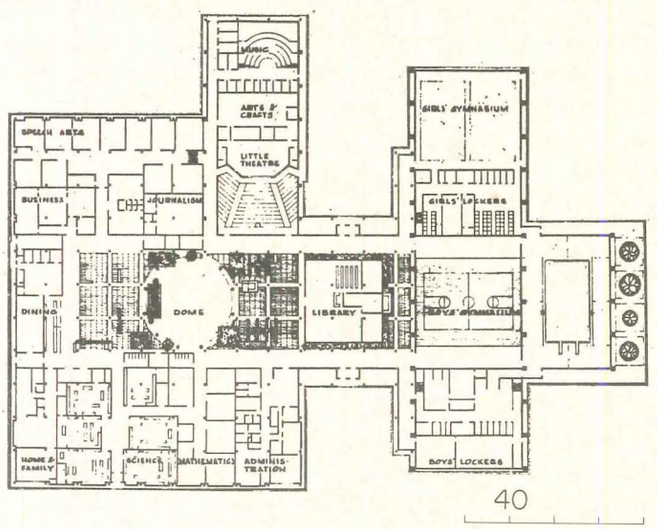
This final layer of perforated metal backed by an acoustic blanket absorbs sound emanating from the stage, and thus improves speech intelligibility by swallowing the disturbing echoes that would bounce off a more reflective surface. The same function is performed by similar sound-absorbing finishes on the permanent walls facing the stage—the back walls of the alcoves and the front wall of the lobby-audio-visual core.

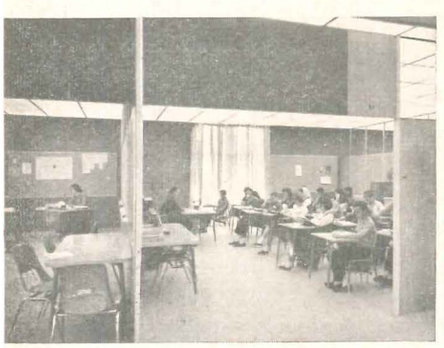
Other interior features of the building were also chosen with an eye—or more properly, an ear—on acoustics. For example, the hard plaster finish and irregular profile of the ceiling over the seating area produce maximum sound levels in the back rows of the opened auditorium by reinforcing sounds from the stage, while the acoustic-tiled ceilings in the lobby and gallery, and over the rear of the stage itself, prevent a similar dispersion of sound from these areas. To make sure that sound projected from the stage maintains clarity as it travels through the auditorium, the acoustical consultants also recommended carpeted floors and upholstered seats, which would supplement the reverberation control provided by the sound absorptive surfaces facing the stage. (Carpeting has been installed since the completion of the building, but the tight budget makes it necessary to rely on the sitters to sound cushion the seats.) . . .

The objective sound measurements taken by Bolt Beranek and Newman . . . confirm the (positive) results of . . . informal listening tests. While the amount of sound blocked by the partitions varies over the critical frequency range—and indeed varies from wall to wall, and from front to back of the same wall —the average noise reduction is about 40 decibels.

THE ACOUSTICS OF THE ANDREWS HIGH SCHOOL

by John Lyon Reid





The recently completed Andrews High School, Andrews, Texas, has classrooms and a domed "campus" (see ARCHITECTURAL RECORD, February 1960)

Andrews is a small community of 10,000 to 11,000 population near the west border of Texas. Its school system is under the leadership of Superintendent Truett A. Roach, whose staff of administrators and teachers is of an exceptionally high caliber.

In the several elementary schools which have been constructed within recent years in Andrews, the designs for which were developed by Caudill, Rowlett & Scott, architects, and Martin and Lemmon, architects, the principle of open planning for classrooms has been followed. There is a minimum separation between classrooms in the several schools and many of the classrooms open widely into adjacent library or classroom areas or into trafficways. All of these schools are of a high order of quality and are generally regarded with approval, even enthusiasm, by the teachers and children who use them.

During the programming stages which preceded the design of the Andrews High School, the matter of classroom environment was discussed at length and in detail. Many of the educators of the district felt that the open plan of the elementary schools would offer educational advantages if used in the new high school.

The lines of division between the various areas of subject matter in the curriculum were to be minimized as far as possible; there would be an attempt to unify the learning experience by encouraging communication between teachers and by sharing teaching skills in related subjects. Students would be encouraged as well to seek relationships among all learning experiences. The teachers generally agreed that an open plan would strengthen this concept of education.

Some teachers whose past work had been done in more conventional closed classrooms were mildly skeptical. It is true that the greater variety of learning tasks and activities at the secondary level require more concentration and less distraction than at the elementary level.

As architects we accepted this program requirement as an interesting challenge. We were aware of the fact that the open plan concept of schools was not altogether new in Andrews as well as in many other areas of the United States, so we approached the problem in the hope that we would be able to develop a maximum of control in shaping the acoustical environment.

A high degree of flexibility of interior space was an additional program requirement, and this led us to one of our first choices in working out the design of the interior spaces. This was a decision to use a luminous ceiling as a light source throughout all of the academic teaching areas. This choice permitted practically no sound absorption at the plane of the ceiling.

Partitions are constructed of metal tubular uprights at 3-ft centers, and between these uprights hollow core wood doors are attached by a spline de-

tail. The hollow core wood door is 7-ft high and since the ceilings are 10 ft above the floor, the upper 3 ft are glazed. Although this proved to be an extremely economical partition with the attribute of great flexibility, it also presented questionable conditions of sound interception.

By the use of perforated hardboard with fiberglass backing we were able to provide some sound absorptive areas on classroom walls. We made more generous use of this same detail for absorptive surfaces on corridor walls to increase the attenuation of sound between adjacent classrooms.

The school district has used carpeting to a limited extent in some of the elementary school buildings and in the administrative offices of the district. There was a hope expressed that a certain amount of carpeting could be used in the new high school. Because of the high degree of sound absorption of this floor covering it was decided that the entire academic area would be carpeted. This provided an opportunity for large areas of sound absorptive material in classrooms and traffic areas; this also served to reduce the sounds of footsteps and moving furniture at the source.

Students were moved into the new building on January 15, 1962, and classes have been under way since that time. Acoustical measurements have been taken of the classrooms in use, and some of the figures have revealed some interesting data.

Acoustical engineers for years have designed partitions to provide a 40-45 decibel sound interception between rooms—which in practice is seldom realized. In the Andrews High School there is only a 20 decibel sound interception over the entire hearing range, and 22 decibel interception over the speech frequency range which extends from 600 cycles per second at the low extremity to 4,800 cps at the high end. This represents a much lower interception between classrooms than acoustical engineers and architects have previously regarded as necessary.

The noise levels within the classrooms when in use run from 62 decibels to 68 decibels, with the lower and upper limits at 60 db and 79 db; the average is 65 db.

When sound measurements are taken in a silent classroom, the noise which intrudes from adjacent areas measures from 56 db to 61 db; with an average of 58 decibels; this is the ambient noise level. The difference in sound level of a classroom in use is therefore only 7 db higher than the ambient sound level. This is a surprising figure to us since this is not normally regarded as a sufficient difference to enable a student or teacher in a room to perceive and comprehend speech or other sounds.

The acoustical environment found in the classroom area corresponds quite closely to the design premises and the calculations developed during the design phase of the project by Mr. Dariel Fitzroy, the acoustical engineer.

Considerable care has been exercised by Mr. Fitzroy and myself to evaluate the acceptability of this acoustical environment. I believe that I can report that these rooms are quite acceptable and that the teaching and learning tasks can be performed without distraction or annoyance. Detailed questionnaire and opinion polls reveal how the teachers rate the acoustical environment at the Andrews High School on a rating scale extending from excellent downward to good, satisfactory, acceptable, and not acceptable. Sixty per cent of the teachers reported the environment excellent, 33 per cent good, 7 per cent satisfactory. Thus 93 per cent of the teachers viewed these conditions as good to excellent. There were none who rated it as acceptable or not acceptable.

OPEN CLASSROOM CAN WORK

It is my conviction that when the acoustical environment is carefully calculated and designed by the acoustical engineer and the architect, and when the building is carefully inspected during construction by the architect to enforce the contract requirements of the working drawings and specifications, an acceptable environment can be provided in classroom areas which are generously open to each other.

In the science rooms, because of the problems of the spillage of acids and other materials which would damage carpeting, asbestos vinyl flooring was used. It is my opinion that the acoustical conditions in such rooms are not nearly as acceptable as in classroom areas with carpeting.

When we were in the design phase of the project we believed that all of the academic areas would be hushed and that both students and teachers would sense the fact that classroom sounds might be quieted to unnaturally low levels. We felt, therefore, that if the concourse area were acoustically quite live, that the contrast of environment might prove advantageous. These assumptions have proved true and the classroom areas seem muted even with an ambient noise level of 58 decibels; students apparently react to this contrast because I have noted that behavior changes when a group of students walk from the concourse area into classrooms.

The dome area produces a slight and not unpleasant flutter echo when a person stands at the center of the dome and speaks and the entire dome area is extremely live acoustically. This was in accordance with Mr. Fitzroy's predictions. When the dome is filled with people, the clothing and the irregular surfaces of bodies, tables and chairs absorb enough sound so that the echoes are silenced. I am told that 800 people have dined in the dome area and experienced no problems of noise, and were able to hear the speaker with ease. The dome area has been designed to serve for assembly, dining, dances, and uses involving large groups in varied activities.

SOME COMMON SENSE FOR SCHOOL ACOUSTICS

by Robert B. Newman

Bolt Beranek and Newman Inc.

Consultants in Acoustics

The educational process takes place most easily (although it would be difficult to prove quantitatively) in a comfortable acoustical environment in which people can communicate easily. This means that not only should pupils be able to hear the teacher well and to hear other pupils without any strain, but the environment should be free from distraction from other activity areas nearby. Our tolerance of these distracting sounds varies with the task in hand and with how intent we are on that task.

The engineering techniques for solving these problems in school design are well established. It is largely the matters of defining the problem at hand and of determining the criteria for design that remain a little vague now. We hear that perhaps all the acoustics problems in schools can be solved by using carpet everywhere, or that perhaps some kind of air curtain can be made to do the job of isolating various activities from each other. We hear a great deal of talk about flexibility or about the elimination of "old-fashioned" partitions and barriers. There is merit in some of these proposals, but it is important to keep in mind that there are no magic cures to any of these problems, and that *all* aspects of acoustics must be solved well in the school if it is really going to be satisfactory.

ISOLATION

The degree of isolation required between classrooms varies tremendously with the kind of activities going on. If everyone is communicating in small groups (as is so often the case in Sunday schools), there is perhaps little need for any partitions for a satisfactory acoustic environment. There will be a general level of background conversational noise that will hide the minor intrusions of sound from neighboring spaces. We all have experienced this situation in a busy restaurant where we have complete privacy at every table with no partitions. Even the kitchen clatter can be immersed in the general hubbub and not present a problem. But this kind of privacy comes only when everybody is doing the same thing, and nobody is creating an unusual amount of sound.

At the other extreme is the isolation required when one group is very quiet, taking a quiz for example, and in the next room some noisy audio-visual or other classroom activity is taking place. Then it isn't a question of whether partitions are movable or not, but are they adequate for isolation?

We recently were called to look at a problem in a high school in which the isolation between classrooms was considered inadequate. The matter was brought to focus when an English class taking a test in one room got all the answers from a lecture on the same subject in an adjoining room. The principal decided that the isolation simply wasn't good enough, and that something had to be done. This was a new school with fixed partitions—they just weren't put in properly—and it was a relatively simple matter to plug up the holes that were leaking sound and to achieve a satisfactory amount of isolation. The problem would have been even more difficult had there been mobility of the dividers. Had there been two lectures going on simultaneously, it would have been adequate. But suppose the French class wants to sing while the Latin class in the next room is learning to conjugate verbs? The interference may not be serious, but there is distraction. A mathematics teacher in a Long Island school once told us that he didn't object to the audibility of the science lecture from the next room, but when his own students laughed at the science teacher's jokes, that was too much!

It is often pointed out that the doors to corridors in conventional schools are usually left open, so why bother with them. But the point is they are there to be closed if needed. There is no substitute for a closed door and a solid wall for isolation.

PRIVACY

We can achieve adequate isolation between two spaces by the proper design of the separating construction *and* by the proper control of background noise level. The amount of background noise needed to establish a given degree of privacy is quantitatively understood today, and one can predict in advance just exactly what sort of privacy we can get between two spaces with a given partition system and a given background noise. This ambient noise is often available from the ventilating system, but it must be unobtrusive and continuous if it is going to be acceptable and useful. It cannot be at such a high level that it interferes with communication in the room—this is just as important as freedom from distraction. If the background noise level must be raised so high that even a very poor movable partition can give adequate privacy, it can be uncomfortable, if not unreasonable, for a teacher to work over this noise level for an entire day. Most teachers feel that a background spectrum much greater than an NC-40 (as described in the A.S.H.R.A.E. Guide) is quite excessive, and the NC-30-35 spectrum is much more likely to be considered a reasonable level in which one can teach without strain.

The establishment of this limit to the background noise spectrum then imposes a set of requirements

on the partition performance if we are going to have adequate privacy and freedom from distraction for any of the teaching tasks. If we limit the types of activities in the room, we can reduce the requirements for separating construction.

Movable partition systems are available today that will give enough isolation for satisfactory simultaneous use of adjoining spaces with reasonable background noise levels. Some of these can be moved at will, and others can be moved perhaps from semester to semester. This is not a serious technological problem (although it may be a financial one), but there is need for a sophisticated handling of the background noise levels as well as very careful detailing and handling of the partition design itself if satisfaction is to result. Adequate solution won't happen with fixed or with movable partitions unless great care is used in the design.

GOOD HEARING

Good hearing in a school is achieved not only with proper control of background noise, but also by the provision of adequate loudness and good distribution of sound achieved by the proper shape and surface finish in the listening spaces. In one scheme we looked at recently a uniform ceiling height of 9 ft had been established for the entire school, and in this space classrooms were indicated for small seminars of ten pupils to large lecture rooms for 200 pupils. This is ridiculous! While 9 ft may be quite adequate for a 50-seat classroom, it is simply impossible for a 200-seat lecture room. Merely indicating on plan that partitions are movable does not create real flexibility. Flexibility is achieved when we have a variety of spaces within the school, each well adapted to its particular use and not compromised by the vague possibility that some one might want to subdivide it into smaller spaces. A 200-seat lecture room, for example, should have a minimum ceiling height of 15 to 18 ft for good hearing and, hopefully, should have a sloped floor so that people can see the front of the room as well. All too often we think only in plan, and we draw dotted or wiggley lines and say, "this is flexibility."

Each space should be designed ideally for its particular use. The band rehearsal room should have a high ceiling and should not be fitted into a standard classroom bay with normal classroom ceiling height —it can be, but it will be a poor band room! The band rehearsal shouldn't interfere with activities in the auditorium nor should the hammering in the shop be audible elsewhere. These things are basic.

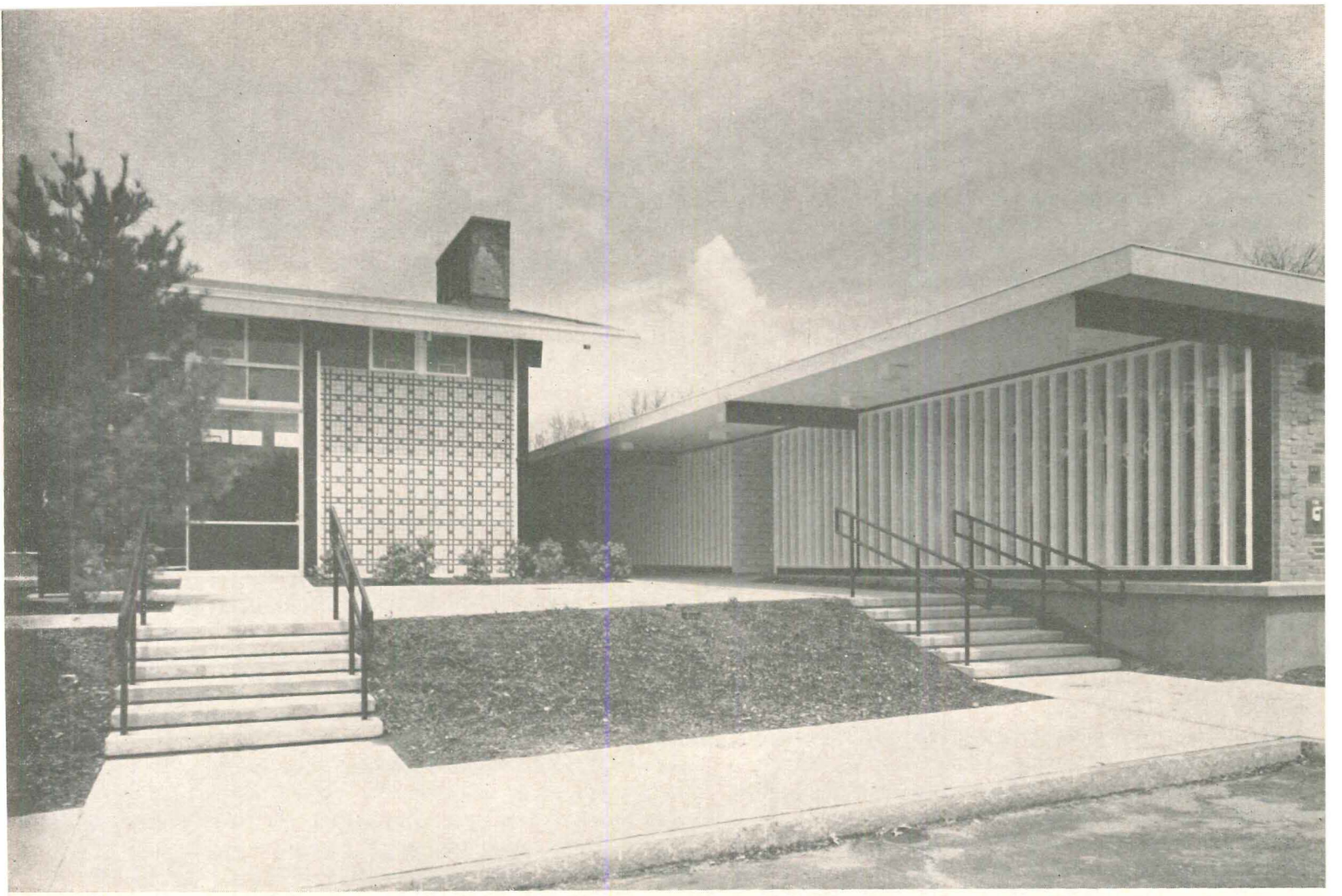
Too often the designers of a school are intrigued with some particular aspect that is new in design concept and forget some of the ordinary problems of school design. One new high school that has been widely publicized, because it has successfully resolved many of the planning problems associated with team teaching, has incorporated in its design two large lecture rooms, each for about 150 students. The lecture rooms have been carefully designed for good hearing with adequate ceiling height and good arrangement of seating so that the students can not only see well but can hear well too, as long as the ventilation system is turned off! In the course of the design the ventilating system noise control had been completely neglected and, when operated, it sounded exactly like Niagara Falls. An unventilated lecture room is hardly a successful teaching environment, but it was a choice of being able to hear or not. Fortunately, the problem was solvable (which is not always the case) but at considerable extra cost and inconvenience.

WHAT'S COMING IN SCHOOL ACOUSTICS?

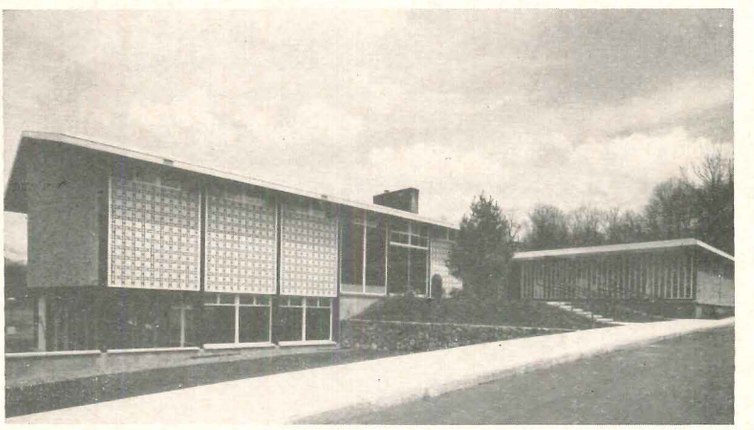
Good acoustics in schools can be had with the technology available today. It is merely a matter of the sensible incorporation of the details that we know and understand and a refinement of the criteria for design. This cannot be accomplished by vague statements or glib talk about concepts. Successful buildings are successful because the concept is brought to fruition in all of its down-to-earth details. While there are admittedly still many technical problems to be solved in school design, there are also matters that the educators must try to clarify. If only we could find out quantitatively the role of the building in the learning process! But learning is indeed difficult to measure.

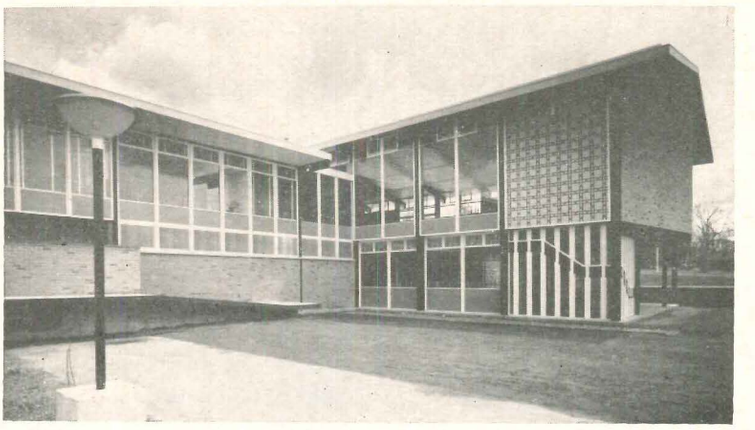
In recent years educators have asked for two specific items more than any other. How do we get an inexpensive classroom divider, and how can we subdivide an auditorium so that we get greater usefulness from it? The answers to these questions have been supplied by cooperative efforts between engineers and manufacturers. Today, there are at least ten companies who make sound isolating folding partitions ranging in cost from $5.00 to $30.00 per square foot. With the best of these partitions an auditorium can be subdivided (and we have done it successfully in the Boulder City, Nevada school) so that movies can be divided from lectures, choral rehearsals from quizzes. Careful engineering can create an auditorium of 500 seats, for example, in which everybody can hear but which can be divided into three or more smaller rooms with complete speech privacy and even reasonable music privacy. With careful engineering design such subdivisions will be done again and again. The educators have only to pose the real problems in specific terms and solutions can be found in today's technology.

We mustn't look for miracles, however. Architects must be aware of the basic principles that govern the behavior of sound in any building. They must understand the true meaning of the word "flexibility," and realize that the acoustics in school design must be solved in all aspects if truly satisfactory schools are to be built for tomorrow.



L. M. Bowen





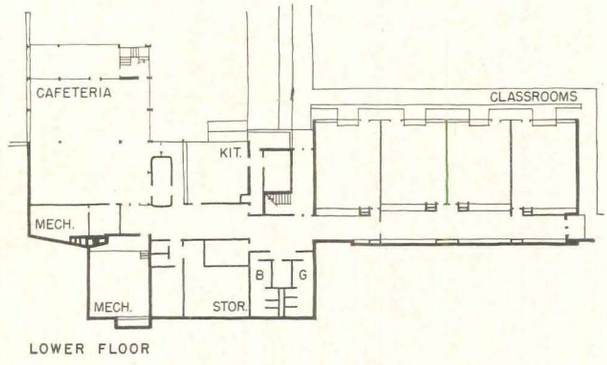
TAC BUILDS A THIRD SCHOOL FOR NEEDHAM, MASS.

Hillside Elementary School, Needham, Massachusetts
ARCHITECTS: *The Architects Collaborative; partner in charge —John C. Hartness; job captain—Alex Cvijanovic*
STRUCTURAL ENGINEERS: *Morgenroth and Associates*
MECHANICAL-ELECTRICAL ENGINEERS: *Reardon and Turner*
CONTRACTOR: *Joseph E. Bennett Company, Inc.*

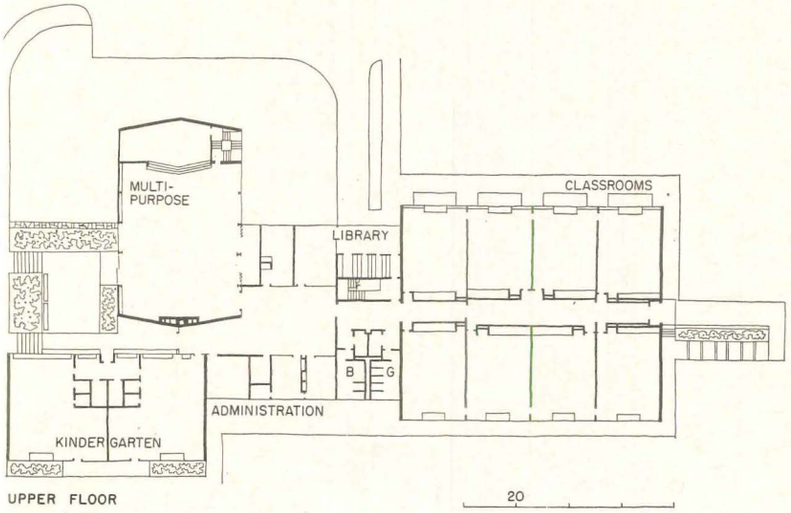
This handsome school marks the third in a series of four schools that The Architects Collaborative has built for the town of Needham in as many years. The fourth school, the Needham Junior High School, is under construction, to be completed this fall.

This elementary school deftly solves the problem of providing a cheerful, colorful atmosphere for small children, without resorting to the "cute" fancies sometimes seen. The structure is a trim, even elegant, post and beam frame, filled with curtain wall panels. Color and texture come mainly from tile patterns, textured brick and spandrel panels. Vertical louvers along the glass walls of the kindergarten wing also add interest and a degree of privacy to this area.

The plan is a simply, but sensibly organized one. Three main elements—a block of twelve classrooms, two kindergartens, and a unit with cafeteria and multi-purpose room—are arranged so that each element may be entered separately from the little front terrace. The noisier multi-purpose area is separated from the kindergarten rooms by a covered but open passage, and from the main classroom block by administrative and service rooms. Both the multi-purpose area and the cafeteria floor below can be entered from ground level. The cost was $17.00 per sq ft for 31,600 sq ft.

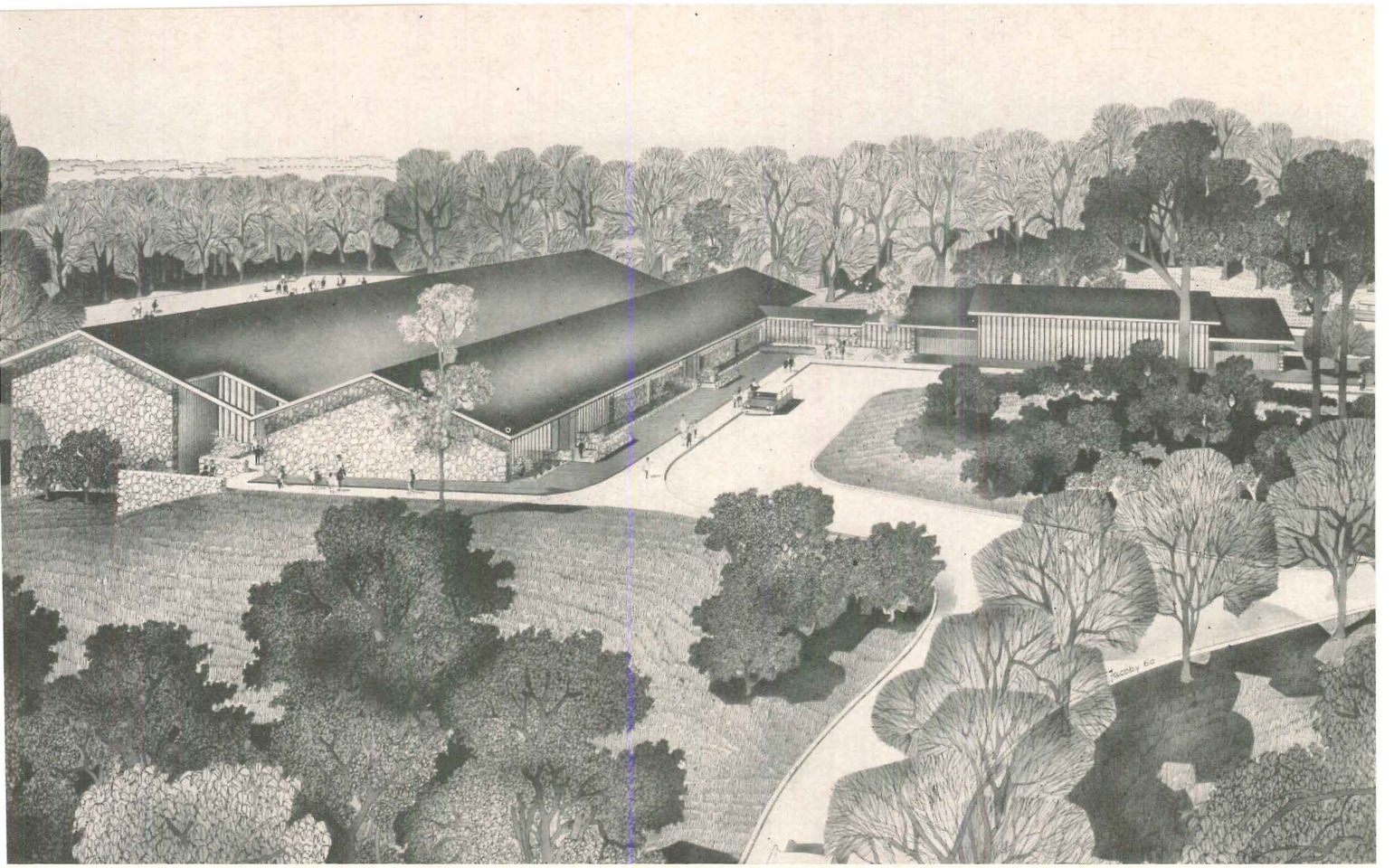


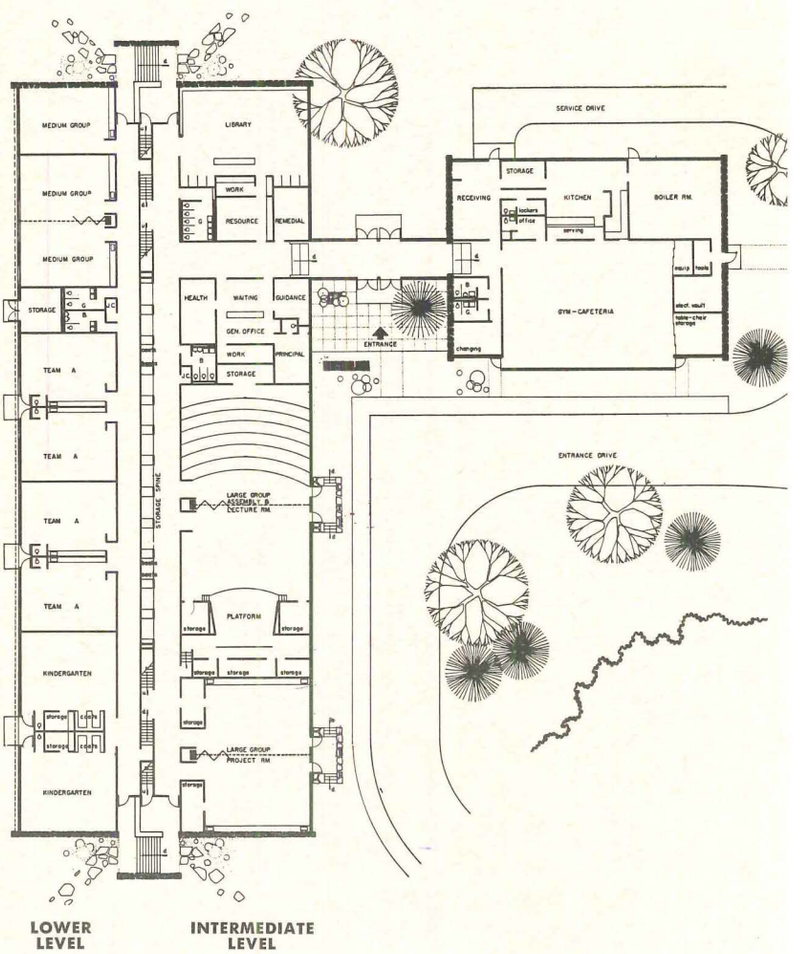
LOWER FLOOR



UPPER FLOOR

20




MEDIUM GROUP
MEDIUM GROUP
MEDIUM GROUP
STORAGE
TEAM A
TEAM A
TEAM A
TEAM A
KINDERGARTEN
KINDERGARTEN
LIBRARY
WORK
RESOURCE
REMEDIAL
HEALTH
WAITING
GUIDANCE
GEN. OFFICE
WORK
PRINCIPAL
STORAGE
STORAGE SPINE
LARGE GROUP ASSEMBLY & LECTURE RM.
PLATFORM
LARGE GROUP PROJECT RM
SERVICE DRIVE
STORAGE
RECEIVING
KITCHEN
BOILER RM.
lockers
office
serving
ENTRANCE
GYM-CAFETERIA
equip
tools
elect. vault
table-chair storage
changing
ENTRANCE DRIVE
LOWER LEVEL
INTERMEDIATE LEVEL

TEAM-TEACHING SCHOOL NEARS COMPLETION

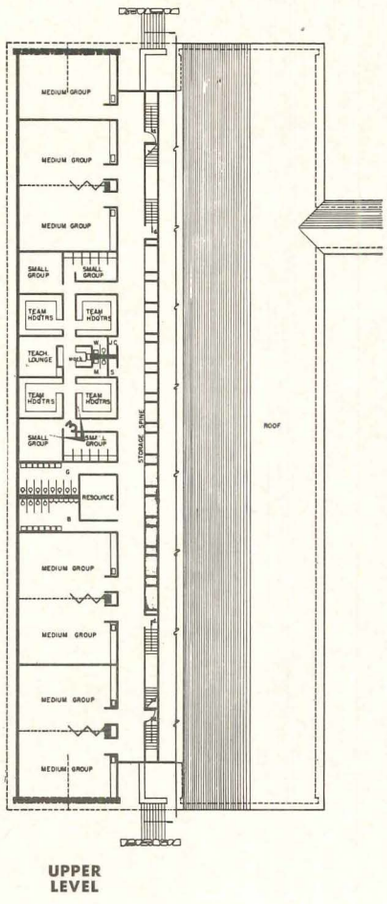
Dundee Elementary School, Greenwich, Connecticut
ARCHITECTS: *Perkins and Will*
SUPERINTENDENT: *John Blackhall Smith*

Now nearing completion, this K-6 school provides an extremely advanced program for the elementary grades. Dundee School supplies flexibility for its teacher teams by providing variously sized spaces—many with operable walls. There are special rooms for the teachers, including a workroom-research center; and a separate center is provided for the students. The school will be equipped with open- and closed-circuit television and other electronic learning devices.

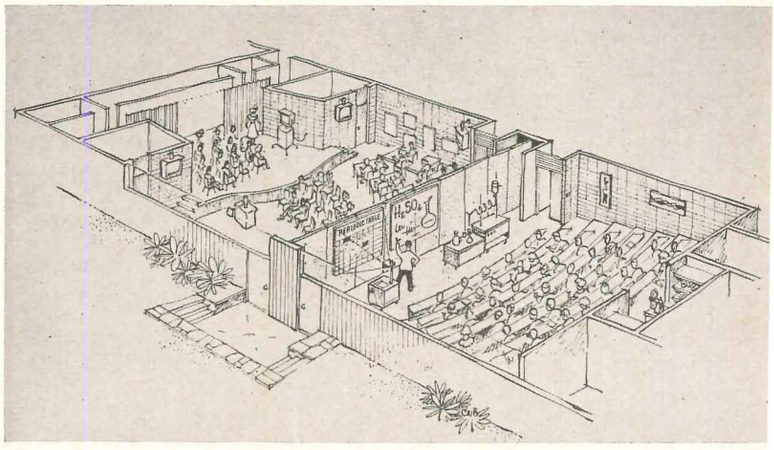
A split-level scheme was developed to place large group instruction areas at half-level between the two floors of smaller group spaces. The major rooms of this intermediate level convert by operable walls into smaller rooms. Corridors are flanked by a three-level storage spine.

In line with the flexibility provided in the rest of the school, gym and cafeteria spaces are combined in a large multi-purpose space, and set in a semi-detached wing. Capacity for the school is 550 students (with 100 in kindergarten). Estimated cost was $919,700, including operable walls, a 10 channel audio system and television facilities.

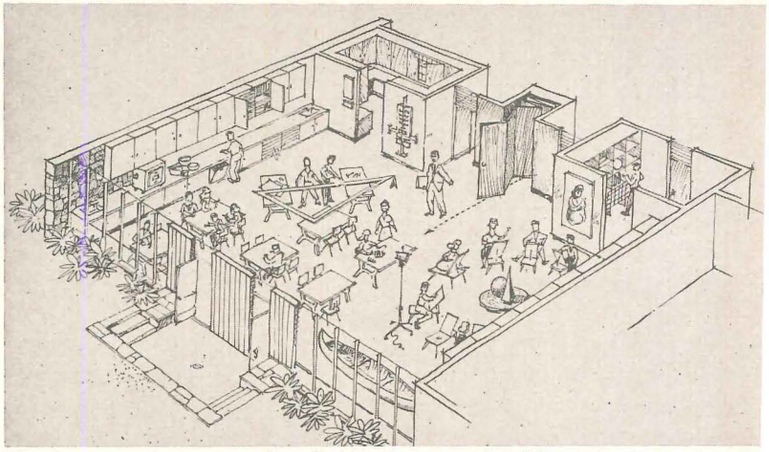
The structure is steel frame, concrete floor slabs; exteriors are board and batten or fieldstone. Interior fixed partitions are plaster, ceilings are acoustic tile. Kindergartens have radiant floor slabs; other heating is by finned pipe convectors.



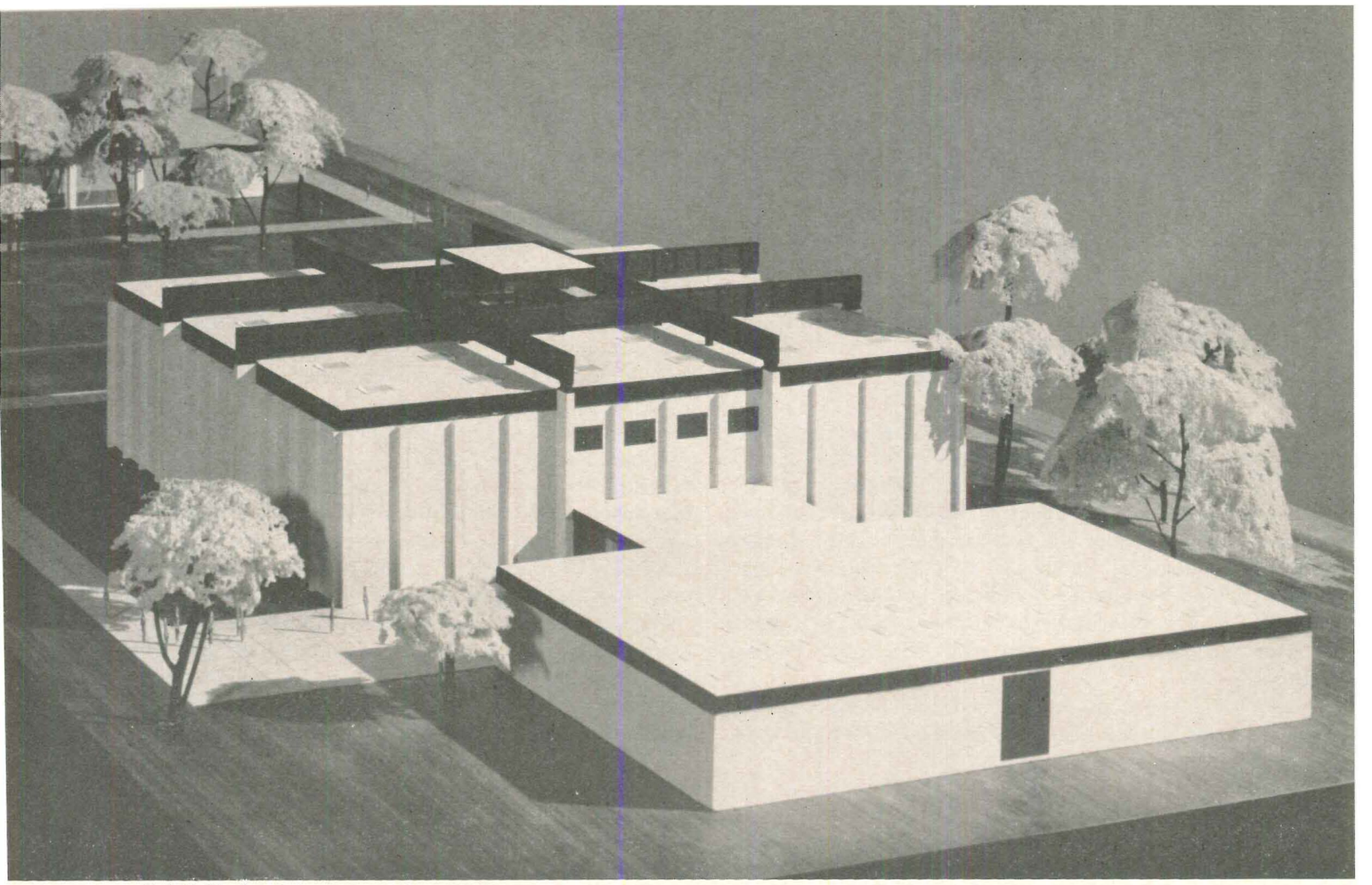
UPPER LEVEL



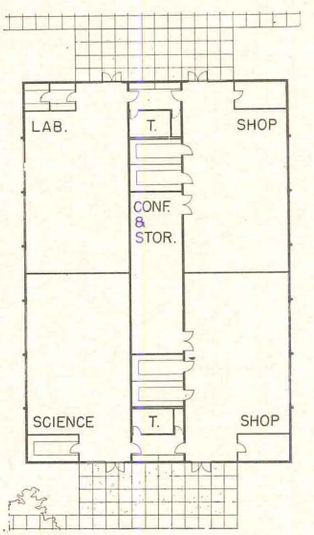
The assembly room (above) has operable wall to convert large space into two rooms (see plan)

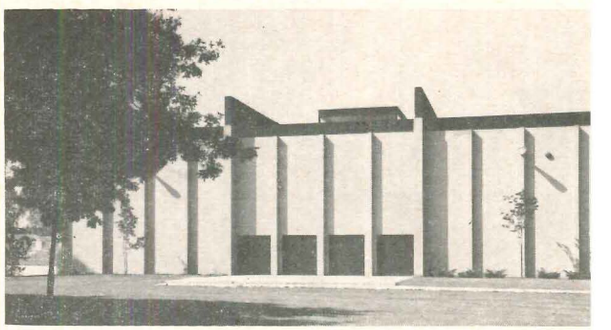


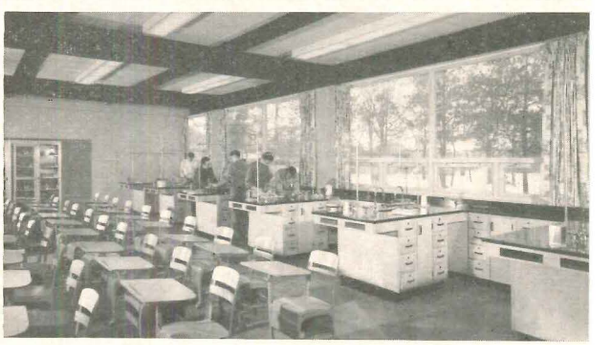
The large project room also divides into two teaching spaces



Hedrich Blessing photos







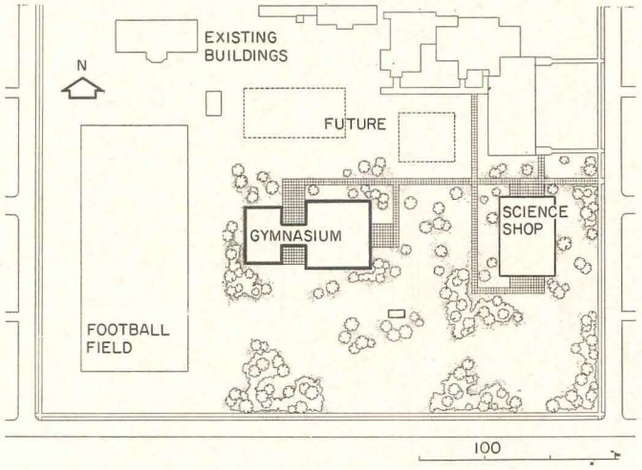
ISOLATED UNITS FOR NOISIER ADDITIONS

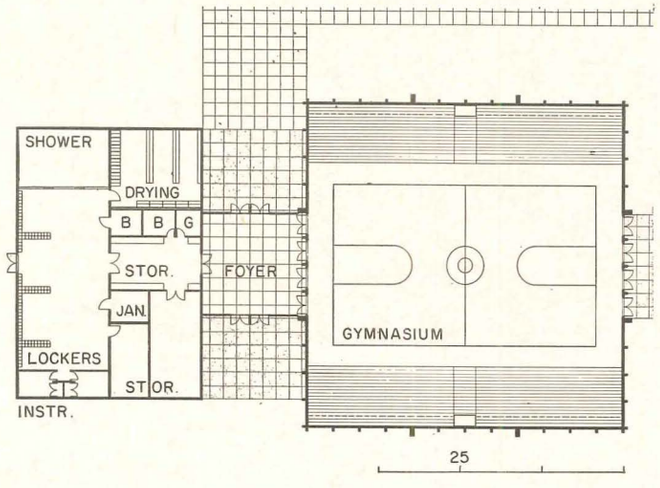
Tolleston High School Addition
Gary, Indiana
ARCHITECT: *Leonard Klarich*
CONTRACTOR: *Eugene S. Babilla, Inc.*
STRUCTURAL ENGINEER: *Frank Kornaker*

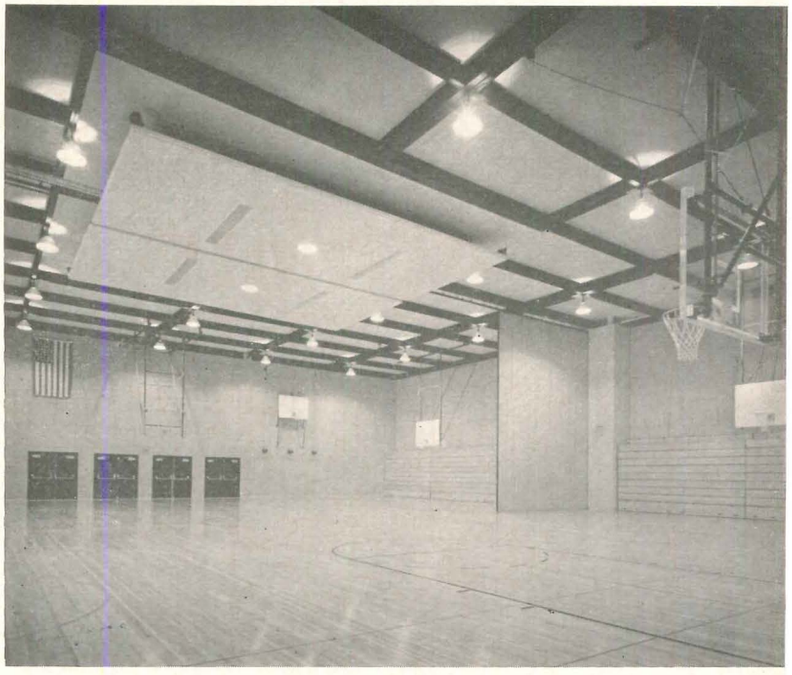
The problem of adding to an existing school, with several buildings constructed in random style and location, was solved in this case by leading the school into a decided campus type plan, with current and future additions treated as detached and acoustically isolated units. The first additions shown here are a gymnasium, and a unit for science rooms and shops. Future additions are cafeteria, library and offices.

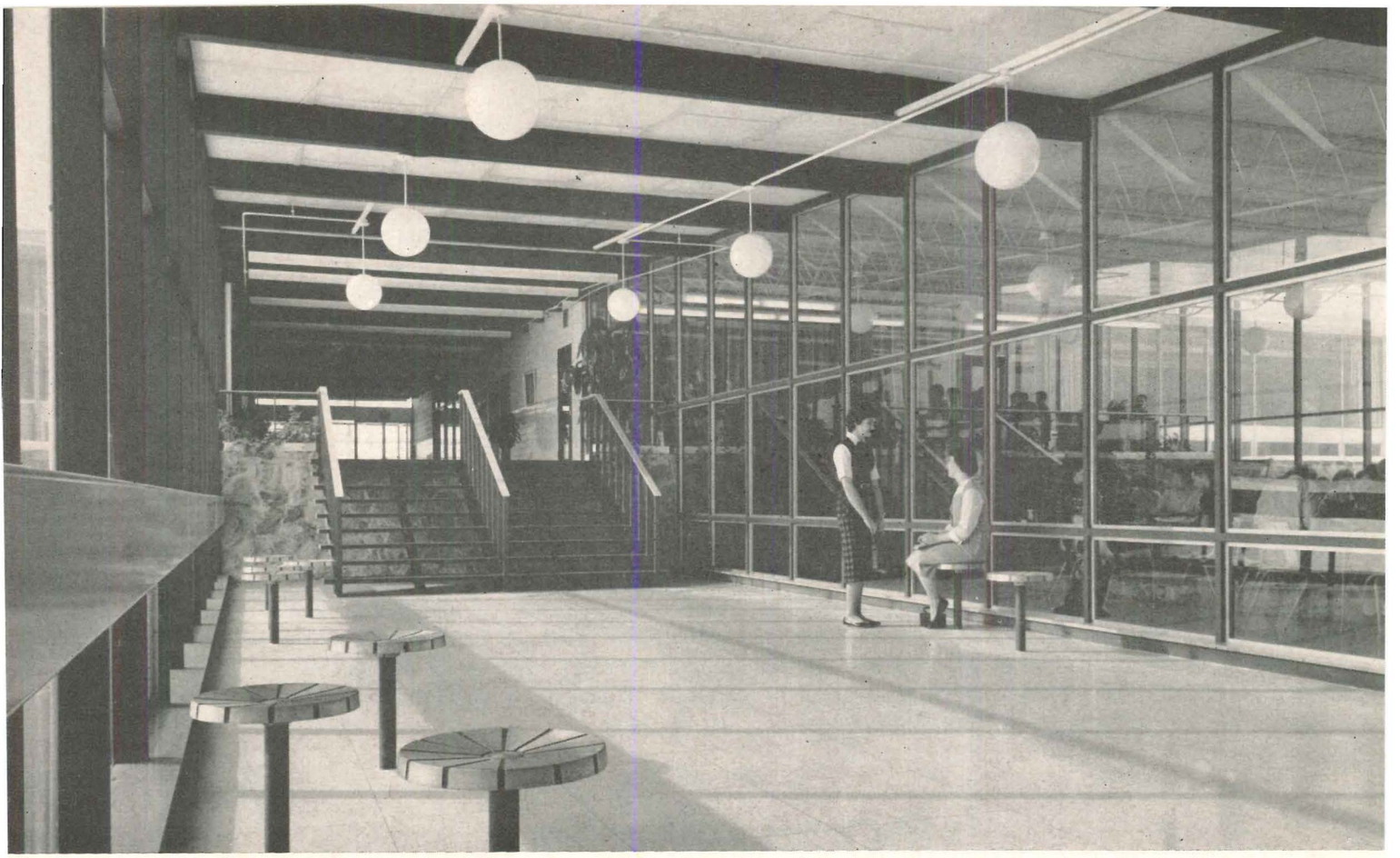
The existing buildings are strung out in a line at the north end of the site. A large flat open space was to the south. The gym was placed in such a position that it could be readily accessible to the parking lot on the south and the existing football field to the west. The shop-science building was placed among trees at the east side of the site.

The two additions are of bearing wall construction, with exterior walls of 8-in. face brick. The gym walls are about 25-ft high and were stiffened with piers on an 8⅓-ft module. The roof framing is steel, with roof decks of poured gypsum and precast concrete tile. Floors are terrazzo, concrete, asphalt tile, and a floating wood gym floor. Heating is a split system of air and hot water in the shop unit, hot water in the gym.

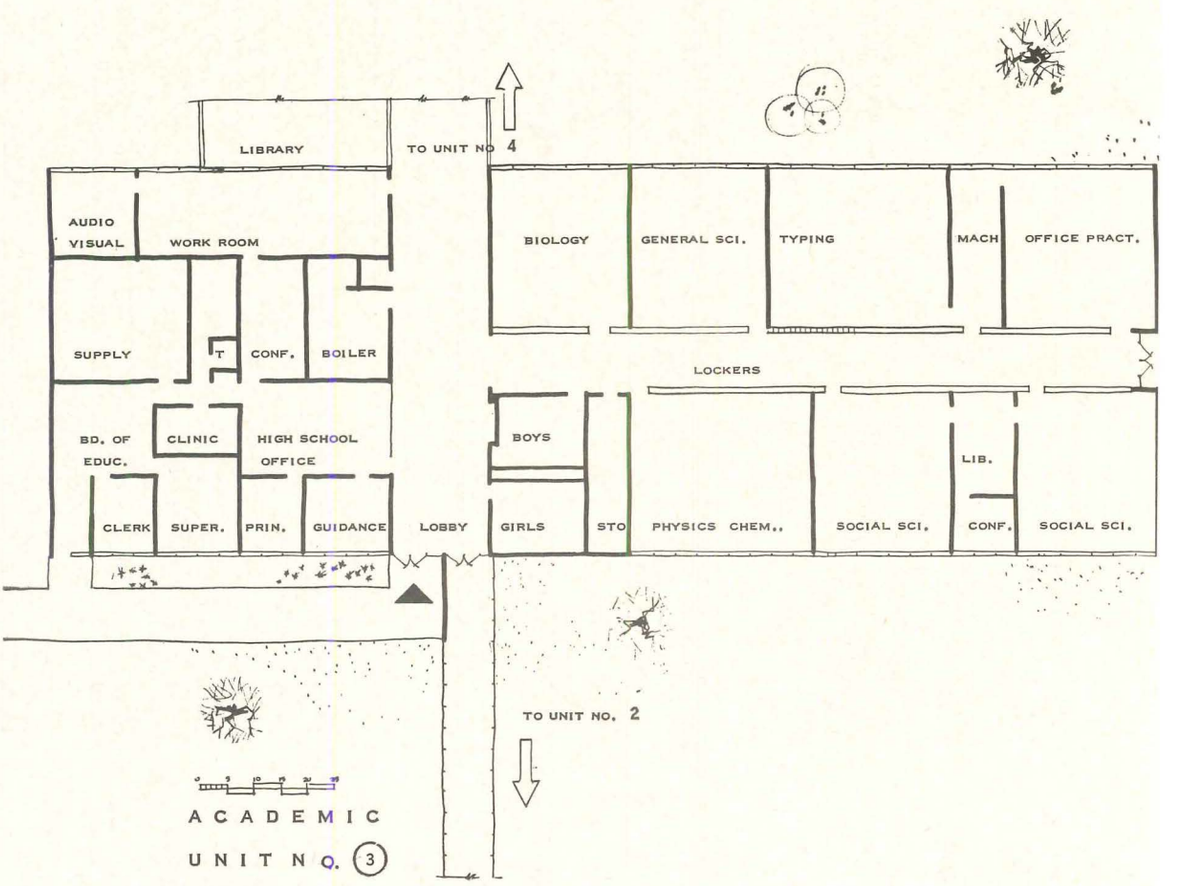








Jack Sterling photos



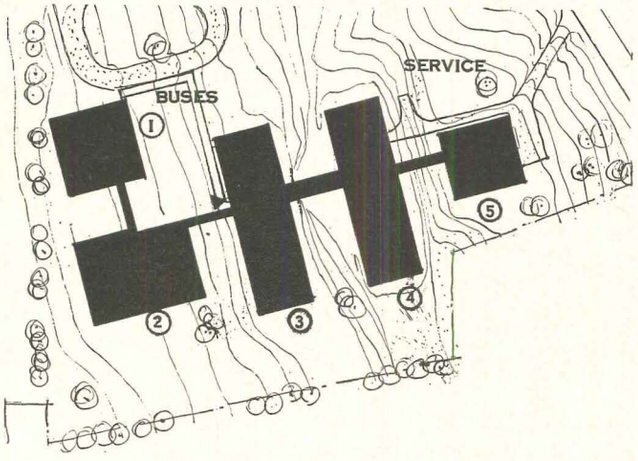
A UNIT SCHOOL WITH "DOORLESS" CLASSROOMS

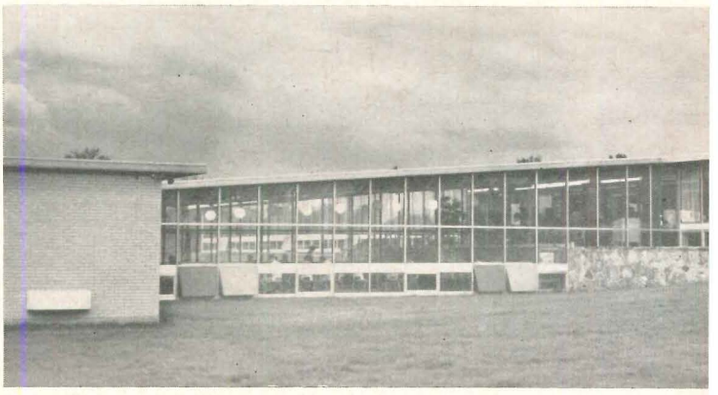
Brookfield Senior High School
Brookfield, Ohio
ARCHITECTS: *Joseph Baker and Associates*
CONTRACTOR: *Jennings and Churella, Inc.*
MECHANICAL ENGINEERS: *Howard Bennet & Assocs.*

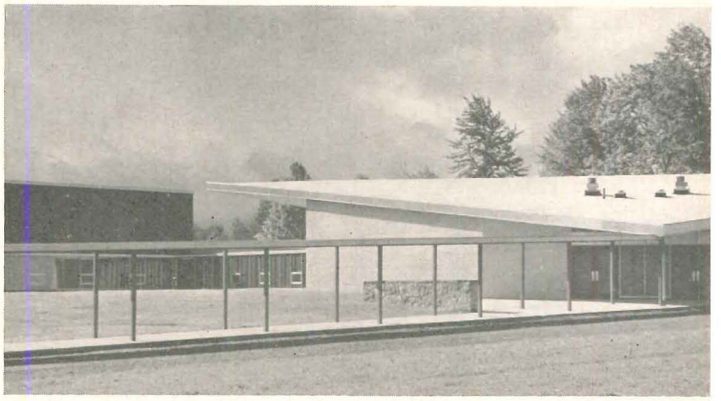
This campus plan, or unit, school was designed with the idea that a *single* large building could not fit the sloping terrain without massive grading and filling operations; but that a series of buildings, with connecting corridors would offer good sound isolation of the various activities, as well as fit the topography.

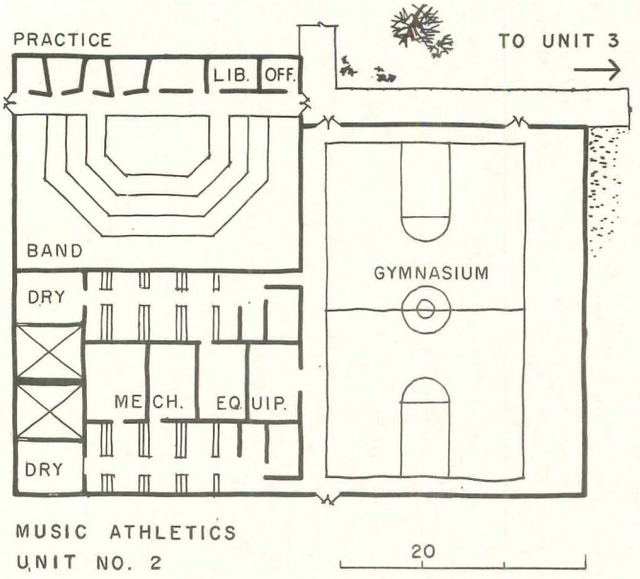
As shown on the plot plan, the school is divided into five units: (1) auditorium; (2) music and gym; (3) academic unit; (4) academic and cafeteria; (5) shop-arts unit. The academic units have classrooms with no doors, but with corridor walls consisting of lockers with special acoustical treatment on the backs. Extra acoustical treatment is used elsewhere (such as acoustical formboard between bar joists in the ceilings) to minimize the transmission of sound between rooms.

The school has poured reinforced foundations, and exteriors of brick; interiors are painted concrete block, with ceramic tile wainscots. Roofing is poured gypsum; floors are terrazzo or asphalt tile. Heating is by circulated hot water, with a separate gas-fired boiler in each building. The school accommodates 525 pupils in grades ten through twelve. Costs were $799,780 or $11.82 per sq ft.

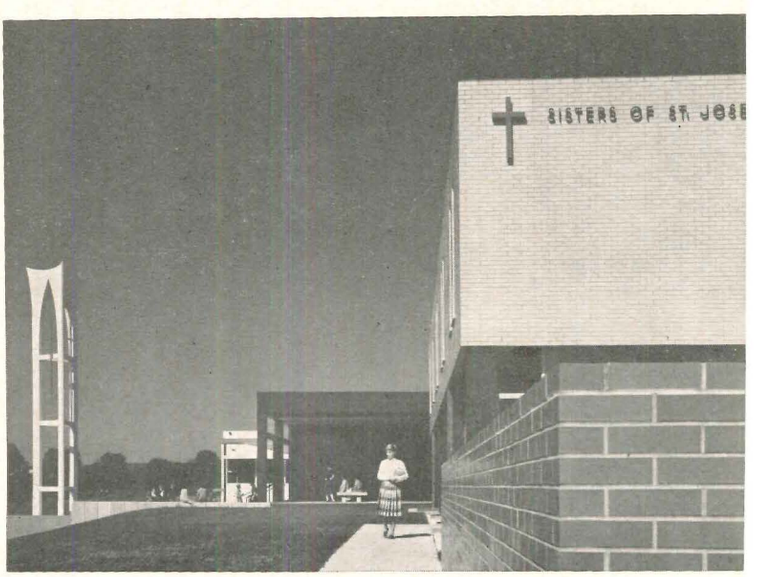








Lawrence S. Williams, Inc. photos



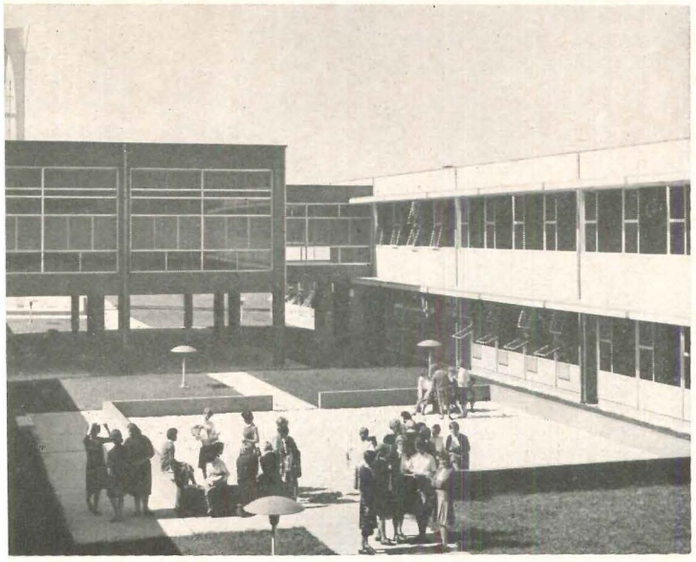
BOLD STATEMENT FOR A PAROCHIAL SCHOOL

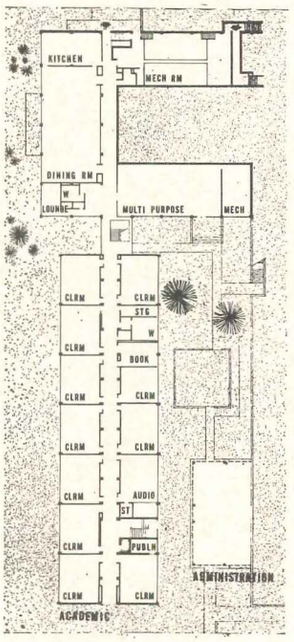
Mount Saint Joseph Academy and Convent
Springfield Township, Pennsylvania
ARCHITECTS: *Nolen, Swinburne and Associates*
CONTRACTOR: *Joseph R. Farrell, Inc.*
MECHANICAL CONSULTANT: *John W. Furlow Engineers, Inc.*
STRUCTURAL CONSULTANT:
Severud-Elstad-Krueger Associates

A very powerful expression has been achieved in this bold design for a Catholic academy for girls and its connecting convent for the Sisters of St. Joseph. The plan is comprised of four major units centered around a landscaped court. These units include: the convent, administration areas, academic areas, and a separate activities wing containing the noisier areas. The total complex is dominated by a simple, but effective 50-ft cast stone bell tower.

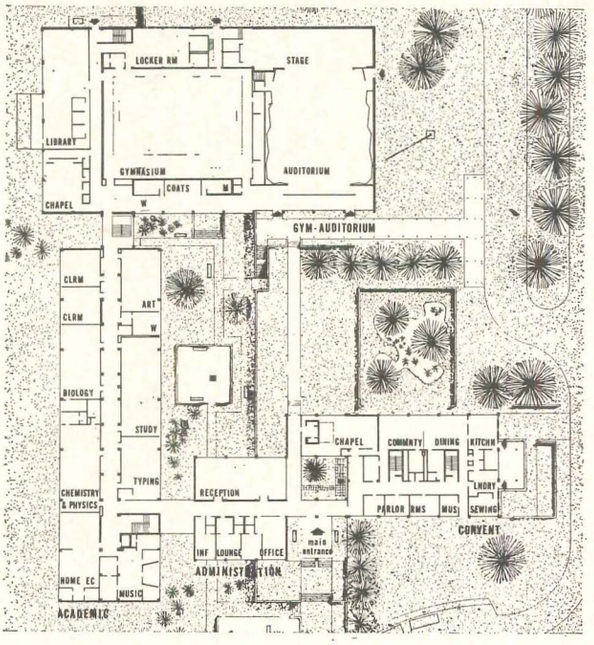
Program requirements included 12 classrooms, 9 special rooms (for science, music, etc.), a gymnasium (with folding stands to seat 320), an auditorium for 600, a library for 20,000 volumes, a student chapel for 40, multi-purpose room, cafeteria, administration and reception areas, and a convent for 20 sisters with its own chapel.

The school was designed for an initial enrollment of 250 girls, and can accommodate 300. It will eventually be expanded for 500 students. The school has 98,500 sq ft, and was built at a total cost of $2,500,000. The site is on the high portion of a 97-acre tract.



