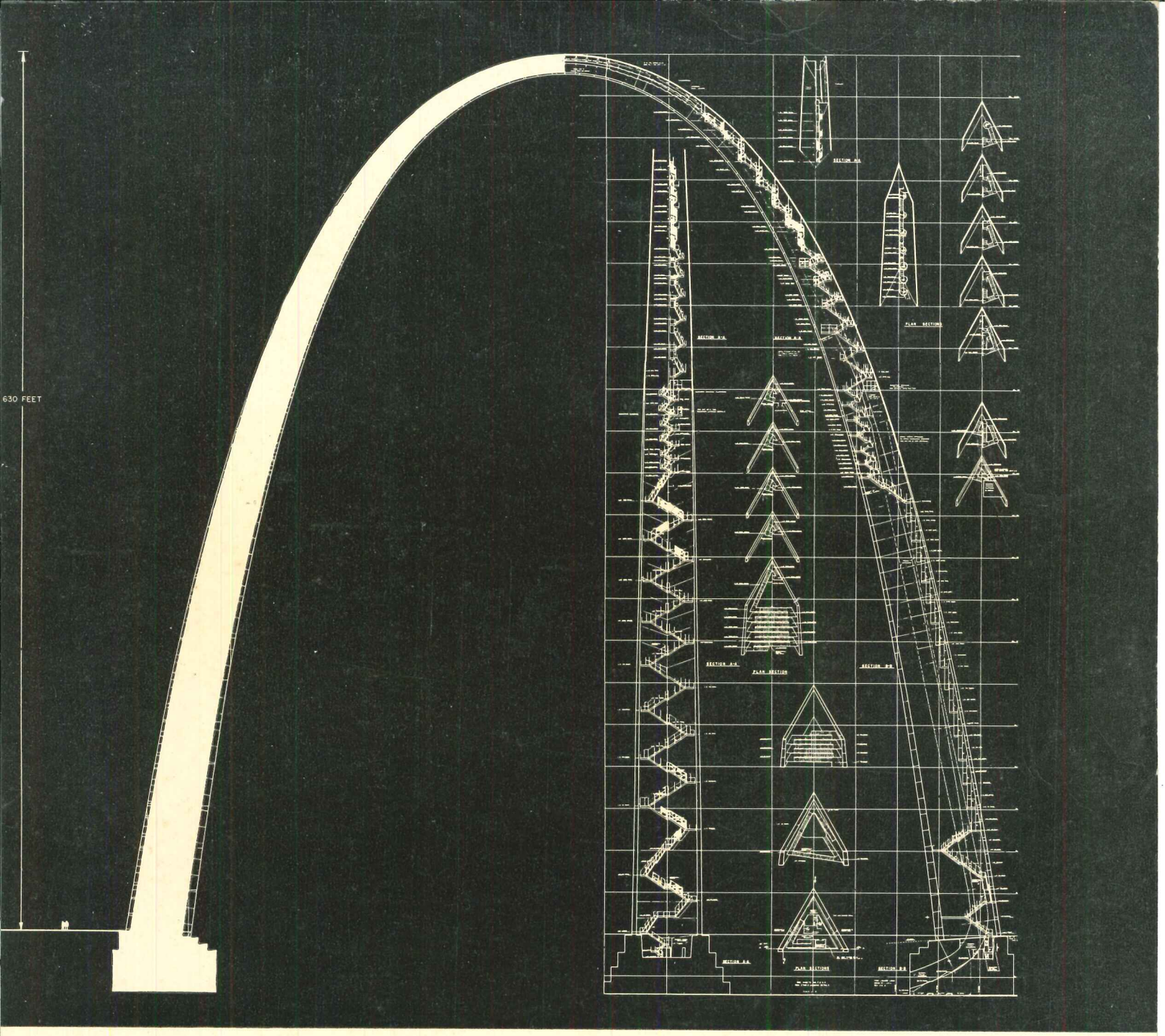

ARCHITECTURAL RECORD

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BUILDING TYPES STUDY: SPECIAL SCHOOLS

CURRENT WORK OF HARRY WEESE

ENGINEERING OF SAARINEN'S ARCH

FULL CONTENTS ON PAGES 4 & 5

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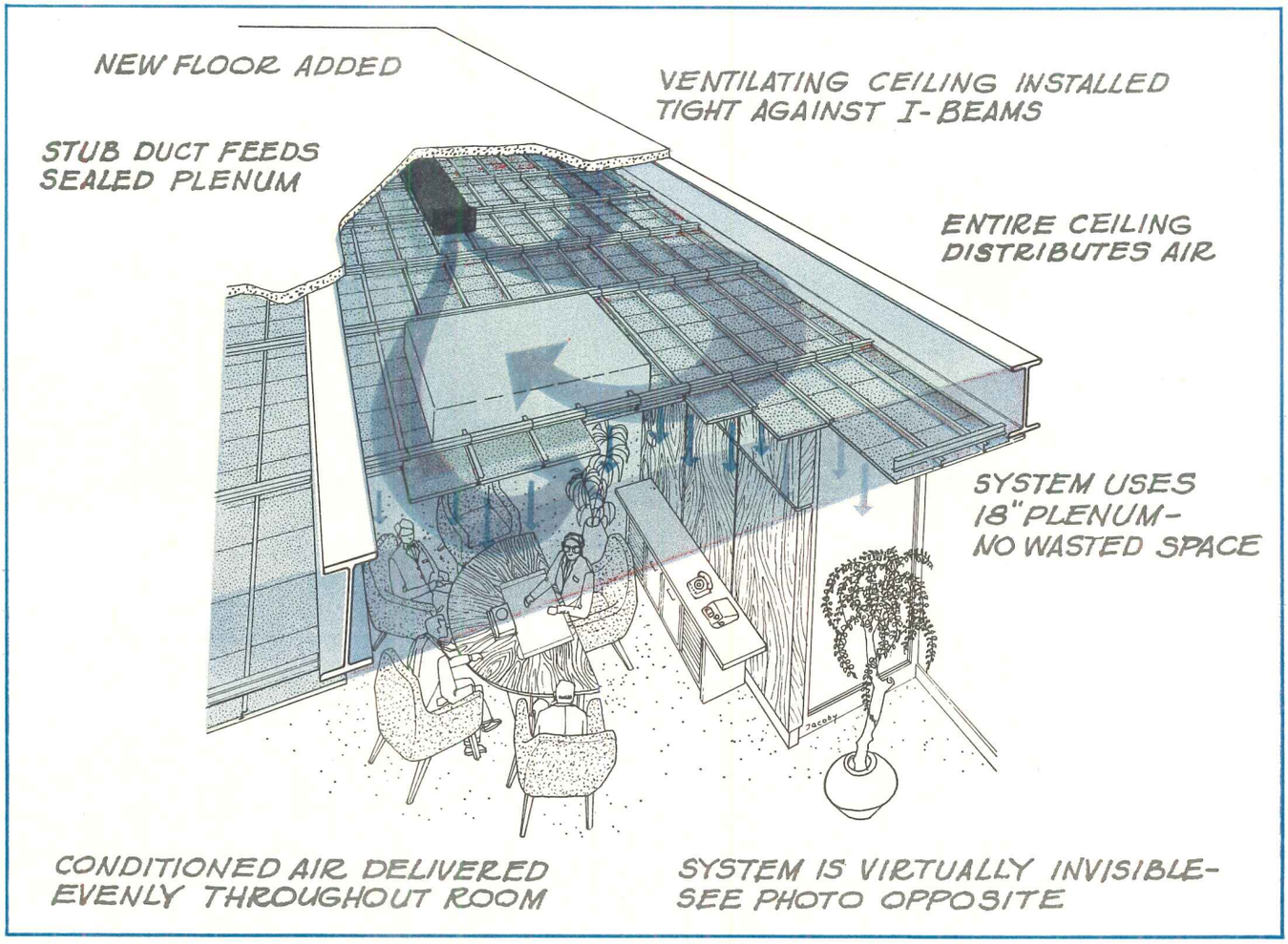

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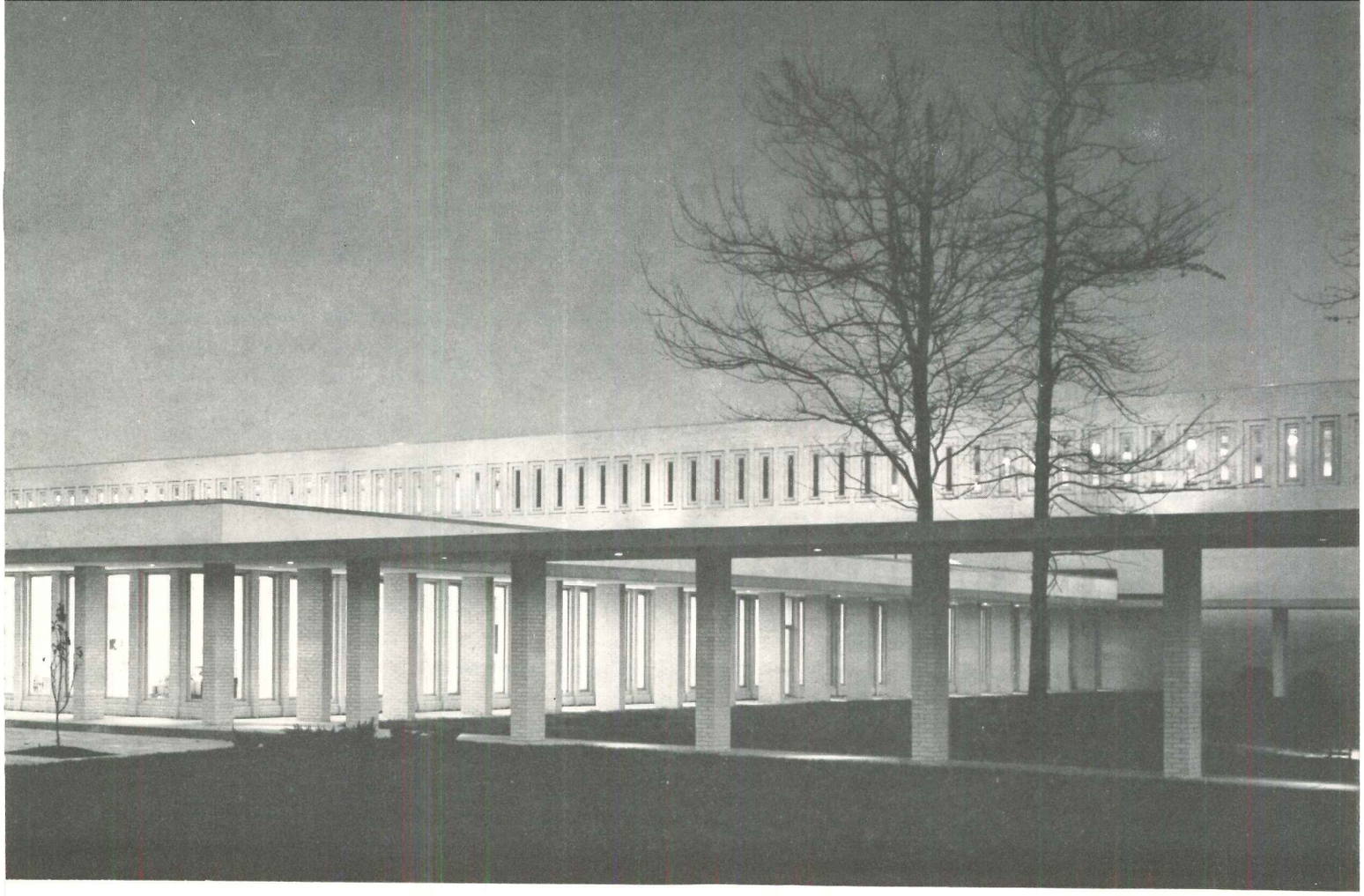

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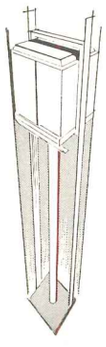

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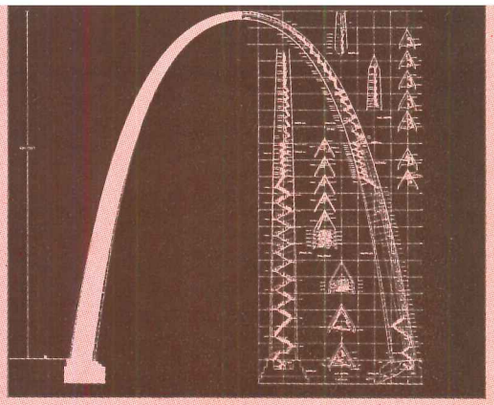

Cover:

Gateway Arch, St. Louis, Missouri. Architects, Eero Saarinen & Associates. Designed from Saarinen drawings by Alvin Eisenman for "Eero Saarinen On His Work," courtesy Yale University Press

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CONTEMPORARY DESIGN THAT UNITES TRADITIONS

Edward Larrabee Barnes' dormitories for St. Paul's School will interest architects for a number of reasons, not least among them the skill and sensitivity with which the new buildings have been designed to continue and unite the essential traditions of an old campus. The buildings are at the same time notable for their orderly solution of the planning problem and their clear expression of it.

STORE DESIGN AS A MERCHANDISING TOOL

More architects are designing more stores all the time, and architecture is ever more widely recognized as a vital tool of effective merchandising. Store building construction contracts, as reported by F. W. Dodge Corporation, topped the $2 billion mark last year for the first time, and an even bigger volume is predicted for this year. Next month's Building Types Study on stores will offer a major review of current trends in store design, an informative survey of how architects are using their expanding opportunities.

SEMI-ANNUAL INDEX

Next month, as in June and December every year, the semi-annual index will present a convenient reference to the material published during the six months ending with that issue.

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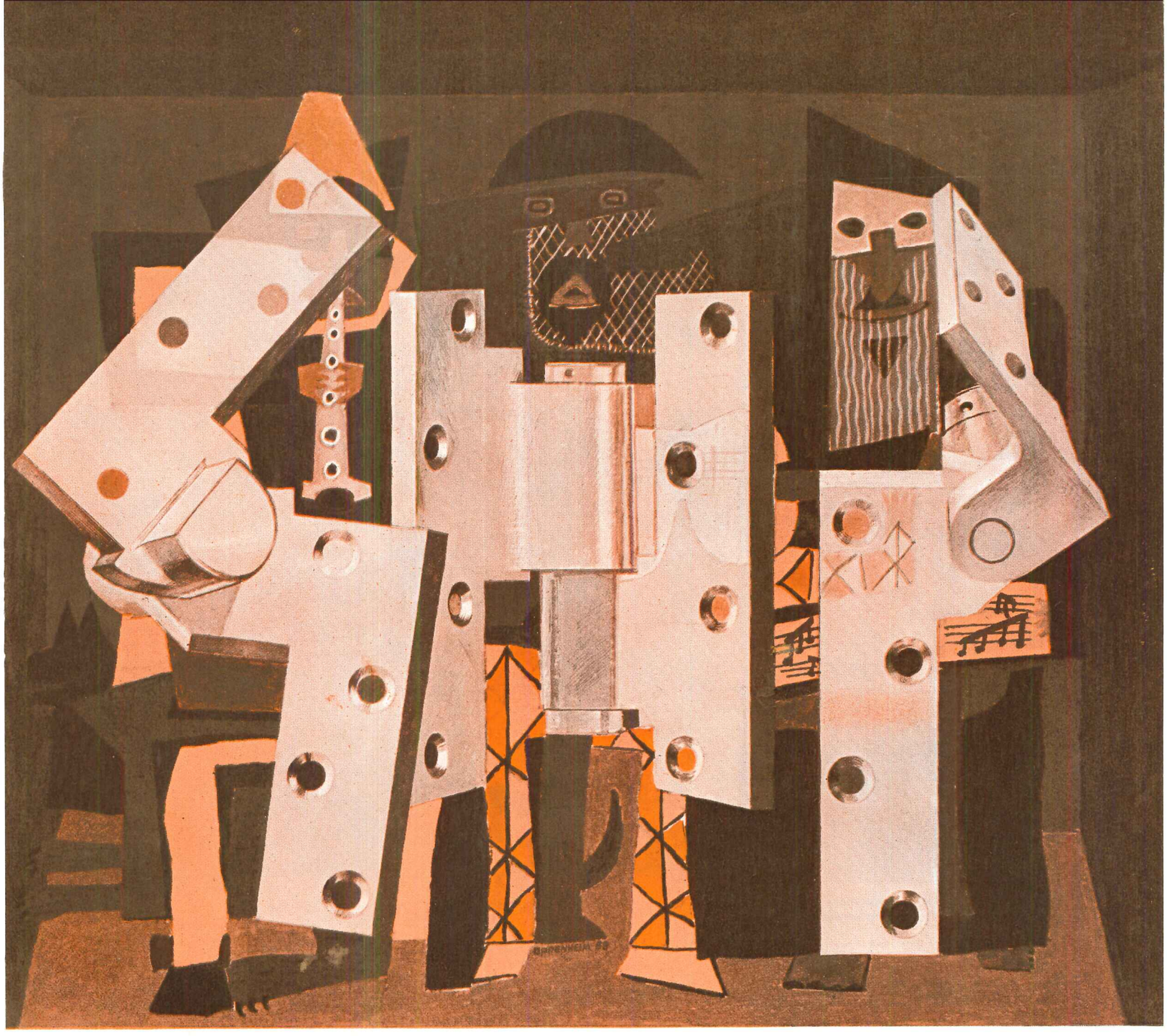