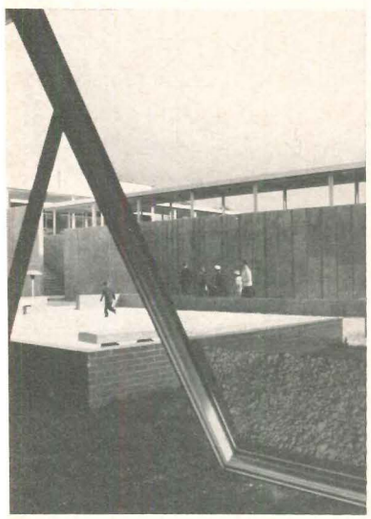


GROUND FLOOR



FIRST FLOOR

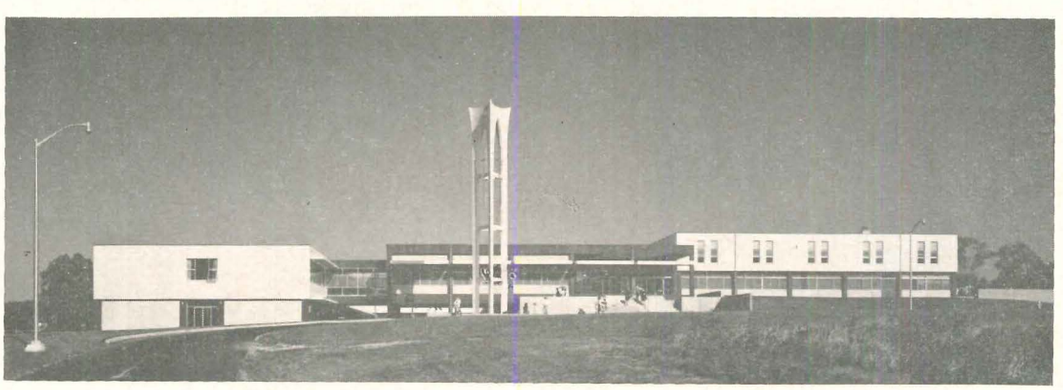
25



Mount Saint Joseph Academy and Convent

The structures for the academic and convent buildings are of concrete frame, and a steel frame was used for the activities building. Exterior finishes include white glazed brick, dark gray slate for columns and spandrels, and tan brown precast panels. Windows have aluminum frames and gray heat absorbing glass.

Interiors are plaster in most areas, glazed structural tile in corridors. Floors are terrazzo or vinyl tile. Acoustical ceilings are used throughout and the wood paneling is African cherry. The stained glass chapel windows were designed by the Sisters of St. Joseph



Architectural Engineering

"No Magic in H.P.'s"—Candela

Felix Candela seems much more concerned of late about attitudes toward structure (most particularly the hyperbolic paraboloid) as an architectural element, and the realities of engineering design, than in the economic benefits which occupied his attention earlier. Talking before the Association of Collegiate Schools of Architecture in Dallas last May, Candela said that structures are not science; they are no more than common sense; and it seems difficult, he said, to find common sense. Candela told about teaching an elective course on structure to architectural students at the University of Mexico. The classes are always small to begin with, he said, and, even then, many of the students are relatives of his friends. The rate of attrition is high, Candela stated. The students believe in magic . . . in "tricks." By being next to Candela, students feel they will catch the magic. Then they are greatly disappointed when they find there is no magic.

Russian Concrete is in a Flicker

The Soviets give evidence of being able to create heroes in almost any context—not just in space. A new movie has opened in New York City, titled "Apartment in Moscow" which portrays the wonder of Moscow housing-project expansion (housing made, as you know, of factory-produced precast concrete) as personified by a big, genial construction leader. Come to think of it, we doubt if Hollywood's tribute to architecture, "The Fountainhead," ever got to the U.S.S.R., even if it did have Gary Cooper.

"Instant People" Test the Philharmonic

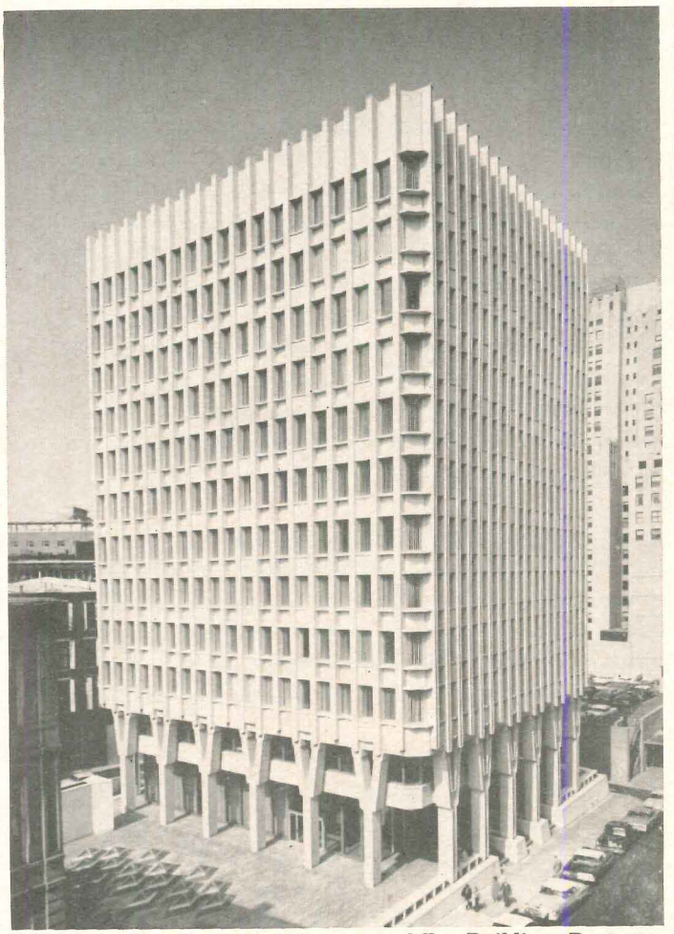
Instead of having a live audience for testing out the acoustics of Philharmonic Hall in Lincoln Center the week of May 28, the acoustical consultants for the Hall, Bolt, Beranek & Newman, Inc., created what Dr. Leo L. Beranek calls "instant people." These "instant people" were actually 30- by 40-in. glass fiber blankets, folded in the center to fit in the seats. Among the "instant people" were several dummy heads with "ears" (actually microphones which permitted recording on binaural tape). "Of course these "instant people" cannot applaud," said Dr. Beranek, "but neither can they cough." Acoustical values measured include balance, warmth, level of loudness and brilliance. The tests were conducted for the Hall's architect, Max Abramovitz, of Harrison and Abramovitz.

From Acoustic Scattering to Wave Front

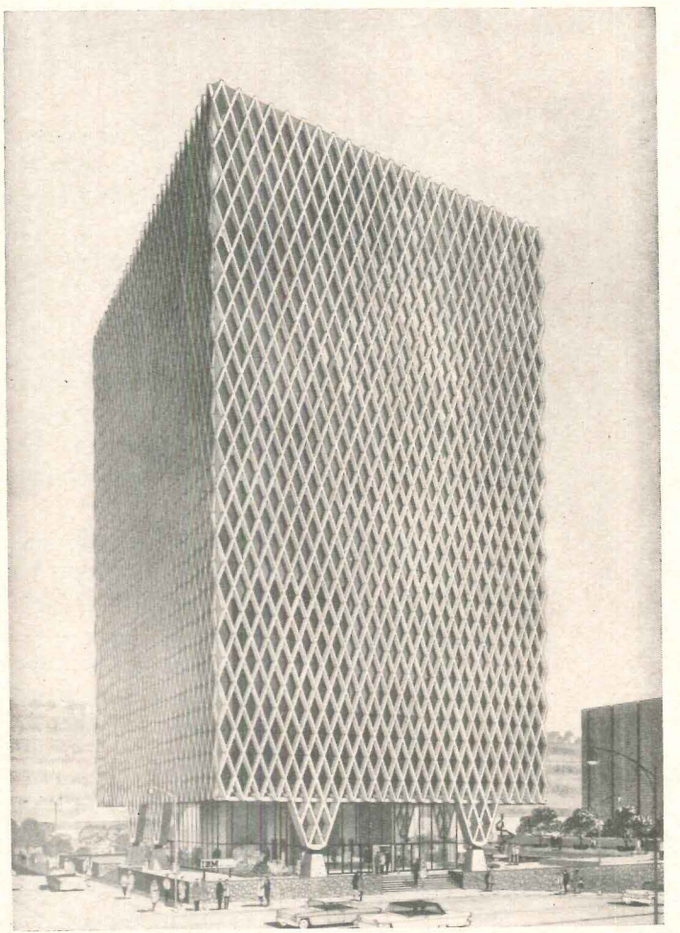
On hand in the press room at the annual meeting of the Acoustical Society of America last May in New York was an interesting little publication, "Glossary of Terms Frequently Used in Acoustics." Tucked in among the host of scientific terms such as "acoustic interferometer" and "doppler effect" was a term every layman could comprehend, "cocktail party effect." The definition: "Anyone who has ever attended a cocktail party is aware of the fact that as people gather and time progresses, the noise level in the room where the party is being given gets louder and louder until finally the room is quite noisy indeed. By our usual notions of masking, it should be almost impossible to understand any of the conversation, yet we all know that people will gather together in groups of two or more and carry on quite satisfactory conversations. This means that a human being is able in some way to focus his attention upon a desired source of sound, and to some extent ignore other masking sounds that may be present in the environment. This particular effect has been called the 'cocktail party effect.' It may be added that the phenomenon can show up in any number of situations, not just at a cocktail party."

The glossary was compiled by Horace M. Trent and Betty Anderson of the Naval Research Laboratory and can be obtained from the American Institute of Physics, Public Relations Department, 335 East 45th Street, New York 17, N.Y. Price $1.00.

This Month's AE Section



Blue Cross-Blue Shield Headquarters Office Building, Boston



I. B. M. Office Building, Pittsburgh

THE RETURN OF THE BEARING WALL

by William J. LeMessurier, Structural Engineer *Wm. J. LeMessurier & Associates, Boston*

A careful observer of the multi-story buildings built in the last five years will have noticed a change in the structure of exterior walls. The new appearance is marked by the deliberate use of closely-spaced columns which give a finely-grained structural scale, and often produce a façade enriched with high relief. In its most developed form, this kind of wall construction becomes a lacework of diagonal columns and horizontal spandrels which simultaneously support vertical and horizontal loads.

The closely tuned ear can detect new phrases in the architectural jargon describing these constructions; "load bearing mullions," "stressed-skin walls," and other descriptions. What is going on? Is this new departure merely an anti-curtain wall reaction, or is there a logic behind this evolving new form? A look at the operating structural principles may help provide an answer.

Historical Perspective

For several millenia man built the walls of his permanent buildings with masonry—creating a continuous surface interrupted only by those openings necessary for entrance and light. The masonry surface kept out wind, water and fire; supported the floors and roofs; and, last but not least, resisted those forces causing racking and overturning of the whole building. Large openings in masonry walls were only possible when spanned with arches. Even when the metal skeleton frame was first employed in the 19th century, it was used with exterior walls of masonry built in the traditional way. But as the pressure for higher buildings grew, the masonry bearing wall was abandoned and the complete skeleton frame made its appearance in Chicago, in the late 1800's.

The most characteristic feature of the steel skeleton, as used for multi-story buildings, is its organization into bays of roughly square dimensions which can be added together in a cellular order to produce buildings of any size. Since enclosing vertical surfaces are not an integral part of this skeleton, a secondary structure, the curtain wall, has been used to terminate interior space.

The concept of structural organization by framed bays is so pervasive that architectural form is often strait-jacketed. It may be well to look for other conceptual approaches to structural organization.

In order to clearly understand our terms we shall define two concepts. *A bearing frame* is a vertical plane

containing columns and girders which supports loads applied in its own plane and in which the columns have a spacing established by functional requirements. *A bearing wall* is a vertical structure which supports loads applied in its own plane, and in which the elements have a spacing established by structural requirements.

Multi-story buildings may be considered as an assembly of horizontal floor and roof planes combined with vertical bearing frames and/or bearing walls. If we think of the exterior plane as a bearing wall, then what are the structural requirements which establish column spacings? If window openings are variable the determining factor will be structural efficiency.

It will be shown later that the most efficient column spacings for steel within a bearing wall system will range from one-third to one times the story height for usual loads and member proportions. This conclusion may be extended to include reinforced concrete and wood systems as well.

Implications

Considered as bearing wall structures a series of new buildings make very good structural sense. A few examples taken from current practice illustrate the point. The Blue-Cross Blue-Shield building in Boston has exterior columns at alternate spacings of 5 ft and 10 ft. These close spacings eliminate the need for a deep spandrel and allow a total structural floor depth of 17 in. even though the span behind the wall is 34 ft. The new C.B.S. building in New York designed by the late Eero Saarinen has wide exterior columns spaced at 10 ft on center, resulting in alternating 5-ft windows and 5-ft columns. This design is especially well suited to reinforced concrete and makes possible a great height which would be impractical with large exterior bays. The bearing wall appears in its traditional form surrounding the interior core and providing support to the one-way floor systems.

Perhaps one of the clearest illustrations of the modern bearing wall is the 33 Rue Croulebarbe building in Paris, designed by Albert, Boileau, and Henri-Labourdette. The exterior walls are framed by steel pipe columns at 5-ft centers with a wide flange steel spandrel between. The spandrel, because of its short span, is only 4-in. deep and is encased in the 6-in. cast-in-place floor slab. Two interior bearing walls are similar in construction to the exterior walls, except that diagonal bracing is added. The same bracing appears in the exterior side walls where it becomes an important architectural feature. By including diagonal bracing, the end wall structure of the 33 Rue Croulebarbe building completely satisfies our definition since it can resist loads applied in any direction in its own plane.

Examples

Two American buildings which use bearing walls with great imagination are alike in having diagonal members to carry gravity loads as well as lateral loads. The American Cement building designed by Daniel, Mann, Johnson and Mendenhall uses sculptured precast X units to form a true bearing wall with great rigidity in its own plane. This wall gathers all vertical and lateral loads and carries them down to a deep girder at the base of the tower. Like the C.B.S. building by Saarinen, the floors have a one-way span back to the interior core. A similar scheme in structural steel is being used in the I.B.M. building in Pittsburgh.

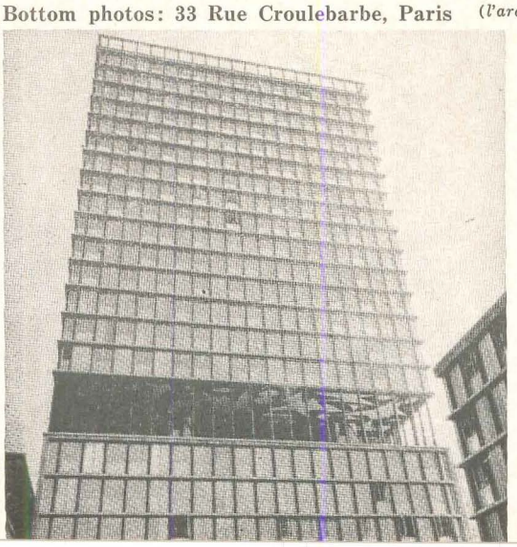
A special problem of the bearing wall arises at the base of the building. Having established a tightly-scaled, highly-efficient system, how can it be designed to provide ground-level openings of monumental scale? That such interruption of the system is indefensible in purely economic terms should be obvious. And Saarinen has eloquently shown that the unbroken structural system can yield a design of great power. But for both esthetic and practical reasons, an open base may be desirable.

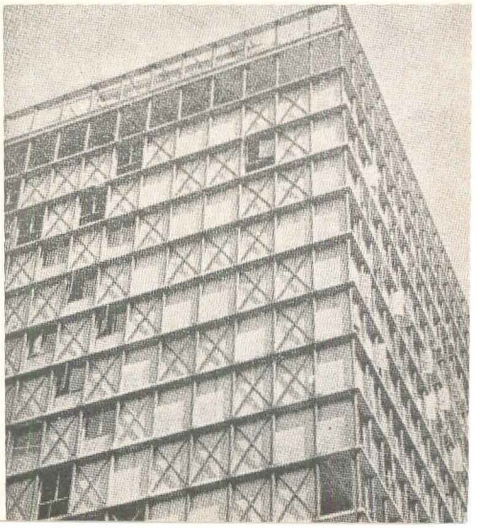
Paul Rudolph's Blue-Cross building solves the problem by collecting the column loads in pairs. In principle, this scheme is very simple and efficient. The Brunswick building by Skidmore, Owings and Merrill has a gigantic spandrel girder above the ground floor to carry the loads from a bearing wall.

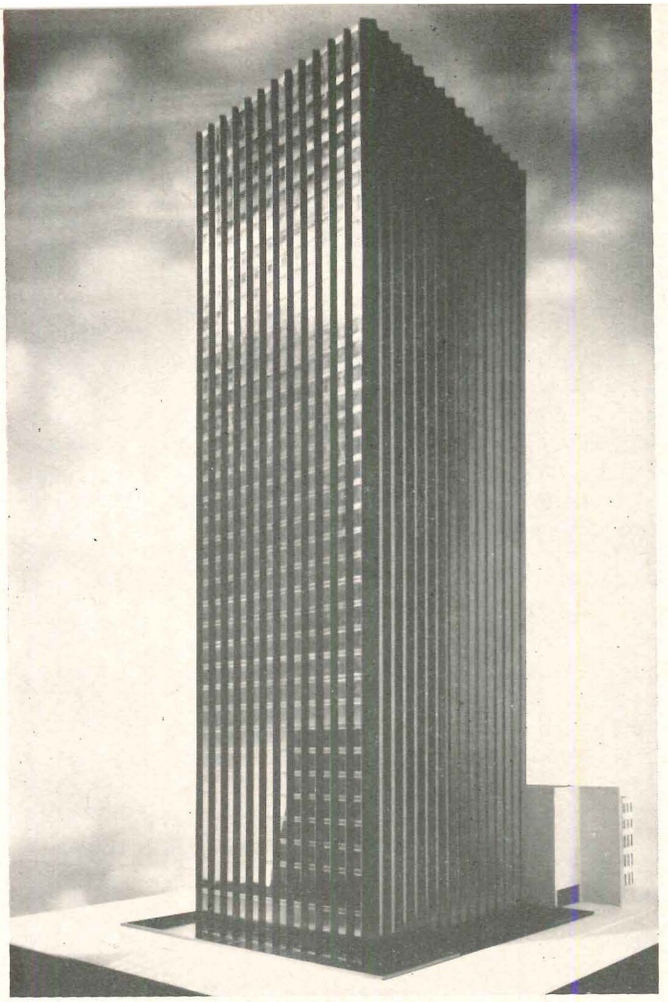
Further, an economic study of these structures will show that con-

Top photos: American Cement Building, Los Angeles

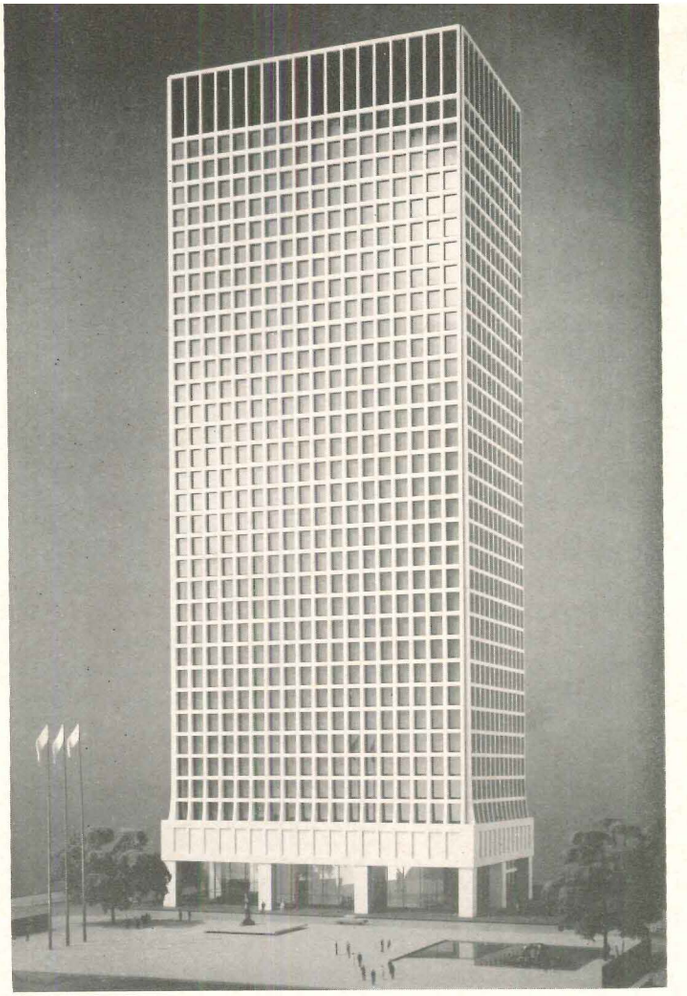
Bottom photos: 33 Rue Croulebarbe, Paris *(l'architecture d'aujourd'hui photos)*







C. B. S. Headquarters Building, New York City



Brunswick Building, Chicago

centrating the effort of spanning a large ground floor bay is distinctly advantageous to the spanning that bay in every floor.

The steel structure of the I.B.M. building exploits the modern bearing wall itself to solve the open base problem. By taking advantage of high strength steels the diffused floor and wind loads are gathered to eight points at the ground. The dramatic result shows the design freedom yielded by abandoning the framed bay concept.

To understand the full advantage of its walls, the I.B.M. building must be studied in three dimensions. Since the wall efficiently supports loads applied at any point in its own plane, freedom of floor system design was possible. An optimum floor system of steel beams at 9-ft centers has been used to span 54 ft to the core. The beams support a composite steel and concrete deck which carries lateral loads through diaphragm action to the exterior bearing walls.

Future Potential

What are the future possibilities of the bearing wall? A most likely development, as soon as building codes modernize their treatment of masonry, will be the resurgence of brick as a structural material. Research progress in high-strength mortars is already at the point where thin, efficient masonry bearing walls may be used for high-rise buildings. In reinforced concrete, greater use of the slip-form method of construction to provide load-bearing exterior walls as well as interior cores can be foreseen.

The practicality of closely spaced steel columns has been greatly increased by the new specification of the American Institute of Steel Construction. In designs where columns are not required to resist lateral loads, the column efficiency factor, K_c, may be reduced up to 75 per cent by providing rigid connections between columns and spandrels. In addition, high-strength steels may be used to keep dimensions more nearly constant as loads accumulate.

Perhaps the most valuable result of reconsidering the structural function of exterior walls will be the restoration of their role as bracing elements for wind and earthquake in tall buildings. Construction in the form of large framed bays with rigid connections is the most inefficient way to resist lateral loads. And since high efficiency of structural form for purposes of strength is always accompanied by maximum rigidity, the use of rigid bearing walls will improve the structural performance of buildings.

Calculating Column Spacing

Figure 1 shows an idealized bearing wall with story height of h, a column spacing of L, and a uniform load of w/ft applied at each floor. For any given materials, story height h, and load intensity w, there will be an optimum value of L to give the least total material in the wall. As the value of L increases the girder bending moments increase, and the total amount of girder material increases. But an increasing value of L will result in fewer, more heavily loaded columns so that the total amount of column material will decrease. For any situation a minimum value may be found.

Let us see what magnitudes of spacing result in the case of a bearing wall built of steel with typical floor loads. The amount of material per foot in a steel beam designed for 20,000 psi stress may be shown to be:

$$\text{weight/ft} = B = (M)^{2/3}\ 2.42 \times K_b$$

where M is the bending moment

in foot-kips and K_b is a constant depending on the proportions of the beam. For the economical rolled wide flange shapes K_b is about .70. For a solid square $K_b = 3.30$.

The total material in a steel column of height h feet carrying a load of P kips may be shown to be:*

$$C = \frac{P\ h}{5} + .014\ K_c\ h^3$$

where K_c is a constant depending on the proportions of the column. For typical wide-flange steel columns $K_c = 12$.

If these two equations are combined, taking $P = wL$ the total material per foot =

$$B + \frac{C}{L} = \left[\frac{wL^2}{8}\right]^{2/3} 2.42\ K_b + \frac{wL\ h}{5L} + \frac{.014K_c h^3}{L} = \text{lbs/ft}$$

The second term is seen to be independent of L so that the equation may be used to find a minimum value regardless of the number stories. A minimum value exists when

$$L = .097\left[\frac{K_c}{K_b}\right]^{3/7} h^{9/7}\left[\frac{8}{w}\right]^{2/7}$$

Figure 2 gives values of K_c, K_b, and the ratio K_c/K_b for various shapes. A low value of K_c or K_b indicates high structural efficiency. A low value of K_c/K_b indicates high relative column efficiency. Figure 3 shows curves giving values of L for various values of K_c/K_b and two values of w.

Lateral Loads

Although diagonal bracing is the most efficient way to resist lateral forces, many structures depend on joint rigidity or frame action for lateral strength. In a frame such as Figure 1 the optimum column spacing L for a given story height with a given total lateral force may be determined. Using the approximate portal methods of lateral load analysis and the previous equation for material in members designed for bending, the optimum spacing of verticals is

$$L = \frac{h}{2}\frac{K_b \text{ of verticals}}{K_b \text{ of horizontals}}$$

The factor K_b is the same constant previously used. For beams and columns with similar bending efficiency in the plane of the wall the most logical column spacing lies in the same range determined for gravity loadings.

This discussion is not a plea for mathematical determination of architectural proportions. Optima of any kind are only guides to design. But the understanding that the most efficient scale for the spacing of elements in a wall structure is related to the story height is an important qualitative conclusion. Many structural benefits may follow: Columns at every module avoid awkward projections into office spaces. Closely spaced columns supplement mullions designed only for wind. Deep reveals can provide sun shading.

Perhaps the old fashioned quality of the term bearing wall will disappoint those who favor more romantic terms. But the terminology used here is deliberate. In a rapidly changing world, the constancy of the principles of statics is a comfort to the designer of structures. And it follows that structural form is based on principles which are unchanging. Construction methods, the technology of materials, and the art of analysis are always improving. But the search for structural form is a quest for permanent truth. Therefore, the bearing wall which served well in the past was bound to reappear.

Figure 3 shows the optimum column spacing for steel based on a given load and floor height, as shown in Figure 1, and on a configuration ratio K_c/K_b, Figure 2

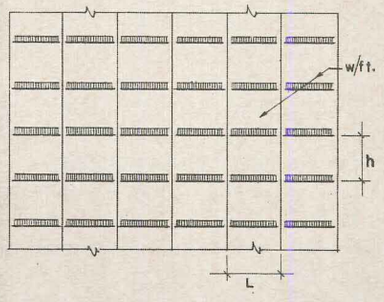


FIGURE 1

COLUMN & BEAM CONSTANTS					
	I			2	b/20
K_c	3.00	12.0	12.56	24.0	1.26
K_b	.70	3.30	3.70	4.16	1.45
K_c/K_b	4.28	3.53	3.40	5.76	.87

FIGURE 2

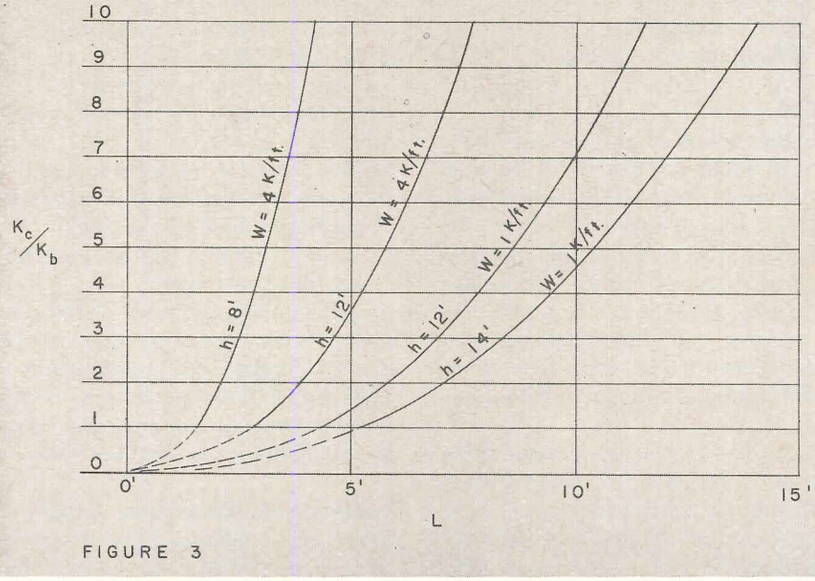


FIGURE 3

---

* based on allowable axial stress $= 17{,}000 \text{ psi} - .485\left(\frac{L}{r}\right)^2$

I. B. M. BUILDING, PITTSBURGH
Architects: Curtis and Davis
and Associated Architects and Engineers
Structural Engineers:
Worthington, Skilling, Helle & Jackson

BLUE CROSS—BLUE SHIELD
HEADQUARTERS OFFICE BUILDING, BOSTON
Associated Architects: Paul Rudolph;
Anderson, Beckwith and Haible
Structural Engineers:
Goldberg, LeMessurier and Associates

AMERICAN CEMENT BUILDING, LOS ANGELES
Architects and Engineers:
Daniel, Mann, Johnson & Mendenhall

33 RUE CROULEBARBE, PARIS
Architects: E. Albert, R. Boileau,
J. Henri-Labourdette
Structural Engineer: J. L. Sarf

C. B. S. HEADQUARTERS BUILDING, NEW YORK
Architects: Eero Saarinen and Associates
Structural Engineer: Paul Weidlinger

BRUNSWICK BUILDING, CHICAGO
Architects and Engineers:
Skidmore, Owings & Merrill

ELECTRICAL LOADS IN LARGE BUILDINGS

A study of types and sizes of loads will aid in anticipating future growth

by Louis A. Bello, Syska & Hennessy, Inc., Consulting Engineers

It would be fairly safe to say that in the last decade typical electrical loads in office buildings have doubled due to air conditioning, higher lighting intensities, more business machines, more appliances and the impact of automation. Even four years ago, it was reported that the loads in existing office buildings had increased by 40 per cent in a decade, according to a study made by the Building Research Advisory Board for the Federal Construction Council.

A clear understanding of the types and magnitudes of electrical loads in office buildings, hospitals, schools and laboratories is essential in anticipating their growth. One way of accomplishing this is through a listing of commonly encountered loads, a brief description of each and a tabulation of their capacities in typical buildings.

TYPES OF ELECTRICAL LOADS

1. Lighting
2. Convenience outlets
3. Heating, ventilating and air conditioning (HVAC)
4. Sanitary equipment
5. Elevators, moving stairways and material handling equipment
6. Cooking appliances
7. Business machines
8. Laboratory equipment
9. Shop equipment
10. X ray equipment
11. Miscellaneous equipment

Lighting

Lighting is one of the largest loads, and its requirements must be well established before an accurate total load can be computed. However, for preliminary design, estimating and checking purposes watts per square foot (w/sq ft) is a common and useful means for determining such loads, based on a particular footcandle level and type of lighting system.

The finally selected fixture types should be checked to verify these loads. Also, electrical codes have mandatory minimum requirements regarding lighting loads to be used in determining minimum feeder sizes. See Article 220 in the National Electrical Code.

Convenience Outlets

Outlets usually are a minor load, but they are closely related to and associated with lighting. An allowance of between ½ to 1½ w/sq ft is quite common; the actual figure is determined by the density of receptacle application. Underfloor duct and cellular floor systems will usually require 1 to 1½ w/sq ft.

The National Electrical Code (Article 210) has a minimum requirement of 1½ amperes (180 watts) per convenience outlet.

Heating, Ventilating and Air Conditioning

These power requirements will, of course, be determined by the amount of ventilation and the amount of heat to be supplied or removed from a building.

For heating and ventilating purposes only, equipment such as the following may be encountered:

1. Fuel combustion motors and controls
2. Pumps (vacuum, condensate, circulating)
3. Heaters (unit, space, fuel and induct)
4. Unit ventilators
5. Fans (supply and exhaust)
6. Heating cable
7. Snow melting equipment

Air conditioning equipment usually consists of:

1. Refrigeration compressors
2. Pumps (chilled water, condensate, condenser and circulating)
3. Fans (supply, return, exhaust and cooling tower)

Unlike lighting and convenience outlet loads, which are more or less equally distributed throughout a building, HVAC loads are usually concentrated in basements, penthouses and fan or machine rooms.

Sanitary (or Plumbing) Loads

These are relatively modest in comparison to HVAC; however, where fire pumps, house water pumps and well pumps are encountered, they can comprise a sizable load. Some commonly encountered equipment includes:

1. Sump pumps
2. Sewage ejectors
3. Circulating pumps
4. Vacuum pumps
5. Fire pumps
6. Well pumps
8. Compressors
9. Chilled water pumps (for drinking fountains)

Most of these loads are located in basement areas and/or penthouse machine rooms.

Elevators, moving stairways and material handling equipment are formidable loads in tall buildings and hospitals and may consist of:

1. Elevators
2. Moving stairways
3. Dumbwaiters
4. Conveyors
5. Pneumatic tubes
6. Various hoists and lifts

Major factors affecting the capacities of such equipment are speed of travel and weight being handled.

Cooking appliances can generally be classified into two categories:

1. All-electric
2. Gas and/or steam with or without electric auxiliaries

The number of persons to be served, the type of service and equipment used determine actual electrical load. The tables indicate kitchen loads of actual installations. The commercial-type dishwasher may require electric booster heaters to raise the temperature of the normal building hot water supply. Loads up to 50 kw for such purposes are not uncommon.

Business Machines

A large portion of loads falling under this heading are supplied from convenience outlets, underfloor ducts and cellular floor systems. Major exceptions are data processing machines, electric typewriters, card punch equipment, etc., which are scattered throughout office spaces and are taken care of by the load al-

lowances of convenience receptacles.

Data processing machines are confined to specially designed spaces with a high degree of temperature control and flexible wiring provisions in the form of raised floors or floor troughs.

Laboratory Equipment

It is difficult to determine laboratory loads because of the diversity of equipment usage and the flexibility required. Individual laboratory loads may vary between 20 to 40 w/sq ft, exclusive of special equipment. These may in some cases be diversified to 50 per cent for individual feeders supplying groups of laboratories. Further diversifications for service to the laboratory building or suite may reduce this load to as low as 15 per cent of the original 20 to 40 w/sq ft. The actual initial loads and diversifications depend on the type of laboratory and its use.

Shop Equipment

This is usually a minor load for the commercial building, however, it may be for concentrated areas in high schools.

X ray Equipment

Although usually associated with hospitals, such equipment may also be found in office buildings and laboratories on a smaller scale. It is important to note that these loads tax a distribution system for only a few seconds, and they are usually well diversified with other X ray equipment.

Miscellaneous Equipment

Where large quantities of individual equipment are present, it may be necessary to have accurate individual load capacities for over-all load determination.

SUMMARY

The tables indicate the range of loads that have actually been installed in a number of buildings. Tabulations such as these can be useful for both preliminary estimates and final checking.

All of the buildings in the tables, except one of the office buildings (1953), were designed within the last five years.

OFFICE BUILDINGS

Location	Area Sq Ft	Level of Illum Ftc	Ltg Recept KVA	HVAC HP	Plbg HP	Elev KVA	Kitchen KVA	Computer KVA	Fire Pump HP	Misc KVA	Remarks
New Jersey	500,000	45	2,700	2,600	120	700	240	320	150	170	Elec. compressor for A/C Misc. KVA = snow melting, printing equip., pneumatic tubes, etc. Boiler plant in bldg.
N. Y. City	1,500,000	80	10,000	6,000	520	2,000	410	250	300	500	Steam for A/C Misc. KVA = teletype, exhibit pwr., etc. No boiler plant (purchased steam)
N. Y. City	1,900,000	35	8,700	4,500	360	2,300	300	100	200	—	Steam for A/C No boiler plant
Conn.	680,000	45	6,600	1,700	120	130	210	50	150	780	Steam for A/C Misc. KVA = well pumps, printing equip., X-ray, conveyors, etc. Boiler plant in bldg.
Boston	1,600,000	45	7,600	6,100	460	3,400	620	250	250	—	Steam for A/C No boiler plant
Kansas City	190,000	70	770	380	15	150	—	—	—	—	Steam for A/C No boiler plant
New Orleans	125,000	60	520	320	55	80	—	—	25	—	Steam for A/C No boiler plant
Kentucky	248,000	70	910	670	10	—	15	30	—	265	Steam for A/C Misc. KVA = well pumps, printing equip. & microwave equip., etc. Boiler plant in bldg.
Westchester	186,000	50	760	800	15	60	180	100	—	50	Elec. compressor for A/C Misc. KVA = well pumps, etc. Boiler plant in bldg.
Virginia	1,600,000	55	6,000	11,200	250	750	830	450	—	375	Elec. compressor for A/C Misc. KVA = printing equip., etc. Boiler plant part of complex

HOSPITALS

Type	Bed Patients	Area Sq ft	Ltg KVA	HVAC HP	Plbg HP	Elev KVA	Kitchen KVA	X ray KVA	Lab KVA	Emerg. KW	Misc	Remarks
V.A. hosp. (Tenn.)	500	373,000	1,970	2,400	115	580	270	250	105	1,000	80KVA	Elec. compressor for total air conditioning
V.A. hosp. (Wash.)	720	590,000	3,400	4,500	260	240	480	300	210	1,500	—	Elec. compressor for total air conditioning
V.A. hosp. (Wis.)	1,264	789,800	5,000	2,900	260	360	600	300	150	1,500	—	Elec. compressor for partial air conditioning
General hosp.	600	512,000	2,000	2,600	270	860	250	410	880	460AH at 8 hr rate	60KVA	Steam for total air conditioning
Addition to existing hosp.	90	64,000	275	200	10	70	10	—	—	200	--	Steam for total air conditioning of addition
Addition	90	43,000	360	117	1	25	—	50	—	200	--	Elec. compressor for 20% air conditioning of addition
Addition	60	60,000	180	180	25	40	170	15	—	350	—	Steam for 40% air conditioning of addition

SCHOOLS

Location	Area Sq ft	Level of Illum Ftc	Ltg. & Recept KVA	HV HP	Plbg HP	Kitchen KVA	Elev KVA	Central vacuum cleaning	Remarks
N.Y.C.—h.s.	263,000	30	990	190	20	95	35	40	—
Mass. parochial h.s.	270,000	45	1,100	270	15	200	15	—	Elec. kitchen
N.Y.C. parochial h.s.	258,000	30	1,150	460	10	230	30	—	
L.I.—h.s.	166,000	40	640	170	5	60	30	—	—
N.Y.C.—seminary school	20,300	30	100	20	—	—	—	—	—
N.Y.C.—elem. school	75,000	30	300	100	10	30	—	—	--
N.Y.C.—elem. school	76,000	30	280	140	10	25	—	—	--
N.Y.C.—elem. school	76,000	30	270	80	10	15	—	—	--
N.Y.C.—nuns academy	25,000	30	130	25	2	50	—	—	—

LABORATORIES

Type	Area Sq Ft	Level of Illum Ftc	Ltg. & Recept KVA	HVAC HP	Plbg HP	Elev KVA	Lab Pwr KVA	Kitchen KVA	Remarks
Basic research	33,000	45	100	150	80	30	480	62	Steam compressor for A/C
Chemical research	51,000	45	215	290	110	100	540	—	Steam compressor for A/C
Earth science	120,000	40	140	900	170	120	510	—	Elec. compressor for A/C 115 KW standby generator
Medical research	118,000	50	450	790	180	120	750	40	Steam for A/C 50 KVA computer
Physics research	175,000	50	600	250	75	140	680	—	—
Plastics research	40,000	50	225	300	50	25	55	—	Elec. compressor for A/C 75 KW standby generator

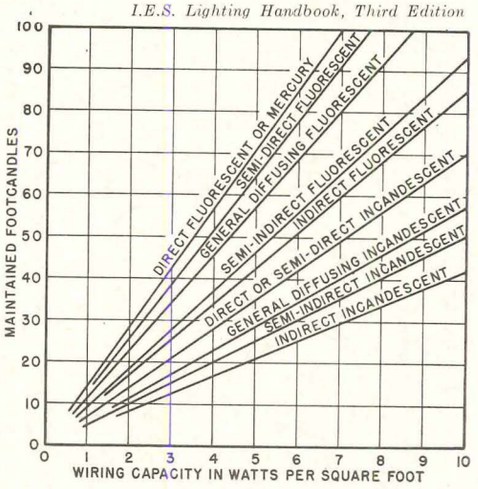
ELECTRICAL CAPACITIES OF BUILDING EQUIPMENT: 1

by Louis A. Bello, Syska & Hennessy, Inc., Consulting Engineers

Cooking Appliances

Appliance	Elec. Capacity, KVA
1. Range (4 burner)	12
2. All purpose oven (1 section—60 lb of beef per hour)	6
3. Bake ovens (1 section—40 lb of bread)	7.5
(1 section—60 lb of bread)	11
4. Broiler (1 section—100 lb per hour)	12
5. Fry kettles (40 lb potatoes per hour)	12
(90 lb potatoes per hour)	18
6. Griddles (16 hamburgers)	3
(32 hamburgers)	6
(48 hamburgers)	12
7. Hotplate (2 plates)	2.5
8. Roll warmers (48 buns)	1.65
9. Food warmer	1.65
10. Steam tables (8 wells)	12.
11. Warming cabinets (dishes, utensils, etc. 300 to 400 w per ft of length)	.5 to 10
12. Coffee urns (500 w per gal)	1.5 to 10
13. Compression steam cooker	12
14. Dishwashers	.6 to 50
15. Glass washers	.5
16. Food choppers	1/4 to 10 hp
17. Food cutters	1/3 to 3/4 hp
18. Food mixers	1/6 to 1/3 hp
19. Slicers	1/8 to 1/3 hp
20. Tenderizer	1/3 hp
21. Peelers	1/3 to 1/2 hp
22. Waste Disposer	1 1/2 hp

I.E.S. Lighting Handbook, Third Edition



Lighting Loads

Approximate wiring capacity in watts/square foot to maintain a given illumination level in a room of average size (Room Index E; see I.E.S. Lighting Handbook) by means of various types of lighting installations

Shop Equipment

Item	Elec. Capacity	Size
1. Drill press	½ hp	15-in. dia stock
2. Grinder	⅓ hp	6-in. dia wheel
3. Grinder	½ hp	7-in. dia wheel
4. Grinder	¾ hp	8-in. dia wheel
5. Grinder	1 hp	10-in. dia wheel
6. Jointer	¾ hp	6-in. table width
7. Jointer	1½ hp	8-in. table width
8. Kiln	4.5 kva	14- by 14- by 14-in. cabinet 2000 deg F
9. Kiln	6.0 kva	16- by 17- by 18-in. cabinet 2,000 deg F
10. Lathe (variable speed)	1 hp	12-in. dia
11. Milling machine	⅓ hp	9-in. travel
12. Milling machine	1 hp	14-in. travel
13. Milling machine	2 hp	17-in. travel
14. Mortiser	¾ hp	6- by 30-in. table
15. Oven	1 kva	28- by 24- by 20-in. cabinet
16. Oven	2 kva	cabinet 325 deg F
17. Planer	2 hp	4- by 12-in.
18. Potters wheel	¼ hp	19- by 30-in. table
19. Router	1¼ hp	
20. Sander, belt & disc (floor mtd)	½ hp	10-in. dia, 6-in. belt
21. Sander, comb. belt & disc	½ hp	4-in. dia, 10-in. belt
22. Sander, spindle (floor mtd)	1 hp	20- by 24-in. table
23. Saw, arbor	2 hp	10-in. dia
24. Saw, band	½ hp	14-in. dia
25. Saw, band	1½ hp	20-in. dia
26. Saw, circular	3 hp	10-in. dia
27. Saw, jig	⅓ hp	24-in. throat
28. Saw, radial	¾ hp	9-in. dia
29. Saw, scroll	⅓ hp	26-in. throat
30. Surfacer	5 hp	6- by 18-in.
31. Surfacer	7½ hp	8- by 24-in.
32. Surfacer	10 hp	8- by 30-in.
33. Welder, arc	7.5 kva	
34. Welder, spot	1.5 kva	1/8-in. thickness
35. Welder, spot	2.5 kva	3/16-in. metal thickness

ELECTRICAL CAPACITIES OF BUILDING EQUIPMENT: 2

by Louis A. Bello, Syska & Hennessy, Inc., Consulting Engineers

Residential Appliances

Item	Watts	Item	Watts
1. Air conditioners (room)		30. Fans	
½ ton	880	Floor circulator	120
¾ ton	1,225	Attic	345
1 ton	1,540	Kitchen exhaust	75
2. Aquarium aerator	50	Portable	50
3. Aquarium aerator	250	31. Floor polisher	475
4. Blanket	175	32. Food freezer	up to 460
5. Blender	275	33. Food warmer	310
6. Bottle warmer	440	34. Fry kettle	1,300
7. Broiler	1,400	35. Frying pan	1,085
8. Casserole	510	36. Food mixer	130
9. Clock	2	37. Hair dryer	415
10. Clothes dryer	4,760	38. Refrigerator	230
11. Coffee maker	up to 1,000	39. Roaster	1,320
12. Corn popper	440	40. Sandwich grill	960
13. Heating equipment		41. Sewing machine	75
Warm air furnace fan	320	42. Serving tray	600
Oil burner	230	43. Shaver	11
Humidifier	185	44. Steam iron	1,040
14. Ice cream freezer	115	45. Sun lamp	275
15. Ironer	1,455	46. Tea kettle	550
16. Knife sharpener	50	47. Toaster	1,130
17. Odorizer	11	48. Trivet	50
18. Pressure cooker	1,400	49. T. V. receiver	275
19. Power tools	up to 1,000	50. Vacuum cleaners	
20. Projector	300	Bag type	340
21. Radio	30	Canister type	725
22. Range	up to 23,000	Tank type	555
23. Recorder	95	Hand type	310
24. Record player	50	51. Heat lamp	250
25. Dehumidifier	185	52. Heating pad	60
26. Door chime	15	53. Heater	up to 1,650
27. Dishwasher	1,325	54. Vaporizer	385
28. Dry iron	1,025	55. Waffle baker	960
29. Egg cooker	440	56. Washers	
		Automatic	400
		Nonautomatic	380

X-Ray Equipment

Use	KVA
1. Simple radiography and fluoroscopy	15
2. Advanced radiography and fluoroscopy	25
3. Operating room radiography	25
4. Cystoscopic room radiography	15
5. Emergency (and/or admission) room radiography	15
6. Special procedures radiography and fluoroscopy	37½
7. Cardiology radiology and fluoroscopy	25

Large Data Processing Equipment

Use	Elec Capacity, KVA (not including ventilation or air conditioning requirements)
1. Automatic production recording, continuous accounting and typewriter tabulating control	15
2. Similar to above except greater storing capacity and remote station operating features	20
3. Engineering and scientific computations	5
4. Banking, billing, inventory, insurance and accounting	10
5. Similar to above except faster and greater storage capacity	25
6. Engineering, aircraft and heavy industry computations	32
7. Payrolls, management reports, accounting at very high speeds. (300,000 plus decisions per second)	45
8. Design of missiles, rockets, jet engines, nuclear reactors, etc.	35

TWA's new Trans World Flight Center, International Airport, New York. Eero Saarinen, architect

TWA cordially invites you to visit its new New York terminal building

Architects have found this new building to be as functional as it is beautiful. A graceful concrete tube connects lobby with flight wings. New baggage-handling systems eliminate waiting. Spacious lounges abound. Glass walls enhance the airy spaciousness Architect Saarinen created with soaring roofs. The building is unique for still another reason: only here are routes to 70 U. S. cities linked to 15 world centers abroad. On your next trip to New York, fly TWA and inspect the world's most beautiful air terminal.

Nationwide
Worldwide
depend on TWA

See feature article on the new TWA terminal beginning on page 129.

Beautifully Washable...

Vinyl Faced
Fiber Glass Ceiling Board

for suspended acoustical ceilings

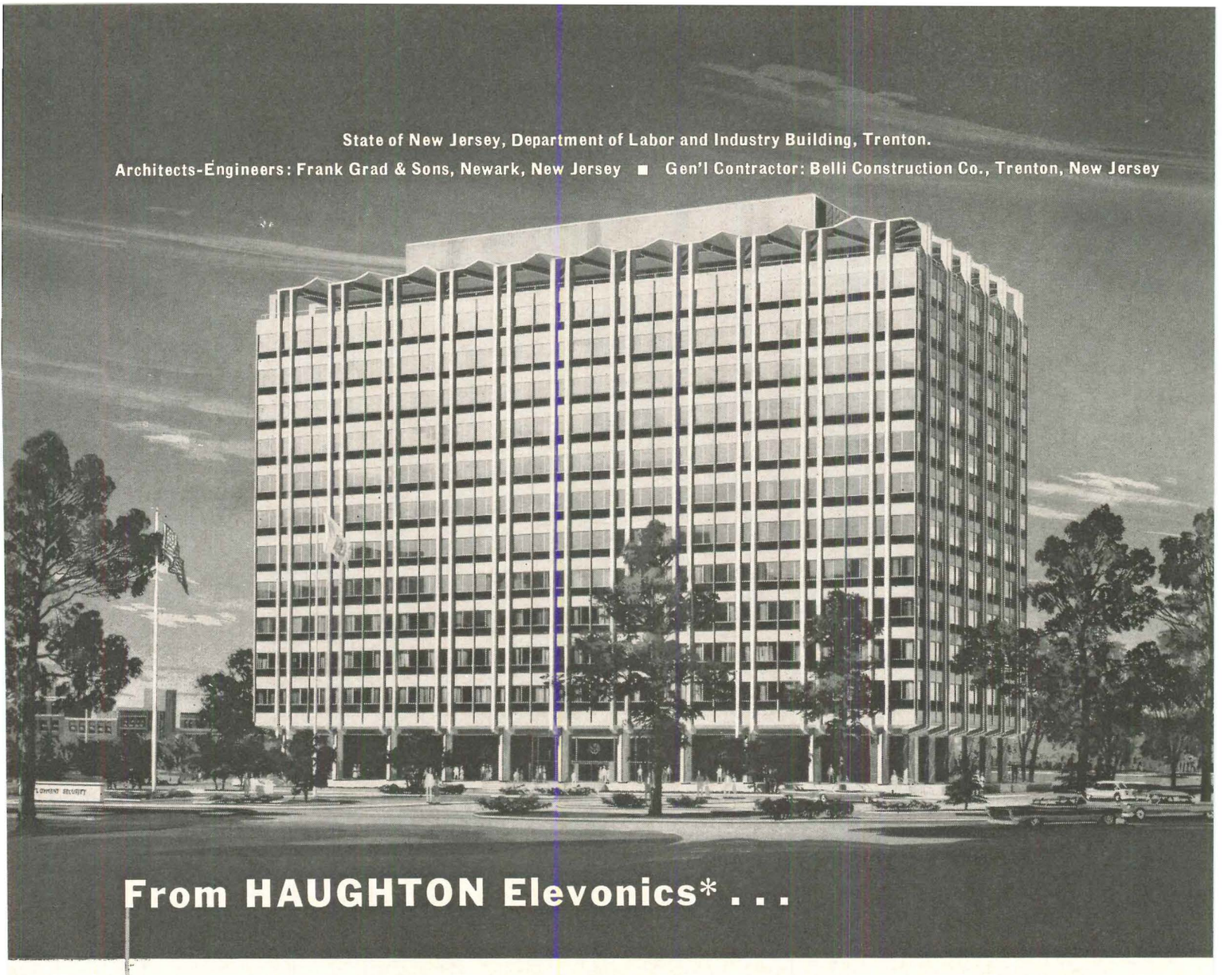
Now you can design suspended ceiling systems that are as practical as they are beautiful. Specify G-B Vinyl Faced Ceiling Board, the molded fiber glass ceiling panel that is covered with a pleasing off-white, embossed vinyl film. Specially designed for areas where smoke, dirt, and grease are a problem, G-B Vinyl Faced Ceiling Board is completely washable with soap and water—comes out looking like new every time.

G-B Vinyl Faced Ceiling Board provides high acoustical performance (.75 NRC) at an installed cost similar to wood fiber tile. It has a light reflection rating of 80%. Lightweight panels are easy to install, convenient to remove to provide access to mechanical elements concealed above the ceiling. Sizes available: 1″ thick, 24″ x 24″, and 24″ x 48″.

Write today for a new, fully-illustrated brochure on Vinyl Faced Ceiling Board and the complete new line of G-B ULTRACOUSTIC® Ceiling Boards.

GUSTIN-BACON
Manufacturing Company

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



State of New Jersey, Department of Labor and Industry Building, Trenton.
Architects-Engineers: Frank Grad & Sons, Newark, New Jersey ■ Gen'l Contractor: Belli Construction Co., Trenton, New Jersey

From HAUGHTON Elevonics* . . .

exciting new concept in elevatoring for an exciting new building

Buildings are for people. ■ And people who use the elevators in Trenton's new Department of Labor and Industry Building will enjoy speed, comfort and convenience that can be provided only by Haughton Elevators under fully-automated electronic control. ■ Not even peak demands at "coffee breaks" or rush hours can cause service to deteriorate. ■ An automatic electronic computer constantly receives and analyzes data pertaining to amount and character of traffic, and makes adjustments to match traffic needs exactly. ■ Such is the magic of Haughton Elevonics*, key to superior elevator performance in new buildings and old. ■ For complete information on our design, modernization and maintenance capabilities, contact your Haughton sales office (listed in the Yellow Pages), or write: Haughton Elevator Company, Division of Toledo Scale Corporation, Toledo 9, Ohio. ■ Passenger and Freight Elevators, Escalators, Dumbwaiters.

EMBLEM OF EXCELLENCE IN VERTICAL TRANSPORTATION

* *Haughton's advanced program in systems research and engineering with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance. Registered in U. S. Patent Office.*

A GUIDE TO GLASS FOR ARCHITECTURE

by Richard W. Rigg **Part 2: Applications of Glass**

GLAZING RECOMMENDATIONS

Distortion can be introduced into glass by uneven glazing. Even in a light of originally distortion-free plate glass, an irregularity in the glazing can cause minute deflections that will produce warped reflections. Several methods of more even glazing have been developed to lessen this problem. One is the use of a metal or vinyl glazing bead which snaps flush against the glass on one surface, pushing it against a layer of glazing compound on the other. Another method is the permanently elastic glazing channel—a uniform, grooved "plastic" cushion that surrounds the light, sealing it into its frame.

Special care must be taken with heat-absorbing glass, since thermal expansion must be taken into consideration. There should be a minimum clearance of one-eighth inch between the edge of the pane and framing members at all points, and a permanently elastic glazing compound should be used. In designing, care should be taken to prevent too great a temperature difference between areas within a single light. This situation arises when a pane is adjacent to a structural member that could conduct heat away from the glass, or when an overhang or pilaster casts a shadow on part of the pane. In extreme circumstances, expansion of the hot glass can cause heat cracks.

When the glass is adjacent to a structural member, the edge should be insulated by embedding cork or asbestos-impregnated tape in the glazing compound next to the member. When a narrow shadow from overhang or pilaster falls on part of the pane, cracking can be prevented by extending the shadow four to five inches, either by extending the overhang artificially or by adhering an aluminum-faced, pressure-sensitive tape to the glass. This has the advantage of adding more mass to the cool area, thus increasing its resistance to being "stretched" by the expanding glass.

However, certain maximum dimensions have been recommended by manufacturers. If panes of heat absorbing glass are kept within these limits, no additional precautions need be taken.

RICHARD W. RIGG, Vice-President Merchandising, American-Saint Gobain Corporation

HEAT CONTROL

A basic problem in the use of glass is how to admit the visible illumination of sunlight without also admitting the heat of solar energy. This can be partially solved through the use of heat-absorbing glass. This glass admits most of the visible light of the sun but absorbs a large amount of the infrared rays. Caution should be exercised when using this glass, however, since the energy thus absorbed is passed off as convected heat. Under laboratory conditions, heat is convected equally from both sides of the glass, but in actual situations a large part of it tends to be discharged on the cooler side; i.e., into the interior of the building.

Attention to design may help avoid this. If the building's exterior is so designed that moving air can pass along the surface of the glass continually, much of the heat can be carried off outside. If the interior air distribution system provides air flow past the glass, the heat can be picked up by the air conditioning system.

Another way to use heat-absorbing glass is to keep it on the outside of the building as a sun-screen, hanging a few feet above and in front of the windows of clear glass. Absorbed heat will then pass off into the outside air, while the solar rays that come through the windows and into the building will be deprived of most of their radiant heat. Screens of polished glass will admit bright, slightly tinted direct illumination, while patterned or frosted screens will diffuse the light and thus reduce glare.

Another type of heat and light controlling glass uses minute metallic louvers laminated to the glass. Solar heat can also be controlled by the use of shading devices of masonry, metal, fabric or other materials, either built into the structure's exterior or included in the interior window fixtures.

Several heat-reducing products are in the development stage. These include an ultra-thin metallic coating which is relatively transparent, but which will cause the glass to reflect heat energy; photo sensitive glass which becomes less transparent as the light falling on it increases; and electrically sensitive glass, the transparency of which can be controlled electrically.

It may be well to point out that all these methods of heat control deal only with the radiant heat of sunlight. Atmospheric heat is less of a problem.

GLARE CONTROL

Glare, the result of extreme difference in the levels of lighting, can be combatted in several ways. One very effective method is through glazing windows in a light-diffusing glass—patterned, frosted or opal. These glasses will break up the direct beams of light, scatter them from a broad base, and provide a virtually shadow-free illumination. Milky-white opal glass is best for this purpose, since it has the greatest diffusing effect of any glass. Windows that give no view of the outside may have an adverse psychological effect, however, so it often is preferable to glaze only the upper part of the window with light-diffusing glass, leaving a "vision-strip" of clear glass in the lower third or quarter of the window.

An extreme amount of diffusion can be gained by the use of corrugated patterned glass, since the corrugations form an added element in "spraying" illumination in several directions. This is of special value in industrial structures, where windows or skylights may be at a great distance from work areas.

Another method of glare control uses the gray tinted plate or sheet glass. The neutral gray tint does not distort the colors of objects seen through the glass, but it does tone down the brighter and harsher beams of sunlight. One source of glare is the contrast between a brightly-lighted window and dark-colored or shadowy walls; this can be controlled by lightening the walls, especially those adjacent to the window, with a light color, and glazing the window with gray glass.

STRENGTHENING GLASS

Glass can be strengthened by two methods—laminating and tempering. Wired glass should not be put in the category of strengthened glass since, while it is the only approved fire-retardent glass, it is not stronger than ordinary glass of the same thickness. However, the visibility of the wire mesh in certain situations gives an added psychological advantage—wired glass has been used in windows of ground floor apartments to give tenants a greater sense of security.

Laminated glass, made by sandwiching a sheet of plastic between two panes of plate or sheet glass, is used mostly in automobile windshields. It will break as readily as other glass, but the plastic holds the splinters and keeps the windshield in place. Taking a lesson from the automotive industry, architects and builders are using laminated glass more and more in construction where safety is a prime consideration.

Tempered glass, on the other hand, is up to five times stronger than ordinary glass of the same thickness. The tempering process consists of heating the glass above the annealing point, and cooling it rapidly; this sets up strong compressive stresses on the surface of the glass, giving it a high resistance to mechanical shock. A rupture of the surface will cause the glass to shatter; therefore, tempered glass cannot be cut after processing. If a pane of tempered glass does break, the entire pane shatters into tiny cubes which, if the glass is set in a frame, will often hold together and not fall out.

The size and shape of the break-particles, indeed the added strength obtained by tempering, is a function of the depth of tempering. The term *heat-strengthened* is often used, and means usually that the glass has been partially tempered. The greater the temper, the stronger the glass, and the smaller the break-particles.

Not all types of glass can be tempered—for instance, opal glass, wired glass, deeply patterned glass and glass thinner than 7/32 inch. Regular lime glass, as used in commercially patterned, sheet and plate glass, may be fully tempered.

Panels of tempered glass to which a ceramic enamel has been fired make an excellent facing material. In contrast to tiles of various sorts, this glass can be obtained in large sheets. Since the ceramic colors are the most durable known, and since the surface of glass is almost impervious to weathering, and can be cleaned by rain or simple washing, glass makes one of the most durable and easily maintained of the various structural materials.

Facing panels can be obtained in any color within the range of ceramic enamels available, and with polished or patterned surfaces. The patterned surface has the advantage that it will not give distorted reflections, and dirt and streaking is less visible. One type of glass facing is made with a thin layer of aluminum fused to the back surface, which gives the panel added heat-reflecting and insulation value.

Tempered glass is also widely used for "all-glass" doors. These are not only attractive, but have many functional advantages. They need no finishing or surface maintenance beyond an occasional wipe with a damp cloth. They add a safety feature in that a person approaching from the other side is visible—or in the case of patterned glass, partly visible—so that collisions are avoided. Clear glass doors in shops allow the passers-by to see in. Patterned glass doors, on the other hand, allow light and open effect to be maintained while giving privacy; they prevent the possibility of walking into a clear glass door (a surprisingly common occurrence). Patterned glass doors are often used in shower and locker rooms or swimming pool areas.

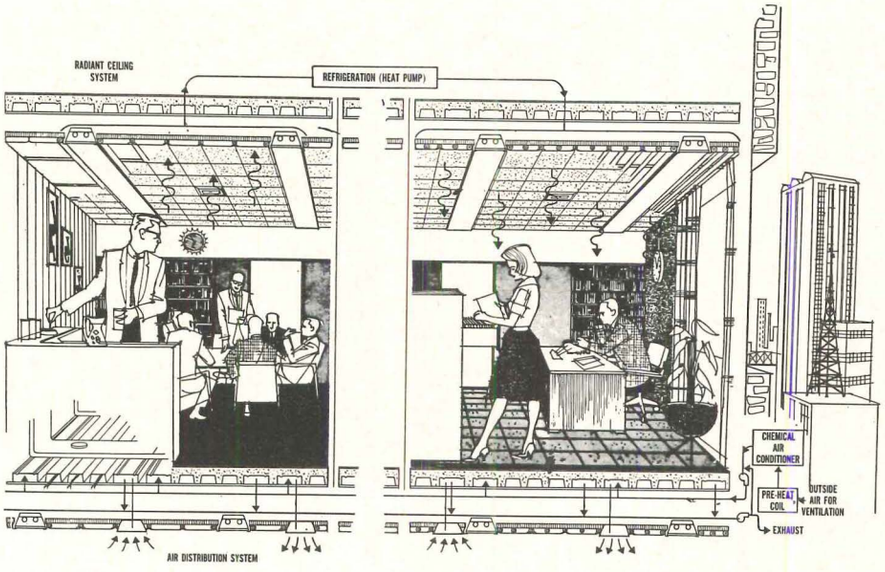
It is important to select the hardware function to be used with the all-glass door early in the job planning stage. Operating hardware varies widely for different types of doors, and frames must be designed to accept the selected hardware. Neither the size of the door nor the location of the hardware on the door can be changed after fabrication of the glass; therefore, final dimensions must be arrived at prior to ordering. Doors are available in glass thicknesses of 3/8 in., 1/2 in., and 3/4 in. The 3/8-in. door is the only glass door available in patterned as well as polished glass. This door also has the choice of conventional hinge mountings as well as the familiar floor-pivot mountings.

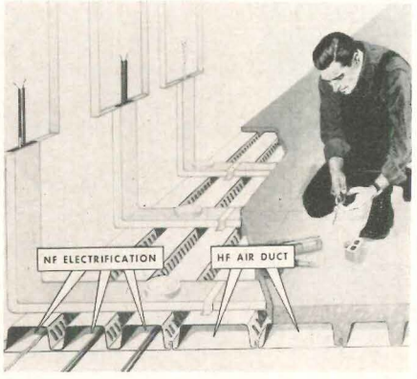
Tempered glass also is widely used in windows for institutions, jails, and gymnasiums; for a protective covering under hospital operating room lights; for basketball backboards, hockey rink shields, and swimming pool wind screens.

For purposes of thermal shock strength and corrosion resistance, flat borosilicate glass is beginning to come into architectural use. Skylights have been made of borosilicate, as have lighting shields for ball parks. Because of its corrosion resistance borosilicate glass resists pitting and etching much better than lime glass, and hence remains cleaner looking and is easier to wash.

NOTE: More detailed information on architectural glass is available from the manufacturers and from the glass jobbers and glaziers. In addition there is extensive literature on glass. Several books which the architect may add to his reference library are: Phillips, C. J.: "Glass the Miracle Maker," 2nd ed., Pitman Publishing Corp., N. Y., 1948; Scholes, S. R.: "Modern Glass Practice," rev. ed., Industrial Publications, Inc., Chicago, 1952; Shand, E. B.: "Glass Engineering Handbook," 2nd ed., McGraw-Hill Book Company, Inc., N. Y., 1958. (All three have good bibliographies.)

FLOOR-CEILING SYSTEM FOR AIR CONDITIONING





Environmental control in multi-story buildings can be achieved at low cost with an integrated air-floor system developed by Inland Steel Products Company using the products of other companies in conjunction with Inland's *Celluflor*, a cellular steel subfloor which carries all supply and return air and provides raceways for power and telephone.

Kathabar chemical air conditioning by Midland-Ross Corporation is used to control humidity. Radiant heating and cooling ceiling panels by Burgess-Manning are used for sensible heat control. Water for the ceiling panels is heated and cooled by conventional or heat pump systems. During winter, the panels can remove heat from one area and transfer it by heat pump to another area which requires heat.

Reduction in air circulation as compared to all-air systems allows the *Celluflor* to handle all ventilation air without added duct work. This is said to enable savings of up to nine inches of vertical space for each floor of the building. — *Inland Steel Products Co., P.O. Box 393, Milwaukee 1, Wisconsin.*

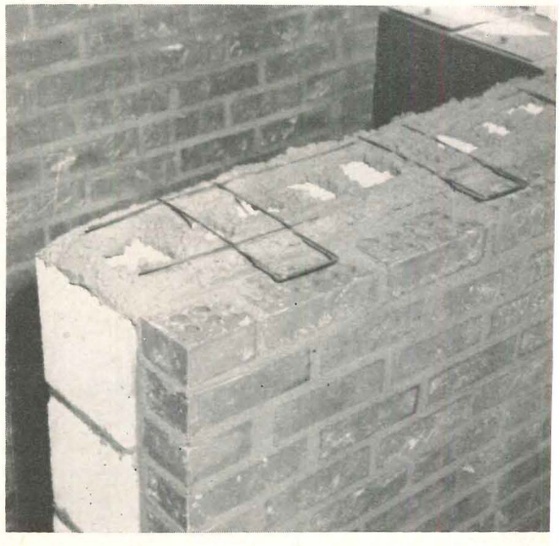
WIRE REPLACES HEADER JOINTS IN BRICK WALLS

A method of joining face brick to concrete block using wire reinforcement instead of traditional brick header joints has considerable merit over the more conventional construction, according to tests at the Armour Research Foundation of Illinois Institute of Technology. In a study conducted for the Dur-O-waL Division of Cedar Rapids Block Company, it was found that wire joined walls are less permeable to moisture than walls constructed with brick headers. The wire-tied walls do not provide a continuous path for water to travel through the wall, and less saturation occurs. They also have an additional factor of safety after initial cracking has occurred.

Tests were run on the traditional header-tied walls, a truss-shaped wire wall tie and a tab wire tie (illustrated). Specimen walls consisted of a face brick with either 4- or 8-in. concrete block back-ups.

Compression tests showed: (1) initial failure due to compression is not affected by the type of wall tie; (2) after initial failure, however, wire ties appear to be more effective than header ties in holding a wall together. Wind loading revealed no difference in the wall strength due to the type of tie employed. — *Armour Research Foundation of Illinois Institute of Technology, 35 West 33rd Street, Chicago 16, Ill.*

more products on page 188



Office Literature

CLASSROOM COMFORT

Unit ventilators for classroom heating and air conditioning apply heat directly to cold wall and window surfaces to eliminate down draft and body-heat losses. The ventilators and matching accessory cabinets are illustrated in color. *American-Standard Industrial Div., Detroit 32, Mich.*

WIDE-ANGLE LIGHT FIXTURE

Fresnel Lens Downlite, recessed for lower glare, offers wide-angle light distribution and a reflector which is said to give greater efficiency. *Morris Kurtzon, Inc., 1420 S. Talman, Chicago 8, Ill.*

FLOORING HANDBOOK

"Flooring Specification Manual" has full-color illustrations of inlaid vinyl, linoleum and resilient tiles of all kinds for floors, walls and countertops. The 94-page, hard-cover book has detailed information about factors to consider in choosing a floor covering, costs, maintenance, light reflectance, electrical conductivity and preparation of underfloors. *Congoleum-Nairn Inc., Kearny, N. J.**

LOBBY DETAILS

(A.I.A. 15-H-1) Details of the lobby in the Union Carbide building show the use of stainless steel through pictures, diagrams and scale drawings. *U.S. Steel Corp., 525 Wm. Penn Place, Pittsburgh 30, Pa.**

LOUVERS

(A.I.A. 30-J) Extruded aluminum louvers, dampers, penthouses and other fabricated louver products are in a 24-page catalog, which includes technical data and scaled drawings. *Air Balance, Inc., 8933 Krewstown Road, Philadelphia 15, Pa.*

DOORS AND WINDOWS

(A.I.A. 16-E) Specifications for aluminum prime windows and sliding glass doors are contained in two 16-page booklets. *Architectural Aluminum Manufacturers Assoc., 35 E. Wacker Dr., Chicago 1, Ill.*

PRESTRESSED CONCRETE

"Fundamentals of Prestressed Concrete Design" covers prestressing high strength concrete, principles of design for flexure and shear, and interpretation of specifications and codes. The 84-page handbook is $3.00. *Pres-Stressed Concrete Institute, 205 W. Wacker Drive, Chicago 6, Ill.*

AIR CONDITIONERS

Packaged air conditioners in 20- to 60-ton capacities with a choice of air- or water-cooled condensers and five fan discharge arrangements. *Acme Industries, Inc., 600 N. Mechanic St., Jackson, Mich.*

STEEL-FRAMED SCHOOLS

Advantages of using steel for schools are presented with pictures, floor plans and design data on ten steel-framed schools by prominent architects. A 34-page booklet. *American Institute of Steel Construction, Inc., 101 Park Ave., New York 17, N.Y.*

OFFICE CHAIRS

Office chairs designed (after five years' research) for comfort and firm back support. Eight chairs are pictured in a 4-page folder. *Boling Chair Co., Siler City, N.C.*

COLD STORAGE DOORS

Electrically-operated refrigerator doors slide horizontally and automatically. An 8-page brochure shows details. *Jamison Cold Storage Door Co., Hagerstown, Md.**

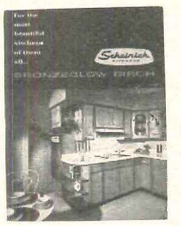
SOUND SYSTEMS

Fourteen types of sound systems for auditoriums with capacities ranging from 300 to 2,000 seats. *Audio-Visual Products, Radio Corporation of America, Meadow Lands, Pa.**

FIRE TESTS OF CONCRETE

"Fire Tests of Precast Cellular Concrete Floors and Roofs" shows effect of the amount of cover for reinforcing bars, overall thickness, amount and distribution of reinforcement, and density of concrete. Monograph 45, 12 pages, 15 cents. *Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C.*

BIRCH KITCHENS



(A.I.A. 35-C-1, 2-B) Birch kitchen cabinets come in a wide variety of sizes, with accessories, racks, and special equipment. Specification details are given. Finishes include *Bronzeglow, Royal Birch,* and *Heather Birch. H. J. Scheirich Co., 250 Ottawa Ave., Louisville 9, Ky.*

INDUSTRIAL LIGHT FIXTURE

An 18-in.-wide industrial light fixture uses parabolic reflectors to control light from *Power Groove* lamps. Ten pages. *Solar Light Mfg. Co., 1990 N. Mannheim Road, Melrose Park, Ill.*

DRAWING REPRODUCTION

"Engineering Reproduction Handbook" has technical data on all Du Pont films and papers used in architectural and engineering-graphics reproduction. Future supplements to the loose-leaf manual will be sent free to owners. Cost $5.00. *E. I. Du Pont De Nemours & Co., Wilmington, Del.*

SCHOOL LIGHTING

A 16-page technical publication on school lighting has special sections on all specific areas, including lighting for television viewing and audio-visual activities. *Inquiry Bureau, Dept. TP-102, General Electric Co., Nela Park, Cleveland 12, Ohio*

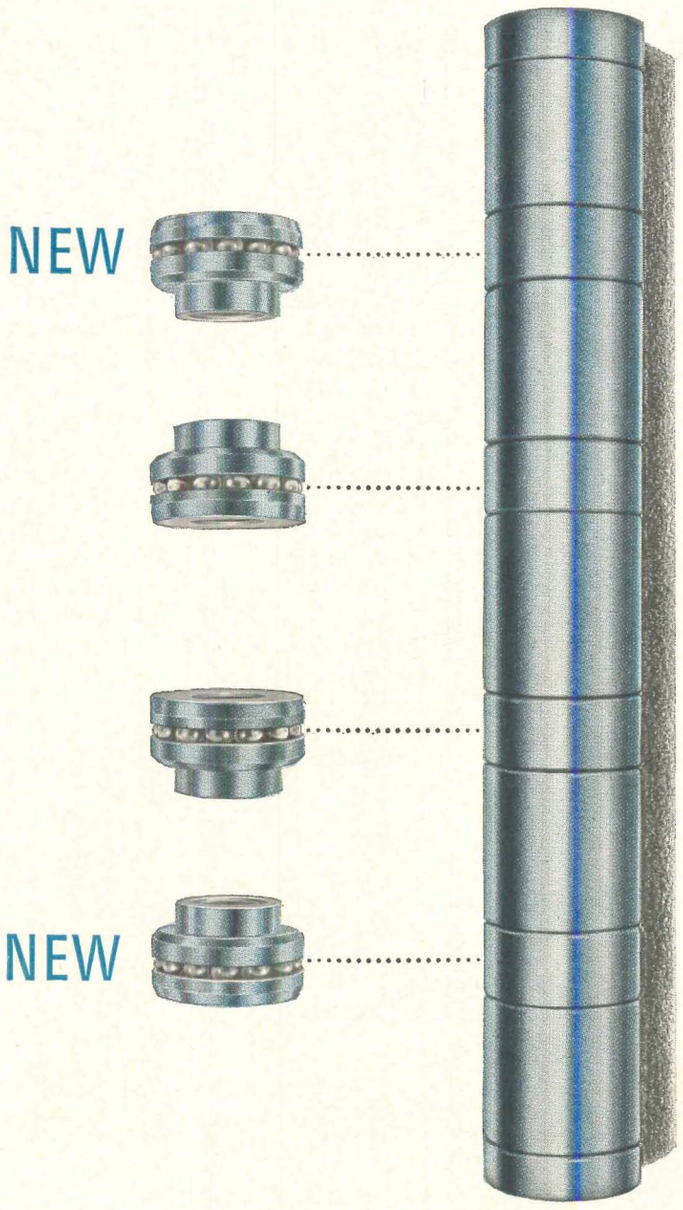
GARAGE DOORS

Residential all-steel sectional garage doors are illustrated in a 4-page folder. *Morrison Steel Products, Inc., P. O. Box 3003, Buffalo 5, N.Y.*

STEEL ANALYSES

"Pocket Guide to Steel Analyses" has 28 pages listing compositions of 42 stainless steels, 112 carbon steels and 184 alloy steels. *Jones & Laughlin Steel Corp., Box 4606, Detroit 34, Mich.**

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



conversation piece...

NEW SLIMLINE 5

WITH 4 BALL BEARINGS

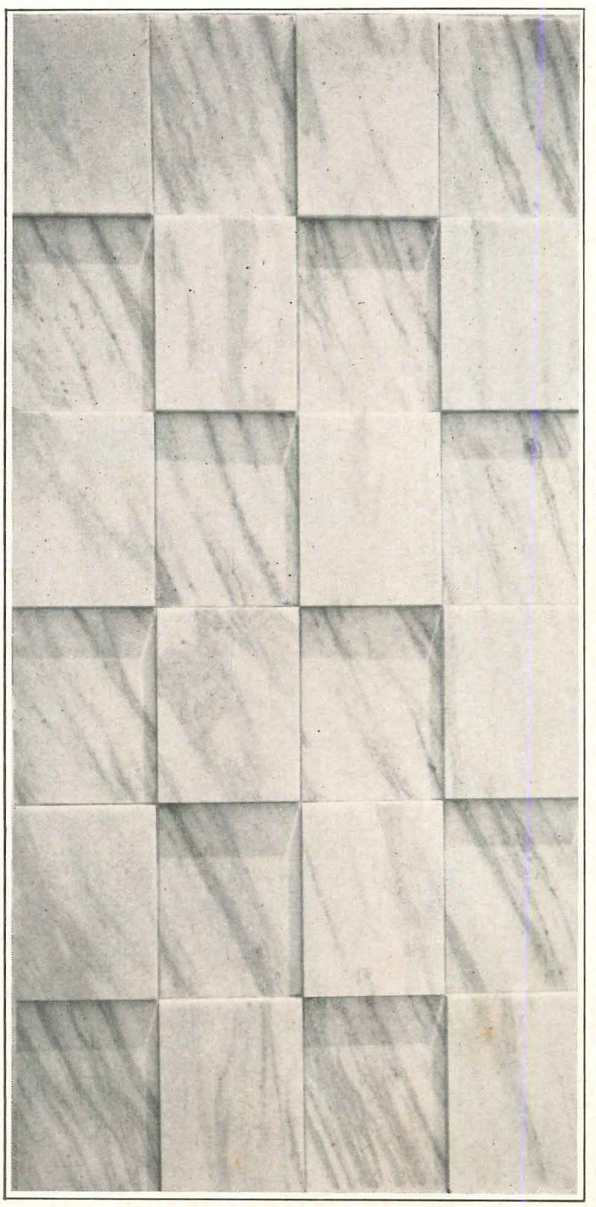
When talk turns to quality and design, architects and builders find this new hinge makes for good conversation. It's the *only* slimline with five knuckles, the *only* slimline with four ball bearings . . . and it's still the slimest of them all. How the four intricate but rugged ball-bearing units integrate without increasing knuckle size is a tribute to hinge craftsmen at Hager.

The five knuckles mean 10% to 20% more strength on lateral pull and twice the bearing surface to support vertical weight. The pin, approximately one-third larger than other slimlines, naturally maintains a much greater protective margin in shear and tensile strength.

Medium and heavy doors move ever so quietly, ever so smoothly, ever so true, on the new four-ball-bearing Slimline 5. Write Hager, or contact your Hager representative for information. C. Hager & Sons Hinge Mfg. Co., St. Louis 4, Mo. Hager Hinge Canada, Limited, Kitchener, Ontario.

Everything hinges on Hager®

Hager



NEW

ARTISTRY IN MARBLE

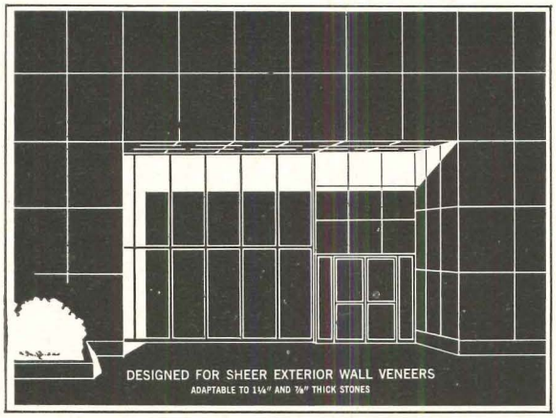
From new research and development, The Georgia Marble Company introduces new ways to use the incomparable beauty of the oldest building material of them all

MARBLE-FACED PRECAST CONCRETE PANELS

Now design in marble for structural facings is practically unlimited. Effects can be dramatically beautiful. Use marble in narrow strips, small squares, rectangles, regular ashlar patterns – develop your own design. You'll find that the combinations of patterns and colors is close to infinite. The finest building material of all – marble – now challenges the imagination of the boldest practitioners of architectural art.

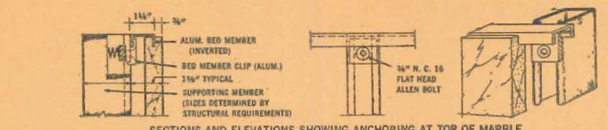
This wedding of marble with concrete produces a unique combination of the best qualities of both materials. Among them: high bond strength, low absorption (marble, less than 0.1%), high flexural and compressive strength, greatly reduced weight and excellent thermal properties.

More, the development of marble-faced precast panels has virtually eliminated any difference in initial costs. The distinguished beauty, extraordinary durability and exceptional low-maintenance qualities of marble now cost no more than most ordinary materials.

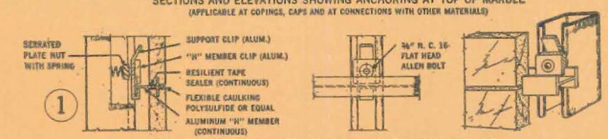


THE ZIBELL ANCHORING SYSTEM

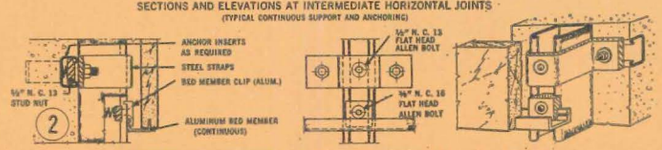
This new concept is applicable not only to sheer exterior wall veneers but also to many forms of interior marble. It is a lightweight, weather-tight veneer system which combines absolutely positive anchorage with simple and rapid installation. Advantages include the possible elimination of conventional masonry back-up walls, minimum marble thickness (⅞") and unprecedented labor and material economies. Result: the enduring beauty, permanence and prestige of marble can now be utilized at moderate cost.



SECTIONS AND ELEVATIONS SHOWING ANCHORING AT TOP OF MARBLE
(APPLICABLE AT COPINGS, CAPS AND AT CONNECTIONS WITH OTHER MATERIALS)

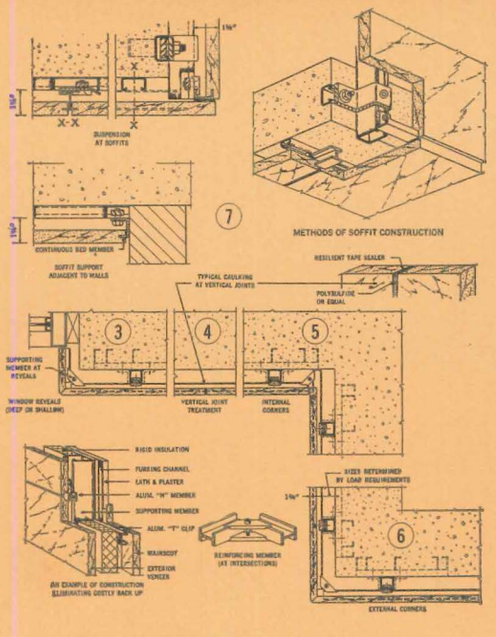


SECTIONS AND ELEVATIONS AT INTERMEDIATE HORIZONTAL JOINTS
(TYPICAL CONTINUOUS SUPPORT AND ANCHORING)

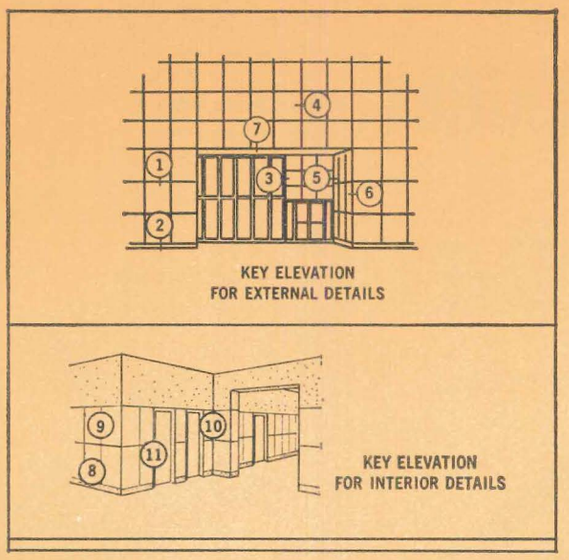


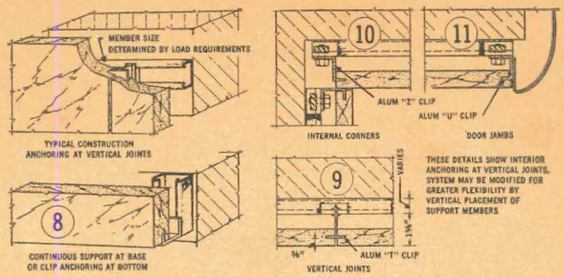
SECTIONS AND ELEVATIONS SHOWING SUPPORT AND ANCHORING AT BOTTOM OF MARBLE
(APPLICABLE AT BASE AND AT CONNECTIONS WITH OTHER MATERIALS)

EXTERIOR ANCHORS, SUPPORTS AND RELATED MATERIALS



BASIC DESIGN AND INSTALLATION OF ANCHORS AND SUPPORTS FOR EXTERIOR MARBLE VENEERS





BASIC APPLICATION OF ANCHORING FOR INTERIOR MARBLE

For full information and details, see our catalog, "New Artistry in Marble" in Sweets. Or write and we'll send you a copy by return mail.

THE GEORGIA MARBLE COMPANY 11 Pryor Street, S. W., Atlanta 3, Georgia

The GEORGIA MARBLE Co. DIVISIONS: Structural, Nelson, Georgia; Calcium Products, Tate, Georgia; Alabama Limestone, Russellville, Alabama; Green Mountain Marble, West Rutland, Vermont; Tennessee Marble, Knoxville, Tennessee; Alberene Stone, Schuyler, Virginia; Willingham-Little Stone, Atlanta, Georgia; Consolidated Quarries, Lithonia, Georgia.

Product Reports

continued from page 183

THERMOELECTRIC REFRIGERATOR

A new refrigerator chills (with no moving parts or refrigerant fluid) by the electric effect which occurs at the junction of two dissimilar metals when a direct current is passed

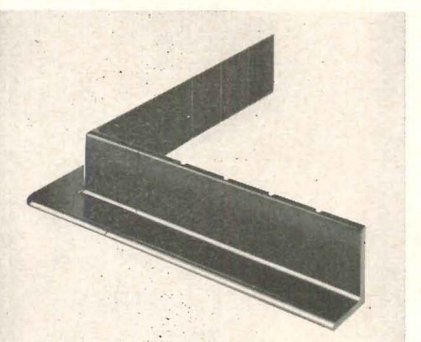
through. The 2-cu-ft model, soon to be available, is intended for weekend cottages, boats, executive offices, etc. The steel cabinet has a walnut-grained vinyl coating. It is expected to be virtually service-free. *Norge Div., Borg-Warner Corp., Merchandise Mart, Chicago 54, Ill.*

SPACE DIVIDERS

Space dividers for inside or outside can be made from 12-in.-square aluminum grills in several patterns with a choice of gold, white or black enamel finish. *Meta-Mold Aluminum Co., Cedarburg, Wis.*

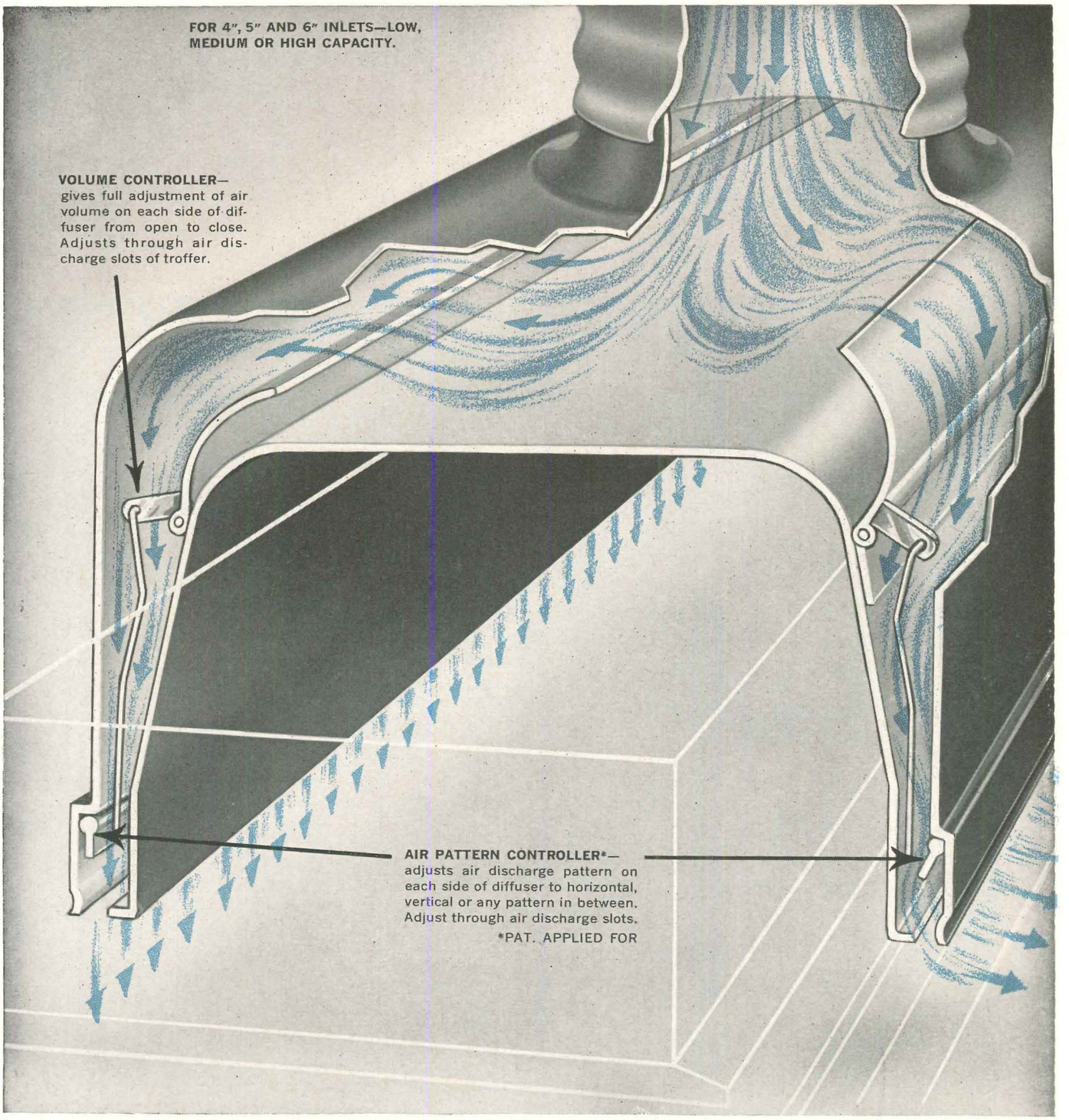
RUBBER COVE BASE

Johnsonite Ventcove is a heavy duty, molded rubber cove base with air vents for use with slab-mounted hardwood floors. Vertical grooves in the back of each section allow air to circulate under the floors. With vents



molded into the cove base, sections can be installed tight against the wall. A 3-in. toe covers perimeter expansion voids. *The Johnson Rubber Co., 222 Vine St., Middlefield, Ohio*

more products on page 192



by TITUS®

World leader in the design and manufacture of air distribution equipment

NEW *complete line of* CEILING DIFFUSERS

Today's first for unrestricted use with modified light troffers; superior air distribution on any application

Here, for the first time, is a line of air diffusers that can be specified *entirely independent* of the light troffer* selected! This means architects, engineers and contractors can now be sure of the finest air distribution . . . *regardless of modified troffer used . . . regardless of ceiling application.* *(Contact Titus reps for names of qualified light troffer manufacturers.)

LOOK AT THESE BENEFITS YOU GET ONLY WITH THE NEW TITUS AIR DIFFUSING UNITS:

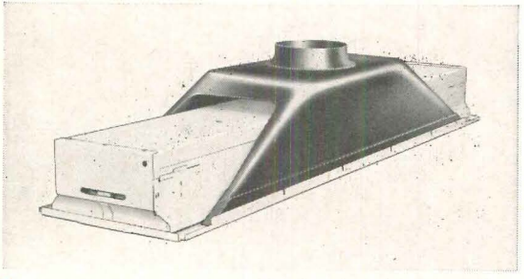
1. Completely adjustable air pattern. The air pattern on each side of each Titus unit can be quickly, easily adjusted to a horizontal discharge, a vertical discharge, or to any pattern in between, to exactly suit the space requirements. Simply adjust pattern controller through troffer air discharge slot for pattern desired.

2. Complete air volume control . . . from open to closed position. Adjusts through air discharge slot of troffer. Both air pattern controller and volume controller can be adjusted anytime before, during, or after diffuser installation.

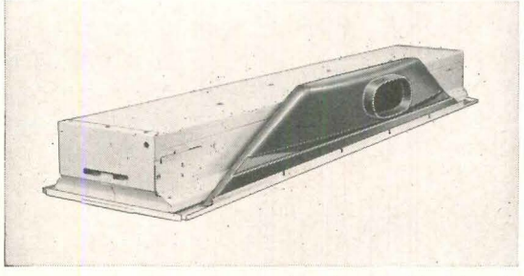
3. Diffusers are of one-piece, air-tight construction. This means faster, easier, lower-cost installation—*maximum isolation of air diffuser from light troffer.* Because diffuser is independent of troffer, heat from troffer is dissipated uniformly to ceiling space—no supply or return air can enter troffer. This assures maximum light output and color stabilization.

4. Today's only complete line. One-piece models to fit every need. Furnished in units that feed air from top, or in single and double units that feed air from side. Models to fit 1 x 4 and 2 x 4 light troffers.

Don't settle for "second best" air distribution . . . SPECIFY TITUS DIFFUSERS AND BE SURE OF *THE* BEST . . . regardless of modified light troffer you select.



• **MODELS LT-14 and LT-24.** For 1 x 4 and 2 x 4 troffers. Feed from top. 4″, 5″ or 6″ inlet . . . low, medium or high capacity. Each side has individual, fully adjustable air pattern and air volume control. Use as supply or return units.



• **MODEL LT-10.** For use as single unit or double side unit. Individual feed, individual air pattern and volume control. Can be used with both sides supply or return . . . or with one side supply and other return. Snaps into troffer.

MAIL COUPON FOR NEW CATALOG

TITUS MFG. CORP., WATERLOO, IOWA
Branch Mfg. Plants — Hialeah, Fla., Terrell, Texas

( ) Rush new Catalog on Titus Ceiling Diffusers for *unrestricted* use with light troffers.

( ) Have representative call.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

Product Reports

continued from page 188

PLASTIC CEILINGS

Diamond-patterned square ceiling tiles are molded of foam plastic from Koppers Co. The tiles are 2-ft square and are available in thicknesses

ranging from one to eight inches. They have a lap edge and may be installed by stapling, nailing or gluing. *United Progress Co., 54-60 Dott Ave., Albany, N.Y.*

DECORATIVE LIGHTS

Single and cluster hanging light fixtures are available in a variety of shapes in both glass and metal. Wall-mounted fixtures have die-cast brackets with cylindrical, acorn and sphere shaped glass. *Markstone Mfg. Co., 1531 N. Kingsbury St., Chicago 22, Ill.*

TELEPHONE BOOTH FOR NOISY AREAS

Industrial telephone booth, *Acousti-Call* Model 30, surrounds the caller with a "circle of silence" that shuts out outside noises and heavy machinery vibration. Construction is 20-gage steel with a baked-on enamel

finish lined with two inches of acoustical material. *Acoustics Development Corp., 1061 N. Northwest Highway, Park Ridge, Ill.*

more products on page 210

SLOT WINDOWS OF L·O·F 9/32" ROUGH GREY PLATE.

TUF-FLEX TEMPERED GLASS DOORS.

END WALLS AND CLERESTORY WINDOWS OF 1" PARALLEL-O-GREY THERMOPANE.

William M. Cooley, A.I.A. creates a church of Open World design

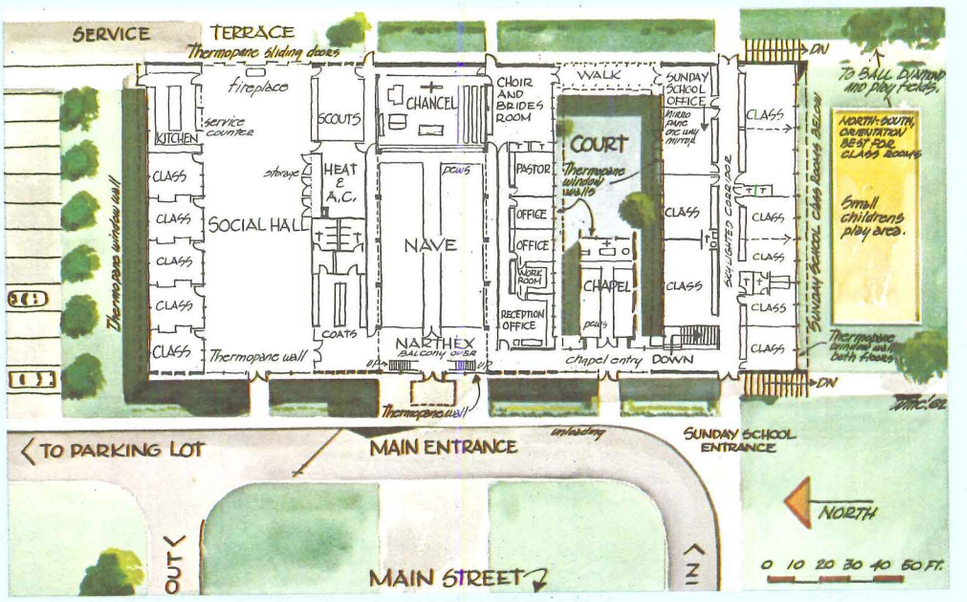
MADE IN U.S.A. L·O·F GLASS

CHURCH MEMBERSHIP, today, is growing at a faster rate than total population. And well it should. Because the church is becoming again the "hub" of community activities. It not only serves the spiritual needs of its people, but also provides for a broad range of social, recreational and educational functions. Every day, all week long.

And to maintain this growth, the church must continuously attract young people. So the church structure itself should be light, bright and contemporary—a church that leads the way in its community, architecturally as well as spiritually.

We commissioned William M. Cooley of Cooley and Borre, Park Ridge, Illinois, to design such a church.

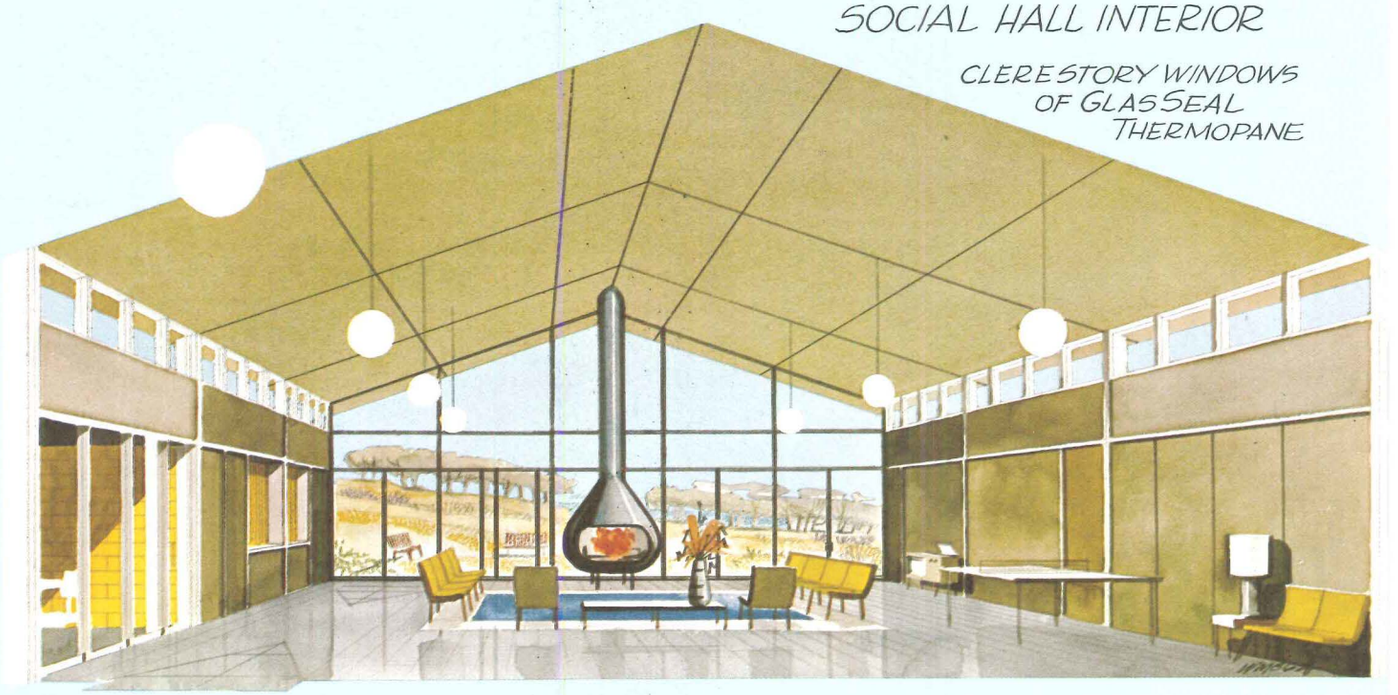
Mr. Cooley, a director in both the Church Architectural



PLAN

SOCIAL HALL INTERIOR

CLERESTORY WINDOWS OF GLASSEAL THERMOPANE



¼" PARALLEL-O-PLATE WITH TUF-FLEX DOORS TO CLASSROOMS

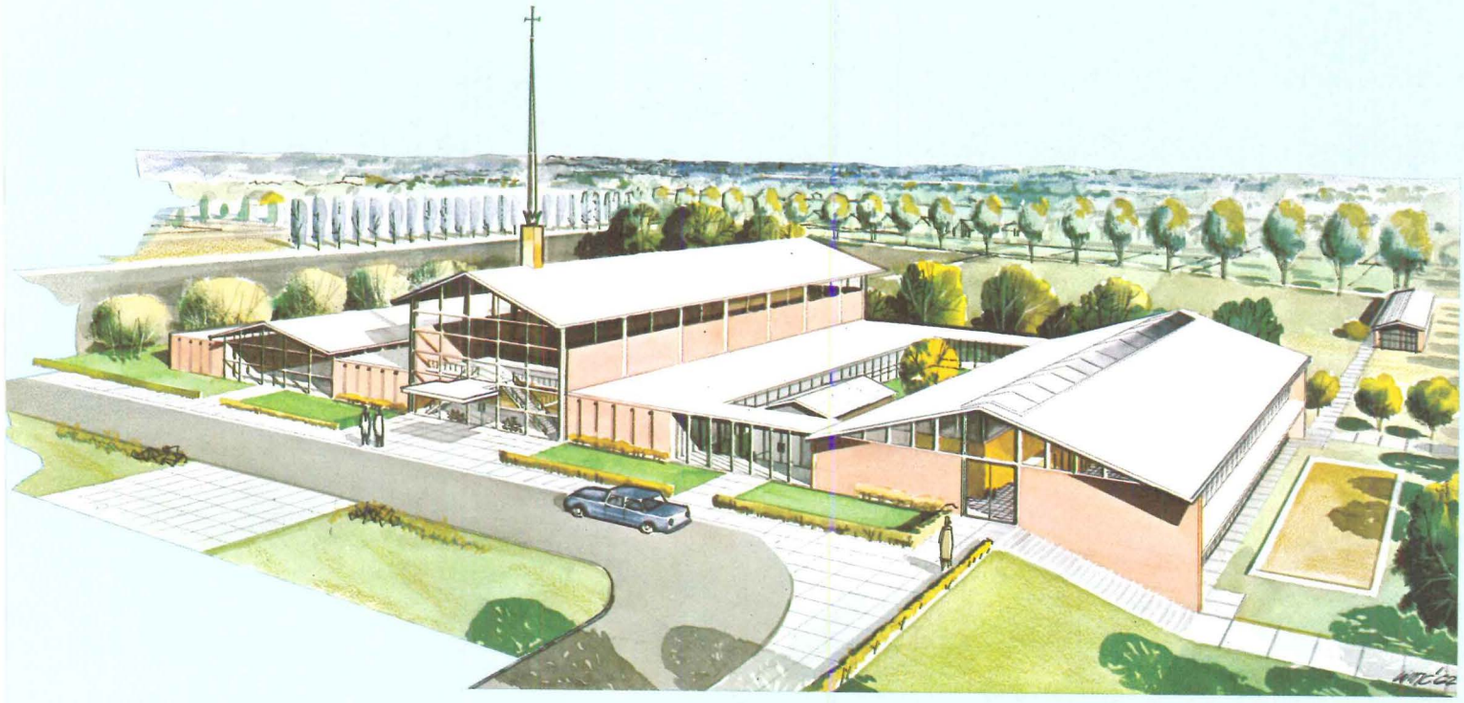
TUF-FLEX TOP ON COFFEE TABLE.

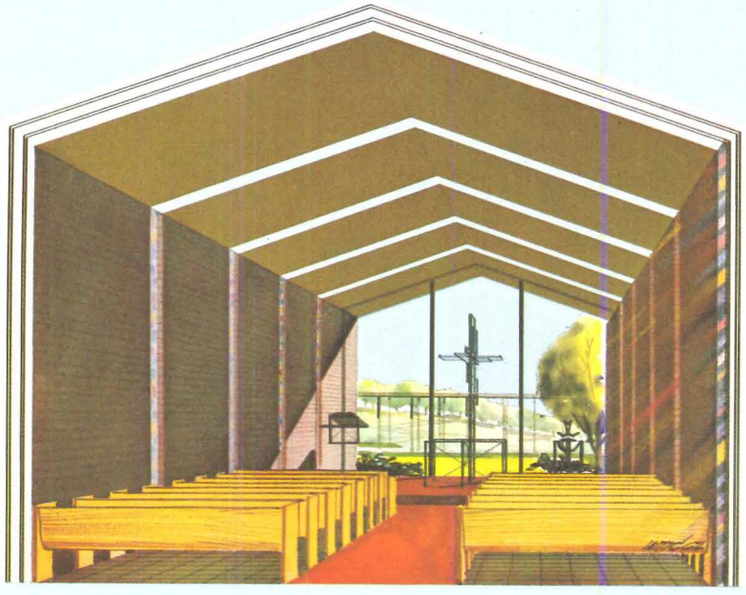
END WALL GLAZED IN PARALLEL-O-GREY THERMOPANE, INCLUDING SLIDING DOORS.

Guild of America and the American Society for Church Architecture, had in mind a suburban site on a main thoroughfare in Waterloo, Iowa. The complex is designed for three stages of construction: first, the sanctuary with attached social hall and classrooms; next, the small chapel and courtyard; and last, the larger classroom building.

To attract and intrigue the passerby, he opened up the entire facade of the sanctuary with glass. And to balance the light, Architect Cooley has provided clerestory windows the full length of the nave. *Thermopane*® insulating glass is specified for all large glass areas in outside walls to effect savings in heating and air-conditioning cost. And to muffle outside noise. In areas other than clerestories, which are protected by roof overhangs, *Parallel-O-Grey*® Plate Glass is used as the outer pane of *Thermopane*. This excludes approximately 50% of the solar heat, and the neutral grey color subdues glare for eye comfort.

The architect has taken advantage of the many kinds of L·O·F glass available. In the chapel, for instance, he wanted an unobstructed view of the landscaped court-





END WALL OF PARALLEL-O-GREY THERMOPANE.

CROSS OF 1/4" PARALLEL-O-PLATE, ALTAR, PULPIT SHELF & FONT OF TUF-FLEX, TEMPERED PLATE, ALL GLUED WITH CLEAR EPOXY.

CHAPEL INTERIOR

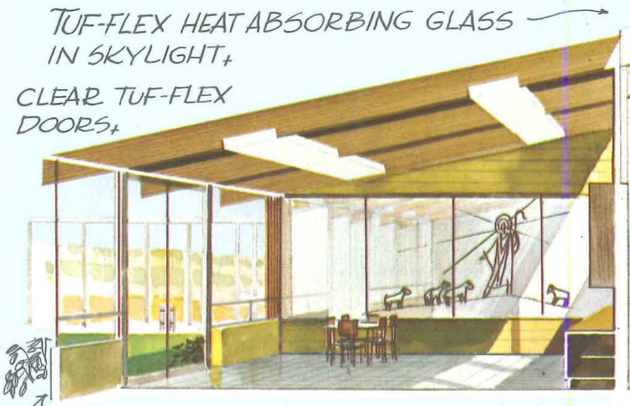
yard, so he designed a pulpit and free-form cross of *Tuf-flex*® heat-tempered plate glass, clear epoxy glued. In this same chapel, he has broken the massiveness of walls and roof-ceiling with bands of pale blue-green *Tuf-flex*, (or wired) Heat Absorbing Plate Glass. Slabs of stained glass as an inner pane of these bands create a colorful warmth.

For classroom corridor walls (next page) he suggests translucent L·O·F Rough Plate. This glass has a texture that provides classroom privacy, yet transmits borrowed light. And over the corridor is a skylight of *Tuf-flex* (or wired) Heat Absorbing Plate. In one wall between classroom and Sunday School office, Mr. Cooley has placed a *Mirropane*® see-thru mirror so teaching techniques can be studied by staff members without the pupils being aware that they are observed.

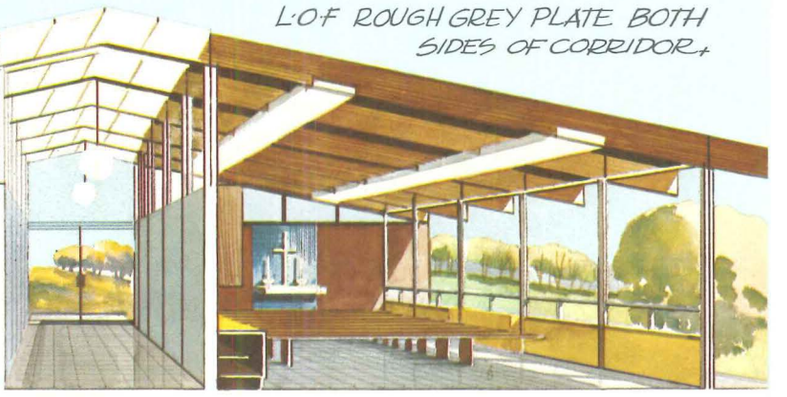
If this church should become a reality, choir members (and brides) will thank Mr. Cooley for providing *Parallel-O-Plate*® mirrors and sliding mirror doors in the dressing room, a feature too often overlooked in church design. It's a small thing, but it plays an important role in this church designed to attract young people.

TUF-FLEX HEAT ABSORBING GLASS IN SKYLIGHT.

CLEAR TUF-FLEX DOORS.



L·O·F ROUGH GREY PLATE BOTH SIDES OF CORRIDOR.

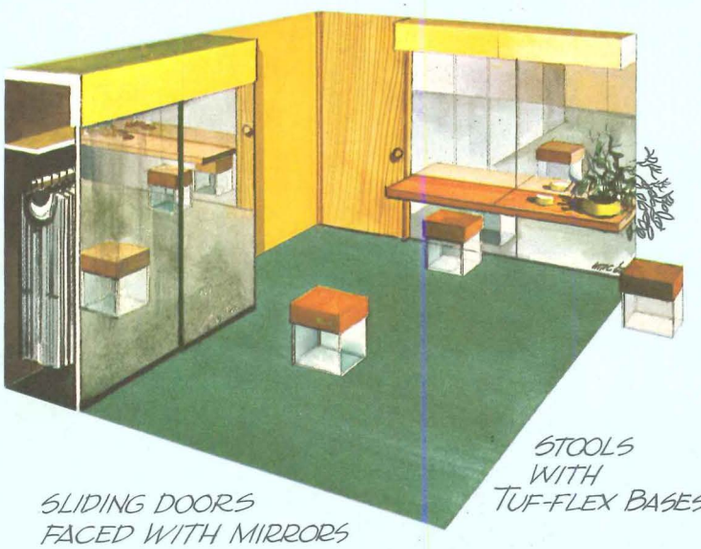


VITROLUX GLASS SPANDREL FACING. PARALLEL-O-GREY MIRROPANE ONE WAY MIRROR, FOR OBSERVING CLASS FROM ADJOINING OFFICE, ETCHED GOOD SHEPHERD DESIGN.

SUNDAY SCHOOL SECTION.

ROUGH PLATE GLASS SIDELITE, ROUGH PLATE, TUF-FLEX, DOORS.

PARALLEL-O-GREY THERMOPANE



SLIDING DOORS FACED WITH MIRRORS OF PARALLEL-O-PLATE

STOOLS WITH TUF-FLEX BASES.

PARALLEL-O-PLATE MIRROR WALL.

CHOIR ROOM, BRIDE'S ROOM

Now one product cures, hardens, seals and dustproofs new concrete floors with a single application

West Chemical Concrete Floor Treatment goes right on after troweling... cuts labor costs in half

Now you can treat newly-laid concrete floors immediately after troweling with no delays for drying. No delays between treatment applications.

For West Concrete Floor Treatment cures, hardens, seals and dustproofs new concrete with a single, simple, penetrating application. Gives a thorough, deep-cure treatment which also prepares the surface perfectly for the addition of composition tile or other material.

It enables concrete to retain over 95% of its moisture. Permits a gradual and even release of moisture so that the curing, hardening and sealing processes occur simultaneously.

Just one coat of West Concrete Floor Treatment seals concrete against stains from acids, oils, and greases during the early construction phases. Protects surface from plaster, paint, mud, and abrasive traffic during final construction phases.

This remarkable time-and-labor saving treatment is as effective indoors as out. No special skill is needed to apply it. No complicated machinery or equipment. And it meets ASTM specifications C-156 and C-309.

So speed up your whole operation, cut costs in half and protect your investment by proper curing with West Concrete Floor Treatment.

The man to contact for specifications and additional information is your local West representative, or mail coupon below. West Chemical Products, Inc., 42-16 West Street, Long Island City 1, N. Y. In Canada: West Chemical Products, Ltd., 5621-23 Casgrain Ave., Montreal, P. Q.

WEST CHEMICAL PRODUCTS INC.

West Chemical Products, Inc.
Concrete Division, Dept. AR-C
42-16 West Street, Long Island City 1, New York

☐ Please send me further information on West Concrete Floor Treatment

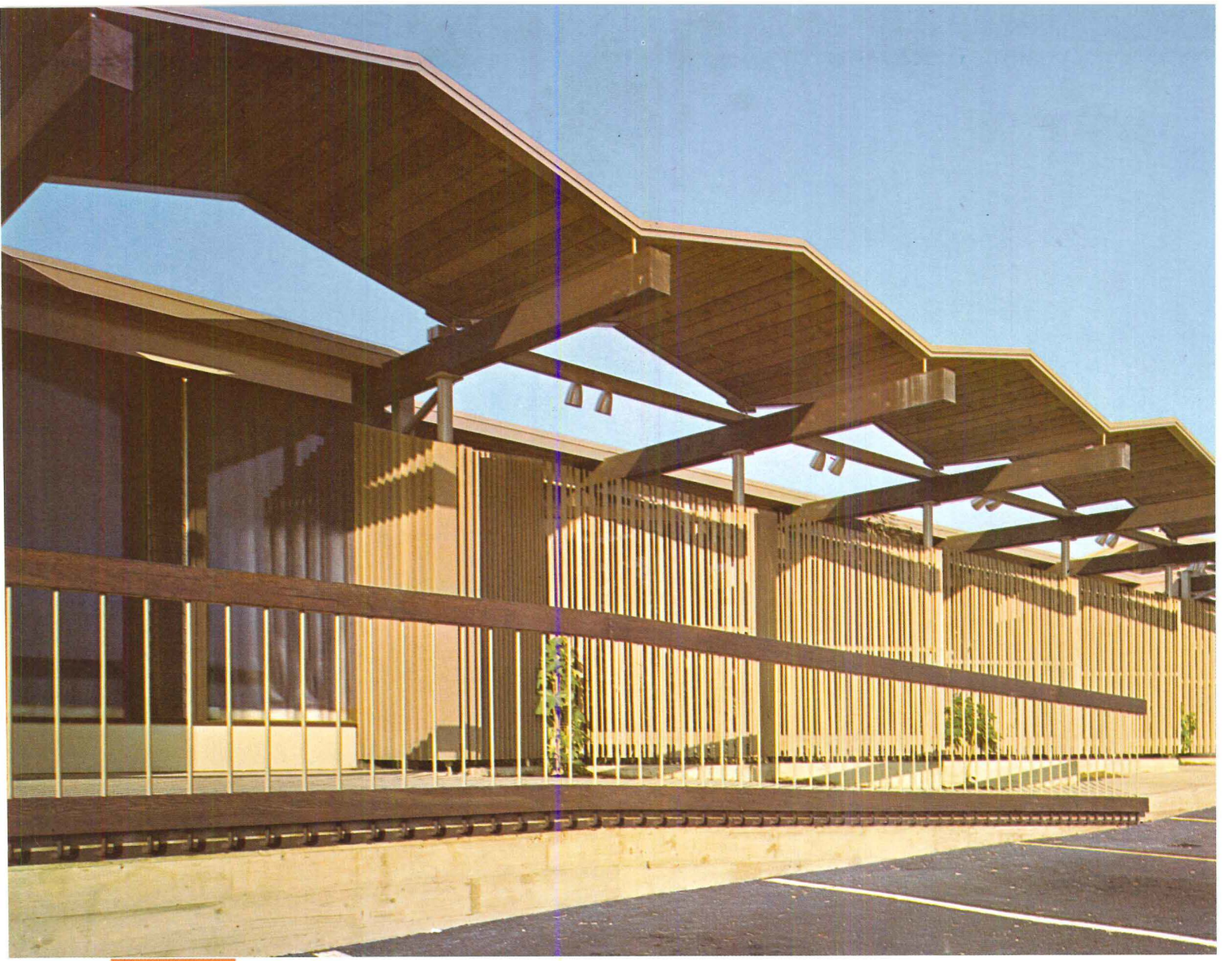
☐ Have your representative call

Name_____

Company_____

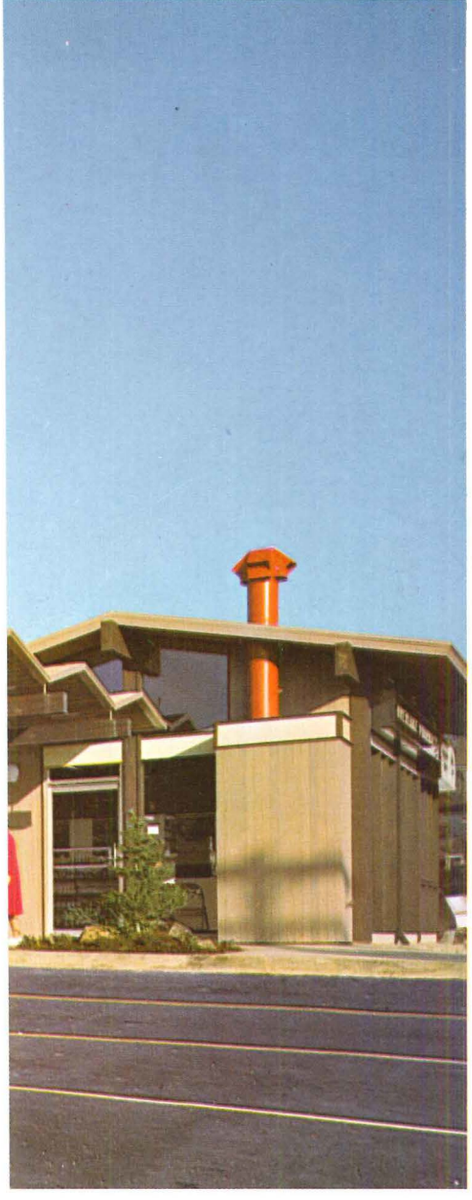
Address_____

City_____ Zone____ State_____

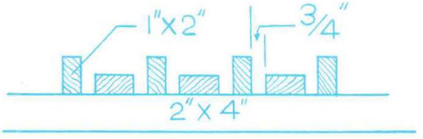


MODERN DESIGN Uses WEST COAST LUMBER

WEST COAST DOUGLAS FIR
WEST COAST HEMLOCK
WESTERN RED CEDAR
SITKA SPRUCE
WHITE FIR



Simple application technique of 1″ x 2″ Western Red Cedar produces dramatic, but practical result for privacy screen.



ARCHITECTS: Jones, Lovegren, Helms & Jones, A.I.A.

The intimate charm of a modern residence has been designed into this Bellevue, Washington medical center, located in a residential area. It features the imaginative use of standard sizes and grades of West Coast Lumber. Built on a hillside site, the structure provides 4,850 square feet of space on two floors for five individual office suites and an apothecary shop.

The privacy screen of Western Red Cedar takes its pattern from the simulated folded plate roof which runs immediately above it, horizontal to ground level. The screen provides a visual division of the offices from the upper-level, 16-car parking lot, while allowing a full view and diffusion of early morning and late afternoon sunlight. Character is subtly added to the building by the pattern of the folded plate roof, the function of which is weather protection for the outside entrance corridor.

The apothecary shop and clinic blend into the relaxed suburban atmosphere. The rich, natural appearance of West Coast Lumber offers an impression of friendly welcome to patients, replacing the conventional "sanitary white" for such structures. This building is the second of a medical "complex" planned for the area.

This striking and imaginative interpretation of modern architectural ideas has been accomplished with maximum economy through the practical use of West Coast Lumber's many sizes and grades. You'll find a limitless field of design applications for versatile, practical West Coast Lumber. Your local retail lumber dealer is a convenient supply source.

Technical West Coast Lumber information:

Posts: West Coast Douglas Fir 4″ x 4″, 6″, 8″, 10″. Glue laminated 7″ x 7″ and 7″ x 8″.

Beams: Glue laminated West Coast Douglas Fir 5¼″ x 8″, 5¼″ x 11¼″, 5¼″ x 12⅞″, 5¼″ x 14½″ to various lengths.

Joists: West Coast Douglas Fir 2″ x 6″ spaced 12″ and 16″ o.c.

Subfloor: West Coast Douglas Fir 1″ x 6″ shiplap.

Wall framing: West Coast Hemlock 2″ x 4″.

Roof Deck: West Coast Douglas Fir 2″ x 6″ tongue and groove.

Entrance canopy: West Coast Douglas Fir 2″ x 6″ tongue and groove.

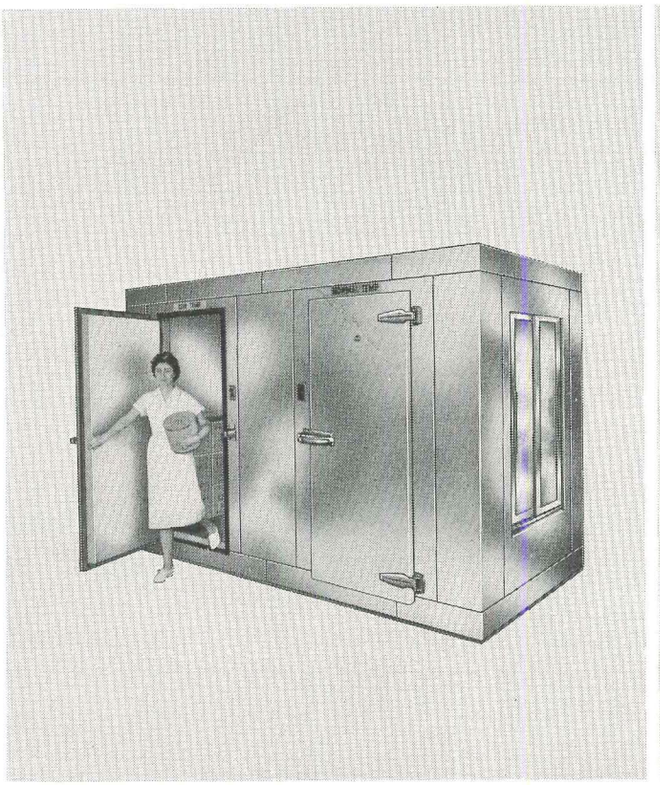
Siding: Western Red Cedar 1″ x 4″ tongue and groove.

Screen: Western Red Cedar 1″ x 2″.

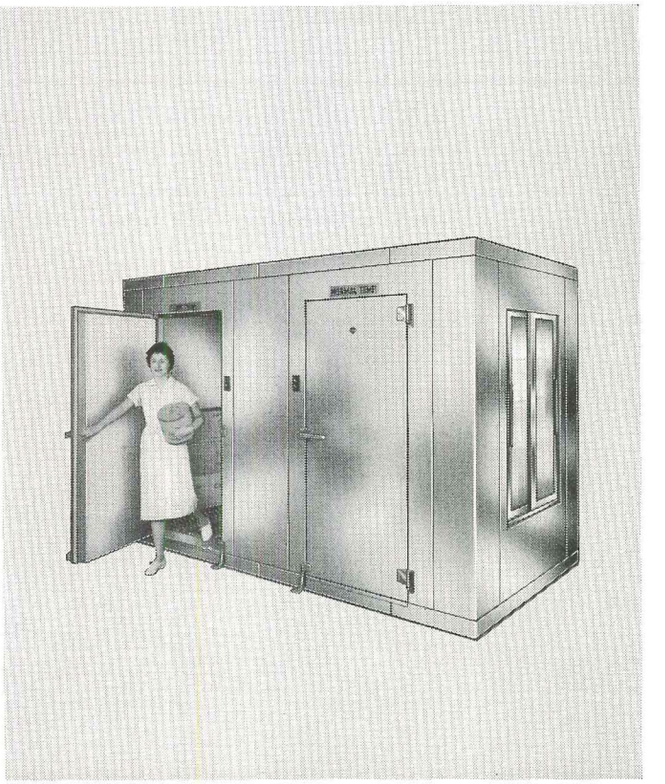
"Buildings for Business," full color, 12-pages full of small building ideas. Write for your personal copy today . . . Dept. 77

WEST COAST LUMBERMEN'S ASSOCIATION

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



This was the world's most advanced design.



Until we made this one.

Bally Walk-in Coolers and Freezers are now made with science's new wonder insulation . . . Rigid Urethane "foamed-in-place"

The tremendous advantages of this new insulation represent a major design advancement . . . one that obsoletes all conventional insulated Walk-Ins, both prefabricated and built-ins. ◆ With 97% closed cells it cannot absorb moisture . . . maintains forever peak efficiency, indoors or outdoors ◆ Has double the insulating value . . . Bally 4" urethane equals 8½" of conventional insulation. Standard models ideal for use as minus 30° freezers ◆ Urethane, poured as a liquid, foams in place and while rigidizing binds tenaciously to the metal for great strength. Eliminates need for structural members. Replaces that space with highly efficient insulation ◆ Lightweight urethane and new construction reduce weight to one-third for tremendous freight savings . . . make erection fast and easy ◆ Foamed door is extremely lightweight, to open and close with little effort. Unique magnetic gasket provides positive continuous seal ◆Thinner walls increase usable inside space ◆ Fire-retardant.

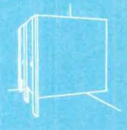
Your choice of Aluminum or Galvanized as standard finishes. Sections have Bally's patented Speed-Lok for quick and accurate assembly. Easy to add sections to increase size . . . equally easy to disassemble for relocation. Hermetically sealed refrigeration systems eliminate installation problems . . . drastically reduce service costs.

Write for Free Architect's Fact File, complete with new Specification Guide, descriptive literature and technical booklet.

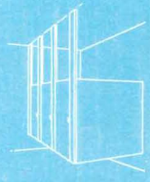
Bally

Bally Case and Cooler, Inc. Bally, Pennsylvania

An installation of two Stallpack units with standard urinal screens of matching Ozark Grey Veined marble.



STALLPACK, the packaged marble toilet enclosure



SPACEPACK, the ceiling-hung Stallpack

SHOWERPACK, the complete marble shower cabinet

ECONOPACK, multi-unit marble dressing room and shower

URINAL SCREENS, standard screens in Stallpack marble

Only marble is so durable
Only Stallpack® is so easy to specify

Stallpack gives you the unique durability of solid marble partitions precut to standard size, predrilled ready to assemble, and offered in a package unit complete with door and chrome plated rustproof hardware. These package units are ready to be shipped immediately.

All you do is indicate water closets 2′ 10″ on centers on your drawings, then specify Stallpack. With that one easy specification you give the toilet rooms of your building the lasting beauty and trouble-free durability that cannot be had with any material but marble.

Stallpack marble partitions will not rust or deteriorate. They will never need refurbishing. Washing with mild soap and water is all it takes to keep Stallpack marble partitions in perfect, shining condition. Imagine the savings in upkeep expense over the life of a building!

These remarkable partitions are easy to keep clean because they are solid marble. Flush construction with solid marble leaves no inaccessible hollow places around the base of the stiles to breed germs and retain odors.

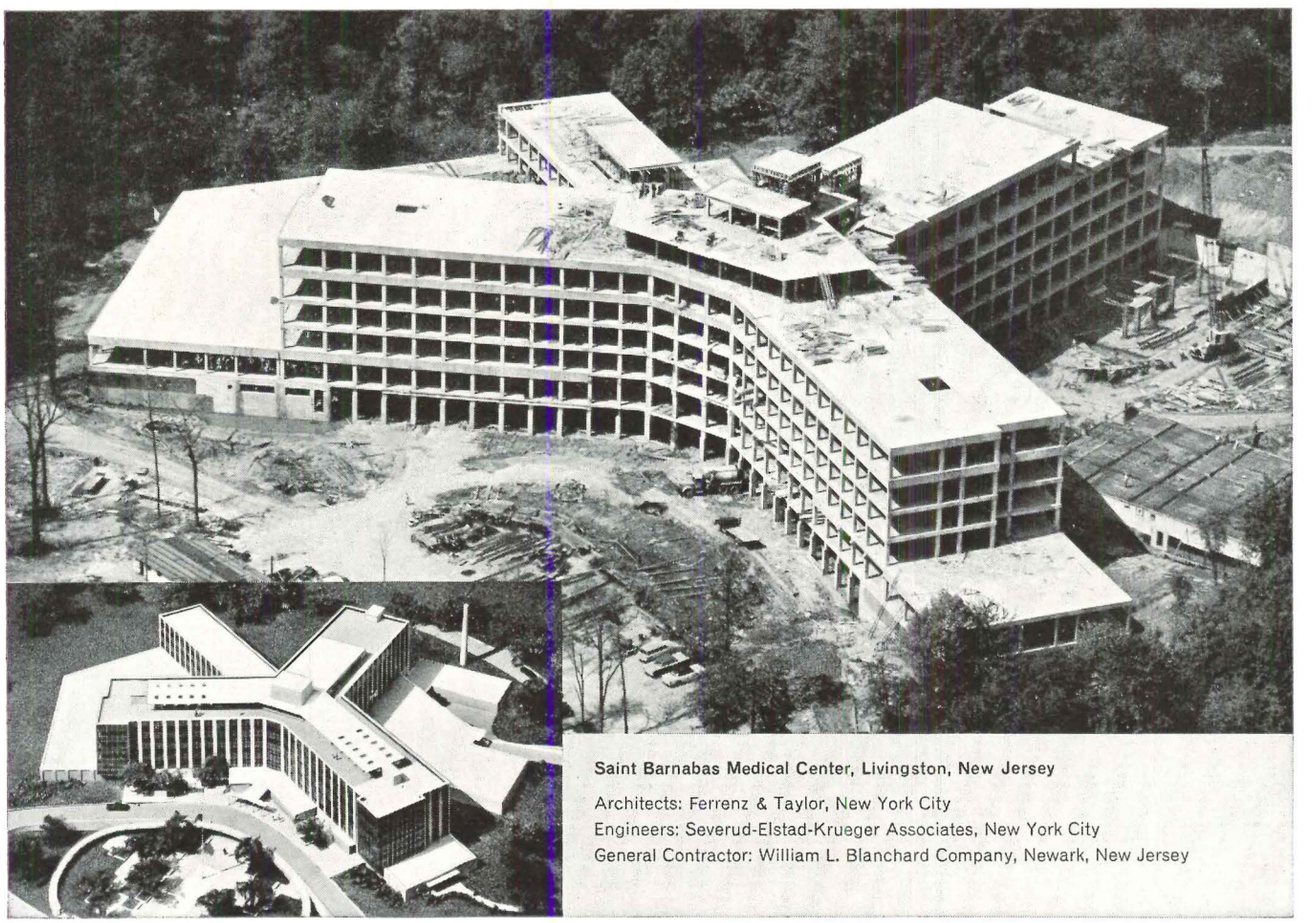
Stallpack partitions are made of fine Ozark Grey Veined marble. This lustrous light grey marble blends beautifully with any color scheme, stays beautiful as long as your building stands!

Write today for specifications, detail drawings, and prices. Address Stallpack, Dept. R, Carthage Marble Corp., Box 718, Carthage, Mo.

150 IMPORTED AND DOMESTIC MARBLES KEPT IN STOCK FOR CUSTOM MARBLE SERVICE

CARTHAGE MARBLE CORPORATION

Monolithic REINFORCED CONCRETE Helps Make Hospital Fallout Proof



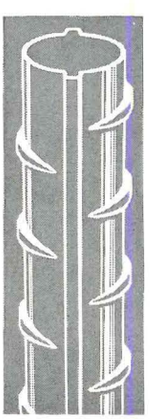
Saint Barnabas Medical Center, Livingston, New Jersey

Architects: Ferrenz & Taylor, New York City
Engineers: Severud-Elstad-Krueger Associates, New York City
General Contractor: William L. Blanchard Company, Newark, New Jersey

When completed, the new six-story, 600-bed, reinforced concrete Saint Barnabas Medical Center will be the first hospital in the Nation providing complete protection against radio-active fallout. The first floor of the building, encased in 12-inch-thick walls, plus one floor below ground, will provide 5½ acres of shelter area to accommodate 1100 persons, including patients and hospital personnel. The two floors also provide facilities to operate the hospital under both normal and emergency conditions.

For your next building, investigate the many superior structural and design advantages of this versatile construction method.

CONCRETE REINFORCING STEEL INSTITUTE
C.R.S.I.
FOUNDED 1924



Concrete Reinforcing Steel Institute
38 South Dearborn Street
Chicago 3, Illinois

1-62

FOR ECONOMY MINDED BUYERS OF SCHOOL LIGHTING

Sylvania's New Stylus Series provides Quality Lighting at Budget Prices

Here's a new Sylvania Fixture Series that has gained tremendous acceptance for school lighting because it fills illumination requirements so perfectly.