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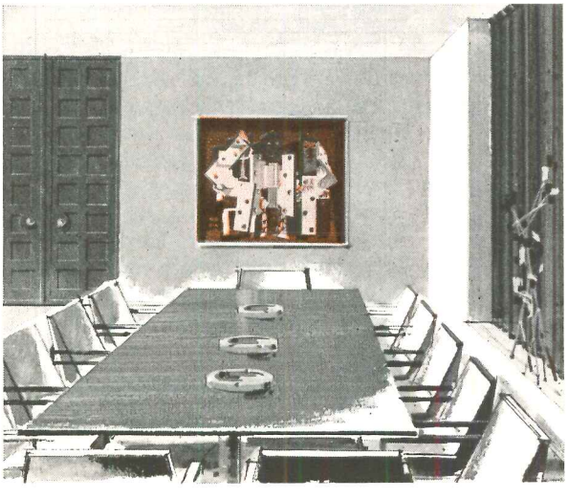

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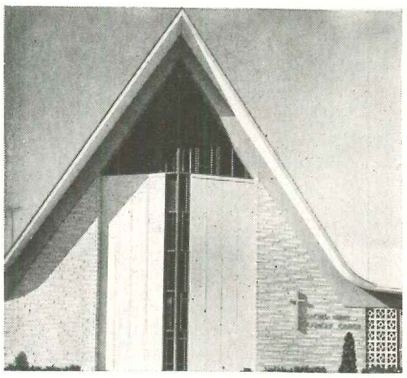

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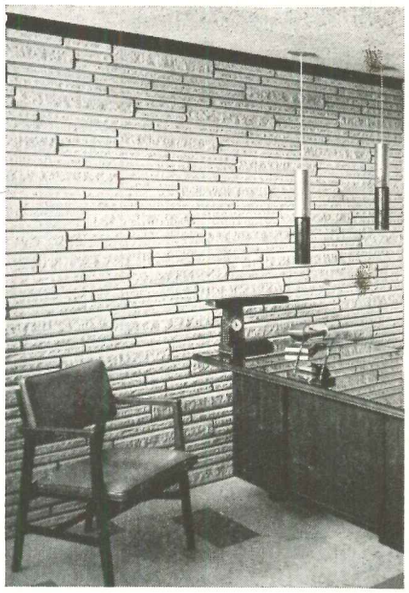

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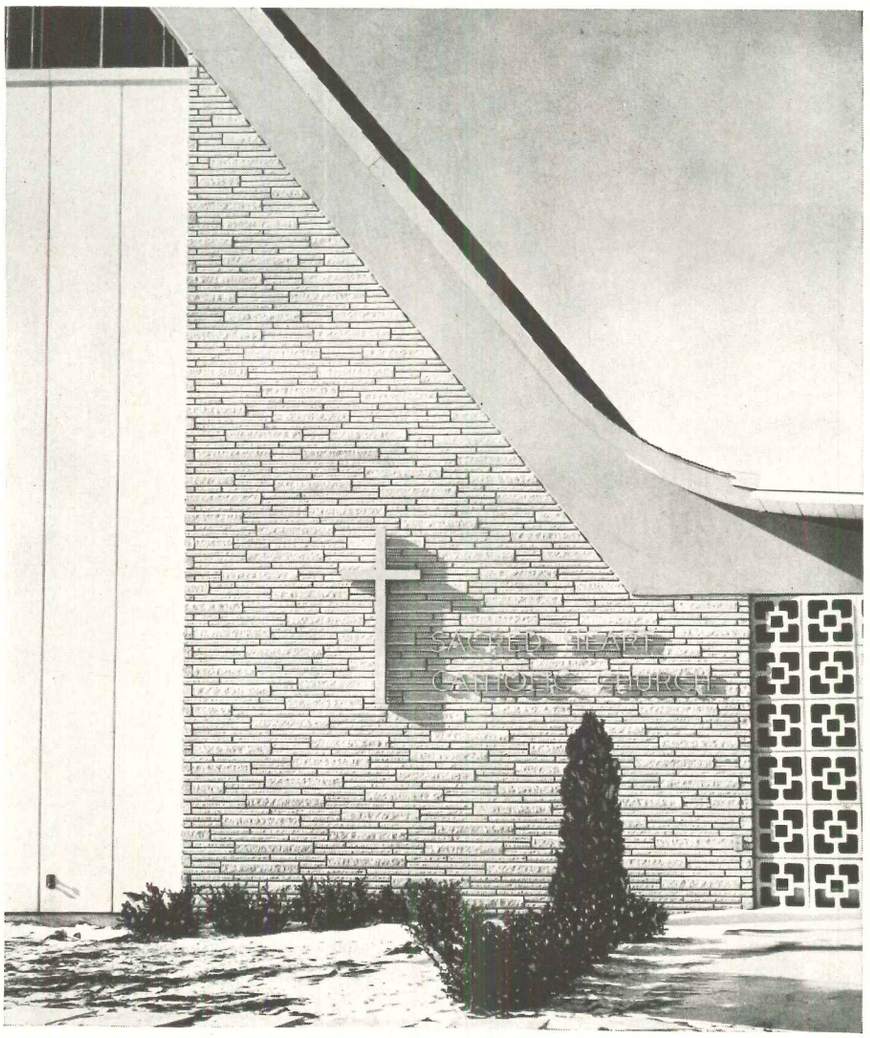

Sacred Heart Catholic Church, Miami, Oklahoma
Architect: Jack Mann, Miami, Oklahoma

Split Concrete Veneers... *for Beauty and Economy*

THE WAY in which split concrete veneers are made has much to do with their attractive appearance. Modular thicknesses are cast using selected aggregates and Trinity White portland cement.

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Visit to Portugal

While one would not go to Portugal to study current trends in architecture, he would probably be surprised at how many observations he would make there which insistently intruded into the stream of architectural thought. At least this wandering observer found many interesting Portuguese scenes, habits and attitudes which kept suggesting parallels. One great wish seemed to haunt me—that Americans had the sense of order and beauty of the Portuguese.

I did not specifically search for individual gems of "significant" architecture, and I did not happen to see any. Very possibly I missed some. In any case, the general man-made scene is pleasing, whether it be in bustling Lisbon or in the age-old fishing villages of the Algarvé. You find a great many "modern" buildings—something of a building boom is in progress—but they do not leap out at you. They mix in with their ancient neighbors with a sort of racial resemblance.

The new buildings are perhaps too gay for current architectural magazines. They are frankly decorated—quiet decoration is a national habit, decoration of buildings if not of women—and occasionally architects seem to revel in being uninhibited. But the embellishments spring from old roots, as in the intricate tile mosaics, or perhaps in concrete sculptures. The old status symbol on the small house is a fancy chimney top, frequently a decorated cupola design.

Color is a unifying factor. The typical little farm house is white stucco with terra cotta tile roof. But in the villages the stucco is frequently in pastel shades, or, given more prosperity, there is a wide mosaic base course or even a whole front.

Another unifying influence is the material, or at least the finish. It is almost always stucco, over stone, hollow tile or concrete.

Generally speaking, colors, materials or decorations are used with a gentle restraint, which seems to be essentially a respect for the visual scene.

Perhaps more to the point—and here's my wish again—is the totality of this respect for the appearance of the city, village or country. Portugal is a very beautiful land, totally beautiful. Nature provided many of the beautiful scenes, but man has nurtured them with tender care. This habit of developing and maintaining the landscape is universally and arduously pursued. You can travel miles on a highway without seeing another car or truck—you almost never see an advertising signboard—but you will frequently see a man with a wheelbarrow and a spading hoe, grading or weeding the shoulders. Sides of the roads are frequently planted with flowers, or there will be hedges of cactus or bush geraniums. Every square foot of farm or yard or court is thus tended.

And clean, clean, clean. Never a bit of litter, in village or along a road. In Lisbon we noticed a man hosing down the street; the driver said yes, they wash the streets once a week. They sweep them continuously. They sweep up after the donkeys even on Sundays; and they sweep laboriously with a broom made of twigs lashed to a stick.

In spite of general poverty the kids on the streets are nicely dressed, and clean. The little dress is probably faded, but it is washed and washed. The youngsters look healthy, well mannered and smiling.

Hard work is the universal habit. Work is done by donkeys or oxen. Or by hand. Almost never do you see a mechanical earth mover or tractor. Women carry great baskets of fish or oranges on their heads; they work in the fields with the men; they scrub and scrub and scrub.

Do you suppose that poverty and hard work conduce toward a respect for the land and a love of beauty? Not universally, at any rate.

And if the economically backward Portuguese can maintain such universal dignity and order, what could we do in a prosperous country, if only we had the thought?

—*Emerson Goble*

NEW FEATURE ON BUILDING COSTS BEGINS IN THIS ISSUE

In recognition of the ever-growing need of architects and engineers for dependable building cost data, the editors of ARCHITECTURAL RECORD announce the establishment of a new and more comprehensive Building Construction Costs feature beginning with this issue (page 20).

The new feature offers, in addition to current and historical cost indexes for 21 major metropolitan areas across the United States, data on building materials prices, wage rates for building trades craftsmen and money market trends.

The feature is based on data collected for the Dow Building Cost Calculator, an F.W. Dodge Corporation service, and prepared especially for the RECORD by Myron L. Matthews, manager of the Dow service. It is the first time Dow Calculator data has been released to any but its own signatory clients. While it cannot, of course, compare in scope or detail with the Dow Calculator itself, the new department brings RECORD readers significant extractions from it.

Specific purposes for which it is expected readers will use the complementary group of cost barometers and business indicators constituting the Building Construction Costs feature include: (1) determining the change in costs between dates; (2) calculating the difference in costs between metropolitan areas; (3) projecting past and current cost trends toward a future objective date; (4) estimating current costs for construction of a building in a given locality; (5) assisting clients in determining the proper amount of fire insurance during and after construction; (6) checking contractors' bids.

LANDRY SUCCEEDS ROCKWELL IN MAJOR A.I.A. POST

Kenneth C. Landry has been appointed director of the Division of Public Services of the American Institute of Architects, succeeding Matthew L. Rockwell, who is returning to his native Chicago to become deputy director, Northeastern Illinois Metropolitan Area Planning Commission.

Mr. Landry moves up from the A.I.A. Department of Institute Relations, which he has headed since joining the Institute staff in April 1962. Born in New Orleans, he received his B.S. in architecture at Tulane University in 1949 and was formerly a partner in the Baton Rouge architectural firm of Bodman, Murrell, Landry & Webb.

Mr. Rockwell had practiced with the firm of Stanton and Rockwell in Chicago for 15 years before joining the A.I.A. staff in 1961. His staff responsibilities as director of urban programs will be taken over by Robert J. Piper, head of the A.I.A. Department of Professional Practice.

COLUMBIA LOSES A DEAN, HARVARD AN APPOINTEE

Two major posts in architectural education were vacant last month, one through an unexpected resignation and the other through an equally unexpected change of mind.

The top vacancy was at Columbia University, where the resignation of Charles R. Colbert as dean of the School of Architecture was announced on April 4 by President Grayson Kirk. At Harvard University, the post of professor of architecture and chairman of the Department of Architecture, which Dean Joseph Passonneau of the Washington University School of Architecture had been appointed last December to assume "in the course of the academic year 1963-64" remained vacant as Dean Passonneau decided to stay at Washington University.

The release from Columbia which announced Mr. Colbert's resignation said the resignation would become effective June 30 but that "Dean Colbert plans a leave of absence for the rest of the academic year" though he "will be asked to retain professorial status for the immediate future."

The release also quoted Mr. Colbert as saying: "Opportunities presented by my architectural practice in New Orleans, which I left to come to Columbia, have proved so compelling as to demand my return."

In the three years since he left private practice to become dean of architecture at Columbia, Mr. Colbert had attempted to re-shape the curriculum to implement his strong conviction that architectural education must find new ways to train architects for the increasingly complex functional problems that confront today's architects, from the design of buildings to the design of cities, and for their increasingly complex role as coordinators of many other disciplines in the solution of these problems. In his search for new ways at Columbia, he never hesitated to challenge the status quo.

Among the innovations at Columbia during Mr. Colbert's deanship were a course leading to the new degree of Bachelor of Planning and designed to provide not only comprehensive professional training for community planners but an improved basis of communication between architects and planners. Two new postgraduate programs were instituted in 1961 to increase comprehension of the total architectural process through concentrated study of particular building types—medical and educational facilities. In another graduate program, intended to develop understanding of urban design problems, students last year worked under Mr. Colbert's direction to produce a redevelopment scheme for downtown Dallas which is now being carried forward by the group of Dallas business leaders who sponsored it.

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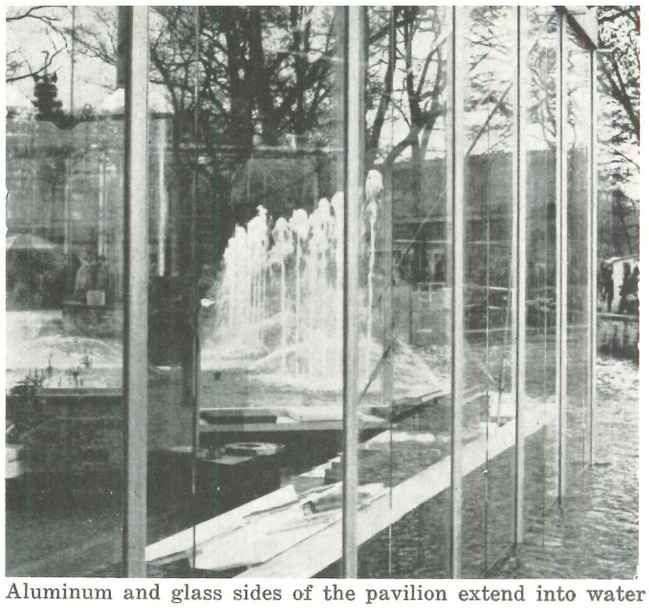
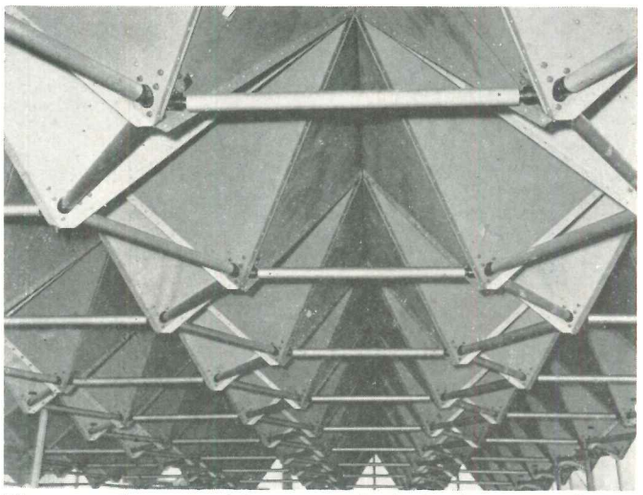


Kurt Julius

Aluminum and glass sides of the pavilion extend into water below the deck, provide insulation "seal" for interior



The space-frame roof is composed of aluminum tetrahedons connected by tension members also made of aluminum