Featuring a wraparound plastic one-piece lens shielding, the Stylus provides high lighting efficiency with comfort; shallow, modern styling; neat, handsome appearance; and simplified installation and maintenance features.

Sylvania's high-quality product standards of rugged construction, long-lasting finish, CBM ballasts and guaranteed performance have been maintained. Yet the Stylus carries an exceptionally modest price tag.

The Stylus provides eye comfort with a dual prismatic low-brightness lens which reduces contrast by directing some light to the ceiling.

Maintenance is made easier through the use of a bead chain retainer which holds the lens during cleaning or relamping.

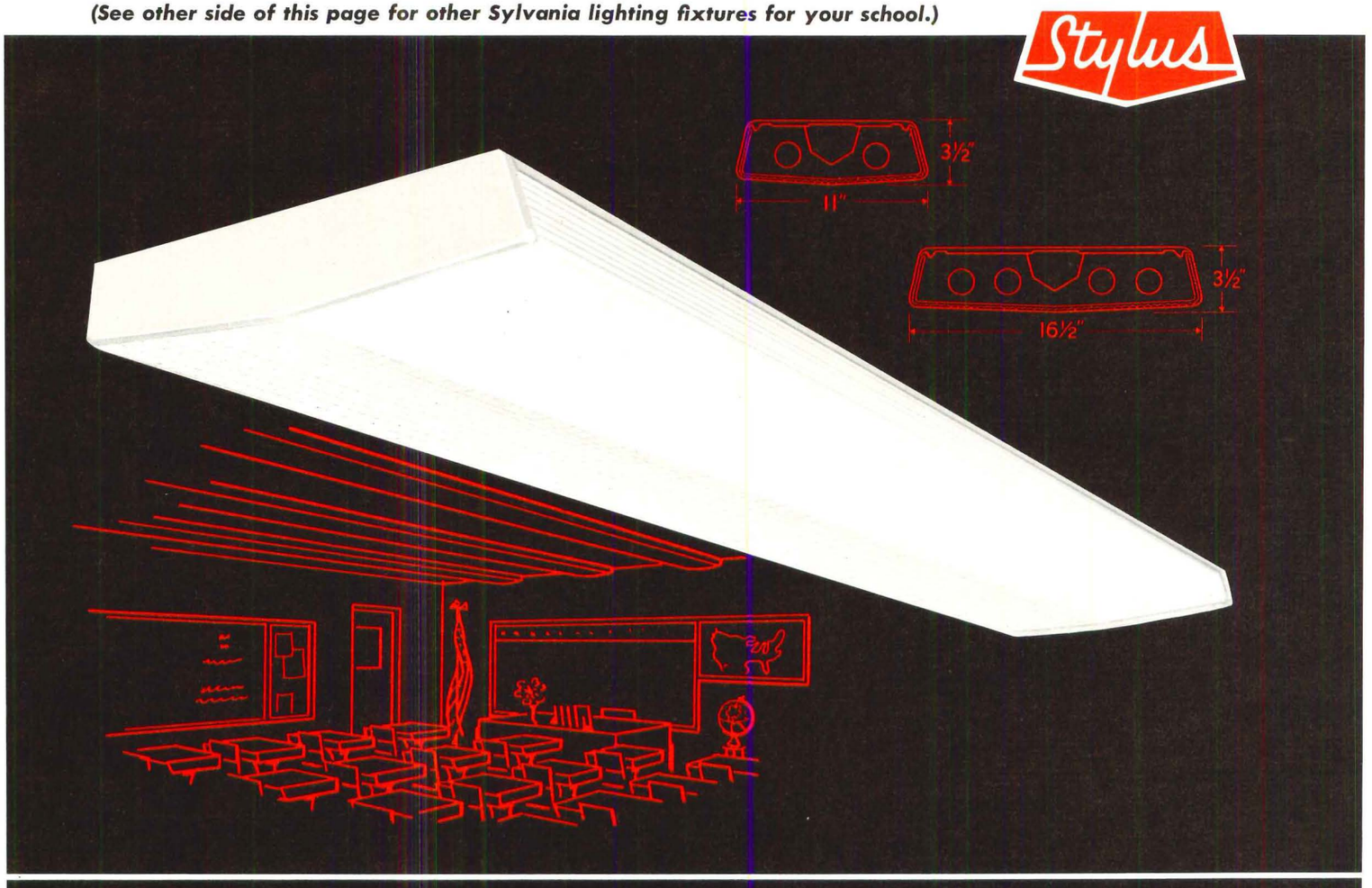
When budget lighting is required for your school, see your Sylvania distributor or write to Sylvania for complete information on the Stylus Series.

Here are some details:

Ordering No.	Length	Width	Depth	Lamps
W-2404	4′	11″	3½″	2-40 Watt Rapid Start
W-4408	8′	11″	3½″	4-40 Watt Rapid Start
W-4404	4′	16½″	3½″	4-40 Watt Rapid Start

Because of the popularity of the Stylus, these fixtures are being manufactured continually. Therefore fast delivery for relighting schools can usually be assured. Check your Sylvania distributor for service information.

(See other side of this page for other Sylvania lighting fixtures for your school.)

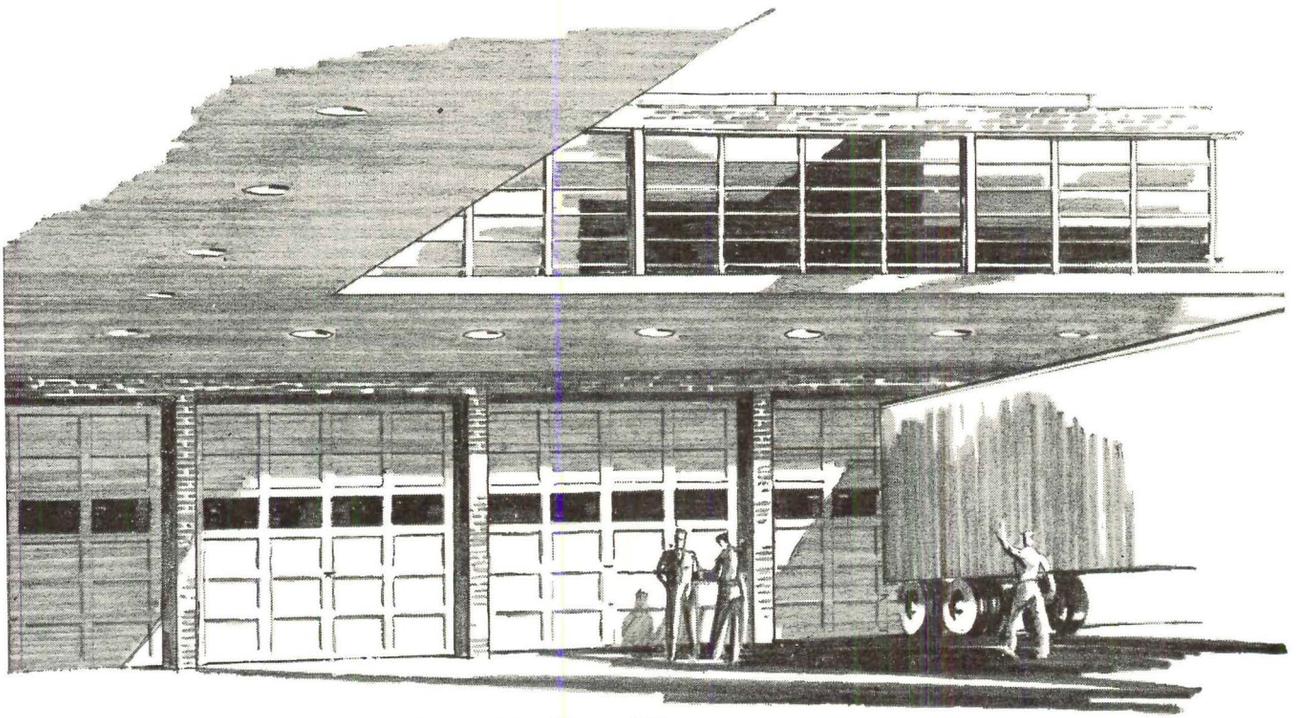


LIGHTING FIXTURES BY

SYLVANIA

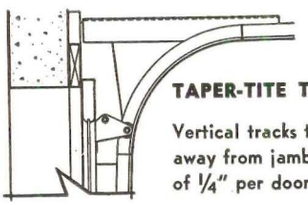
SUBSIDIARY OF GENERAL TELEPHONE & ELECTRONICS

SYLVANIA LIGHTING PRODUCTS
A Division of SYLVANIA ELECTRIC PRODUCTS INC.
One 48th Street, Wheeling, West Virginia



RōWAY Doors

COMBINE DESIGN BEAUTY WITH WEATHERTIGHT CONVENIENCE



TAPER-TITE TRACK

Vertical tracks taper away from jambs at a pitch of 1/4" per door section.

SEAL-A-MATIC HINGES

Seal-A-Matic hinges of graduated height guide the closing door firmly against jambs and — for opening — free the door from jambs for easy, frictionless lifting operation.

Your commercial and industrial clients gain important advantages when you specify RoWay Overhead Commercial Doors.

First, the modern, trim design of RoWay Doors adapts handsomely to any contemporary building. Lasting good appearance is assured by Masonite Dorlux panels guaranteed for the life of the door. Second, these fine doors are completely weathertight to seal out snow, rain and dust. BECAUSE ROWAY DOORS ARE COMPLETELY FABRICATED IN ONE PLANT, you're assured of strict quality control in the manufacture of all components. All-under-one-roof fabrication also makes possible "power-metered" springs which are custom-wound according to the exact weight of each door. For your next job, work with client-pleasing RoWay Doors.

there's a RōWay for every Doorway!

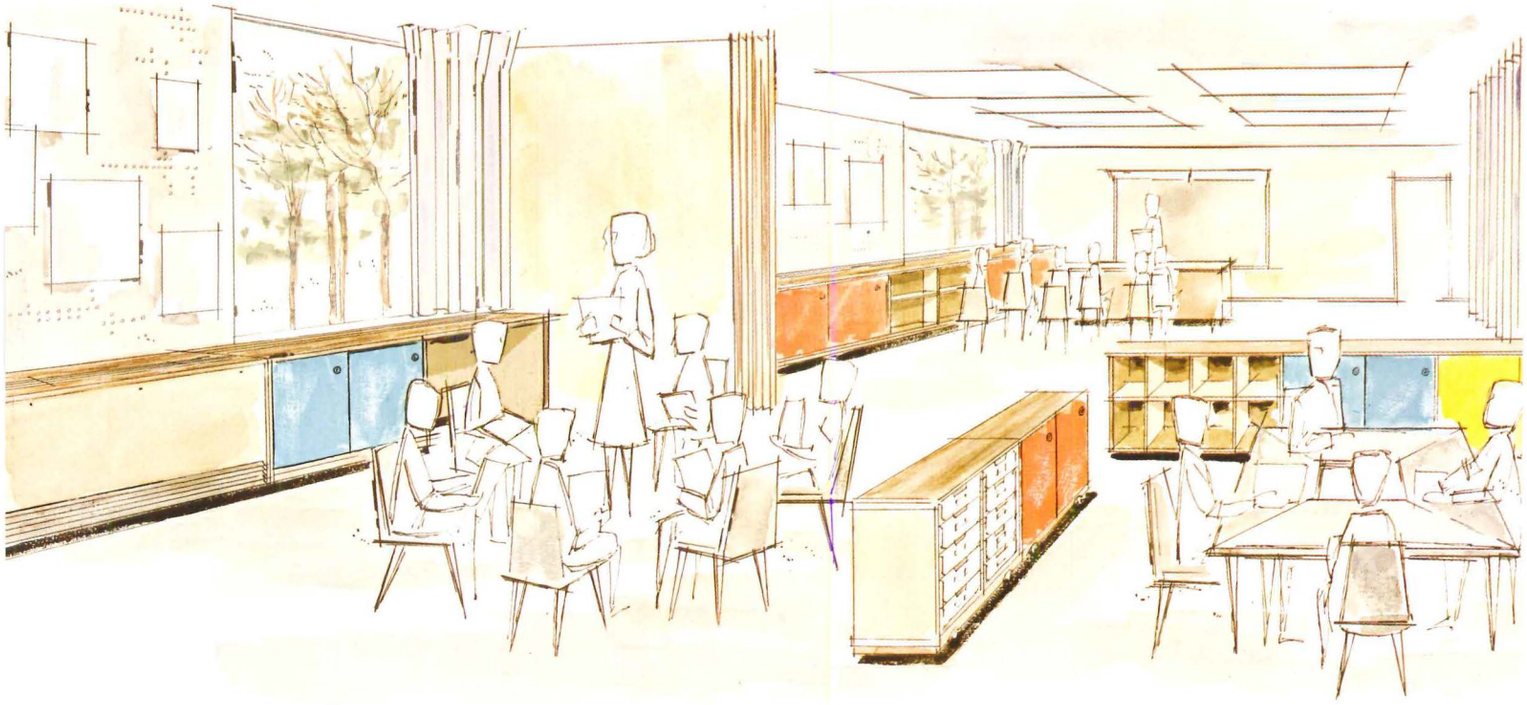
Find Your Nearest Distributor In The 'Yellow Pages'

SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY

COMMERCIAL • INDUSTRIAL • RESIDENTIAL

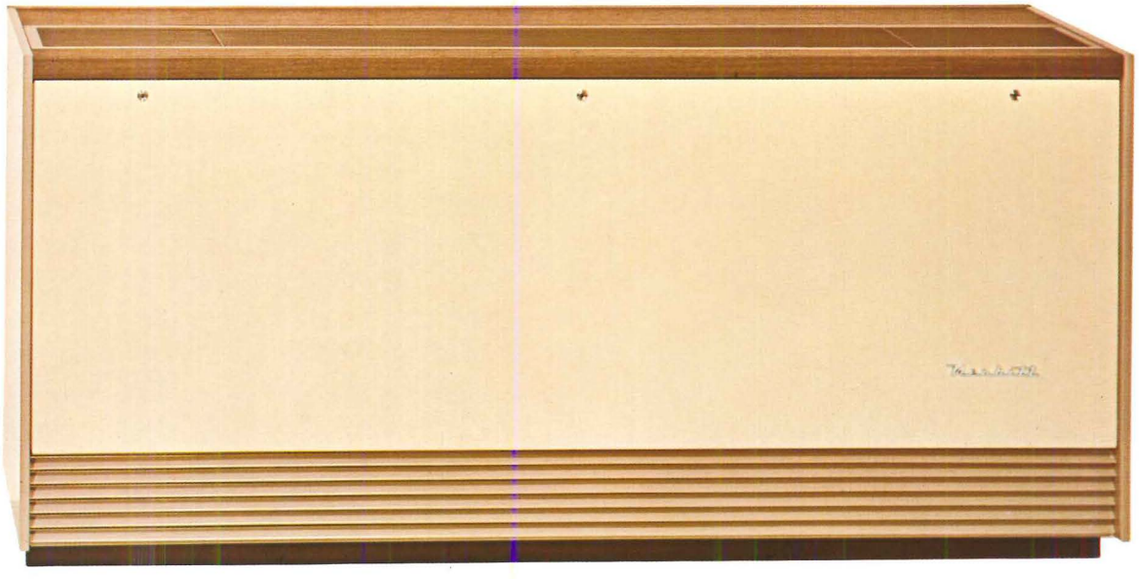
RoWay OVERHEAD DOORS

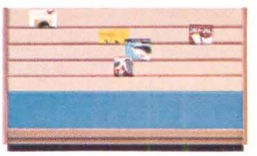
ROWE MANUFACTURING COMPANY
Department A • Galesburg, Illinois



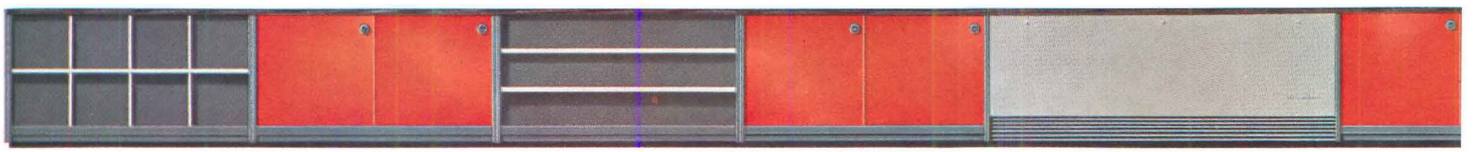
NOW YOU

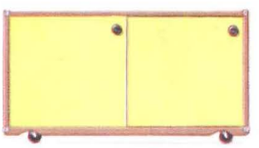
can give new schools the year-round air conditioning needed for active learning at a cost within reach ▸▸▸▸▸▸▸

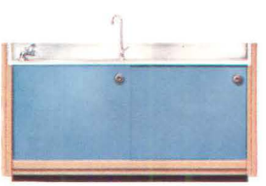




Nesbitt Year-Round Unit Ventilator and versatile Storage Cabinets with the clean, crisp architectural lines and colors by Designer Paul McCobb.







by designing with this Nesbitt UNIT SYSTEM

Beauty and utility are important adjuncts of year-round comfort with the Nesbitt 600 Series of Classroom Unit Ventilators and Storage Cabinets

The comfort conditioning of school and college buildings is, as you know, a singular assignment, with uncommon demands. The buildings may be used part of the day, or day and night; part of the year, or all year round. Some classrooms will be occupied, others not; the number and activities of the occupants will vary greatly. There will be need for heating many days of the year, more in some localities, less in others; but at least for morning warm-up, during recesses, overnight, and week-ends. Rooms with certain exposures or large windows may need independent cold surface and downdraft radiation. At the same time, most occupied classrooms will need cooling; and when the outside temperature is below 60°F this can be had for the low cost of introducing outdoor air. But in the spring and fall—and most certainly in the summer—mechanical cooling and dehumidification will be needed. And always, of course, the control of heating, ventilating and cooling must be on an individual room basis—learning productivity depends on the proper thermal environment.

Thus, everything about a school's thermal comfort requirements calls for a unit system. More unit systems are used in schools than all other kinds; and more of the units have been made by Nesbitt than by any other manufacturer.

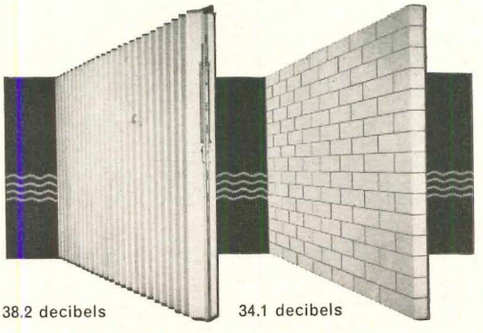
Plan to use Nesbitt Year-Round Syncretizers in your next school. They will do what you want—winter and summer—and for the life of the building! The Nesbitt record over the last 45 years attests to that. Will you let us prove it?

SEND FOR PUBLICATION 11-3

MADE AND SOLD BY JOHN J. NESBITT, INC., PHILADELPHIA 36, PA.
Offices in Principal Cities

...each with better sound privacy* than you'd get from walls of 4" cinder block

● At a cost any school can afford, Soundmaster 240 operable walls can put to work the high-cost space that stands idle half the day. These expensive areas—auditorium, cafeteria, gymnasium and library—may be subdivided by Soundmasters in seconds to provide extra classrooms . . . each enjoying better sound privacy than a room closed off by permanent masonry walls of four-inch cinder block. Yet, the investment for Soundmaster 240 is only a fraction of the cost for building additional instruction space. And the original specialized areas remain intact. The stacked Modernfolds take only a few feet of wall space (or disappear entirely into pockets). Write for details on creating these extra classrooms, plus the many other ways that Modernfolds can stretch your building budget . . . by making space do double duty. Just fill out the coupon below.

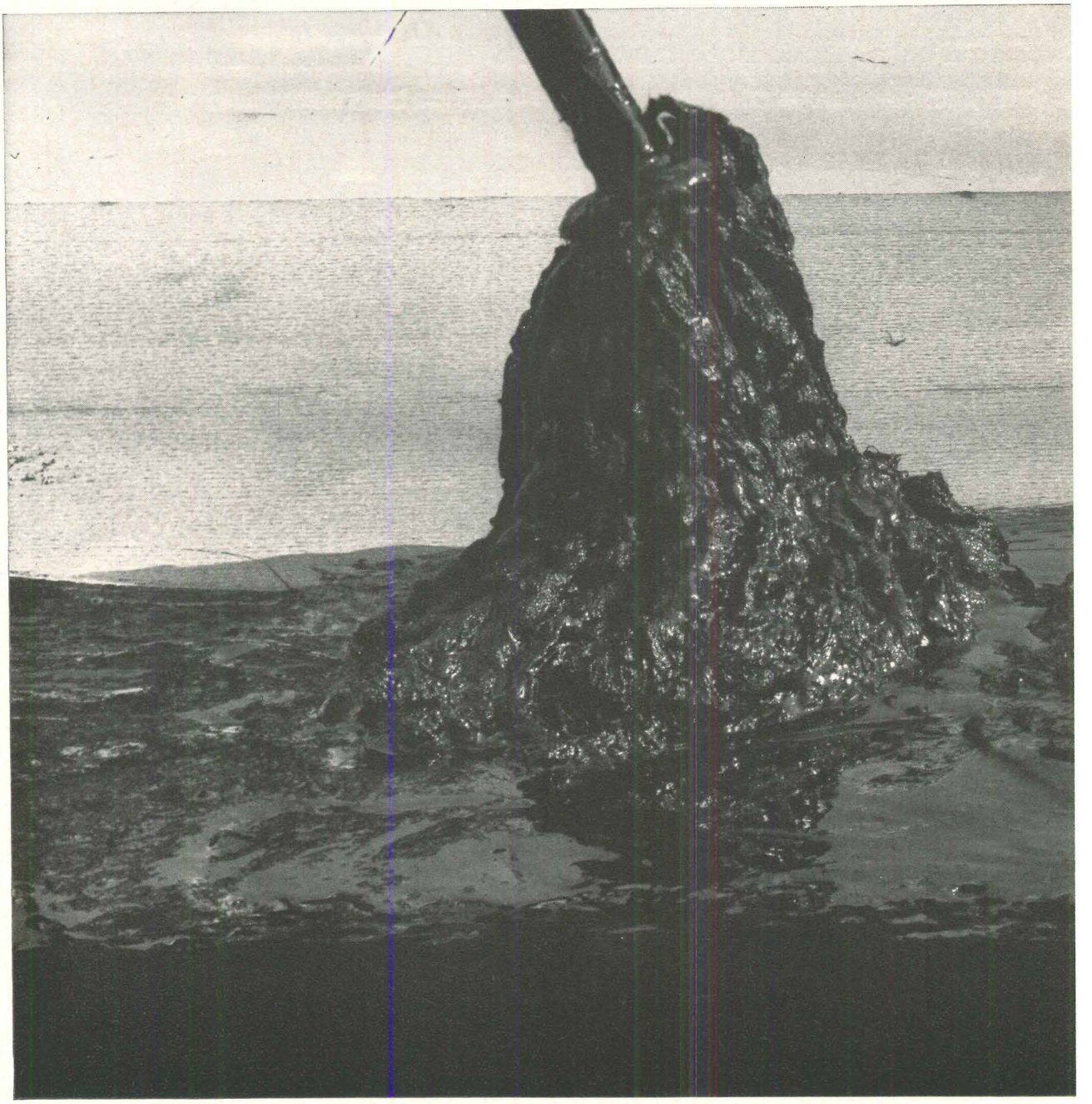


*Geiger and Hamme Laboratory Tests (full scale) show that in a 14′ x 9′ opening under simulated field conditions, the average sound reduction of a Soundmaster 240 operable wall is 38.2 decibels, compared with 34.1 decibels for a 4" cinder block wall painted on both sides.

modernfold®

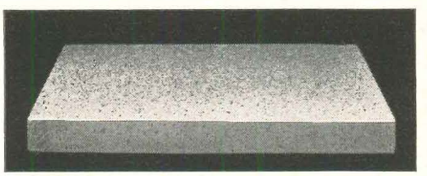
NEW CASTLE PRODUCTS, INC. • NEW CASTLE, INDIANA
In Canada: New Castle Products Canada, Ltd., St. Lambert, Quebec
"Modernfold" Operable Walls, Partitions and Doors; "Air Doors"; "Modern-Cote" Wall Coverings; "Peabody" School Furniture, "Pyrox" Sheathed Thermocouples.

NEW CASTLE PRODUCTS, INC. Dept. A272
New Castle, Indiana
Gentlemen: Please send me your 20-page School brochure.
NAME
SCHOOL
ADDRESS
CITY CO. STATE
In Canada: New Castle Products Canada, Ltd., St. Lambert, Que.

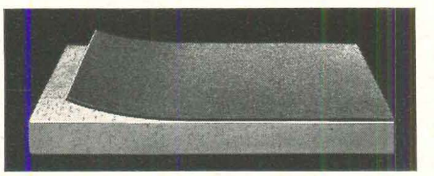


"Roofmate FR makes this the best roof you've ever worked on"

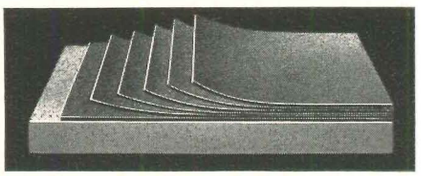
Here are the simple steps to a better built-up roof using Roofmate FR and coated base sheet



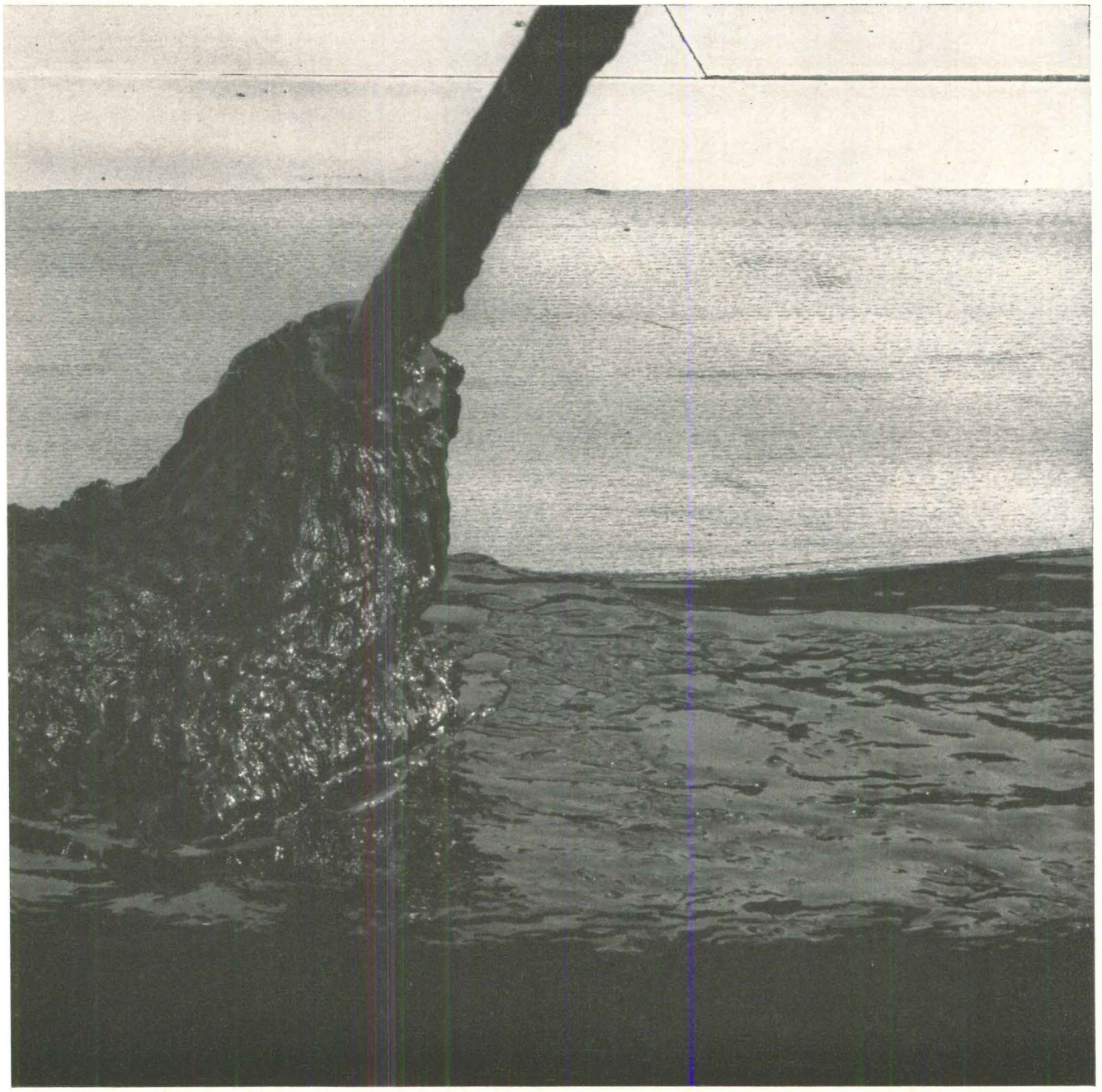
1. Roofmate FR is laid on concrete, gypsum, wood or metal structural deck over strip-mopped coat of hot asphalt.



2. It is covered with an approved coated base sheet. Next layer of hot asphalt bonds base sheet to Roofmate FR.



3. Roof is completed by building up standard roofing felts in conventional manner, either by hand or by machine.



"What a build-up!"

Matter of fact, this *is* the best insulated roof yet—right down where it counts! Based on Roofmate® FR roofing insulation, a new system builds up this superior roof *faster*.

Roofmate FR flame-retardant polystyrene foam board has a high-density skin, good impact resistance and compressive strength. It can even span the flutes in a metal deck. Closed-celled and nonabsorbent, Roofmate FR is unaffected by water. So it has permanently high insulating value.

When you specify Roofmate FR, the roofer still works with conventional materials (see steps at left). Using coated base sheets eliminates the disadvantages of unprotected moisture-absorbent felts for the first ply and prevents wrinkling at the insulation joints. Roofmate FR is used as the vapor barrier. These roofs are bondable, of course.

Extremely lightweight Roofmate FR saves preparation time and trouble, too. It comes in thicknesses for most roofing applications. To get more data and specifications, write us in Midland, c/o Plastics Sales Dept. 1302N7.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

Product Reports

continued from page 192

WINDOW HARDWARE

Double hung windows can be tilted inward to any position for cleaning and no-draft ventilation with the use of aluminum hardware which can be

installed on any wood window sash without disturbing the frame. When closed the window can be operated or locked in the regular way. *Kaywood Windoware Corp., Box 187, Kalamazoo, Mich.*

PLASTIC DOORS

Safe transparent doors are made of ½-in.-thick polyvinychloride plastic. The doors are semi-flexible, non-shattering and flame-resistant and are

available with steel or aluminum frames. *W. B. McGuire Co., Inc., Box 265, Champlain, N.Y.*

more products on page 218

JOISTOLOGY*

GIVES
THEM
WIDE,
OPEN
SPACES...

gives you more efficient, economical construction

How do you roof over a large area and still keep internal supporting columns to a minimum? This is a problem faced every day by designers of supermarkets, factories, gymnasiums and other structures requiring unobstructed floor space.

There's a simple, efficient and low-cost answer to this problem: New high strength "J" and "H" series open web steel joists. These efficient members provide a maximum of strength with a minimum of dead load. They can span considerable distances and bear heavy loads without intermediate support. They're available in lengths up to 48 feet, and even in the largest sizes are easy to handle and set in place.

Would you like to learn more about the construction and design of open web steel joists? The Steel Joist Institute specifications and load tables provide helpful technical information. Write for your copy.

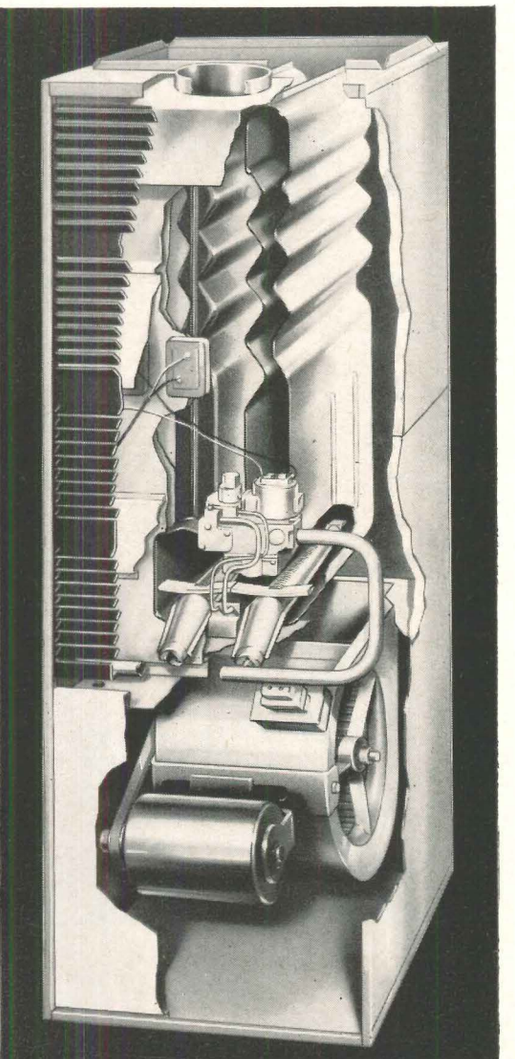
***Joist-ol-o-gy, N.** (As Webster *should have* defined it.) The art or science of designing and building more economical structures through the use of open web steel joists.* 6105

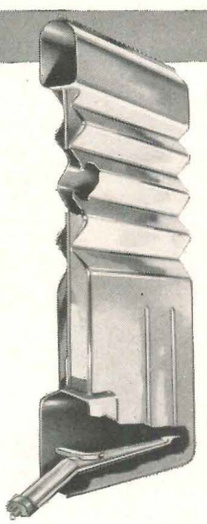
STEEL JOIST INSTITUTE APPROVED

Steel

Another in a series of advertisements placed in the public interest by the STEEL JOIST INSTITUTE, DuPont Circle Bldg., Washington 6, D. C.

NOW- Year 'round





featuring the newest achievement in heating efficiency . . .

THE SUPER-THERMEX HEATING HEART

The key to Janitrol's compactness and peak performance is this unique Super-Thermex heat exchanger-burner combination. The exchanger tubes have an unusual zig-zag design in which the hot gases change velocity seven times in their upward travel. This alternating turbulence and high velocity provides faster, more efficient heat transfer that not only results in low fuel costs, but also in smaller tubes which permit a lower furnace height.

Janitrol's new and exclusive proportioning ribbon flame burner generates a clean, intense flame that is precision-centered in each exchanger tube so that no live flame touches metal . . . hot spots that cause burn-out are eliminated. The burner automatically mixes air and fuel for maximum combustion efficiency . . . no adjustments are ever needed!

comfort goes compact

new Janitrol package designed especially for the modern apartment and small home market.....

This all-new heating and air conditioning package by Janitrol meets the demands of modern apartments and small homes for individualized, all-year environmental control.

Architects, builders and real estate operators agree that the increasing popularity of apartments, row-houses, small homes and multi-zone large homes, calls for heating and air conditioning equipment with these engineered qualities:

- Sized to conserve on floor space.
- Economical to buy, economical on fuel consumption.
- Dependable, trouble-free maintenance.
- All-season living comfort in every climate.
- Completely flexible in location and size of units.

The new line by Janitrol has all these features and many more, including pre-charged, tested and sealed refrigerant systems, quick-connect couplings for speedy installation, and burners that never need adjustment.

The New Line by JANITROL is Small in Size, Big in Performance!

Contemporary Styling — clean, neat, uncluttered. Finished in durable baked enamel, neutral grey-beige with front panels in accent colors of storm blue and cloud white.

Sturdy, compact cabinets — only 12 inches wide, 28″ deep, of rigid, unitized welded steel construction. Thermally and acoustically insulated with foil-faced fiberglass.

Factory-tested — all models are wired, fired, and inspected at the factory before shipment.

Prelubricated Blower Bearings — deep-well reservoir-type that require no oiling for five years under normal operation. Rigidly supported by a 3-point mounting for durability — rubber-cushioned to absorb vibrations.

Quiet air circulation — larger blowers operate at reduced speeds to move larger volumes of air with unusual quietness.

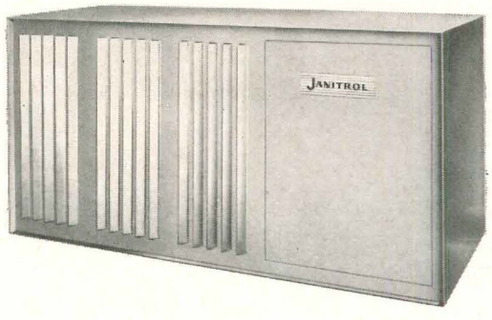
Precision Controls — Automatically maintain your comfort and protect your investment. Protected from tampering and ventilated by the louvered front access panel.

Sealed Base — A solid base panel in upflow models seals against dirt . . . saves the expense of grouting.

Sensitive Thermostat — an adjustable, heat anticipating-type that maintains uniform, healthful temperatures automatically.

Air Filter — One-inch thick disposable, blanket-type air filter removes dust, dirt and pollen from all circulating air.

Higher Capacity Models — When design conditions require, the new units are available in a 100,000 Btu/hr. heating capacity with an 18″ wide cabinet. The matching condensing unit is the Janitrol 52 Series.

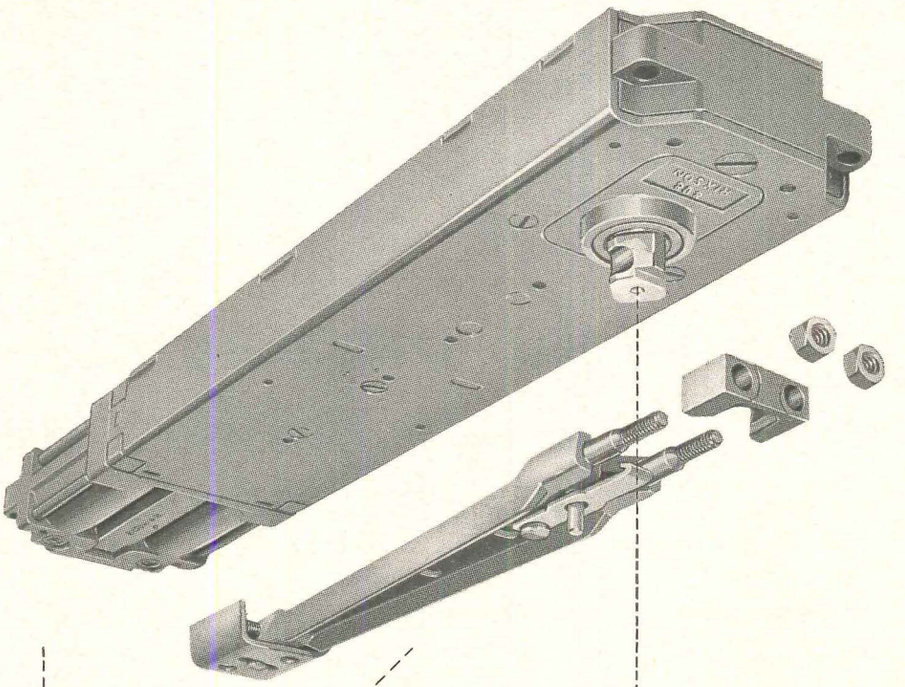


PLUS Custom-Matched Cooling

The companion 57-Series air-cooled condensing unit measures only 39″ x 18″ x 18″. It's fully precharged, with quick-connect refrigerant lines included. Available in 16,000 and 24,000 Btu./hr. capacities. A. R. I. rated.

JANITROL® HEATING AND AIR CONDITIONING DIVISION
MIDLAND-ROSS CORPORATION, COLUMBUS 16, OHIO

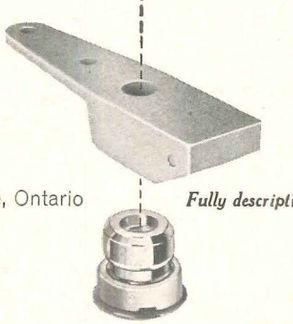
M-R



808 OVERHEAD

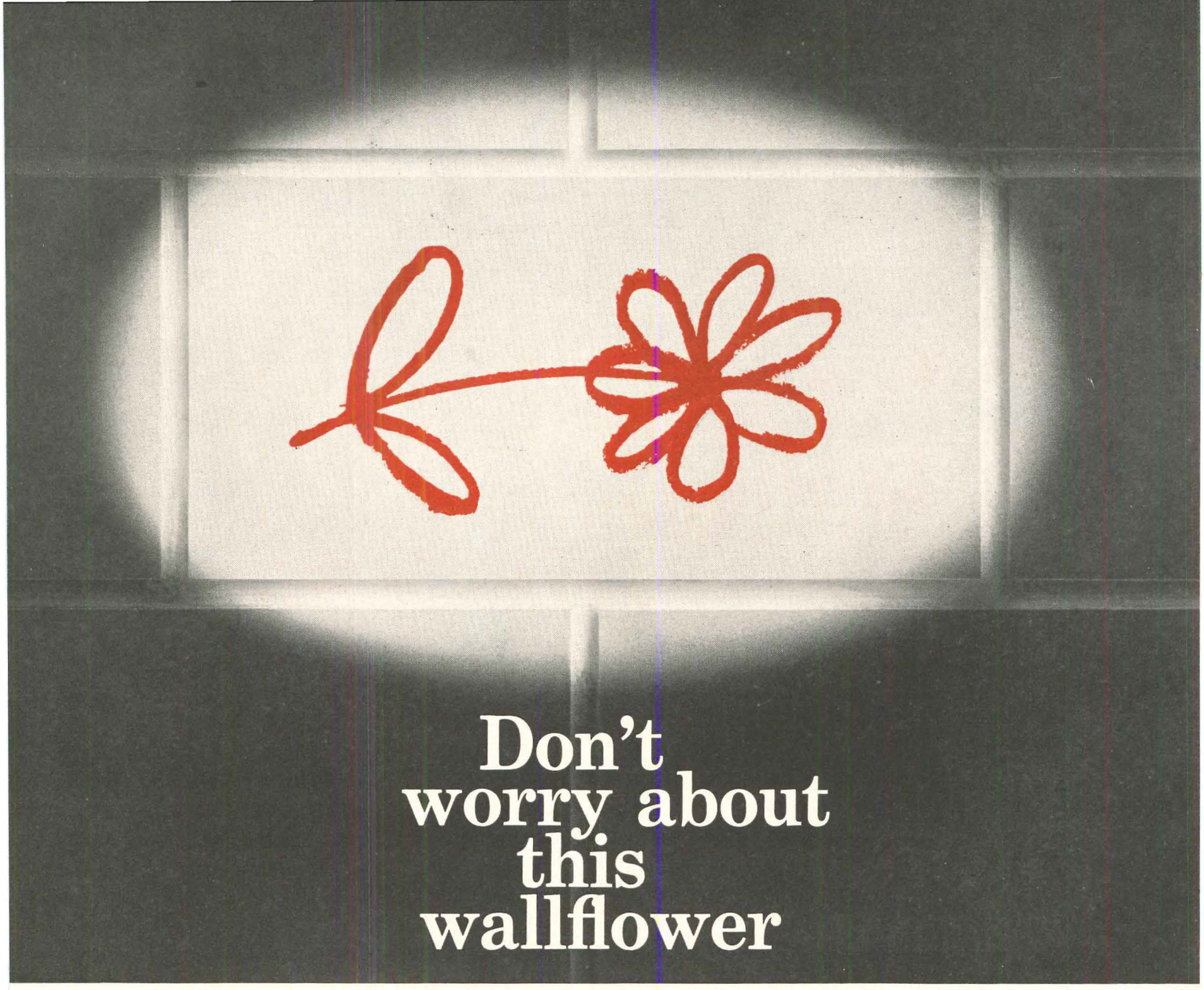
single or double acting closer
fits into 1-3/4″ x 4″ head frame

RIXSON Inc.



RIXSON Inc., Franklin Park, Illinois / Canada: Rexdale, Ontario

Fully descriptive literature on request



Don't worry about this wallflower

when the walls are of Natco Vitritile!

Lipstick, crayon, scuff marks or dirt. They present no maintenance problem at all when walls are constructed of load-bearing Natco Vitritile. All that's needed to retain Vitritile's original finish and lustre are periodic cleansings with common soap or detergent and warm water.

Because Natco Vitritile is a ceramic glazed, *genuine* clay tile product, it is also chemical resistant, moisture resistant and completely fireproof.

Vitritile is available in 44 standard and accent colors to provide a wide selection of interior color combinations. For complete information write for catalog S-62:

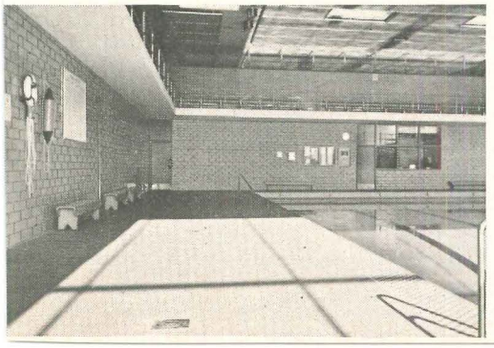
NATCO CORPORATION

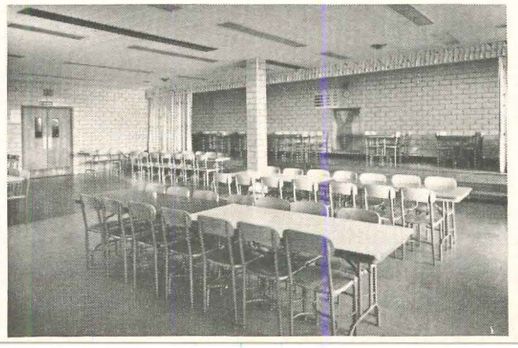
NATCO QUALITY CLAY PRODUCTS SINCE 1889

General Offices: 327 Fifth Avenue, Pittsburgh 22, Pa. Other Branch Sales Offices: Boston, Chicago, Detroit, Houston, New York, Philadelphia, Pittsburgh, Syracuse, Birmingham, Alabama; Brazil, Indiana. In Canada: Natco Clay Products Ltd., 55 Eglinton Ave. E., Toronto

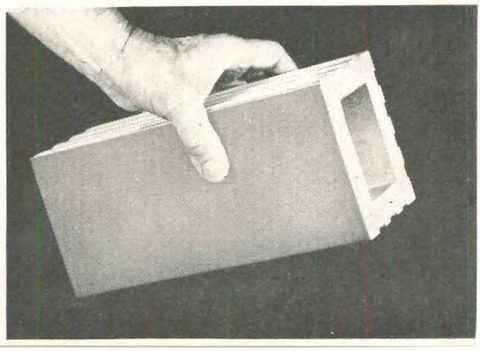
Today's idea becomes tomorrow's showplace . . . when Natco structural clay products are in the picture

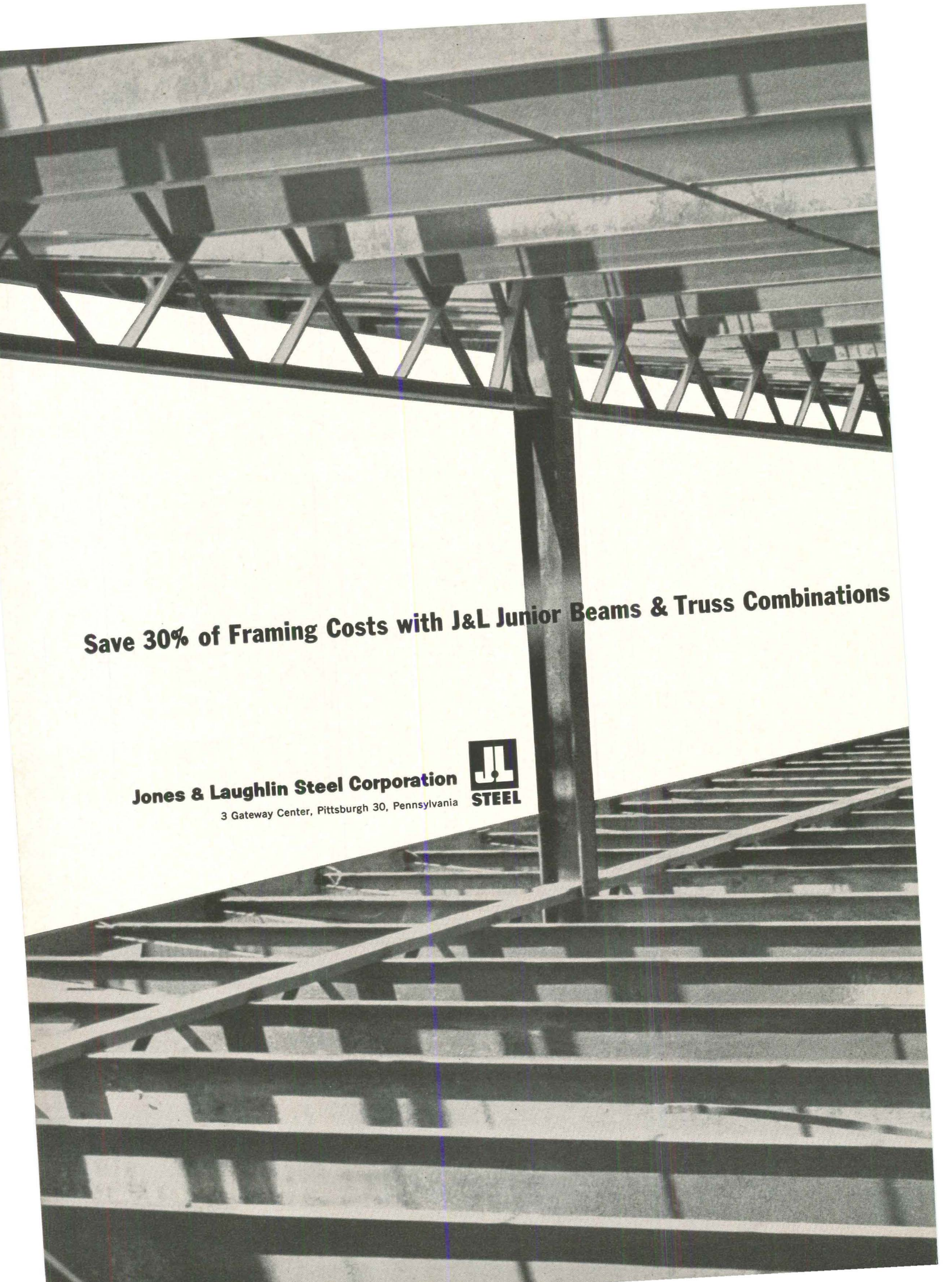
Vitritile was used extensively throughout the modern Abington High School in Philadelphia, Pa. The photos below show the indoor swimming pool (left), and the combination cafeteria-auditorium (right).





Vitritile comes in three nominal face sizes: 8″ x 16″, 5⅓″ x 12″ and 5⅓″ x 8″, in 2″, 4″, 6″ and 8″ thicknesses.

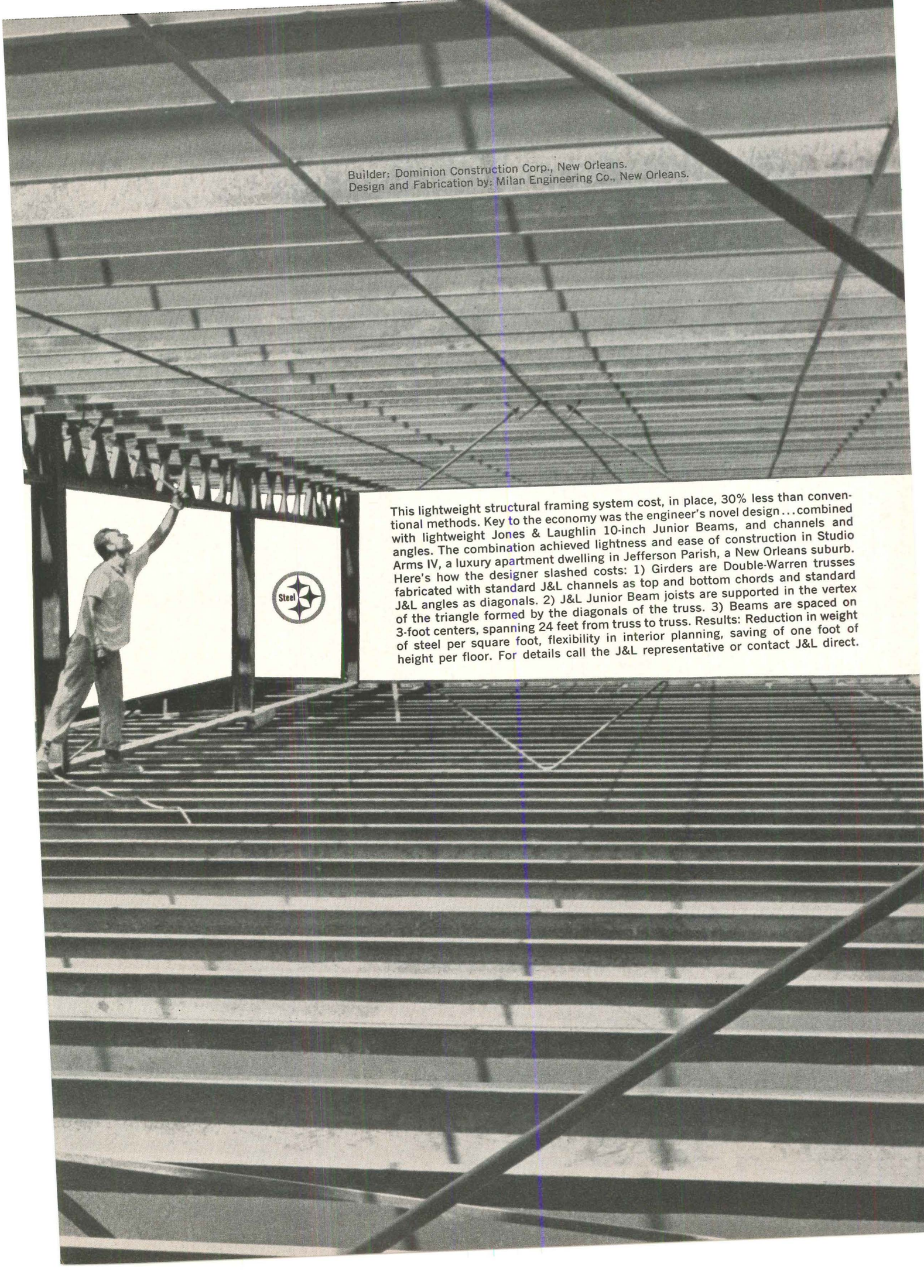




Save 30% of Framing Costs with J&L Junior Beams & Truss Combinations

Jones & Laughlin Steel Corporation
3 Gateway Center, Pittsburgh 30, Pennsylvania

J&L STEEL



Builder: Dominion Construction Corp., New Orleans.
Design and Fabrication by: Milan Engineering Co., New Orleans.

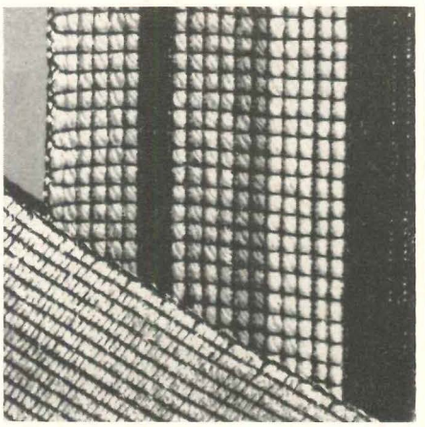
This lightweight structural framing system cost, in place, 30% less than conventional methods. Key to the economy was the engineer's novel design . . . combined with lightweight Jones & Laughlin 10-inch Junior Beams, and channels and angles. The combination achieved lightness and ease of construction in Studio Arms IV, a luxury apartment dwelling in Jefferson Parish, a New Orleans suburb. Here's how the designer slashed costs: 1) Girders are Double-Warren trusses fabricated with standard J&L channels as top and bottom chords and standard J&L angles as diagonals. 2) J&L Junior Beam joists are supported in the vertex of the triangle formed by the diagonals of the truss. 3) Beams are spaced on 3-foot centers, spanning 24 feet from truss to truss. Results: Reduction in weight of steel per square foot, flexibility in interior planning, saving of one foot of height per floor. For details call the J&L representative or contact J&L direct.

Product Reports

continued from page 210

VERTICAL BLINDS

Woven vertical blinds designed by Matias Lazano are available in a variety of fibers including asbestos, vinyl covered glass fiber, *Rovana* plastic and wool. The asbestos-glass group,



shown in picture, have a double face with striped wool on one side and asbestos-glass fiber on the other. When sun is strong, the louvers can be shut so only the sun-resistant asbestos-glass is exposed to the sun. *Verti-Color Blinds, Inc., 64 E. 55 St., New York 22, N.Y.*

MODULATING CONTROL FOR GAS FURNACES

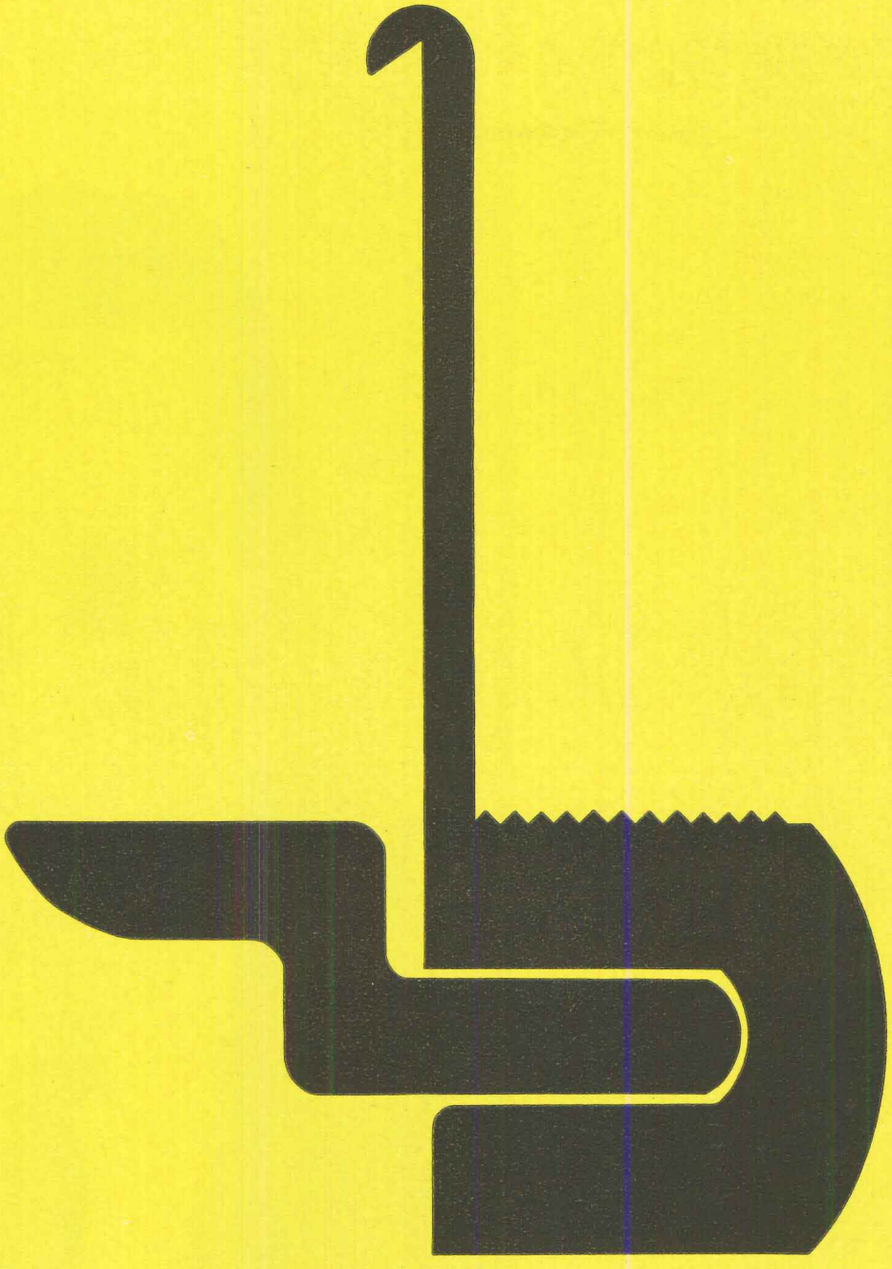
Selectra electronic modulation for gas furnaces automatically adjusts the flame to compensate for changing heat losses, thus eliminating frequent cycling of burners. The wall control can sense 1/10 degree change. *Maxitrol Co., Southfield, Mich.*

SCULPTURED LOOK FOR WALL TILES

Sculptured wall tiles of one-ft square may be used on new or existing walls or as free-standing dividers. *Durastone* squares are available in several

stock patterns in sandstone, bronze, patina or antique finishes. *Austin Productions, 1615-62nd St., Brooklyn, N.Y.*

more products on page 236



This clamp cuts fixed window installation time by seventy-five percent. An Adlake first;* it holds glass, weatherseal and glazing strip under proper compression. Does so automatically and never needs adjusting. Anchors the window frame to the building without a single screw. Put this clamp to work for you—and save substantially on your next stationary fenestration. Write for Bulletin 406.

THE ADAMS & WESTLAKE CO.

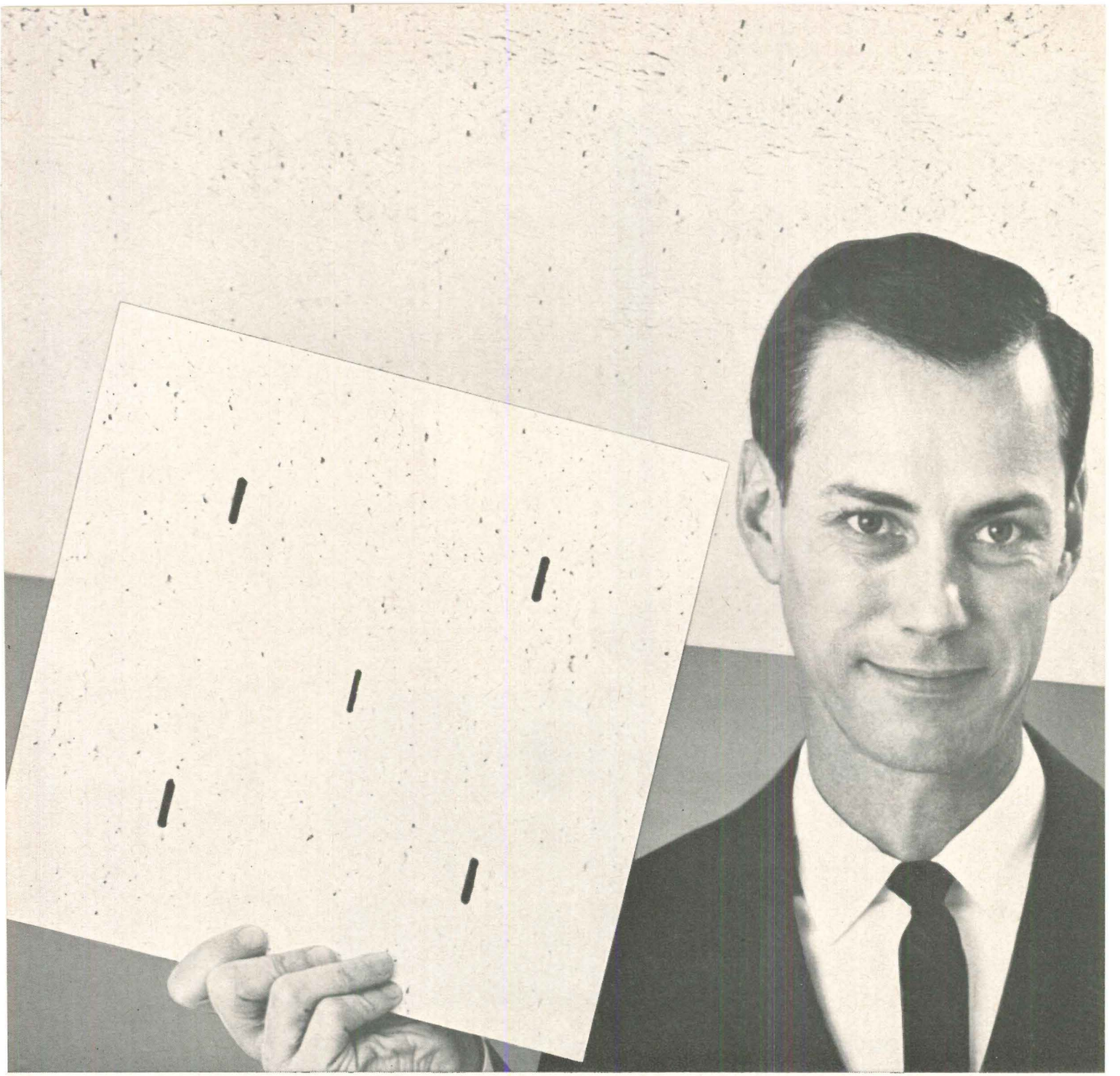
ELKHART, INDIANA

* *patent applied for*

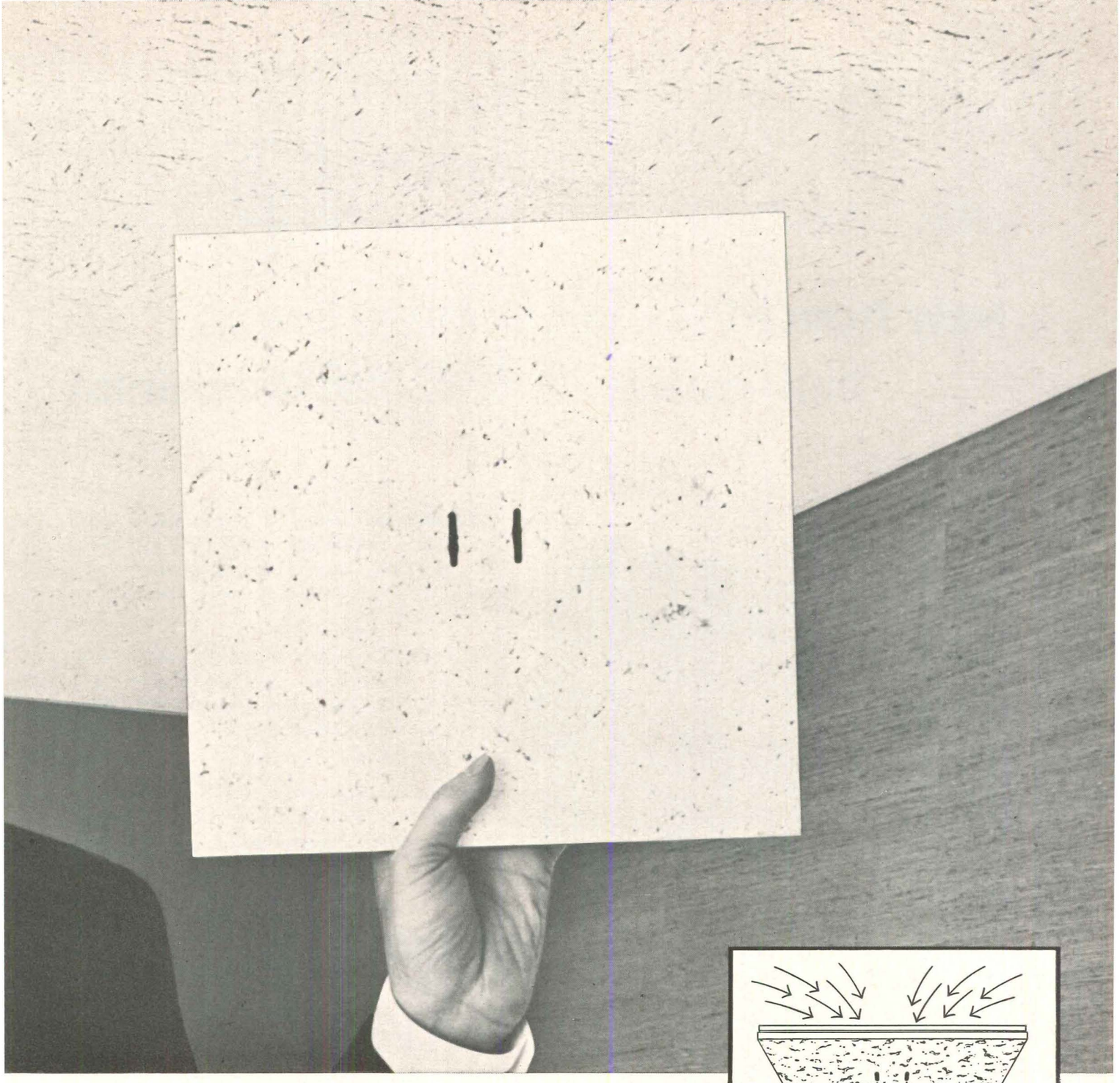
A+dlake®

WINDOWS AND CURTAIN WALLS

PRODUCTS OF INGENUITY



Two ways to deliver air



Heated or cooled air from the plenum passes through suspended ACOUSTONE Tile, via openings designed to assure proper penetration of air and optimum comfort level.

WHY TWO KINDS of tile for AIRSON System ceilings? Answer: to make the AIRSON Air Distribution System even *more* versatile.

The new two-slotted ACOUSTONE* Acoustical Tile, called A-2, offers the same advantages as the familiar five-slotted tile, A-5. Adjustable openings permit you to balance air distribution, jet the air down to breathing level and eliminate air stagnation.

AIRSON† Air Distribution System

The difference is that the new A-2 tile is specially designed for high ceiling applications. Having only two slots, it delivers air at greater velocity —from a higher level—down to occupant breathing level.

Either tile brings you many other AIRSON advantages: cleanliness; the quiet and beauty of ACOUSTONE Acoustical Tile; proof of performance—millions of square feet in use; hundreds of users planning new applications.

This new A-2 tile is important to your planning of high ceiling and low cfm installations. To find out about it, contact your U.S.G. Architect Service Representative, or write Dept. AR-25, 300 W. Adams St., Chicago 6, Ill.

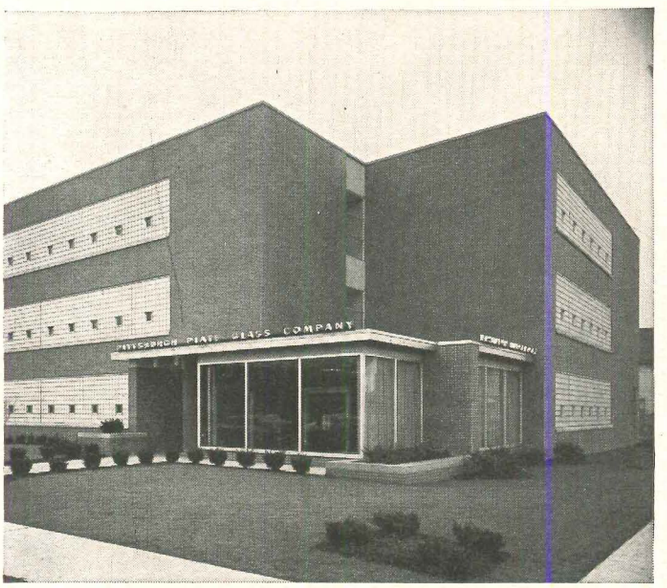
UNITED STATES GYPSUM

the greatest name in building

*T. M. Reg. U. S. Pat. Off. †T. M. Reg. U. S. Pat. Off. by Airson Co., Inc.

Where leadership in research leads to a better life for you . . .

New from PPG . . . a complete line of high-quality SPEEDHIDE® paints!



• **Pittsburgh's huge Paint Research Center** at Springdale, Pa., contains the most modern laboratories devoted exclusively to the creation and experimental production of new finishes. This is where the new SPEEDHIDE line was born.

• **Pittsburgh research technicians** were given this assignment: Develop a complete line of quality paints for professional application that will stand up with the best on the market.

• **The result was SPEEDHIDE,** a remarkable new line of interior and exterior finishes that combine easy application, high hiding, fast drying, and excellent color retention with extremely good durability.

• **You can specify** Pittsburgh SPEEDHIDE for all your buildings with complete confidence in the ability of these finishes to do the kind of job you want done.

NOTE: *Specifications* for the new SPEEDHIDE line can be found in Section 15 Pi, Sweet's Architectural File.

FREE—illustrated brochure explaining the modern Pittsburgh COLOR DYNAMICS® Painting System

• **This most modern** of all painting systems is scientifically based on known psychological reactions of people to the energy in color. Even though you are a color expert in your own right, we think you will find this brochure extremely interesting. For your free copy, just mail the coupon, or contact your local PPG representative.

Mail coupon now for free booklet containing complete details, including color charts, of these remarkable new SPEEDHIDE Paints.

PITTSBURGH® PAINTS

® PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

Pittsburgh Plate Glass Company, Paint Div., Dept. AR-72, Pittsburgh 22, Pa.

☐ Please send booklet with full information on new Pittsburgh SPEEDHIDE line.

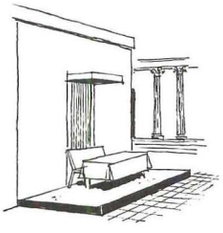
☐ Please send me your free brochure on COLOR DYNAMICS.

☐ Please have your Architectural Representative contact me.

NAME_____
(Please Print)

ADDRESS_____

CITY_____ ZONE_____ STATE_____



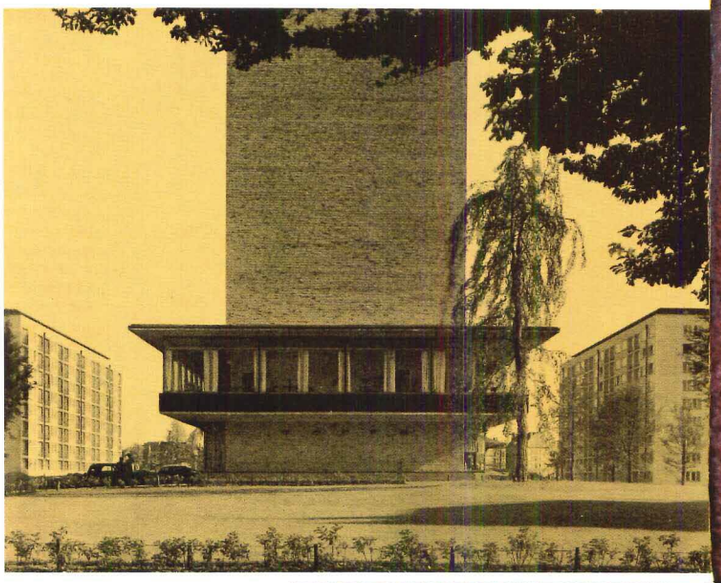
Dáis

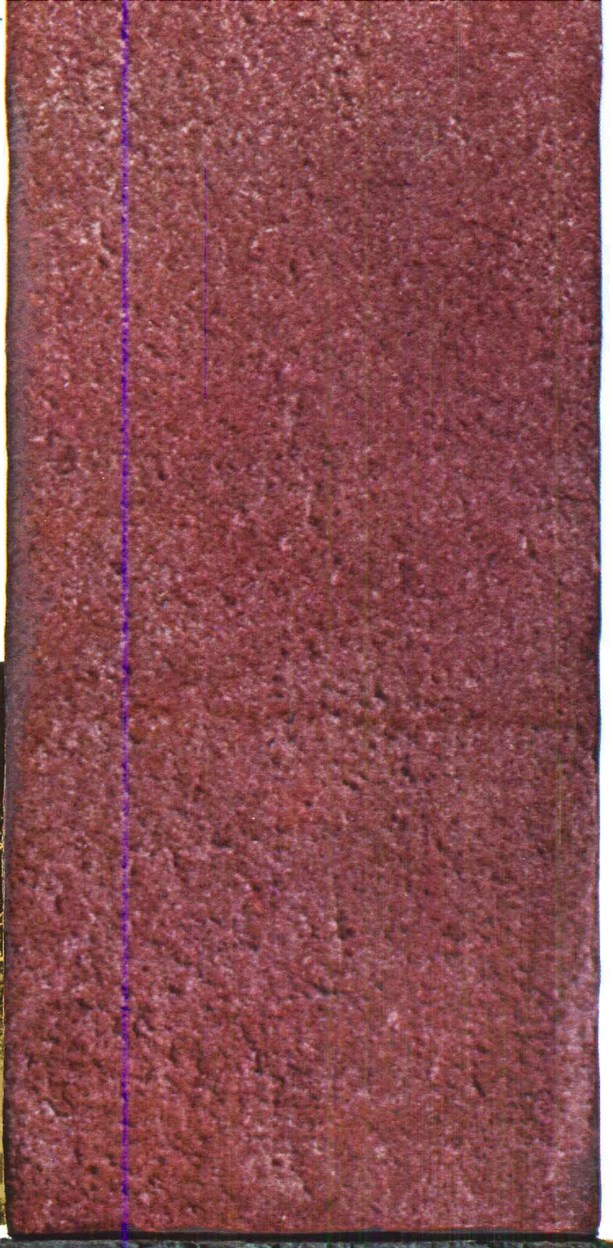
The dignity and symmetry of Grecian architecture are subtly reflected in the Dáis desk by Leopold. The distinctive walnut split-level top provides an ample area of laminated plastic for the executive, plus a 15¼″ wide raised walnut surface along the front of the desk for conference use. To create a truly distinctive office, specify the Dáis desk and companion pieces from The Template Group—they impose no restraints on your imagination. Brochure? Write The Leopold Company, Burlington, Iowa.

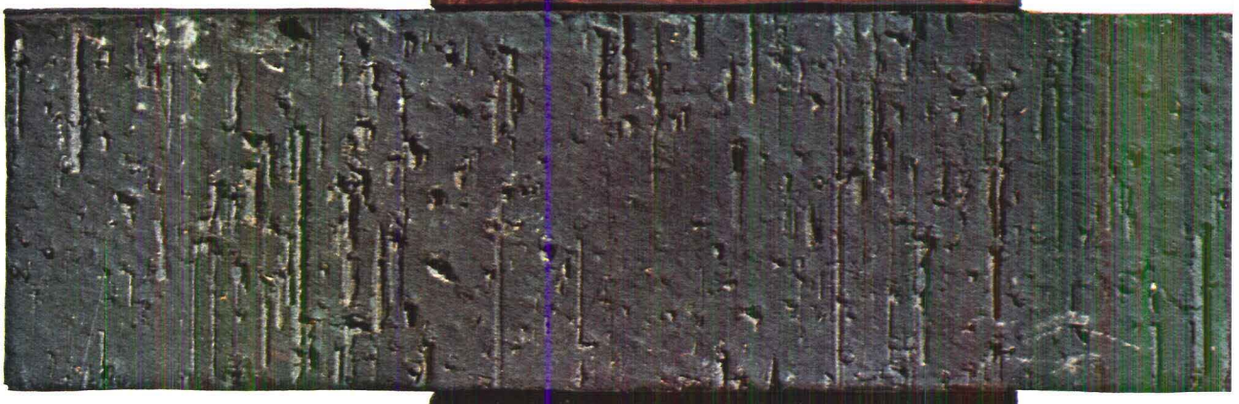
THE LEOPOLD COMPANY

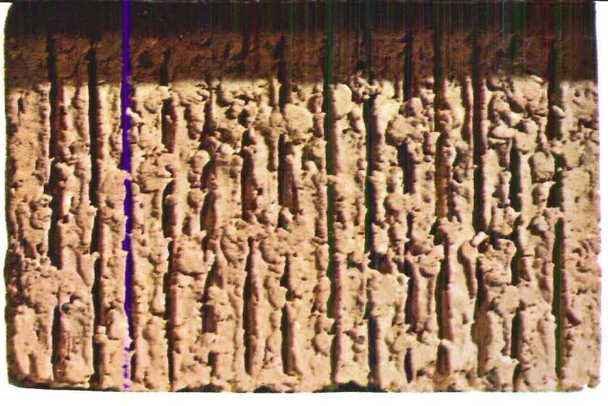
A Deaton Design

Carpet by C. H. Masland and Sons; fabric by J. H. Thorp and Co., Inc.; accessories, Flairtime by Silvestri





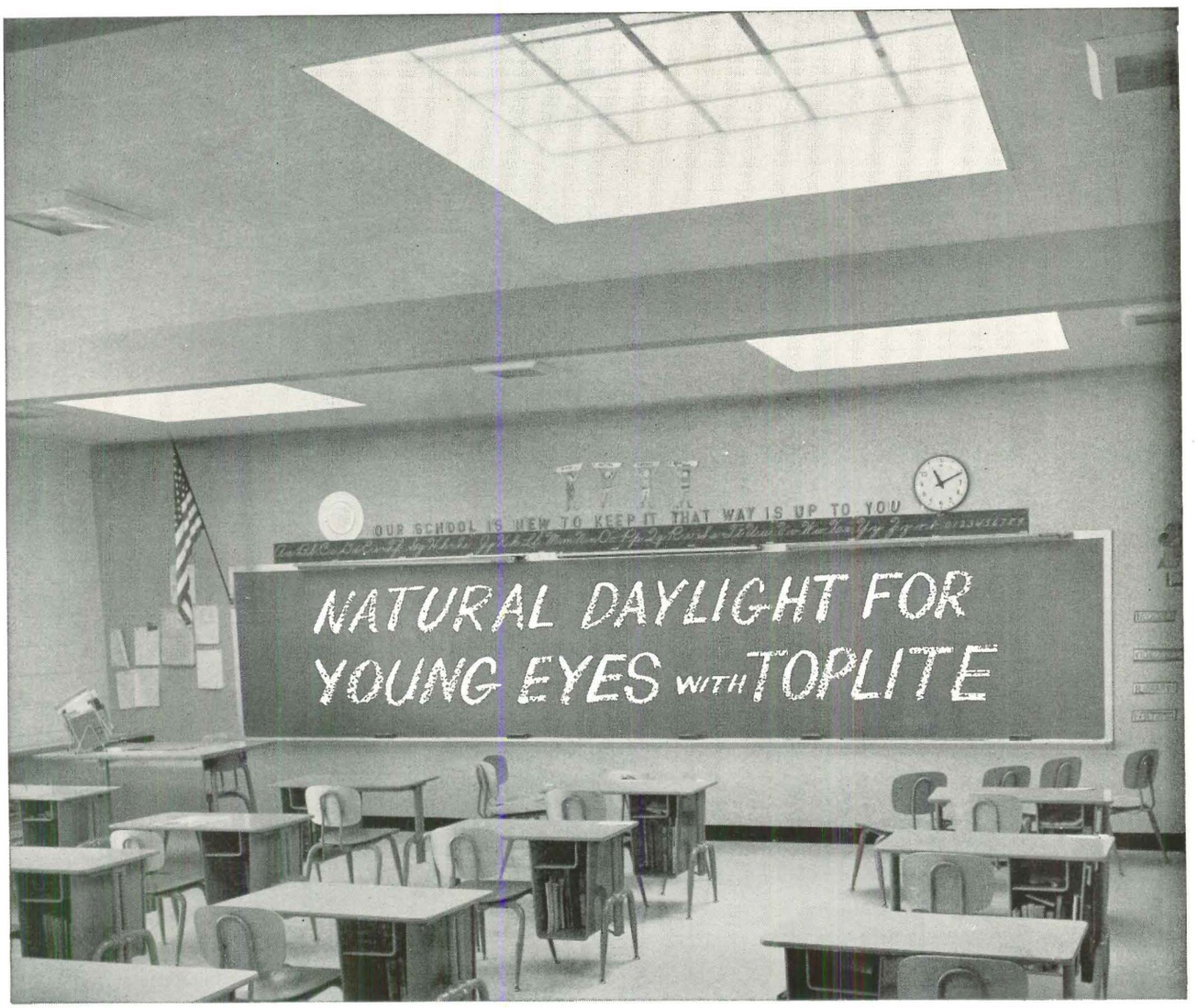




A Sense of Nature

In their apartment house in Hamburg, the architects of Architekten-Arbeitsgemeinschaft create delight with an unusual form, use masonry to give to city dwellers a sense of nature in their urban life. For delightful form, enduring structure, harmony with man and nature: *brick.*

Structural Clay Products Institute
1520 18th St., N.W. Washington, D.C.

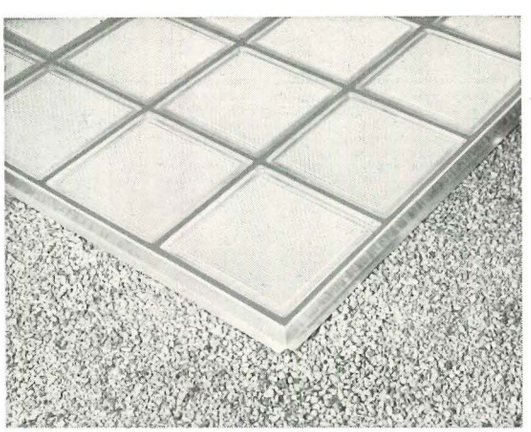


Port Washington Elementary School
Port Washington, Wisconsin
Architects: Schutte-Phillips & Mochon

Johnny can and does read, pays better attention, gets more from his studies when classroom illumination is soft, glare-free and uniform.

To provide such illumination in the new Port Washington Elementary School, architects Schutte-Phillips & Mochon relied almost entirely on Toplite Roof Panels for natural lighting.

Toplite Panels utilize hollow, prismatic glass units which transmit a high percentage of the light from the north sky and the low winter sun, but reject the intense light and heat from the high summer sun. (They transmit about one-third as much heat in summer as conventional skylights.) In this way they provide controlled daylight particularly ideal for classrooms, corridors, gymnasiums and all other teaching and non-teaching stations.



Low silhouette Toplite Roof Panels are available in a variety of sizes for easy installation on most roofs. Panels are furnished with light controlling prisms at 45° or 90° to the perimeter, for complete flexibility in any building orientation.

PRC®

PRODUCTS RESEARCH COMPANY

CORPORATE OFFICES AND WESTERN
MANUFACTURING DIVISION
2919 Empire Ave., Burbank, Calif. • VIctoria 9-3992
EASTERN SALES AND MANUFACTURING DIVISION
410 Jersey Ave., Gloucester City, N.J. • GLenview 6-5700

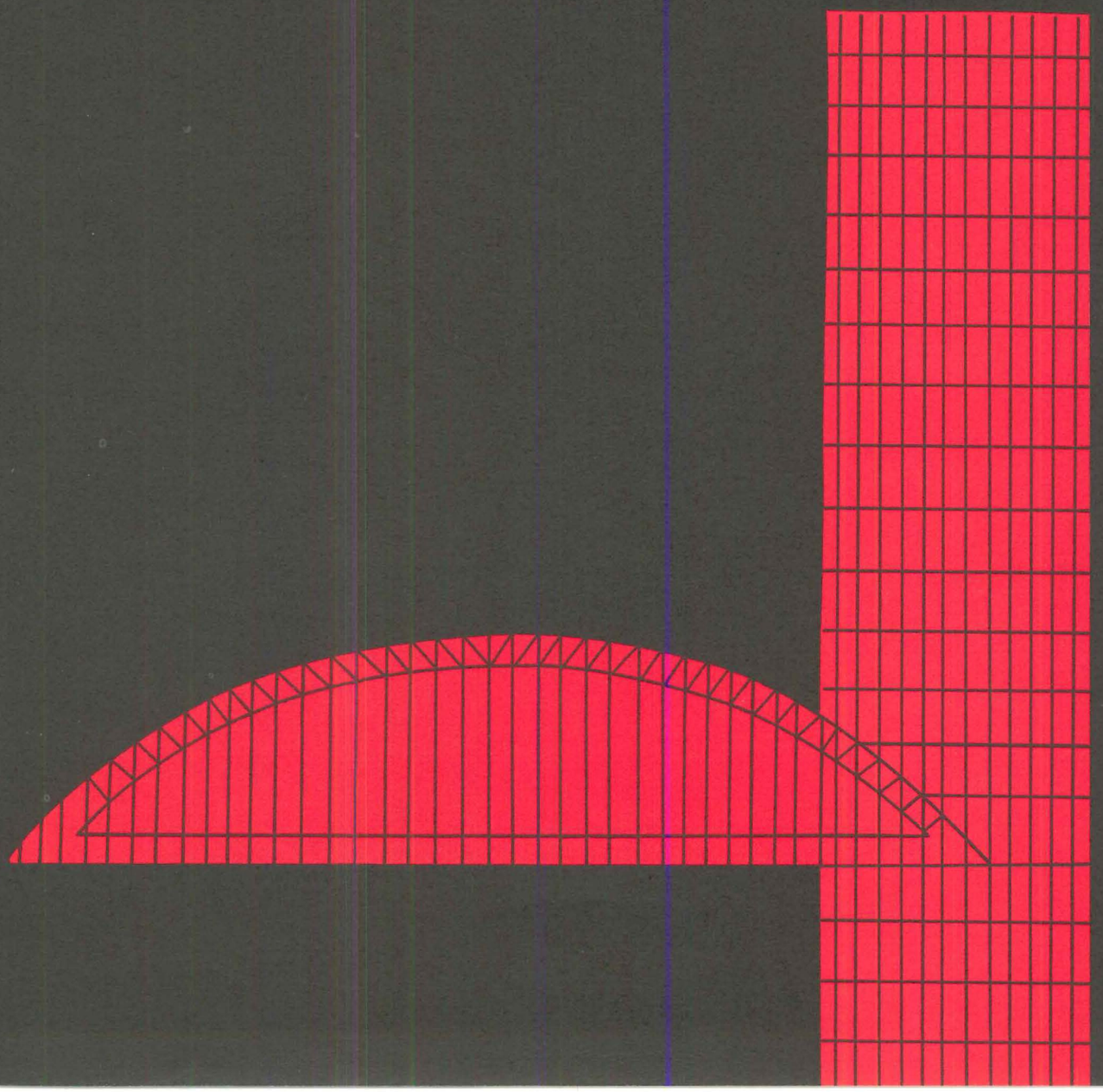
Take a good look at what you can do with the complete family of USS Design Steels

Over the past 50 years, the steel industry has developed at least 10,000 new steels! Many of these steels have been proved thoroughly on the job and wait only for the design magic of the right engineer, the right architect or the right designer to put them to use in stronger, safer and more economical structures.

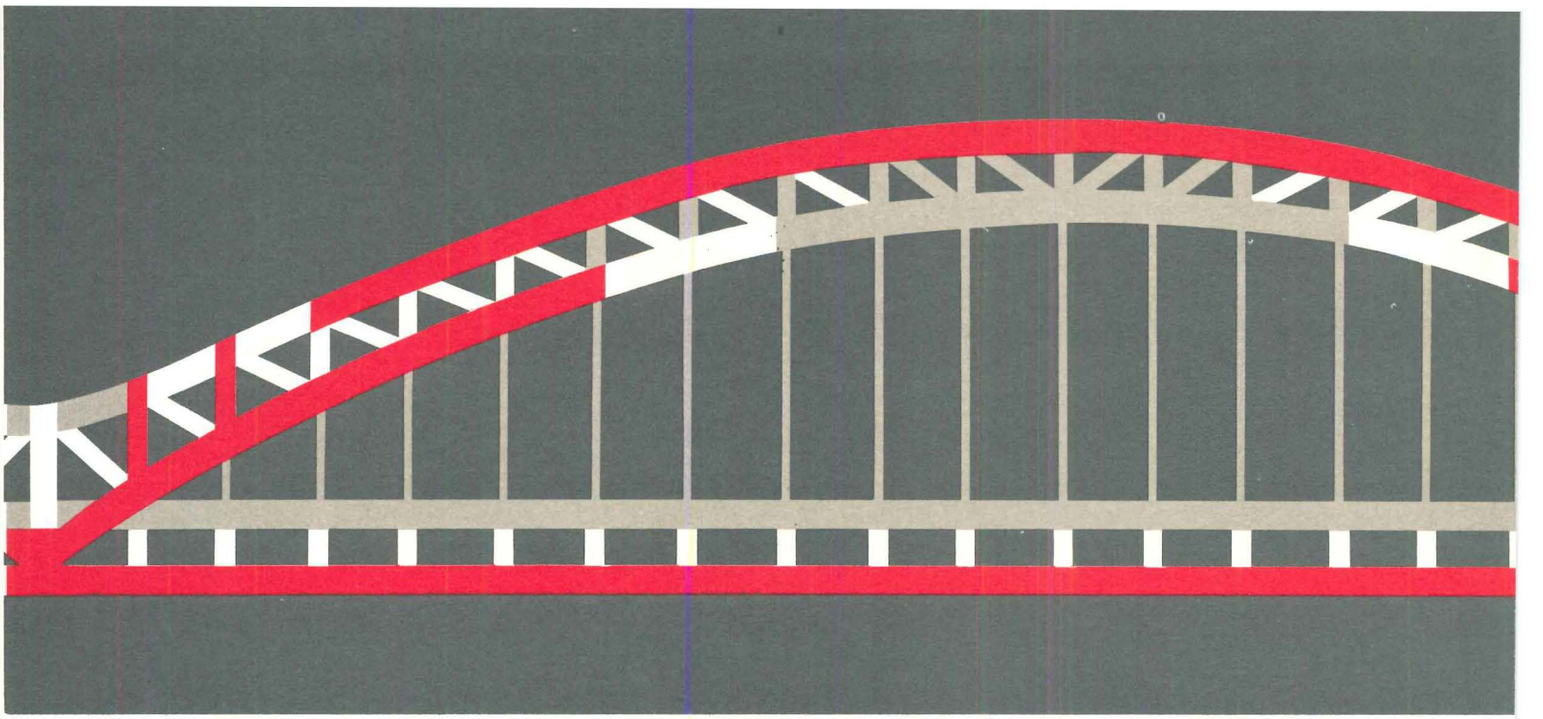
Designers of buildings and bridges now have a whole "family" of USS Structural Carbon Steels, High Strength Steels and Constructional Alloy Steels available in the necessary shapes with minimum yield points ranging from 32,000 psi to 100,000 psi.

Several bridges and buildings have already been built combining these various steels into one structure to obtain maximum strength, light weight and economy—but all kinds of interesting developments lie ahead. It should be a challenge to designers to get the most out of every steel!

USS United States Steel

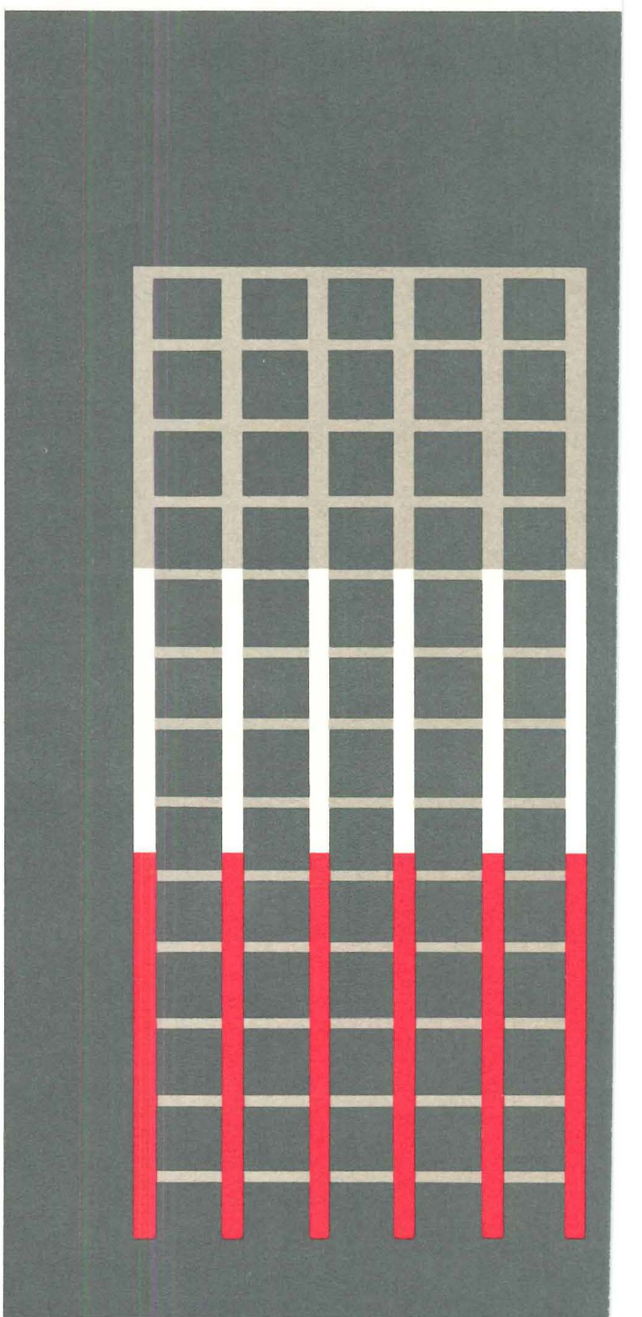


See the next two pages

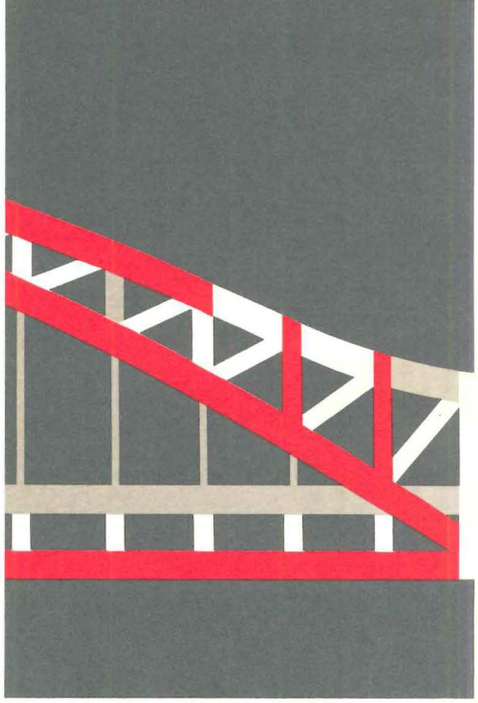


New concept of design for buildings and bridges—get the most out of the family of steels by using them wherever they will improve design, reduce weight or effect over-all savings in construction.

USS Design Steels that do the most to reduce construction costs



This mark tells you a product is made of modern, dependable Steel.



Red—USS "T-1" Constructional Alloy Steel (100,000 psi minimum yield point)

White—USS MAN-TEN High Strength Steel (ASTM A440—50,000 psi minimum yield point)

Gray—USS Structural Carbon Steel (ASTM A36—36,000 psi minimum yield point or A7—33,000 psi minimum yield point)

Pound for pound, these stronger steels shoulder heavier loads . . . or they reduce the size and weight of structural members and foundations. They add valuable floor space to buildings, reduce freight costs and result in faster erection with earlier occupancy . . . all money-saving advantages.

New design concepts are emerging that challenge the designer's imagination and ingenuity. The combining of many steels to get the most out of them has long been practiced by automotive engineers and some other designers. It has given us the best automobiles, the highest television towers in the world, the largest earth-moving equipment and giant radio telescopes.

ASTM A7 Structural Carbon Steel is a mighty versatile and potent metal. No other material so strong (minimum yield point 33,000 psi) and selling at a material cost of less than 10 cents a pound, can be drawn, welded, forged, riveted, punched, and painted so readily and safely. A more weldable carbon steel (A373) has a minimum yield point of 32,000 psi.

ASTM A36 Structural Carbon Steel. The higher yield point of 36,000 psi and the low price indicate that this important new steel may become the predominant structural grade, and that it may displace A373 in welded construction. A36 steel gives the designer the opportunity to provide lighter-weight structures at a low cost. It has been accepted for both building and bridge construction at a basic allowable design stress 2,000 psi higher than A7 steel (20,000 allowable design stress for bridges, 22,000 for buildings). It can be used for riveted, bolted and welded fabrication.

USS High Strength Steels

All have minimum yield points of 50,000 psi. Each has specific area applications where it will do the very best job.

USS MAN-TEN Steel (A440) is a high-strength carbon steel intended for riveted and bolted construction. It is the most economical of the high-strength steels; has good workability, high resistance to abrasion, and atmospheric corrosion resistance double that of plain carbon steel. Since it provides a yield point 50% higher than A7 steel, engineers can design with higher unit working stresses and achieve *real* reductions in steel size, weight and costs.

USS TRI-TEN Steel is a high-strength low-alloy steel intended primarily for use in welded construction. This steel meets all requirements of ASTM A441. It provides greater toughness, even at low temperatures, and has twice the atmospheric corrosion resistance of carbon steel. TRI-TEN Steel has been widely used for bridges, buildings, machinery and railroad equipment to reduce weight and costs or to provide increased strength and load capacity without increased weight.

USS COR-TEN Steel is recommended for all applications in which relatively high resistance to atmospheric corrosion is considered necessary. It permits the use of thinner sections to take advantage of the increased strength of the material, or the use of equal or heavier thickness for extended life *with or without protective coating*. Paint lasts up to twice as long on COR-TEN Steel as it does on carbon steel.

USS "T-1" Constructional Alloy Steel. This is the "superman" of structural steels with a minimum yield strength of 100,000 psi. It is furnished quenched and tempered and is readily weldable. It has four to six times the atmospheric corrosion resistance of structural carbon steel and possesses exceptional toughness over a wide range of temperatures down to −50°F. "T-1" Steel combined with USS TRI-TEN High-Strength Low-Alloy Steel and carbon steel has already been used in a number of bridges. In Carquinez Strait Bridge in California, it saved $800,000 with big savings in weight. This led to its use in Martinez Bridge nearby, Louisville-New Albany, Whisky Creek and others under design. "T-1" Steel is available in standard structural shapes as well as bars, semi-finished and sheets.

USS "T-1" type A Constructional Alloy Steel. This is a lower-priced steel with the same high yield strength of 100,000 psi in thicknesses up to 1 inch. It can be used in highly stressed members to obtain maximum strength, with reduced size, weight and costs. It is available in the same shapes as "T-1" Steel.

For more information on any of these USS Steels, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

United States Steel Corporation • Columbia-Geneva Steel Division • Tennessee Coal & Iron Division • United States Steel Supply Division • United States Steel Export Company

United States Steel

USS

Cut $20 from the ultimate cost of a school building with every square foot of

TERRAZZO

Savings in floor maintenance will more than pay entire school construction cost.

A recent study[1] shows that the ultimate cost of Terrazzo is $20 less per square foot than asphalt tile, or *more than enough to pay for the entire school construction cost.*

Lower maintenance costs of Terrazzo are responsible. The initial cost of floor finishes represents from 1 to 4% of ultimate cost.

A survey[2] of a number of schools reveals that the annual maintenance cost of Terrazzo is 21c per sq. ft. less than vinyl tile, 53c less than asphalt tile.

Maintenance cost is one of six factors considered in the complete study. The others: (1) value of money (2) price increases (3) initial cost (4) replacement (5) speed of construction. These costs and their incidence over an anticipated life of 50 years were determined and converted to present value[3] for ready comparison. The study is summarized in the chart shown at right.

PRESENT VALUE OF ULTIMATE COSTS
50 Year Period
(per square foot of floor area)

	TERRAZZO	ASPHALT TILE	VINYL TILE
Initial cost	$ 1.45	$ .50	$ .75
Maintenance cost	35.30	56.48	43.77
Replacement costs	.05	.08	.14
Less speed erection credit	—0.00	—.20	—.20
Total	$36.80	$56.86	$44.46
Relative ultimate cost	100	154	121

For a free copy of the complete study of ultimate cost write: The National Terrazzo and Mosaic Association, 2000 K Street, N. W., Washington 5, D. C.

1. The Ultimate Cost Of Three Floor Finishes In Tax Exempt School Buildings, Clayford T. Grimm, P. E., Special Consultant, 1959.
2. Survey by Walter Gerson & Associates, Inc., marketing research and management consultant firm, December, 1959.
3. Present value: means of expressing future payments in terms of today's dollar.

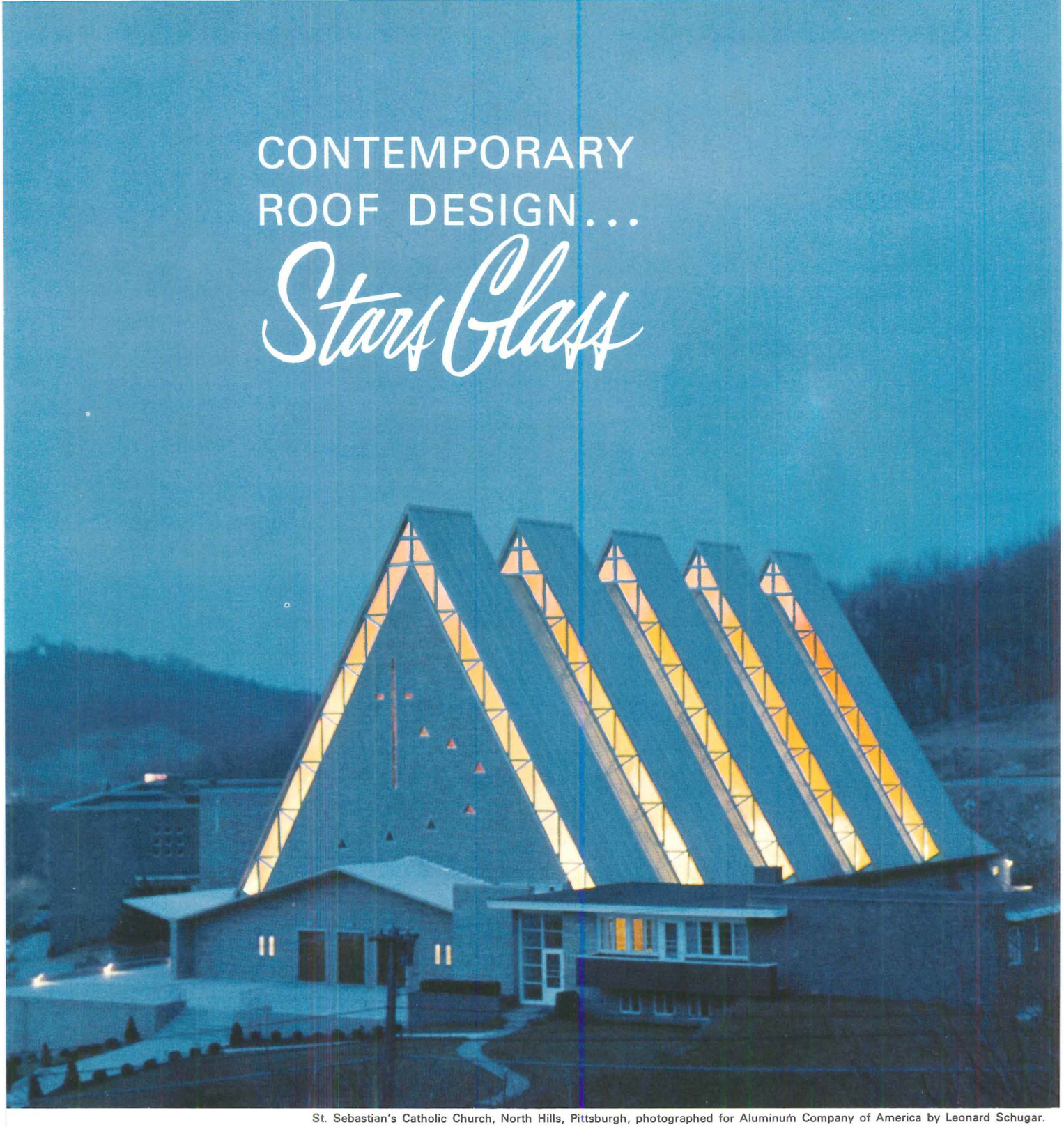
Member Producers' Council

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

503 N.A.D.A. Building, 2000 K St., N.W., Washington, D.C.

CONTEMPORARY ROOF DESIGN...

Stars Glass



St. Sebastian's Catholic Church, North Hills, Pittsburgh, photographed for Aluminum Company of America by Leonard Schugar.

Mississippi Wire Glass Combines Beauty and Utility

Outstanding construction feature of this newly built church results from the perfect wedding of metal and glass. Contributing to its modern appearance, translucent Hammered Misco blends harmoniously with the peaked aluminum roof . . . offers maximum beauty and the proven protection of wire glass while it contributes light, drama, distinction. Achieve the safety and unparalleled beauty of modern design with Misco*. Available in types for clear vision or diffusion wherever quality glass is sold.

* Mississippi's designation for its diamond-shaped welded wire netting.

MISSISSIPPI GLASS COMPANY

88 Angelica Street, St. Louis 7, Missouri

NEW YORK • CHICAGO • FULLERTON, CALIFORNIA

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

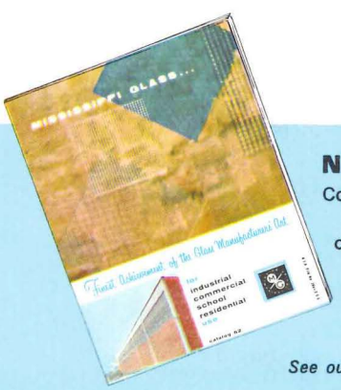
¼" Hammered Misco glass glazed in roof of St. Sebastian's Catholic Church. *Architects:* Gerard & McDonald—M. W. Stuhldreher Assoc., Pittsburgh. *Glazing Contractor:* Golomb Paint and Glass Company, Pittsburgh. Photos of St. Sebastian's Catholic Church courtesy of Aluminum Company of America.

MISSISSIPPI GLASS . . . New Look for a New Era

Typifying clean, functional, modern design, distinctive Mississippi figured patterns blend subtly with any interior or exterior. The versatility of Mississippi glass provides architects, engineers and contractors with a practical and economical solution to virtually every daylighting problem including diffusion, decoration, protection and heat absorption. And remember . . .

New horizons for glass . . . promise of the future . . . will come from the facilities of Mississippi Glass Company.

Coolite, heat absorbing glass controls light and temperatures in Parkway Consolidated School, St. Louis, Missouri.
Architect: Schwarz & Van Hoefen, St. Louis. *General Contractor:* Swan Construction Company.



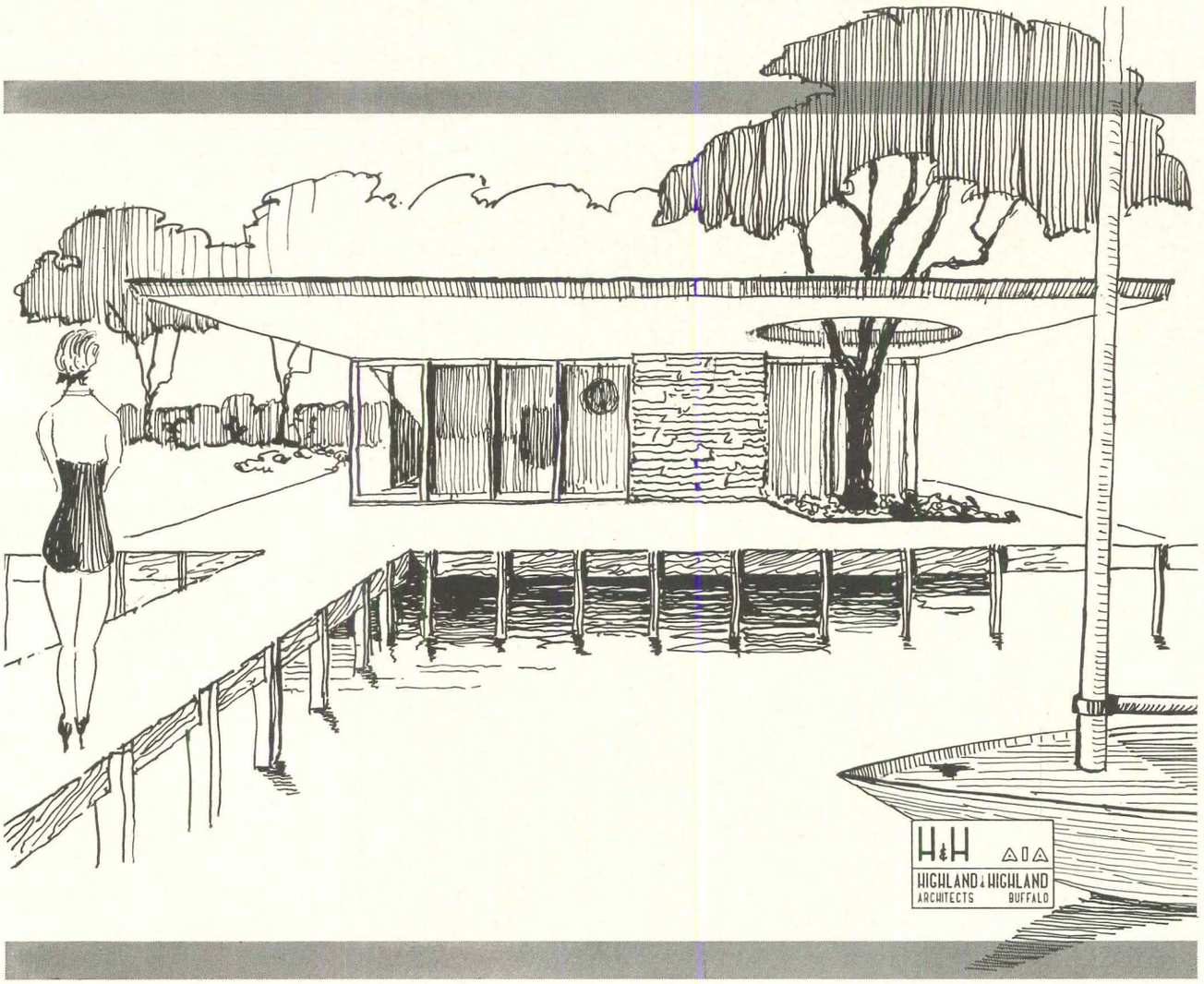
NEW CATALOG
Contains pattern descriptions, light distribution charts and transmission data. Send for your free copy today.

See our catalog in Sweet's. S

MISSISSIPPI GLASS COMPANY
88 Angelica Street • St. Louis 7, Missouri
Distributors in Principal Cities of the United States and Canada

KEEP AMERICAN WORKERS BUSY BUY... UNITED STATES GOODS

H-#3-6



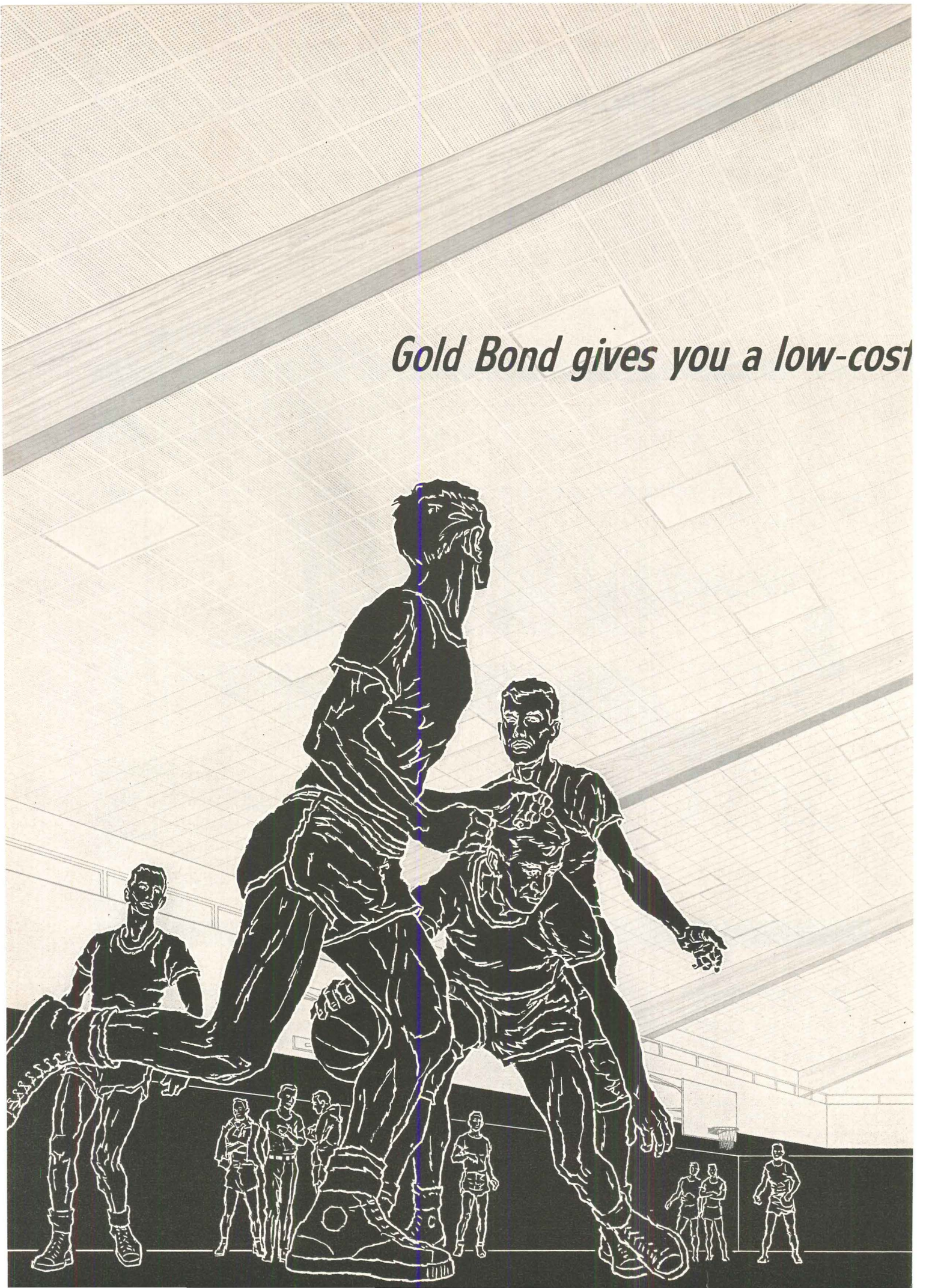
THE DOCK HOUSE This lakeside hideaway takes full advantage of the beauty of natural wood to blend with its surroundings . . . even to accommodating the tree which penetrates the overhang. In designing similar structures where the requirements call for a quiet, natural blended-in appearance, you can do so with full confidence that your structural and exposed finished wood will safely withstand the elements, season after season. The only safeguard necessary is a specification for Osmose Pressure Treated Wood. The deep, full-cell Osmose process affords a positive barrier against termites and gives maximum protection against wetting-drying cycles which lead to decay. You'll also find that Osmose is a low-cost application . . . more than offset by the resulting low upkeep. More and more, architects think of Osmose when they think of wood preservation and specify it frequently to gain greater design flexibility.

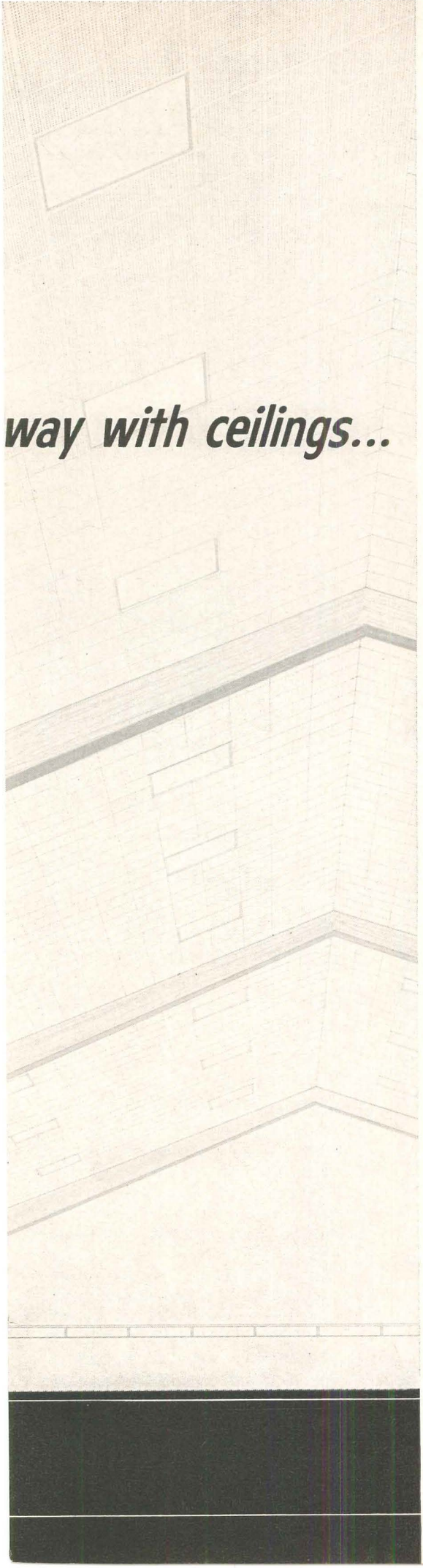
FILL OUT COUPON FOR MORE DATA ON OSMOSE PRESSURE TREATED WOOD AND NAME OF NEAREST OSMOSE TREATING PLANT.

OSMOSE WOOD PRESERVING CO. OF AMERICA, INC.
980 ELLICOTT ST., BUFFALO 9, N. Y.

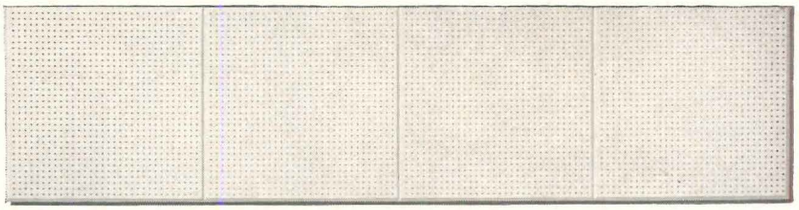
☐ Send more data on OSMOSE Pressure Treated Wood
☐ Name of nearest plant

Name_____
Firm_____
Street_____
City_____ Zone_____ State_____


Gold Bond gives you a low-cost



way with ceilings...



Available in 1, 2, 3 or 4-foot sizes in either Spatterfect or Rippletone finish.

Perforated Acoustimetal can be installed at surprisingly low cost. And it gives you one of the most permanent, durable and maintenance-free acoustical ceilings available. The baked-enamel surface can be scrubbed repeatedly with soap and water. Acoustimetal soaks up as much as 85% of the noise that reaches it. Both the perforated-metal panels and the concealed sound-absorption units are noncombustible. And the units snap in or out of carrying channels for easy behind-the-scene access. Available in steel or aluminum, one foot wide and in lengths from one to four feet (in 12″ increments) — center scored to simulate 12″ x 12″ tile. Requires little or no cutting and fitting to accommodate snap-in flush lights or drop lighting of any kind. Choose from square, diagonal or random perforated designs. Spatterfect, and Rippletone finishes and custom colors are available on special order. For even more ways with ceilings, call your Gold Bond® representative, or write National Gypsum Company, Buffalo 13, N.Y.

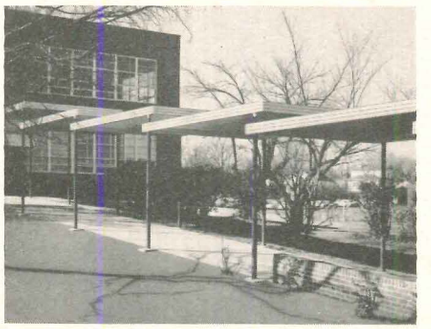
Gold Bond®
ACOUSTICAL PRODUCTS

Product Reports

continued from page 218

ALUMINUM CANOPY

Deep-channel interlocking roof panels of aluminum provide attractive walkway covers which are durable and require little maintenance. The *H/D Portiko* canopy may be free-standing or wall-attached. Six styles are offered. *Bridgeport Brass Co., Bridgeport, Conn.*

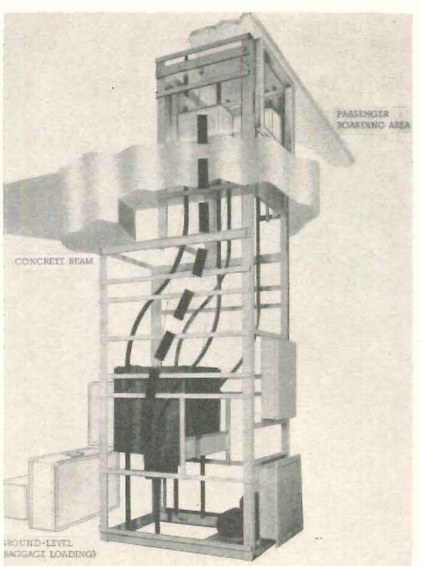


ELECTRIC TRAVERSE ROD

An electric traverse rod has a flexible drive which turns a spirally grooved track shaft running full width of the traverse. Grooves act as a worm gear to move drape carriers in either direction without cords or pulleys. Nylon gears are used in motor drive, and all bearing surfaces are shock-mounted in rubber for quiet operation. The system can be operated remotely. The aluminum track cover is available in white, gold or platinum. *Kenney Mfg. Co., Cranston, R.I.*

CURVED DUMBWAITER

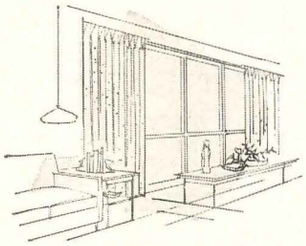
A dumbwaiter to speed baggage handling at the TWA terminal at Idlewild Airport has a built-in curve around a concrete beam. Two sets of



guide rails keep the car platform level while passing curves. *D. A. Matot, Inc., 1533 W. Altgeld, Chicago 14, Ill.*

SURFACE MEMBRANE KEEPS ACOUSTIC PANELS CLEAN

Mylar, a tough polyester membrane, is used with a new line of acoustical ceiling materials designed to withstand heavy, repeated washing. The *Mylar* film is cemented to the ceiling panel only at the four edges, so it is free to vibrate and transmit sound energy into the porous inner core where it can be absorbed. The film eliminates the problem of the passage of dirt laden air through to acoustical material, which can result in dust on the ceiling surface. The material is used with incombustible and *Fire Guard* lay-in panels. *Armstrong Cork Co., Lancaster, Pa.*

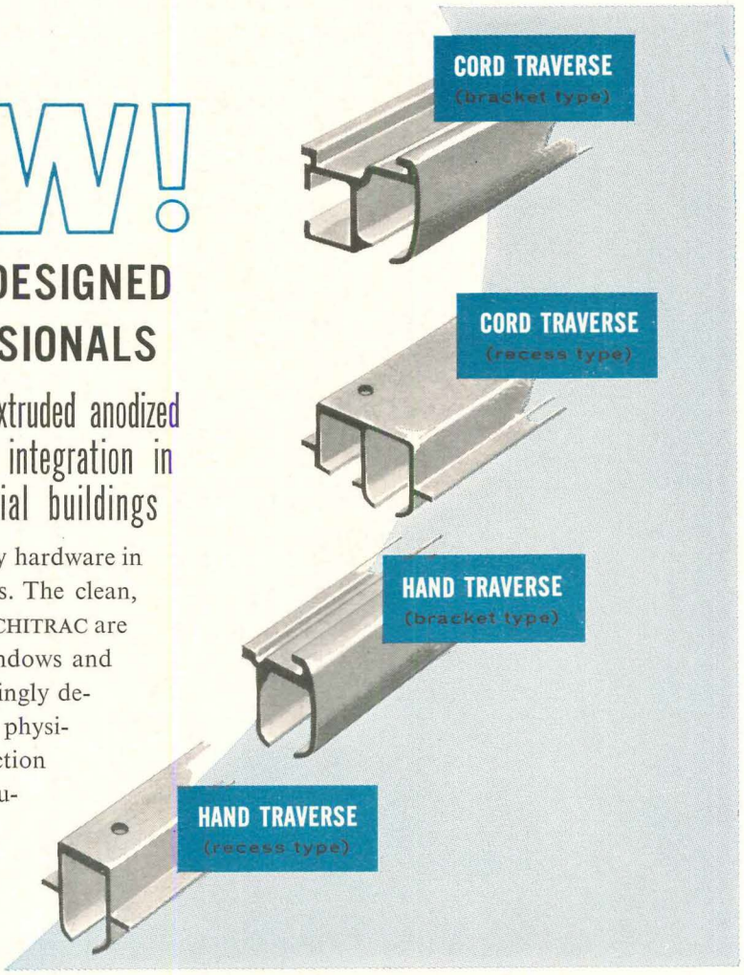


NEW!

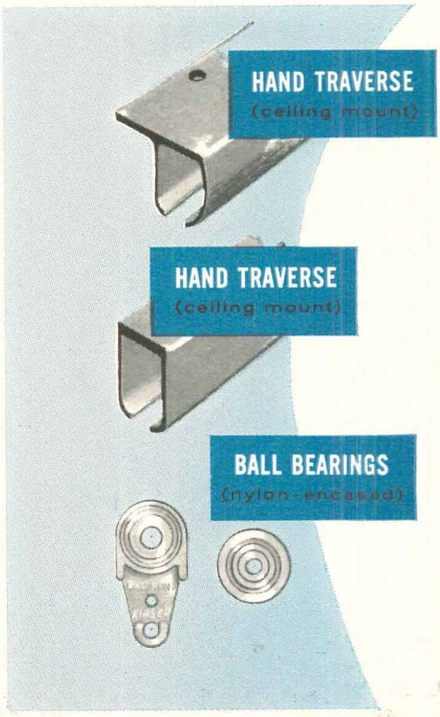
DRAPERY HARDWARE... DESIGNED ESPECIALLY FOR PROFESSIONALS

Kirsch ARCHITRAC provides six designs of extruded anodized aluminum traverse track and parts for integration in commercial, institutional and residential buildings

Now it is easy—and logical—to include drapery hardware in planning 'most any structure having windows. The clean, simple profile and satin-finished beauty of ARCHITRAC are highly compatible with modern aluminum windows and sliding glass doors. The product was painstakingly developed over a three-year period; it combines physical characteristics that ensure long-term satisfaction over a broad range of applications including humid and salt-air conditions. Scores of prestige installations attest its acceptance. Expert assistance in specifying is available.



ARCHITRAC



- Developed for, and in collaboration with, registered architects, to ensure broad-range applicability, professional acceptance.
- Full range of types—for draw-cord or cordless operation—to be surface-mounted or recessed in ceiling.
- Nylon-encased ball bearing pulley and carrier elements ensure years of smooth operation, even in humid locations.
- Made in America—to highest standards—by Kirsch Company, the long-established world leader in the manufacture of high grade drapery hardware.

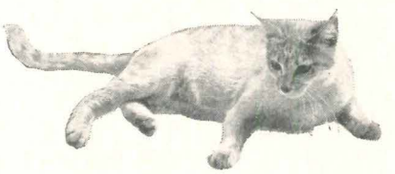
Nationwide consultation service and product availability

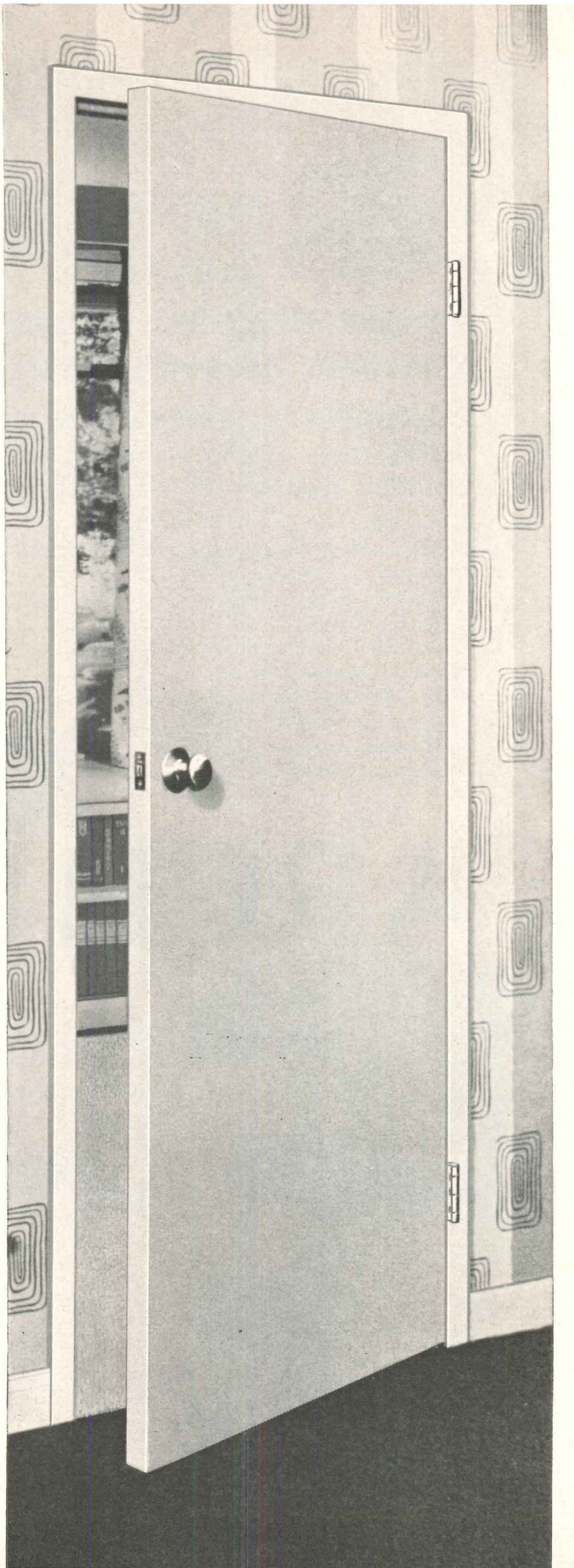
Special illustrated catalog in Sweet's; see it, or write for a copy. Ask for architects' price-estimating information, too.

Kirsch

KIRSCH COMPANY, STURGIS, MICHIGAN

shhh...it's quiet





shhh...it's quiet

styled for
apartments
offices
clinics
motels
housing projects
commercial buildings

new steel door

BY CECO

flush and strong...and seamless on both faces

All doors open and close... but this new 1⅜" Ceco steel door opens and closes in a different way!

It does it q-u-i-e-t-l-y. The Ceco door eliminates all metallic ring. How? By an exclusive full-honeycomb core that does a superb job of deadening sound.

It does it handsomely. The Ceco door gives the architect and contractor almost unlimited decorating opportunities. The unique design and flush construction permit any kind of finishing texture. This door is seamless on both faces and completely flat.