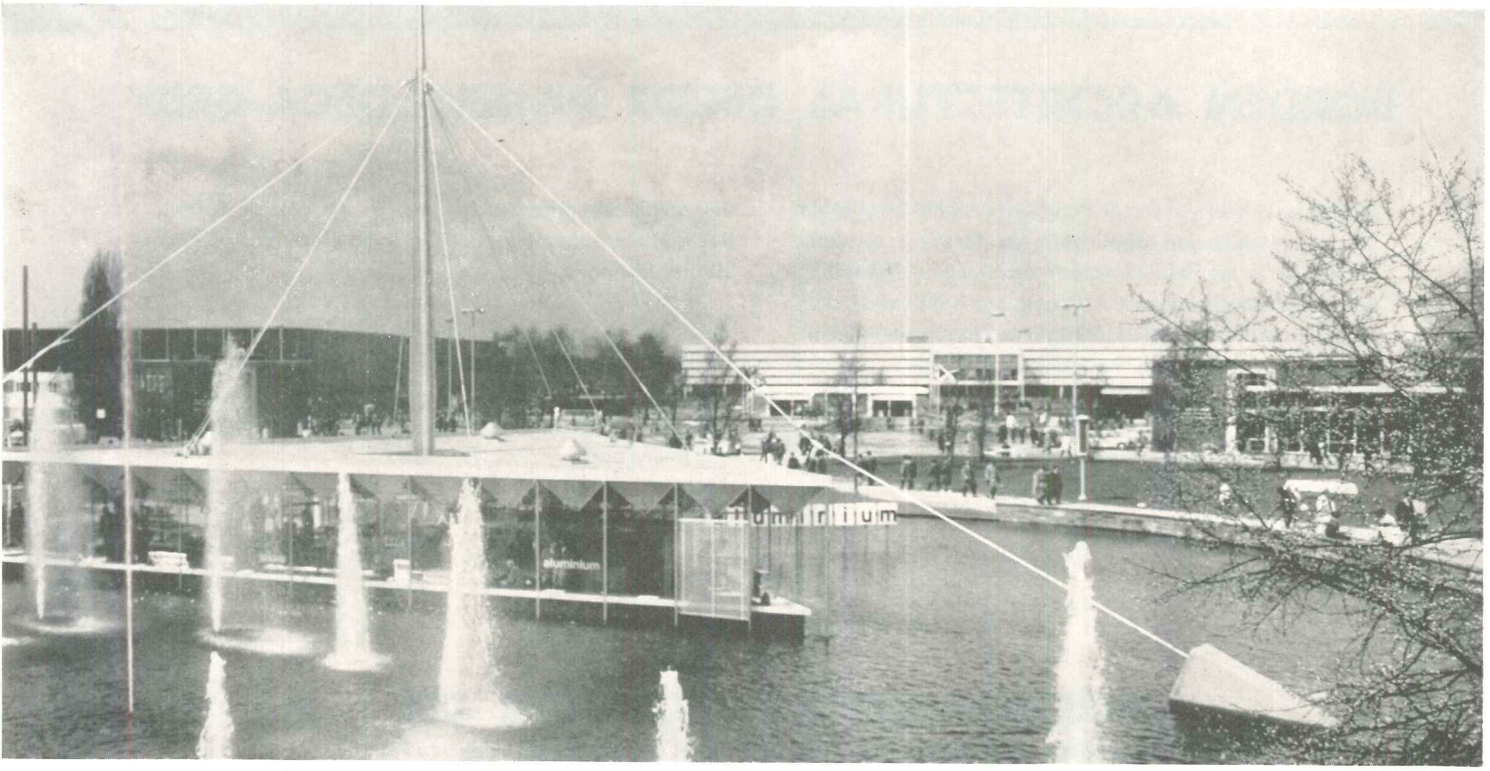
MAURER OF MUNICH WINS REYNOLDS AWARD FOR 1963

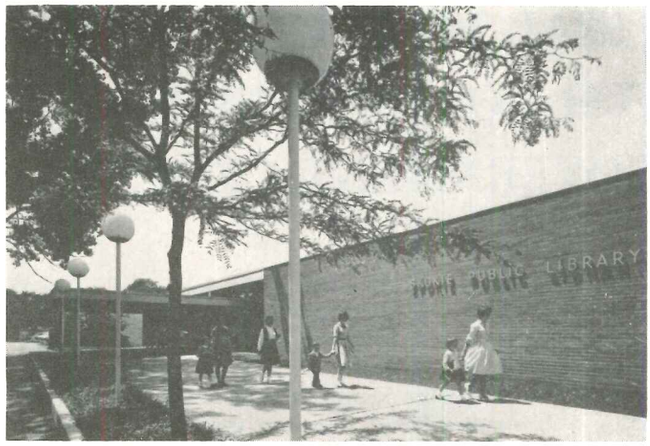
Hans Maurer of Munich, Germany, has won the 1963 $25,000 R. S. Reynolds Memorial Award for design of an aluminum exhibition pavilion in Hannover. Associate in the design of the Aluminum Center Pavilion, located over a lake at Hannover Fair, is Ernst Denk.

The pavilion is basically a triangular-shaped aluminum space frame (with each leg of the triangle 88½ feet), suspended by cables from a 65½-foot aluminum mast which passes through a triangular opening in the building. The entire structure is free to move.

Owned by the Aluminum Center of Dusseldorff, an association providing technical information and other services for the German aluminum industry, the pavilion was designed to demonstrate the potential of aluminum as a structural building material. It uses 22 tons of aluminum —17 tons in the roof, four in the mast, and one in miscellaneous features. The aluminum and glass wall is hung from the space-frame roof. Cables from the triangular roof frame are secured to the mast, which carries the pavilion's weight. Cables also extend to the lake bottom for horizontal stability. The mast is secured to its base by a ball joint. Construction was by L. A. Riedinger, Metallbau Augsburg.

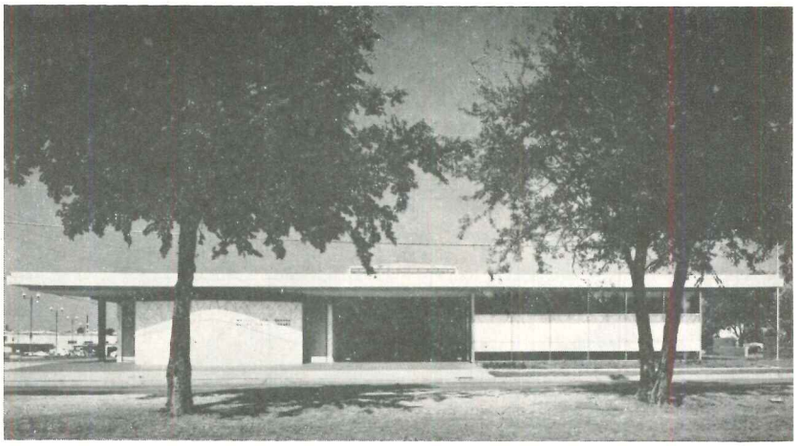
The award, seventh in the Reynolds program, the sixth won by a foreign architect, will be presented during the annual A.I.A. convention in Miami.



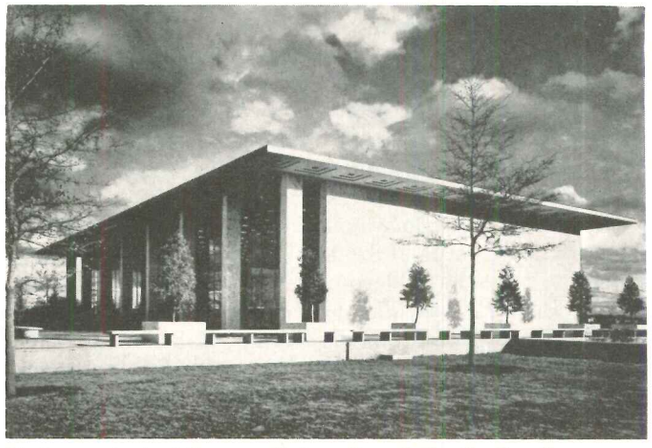


Torkel Korling

Skokie Public Library, Skokie, Illinois
Architects: Skidmore, Owings & Merrill
Landscape Architects: Skidmore, Owings & Merrill
General Contractor: Abbott Construction Company



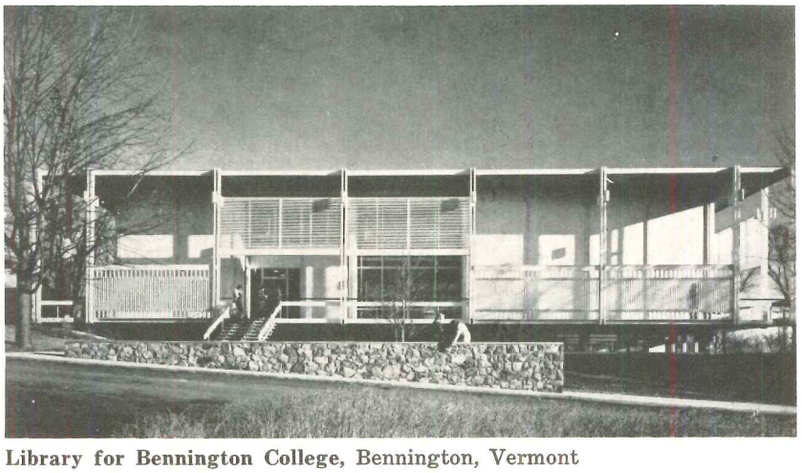
Walnut Hill Branch, Dallas Public Library, Dallas, Texas
Architects: J. Herschell Fisher and Donald E. Jarvis
Mechanical Engineers: Gregerson & Gaynor
Structural Engineers: William L. Cobb & Associates
General Contractor: Carlson & Skelton



Molitor

Undergraduate Library, University of South Carolina
Columbia, South Carolina
Architects: Lyles, Bissett, Carlisle & Wolff
Associate Architect: Edward Durell Stone
Landscape Architect: Richard K. Webel
General Contractor: John C. Heslep Company

Ezra Stoller



Library for Bennington College, Bennington, Vermont
Architects: Pietro Belluschi and Carl Koch & Associates
Landscape Architects: Sasaki, Walker & Associates
General Contractor: Gordon & Sutton

FIRST LIBRARY AWARDS CITE FOUR TOP WINNERS

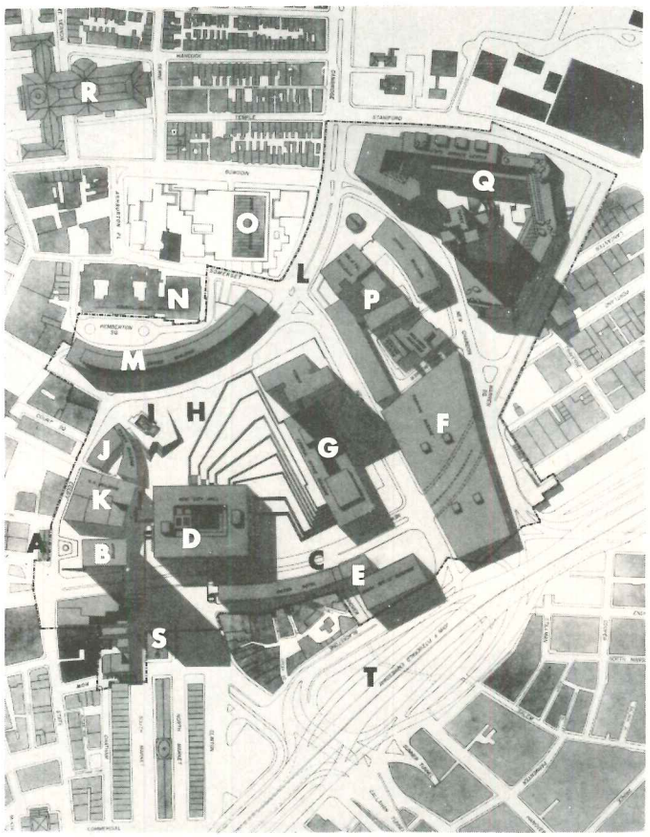
Four libraries received top honors in the First Library Buildings Award Program sponsored jointly by the American Institute of Architects, the American Library Association and the National Book Committee. Photographs of the two First Honor Awards in two categories—public and college libraries—are shown. No awards were made in a third category—elementary, secondary school libraries.

On the jury were: J. Roy Carroll Jr., F.A.I.A., Philadelphia, chairman; Hugh Stubbins Jr., F.A.I.A., Cambridge, Mass.; Robert S. Hutchins, F.A.I.A, New York; Lucille Morsch, chief, descriptive catalogue, Library of Congress, Washington, D.C.; Charles Mohrhardt, associate director, Detroit Public Library; M. Bernice Weise, director, library service, Baltimore Public Schools; Dr. Keyes Metcalf, director emeritus, Harvard Univ. Library.

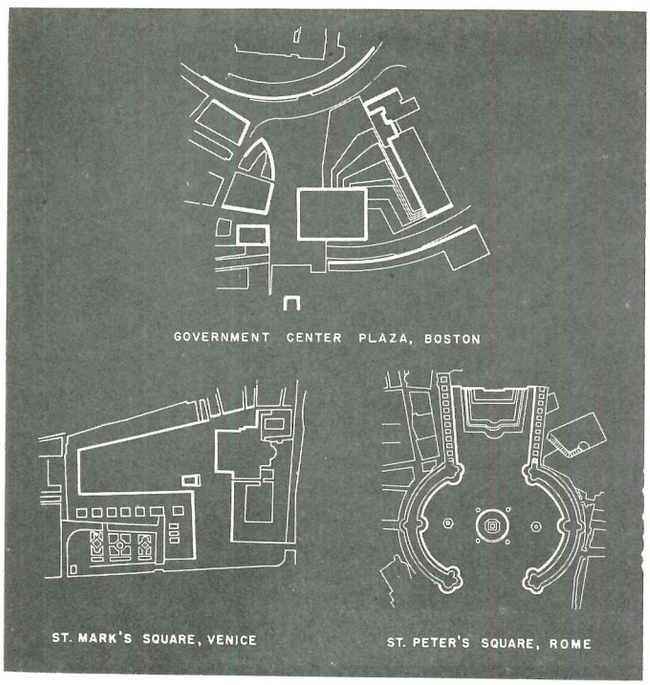
Presentation of the award citations to libraries was to be made during National Library Week, April 21-27. Architects of winning buildings will receive awards at the A.I.A. convention in Miami this month.

Merit Awards were given to the following architects: McPherson-Swing and Associates; Carl Koch and Associates; Curtis and Davis, Goldstein, Parham and Labouisse, Favrot, Reed, Mathes and Bergman; Stickel, Jaroszewicz and Moody, Architects, now Frederick Stickel Associates; Paul Thiry; William R. Burk and John J. Desmond; William L. Pereira & Associates; Barber and McMurry; Nolen-Swinburne & Associates; Skidmore, Owings & Merrill; Spangler, Beall, Salogga & Bradley; Office of Ernest J. Kump and Masten & Hurd; and Warner, Burns, Toan, Lunde.

FINAL PLAN UNVEILED FOR BOSTON'S NEW GOVERNMENT CENTER



A. Old State House
B. Private office building
C. New Congress Street
D. City Hall
E. Motel—office building
F. 2,000-car parking garage
G. Federal Office Building
H. Plaza
I. M.T.A. Kiosk
J. Sears Crescent
K. V.A. Building
L. Cambridge Street
M. Private office building (One Center Plaza)
N. Court House Annex
O. State Office Building
P. Private office and commercial buildings
Q. State Service Center
R. State House
S. Faneuil Hall
T. Central artery



Early last month, a little over two years since the Federal Government approved the Boston Redevelopment Authority's application for Federal funds, the final plan for Boston's new Government Center was unveiled. Involved in the plan is redevelopment of one of the city's oldest sections, 60 acres of predominantly substandard housing and decaying commercial properties. The aim is to provide a worthy setting for local government, to stimulate private building and provide fresh impetus to a declining central business district.