...and here are other advantages

- Top and bottom edges are closed flush, leaving no voids to catch dirt at the top or to wedge foreign matter at the bottom.
- Hardware never loosens—reinforced attachments hold it fast.
- Every door is bonderized and finished in gray epoxy-base primer, baked on.
- Available in combination door-frame-hardware "packages" for trouble-free installation. Seven styles in single or double types. Standard sizes.

Ceco's new 1⅜" door complements a full line of 1¾" doors, including the new Commercial Flush Door . . . the Custom Medallion Door . . . and Recessed Panel and Flush Panel Doors.

metal doors • steel and aluminum curtainwalls, windows, screens • steelforms • concrete reinforcing steel
steel joists • roofing products • steel buildings • metal lath

Just published

. . . all the facts about all Ceco metal doors and accessories. 28 pages of features and specs. Just send coupon.

CECO Steel Products Corporation
5601 W. 26th St., Chicago 50, Ill. • *Sales offices and plants in principal cities*

Please send me your new Bulletin No. 2040-J, "Metal Doors."

name _____ title _____

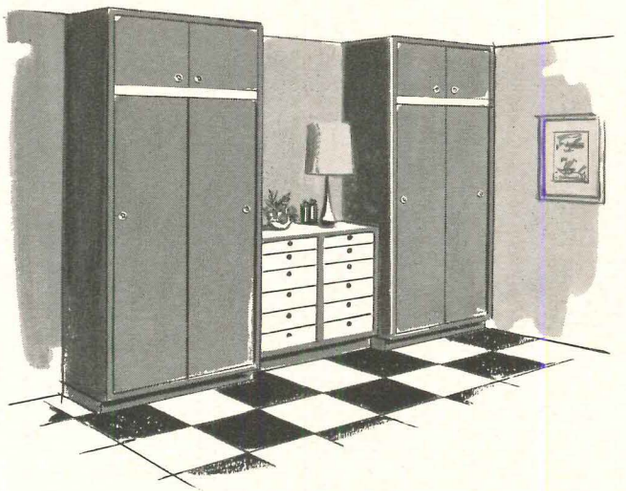
firm _____

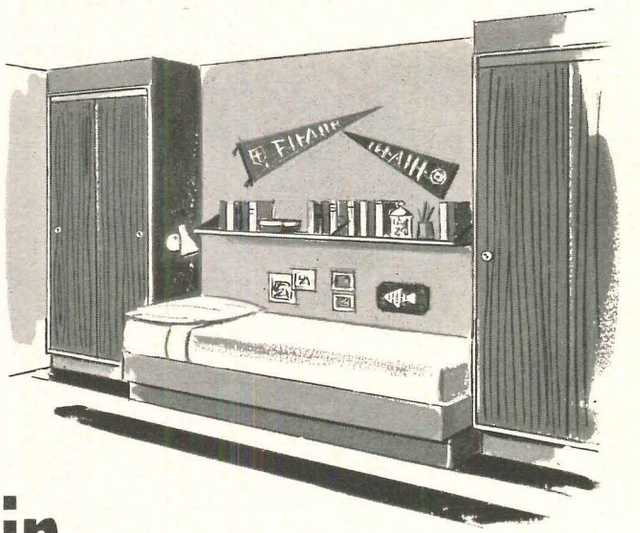
address _____

city _____ zone _____ state _____ AR

CECO STEEL

Steel

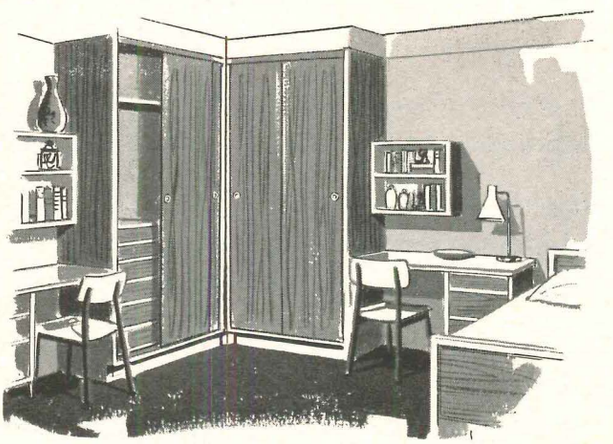




build up...in...

Gain floor-to-ceiling storage space with compact, sturdy Dorm Line wardrobes. Save time and expense of constructing closets or handmade wardrobes.

Dorm Line units including beds can be built in—thus qualifying for long-term government financing. "Student-proof" construction means long-term service.



...under...around...

Dorm Line helps put every inch of space to work—makes even small rooms comfortable. Bookcases, chests, drawer units utilize space from the floor up.

Follow contours of odd-sized rooms, jutting corners or other construction with versatile Dorm Line. You achieve maximum sitting-studying-sleeping comfort.

with DORM LINE by SIMMONS

Gain now and for years to come—plan your rooms with Dorm Line by Simmons. Complete catalog available, or see Sweet's File.

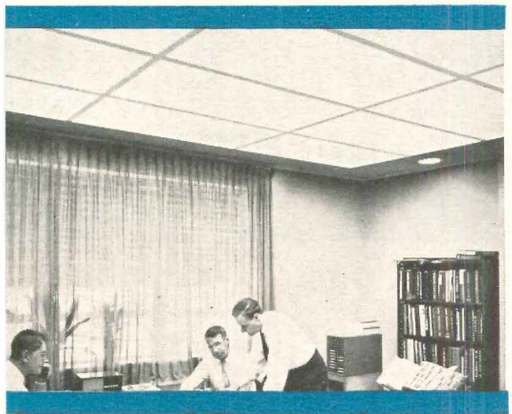
SIMMONS COMPANY
CONTRACT DIVISION

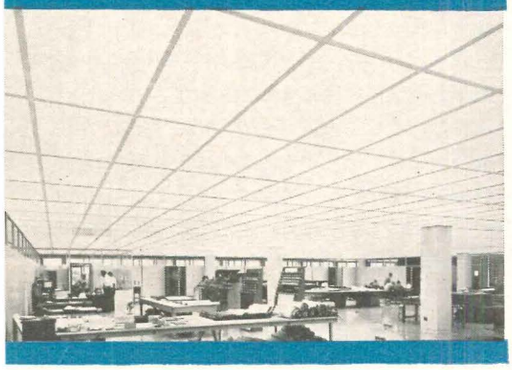
Merchandise Mart • Chicago 54, Illinois

DISPLAY ROOMS: Chicago • New York • Atlanta
Columbus • Dallas • San Francisco • Los Angeles

Over 200,000 square foot installation *with* American's *New* 2½x5 foot louver...

EDITS:
ARCHITECTS: Argonaut Realty, Div. General Motors
ELECTRICAL CONTRACTOR: Harlan Electric Co., Detroit, Mich.
CEILINGS: Custom Ceilings, Inc. Detroit, Mich.





CHOSEN BY GENERAL MOTORS FOR THE NEW TERNSTEDT OFFICE AND ENGINEERING BLDG. A MODEL OF PROGRESSIVE ARCHITECTURE

LUMINOUS CEILING: Completely covers the office and working areas. The new 2½ x 5 ft. plastic open cell 45° shielding louver ceiling, suspended below two-lamp high out-put slimline strips on 30″ centers, designed for 120 to 175 foot-candles.

MORE ECONOMICAL: The new 2½ x 5 ft. louver requires considerably less grid system, structural work, less parts to handle which permits simplification of the installation.

GREATER VERSATILITY: New louver size is ideal for 5 x 5 ft. modules and the new trend in larger variations of module patterns, island types, or complete ceilings.

UNINTERRUPTED LIGHT: Through the use of fewer structural members. This large louver panel provides more glare-free area with cleaner ceiling appearance, and easy lamp replacement.

STURDY CELL CONSTRUCTION: Of 9/16 x 9/16 x 9/16 cubes, offers sag-free shadowless, high efficiency with low surface brightness.

SPECIFY AMERICAN'S NEW 2½ X 5 FT. LOUVERS ON YOUR NEXT LUMINOUS CEILING REQUIREMENTS

Write for free sample kit and specification sheets today.

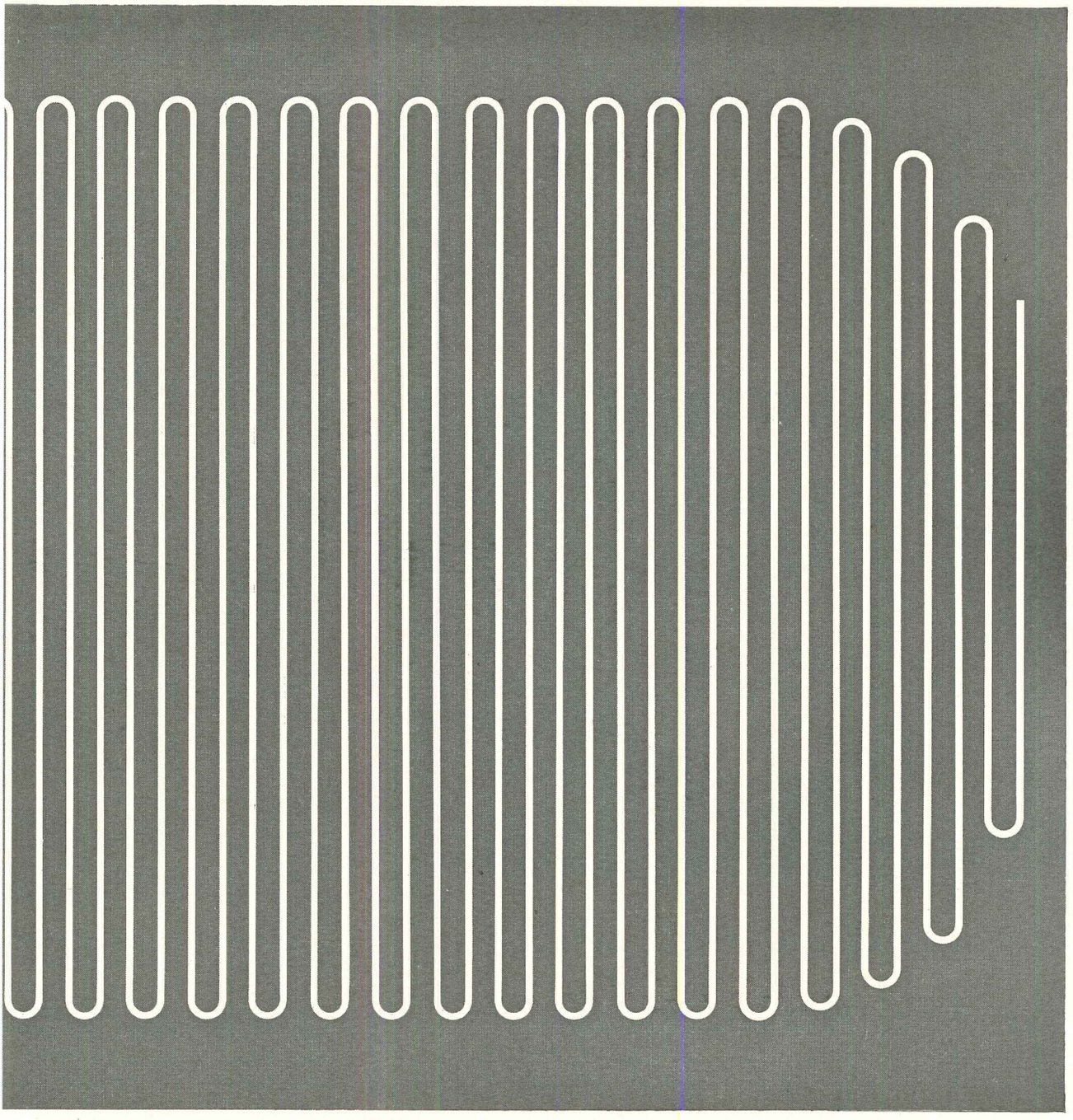
american louver company

5308 NORTH ELSTON AVENUE • CHICAGO 30, ILL.

11½ miles of steel pipe . . . and every inch has to be right

Pittsburgh's gleaming new Auditorium, with its movable Stainless Steel roof, is now open. The world famous Ice Capades were the first attraction, and professional hockey returned to the city to cavort on the Auditorium's ice rink, which has some 11½ miles of USS National Pipe underneath.

For quick freezing of the ice, temperatures will go down around −42°F., although specifications called for a temperature of "only" −16°F. The system uses a calcium chloride brine solution with 1.25 specific gravity, and it is a 25.9% solution. The steel pipe used in the coils was 1¼" standard and extra strong; the reverse header pipe



Architect: Mitchell & Ritchey, Pittsburgh, Pa. **Mechanical Contractor:** Limbach Company, Pittsburgh, Pa. **Supply House:** Crane Supply Company, Pittsburgh, Pa.

consisted of over 600 feet of 4″ through 10″ pipe.

In a big commercial operation like this, the pipe has to be dependable or the show doesn't go on. That's one good reason they specified USS National Pipe. If you need top-quality steel pipe for ice skating rinks, snow melting and radiant-heating installations, or for any type of building or industrial application, be sure you get USS National Pipe. For further information, or assistance with any pipe problem, write National Tube Division, United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania. USS and National are registered trademarks.

National Tube Division of United States Steel

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
United States Steel Export Company, New York

This mark tells you a product is made of modern, dependable Steel.

Pennsylvania Avenue text

continued from page 26

sylvania Avenue leading from the Capitol to the White House, symbolizing at once the separation of powers and the fundamental unity in the American Government.

Just as the new Government was not founded on small aspirations, neither did Washington or L'Enfant make any little plans. The city they conceived was not intended to be completed in the life of one administration, or one generation. They designed the capital of a great nation: building it would become the work of that nation.

Scarcely a generation in our history has not contributed to this work. The appearance of the Nation's capital has been a matter of continued concern to Congress, and to successive administrations. Down through the years, despite some lapses, those responsible have been essentially faithful to the original version of Washington and his inspired city planner.

The modern era began with the report of the McMillan Commission at the beginning of the century which reiterated the essential principles of L'Enfant's scheme. The Commission plans called for the construction of the Mall, the Lincoln Memorial, the Arlington Bridge, and for a general development of public buildings in the area between the Capitol and the White House.

The most recent major development in the capital took place under President Hoover and Secretary of the Treasury Andrew Mellon, who conceived the great Federal Triangle. This spacious and dignified complex of office structures occupies the area formed by Constitution Avenue, Fourteenth Street and Pennsylvania Avenue. As a result, all of the space on the south side of Pennsylvania Avenue between the Capitol and the White House is occupied by public buildings.

It was clear to the planners of the 1920's that the south side of Pennsylvania Avenue could not be developed while neglecting the north side. To develop one without the other would produce an imbalance wholly at odds with the spirit of L'Enfant. Accordingly, the plans for the Federal Triangle were accomplished by plans for a Municipal Center on the north side of the Avenue extending from Third Street to Sixth Street, with John Marshall Place at the center. The architecture of the Municipal buildings was to follow closely that of the Federal structures opposite.

Andrew Mellon expressed with great feeling the harmony of the scene he hoped to create:

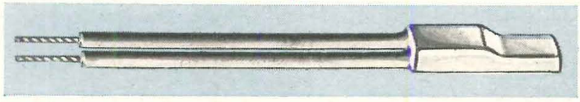
"It is easy to see what the effect will be. As one proceeds down Pennsylvania Avenue toward the Capitol, on the south side will be a succession of beautiful and harmonious build-

continued on page 256

ADVAN-guard® is a thermally actuated automatic reclosing protective device sealed in the ballast housing. It is sensitive to voltage and current as well as temperature and protects against excessive voltage supply . . . internal ballast short circuiting . . . inadequate lamp maintenance . . . improper fixture application and eliminates the need for individual fixture fusing.

ADVAN-guard® is preset to trip out automatically whenever the Fluorescent Lamp Ballast operates at abnormal temperatures. When heat decreases to normal operating temperatures, ADVAN-guard® resets automatically and the ballast resumes normal operation. Through this continuous protection the full life of ADVAN-guard® Fluorescent Lamp Ballasts is realized. Only ADVAN-guard® ends premature destruction and unnecessary replacement labor costs.

AUTOMATIC RE-SETTING
ADVAN
THERMAL PROTECTION
guard®



ADVANCE OFFERS A CHOICE OF BALLAST PROTECTION

EQUIPPED WITH NON-RESET
FUSE LINK
THERMAL PROTECTOR

Advance FUSE-LINK is a temperature sensitive non-resetting protector built into the fluorescent lamp ballast. It is sensitive to heat and designed to open when the ballast is subjected to high temperature from any internal or external cause. The capacitor utilized in the FUSE-LINK ballast line also incorporates a thermal link which will open whenever the capacitor is subjected to abnormally high temperatures.

FUSE-LINK Fluorescent Lamp Ballasts protect against ballast leakage and end-of-life hazards. When a condition occurs that causes either or both links to open . . . the ballast is destroyed and must be replaced.

That's the protection story, ADVANCE offers a choice! Your ADVANCE Sales Engineer will be happy to help you make that choice. Call him or write today.

"The Heart of the Lighting Industry"®

ADVANCE®

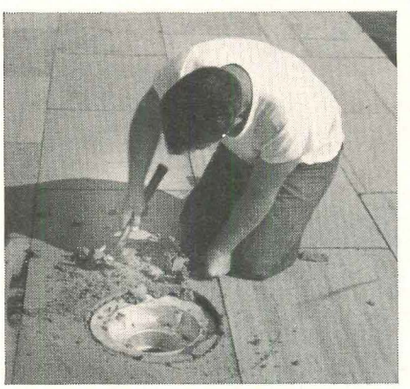
CBM CERTIFIED
WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF FLUORESCENT LAMP BALLASTS

TRANSFORMER CO.

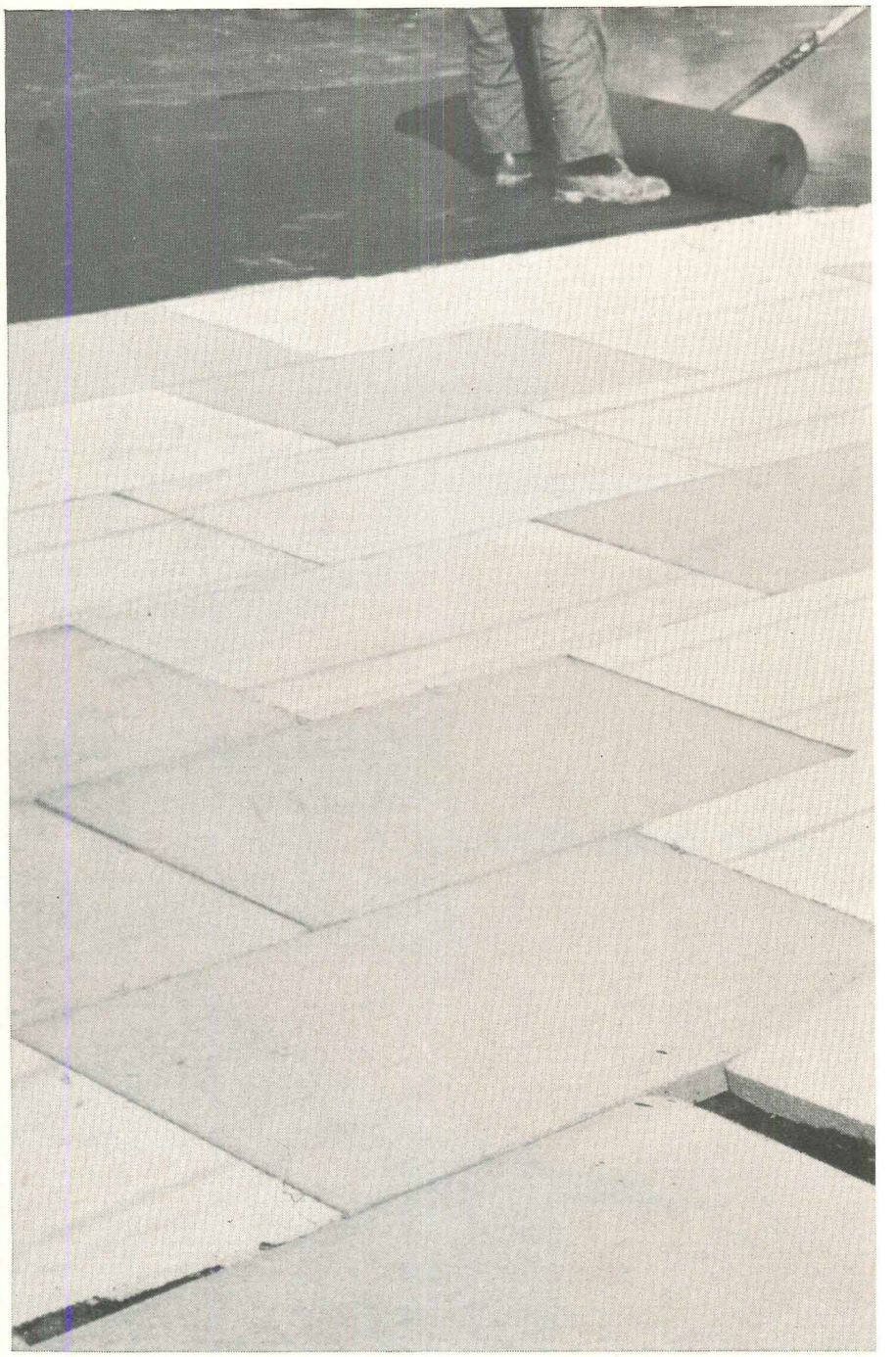
2950 NO. WESTERN AVE. CHICAGO 18, ILL. U.S.A.

EASY TO CUT
(on the average job 30% of insulation must be cut)

EASY TO FIT
around any roof opening



EASY TO SHAPE
around drains to assure smooth run-off of water



JOHNS-MANVILLE

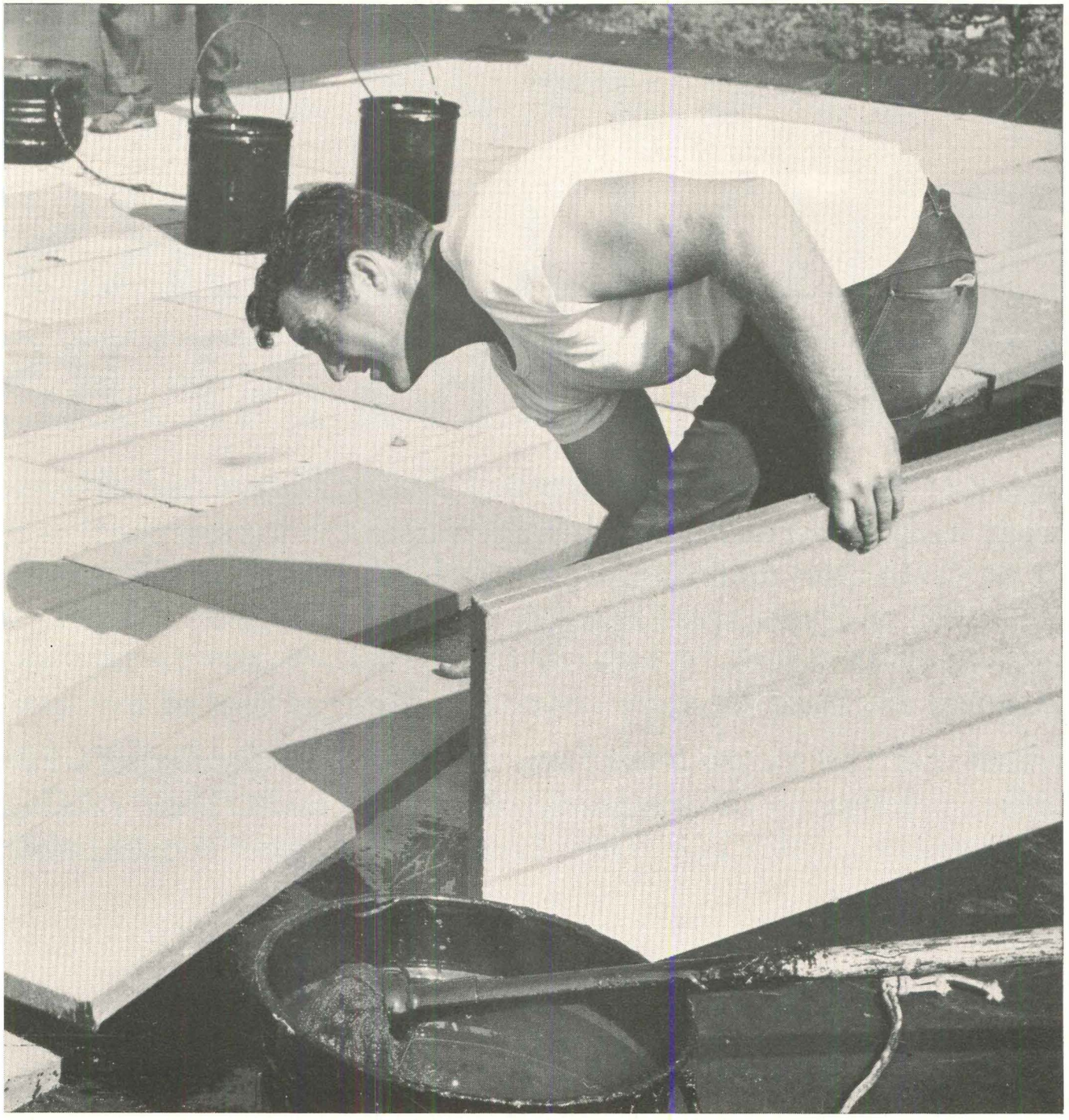
FESCO BOARD

ROOF INSULATION

MOISTURE-RESISTANT . . . INCOMBUSTIBLE . . . DURABLE (YET LIGHTWEIGHT AND EASY TO APPLY) . . .

J-M Fesco® Board combines to a unique degree many special advantages. This is largely due to its basic component, perlite – a volcanic ore. When exposed to tremendous heat, the carefully graded perlite expands to form tiny glass-like beads. Each bead is a honeycomb of dead air cells, giving Fesco Board its excellent thermal coefficient.

In addition to its insulating value, Fesco Board offers these important advantages:



Incombustibility. Because it meets the rigorous standards of Underwriters' Laboratories, Inc., you will find the UL label on each package of Fesco Board.

Insurance Approved. Fesco Board makes possible the specification of insurance-rated roof assemblies.

Moisture Resistance. With uniform density from surface to surface, Fesco Board has excellent resistance to moisture absorption. *Wet* insulation is *no* insulation . . . but when you specify Fesco Board you get maximum insulation year 'round.

Compression Resistance. Rugged Fesco Board is not damaged by heavy equipment used during application of the built-up roof...nor by repair-maintenance activities throughout the life of the roof.

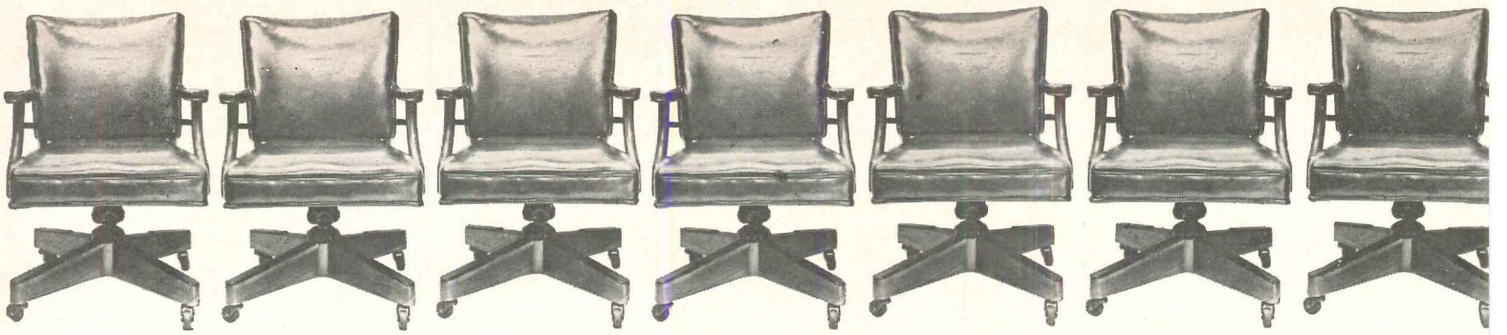
Low Bitumen Absorption. This important advantage means that on the roof you have a heavier "glue line" for securing Fesco Board to the deck below and the roofing felts above.

Easy Application. Lightweight Fesco Board is easy to handle, easy to cut and shape on the job for installation around ventilating stacks, drains, curbs and other roof openings.

Now Fesco Board is available in thicknesses of ½" to 3", in ½" increments. For an illustrated folder on Fesco Board, write to Johns-Manville, Box 158, Dept. AR-762, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

ON THE NEXT JOB, SPECIFY FESCO BOARD ROOF INSULATION

JOHNS-MANVILLE JM PRODUCTS



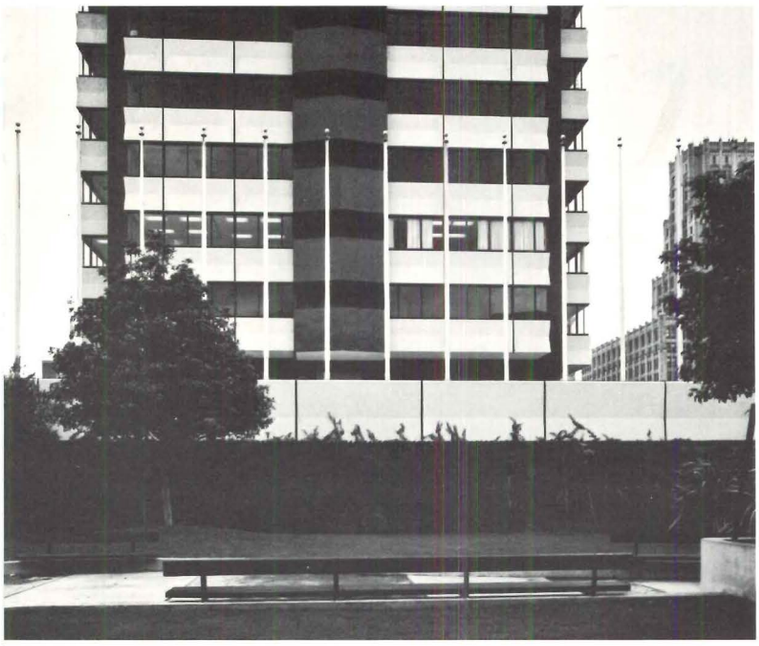
DAVID EGGERS' OTHER PARTNERS

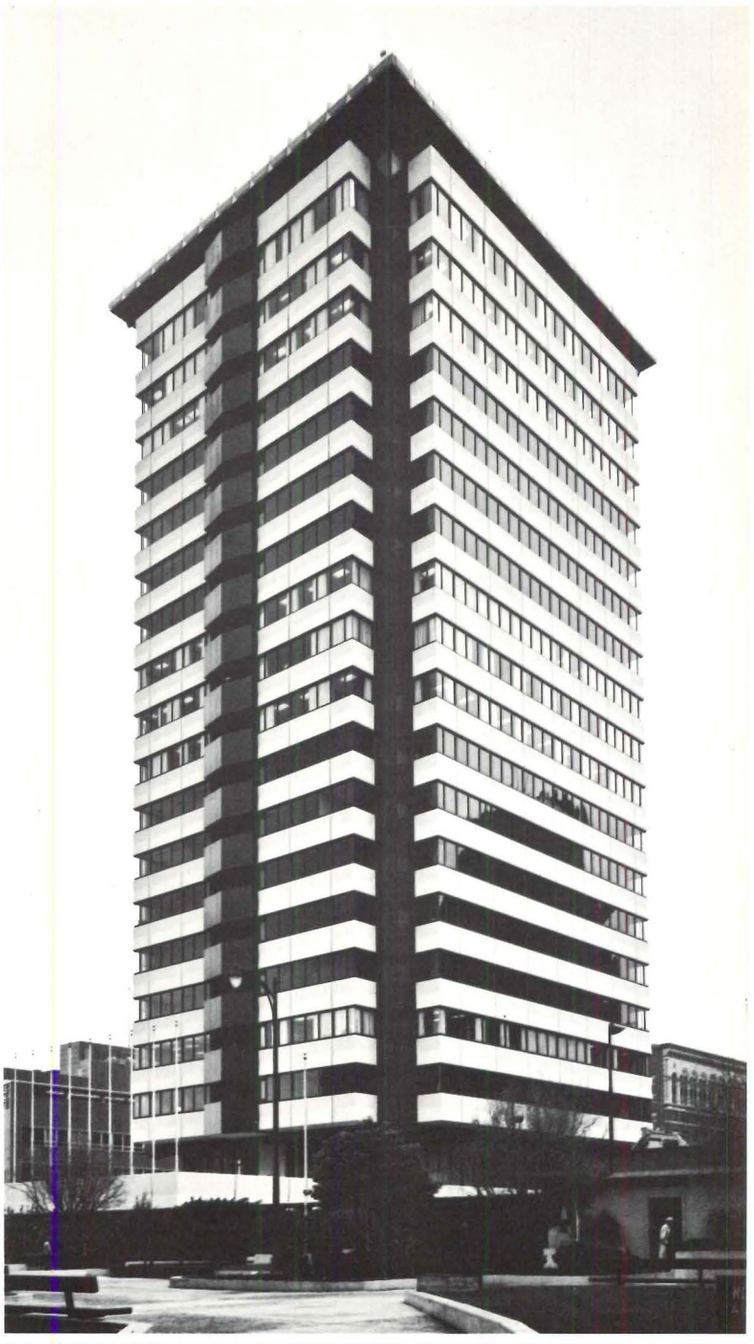
David Eggers, of the New York architectural firm of Eggers and Higgins says: "In our daily design and specifying functions, we are constantly dependent on up-to-date manufacturers' catalogs to help us select building materials. We at Eggers and Higgins regard the Sweet's Files in our office as our silent partners, because of the invaluable service they perform in meeting the basic catalog needs of all the members of our firm.

The real credit for the completeness and usefulness of the Sweet's File in your office belongs to the manufacturers who make their catalogs instantly accessible in the File. They have earned your consideration.

SWEET'S CATALOG SERVICE, DIVISION OF F. W. DODGE CORPORATION, 119 WEST 40TH STREET, NEW YORK 18, NEW YOR

San Francisco's
INTERNATIONAL BUILDING



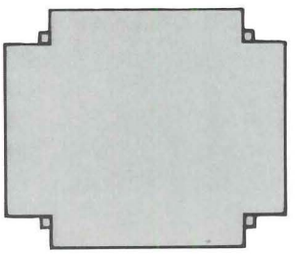


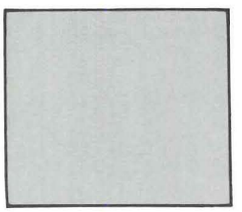
Architectural Award of Excellence—1962—*from American Institute of Steel Construction*

...A Bethlehem Steel Report

BETHLEHEM STEEL

They put a building this big...



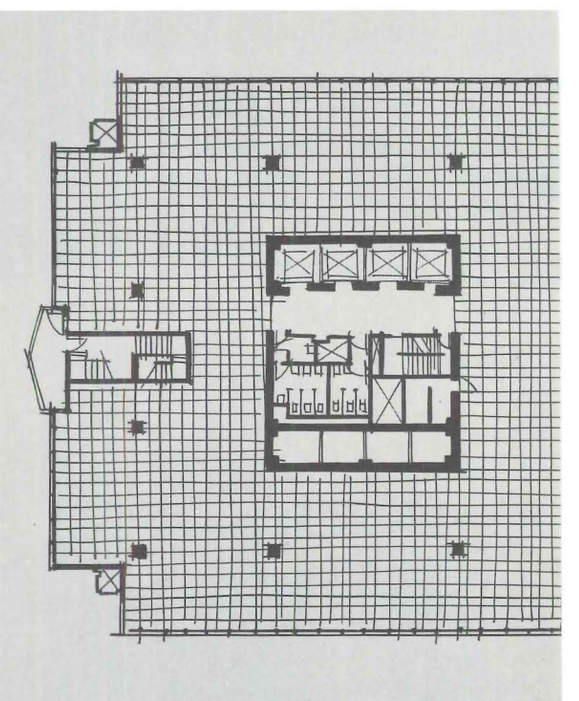


on a lot this big

How did they do it?

They used *cantilever design*, reaching out 16 ft on all four sides—on two of these sides thrusting into air space acquired from the adjoining property owners.

In addition, the building owners purchased the rights to construct a fourth-floor terrace over the rooftop parking deck of an adjoining city-owned garage. This terrace covers the full 75-ft width of the garage and extends out 76 ft to the very edge of a public park. Thus the designers substituted an idyll for an eyesore.

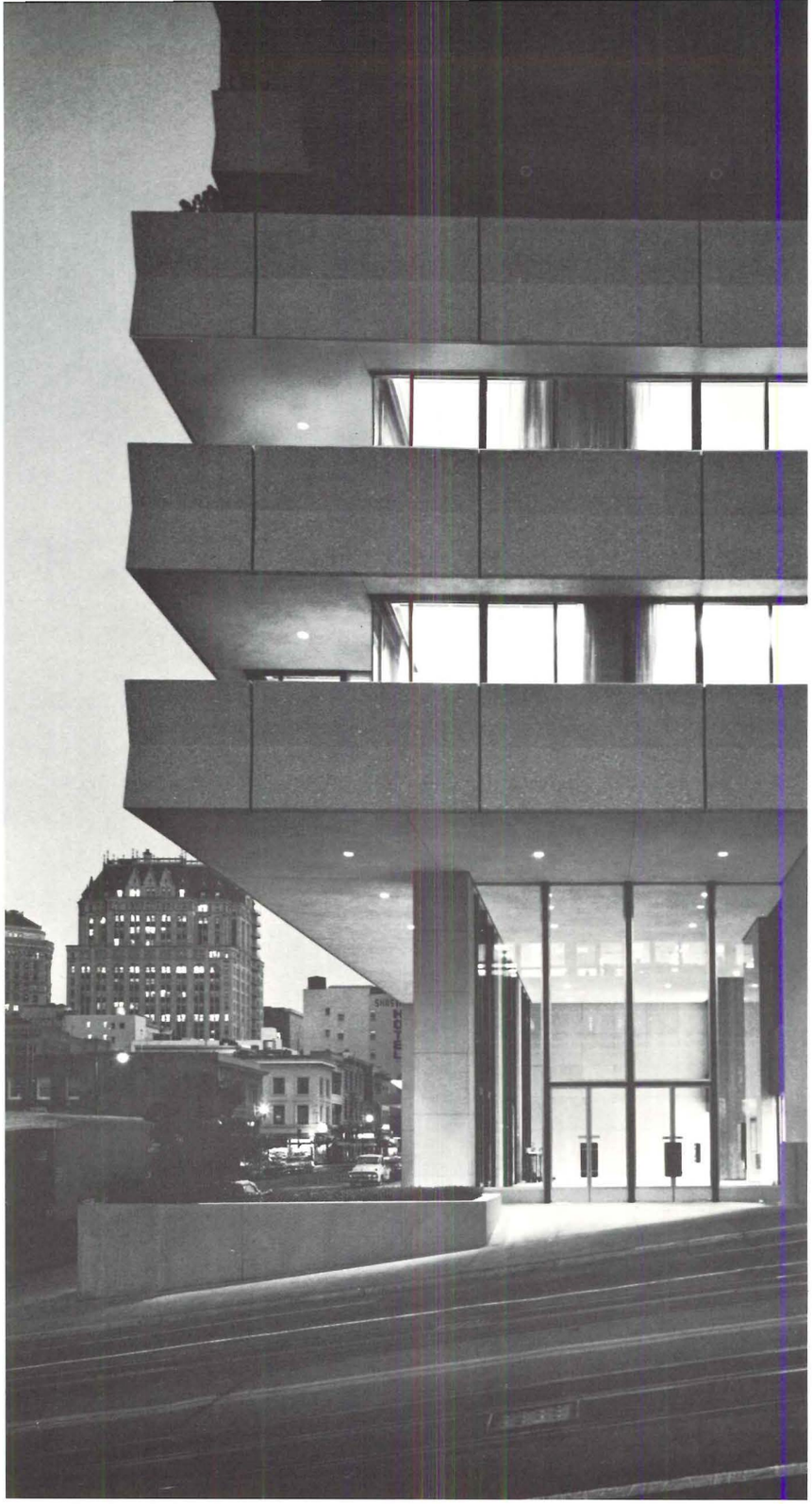


Note the corner cut-outs. This design avoided costly structural detailing and actually paid dividends by providing eight—instead of four—desirable corner offices on each floor. The architects used part of this space for air-conditioning ducts, finished in colorful porcelain-enameled steel that enhances the beauty of the building.

Owner: Natomas Corporation
Architect: Anshen & Allen
Structural Engineers: Gould & Degenkolb and Robert D. Dewell
General Contractor: Dinwiddie Construction Company
Mechanical/Electrical Engineers: Eagleson Engineers

BETHLEHEM STEEL

BETHLEHEM STEEL



Earthquake-Resistant Design—The International Building meets the lateral-force provisions of the San Francisco Building Code.

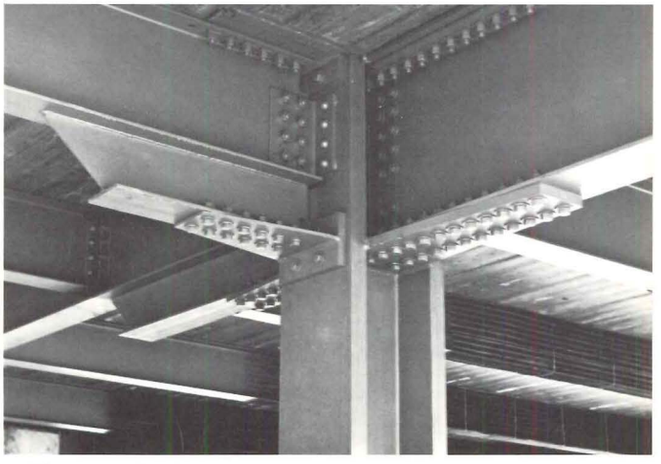
Cellular steel decking, topped with concrete, contributes to 'quake resistance by serving as horizontal diaphragms, capable of transmitting loads to the steel columns and to the reinforced-concrete service core.

Lab-Tested Column Connections—The designers decided to use a combination of welded tees and extra-high-strength bolts for column-to-girder connections. However, they wished to have empirical evidence of the performance of these connections, and especially the resistance of the stress-relieved welded tees to brittle failure. For this reason the structural contract provided for a test program to be carried out under Bethlehem's supervision.

These tests, performed at Lehigh University's famed Fritz Engineering Laboratory, clearly proved the soundness of the welded tees, and showed deflection to be negligible. In fact, a 50 per cent increase in ductility in the stress-relieved steel was considered advantageous for absorbing seismic shock.

The heat-treated alloy steel bolts checked out to the complete satisfaction of architects and engineers.

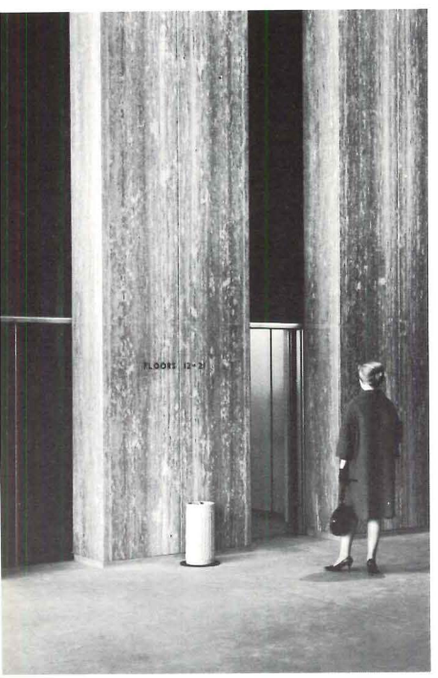
The steel framework was fabricated and erected by Bethlehem. At the intersection of California and Kearney Streets in San Francisco, the building is 22 stories high (352 ft), with a floor area of 285,000 sq ft. Total project cost, $10,700,000.

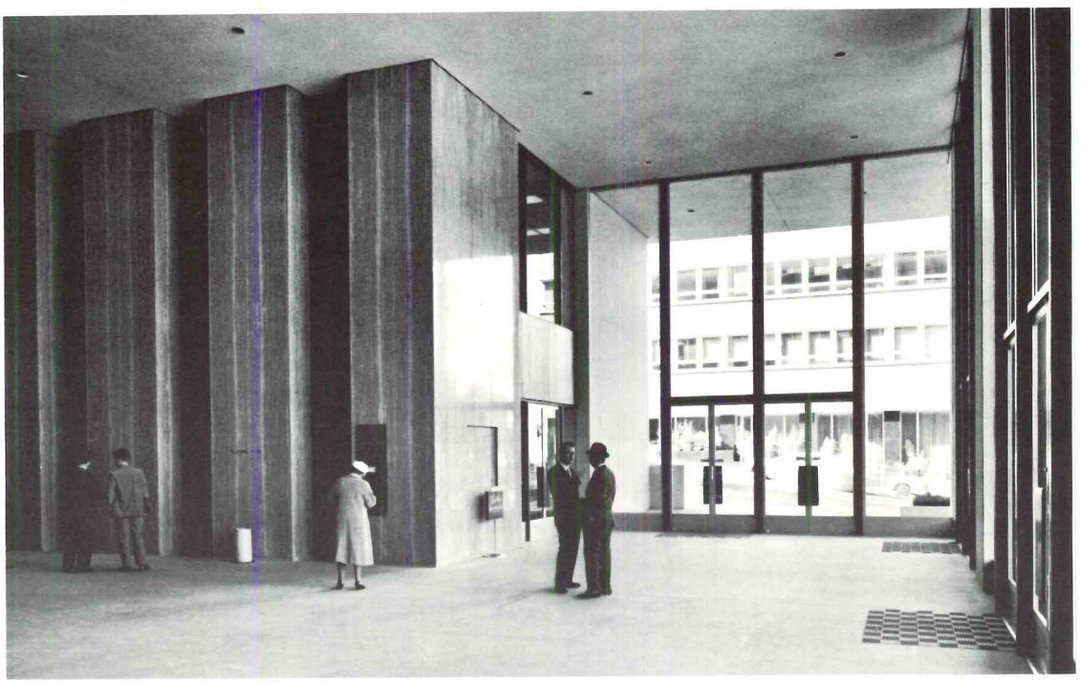


Close-up of column connection illustrates type of welded tees which were lab tested. A373 steel was used, with stress-relieved full butt welds. The bolts were extra-high-strength (140,000 psi minimum tensile strength).

This huge girder (109 ft long, 8 ft deep, and weighing 38½ tons) carries the terrace at its far end, where it is supported by two steel columns extending down through the five-level parking garage.

Bethlehem supplied nearly 8 miles of elevator rope, as well as much of the steel plumbing and heating pipe for the International Building.





Literature of special interest to architects and structural engineers

AISC Specification New rules for the design, fabrication, and erection of structural steel for buildings.

No. 549 A description of the design, fabrication, and erection of the 60-story Chase Manhattan Bank Building in New York City.

No. 1802 An idea-provoking booklet presenting outstanding examples of architect designed steel-framed houses from coast to coast.

No. 563 Latest revision of our informative guide for designing high-strength-bolted structural joints. Includes latest ASTM specification revisions.

No. 1855 This booklet, which includes useful strength and relative-cost tables, describes Bethlehem's new low-cost, high-strength V Steels for construction—shapes and plates with yield points from 45,000 psi through 65,000 psi.

No. 583 Design data covering all kinds and grades of deformed steel reinforcing bars, including the new, high-strength grades (ASTM A431 and A432).

Bethlehem color films for group showings
Our 16mm color motion pictures include several of special interest to architects and engineers. We suggest you send for our Catalog 467-B, which describes the films and how to obtain prints for group showings.

Publications Department
Bethlehem Steel Company
Bethlehem, Pa.
Please send me the publications circled below:
AISC Spec 549 1802 563 583 1855 467-B

*Name*_____

*Title*_____

*Company*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

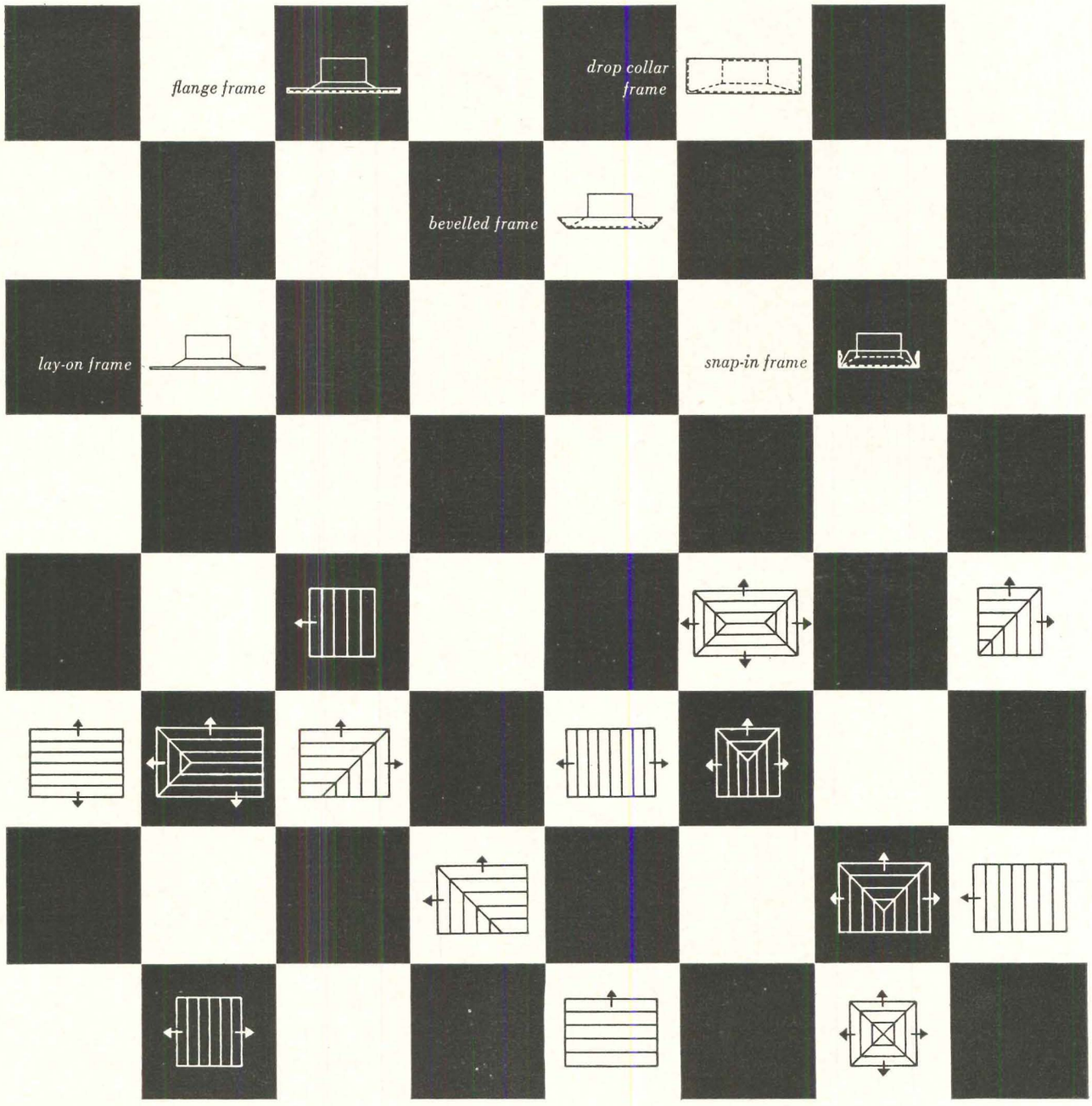
IT'S YOUR MOVE!

mate any of these **5 FRAME STYLES...**

WATERLOO

extruded aluminum

DIRECTIONAL DIFFUSERS



to any of these **14 CORE PATTERNS**

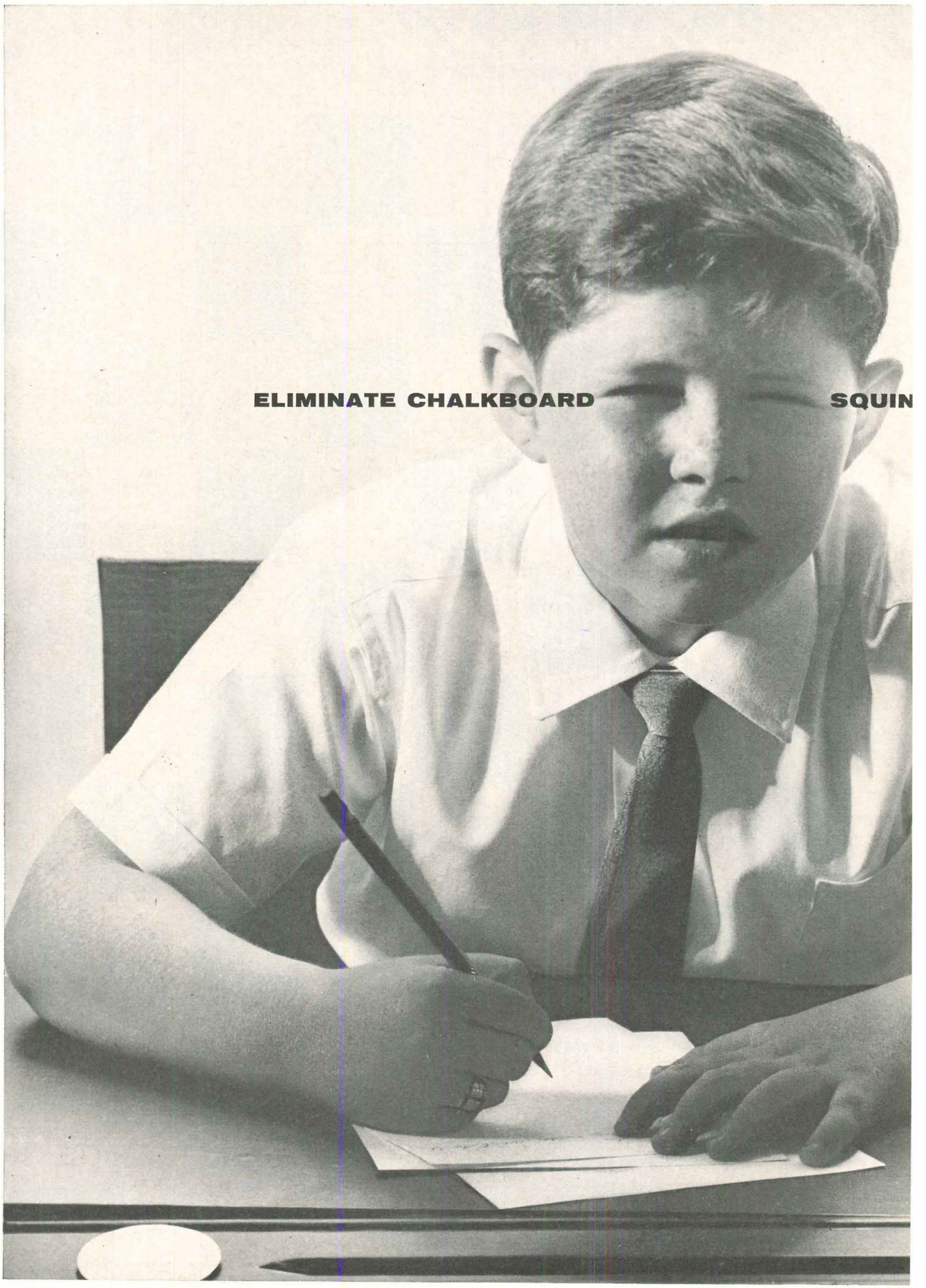
...to get matchless diffuser performance in *extruded aluminum!* These directional diffusers are light, long-lasting, rust-proof. All fourteen core patterns are removable and interchangeable — no mis-matches on the job, plenty of design flexibility. And Waterloo diffusers are performance-proved in the famed Anemostat Air Distribution lab. It's your move... get details from your Waterloo-Anemostat Representative today!

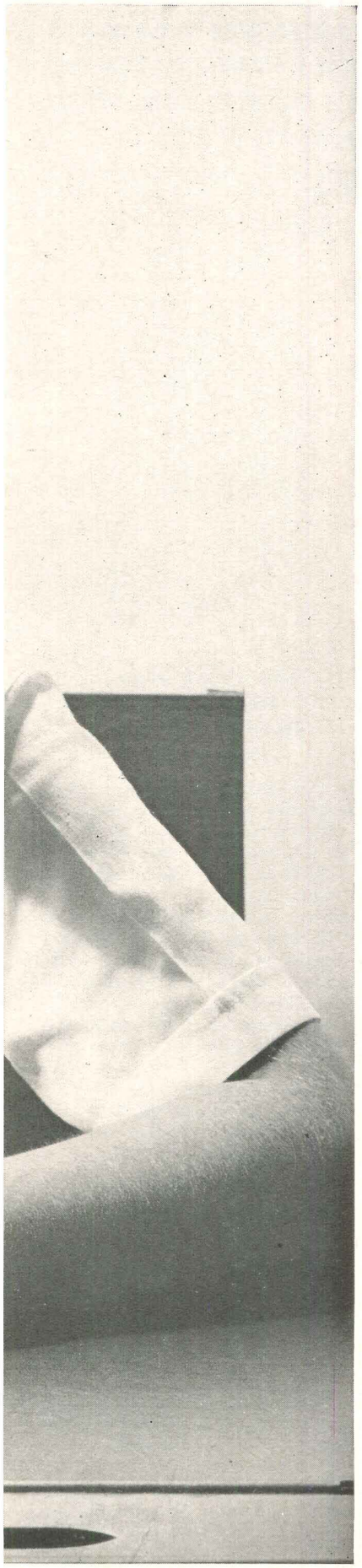
WATERLOO REGISTER COMPANY, INC.

WATERLOO, IOWA

A SUBSIDIARY OF

DYNAMICS CORPORATION OF AMERICA


ELIMINATE CHALKBOARD
SQUIN



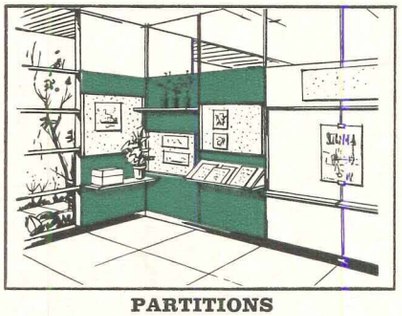
Improve visibility three ways with J-M Colorlith® chalkboards

Now you can provide classrooms with strong, durable, beautiful chalkboards that are truly easy on the eyes. With Johns-Manville Colorlith, you get uniform texture, minute pore structure and pleasing shades to eliminate the three major causes of poor chalkboard visibility: chalk build-up, low visual contrast and harsh colors.

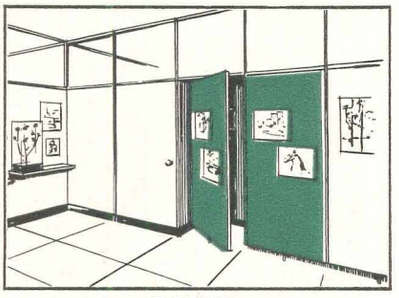
Colorlith is a dense, homogeneous sheet that provides a smooth, hard-writing surface that is extremely easy to clean. Because its minute pores cannot fill with chalk particles, dust build-up is cut to a minimum. This means infrequent washings, too! Colorlith's asbestos-cement structure takes chalk easily, thus permitting full, unbroken lines for easy readability. And, Colorlith is available in three eye-pleasing colors—Spruce Green, Cameo Brown and Charcoal Gray. Extensive research and testing have proved these colors the most restful to the eyes.

Because of its unique composition, Colorlith retains its excellent properties over the years. For full details on this high-quality chalkboard, write to J. B. Jobe, V.P., Johns-Manville, Box 14, New York 16, N. Y. In Canada: Port Credit, Ontario. Cable address: Johnmanvil.

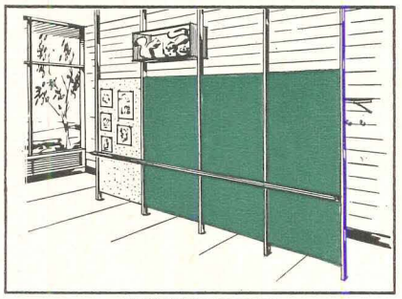
ADDITIONAL CLASSROOM USES FOR COLORLITH CHALKBOARD



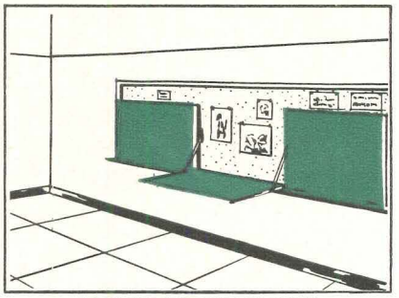
PARTITIONS



DOORS



WARDROBES



CONVERTIBLE UNITS

JOHNS-MANVILLE PRODUCTS

JOHNS-MANVILLE

Pennsylvania Avenue text

continued from page 244

ings, all of a design in keeping with the semi-classical tradition so well established in Washington. On the north side vistas will be opened up, so that groups of buildings, such as the beautiful District of Columbia Courthouse, on John Marshall Place, shall be brought into the general plan of Pennsylvania Avenue. At the same time the Mall will present the spectacle of a great park bordered on one side by the new boulevard lined with beautiful buildings, a wide parkway of greensward with its four rows of trees, its drives and walks, statues, and reflecting pools, all arranged in such a way that long vistas will be opened up for views of the Capitol in one direction and of the Washington Monument and Lincoln Memorial in the other."

The plans for Pennsylvania Avenue were never fulfilled. The great depression prevented the completion of the façade of the Federal buildings (while the Main Court of the Triangle was left to become a parking lot of surpassing ugliness). For various reasons, only about half the Municipal Center was constructed.

The result of the failure to fulfill this grand concept has been lamentable disharmony. On the south side of the avenue the stately progression of Federal offices designed under Andrew Mellon is twice interrupted by earlier structures of a quite different character. The north side presents a scene of desolation: block after block of decayed 19th Century buildings, many of which are vacant above the first story, only rarely interspersed by partially successful efforts at modernization. The roadway, sidewalks, lamp posts and other features of the avenue have been sorely neglected. Increasingly the Capitol itself is cut off from the most developed part of the city by a blighted area that is unsightly by day and empty by night.

Pennsylvania Avenue should be *the* great thoroughfare of the City of Washington. Instead it remains a vast, unformed, cluttered expanse at the heart of the Nation's capital.

The present appearance of Pennsylvania Avenue demands attention for the precise reason that profound changes are about to take

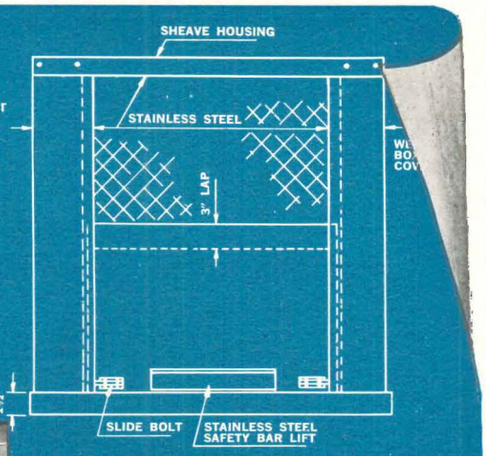
continued on page 269

PEELLE

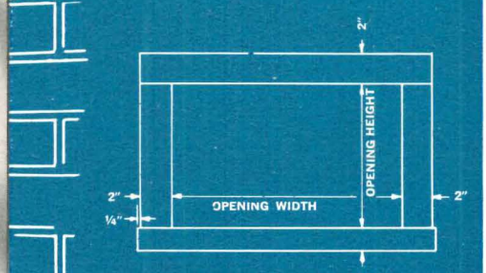
introduces a new

Underwriters Label 1½ Hour

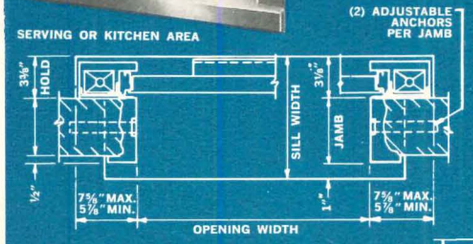
PASS WINDOW



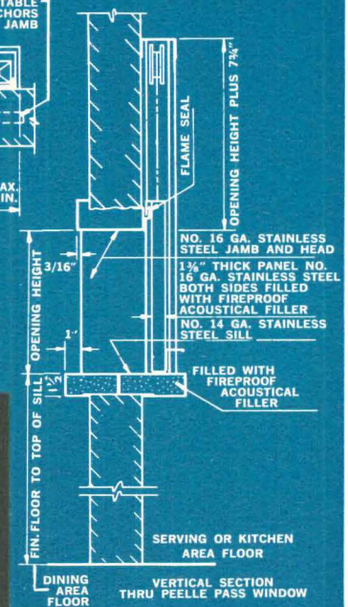
KITCHEN AREA ELEVATION PEELLE PASS WINDOW



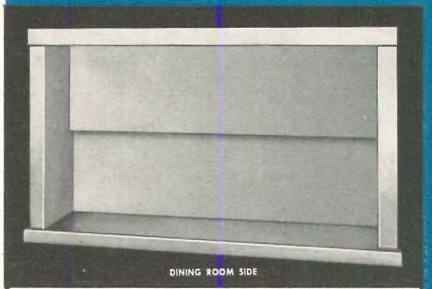
DINING AREA ELEVATION OF PEELLE PASS WINDOW



PLAN SECTION OF PEELLE PASS WINDOW



VERTICAL SECTION THRU PEELLE PASS WINDOW



ALSO PEELLE "TELCO" PASS WINDOWS FOR LOW OVERHEAD CONDITIONS

This stainless steel Pass Window is a complete integral unit and is another example of the application of Peelle engineering skill to the protection of life and property through tested and approved products backed by an automatic certificate of standard of quality . . . The Underwriters' Label.

Specify Labeled Peelle Pass Windows Because

- The *complete* integral unit has been tested and approved. The Label on Peelle Pass Windows reads "FRAME & FIREDOOR ASSEMBLY RATING 1½ Hr. "B" Temperature Rise 30 minutes 650 Degree F. Maximum."
- The Underwriters' label not only guarantees that a high standard of quality has been maintained through factory inspection by impartial U/L inspectors . . . but it is absolute assurance to building owners that your specification of the U/L label provides greater safety, protecting occupants wherever fire hazard exists.
- Many optional features include plain steel units —shop primed, fuse link closing device, cylinder deadlock, flush cups in dining room side and facia plates to conceal wall between guides.