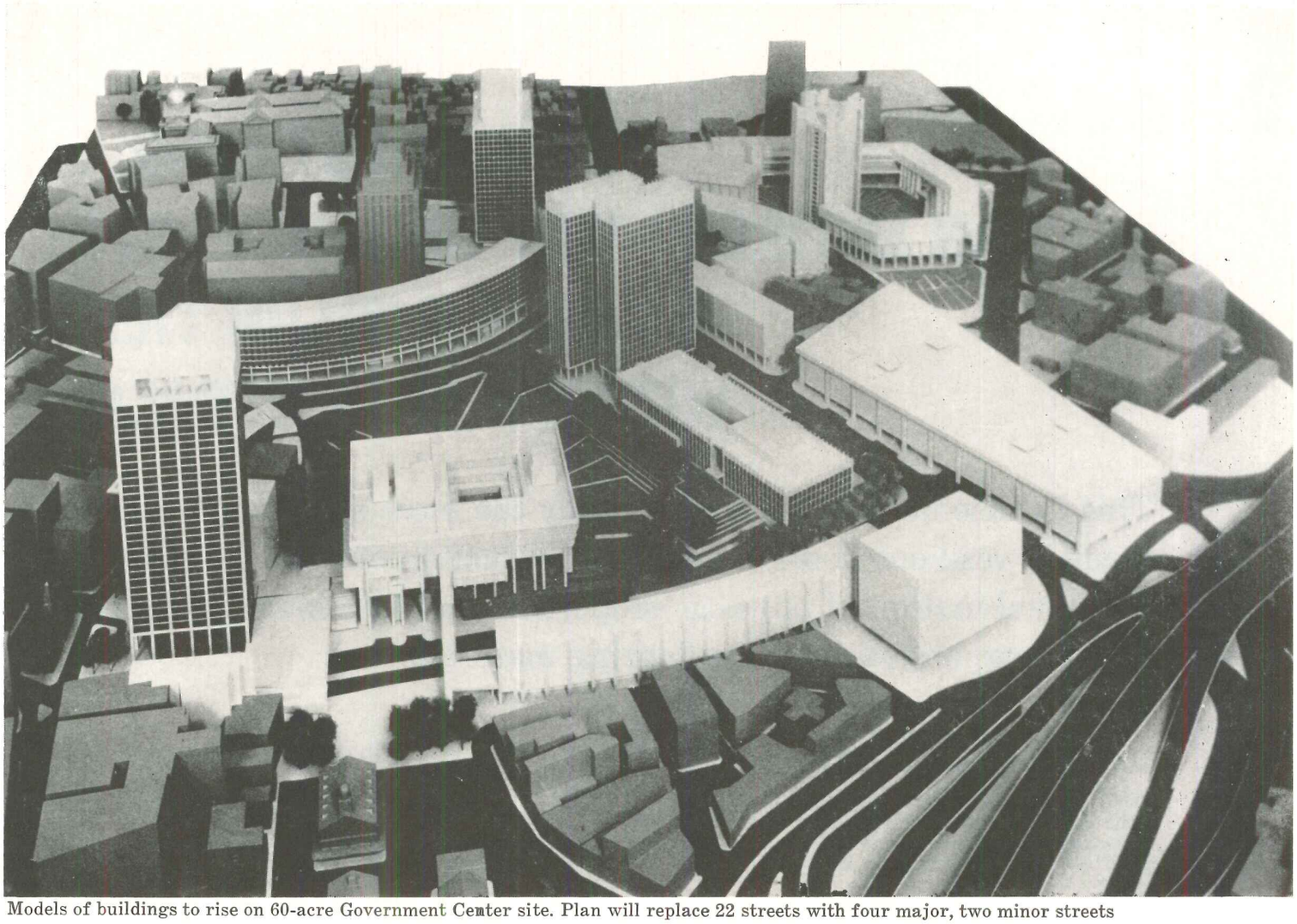
I. M. Pei and Associates developed the over-all plan which provides sites for four major public buildings and at least 10 private or other commercial buildings. Reviewing these designs by some of this country's most noted architectural talents, was a Design Advisory Committee consisting of architect Hugh Stubbins; Pietro Belluschi, dean, M.I.T. School of Architecture; Jose Luis Sert, dean, Harvard School of Design; architect Nelson Aldrich; M.I.T. professor of architecture Lawrence Anderson; and the late Henry Shepley, Boston architect.

Focal point of the Government Center, whose first phase will result in upwards of $200 million in new construction, will be the ruggedly modern nine-level City Hall and Government Center Plaza. The design of the City Hall won a national competition for its architects—Kallmann, McKinnell & Knowles (July, pages 14-15). Collaborating architects are Campbell and Aldrich. The plaza, comparable as a monumental public open space to famous squares in Europe, will be landscaped at its perimeters and paved in red brick.

Other major public and private buildings in the project, whose cost is estimated at $38.5 million, are: State Service Center combining three functions, Employment Security services by Shepley, Bulfinch, Richardson and Abbott, Health, Welfare and Education services by M. A. Dyer and Pederson & Tilney, Mental Health Center by Desmond & Lord and Paul Rudolph—coordinating architect is Paul Rudolph; Federal Office Building, a 26-story tower and four-story annex, by The Architects Collaborative and Samuel Glaser Associates; 2,000-car parking garage; one Center Plaza, eight-story private office building by Welton Becket Associates; 35-story private office building; motel and/or office building; Sears Crescent, an existing building to be rehabilitated.

Engineering work on new streets and utilities has begun. The two earliest developments will be the Federal Office Building and the M.T.A. relocation.

Commenting on Government Center, chairman of the Boston Redevelopment Authority Monsignor Francis J. Lally said, ". . . I know of no urban renewal project which has had a more distinguished group of architects during both the design and planning work. Thanks to their combined creative talent Boston will have an architectural attraction which will rival anything that has been created in our time."



Fay Foto Service Inc.

Models of buildings to rise on 60-acre Government Center site. Plan will replace 22 streets with four major, two minor streets

Part of downtown Boston before demolition, showing congested streets, half-empty business blocks, substandard living quarters

FROM ARMSTRONG... AN ENTIRELY NEW KIND OF FLOOR: VISTELLE CORLON TILE– WITH DU PONT HYPALON

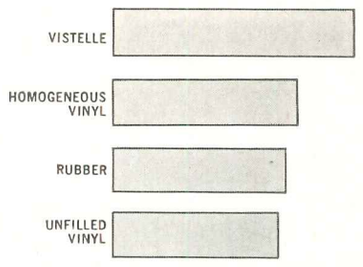
This handsome new floor is probably the most significant development in resilient floors since the introduction of vinyl. It offers the best combination of physical properties and functional advantages ever incorporated into one flooring material.

Here's how Vistelle compares to some other widely used commercial floors:

RESISTANCE TO INDENTATION MARKS

Some flooring materials, such as terrazzo, marble, and the better unfilled vinyl tiles, resist indentation by virtue of their *hardness*. But they offer this benefit at the sacrifice of underfoot comfort. Vistelle's exceptional resistance to permanent indentation is a function of its extreme *resilience*. It gives on impact, but recovers when pressure is released, providing a floor that is free of permanent indentation marks and at the same time, comfortable underfoot. Unlike other resilient floors, the resilience of Vistelle Corlon Tile does not decrease with age.

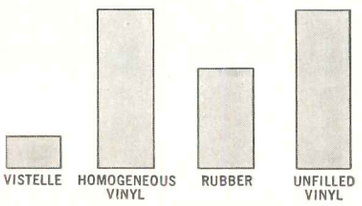
RESILIENCE



RESISTANCE TO CIGARETTE BURNS

Vistelle's superior resistance to cigarette burns is shown in the chart above right. In this test, cigarettes were left to burn out on the tiles. Then the tiles were cleaned with fine steel wool and a commercial floor cleaner and the remaining stain given a severity rating from 0 to 5. Vistelle rates best with only slight staining; so slight in fact, that it was undetectable at arm's length. The vinyl tiles were irreparably scarred, the rubber tile severely stained.

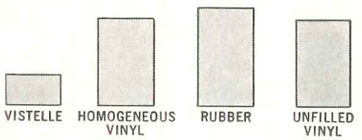
CIGARETTE STAINING



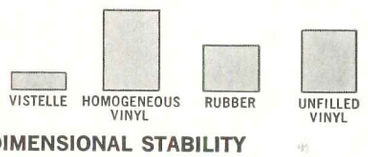
RESISTANCE TO STAINING

Staining tests have also been conducted with more than 100 solvents, acids, and chemicals—and with a like number of common household staining agents such as lipstick, grape juice, crayon, and ink. As shown below, in both sets of tests, Vistelle received a rating of 1 or below indicating very slight or no visible stain. Vistelle is also greaseproof.

ACID, SOLVENT, CHEMICAL STAINING



GENERAL HOUSEHOLD STAINING



DIMENSIONAL STABILITY

Vistelle Corlon Tile has exceptional resistance to shrinkage or expansion, exceeding the requirements of Federal Specification (homogeneous vinyl tile) Interim L-F-00450—(COM-NBS) by a wide margin. Dimensional stability will be guaranteed in writing by Armstrong.

COLOR CLARITY AND FADE RESISTANCE

Compared to other resilient floors, Vistelle's white is whiter, its black deeper, its colors richer. The delineation of design is sharper, too, because colors do not overlap one another. Vistelle is also highly resistant to fading. Test floors exposed to traffic and sunlight for several years have stayed remarkably color constant.

DURABILITY

Vistelle gives superior service under heavy traffic. Tested on the entrance ramp at the Monsanto House of Tomorrow in Disneyland, it was exposed to a traffic rate of 6,000 people a day . . . a total of four million during the test period. After two years under these severe conditions, constantly abraded by sand and gravel tracked from paths leading to the house, only 20% of the tiles' thickness had been worn away.

COST

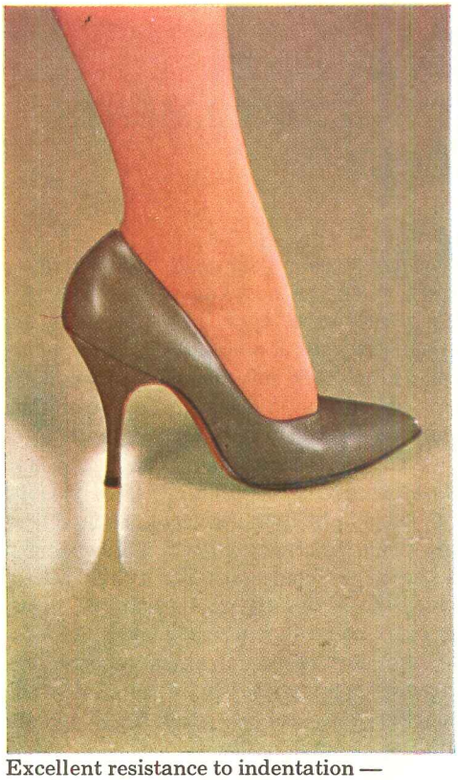
A floor of Vistelle costs $1.50 to $2.00 sq. ft. installed over concrete, depending on the size of the installation. Vistelle can be installed at any grade level over any type of subfloor.

For samples of Vistelle Corlon Tile and technical data, call the Armstrong Architect-Builder Consultant at your Armstrong District Office. Or write to Armstrong, 305 Rock Street, Lancaster, Pennsylvania.

Vistelle and Corlon® are trademarks of Armstrong Cork Co. Hypalon is a registered trademark of Du Pont.

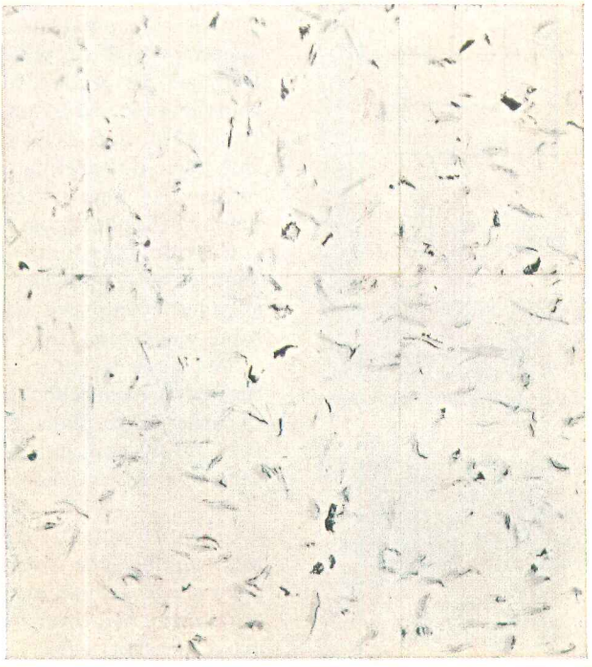
Armstrong FLOORS

A lighted cigarette will not burn its surface.

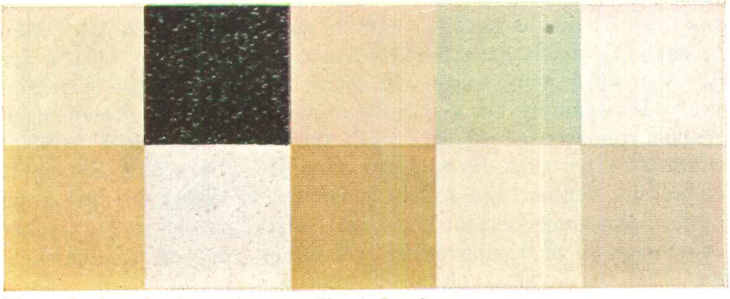


Excellent resistance to indentation — comfortable and quiet underfoot.

Dimensional stability guaranteed by Armstrong in writing.

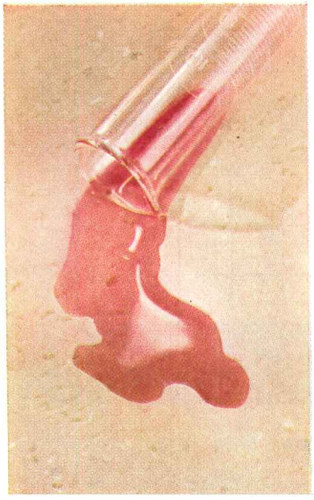


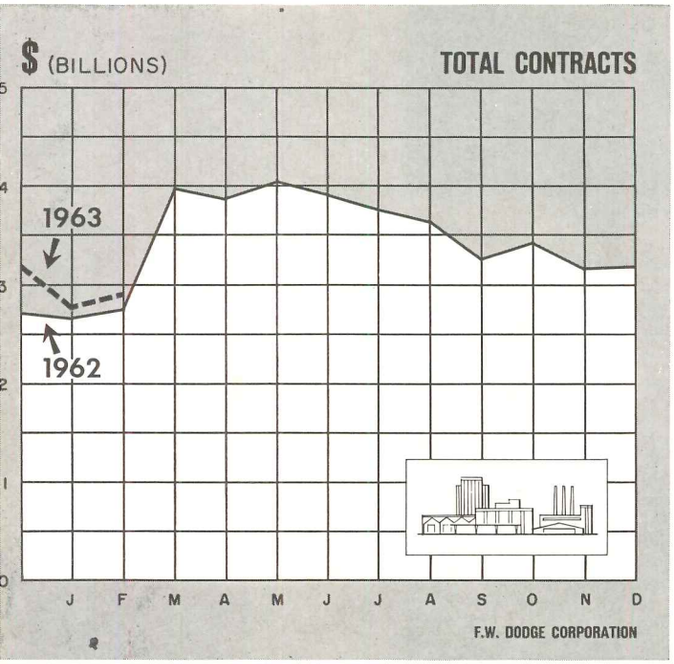
Developed expressly for heavy commercial traffic.



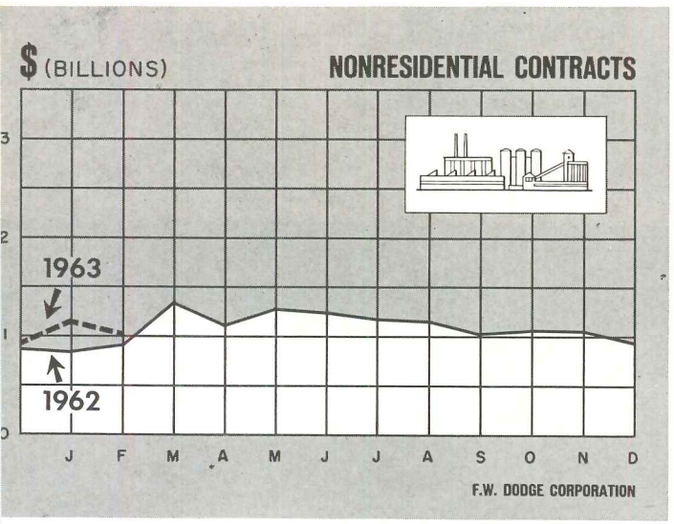
Ten colorings in five color-coordinated pairs.
Subtle, flecked design gives a plain monolithic effect.

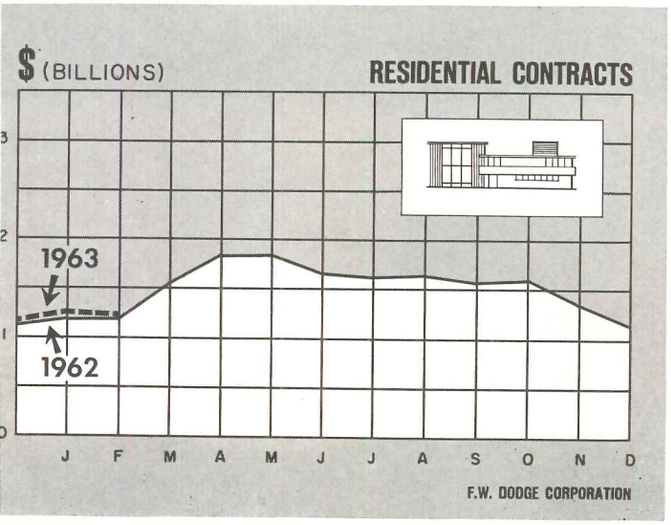
Resists more chemicals, solvents, and staining agents than any other resilient floor.





Total contracts include residential, nonresidential and non-building contracts





SCHOOL BUILDING BOOM FOLLOWS RISING ENROLLMENTS TO HIGH SCHOOL

THE PATTERN OF SCHOOL BUILDING last year once again reflected long-term population trends. With the postwar babies now teenagers, *growth* of primary school enrollment has fallen off, and the need for grade school construction has eased. Primary school contracts totaled 54 million square feet last year, down 5 per cent from 1961, and 23 per cent below the 1957 peak. Yet throughout this period of decline, construction has been sufficient both to accommodate year-to-year increases in enrollment and to reduce much of the classroom backlog accumulated during the early fifties.

Contracts for junior high schools in 1962 amounted to 26 million square feet—up 5 per cent over the previous year. This moderate advance (compared with the 9 per cent gain for 1961) reflects some slackening in the growth of the 12- to-15-year-old group.

The pressure of rising enrollment is currently most acute at the senior high school level, and has forced a dramatic acceleration in construction plans. Expansion last year totaled 61 million square feet, up 20 per cent from 1961 and—*for the first time*—greater than elementary school building.

LOOKING TO THE FUTURE, school age population is expected to grow less rapidly. The Census Bureau estimates that, on the basis of population projections alone, elementary and secondary school enrollment will total some 52 million by 1970, roughly 16 per cent above present levels. This is far from the average 5 per cent a year increase during the early 1950's.

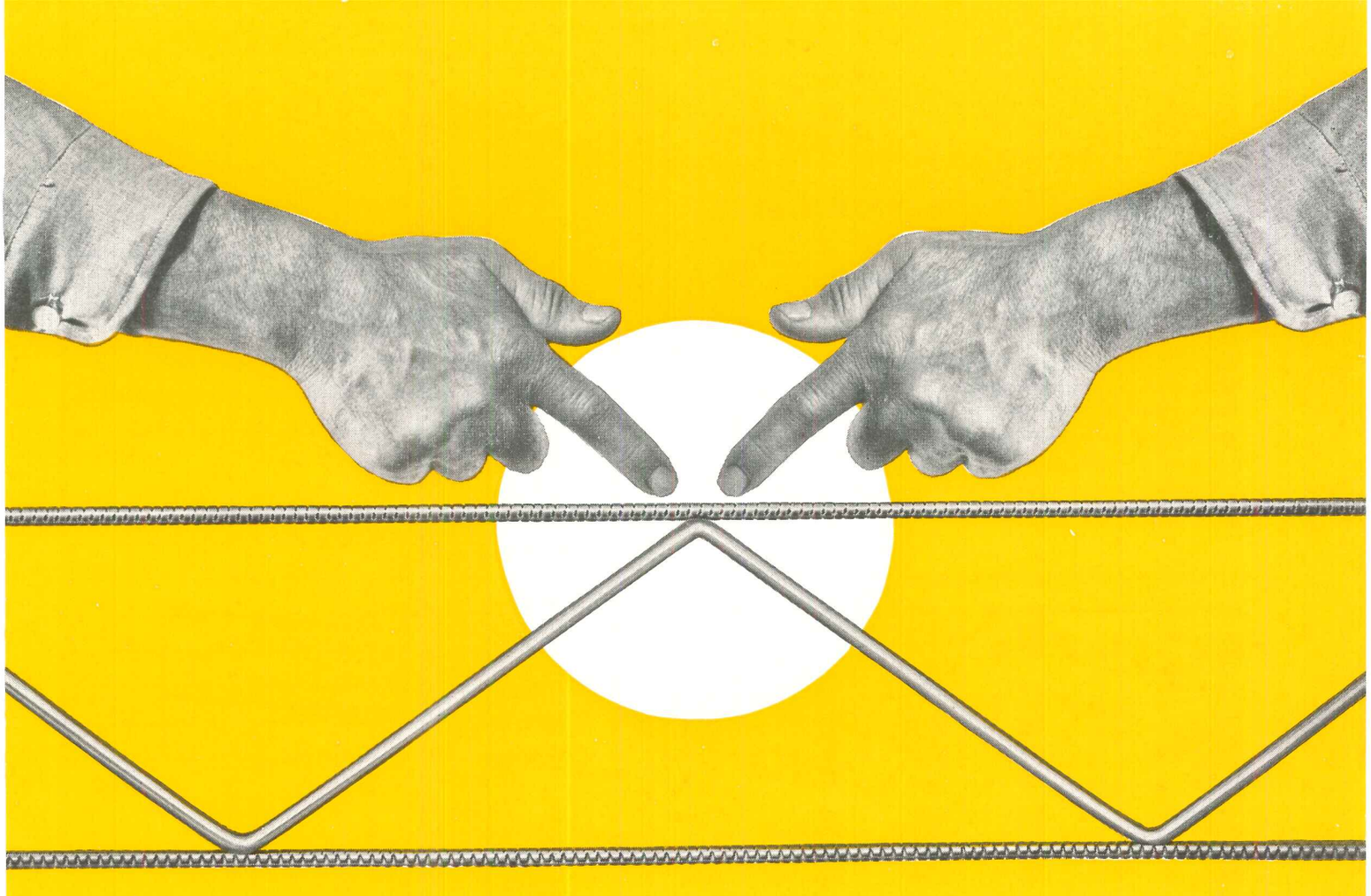
Slowing growth of school-age population will generally check the pace of school construction, though not by a proportionate amount.

First of all, levels of educational attainment are rising steadily. The median number of school years completed in 1960 was 10.8 years; by 1970 this is expected to rise to 12.0 years, as a greater proportion of students remain in school longer. This assumption will raise the enrollment estimate for 1970 by 3 per cent to 53.3 million.

Backlog demand is still significant. About a million and a half public primary and secondary school students are still in excess of present capacity.

THE TREND TO HIGHER QUALITY schools should become more pronounced during the late 1960's. In past periods of great pressure from rising enrollments, limited school board budgets were of necessity allocated to provide the maximum amount of classroom space which could be had, with a minimum of "extras." More recently, as needs have become less acute, there has been a tendency toward more expensive construction. Over the past four years, for example, the average cost per square foot of elementary schools has risen 10 per cent while the cost of labor and materials advanced 7 per cent. By contrast, cost per square foot for rapidly expanding senior high school construction edged up only 4 per cent in the same period. Once the critical period in high school enrollment is past, upgrading will offset some of the inevitable decline in the physical volume of building.

Michael B. Ayre, Associate Economist
F. W. Dodge Corporation
A McGraw-Hill Company



This is Dur-o-wal

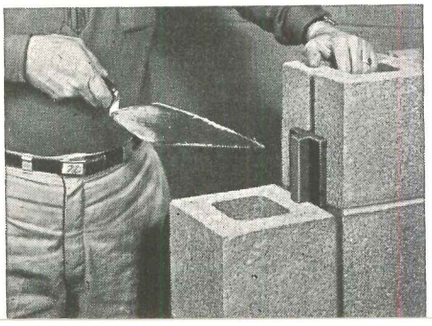
the masonry wall reinforcement with the trussed design

Don't be misled by the common habit of calling all metal-rod reinforcement "durowal". Look for this trussed design. It distinguishes the real Dur-o-wal, insures maximum flexural strength, with all steel members effectively in tension and working together.

Impartial tests of 8″ concrete block walls proved that truss-designed Dur-o-wal exceeds accepted standards—increases the horizontal flexural strength from 60 to 135 per cent, depending on the weight and spacing of Dur-o-wal used, and type of mortar.

An independent new research study shows that Dur-o-wal tied walls outfunction brick-header tied walls. Write to any Dur-o-wal address below for 44-page test report.

STRENGTH WITH FLEXIBILITY—this basic masonry wall requirement is met for sure (and economically!) when Dur-o-wal, above, is used with the ready-made, self-flexing Rapid Control Joint, below.



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- Aurora, Ill., 260 S. Highland Ave.
- Seattle, Wash., 3310 Wallingford Ave.
- Minneapolis, Minn., 2653 37th Ave. So.
- Hamilton, Ont., Canada, 789 Woodward Ave.

For more data, circle 6 on Inquiry Card

Building Construction Costs

By Myron L. Matthews
Manager-Editor, Dow Building Cost Calculator, an F. W. Dodge service

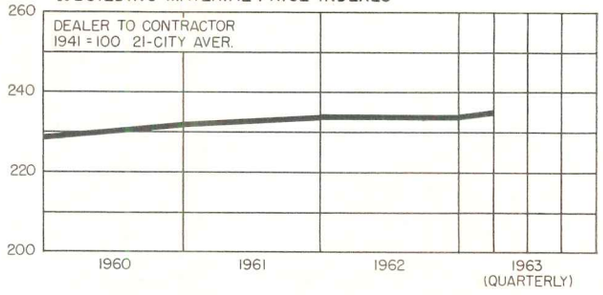
The information presented here permits quick approximations of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). The tables and charts can be used independently, or in combination as a system of complementary cost indicators. Information is included on past and present costs, and future cost can be projected by analysis of cost trends.

A. CURRENT BUILDING COST INDEXES—APRIL 1963

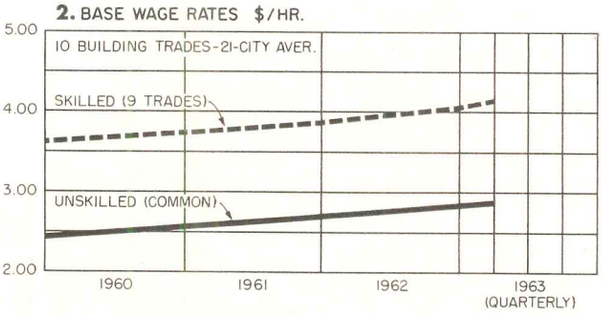
1941 average for each city = 100.0

Metropolitan Area	Cost Differential	Current Dow Index Residential	Current Dow Index Nonresidential	Per Cent Change From April 1962
U.S. AVERAGE— 21 Cities	8.5	256.9	273.6	+1.62
Atlanta	7.1	288.4	305.9	+1.85
Baltimore	8.0	260.6	277.2	+0.66
Birmingham	7.4	237.0	254.8	+0.56
Boston	8.4	230.3	243.8	+0.79
Chicago	8.8	286.0	300.8	+2.24
Cincinnati	8.8	248.0	263.6	+0.93
Cleveland	9.3	260.0	276.4	+2.48
Dallas	7.8	246.0	254.0	+2.77
Denver	8.3	261.8	278.3	+0.69
Detroit	8.9	257.5	270.3	+0.90
Kansas City	8.3	232.1	245.7	+1.63
Los Angeles	8.4	261.0	285.5	+1.74
Miami	8.4	253.2	265.8	+1.27
Minneapolis	8.9	258.4	274.7	+1.30
New Orleans	7.9	235.9	250.0	+0.73
New York	10.0	267.4	287.1	+2.70
Philadelphia	8.7	256.0	268.8	+0.07
Pittsburgh	9.1	242.8	258.1	+1.63
St. Louis	8.9	248.9	263.7	+2.40
San Francisco	8.5	327.3	358.2	+3.24
Seattle	8.5	235.7	263.4	+3.01

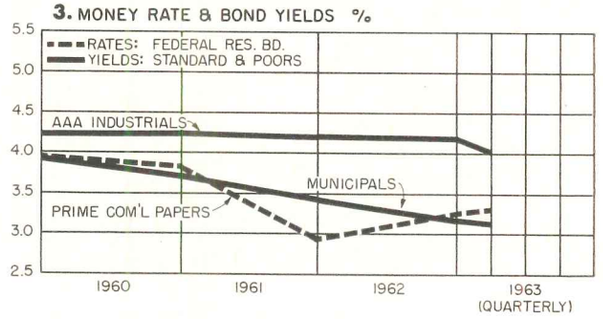
1. BUILDING MATERIAL PRICE INDEXES



2. BASE WAGE RATES $/HR.



3. MONEY RATE & BOND YIELDS %



B. HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.0

Metropolitan Area	1947	1952	1957	1958	1959	1960	1961	1962 (Quarterly) 1st	2nd	3rd	4th	1963 (Quarterly) 1st	2nd	3rd	4th
U.S. AVERAGE 21 Cities	185.9	213.5	244.1	248.9	255.0	259.2	264.6	265.1	265.9	267.4	268.7	269.4			
Atlanta	190.0	223.5	269.6	277.7	283.3	289.0	294.7	296.5	297.6	298.2	300.6	302.0			
Baltimore	181.0	213.3	249.4	251.9	264.5	272.6	269.9	270.5	272.6	272.4	271.9	272.3			
Birmingham	175.0	208.1	228.6	233.2	233.2	240.2	249.9	249.9	249.9	249.9	250.6	251.3			
Boston	187.0	199.0	224.0	230.5	230.5	232.8	237.5	238.5	239.9	240.4	240.4	240.4			
Chicago	182.0	231.2	267.8	273.2	278.6	284.2	289.9	289.9	289.9	292.6	295.8	296.4			
Cincinnati	178.0	207.7	245.1	250.0	250.0	255.0	257.6	257.6	257.6	260.0	260.0	260.0			
Cleveland	173.0	220.7	258.0	257.9	260.5	263.1	265.7	265.7	268.4	268.4	271.7	272.3			
Dallas	202.0	221.9	228.4	230.5	237.5	239.9	244.7	244.7	244.7	247.7	250.8	251.5			
Denver	187.0	211.8	245.6	252.8	257.9	257.9	270.9	273.1	276.3	275.3	274.8	275.0			
Detroit	158.0	197.8	237.4	239.8	249.4	259.5	264.7	264.7	264.7	267.1	267.1	267.1			
Kansas City	172.0	213.3	230.5	235.0	239.6	237.1	237.1	238.5	239.5	240.8	241.8	242.3			
Los Angeles	180.0	210.3	248.4	253.4	263.5	263.6	274.3	274.3	274.3	278.0	278.6	279.1			
Miami	193.0	199.4	234.6	239.3	249.0	256.5	259.1	259.1	259.1	260.8	262.4	262.4			
Minneapolis	176.0	213.5	235.6	249.9	254.9	260.0	267.9	267.9	267.9	269.5	270.8	271.4			
New Orleans	180.0	207.1	232.8	235.1	237.5	242.3	244.7	244.7	244.7	245.5	245.5	246.5			
New York	181.0	207.4	240.4	247.6	260.2	265.4	270.8	273.5	273.5	276.7	280.4	280.9			
Philadelphia	209.0	222.3	255.0	257.6	262.8	262.8	265.4	265.4	265.4	265.0	265.0	265.6			
Pittsburgh	191.0	204.0	234.1	236.4	241.1	243.5	250.9	250.9	250.9	252.1	253.5	255.0			
St. Louis	191.0	213.1	237.4	239.7	246.9	251.9	256.9	254.0	254.3	256.2	257.3	260.1			
San Francisco	243.0	266.4	302.5	308.6	321.1	327.5	337.4	339.1	340.8	344.5	348.7	350.1			
Seattle	175.0	191.8	221.4	225.8	232.7	237.4	247.0	249.0	251.9	253.7	255.3	256.5			

HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B: an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

TABLE A. Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second: if the cost differential of one city (10.0) divided by that of a second (8.0) equals 125%, then costs in first city are 25% higher than costs in second. Also, costs in second city are 80% of those in first (8.0 ÷ 10.0 = 80%) or 20% lower in the second city

TABLE B. Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other: if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. Also, second period costs are 75% of those of the other date (150.0 ÷ 200.0 = 75%) or 25% lower in the second period. CHART 1. Building materials indexes reflect prices paid by builders for quantity purchases delivered at construction sites. CHART 2. The $1.20 per hour gap between skilled and unskilled labor has remained fairly constant. CHART 3. Barometric business indicators that reflect variations in the state of the money market

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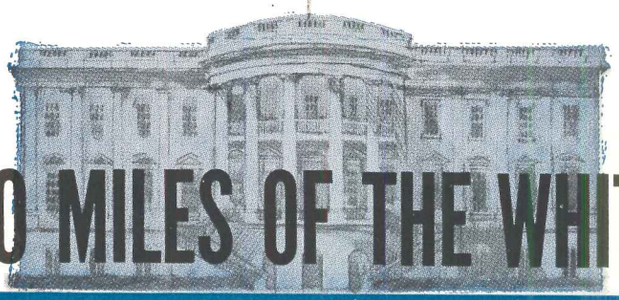

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(7) Riddell Building
(8) No. 1, Farragut Square
(9) Pitney-Bowes
(10) 1725 De Sales St.
(11) 2121 Pennsylvania Ave.
(12) 1707 H St.
(13) 1710 H St.
(14) 1901 Pennsylvania Ave.
(15) 1411 K St.
(16) 1776 Pennsylvania Ave.
(17) Marsh Building
(18) New Medical Building
(19) Doctor's Building

Hotels and Motels

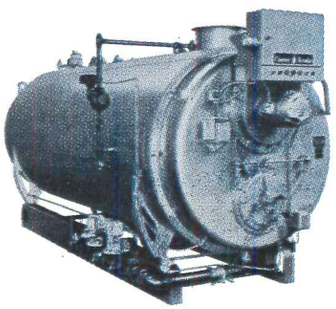
(20) Meridian Hill Motel
(21) Burlington Hotel
(22) International House
(23) Virginia Motel

Buildings—Public and Private

(24) American Chemical Society
(25) Washington Post
(26) Golden Ox Restaurant

Schools and Colleges

(27) GWV Crawford Hall
(28 George Washington U.
(29) Cathedral Latin High School



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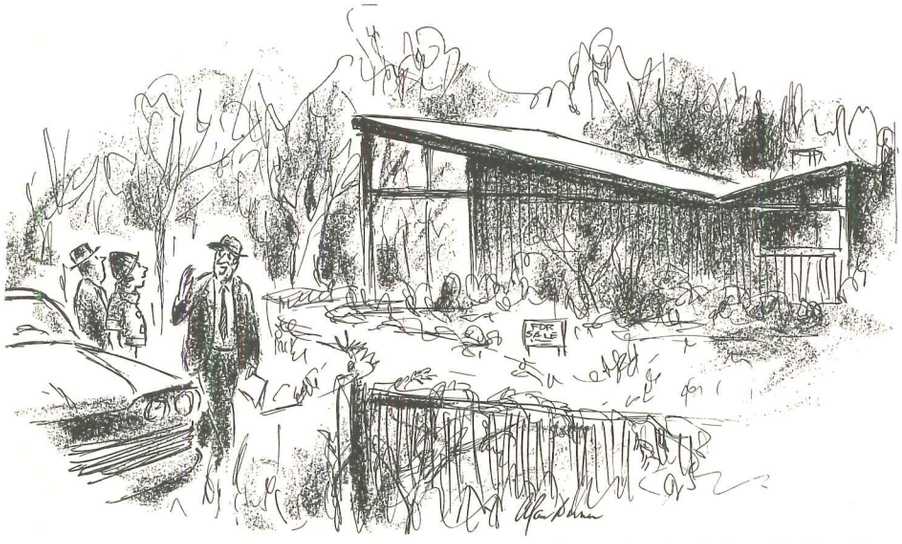

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"An antique! A real find! A genuine late-twenties Butterfly Roof!"