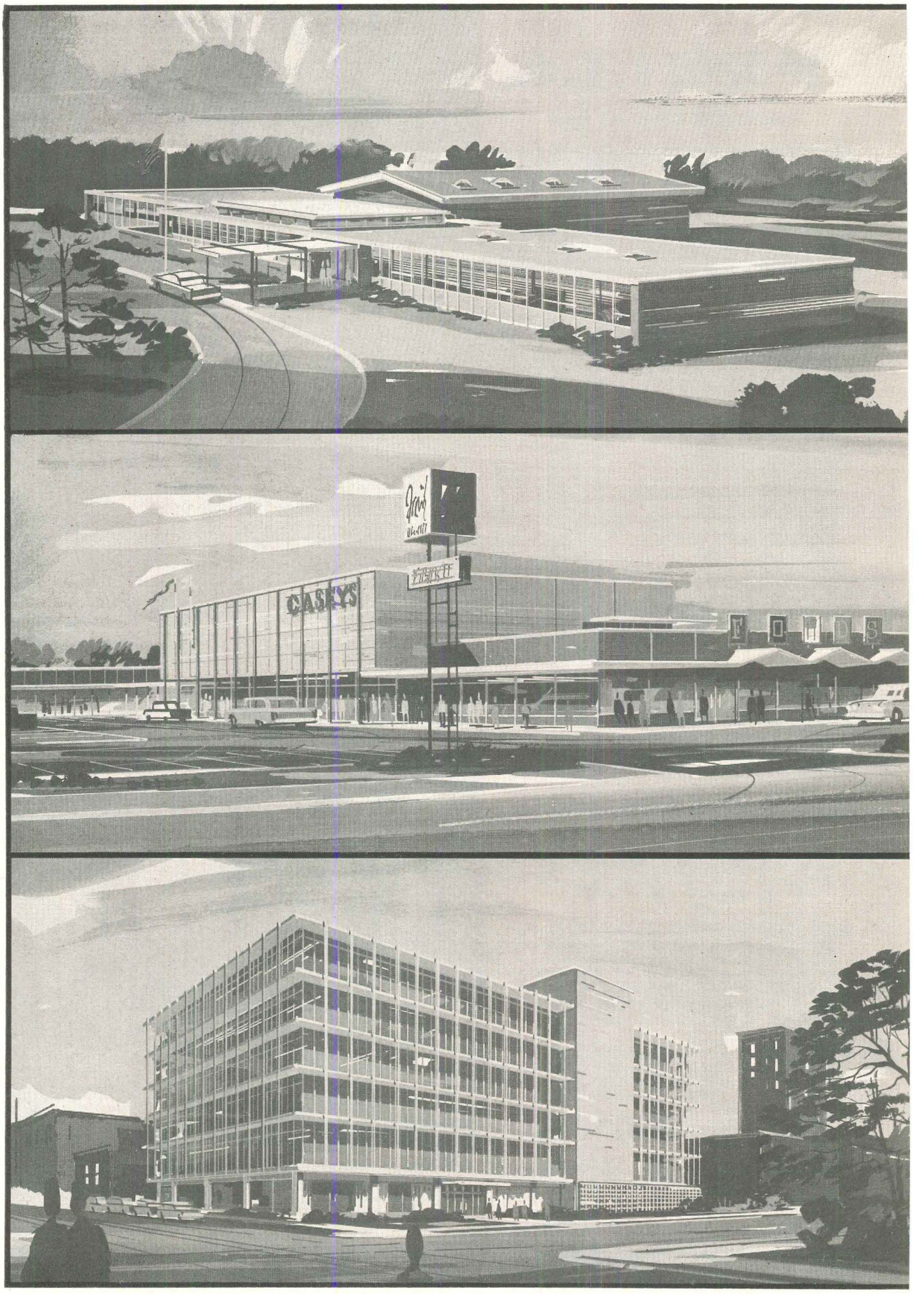
Limitations: Maximum label size 6'0" wide x 4'0" high. Either dimension cannot be exceeded, minimum frame depth 4".

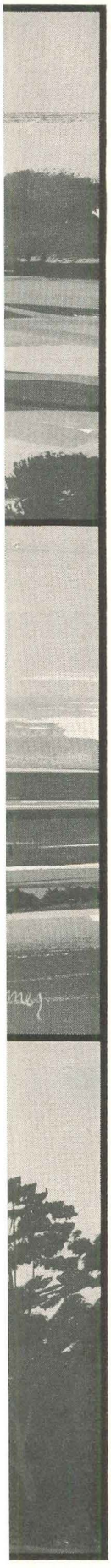
Write for Pass Window "Idea Folder" with complete specifications for Peelle Labeled Pass Windows.

PEELLE-RICHMOND PRODUCTS
Engineered for the Building Industry

THE PEELLE COMPANY 47 Stewart Avenue • Brooklyn 37, N.Y. • Offices in Principal Cities

PEELLE-RICHMOND DOORS FREIGHT ELEVATOR DOORS • DUMBWAITER DOORS • INDUSTRIAL DOORS


CASEY'S
LODGE



Sheffield's new open web steel joists are adaptable to virtually any building design

These SJI-approved high-strength steel joists are the answer to fast, economical construction of schools, factories and commercial structures of all kinds. Whether you're designing or building a traditional or contemporary structure, Sheffield Open Web Steel Joists can simplify floor and roof handling.

These new joists have virtually unlimited adaptability for imaginative design. They are ideal for either pitched or flat roofs. They can be placed fast. They are the perfect answer where deadlines and weather are to be considered.

Today Sheffield's new high-strength Open Web Steel Joists are available in three standardized series — approved by The Steel Joist Institute.

J-SERIES (replacing the old S-Series), based on a stress in tension of 22,000 psi and made from 36,000 psi minimum yield strength steel. Spans up to 48′.

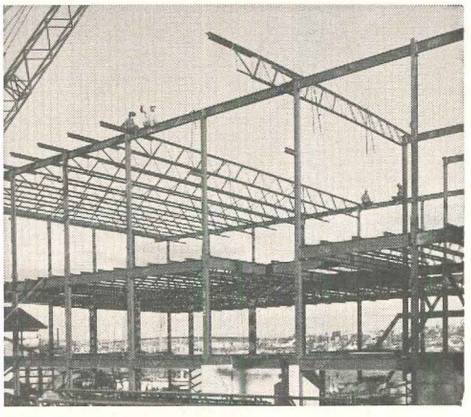
H-SERIES (completely new), high-strength joists based on a stress in tension of 30,000 psi, and made from 50,000 psi minimum yield strength steel. Spans up to 48′.

LA-SERIES (replacing the old LS-Series), based on stress in tension of 22,000 psi, and made from 36,000 psi minimum yield strength steel. Spans up to 96′.

(LS-SERIES. These joists extend beyond the span range of SJI Standard joists, but are designed in accordance with their specifications. Based on stress in tension of 22,000 psi and made from 36,000 psi minimum yield strength steel. Spans up to 144′.)

It pays to consider these advantages of new high-strength Sheffield Open Web Steel Joist construction

- They are lightweight – reduce deadload.
- Savings are substantial in both construction and maintenance.
- Prefabricated and ready to place.
- Fast, easy erection is possible in any weather.
- They allow plenty of freeway for pipe and conduit.
- Excellent for radiant heating systems.
- No form work or curing time is required.
- Dimensions and carrying capacity are standardized.
- Permanent and non-shrinking.
- Termite-proof and rot-proof.



Bring your files up to date with this useful reference book. Sixty pages of specifications and load tables on J-Series and H-Series Sheffield Open Web Steel Joists. (LA-Series and LS-Series information available on request.) Write **Sheffield Division, Armco Steel Corporation, Sheffield Station, Kansas City 25, Missouri.**

ARMCO Sheffield Division

NEOPRENE GASKETS KEEP LIGHT CONSTRUCTION TIGHTLY SEALED

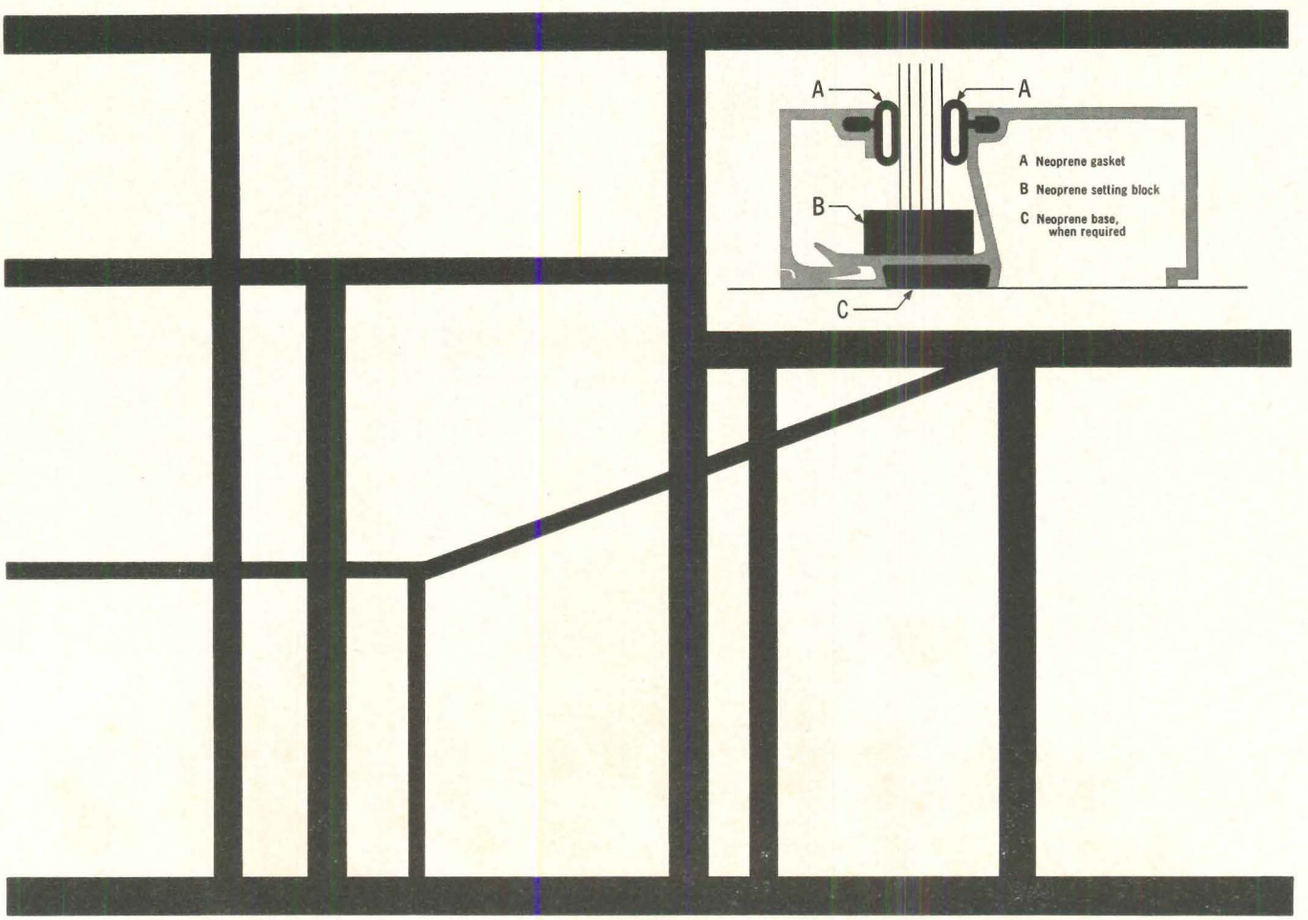
Wind-driven rain. Freezing. Summer sun. To combat these weather extremes, curtain wall construction needs a reliable, permanent glazing seal. Du Pont Neoprene gasketing adds an element of dependability you can get with no other material.

Performance records over the past decade have demonstrated Neoprene gasketing's ability to seal out rain and cushion glass panes against winds of hurricane force. Neoprene gaskets accommodate horizontal and vertical expansion of glass and metal panels. This versatile synthetic rubber also resists ozone and airborne chemicals.

In addition to time-proved reliability, Neoprene gasketing offers two other important features. (1) Glazing is easier, can be done faster. (2) After installation, no maintenance is required. Preformed Neoprene gasketing is competitive in terms of installed costs since job-site labor is reduced to a minimum. Stores, shopping centers and schools are now using Neoprene effectively.

For more information and a list of reliable manufacturers of Neoprene sealing strips, write E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Dept. AR-7-NB, Wilmington 98, Del.

NEOPRENE
ANOTHER RELIABLE
DU PONT
REG. U. S. PAT. OFF.
ELASTOMER
BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*



A floorscape provides a 'setting' as well as a 'surface' for furnishings and decorations. It enhances the finished 'picture' conceived by the designer. It contributes to esthetic satisfaction and is created with a product like textured quarry tile that offers an almost unlimited range of patterns and colors.

Genuine Ceramic Quarry Tile offers many lifetimes of wear, will not fade or burn, never needs waxing and costs no more than other quality floor materials. Ask your Ceramic Tile Contractor for the full 'picture' or write direct to Summitville Tiles, Inc., Summitville, Ohio.

MEMBER: TILE COUNCIL OF AMERICA, INCORPORATED

SUMMITVILLE

TEXTURED QUARRY TILE

LOOK! 3 BATHROOM EXCLUSIVES FROM UNIVERSAL-RUNDLE

FIXTURES WITH PLUS FEATURES NOT AVAILABLE ANYWHERE ELSE!

AMERICA'S FIRST SHAMPOO LAVATORIES!

U/R First! Greatest grooming aid since the counter top. Adds extra value to any vanity installation. Bold new Brushed Chrome Fittings and built-in hair rinse. Shown here on the **Christina**, 20″ x 18″ counter top lavatory.

FAUCETS CAN'T DRIP . . . EVER!

U/R Exclusive! Met-L-Pak® cartridges in Luxury Trim Fittings of **Mayfair** bathtub are leakproof for life. Recess receptor tub and shower combination is 38″ x 39″ x 12″ high. Saves space in small bathrooms. Vitreous enameled cast iron—best there is.

TOILET HANDLE JIGGLING'S UNNECESSARY!

U/R Extra! At no extra cost! Low, close-coupled **Charm** water closet features exclusive, patented Uni-Tilt® Flush Valve. Running water nuisance is gone forever. Quiet siphonic action jet flush. Most efficient, low-cost installation anywhere.

More about Uni-Tilt, turn page

UNIVERSAL-RUNDLE CORPORATION
736 RIVER ROAD, NEW CASTLE, PENNSYLVANIA

I am ☐ an architect ☐ a builder ☐ an engineer ☐ a plumbing contractor ☐ a plumbing wholesaler

Send me a U/R catalog, specifications, roughing-in details, and profit story. Complete information on U/R Builder Promotion Kit.

name_____

firm_____

street_____

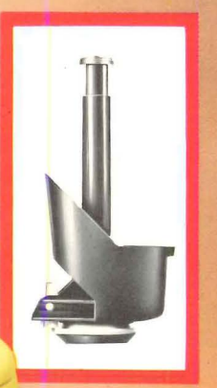
city_____ zone____ state_____

You get extra features at no extra cost from U/R. *Write for details.*

CHOOSE U/R WATER CLOSETS ELIMINATE HANDLE JIGGLING!

Exclusive, patented Uni-Tilt Flush Valve at no extra cost. Seats itself perfectly. Does away with running water nuisance and service callbacks. Featured in these superb U/R closets...

WALLBORNE
Low tank design . . . off-the-floor styling . . . sleek, easy to clean. Dependable, complete flush eliminates hit and miss of outmoded flushing systems.



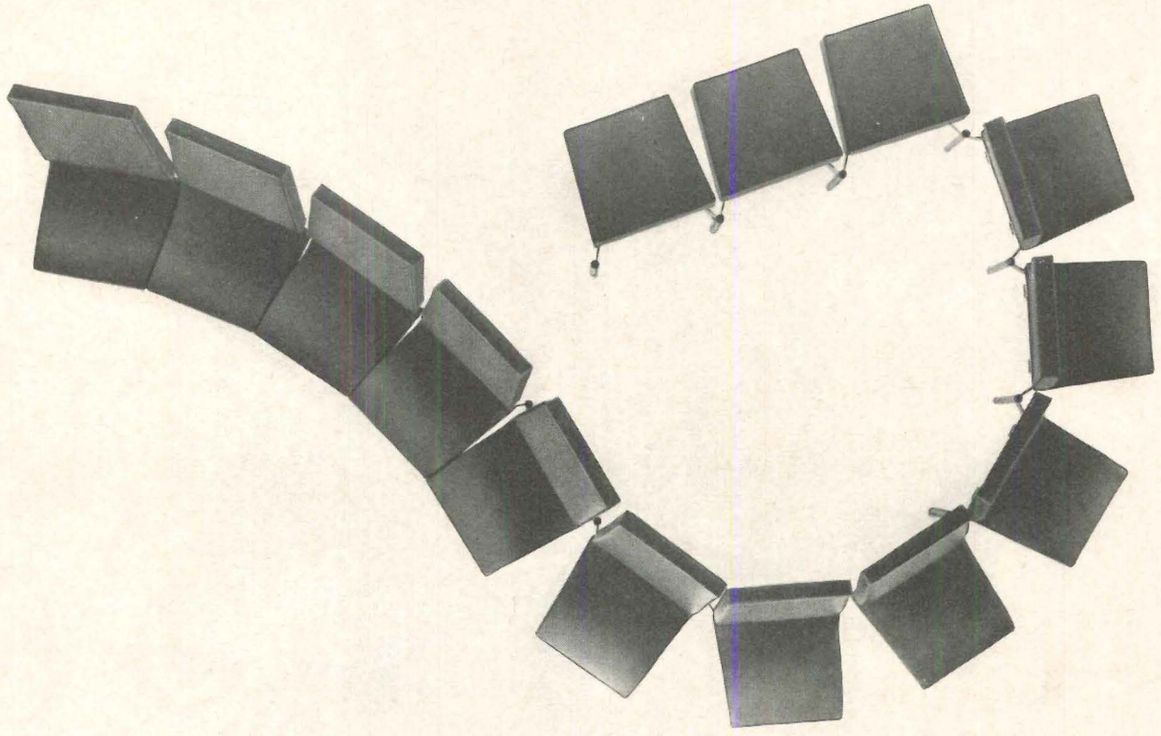
CHARM
Looks like a one-piece unit . . . is actually a low silhouette, low-priced closet combination. Exceptionally quiet flush.

NEW CITATION
Positive front action jet creates more direct flush action in a reverse trap water closet. Smart, low profile tank.

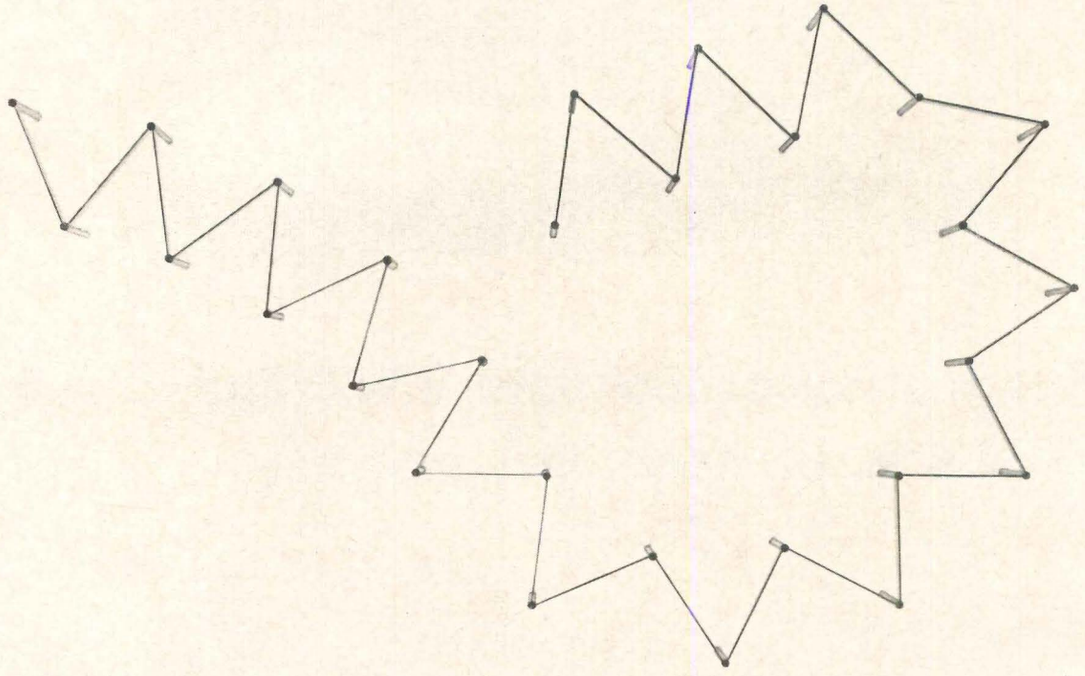
IN 6 FADE-PROOF COLORS AND ARCTIC WHITE

Universal u/r Rundle

The World's Finest Plumbing Fixtures for Over 61 Years
UNIVERSAL-RUNDLE CORPORATION
General Sales Offices . . . New Castle, Pennsylvania



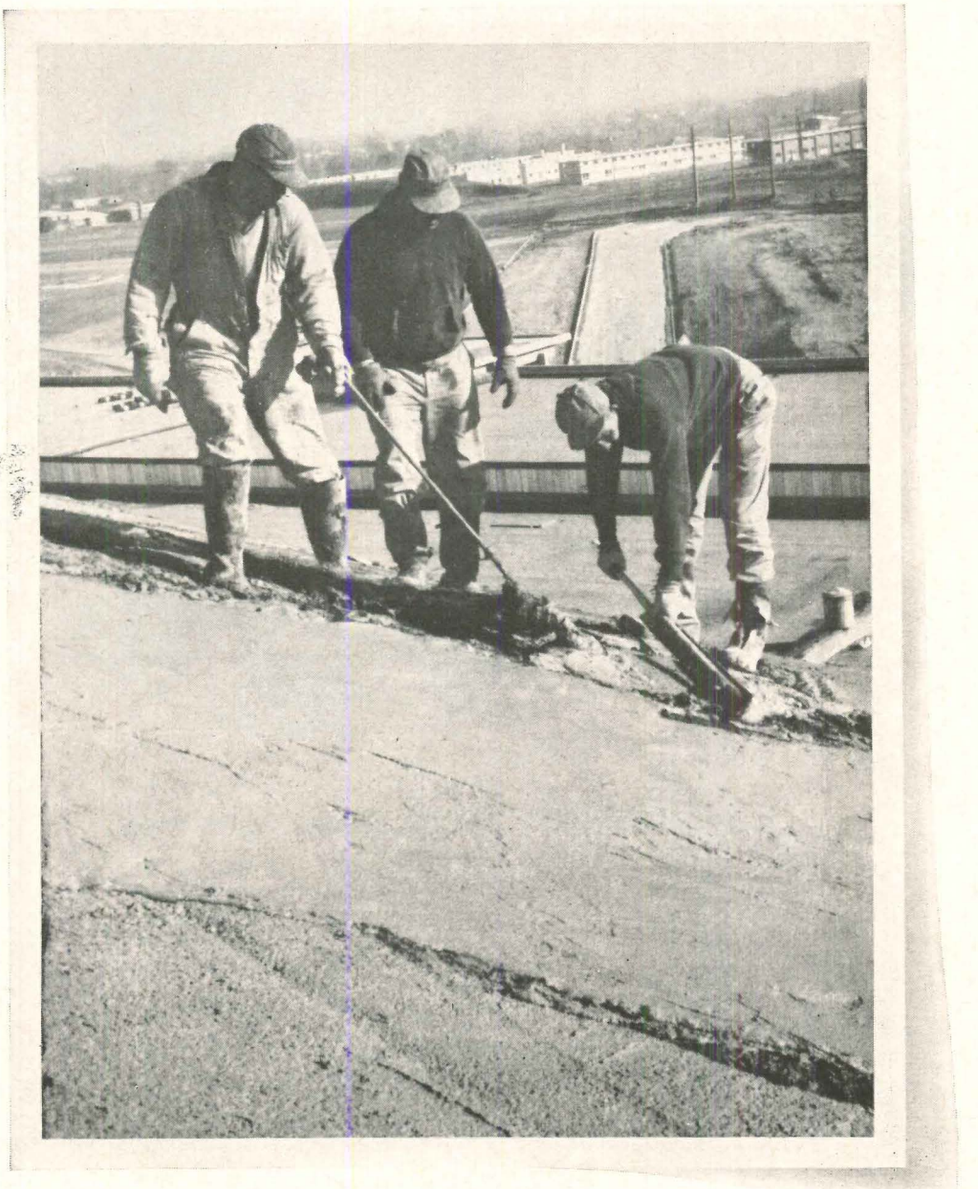
Curves, twists, bends, goes anywhere.



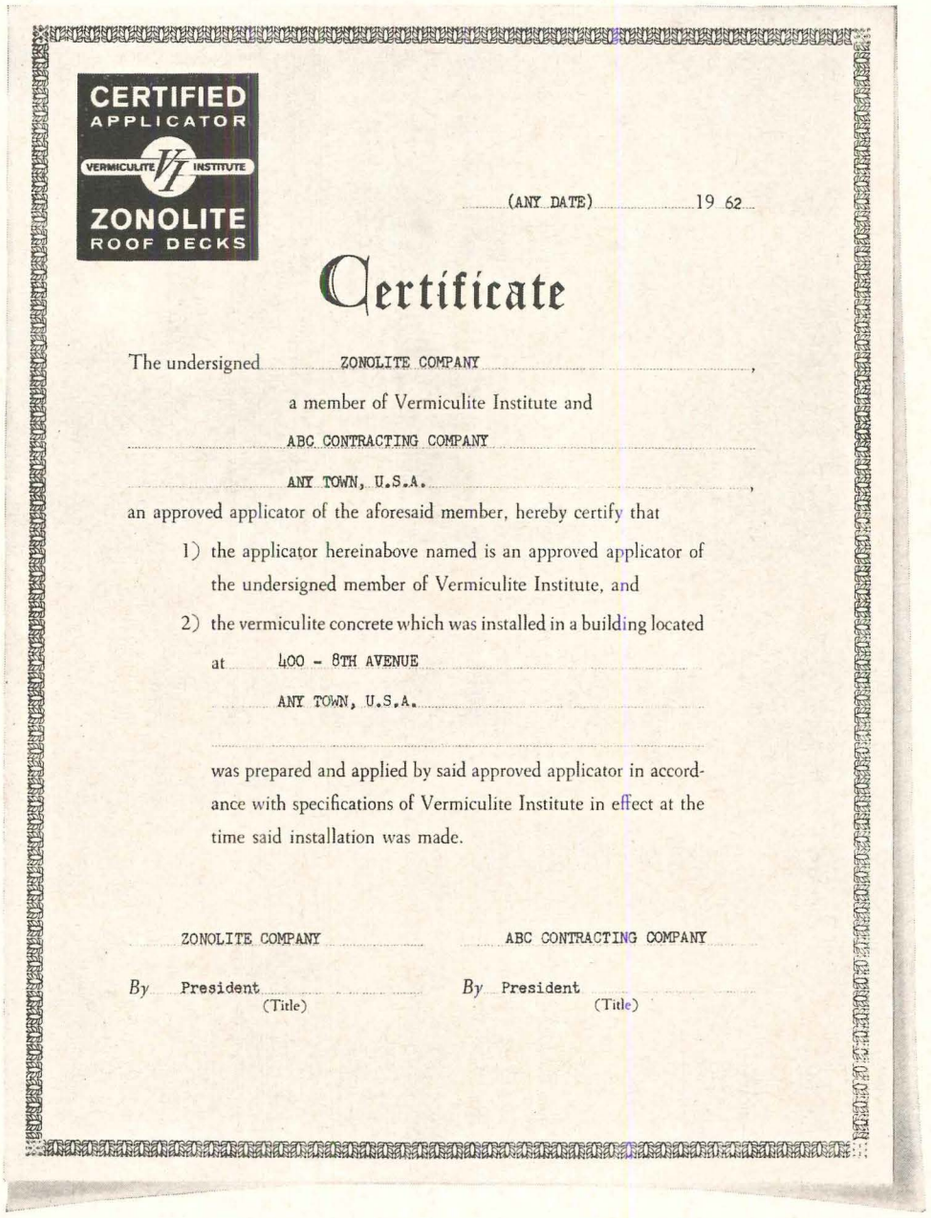
Here's why.

Royalmetal's new Viscount 65 seating is based on an entirely new idea, an entirely new kind of base: one that actually flexes. Viscount 65 can wrap around a column. Turn a right angle. Circle a square. Square a circle. Or hold an arrow-straight line. Think what this means. New freedom to design interiors, to realize ideas that could never work with ordinary lounge seating. And if you never tax Viscount 65 to its full capabilities, you'll still have the most beautiful seating ever designed. The most unique, too, since only Viscount 65 has "floating seat" styling. Sound interesting? Write today for full information. ROYALMETAL CORPORATION, Dept. 10-G, One Park Ave., New York 16, N.Y.

ROYALMETAL T.M.



The application of Zonolite insulating concrete roof decks is as specified, *exactly*



We certify it

It is a regrettable fact that often architects and engineers don't get what they specify and pay for. But it is a fact.

In order to protect you and your client, as well as our own reputation and that of our approved roof deck applicators, we issue this certificate.

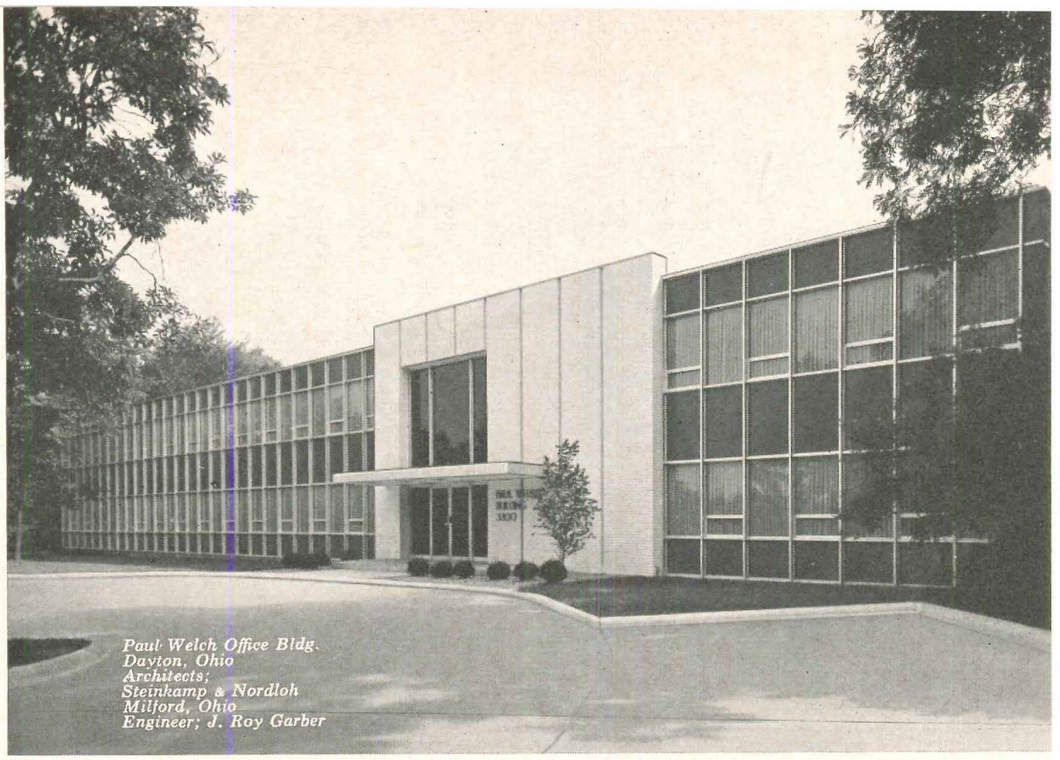
Given after roof deck completion, and after laboratory tests of samples from the job, it certifies that the Zonolite concrete was prepared and applied in accordance with the specifications set down by the Vermiculite Institute.

You get what you pay for when you specify Zonolite concrete roof decks—light weight, insulating value, fire resistance, permanence, application as specified. We certify it.

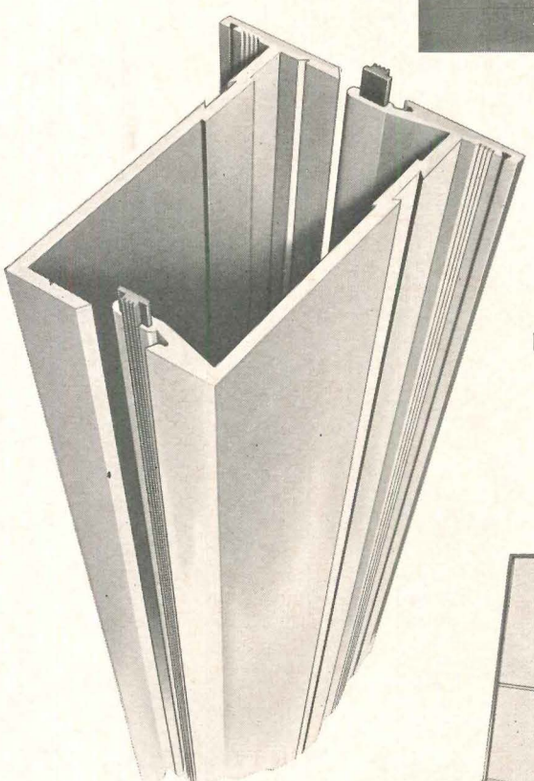
To obtain complete information on Zonolite Roof Deck Systems, write *Zonolite Company, 135 S. LaSalle Street, Chicago 3, Illinois.*

ZONOLITE

Interlocks for fast assembly

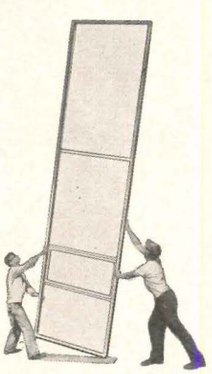


Paul Welch Office Bldg.
Dayton, Ohio
Architects;
Steinkamp & Nordloh
Milford, Ohio
Engineer; J. Roy Garber



MARMET GRIDWALL

with *automatically sealing* mating mullions

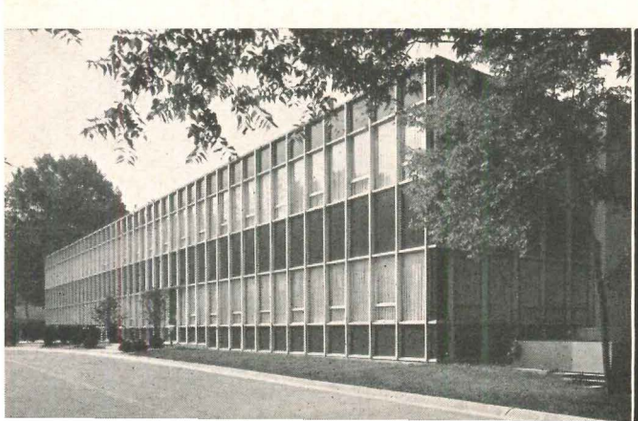


Look at this special split mullion joint developed by MARMET engineers. It helps save on labor costs in the assembly of MARMET gridwall sections. Integral vinyl weatherstripping, contained in the extrusions, automatically seal as each section is assembled into the wall . . . saving a separate sealing operation. Like other MARMET curtain wall, horizontals in the 6000 series have peined joints, internally sealed at the factory under 600 lbs. pressure. Result, positive sealing against the weather even though assembled amazingly fast with minimum costs.

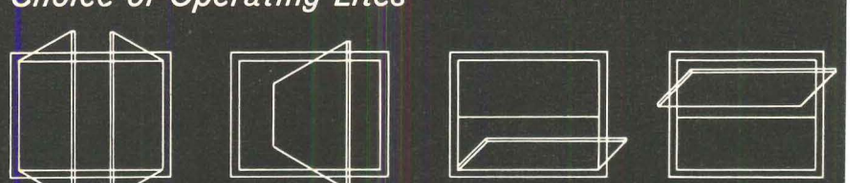
Frames for operating sash and doors are also factory installed in the grid section . . . providing additional savings on erection. Notice the variety of projected operating sash below, available in this series. For versatile curtain wall treatment on a tight budget, choose from any one of five basic MARMET systems . . . engineered to save costs, keep owners satisfied long after the job is complete.

For additional information on the complete line of MARMET products—consult Sweet's Catalog File No. 3a or write to MARMET MAR

MARMET CORPORATION
300-F Bellis St., Wausau, Wis.



Choice of Operating Lites



CASEMENTS PIVOT TYPE HOPPER PROJECTED

Pennsylvania Avenue text

continued from page 256

place. Large segments on the north side are decayed beyond restoration. It is clear that a great many of the buildings are about to be torn down and replaced by new structures which will include both private and public buildings.

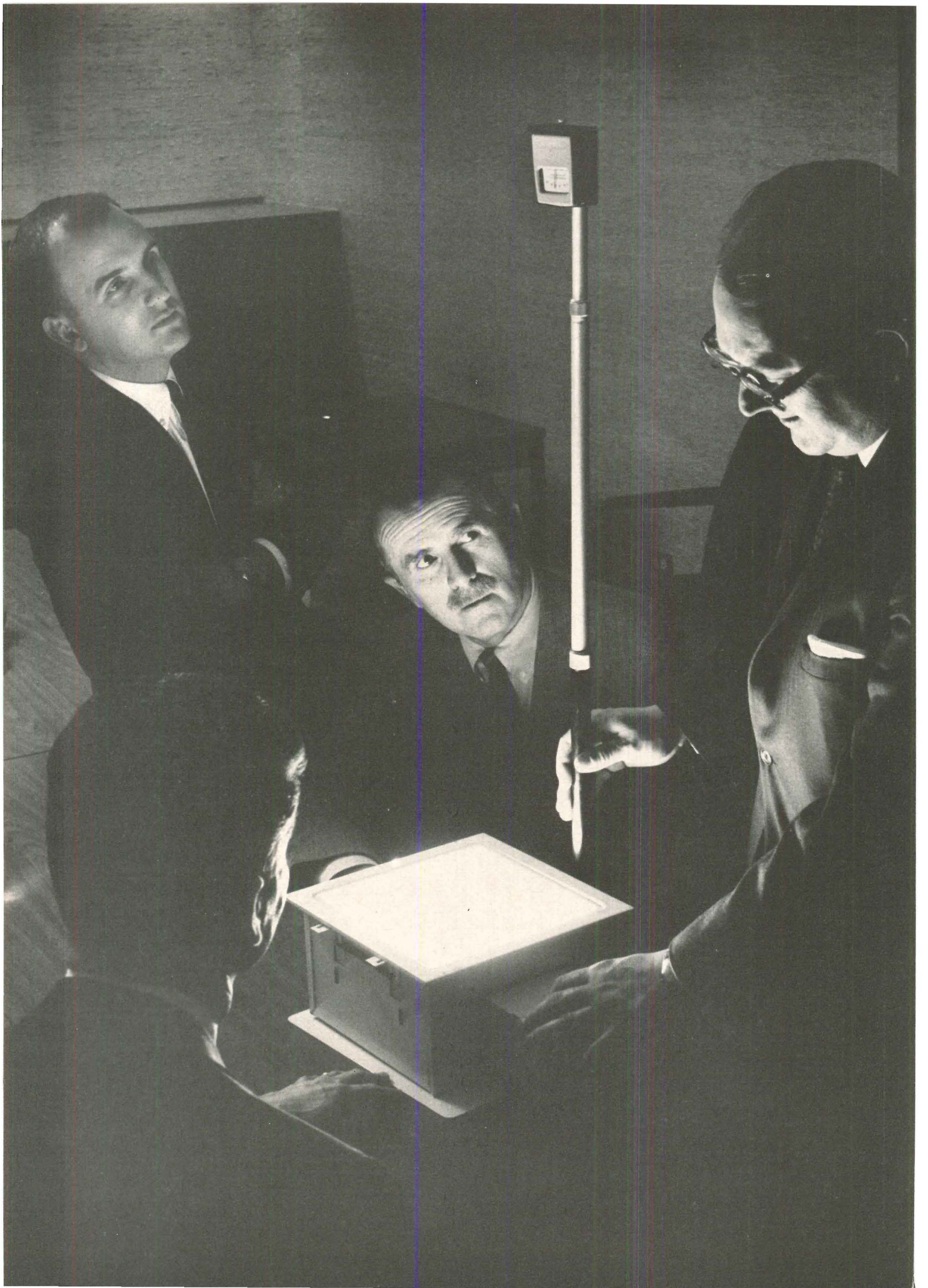
This presents a great opportunity. From Washington's time there has been a general understanding that the Federal Government has a responsibility to maintain standards of buildings and architecture in the Nation's capital. For the past half century this function has been ably performed by the Commission of Fine Arts. The prospect that a considerable number of buildings will be erected along Pennsylvania Avenue in a short span of time makes it possible to consider the over-all appearance, as well as the appearance of the individual structures. Instead of designing and constructing one new building at a time, it becomes possible to design and construct what would, in effect, be a new avenue.

This is an opportunity not to be missed. It will not come again for a half century or more, except at the prohibitive cost of demolishing large blocks of new and expensive office buildings.

At the same time it is clear that a dramatic transformation in the appearance of Pennsylvania Avenue is possible with only a marginal increase in projected expenditure. The General Services Administration hopes to build a number of new buildings in the downtown area. The need for additional office space is such that it cannot be doubted that Congress will approve. There are equally good grounds to suppose that substantial private capital will be expended for hotels and office buildings in the downtown area. (It may be noted that Washington attracts over 15,000,000 visitors a year.) Merely by combining these separate endeavors in one construction program a totality far more handsome, more truly functional, and more soundly economical may be achieved.

The committee feels there should not be any delay in setting about this effort. Specifically, the Federal Government, in cooperation with the Dis-

continued on page 277



This brief demonstration could make your next recessed lighting installation 20% more efficient

The test is simple and accurate and will take less than twenty minutes of your time.

The test apparatus consists of a precision light meter which is mounted to swing in an arc above an inverted recessed fixture. The purpose of the test is to show you the lighting efficiency and distribution of a recessed fixture.

Why should you know how much light gets out of the recessed housing? Because most of the recessed lighting fixtures on the market today vary widely in efficiency. We are not exaggerating when we say that in all probability you can increase the efficiency of your next recessed lighting installation by as much as 20% if you put the results of this test demonstration to work for you.

In an installation where recessed lighting must provide general as well as decorative illumination, a 20% improvement in efficiency would permit you to:

A) increase the footcandle level of the installation appreciably without increasing the number of fixtures used, or

B) reduce the number of fixtures required and effect an important reduction in cost of fixtures, wiring and installation.

The architects and engineers who have seen this demonstration have found it accurate, interesting and useful. We keep the test as relatively non-commercial as possible, but we obviously would not offer to conduct such demonstrations if we didn't have a recessed fixture which is an excellent performer.

The fact is that the one fixture which consistently leads all others in efficiency is manufactured by the Moe Light Division of Thomas Industries.

It's no accident. Among all competitively priced recessed fixtures, the Moe Light housing is the only one with a full parabolic reflector. This efficient reflector directs virtually all light out of the fixture and distributes it evenly.

We could easily diagram and publish the test data, but we'd prefer to show you the demonstration in your own offices and let you draw your own conclusions. Why don't you fill in the coupon below and send it today!

MOE LIGHT DIVISION
THOMAS INDUSTRIES INC.
207 E. Broadway, Louisville 2, Kentucky
Moe Light • Benjamin • Star Light • Enchante

Moe Light Division, Thomas Industries Inc., 207 E. Broadway, Louisville 2, Kentucky

Gentlemen: AR-7

Please have your lighting engineer contact me to arrange a recessed lighting demonstration in my offices.

NAME_____

POSITION_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

—New time-temperature rated acoustical ceiling panels and tiles

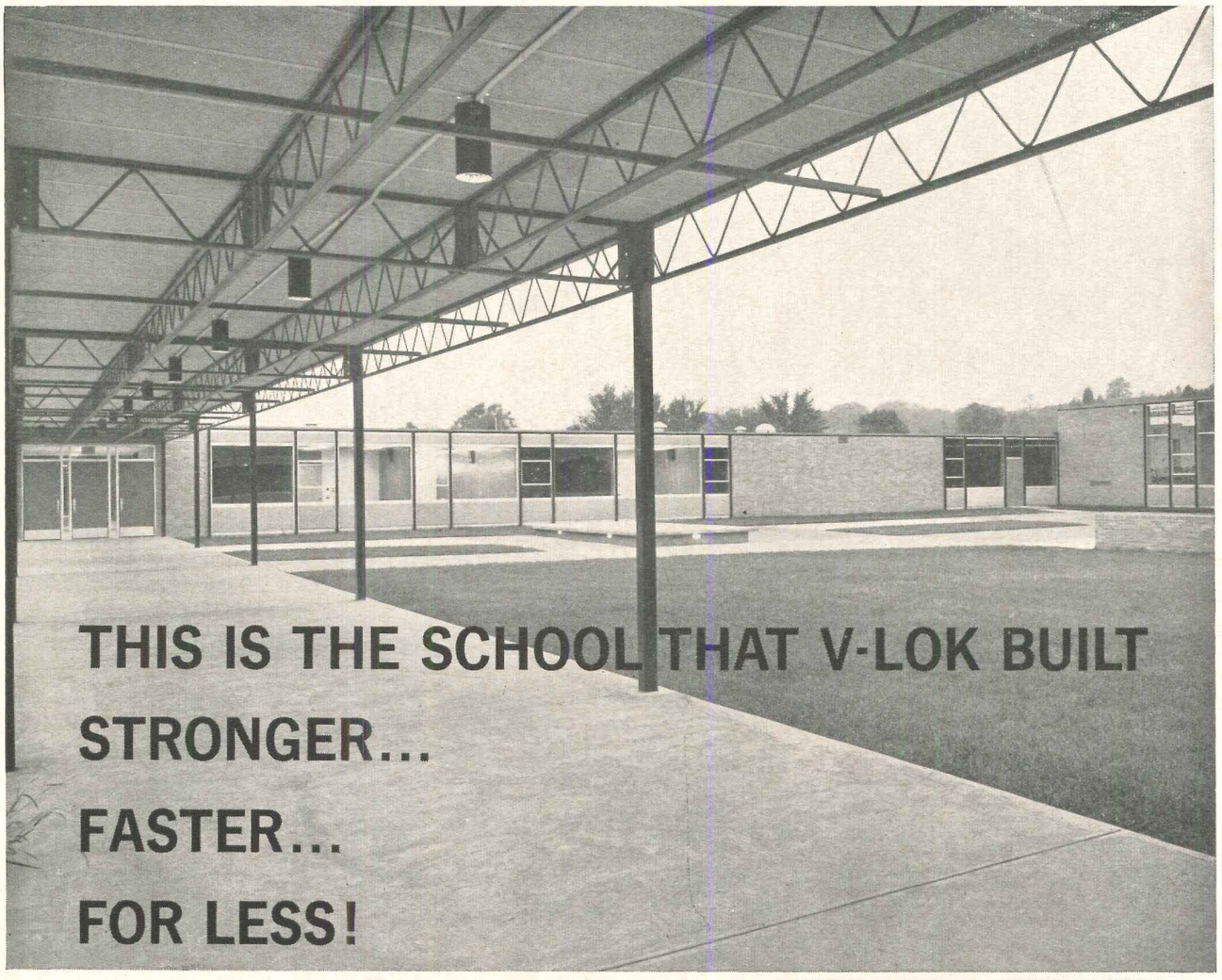
Firedike—new J-M acoustical ceilings that have been tested and approved for time-temperature construction, providing 2-hour and 3-hour ratings! At the same time, these firesafe installations absorb up to 80% of airborne room noise and provide high attenuation values.

FIREDIKE SAVES YOU MONEY! Suspended firestops of metal lath and plaster are not needed with Firedike. No intermediate fireproofing for steel structural members... no protective insulating materials for bar joists, steel beams or metal decks. You save the cost of such materials and also eliminate the expense of installing them!

FIREDIKE SAVES YOU TIME! Whether you are planning a new building or bringing an existing building up to date, Firedike can speed interior installation schedules. It is a completely dry installation: no lathing and plastering, no waiting for the interior to dry, no need to paint Firedike's white, factory-applied finish. Firedike is fire protection and sound control in one easily installed material!

FIREDIKE IS DURABLE AND DEPENDABLE! Made of incombustible mineral wool fibers, Firedike is fabricated in monolithic construction to produce rigid, durable panels and tiles. It is unusually resistant to "breathing," or up-and-down passage of dust-laden air . . . can be easily cleaned by conventional methods. The big panels, in random pierced pattern, are 24" x 48" or 24" x 24" (nominal). The tiles are 12" x 12". For more information, write for Brochure AC-58A. Address Johns-Manville, Box 158, Dept. AR-762, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

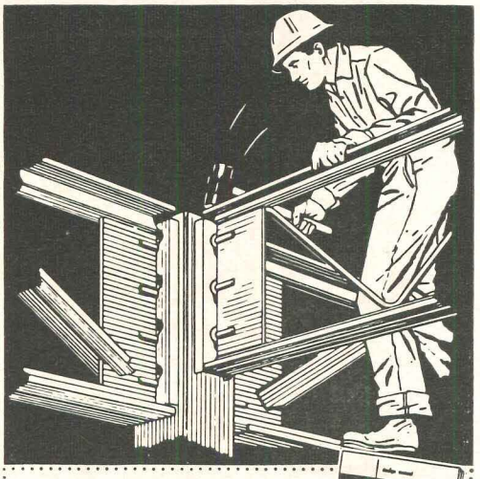
JOHNS-MANVILLE
ACOUSTICAL PRODUCTS



...because V-LOK® interlocks!

V-LOK steel structures go up so fast they advance occupancy time. A hammer blow securely seats their interlocking deep end connections. Result: A stronger, more rigid frame. Faster decking, too, with exclusive nailable V-section chords. And V-LOK structures grow with you. They permit wide design latitude for loading, clear heights, roof type, bay area. What's more, V-LOK is compatible with modern finishing materials and techniques.

For FREE 48-page design manual, return this coupon today.



MACOMBER
Canton 1, Ohio
Please send me your V-LOK Design Manual.

Name _____

Company _____ Position _____

Address _____

City _____ Zone _____ State _____

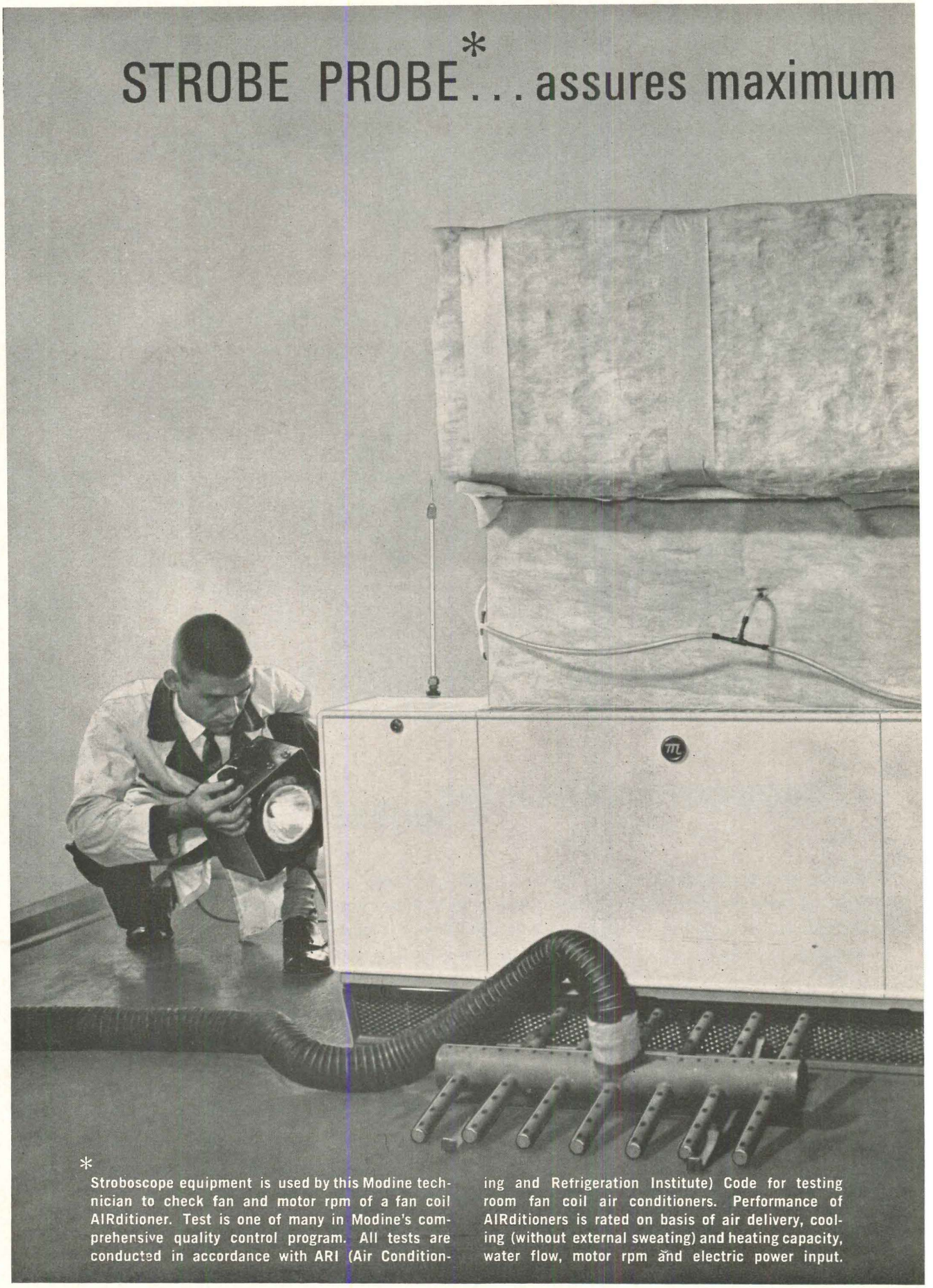
VAR-27

MACOMBER
CANTON 1, OHIO

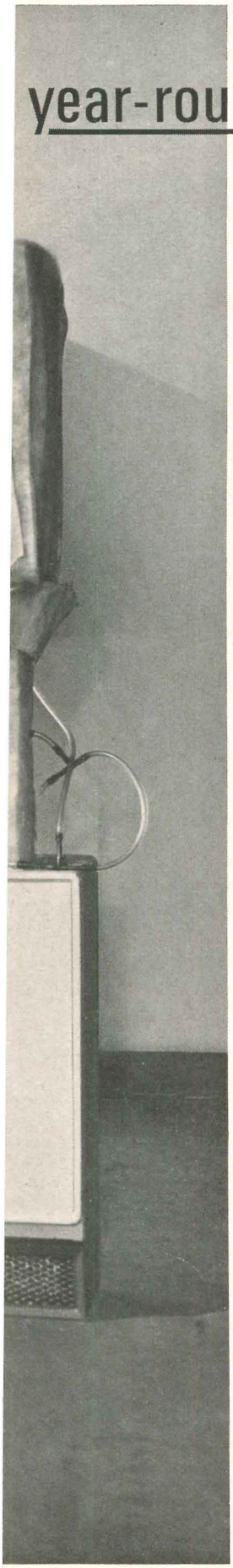
ALLSPANS • V-LOK • V-PURLINS • ROOF DECK
BOWSTRING TRUSSES • MACOFORM • STRUCTURAL STEEL

LOOK UNDER "STEEL FABRICATORS"
to find your local MACOMBER Representative in the Yellow Pages

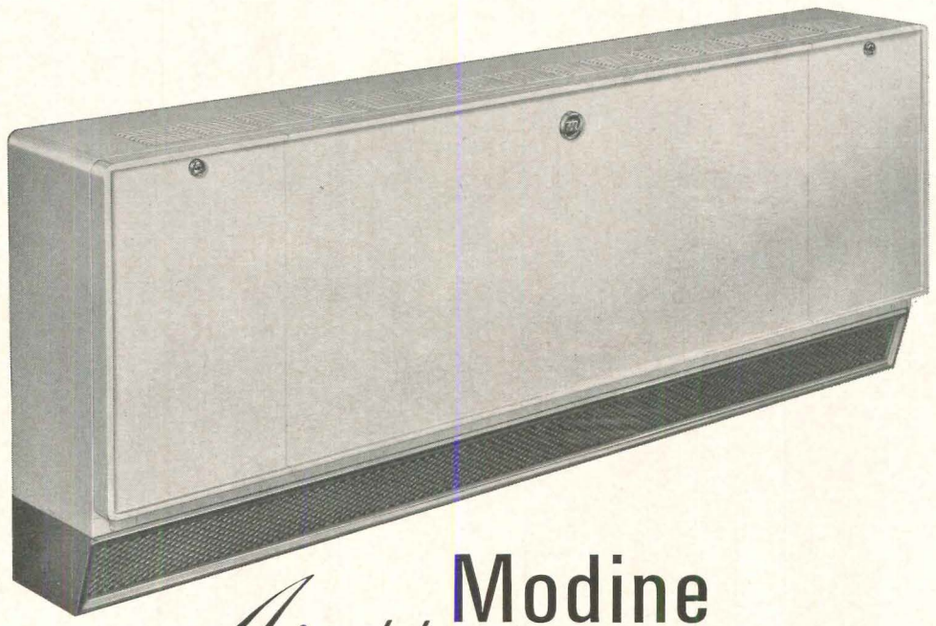
See our Catalog in SWEET'S



* Stroboscope equipment is used by this Modine technician to check fan and motor rpm of a fan coil AIRditioner. Test is one of many in Modine's comprehensive quality control program. All tests are conducted in accordance with ARI (Air Conditioning and Refrigeration Institute) Code for testing room fan coil air conditioners. Performance of AIRditioners is rated on basis of air delivery, cooling (without external sweating) and heating capacity, water flow, motor rpm and electric power input.



year-round comfort and economy



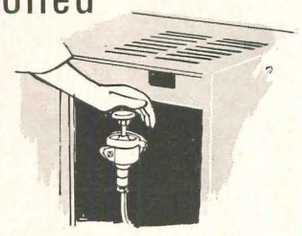
Modine *Airditioner*® fan coil units

Room by room, occupant controlled "all-season" comfort!

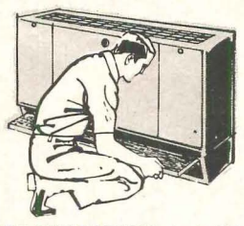
With whisper-quiet efficiency, Modine fan coil AIRditioners insure year-round comfort, all-round economy! They heat with hot water, cool with chilled . . . from a central source. Occupants of each room control their own comfort, manually or by thermostat. And thanks to Modine's high-capacity coil, comfort response is *immediate!*

Installation is economical in new or existing buildings. Same supply and return piping serves for both chilled and hot water. And on most remodeling jobs, existing piping can be used.

Modine fan coil AIRditioners are offered in seven attractive colors. Eight sizes: 200 to 1500 cfm. Models are available for mounting at floor level, on wall, or concealed in wall. For full information, write for Bulletin 761.



PUSHBUTTON LUBRICATION! An optional feature that pays for itself **fast!** Just push a button and metered amounts of lubricant flow to every oiling point.



SLIDE-OUT FILTERS! Just slide out the old, slide in the new! No time lost removing panels. The filter pulls out like a drawer . . . slides in smoothly, quickly.

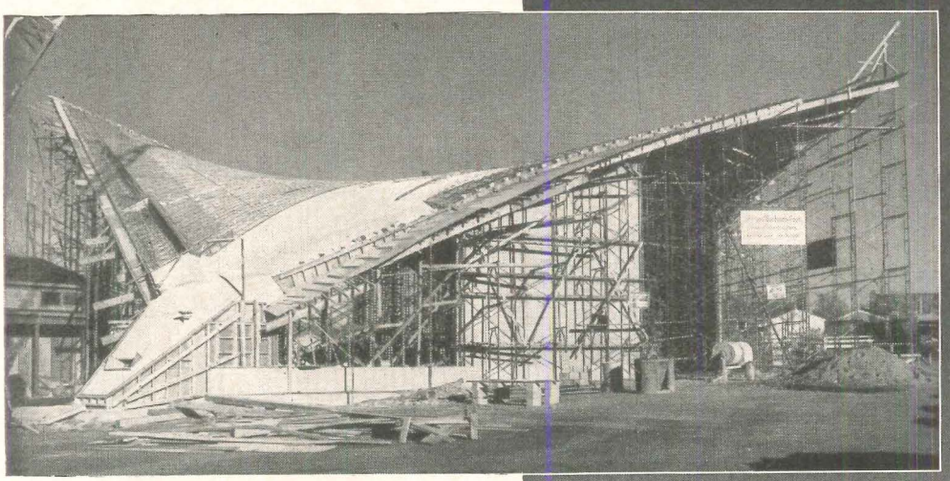
HEAT TRANSFER CREATIVE CENTER®

Modine MANUFACTURING CO.

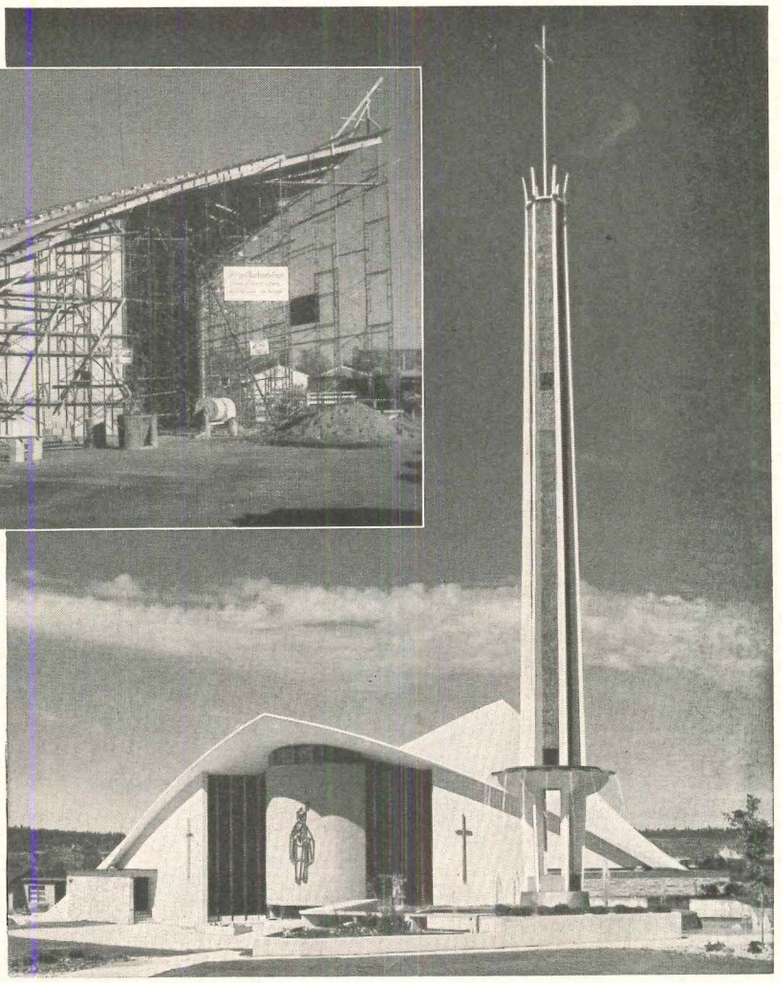
1510 DeKoven Ave., Racine, Wis. • In Canada: Sarco Canada, Ltd., Toronto 8, Ont.

C-1466

- Steam, Hot Water, Gas-Fired and Electric Unit Heaters
- Fan-Coil Units and Self-Contained AIRditioners
- Classroom Heating and Ventilating Units
- Cabinet Unit Heaters, Steam and Gas Blower Unit Heaters
- Steam Specialties
- Radiation Products — Convectors, Finned Tube, Baseboard



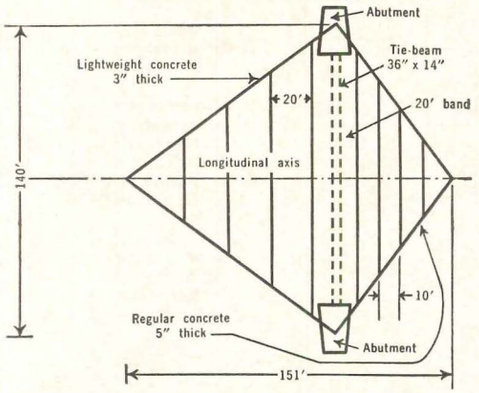
In the photo above, the portion of the shell with lightweight concrete is to the left of the abutment. To the right—the portion with the regular concrete (see diagram below). After shell was complete and concrete had attained 3000 psi compressive strength, it was post-tensioned both longitudinally and transversely. Below-grade tie beam between the abutments was also post-tensioned. Rigid insulation serves as the surface of the formwork, thus becoming an integral part of the shell.



With its sweeping concrete h/p roof and 96′ high illuminated tower, the church is a dramatic sight. In addition to its esthetic appearance, the use of a modified h/p made the building economical in comparison to many others holding the same number of persons.

"UNBALANCED" CONCRETE H/P ROOF

ALLOWS SEATING FOR 800 ECONOMICALLY IN SPOKANE CHURCH



This sketch shows the "unbalanced" design of the h/p roof. Concreting sequence started with the placing of the 36″ x 14″ tie beam below grade. The 20′ band of the shell between abutments came next. After tensioning both tie beam and 20′ band, abutments were poured. Concrete for the rest of the shell was placed by alternating pours of lightweight and normal concrete. Lightweight pours were in 20′ bands, normal pours in 10′ bands.

Though not yet commonplace, perfectly *symmetrical* hyperbolic paraboloid roofs are not totally new either. But this one for the new St. Charles Church, Spokane, Wash., is different. It's "cut off" a little beyond the halfway point of its longitudinal axis. The result is a kite-shaped roof that's symmetrically "unbalanced."

To build this roof *in* balance, an ingenious technique was used: Bands of *lightweight* concrete were placed on the larger section of the roof alternately as bands of *regular* concrete were placed on the smaller section. This kept a balanced deadload throughout construction.

To the church congregation, it means an economical, no-waste-space and column-free structure that seats 800. A beautiful structure that is fireproof and requires little or no maintenance.

Lehigh Cements contributed to the special mixes that helped make this complex job a success. Here is another example of the complete versatility of concrete in any type of modern construction. Lehigh Portland Cement Company, Allentown, Pa.

LEHIGH CEMENTS

Owner: St. Charles Catholic Parish, Spokane, Wash.
Architects: Funk, Murray, and Johnson, Spokane, Wash.
Contractor: Vern W. Johnson & Sons, Inc., Spokane, Wash.
Consultants for Prestressing: T. Y. Lin & Associates, Los Angeles, Calif.
Ready Mix Concrete: Acme Concrete Co., Spokane, Wash.

Pennsylvania Avenue text

continued from page 269

trict government, should formally undertake the redevelopment of Pennsylvania Avenue, so that it may assume its rightful place as the principal thoroughfare of the Nation's capital.