A.I.A. HOLDS 1963 CONVENTION IN MIAMI

Some 3,000 people—2,000 architects among them—are expected to assemble this month when the American Institute of Architects holds its annual convention May 5-9 at the Americana Hotel in Miami, Florida.

Theme of this year's program is "The Quest for Quality in Architecture: The Role of Architecture as an Art." Dean Burnham Kelly of Cornell's School of Architecture will be permanent moderator, presiding at all professional sessions. Speakers will include: Sir Basil Spence, S. Robert Anshen, Paul Rudolph, Dr. Edward T. Hall, Nikolaus Pevsner, Karel Yasko, George McCue, Ada Louise Huxtable, Wallace K. Harrison and John M. Johansen. This year panelists at one session will continue in succeeding sessions and so provide unity for the entire professional program.

Elections to Be Held

Election of officers is on the agenda. Nominee for president is J. Roy Carroll Jr., F.A.I.A., 1962 national vice president, nominee for first vice president (president-elect) is Arthur Gould Odell Jr., F.A.I.A., South Atlantic regional director from 1959-1962.

Present prospects are for two contests: the first for second vice president, which involves candidates William J. Bachman, A.I.A., regional director from Illinois, 1960-1963; and Wayne S. Hertzka, F.A.I.A., 1960 president of the California Council, A.I.A.—the second for treasurer, in which contestants are Raymond S. Kastendieck, F.A.I.A., Institute treasurer since 1956; and Robert F. Hastings, F.A.I.A., former president of the Detroit chapter, 1958-1960, member of the A.I.A. Committee on Education and Committee on Industrial Architecture.

Nominees for regional directors are: California—C. Day Woodford; Central States—Angus McCallum; Florida—Robert H. Levinson; Illinois—Albert M. Goedde; Pennsylvania—Willard S. Hahn; Texas—Llewellyn W. Pitts.

Key Business on the Docket

Key business matters to be discussed and acted upon include proposed bylaw changes relating to: right of president of chapter to cast votes for absent delegate; termination of cooperate membership "without prejudice"; continuation of special programs financed by supplemental dues; new A.I.A. headquarters; judiciary procedure involving unprofessional conduct in architectural practice; the Institute's administrative structure.

An official notice of the 1963 convention business, providing discussion for the Board of Directors, reasons in proposing the actions has been mailed well in advance of the convention to A.I.A. members.

Proposed amendments relating to the Institute's administration would: (1) change the title of Regional Director to "Director"; (2) allow for election of three vice presidents in place of the current Second Vice President; (3) change the composition of the Executive Committee to contain only the officers of the Institute, (4) change the frequency of Board meetings from three to four times a year, with the stipulation that the Executive Committee would meet only as directed by the Board or upon the call of the President.

Gold Medal Award

Among the A.I.A. awards to be presented during the convention is the 1963 Gold Medal to be received by world-famous Finnish architect Alvar Aalto.

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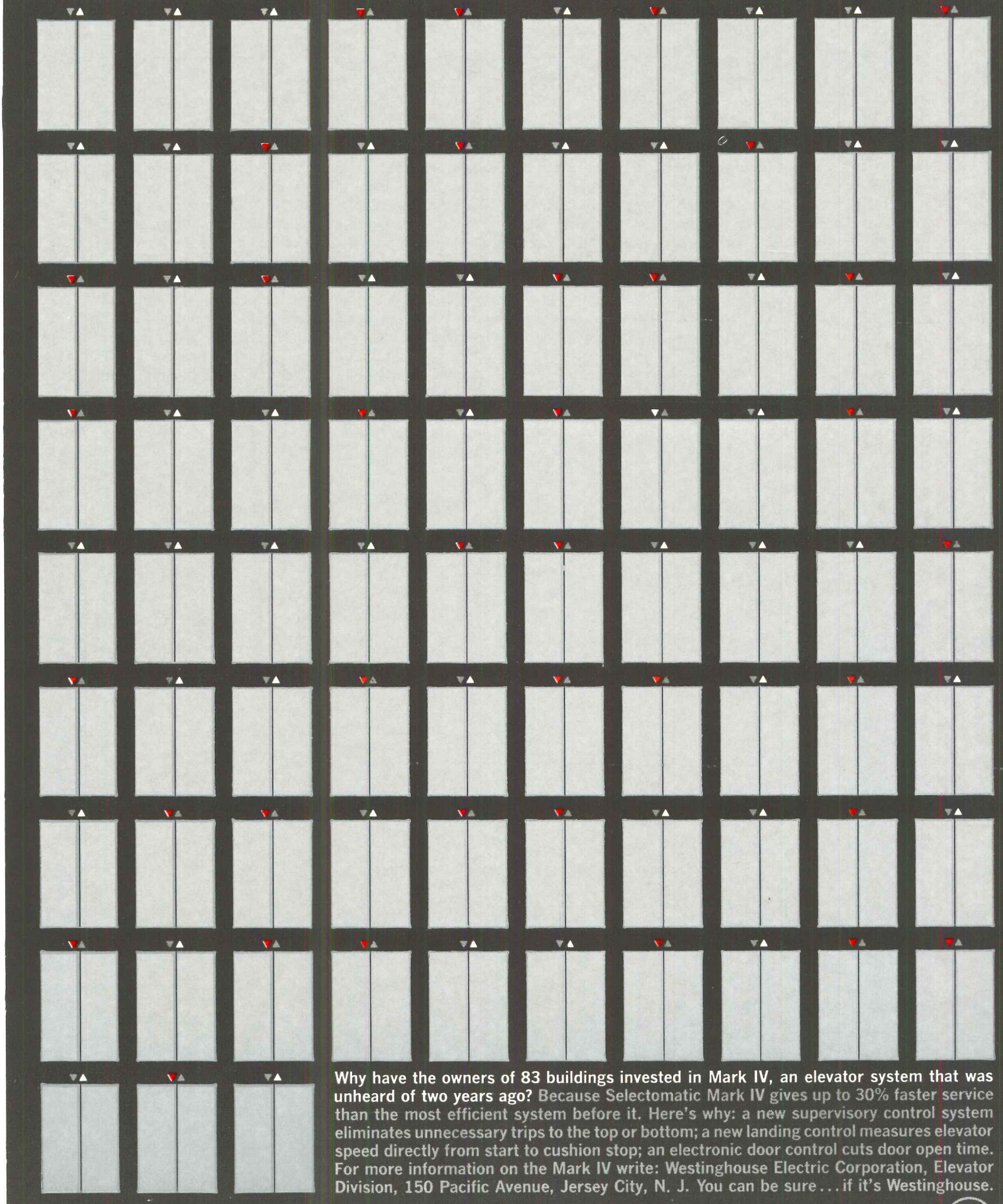

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EMERY ROTH AND SONS MARKS 60TH ANNIVERSARY

The New York architectural firm of Emery Roth & Sons this year celebrates its 60th year of architectural practice. Many of the most typical New York buildings of two very different areas—the highly ornate luxury apartment buildings of pre-Depression days and the highly utilitarian commercial office buildings of the post-World War II boom—have been the work of Emery Roth & Sons; and the firm enters its seventh decade with a third generation of the family already in the business and another member of that generation apparently headed for it.

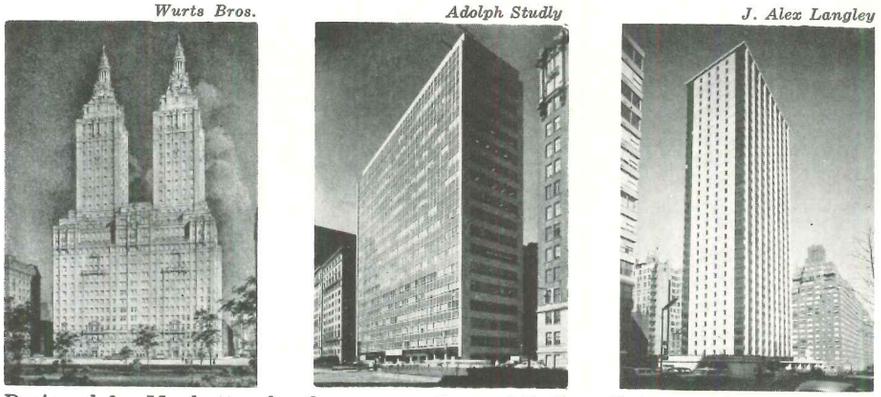
The firm's proclivity for designing profitable buildings for commercial builders has brought it a vast and increasing number of office building commissions—at last count 55 completed since World War II, 20 under construction, nine in planning stage. Most (but not all) of these are in New York, a remarkably large number of them on Park and Madison Avenues. It seems unlikely that any other firm in history has been responsible for so many tall office buildings within such a short span of years. In addition, the firm's postwar commissions have included 19 apartment houses completed, five under construction and three in planning stage, besides 10 other projects.

The Roth firm today consists of Richard and Julian Roth, sons of the founder, who as equal senior partners establish policy, establish and maintain client contact and retain all consultants; four "limited" partners —Controller Estelle Beal, Irving E. Gershon and Harry J. Harman, heading design and "plan and drafting" departments respectively, and Richard Roth Jr.; six associates—Michael Radoslovich, Philip Zinn, Fred Halden, Victor Gorlach Philip Martines and Maurice Wolff; chief specifications writers Douglas Fernandez and Henry Klippel; and some 90 employes.

J. Alex Langley

Today's Roths—Julian and Richard, senior partners, and Richard Jr., one of four "limited" partners, of Emery Roth & Sons—are posed before a photograph of the firm's founder, the late Emery Roth, father of Julian and Richard. He died in 1947

Wurts Bros. *Adolph Studly* *J. Alex Langley*



Designed for Manhattan by three generations of Roths: (*left to right*) San Remo Towers, the kind of luxury apartment for which Emery Roth was known; 430 Park Avenue, example of the commercial office buildings which have been most of the firm's post-world War II work; and Tower East (10 East 70th Street), apartment building designed by Richard Jr., just completed

Richard Roth is the architect head of the firm, working with clients in the initial stages of design development, approving all designs and in charge of production. His brother Julian (not an architect) is in charge of business matters and chief adviser on the materials and construction side. Richard Jr. (a 1957 architecture graduate of Miami University, Oxford, Ohio) is involved in site analysis, design and planning and client liaison; he works closely with the heads of design and drafting.

Richard Sr. fell in love with architecture in his father's drafting room at the age of 5 or 6 and says he never thought of being anything but an architect. He joined his father's firm immediately after getting his B.S. in architecture at Massachusetts Institute of Technology in 1928; Julian had preceded him by two years. These were the climactic years of Emery Roth's apartment house practice—from 1916 to 1930 (when the New York real estate boom collapsed) he designed some 15 apartment buildings a year, mostly in the luxury category, and such familiar New York landmarks as the Ritz Tower, the St. Moritz, the Dorset, the Hotel St. George, the Fifth Avenue Hotel and the Belmont Plaza.

Like many others, the firm had some tough periods during the thirties and again during World War II and the immediate postwar years. Emery kept it going, even when Julian and Richard had to find work elsewhere. When Richard came back from three years of Navy service in 1945, a new practice had to be built; and the new generation of partners seems to have done it.

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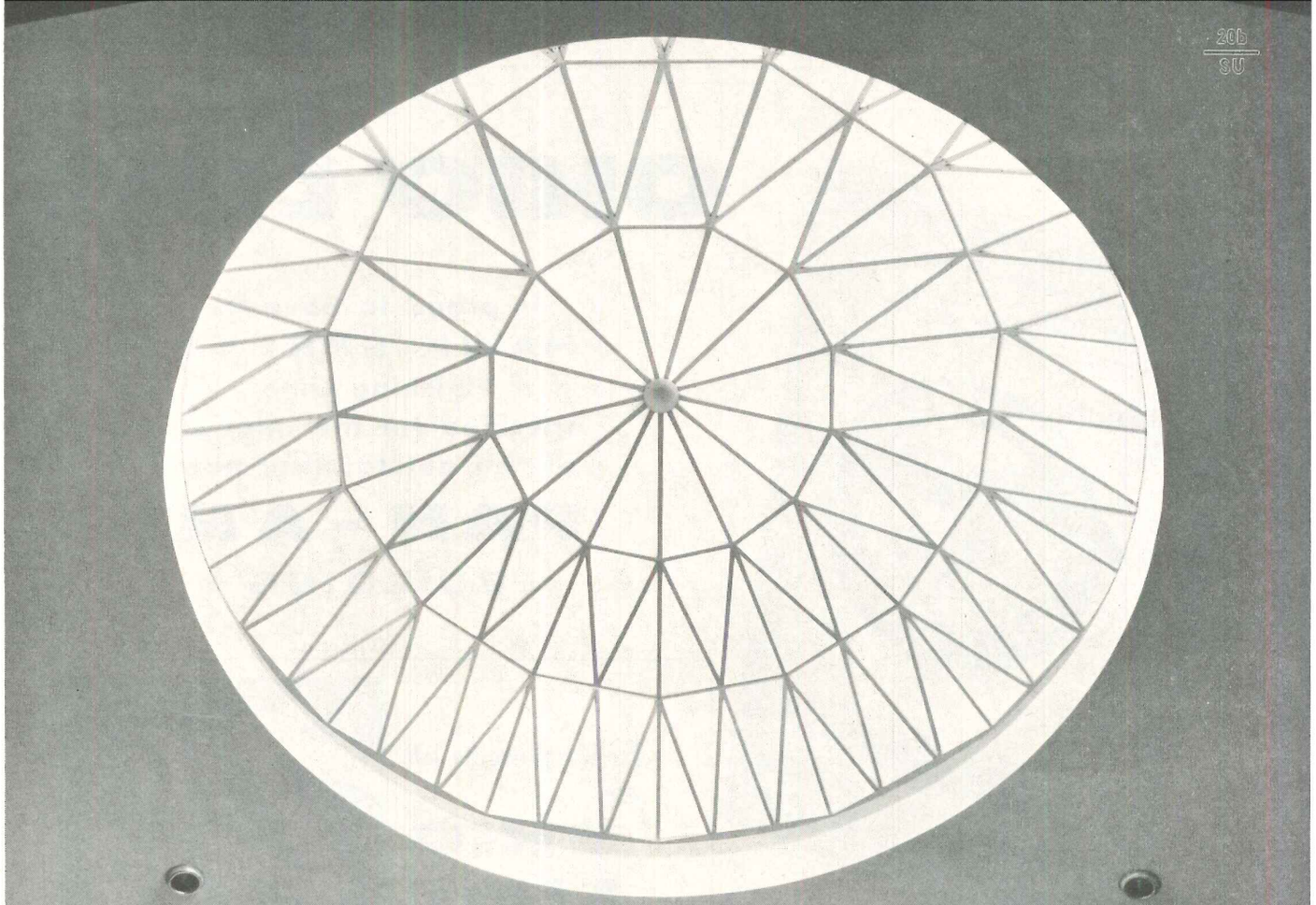

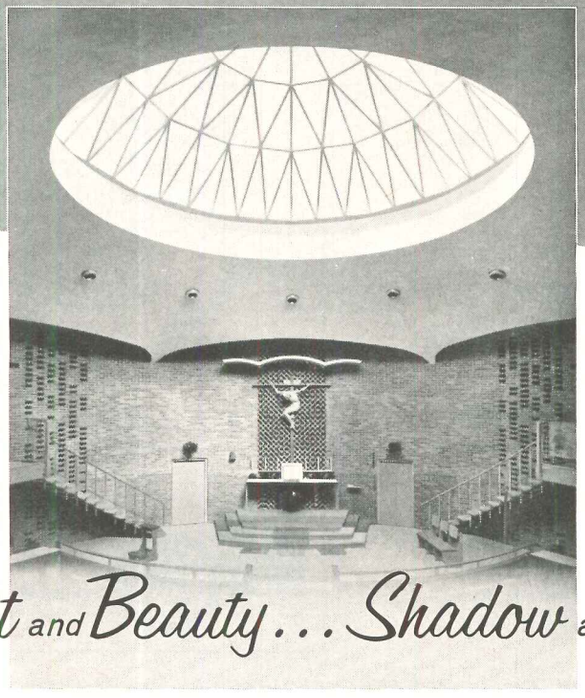

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SPECIAL SUMMER PROGRAMS ARE PLANNED AT M.I.T. AND OKLAHOMA STATE

The Massachusetts Institute of Technology will hold the 25th in its series of annual two-week Special Summer Programs in City and Regional Planning from July 15 through July 26.

As in former years, the program will include a comprehensive review of the principles of city and metropolitan planning and of the administration of planning programs. Special emphasis will be placed on the relationship of the community renewal program to general planning for urban areas. The approach will be from the point of view of the generalist who is more concerned with breadth of interest and recently developed techniques and practices than with completeness or depth of detail.

Enrollment is open to practicing professional planners, members and staffs of planning commissions and urban renewal agencies, and to men and women in such related fields as architecture, public administration, civil engineering utilities, real estate and industrial development. Attendance will be limited to assure ample opportunity for all to participate in the discussions.

Seminars will be held each weekday morning and afternoon, with two evening sessions each week.

Seminar leadership will be provided by members of the faculty of the department of city and regional planning and guest speakers. Frederick J. Adams, professor of city planning, M.I.T., will be director. Tuition is $275. For application blanks, write the Director of the Summer Session, M.I.T., Cambridge, Mass.

The School of Civil Engineering at Oklahoma State University has been awarded a $59,300 grant from the National Science Foundation, Washington, D.C., to conduct a Summer Institute for College Teachers in Engineering on the Oklahoma State campus June 10 through August 9.

Each year the National Science Foundation selects 10 engineering colleges to organize such institutes. This is the third time Oklahoma State's Civil Engineering School has been selected.

The Institute's purpose is to improve the competence of teachers in the fields of structures, soil mechanics and construction. To accomplish this, advanced material in these areas will be presented and free discussion held on teaching methods and ways of organizing undergraduate and graduate courses. Director will be Professor Jan J. Tuma, head of the School of Civil **Engineering.**

Stipends will be carried by the Institute for 40 college teachers of engineering. All engineering professors in the United States and Canada are eligible to apply for membership. A limited number of foreign applicants may be selected.

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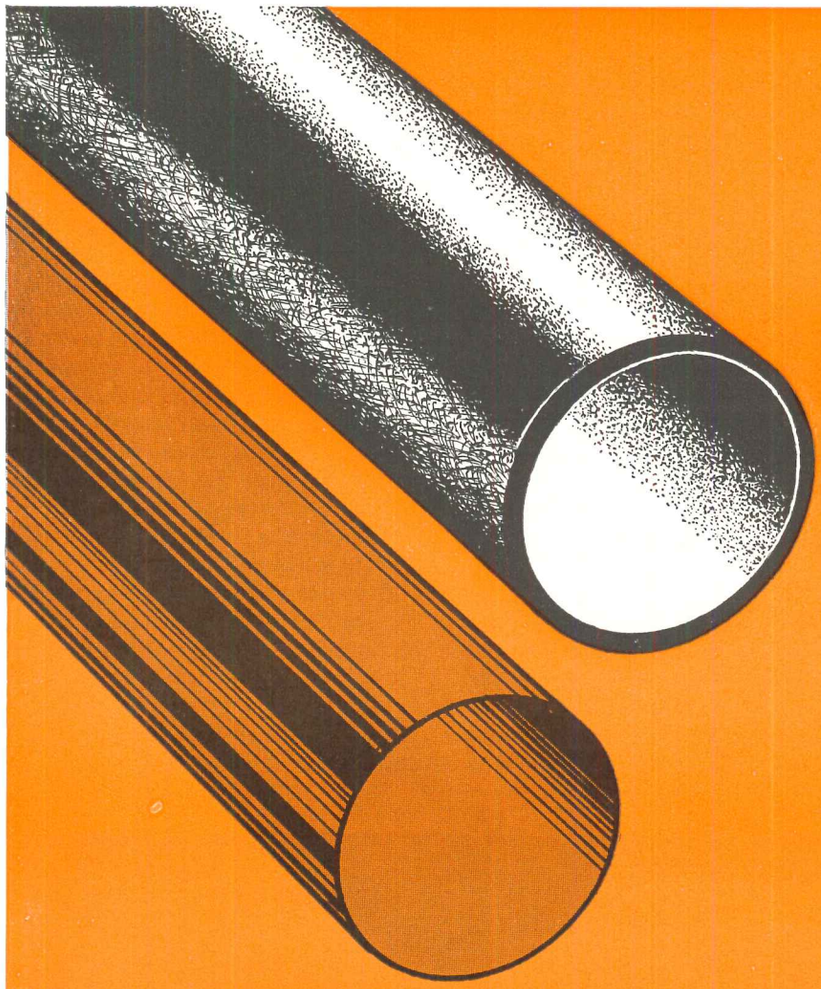

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The facts on the adjoining page show the many advantages you get with cast iron soil pipe. They reveal with startling clarity the limited advantages you get from DWV thinwall copper tubing.

For instance: Cast iron soil pipe has a thick, strong wall. *Copper tubing has a soft, thin wall.* Cast iron soil pipe absorbs water noises and pipe vibration. *Thinwall copper tubing amplifies them.* Cast iron soil pipe can't be punctured accidentally by nails. *Thinwall copper tubing is puncturable.* And, cast iron soil pipe, in more than a century of drainage service, has proved itself safely resistant to corrosive materials in ordinary sewage.

Keep these facts in mind when you write plumbing drainage specifications for *any* structure. And to help keep them before you, let us send you "The Case for Cast Iron Soil Pipe and Fittings." We'll also include the authoritative CI Book of Standards (conforming to Commercial Standard CS188-59)—and a handy pad of gummed CI specification forms for easy attachment to your written specs. Mail the coupon!

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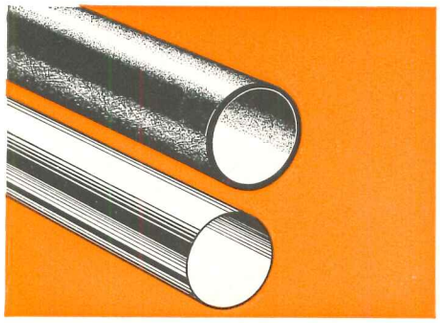
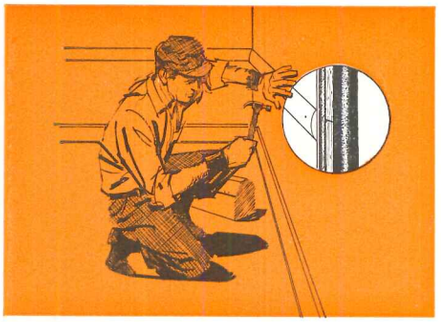
See...Feel...Hear the difference! Specify CI — the way to buy modern...

CAST IRON SOIL PIPE

drainage tubing fail to deliver?



Cast iron soil pipe—a rugged nominal .18-in. thick wall! DWV copper tubing—a soft, thin, nominal .045-in. wall. You can *See...Feel... and Hear the Difference!*



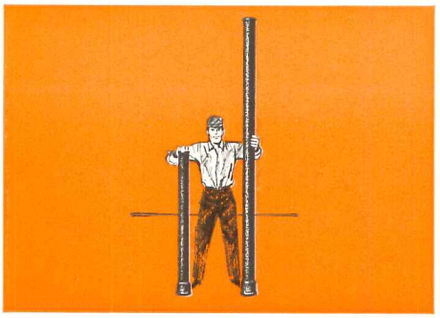
Cast iron soil pipe is nailproof! Accidental puncture of drain lines or stack can't happen with cast iron soil pipe. Plumber's "snake" does no damage from inside the pipe.

Cast iron soil pipe resists corrosive bathroom wastes! Wastes from plumbing fixtures affect cast iron soil pipe least—as records of years of public service show.

Cast iron soil pipe takes household chemicals in stride! Detergents and drain cleaners have little corrosive effect on cast iron soil pipe—even after many years of use.

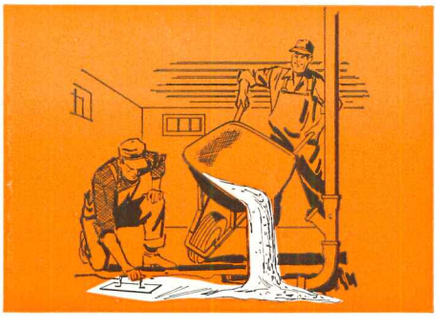
No embarrassing bathroom noises! Thick-walled cast iron soil pipe muffles gurgling water sounds, quiets vibration noise—the sign of a quality plumbing installation. DWV copper tubing amplifies sound.

Cast iron soil pipe gives long, long service. It is not unusual to find cast iron soil pipe installations which have served through three generations—about 100 years.



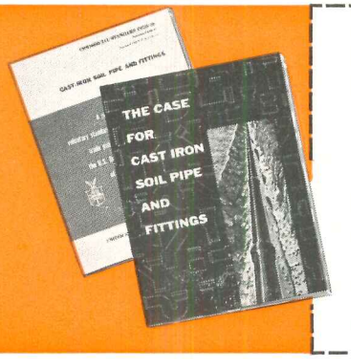
Modern 10-foot lengths of cast iron soil pipe save installation time and cost. Fewer joints are needed in any drainage system in the house and to the street sewer.

symbol of top quality. This insignia on cast iron soil pipe and fittings guarantees these products are American-made, and meet the specifications adopted by the Cast Iron Soil Pipe Institute.



Cast iron soil pipe under the floor and to the street sewer gives maximum protection against infiltration, root penetration, crushing, pipe-joint failure. No substitute drainage piping can match it.

Use coupon for fast return mail service!
Brochure, Book of Standards, and pad of specification forms will be sent promptly.



Cast Iron Soil Pipe Institute, Dept. B
205 W. Wacker Drive, Chicago 6, Ill.

Gentlemen: Please send us:

- ☐ Pad of specification forms
- ☐ Booklet, "The Case for Cast Iron Soil Pipe and Fittings"
- ☐ Book of Standards

Firm name_____

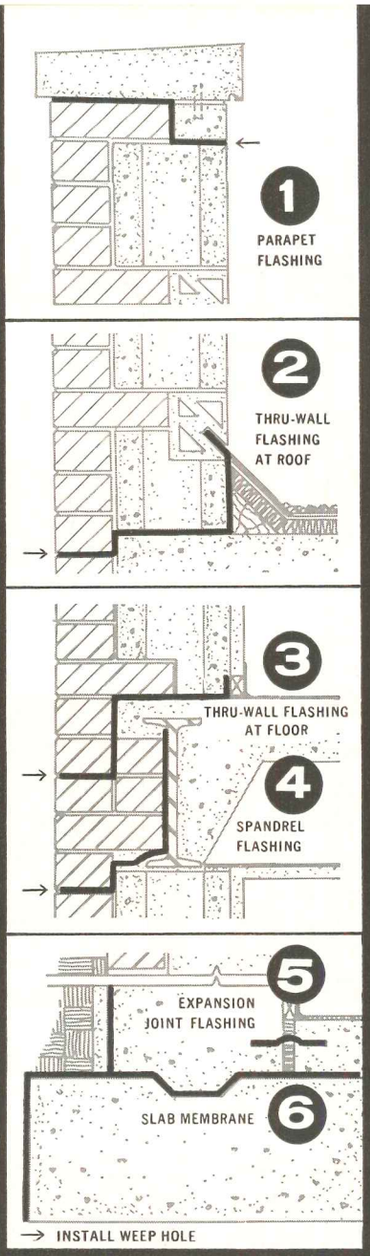
Your name, title_____

Address_____

City_____ Zone____ State_____

For more data, circle 14 on Inquiry Card

DO YOU ALWAYS FLASH THESE SIX TROUBLE SPOTS?



■ In masonry wall construction, these six areas are particularly vulnerable to water damage — yet surprisingly often, protection of these critical points is not called for in specifications. Although flashing is often taken for granted, the fact remains that your best insurance against water damage is *complete* flashing. ■ The danger of seepage in *every* type of building can be eliminated permanently with the right kind of flashing properly installed in all the vulnerable places. ■ WASCO® brand flashing, the nation's leading line, provides this permanent protection, frequently for less than 1/20 of 1% of total construction cost. *On a $1 million building, that's just $500.* ■ WASCO brand flashing is the only complete line of thru-wall and spandrel flashing . . . for protection from parapet to foundation. You can select from 16 different types of WASCO flashings, including copper-fabric, copper-asphalt, copper-lead, fabric, plastic, and aluminum. ■ For exceptional flashing problems, consult the Cyanamid Engineering Staff. Full product details in Sweet's Architectural File 8g/Am and Sweet's Industrial File 8c/Am.

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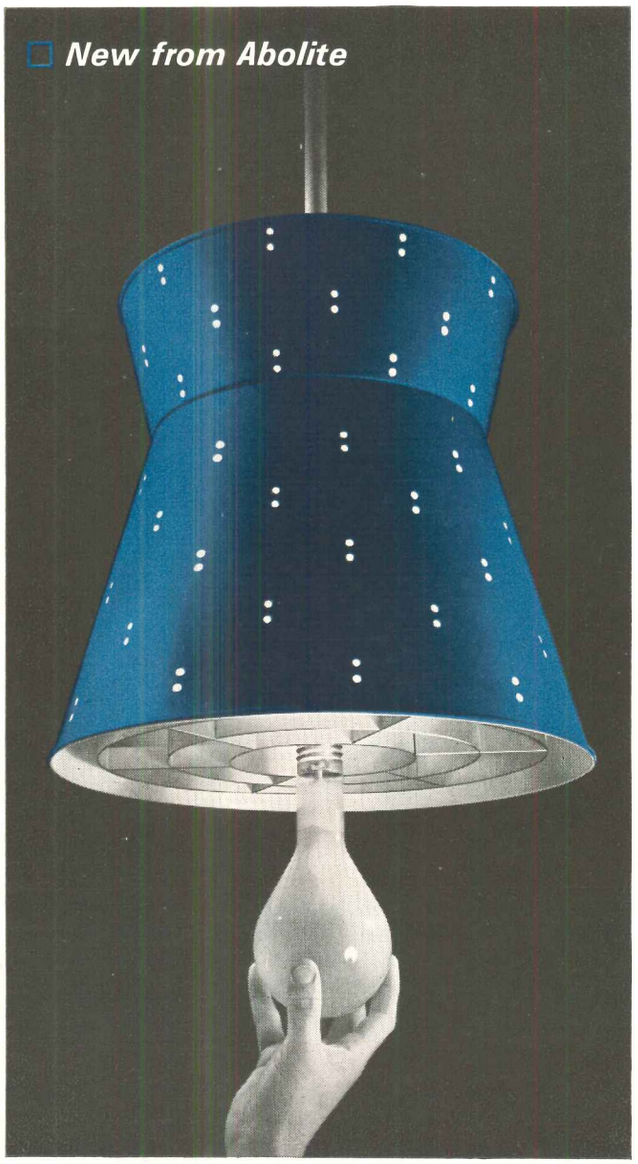
New from Abolite



New decorative luminaires combine smart styling with maximum lighting

Here's a smartly styled aluminum fixture that provides maximum lighting for churches, schools, lobbies, libraries and the like. ■ These Abolite luminaires are supplied complete with aluminum uplight units for 300 to 1500 watt incandescent or 400 watt mercury vapor lamps. They're available separately for use with R40 and R52 incandescent and mercury reflector type lamps. ■ Subdued light sparkling through perforations adds to over-all beauty. ■ Self-cleaning open top design cuts maintenance. ■ Baked enamel finish—white interior with your choice of exterior colors. Louvers, guards, aligners, other accessories available. Our catalog is yours for the asking. Just write Dept. AR-5, Abolite Lighting, West Lafayette, Ohio.