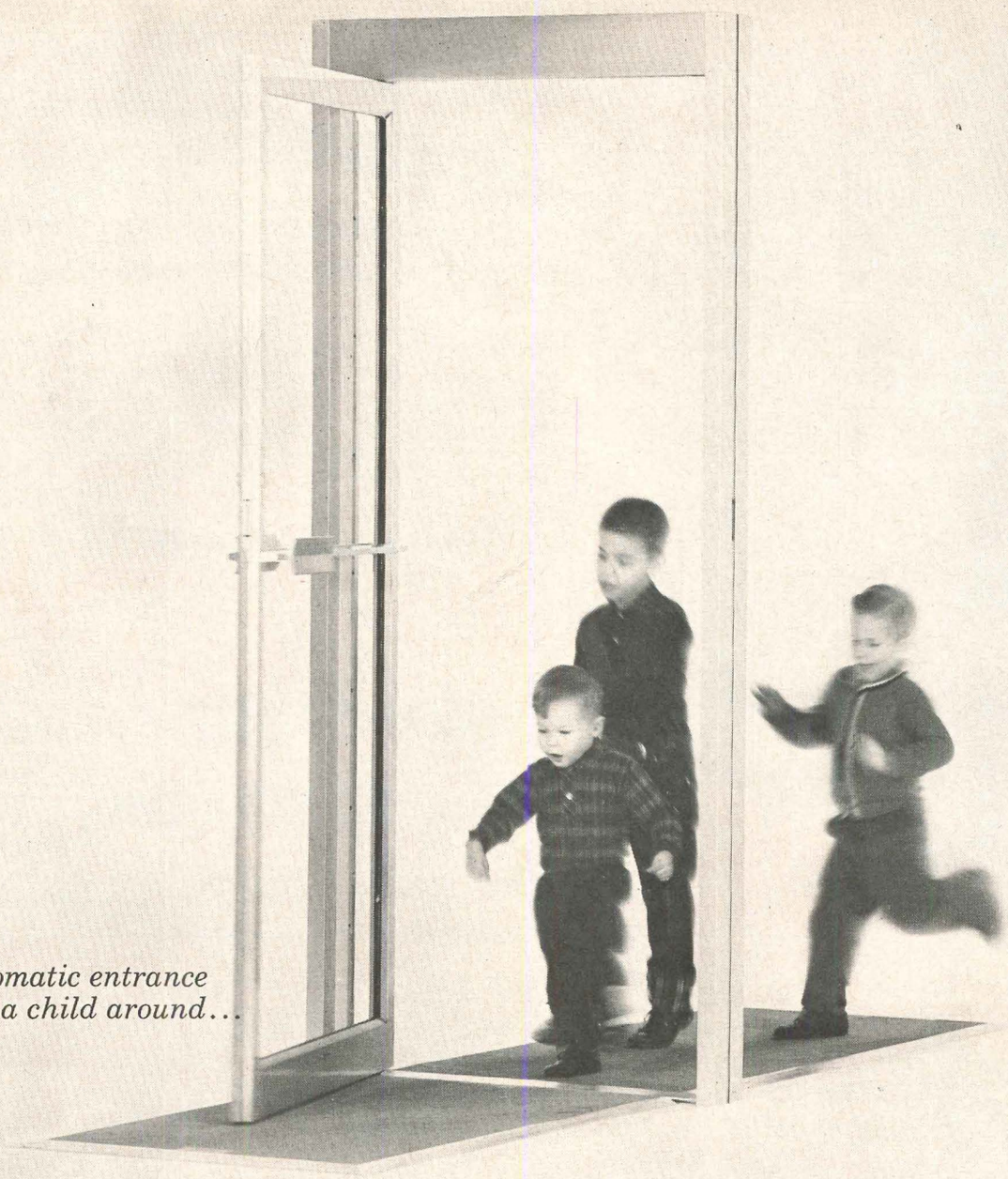
The Pennsylvania Avenue project should be regarded as a continuation of the work on the Federal Triangle which began a generation ago. In this instance, however, the effort should involve a partnership between the Government and private enterprise. A primary object of the redevelopment of the avenue should be to emphasize the role of the Capitol itself as the center of the city. For this reason care should be taken not to line the north side with a solid phalanx of public and private office buildings which close down completely at night and on weekends, leaving the Capitol more isolated than ever. Pennsylvania Avenue should be lively, friendly and inviting, as well as dignified and impressive.

As much attention should be paid to the 160-ft-wide avenue itself as to the buildings that line it. Much repairing and rearranging is in order. The object should be to produce an avenue on which it is pleasant to walk as well as possible to drive. Benches, arcades, sculpture, planting and fountains should be encouraged.

In 1952, by Act of Congress, the National Capital Planning Commission was created and designated as "the central planning agency for the Federal and District governments to plan the appropriate and orderly development and redevelopment of the National capital and the conservation of the important natural and historical features thereof." It is clear that the central responsibility for planning and redevelopment of Pennsylvania Avenue resides with the Commission. To fulfill this responsibility it will be necessary for the Commission to engage the services of a number of the foremost architects of the Nation: nothing less than the very finest, established talents available will be sufficient for this unusually significant undertaking.

Responsibility for the design and construction of new Federal build-

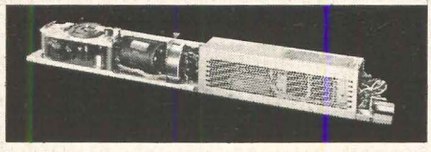
continued on page 284



The only automatic entrance you can trust a child around...

Kawneer, the SAFE automatic entrance

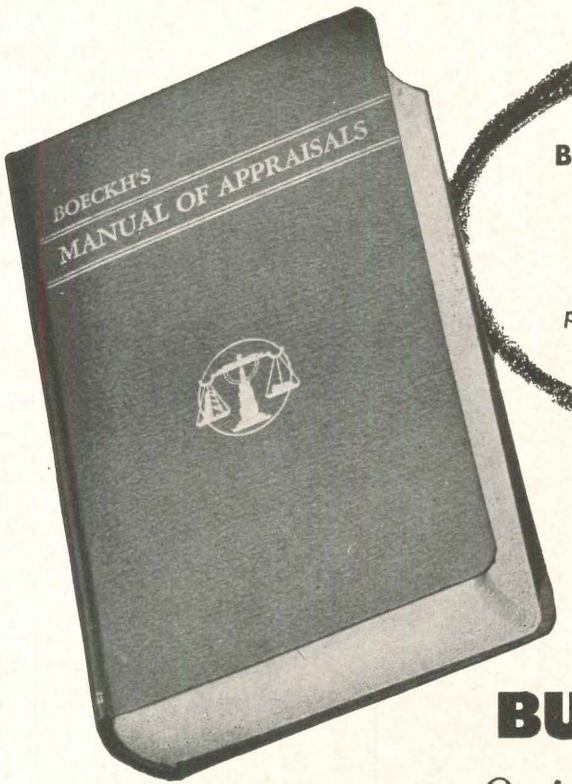
☐ In an accident analysis for two supermarket chains, an insurance company found that each chain had 98 accidents per year involving automatic entrances (53% struck by the door, 36% hands or arms caught in closing door). Children from 2 to 5 were involved in 60% of the accidents. Cost of settling the 196 accidents studied: $26,000. (No Kawneer Automatics were involved.) ☐ Specifying the safe Kawneer automatic entrance spares a great many innocent people injury and pain, and saves your client considerable money. ☐ The Kawneer Automatic is safe because it provides finger and hand protection at both jambs. It is well-nigh impossible for the door to swing back and hit those who go through it the wrong way, because when the door is pushed through the wrong way, the power cuts off. This also serves as a panic breakaway. ☐ The new Kawneer A5 Automatic is most reliable . . . it is the only automatic in which the whole entrance—operator, mat, door and frame—carries the UL and CSA labels. Service is now excellent, and being improved upon every day by a growing network of service agencies. ☐ But first and foremost, remember that when you specify Kawneer, you specify the *safe* automatic entrance.



One of the reasons why the Kawneer Automatic is priced so competitively is that the operator is so easy to install . . . it slips right into the transom bar.

Kawneer

KAWNEER CO., Niles, Mich., Richmond, Calif.
KAWNEER CO. CANADA, LTD., Toronto, Ontario.



FIFTH EDITION—*Just Published*

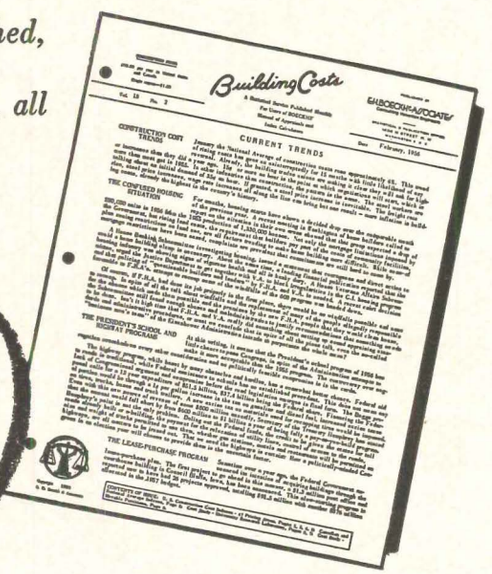
BOECKH'S MANUAL OF APPRAISALS

If advance cost planning is a part of your architectural problem, then this book and its supplement service *"Building Costs"* should be part of your "Kit of Tools." *Here is a service program that has been helping architects and builders develop costs of proposed projects for more than a quarter of a century.*

YOU CAN FIGURE BUILDING COSTS

Quickly and Accurately

For laymen or experts, the most comprehensive and quick method yet published, over 100,000 individual unit costs, more than 300 buildings with hundreds of variations, all easily convertible to local conditions through "Building Costs!"


Building Costs

CURRENT TRENDS

BUILDING COSTS

A comprehensive monthly supplementary service giving you up to the minute news and analysis of market conditions, plus the latest cost indexes for the major metropolitan areas of America and Canada to convert the estimating *Manual* to local cost conditions.

SEND TODAY FOR BROCHURE TO

E. H. BOECKH & ASSOCIATES
Consulting Valuation Engineers
1406 M Street, N. W.
Washington 5. D. C.

Please send me full descriptive literature on your estimating and cost planning services.

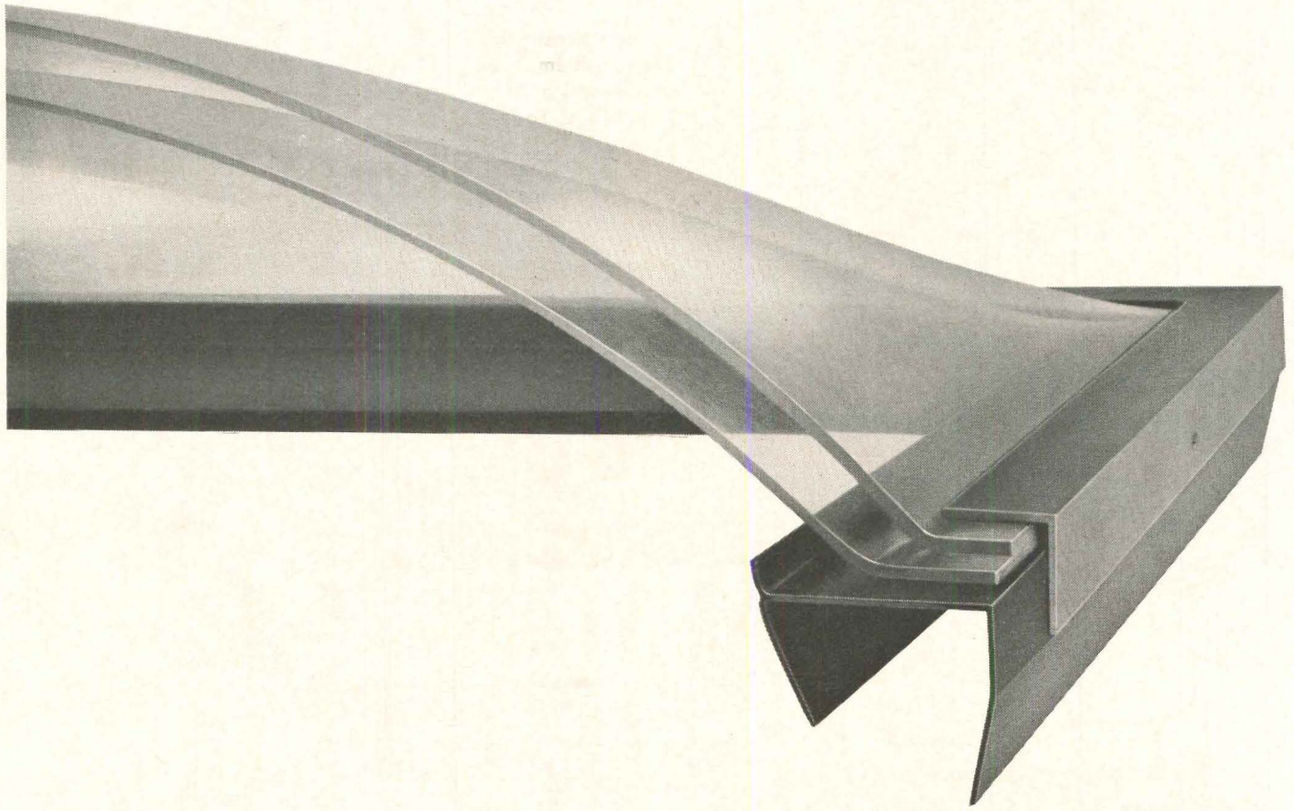
NAME _____

FIRM NAME _____

STREET _____

CITY _____ ZONE _____ STATE _____

NEW FROM JOHNS-MANVILLE



Corrulux® Double-Domes for better daylighting

ALL-ACRYLIC DOMES ARE PREFABRICATED AND FACTORY-SEALED... SPECIAL FRAME DESIGN ALLOWS UP TO 12% MORE DAYLIGHTING AREA

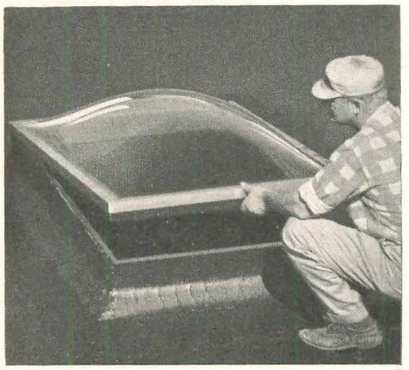
Now—a new unit with a special frame design that affords as much as 10-12% more daylighting area! J-M Corrulux Double-Domes are available in clear acrylic or in 3 shades of white for various light transmission values and insulation requirements. They are particularly suited to the low-pitched roofs favored for modern school, supermarket and factory buildings . . . and also have special residential applications.

On-site assembly is no longer a problem. The new PVC (polyvinyl chloride) frame is rigid and durable, yet flexible enough to adjust to curb openings that frequently deviate from specified dimensions. Therefore, each unit can be installed factory-sealed.

In service, weathering and age leave PVC functionally intact. The domes proper are of time-tested acrylic plastic that has proved itself in every climate zone for many years.

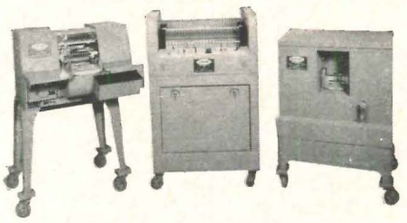
For more information about these adaptable new daylighting units, write for Brochure CXI-9A. Address Johns-Manville, Box 158, Dept. AR7, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

Easy, trouble-free installation

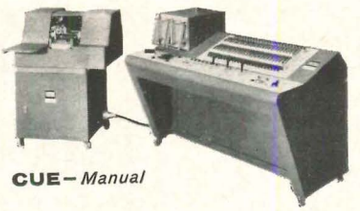


Available in a curb type, as shown above, or in a flush type

JOHNS-MANVILLE



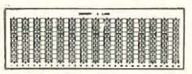
PUNCH – *Automatic*



CUE – *Manual*

CENTURY CONTROL SYSTEMS

Century offers the widest range of remote electronic and transformer control systems for theatre and school — the result of constant research and refinement of design in lighting control.

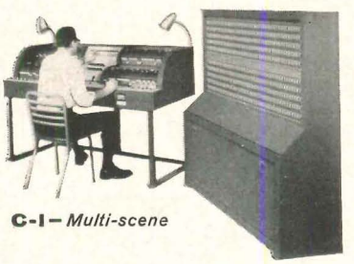


C-CARD – *Re-usable*

PUNCH — Fully automatic punched card system

CUE — Manually operated punched card system

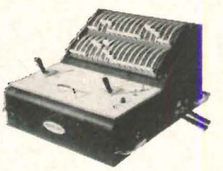
C-CARD — Re-usable preset card system — semi-automatic or manual



C-I – *Multi-scene*

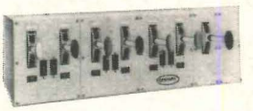
C-I BOARD — Multi-scene preset system with individual manuals

THEATRON — Two scene preset system (2 sets of manuals)



THEATRON – *2 Scene*

PACKAGE BOARD — Manual auto-transformer dimmers



PACKAGE – *Manual Transformer*

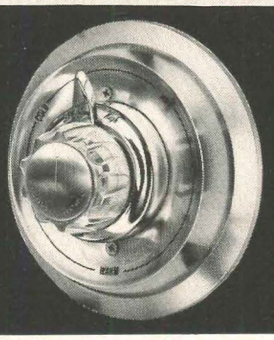
Write for data

CENTURY ARCHITECTURAL LIGHTING

521 West 43 St., New York 36, N. Y.
1820 Berkeley St., Santa Monica, Cal.

SPEAKMANSHIP
the modern approach to water management in the home, the plant and the institution
IN ACTION:

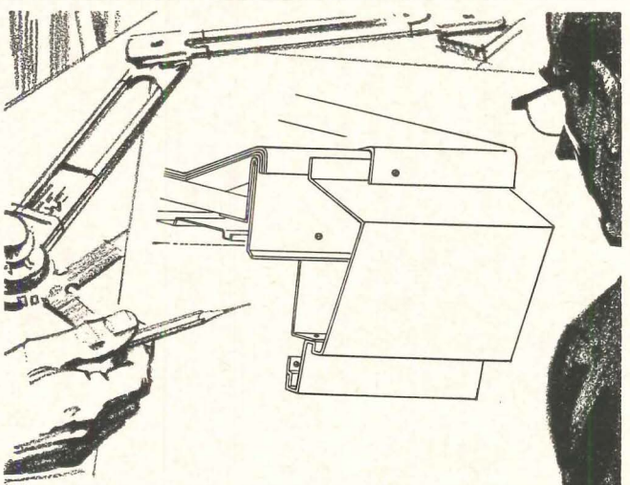
CLEVER SELECTOR



NEW SPEAKMAN® SENTINEL® SHOWERGARD* valve lets bathers dial shower temperature, flick a lever to adjust volume. Then it automatically protects them from sudden, dangerous **icy cold** or **steaming hot** surges! Works on water pressure alone—nothing to get out of order or service. Valve seats are long-wearing, non-corrosive Monel. Available with Acrylic dial or metal handle for temperature selection. Both available **without volume control** if desired. Get full details—send for new Sentinel Showergard brochure S-113 today.

*T.M. Property Speakman Company

SPEAKMAN COMPANY
Wilmington 99, Delaware
In Canada write Cuthbert-Speakman, Montreal 3, Quebec



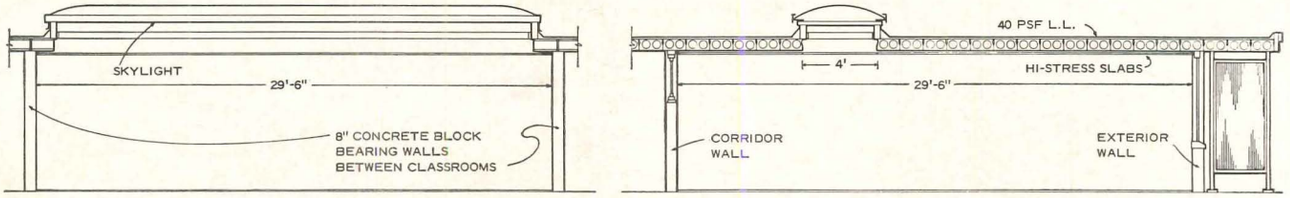
"**McKINLEY FASCIA**

eliminates wood at roof edge . . .
is available in many colors
and shapes."

See Sweets Architectural File 8g/Mc. Write for Detail Kit and Name of Your Representative.

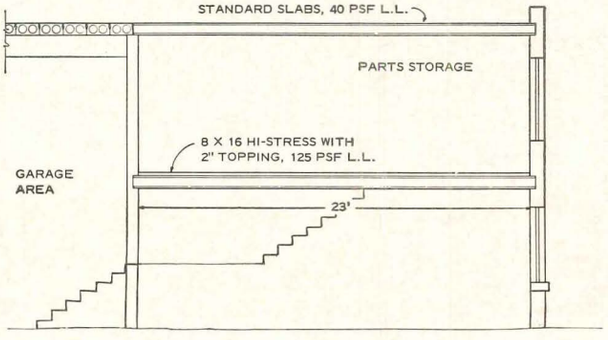
McKINLEY METAL PRODUCTS
o. o. McKINLEY co., inc. 4530 N. Keystone Ave., Indianapolis 5, Ind.

cantilevered sun cornice • cornice shade • marquee-canopy
walkway cover • door hood • wall facing • fascia gravel stop

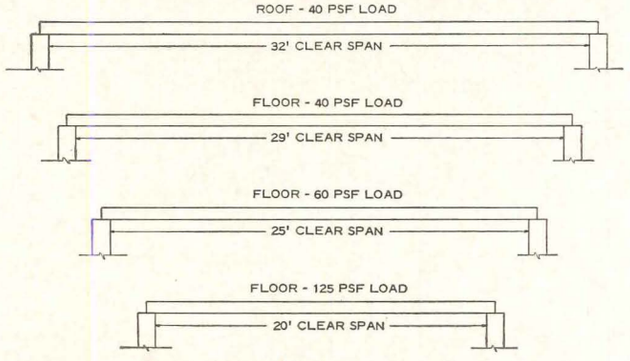


SCHOOL WITH CLASSROOM SKYLIGHTS. Flexicore Hi-Stress slabs with two 7/16" stress-relieved strands clear span the 29'-6" width of the rooms, are designed to carry 40 psf roof load. Four slabs, two on each side of skylight, have three 3/8" strands to carry the extra load of the skylight.

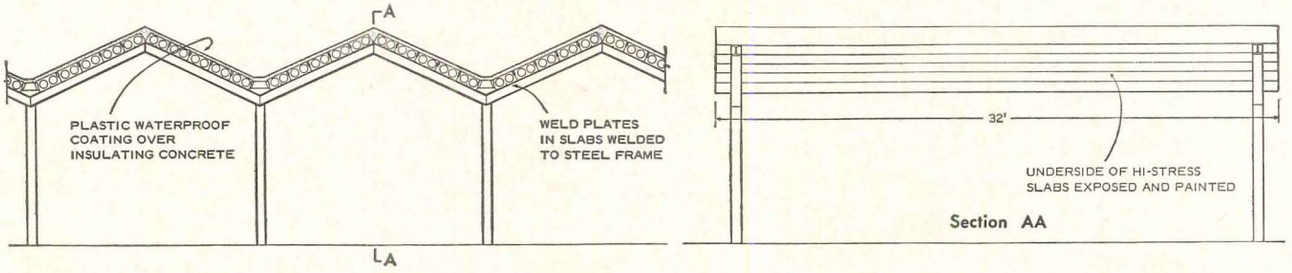
New Hi-Stress Flexicore Slabs Combine Longer Spans, Greater Loads, Improved Structural Performance



PARTS DEPARTMENT FLOOR in garage was designed for 125 psf superimposed load. Two inches of concrete topping on Hi-Stress floor gave a composite design to adequately handle this load on the 23' clear span. Standard Flexicore slabs were used on the roof.

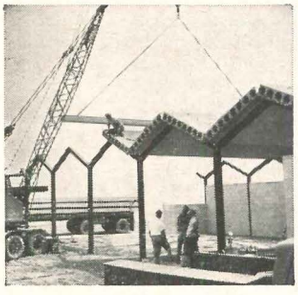


TYPICAL LOAD AND SPAN combinations for 8 x 16 Hi-Stress Flexicore slabs. Superimposed loads shown may be increased with composite design.



ONE-STORY COMMERCIAL BUILDING ROOF DESIGN requires only a steel frame on each side of the building to carry 8-inch Hi-Stress units on long clear span. Design can be repeated in any direction for larger building. Underside of slabs was exposed for neat, maintenance-free ceiling.

Floor or roof slabs erected quickly



New 8" x 16" Hi-Stress units are fully prestressed slabs (f_{si} 175,000 psi) cast in steel forms, with stress-relieved strands tensioned before concrete is poured. Appearance is similar to standard Flexicore slabs which use pretensioned intermediate grade steel bars.

For more information on these projects, ask for Hi-Stress Flexicore Facts 2, 4 & 5. Write The Flexicore Co., Inc., Dayton, Ohio, the Flexicore Manufacturers Assn., 297 S. High St., Columbus 15, Ohio or look under "Flexicore" in the white pages of your telephone book.

flexicore®
PRECAST CONCRETE DECKS

Pennsylvania Avenue text

continued from page 277

ings will, of course, remain with the General Services Administration, which should play a major role in the entire program. The Planning Commission will also wish to work in the closest cooperation with the architect of the Capitol and the Commission of Fine Arts. They will also wish to work with the National Capital Transportation Agency, the Federal City Council, Downtown Progress, the American Institute of Architects and the numerous other public and private organizations that will be concerned with the splendid challenge to the creative talents of all those concerned with the beauty and majesty of the capital city of the United States of America.

Addenda

The RECORD deeply regrets that in its article on the Police Facilities Building, Santa Ana, California (May, pages 165-168), which was properly credited to Richard J. Neutra and Robert E. Alexander, architects, the list of credits inadvertently omitted the names of the associated architects, Ramberg and Lowrey.

In the May issue of the RECORD (pages 14-15), the story "U.S. Picks Architect by Competition" did not include the fact that the program of requirements furnished to competing architects was prepared by Alston G. Guttersen, A.I.A., in collaboration with a committee of advisers and the Bureau of Prisons' administrative and medical staff.

HUNTINGTON

...where research leads to better products

HUNTINGTON LABORATORIES

Huntington, Indiana

Philadelphia 35, Pennsylvania • In Canada: Toronto 2, Ontario

YOU SPECIFY THE FLOORING!

Let him

SOLVE THE MAINTENANCE PROBLEMS

Shoes are murder.

Stiletto-like high heeled slippers. Dress shoes. Work shoes. Day in and day out, they'll pound any flooring you specify . . . grinding in abrasive dust, dirt, even gravel . . . robbing it of its appearance and condition . . . leaving behind the scars of time and traffic.

How do you protect your building *and* your reputation against these floor-killers? Simple. Just hand over your floor maintenance worries and headaches to the gentleman behind the drum. He'll love it. Solving floor maintenance problems has been his way of life for an average of 19 years.

Your Man Behind the Huntington Drum has the ability and experience to create an *overall* maintenance program: for every area of your building . . . for every flooring material you specify. In his zeal, he'll even supervise the maintenance crews to make sure application is proper.

So why not call in our floor-oriented friend? Discuss with him the flooring you're about to specify, and dump the problem of its care into his lap. You'll lose a headache . . . and gain an ally.

SEE OUR CATALOG S IN SWEET'S

FILL OUT AND MAIL THIS COUPON

Huntington Laboratories, Inc.
Huntington, Indiana

Gentlemen: I would like a Man Behind the Huntington Drum to call on me to discuss floor maintenance.

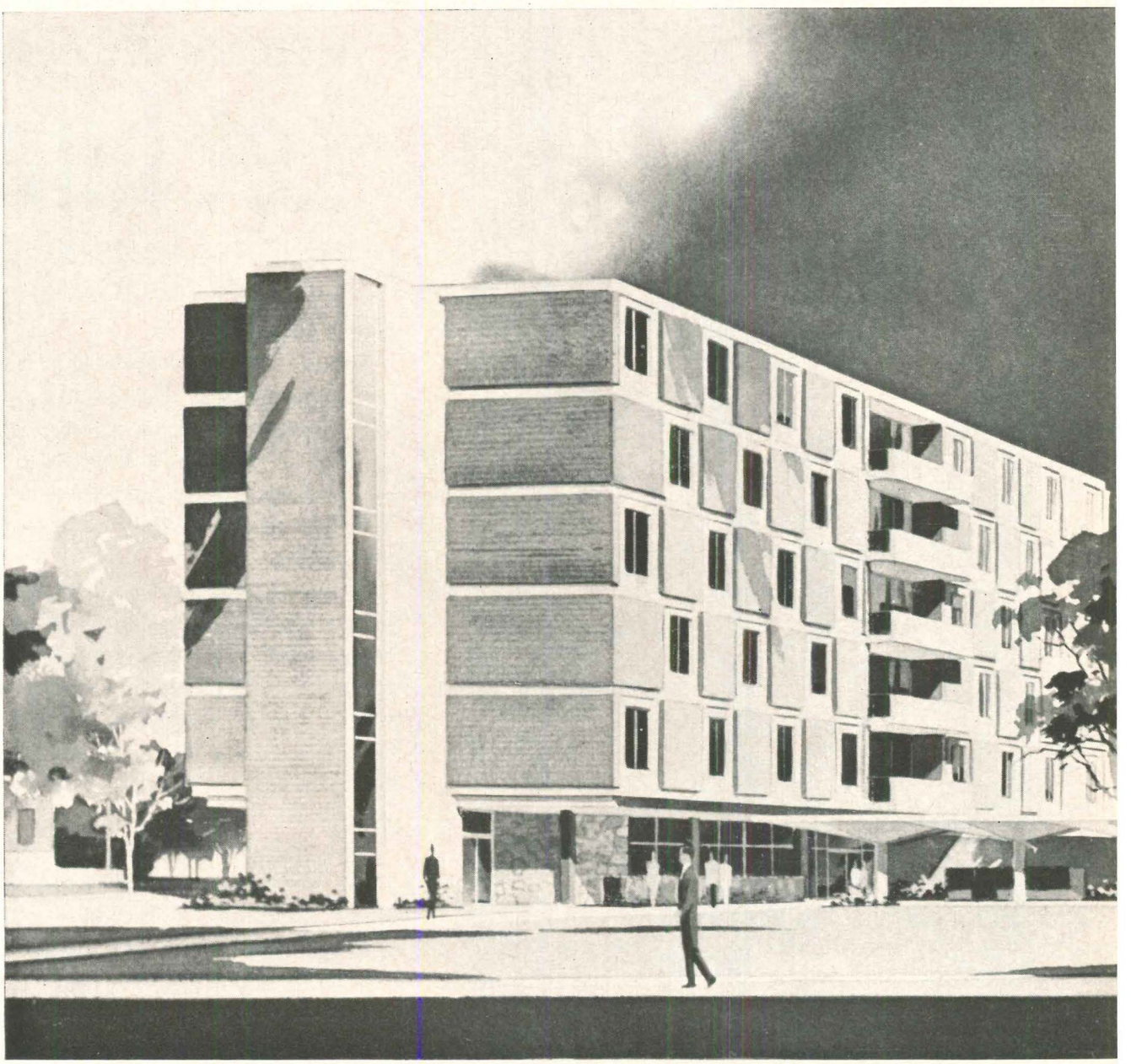
(☐ Ask him to leave his drum outside.)

NAME _____ TITLE _____

FIRM _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

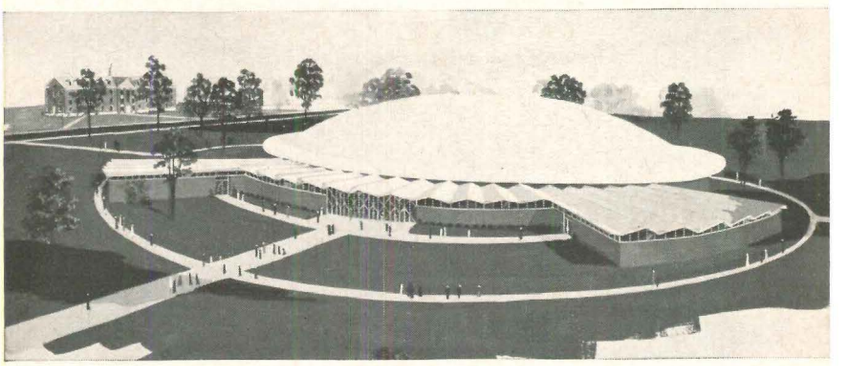


AMERICAN LUTHERAN RETIREMENT HOME, Fargo, North Dakota—the state's first pre-stressed lift-slab building. Each of six post-tensioned slabs measures 103′ x 47′. Maximum column spacing—24′ x 15′11″. Architect: Foss & Co., Fargo Moorhead. **General Contractor:** J. E. Kreig & Sons, Inc., Fargo. **Consulting Engineer:** Kolbjorn Saether & Assoc., Chicago. **Lifting Contractor:** Northwest Lift Slab Co., Portland, Oregon.

THREE MORE

SUCCESSFUL COLLABORATIONS

Lift-slab jobs post-tensioned by Ryerson



300-FT. CONCRETE DOME highlights auditorium of the General Ministerial Assembly of the Church of God, Anderson, Ind. Dome was cast over a mound of earth and lifted into place. Dome ring is post-tensioned with BBRV tendons supplied by Ryerson. Architect: Johnson, Ritchhart & Assoc., Anderson. Gen. Contractor: Lewis Construction Co., Anderson. Lifting: Great Lakes Lift-Slab, Chicago; Sky Hook Lift-Slab, Overland Park, Kansas.

NATURAL PARTNERS

New Lift-slab construction

AND

Ryerson post-tensioning

These four projects demonstrate the advantages and outstanding economies of post-tensioned, lift-slab construction.

The lift-slab method saves time and money. Forming costs are drastically reduced and the job speeded by having all concrete work done at ground level. Shoring is eliminated and sleeve alignment simplified. Another advantage: under-surfaces of slabs are often used as finished ceilings.

Post-tensioning provides strength *and* lightness—longer spans and thinner slabs. Plus better control of slab deflection (as opposed to conventional reinforcement). In the Lutheran project, where unfavorable soil conditions require reduced building weight, these advantages are vital.

Ryerson specialists in post-tensioning and lift-slab construction work closely with architects, engineers and contractors. Ryerson furnishes comparative cost data in development stages; arranges for lifting services and assists at every step of the post-tensioning operation by providing force development calculations, materials, equipment and technical counsel, even during field erection.

Poured like a layer cake

In cost and timesaving fashion, floor and roof slabs are cast on the ground one atop the other. A sprayed-on plastic coating serves as a separation element. Post-tensioning tendons are installed before the concrete is poured; then stressed after a curing period.

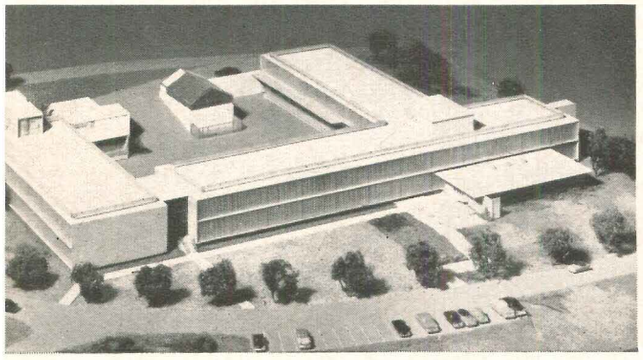
Slabs are lifted by hydraulic jacks mounted on the column tops. Lifting of the slabs is controlled by a single operator at a central console.

For further information on lift-slab construction and Ryerson's complete post-tensioning service, call your nearby Ryerson representative.

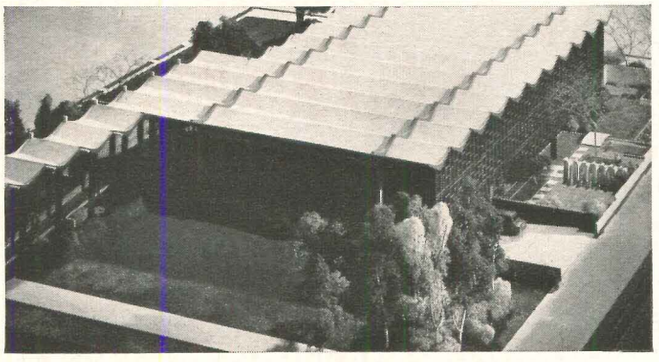
RYERSON

JOSEPH T. RYERSON & SON, INC., MEMBER OF THE INLAND® STEEL FAMILY

Re-Bars and Accessories • Post-Tensioning • Lift-Slab Service • Spirals • Wire Mesh • Open-Web Joists • Sheet Steel Piling and Bearing Piles • Structural Shapes and Tubing • Safety Plate • Stainless Steel • Aluminum Building Products • PVC Water Stops • Expanded Metal • Grating, etc.



V NUCLEAR MEDICINE BUILDING at a Calif. university. Continuous way flat slabs, 9-in. thick are post-tensioned with 838 tendon assemblies Ryerson. Column spacing—about 25 ft. Architects & Engrs.: Neptune & mas & Assoc., Pasadena. Gen. Contractor: James I. Barnes Construction Santa Monica. Lifting: Vagtborg Lift-Slab Corp., Los Angeles.



LIBRARY BUILDING, UNIVERSITY OF NEVADA, is built with 22-ft. 6-in. column spacing, 9-in. lift-slabs and 4-in. folded plate roof structure. Architects: Robert E. Alexander & Assoc., and Vhay Assoc., Los Angeles & Reno. Structural Engr.: Parker, Zehnder & Assoc., Los Angeles. Consultant for roof structure: John J. Driskell. Gen. Contractor: Stolte, Inc.

How to get on a MERRY-GO-ROUND

It is certainly possible to design an air conditioning system by specifying a variety of major components made by different manufacturers.

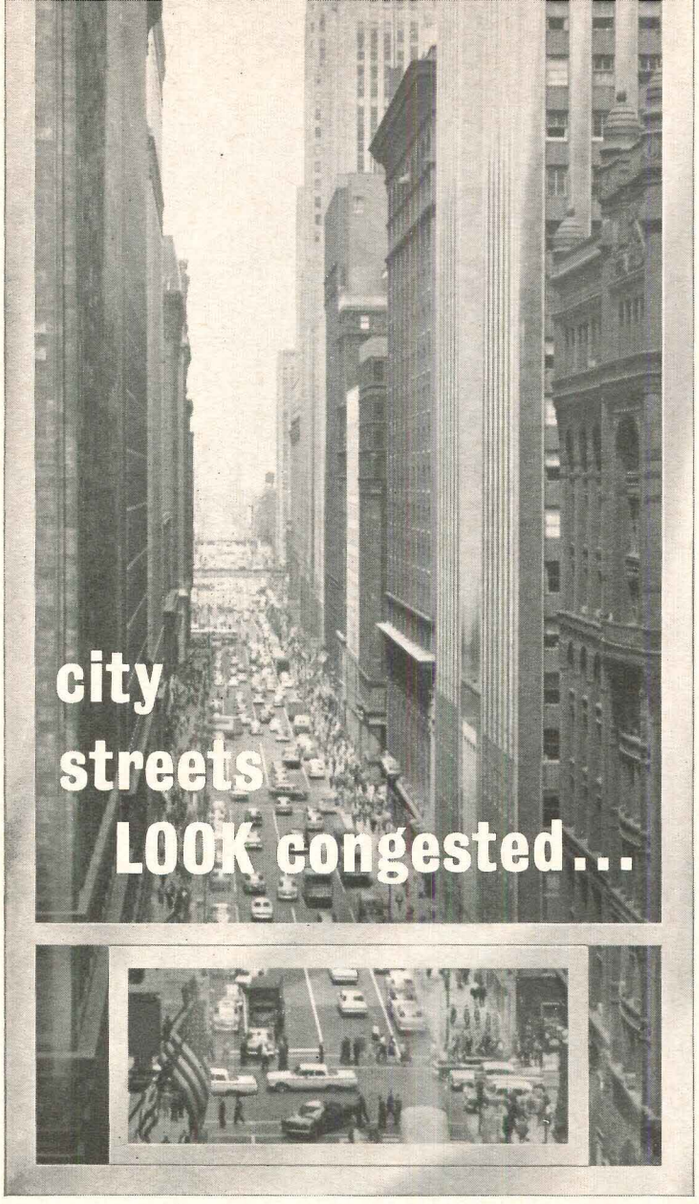
You may even save the owners a few dollars—with refrigeration equipment from one source, cooling and heating coils from another and fans from somewhere else.

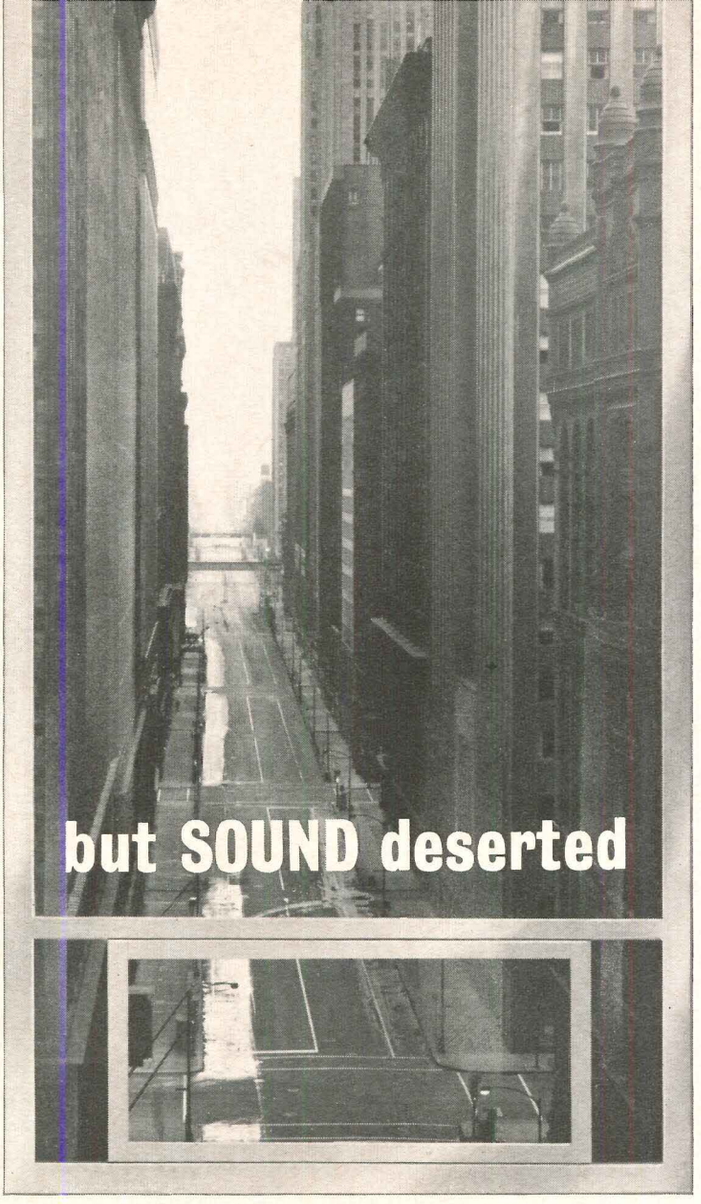
But each added source of supply multiplies the owners' problems when they try to fix responsibility for performance. There they are—going round and round.

Whom will they call if mechanical trouble develops? Which component needs attention? Where will they turn for service? The answers come easily when you specify equipment from one responsible supplier of major components—able to keep the equipment in first-class operating condition.

Although not the only air conditioning manufacturer offering a broad line of components, Carrier is best prepared to serve the owner should trouble come. For our company and our dealers maintain the largest and best-trained service organization in the business—over 11,000 men strong.

Carrier Air Conditioning Company





through acousta-pane* sound-resistant glass

Glass has conquered the "sound barrier," making sound privacy compatible with visibility and natural lighting. Used in outer windows, Acousta-Pane insulates interiors from distracting outside noises, actually reducing sound penetration up to 66% more efficiently than conventional glass. Through special processing, Acousta-Pane glass sets up a resistance to sound waves in the frequency range most productive of everyday noise. With sound control an ever-present problem in urban commercial and industrial construction, the advent of Acousta-Pane marks a new freedom of architectural design—for the first time, glass lets cities be *seen and not heard.*

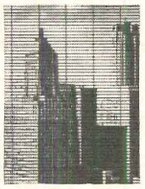
NOW AVAILABLE WITH GREY TINT FOR HEAT AND GLARE REDUCTION!

New grey-tinted Acousta-Pane effectively checks another source of office discomfort: excessive sunlight. Heat-producing glare is absorbed, allowing only "softened" daylight to enter. Interiors stay cooler; full visibility retained without color distortion. The overall effect in terms of *people:* relaxed environment—through *glass.*

Acousta-Pane—tinted, clear, or opaque—is shatter-resistant, easy-to-install and fills any design specification. At leading glass distributors.

Other Unique Amerada Products Available at Leading Glass Distributor Outlets

TWI-LITE*
Greyed laminated safety glass reduces solar energy 60-80% more efficiently than clear glass, eliminates need for costly shading devices.



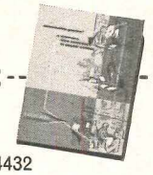
COMFOR-LITE*
Hundreds of minute colored louvers between 2 sealed glass panes screen out heat and glare without obstructing visibility. Available in 12 distinctive architectural colors.

amerada
GLASS CORPORATION

Beauty and function . . . tomorrow's glass today!

*Trademark

SEND FOR FREE BROCHURE



AMERADA GLASS CORPORATION
3301 S. Prairie Avenue • Chicago 16, Ill. DA 6-4432

Gentlemen:
Please send me your free color brochure on new Acousta-Pane at no obligation.

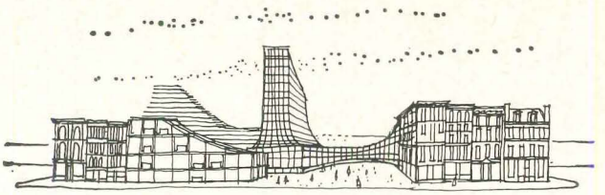
NAME_____

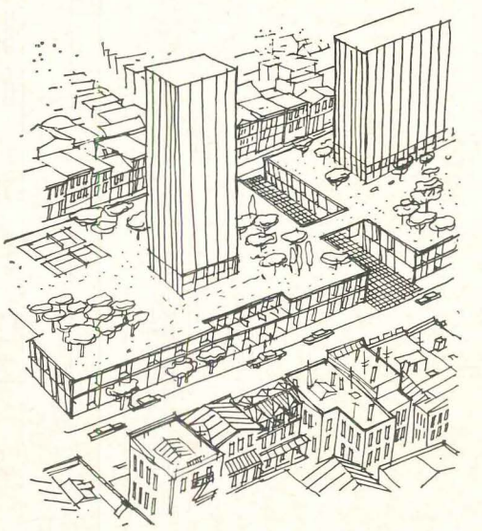
FIRM_____

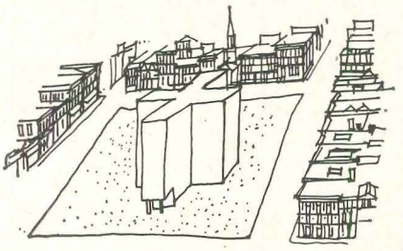
ADDRESS_____

CITY AND STATE_____

Include information on ☐ Twi-Lite ☐ Comfor-Lite



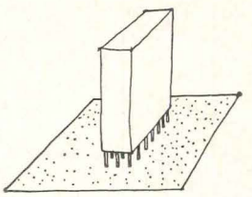




You'll
make
your
greatest

IMPACT

on architects
and engineers
in Architectural Record



Architectural Record is the one magazine specifically edited for—and sold to—professional architects and engineers in building

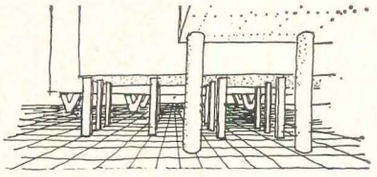
Architectural Record

F. W. DODGE CORPORATION
A McGraw-Hill Company

119 WEST 40TH STREET
NEW YORK 18, NEW YORK

"stimulus to creative architectural and engineering design"

★ Leader	ARCHITECTURAL RECORD	ARCHITECTURAL FORUM	PROGRESSIVE ARCHITECTURE
Architect subscribers	20,075★ (all-time high)	13,113	18,489
Engineer subscribers	10,602★	3,573	8,257
Architect & engineer subscribers	30,677★	16,686	26,746
Architect & engineer subscriber trend			
• 2-year change	+1,755★	—2,418	+ 902
• 5-year change	+4,029★	— 372	+ 2,027
Circulation concentration on architects & engineers (% of total)	78.57★ (all-time high)	26.65	64.20
Per cent of subscriptions sold without price reduction	74.31★	52.18	57.90
Per cent of subscriptions sold without premiums	95.33	100.00★	83.27
Renewal percentage	60.08★	52.98	47.72
Reader preference studies won	161★	6	14
• 1961 to date	11★	0	0
• 1950 to 1960	129★	1	14
Total editorial services (pages 1961)	1,274★	944	1,192
• Number of nonresidential and large residential buildings featured	223★	153	170
• Number of houses featured	41★	5	12
• Number of feature photographs and drawings	2,308★	1,295	1,463
Verifiable coverage of architect-planned building (% of dollar volume)	89★	n.a.	n.a.
• non-residential coverage	93★	n.a.	n.a.
• residential coverage	82★	n.a.	n.a.
Total advertisers 1961	460★	289	318
Exclusive advertisers 1961	205★	86	96
Advertising pages 1961	2,466★	1,412	1,652
Advertising pages 3 months 1962	552★	286	379
Cost per page per 1,000 architects and engineers	$27.87★	$68.02	$31.78



SOURCES:

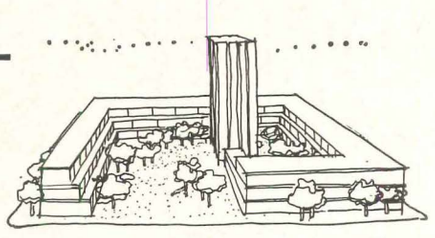
Circulation figures and renewal rates: ABC Publishers' statements.

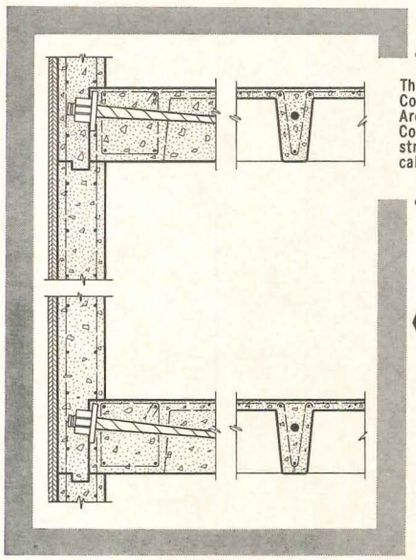
Preference studies: Summary of 177 studies among architects and engineers sponsored by building product manufacturers and advertising agencies.

Editorial pages and awards: Architectural Record Research Department.

Market Coverage: Continuing statewide studies of Dodge Reports.

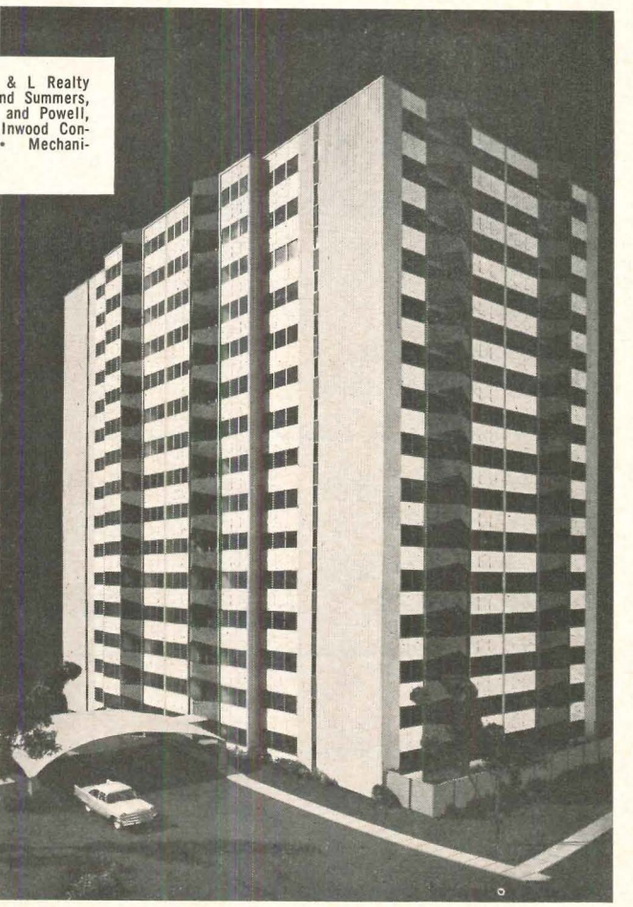
Advertising pages: Industrial Marketing.





The Terrace House • Owner: L & L Realty Corporation • Architect: Stinson and Summers, Architects • Engineer: Mullen and Powell, Consulting Engineers • Contractor: Inwood Construction Co., General Contractors • Mechanical Engineers: Ratliff, Irby & Purdy. All of Dallas, Texas

Schematic showing typical details of tendon placement on two floors at an outside wall.



16-STORY COLUMN-FREE

DALLAS BUILDING USES PRESCON SYSTEM* OF POST-TENSIONING

This 120-unit luxury apartment project has for its floor system, a construction of post-tensioned, lightweight concrete, employing the pan-joist system. Concrete shear walls provide the means for resisting wind loads, and also serve as effective sound barriers between apartments.

Use of the Prescon System allowed spans of 45′ 9″, with pan-joist members of only 18½″ in depth, spaced 36″ on center, and carrying live loads of 70 to 100 pounds per square foot. The total height of the building (195 ft. from basement to penthouse roof) was reduced by the equivalent height of one story with a resultant savings in wall material, elevator height, mechanical, electrical, etc. costs, and an overall reduced dead load. Post-tensioning allows the contractor to pour and prestress a monolithic structure on the job, thereby taking full advantage of the structure to resist wind and other loads.

Complete flexibility in room size and arrangement for each of the 2250 square foot apartments is possible since there are no columns or other obstructions.

You can gain these additional benefits for your clients, by designing with the Prescon System for: (1) greater useable and unobstructed floor space within a given building volume, (2) more economy in construction time and money, and (3) reduced finishing costs.

*The Prescon System consists of the following components: (1) high tensile-strength carbon steel wires with cold-formed button-heads for positive end anchorage encased in (2) slippage sheathing, and (3) threaded-thru end anchorages (steel spread plate at fixed end and stressing washer and bearing plate at the stressing end) plus shims for maintaining tension.

YOUR FILES should include the new Prescon brochure giving the complete information and listing many types of structures across the country using the Prescon System—write for your copy today.

PRESCON

THE PRESCON CORPORATION

P. O. Box 4186 • Corpus Christi, Texas

Albany • Atlanta • Memphis • Dallas • Denver • Los Angeles
St. Louis • San Francisco • Seattle

MEMBER OF PRESTRESSED CONCRETE INSTITUTE

Fremont County Courthouse, Canon City, Colorado. Building area: 58,000 sq. ft. Architects: Nixon & Jones, Boulder, Colorado. General Contractor: Ross E. Cox, Baton Rouge, Louisiana. Painting Contractor: Key's Painting Co., Canon City.

The "Man from DEVOE" helps interpret a **mood**

COLORADO COURTHOUSE THEMED BY THE MOUNTAINS

Since its completion last fall, the Fremont County Courthouse in Canon City, Colorado, has commanded the attention of architects and editors alike. Its bold design effectively captures the rugged, open feeling of the surrounding foothill country. At the same time, the use of geometric forms sustains a functional dignity.

This combined feeling is reflected in the native brown marble and weathered copper sheathing of the exterior. And the mood is carried through the interior, as well, in the carefully coordinated color schemes of courtroom, offices and halls.

These colors were selected—with the help of the "Man from Devoe"—from the over 1,000 shades available in Devoe's Library of Colors®. They were then matched exactly in the actual paint with Devoe's rigidly controlled formulas and mixing procedures.

Assistance in color planning is just one part of the total service to architects performed by the "Man from Devoe". He is an expert, too, on any technical problem involving paint, such as light reflectivity, weather resistance and special formulations. His sole job is to be of aid to you.

Call in the "Man from Devoe" on your next project. Find out how he can save you time and trouble. There is no cost or obligation involved. Merely phone or write the nearest Devoe office.

Milo Taylor, the "Man from Devoe" in Denver, serving architects throughout Colorado.

DEVOE PAINT

DEVOE

DEVOE & RAYNOLDS COMPANY, INC.

Atlanta • Boston • Charlotte, N.C. • Chicago • Cincinnati • Dallas
Denver • Detroit • Houston • Los Angeles • Louisville • Moonachie, N.J. • New Orleans • New York • Philadelphia • Stamford, Conn.
Warehouses in all principal cities, coast to coast.

Index to Advertising

PRE-FILED CATALOGS of the manufacturers listed below are available in the 1962 Sweet's Catalog File as follows: (A) Architectural File (green), IC Industrial Construction File (blue), (LC) Light-Construction File (yellow).

NEW YORK—James E. Boddorf, Sales Mgr.; Tom Tredwell, Advertising Mgr.; Blake Hughes, Marketing Mgr.; Richard Crabtree, Business Mgr.; Benton B. Orwig, Director of New Business Development; Joseph R. Wunk, Advertising Production Mgr.; Harry M. Horn, Jr., Michael J. Davin, 119 W. 40 St.; BOSTON—Harry M. Horn, Jr., 855 Park Square Bldg.; BUFFALO—Benton B. Orwig, James B. Ryan, 310 Delaware Ave.; CHICAGO—Robert T. Franden, James A. Anderson, Robert Kliesch, Douglas S. Brodie, 1050 Merchandise Mart; CLEVELAND—John C. Jackson, Louis F. Kutscher, James B. Ryan, 321 Hanna Bldg.; DETROIT—Louis F. Kutscher, 527 Free Press Bldg.; LOS ANGELES—Wettstein, Nowell & Johnson, Inc., 2801 West Sixth Street; MIAMI—Michael J. Davin, 802 N. W. First St.; PHILADELPHIA—Tom Tredwell, Michael J. Davin, Broad & Locust Streets; PITTSBURGH—John C. Jackson, 411 Seventh Ave.; PORTLAND—Wettstein, Nowell & Johnson, Inc., 1921 S. W. Washington St.; ST LOUIS—Richard Grater, Robert T. Franden, 3842 W. Pine Blvd.; SAN FRANCISCO—Wettstein, Nowell & Johnson, Inc., 417 Market St.

NO. 4 precast balconies

a.i.a. file: 4-a

Prepared as a service to architects by Portland Cement Association

Clip along dotted line

Precasting simplifies design and construction of balconies. Five towers, each with 24 floors of apartments, are included in the huge James Whitcomb Riley Center in Indianapolis, Indiana. Each apartment (studio, one- or two-bedroom) will have its own sun terrace.

The architectural firm, Perkins and Will, suggested precast concrete balconies as an alternate to cast-in-place balconies. The principal benefits they expect from precasting on this project are:

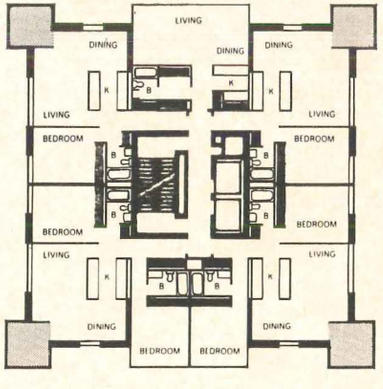
1. Rapid forming of the main structure.
2. Reduction of dead load by casting balconies in lightweight concrete. (Structural frame is conventional-weight concrete.)
3. Quality control in the casting yard assures durability for the exposed concrete balcony components.

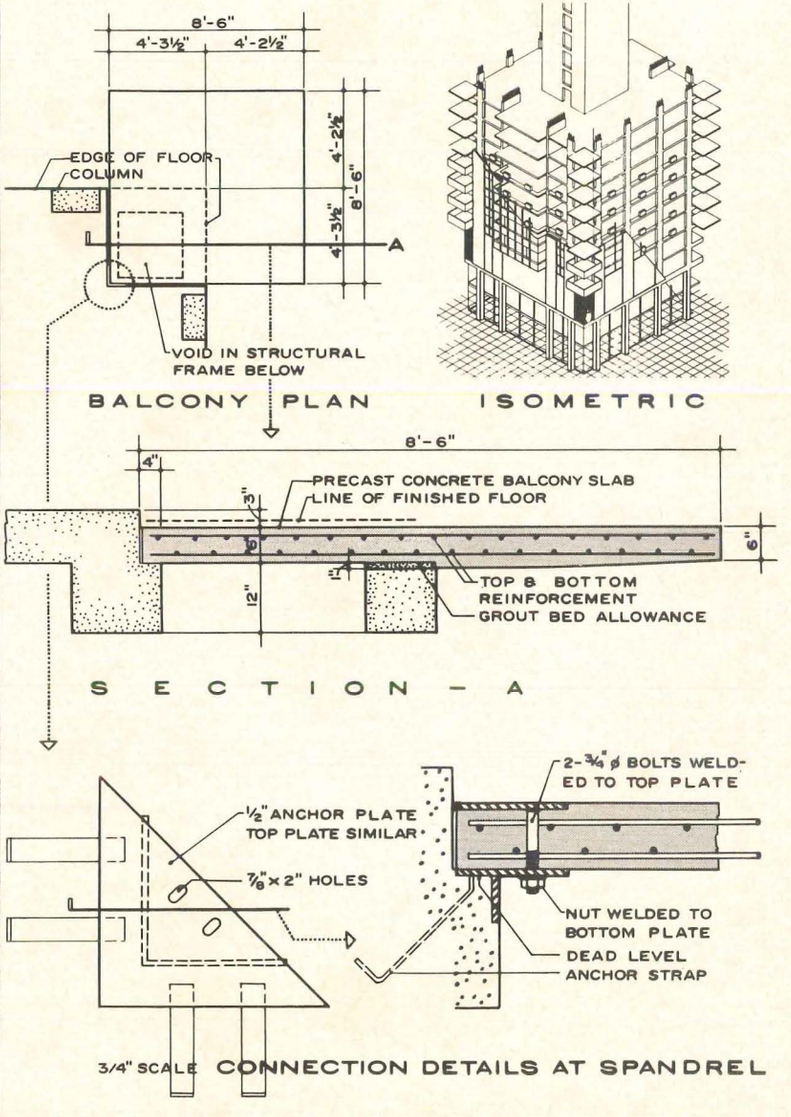
Installation and connection details are shown at right.

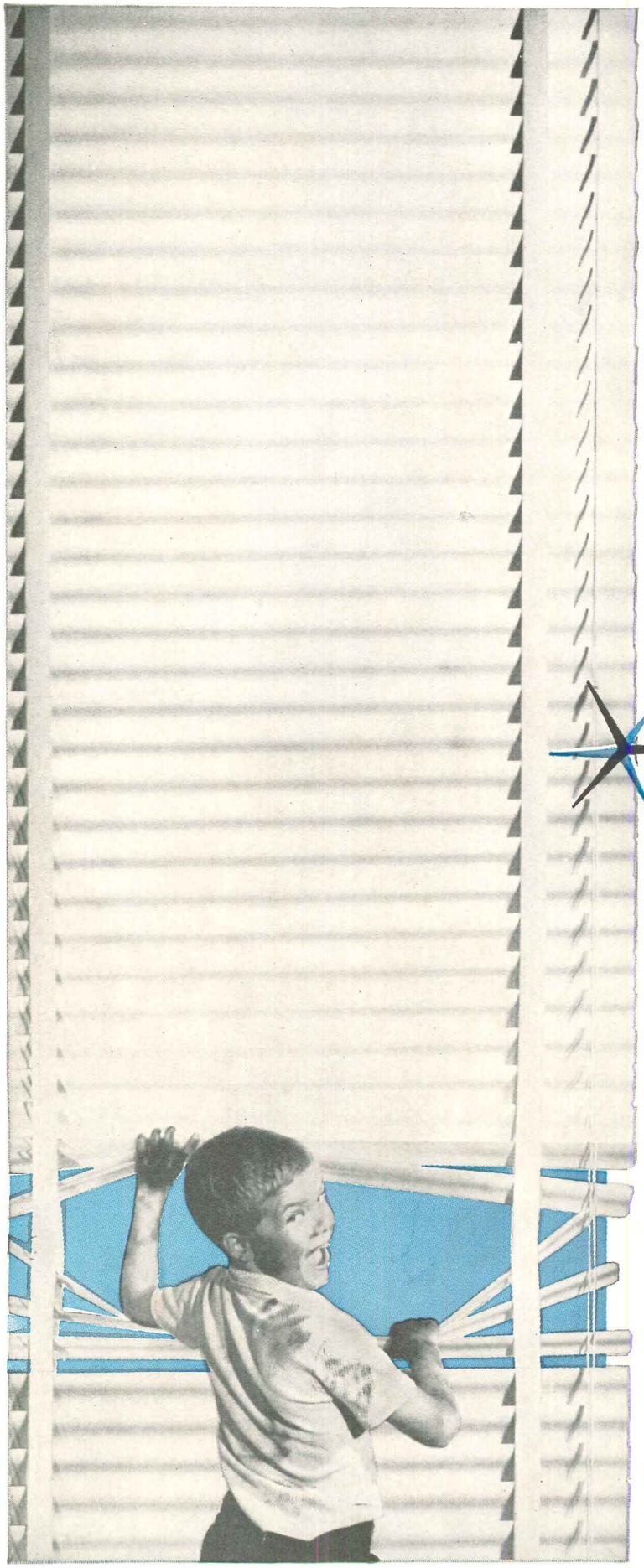
PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

Architects: Perkins and Will, Chicago, Illinois







THIS BLIND KEEPS CLEAN, NO MATTER WHAT!

Tough test for **any** blind, but Eastern's Star finished with Ludox stays clean no matter what ... **or who!** Ludox, DuPont's amazing colloida silica compound, seals microscopic pores, guards against soil of every description, eliminates washing, saves maintenance year after year. In addition, only Eastern's Star offers wider-spaced S-shaped slats which allow up to 38% greater visibility when open... interlock when closed for total darkness and smartest one-piece drapery effect... provide exceptional strength, rigidity, and resistance to abuse. Write today for the full story and learn why the next venetians that you specify should be Eastern's Star.

Eastern Products Corporation

ONLY Eastern's Star IS LUDOX-PROTECTED KEEPS MAINTENANCE DOWN!

CUSTOM-MADE BY FRANCHISED DEALERS THROUGHOUT THE U. S. AND CANADA.

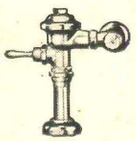
Eastern Products Corporation
1601 Wicomico St., Baltimore 30, Md.
Please send full information on Eastern's Star Venetian Blinds.

name

street

city zone state

AR



LIKELY TO BE THE SMALLEST ITEM IN THE BUILDING MAINTENANCE BUDGET!

■ And by small, we mean small . . . as little as 1½¢ per valve per year according to records from THE STEVENS HOTEL (Conrad Hilton), Chicago, where 3600 ROYAL Flush Valves continue in dependable daily service after 35 years.

In THE EMPIRE STATE BUILDING, New York, Mr. Donald Gibson, Staff Engineer, says Sloan Flush Valves have caused practically no maintenance problems since the opening of that fabulous building.

These experiences are typical of Sloan and especially significant when you consider the hard use and abuse to which Sloan Flush Valves are often subjected in the public toilet rooms of hotels, office buildings, airports, schools, etc.

Such experiences account for Sloan leadership. And Sloan leadership is maintained through a constant effort to make our flush valves even better. Better in design, better in materials, better in workmanship.

Because the Sloan ROYAL is acknowledged as the world's most successful flush valve, attempts have been made to imitate some of its most important features. But why gamble with substitutes when you can plan for the life of the building confidently with Sloan? Specify performance-proven, time-tested Sloan Flush Valves.

SLOAN

FLUSH VALVES

SLOAN VALVE COMPANY • 4300 WEST LAKE STREET • CHICAGO 24, ILLINOIS