ABOLITE Lighting
The Jones Metal Products Company
West Lafayette, Ohio

Hour Glass Taper
(choice of perforation design)

Cluster Mounting
(combinations of 2, 3 or 4)

For more data, circle 16 on Inquiry Card

Steel goes to school... gets straight A's for

LOW INITIAL COST—*competitive with any other construction system.*

STABILITY—*won't burn, warp, sag, gap, crack, creep.*

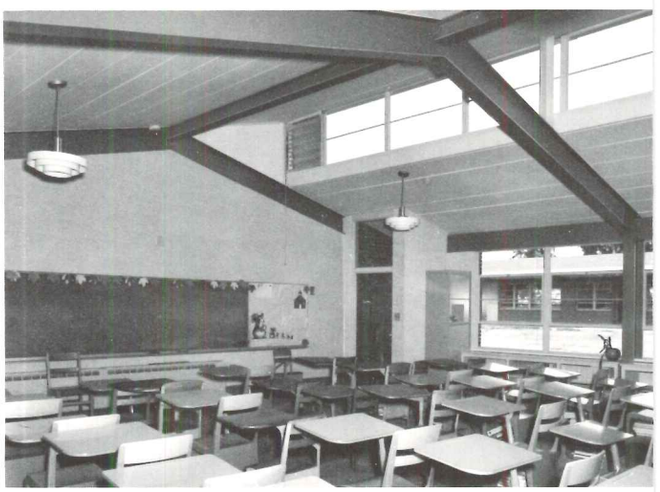
STRENGTH—*longer life than any other construction. Less bulk in beams and columns.*

FUTURE EXPANSION—*additions—upstairs or out the back—are easy and inexpensive.*

FAST ERECTION—*no form work, no new skills required, all-weather erection.*

Tapered steel beams, integral with frame, provide covered walkways

When the elementary school in North Aiken, S.C., needed additional classrooms, a new unit was built close to the original building. Bethlehem structural steel was used in framing the new classrooms. Outside, tapered steel beams were cantilevered to provide a covered walkway. Designing this walkway was especially simple, because the beams are integral with the building's frame. The interesting clerestory window gives strong light without requiring special framing.



Architects: Robert McCreary and William Hughes.

Steel for Strength

Good-looking steel lockers and cabinets withstand hard knocks year after year, require little maintenance, and because of standard design, are easy to replace in whole or in part.

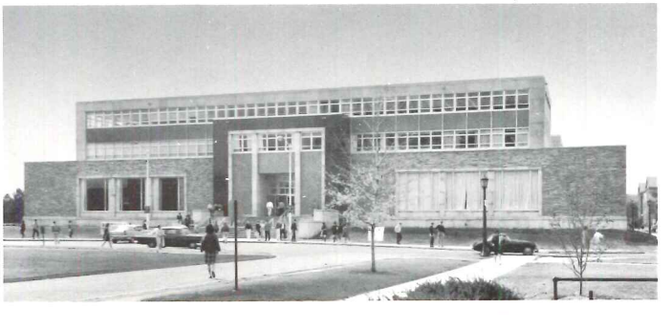
A handsome room that will *stay* handsome for years

Norton Hall, the new student union building at the State University of New York at Buffalo, is described as "built with permanent materials without excessive cost." And that meant a steel frame to the architect and builder. About 1,000 tons of Bethlehem structural steel are in the frame, including four sizes of Bethlehem's lightweight structurals.

"I like the light sections because they provide greater flexibility in selection of the most suitable member," said James Gill, consulting engineer for the architects.

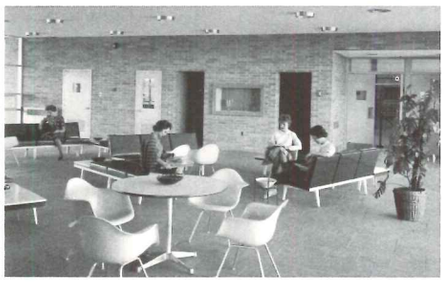
The result is a strikingly good-looking and thoroughly functional building with no wasted space; easy to maintain, economical to construct.

Architects: Duane Lyman & Associates.



BETHLEHEM STEEL

BETHLEHEM STEEL



Gymnasium, dance studio, and related classrooms comprise Cedar Crest College's new Lees Hall. Flagstone, brick, and glass over a Bethlehem steel frame provided the strongest possible materials for a building intended to be used—hard.

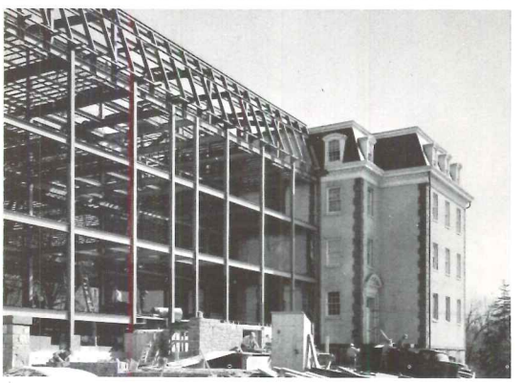
The Pennsylvania Society of Architects awarded Lees Hall an Honor Award in its annual competition for its striking and timeless beauty.

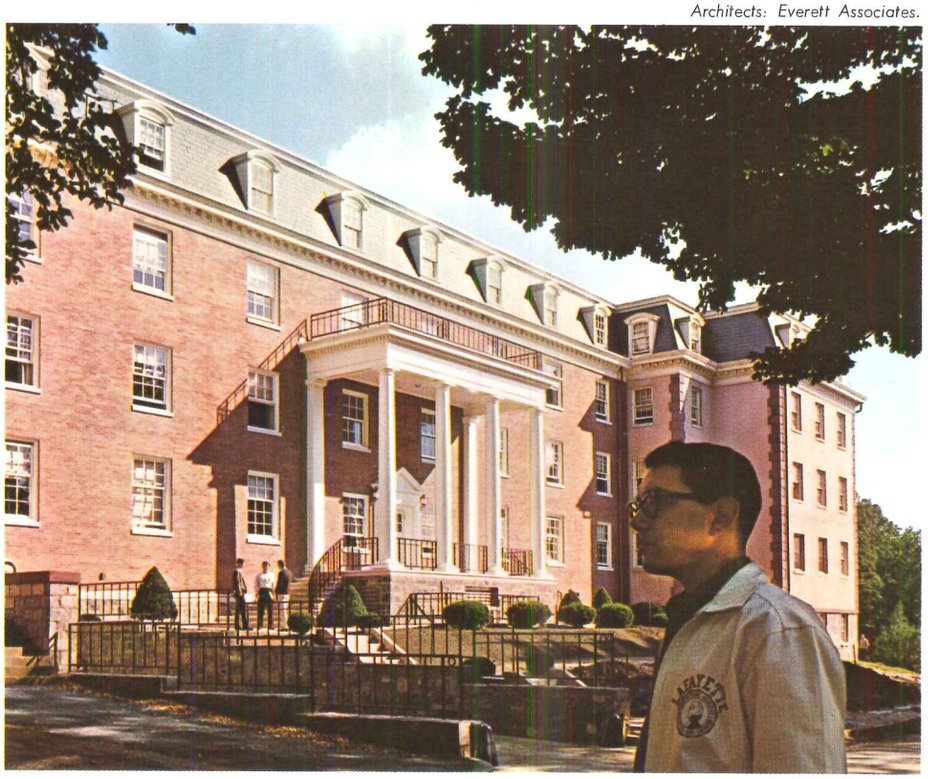
Architect: Bond and Miller.

Crisp and modern . . .

. . . or traditional

Architects: Everett Associates.

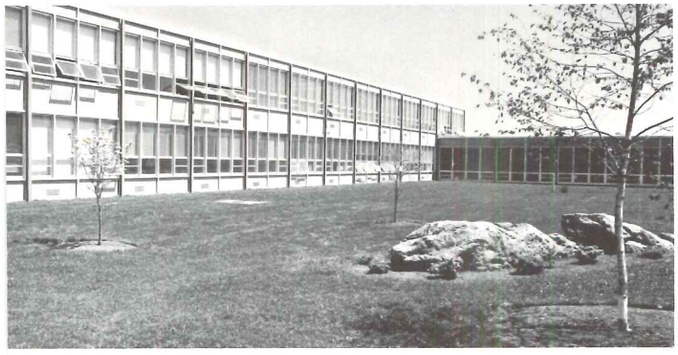


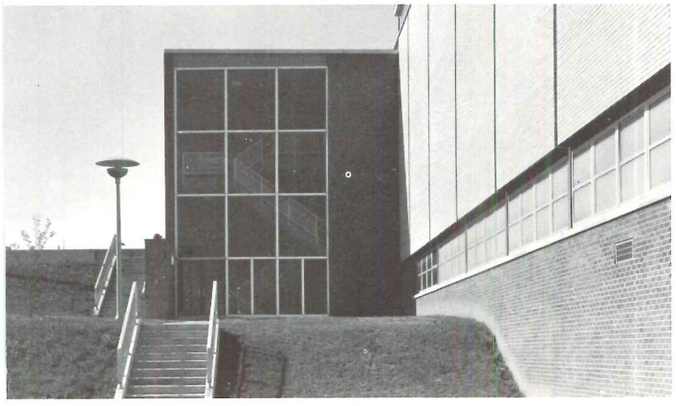


Rebuilding of the center portion of Lafayette College's first building, erected in 1833, now includes dormitory space for 90 students, the college bookstore, and the post office. No problem in keeping the building's traditional architecture over a steel frame. For no other material is so right for framing "colonial" structures, nor so modern and striking for "contemporary" buildings.

Steel for an entire complex of buildings

The area high school in Easton, Pa., is typical of the "new look" in public schools: modern, functional, with dignity and beauty. And the steel frame, here and there left exposed, was selected because it went up fast, at the right price, and promises years of low maintenance service. Steel frames give taxpayers a lot for their money.





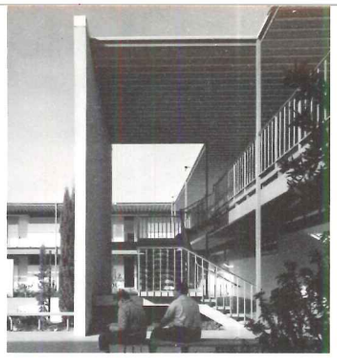
Architects: Buchart Associates.
Associate Architect: Hugh Moore, Jr.

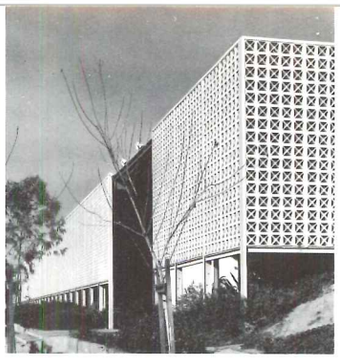
Steel

Steel for Strength

BETHLEHEM STEEL

BETHLEHEM STEEL





Light, graceful framing...

Built around two courtyards, with a campus-in-miniature effect, Alondra Junior High School in Paramount, Calif., is a perfect example of just how graceful a steel-framed building can be. The columns and beams don't have to be massive to be strong—when they're steel.

Architects: Wilton Smith & Associates.

Architects: Killingsworth Brady Smith and Associate.

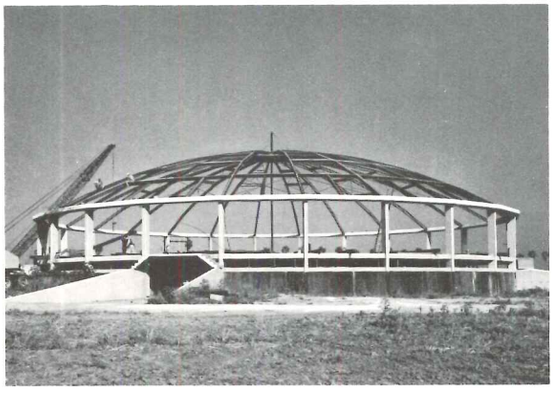
Rugged steel for steep site solution

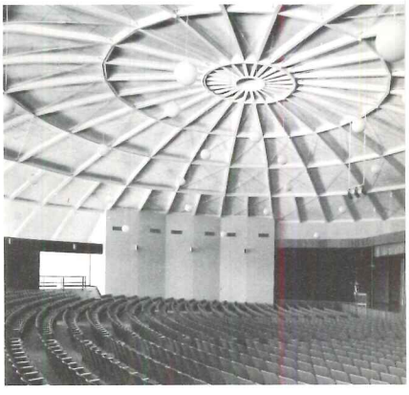
Use of a steep-sloping site for a new building was perfectly feasible for San Francisco's College for Women—with steel. The dormitory building, with prom room and assembly hall, is connected by an enclosed steel bridge to the Chapel building which also contains a dining room and cafeteria. The new buildings have steel frames to carry the vertical loads. Steel is often the answer to difficult site problems. Here, 100,000 sq ft of floor area has been added to what might have remained unusable land.

Striking feature of this school (and the one below) is the use of the steel dome. In the Pharr-San Juan-Alamo High School in Texas, the auditorium has a dome-shaped roof made up of Bethlehem fabricated steel sections. By designing with the circle, and steel, the architects made every seat a good one in the auditorium. No cluttering interior columns were necessary.

Steel was also used to frame other portions of this school, and to frame connecting walkways, covered for protection from the sun.

Architects: Burkhart—Taniguchi—Ford & Winans

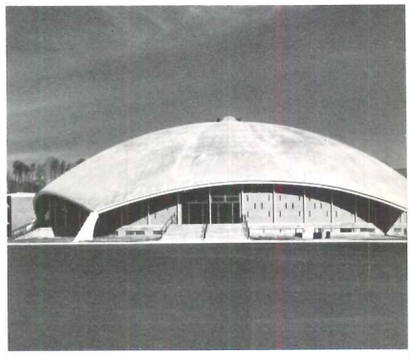




Steel domes are pleasing *and* practical

Walt Whitman High School in Bethesda, Md., has a 157-ft-diameter Field House built with a steel frame. Preliminary studies made by Educational Facilities Laboratories, Inc. (an agency of the Ford Foundation) showed that the dome, compared to the more conventional rectangular auditorium gave 4,200 sq ft more free interior, with no columns to block vision, plus 1,200 more seats—at lower cost.

Architects: McLeod and Ferrara.



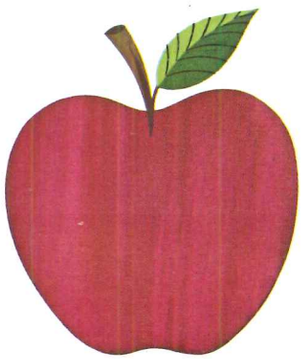
BETHLEHEM STEEL

BETHLEHEM STEEL

Circular dining hall

A striking use of circles and steel is this new Wesleyan University (Connecticut) dining hall. A steel ring forms the skylight, radiating steel beams frame the roof, and slender steel columns plus glass are the wall, except for a rear service portion. Here steel is used in a contemporary building that combines beauty with permanence.

Architects: Brown, Lawford and Forbes—Warner, Burns, Toan, Lunde.



Credits

North Aiken Elementary School, North Aiken, S.C.
Structural Engineer: C. D. Williams & Associates
General Contractor: J. C. Stockton & Son
Fabricator: Macuch Steel Products, Inc.
Erector: Conway Construction Co.

Norton Hall
State University of N.Y. at Buffalo
Consulting Engineer: James F. Gill
General Contractors: B.A.W. Construction Co.
Erector: Buffalo Structural Steel Erectors
Fabricator: Bethlehem Steel Co.

Lees Hall, Cedar Crest College, Allentown, Pa.
Structural Engineer: Frank Mayer
General Contractor: Arthur P. Hauser
Fabricator and Erector: Lehigh Structural Steel Co.

South College, Lafayette College, Easton, Pa.
General Contractor: H. B. Alexander and Son, Inc.
Fabricator and Erector: Dauphin Steel and Engineering Co., Inc.

Easton Area Joint High School, Easton, Pa.
General Contractor: S. H. Evert Co.
Fabricator and Erector: Bethlehem Fabricators, Inc.

Alondra Junior High School, Paramount, California
Structural Engineer: C. G. Deswarte; N. R. Greve, T. V. O'Rourke, Assoc.
Mechanical Engineer: Hugh Carter Engineering Co.
General Contractor: Flowers & Shirley & Robert C. Allen
Fabricator and Erector: Central Industrial Eng. Co.

San Francisco College for Women
Structural Engineers: Gilbert, Forsberg, Diekmann, Schmidt
General Contractor: Rothschild, Raffin & Weirick, Inc.
Fabricator and Erector: Bethlehem Steel Company

Pharr-San Juan-Alamo High School
Structural Engineer: Lee Winans
General Contractor and Erector: Harold Hendricks Contracting Co.
Fabricator: Palmer Steel Supplies, Inc.

Field House, Walt Whitman High School, Bethesda, Md.
Consulting Engineers: Synergetics, Inc.
General Contractor: Merando, Inc.
Fabricator and Erector: Atlas Machine & Iron Works, Inc.

Dining Hall, Wesleyan University, Middletown, Conn.
Structural Engineer: Severud-Elstad-Krueger
General Contractor: Edwin Moss & Son, Inc.
Fabricator and Erector: A. O. Wilson Structural Co.

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Structural steel . . . all standard and wide-flange shapes plus light beams for light loads; Bethlehem's new V steels where strength is vital

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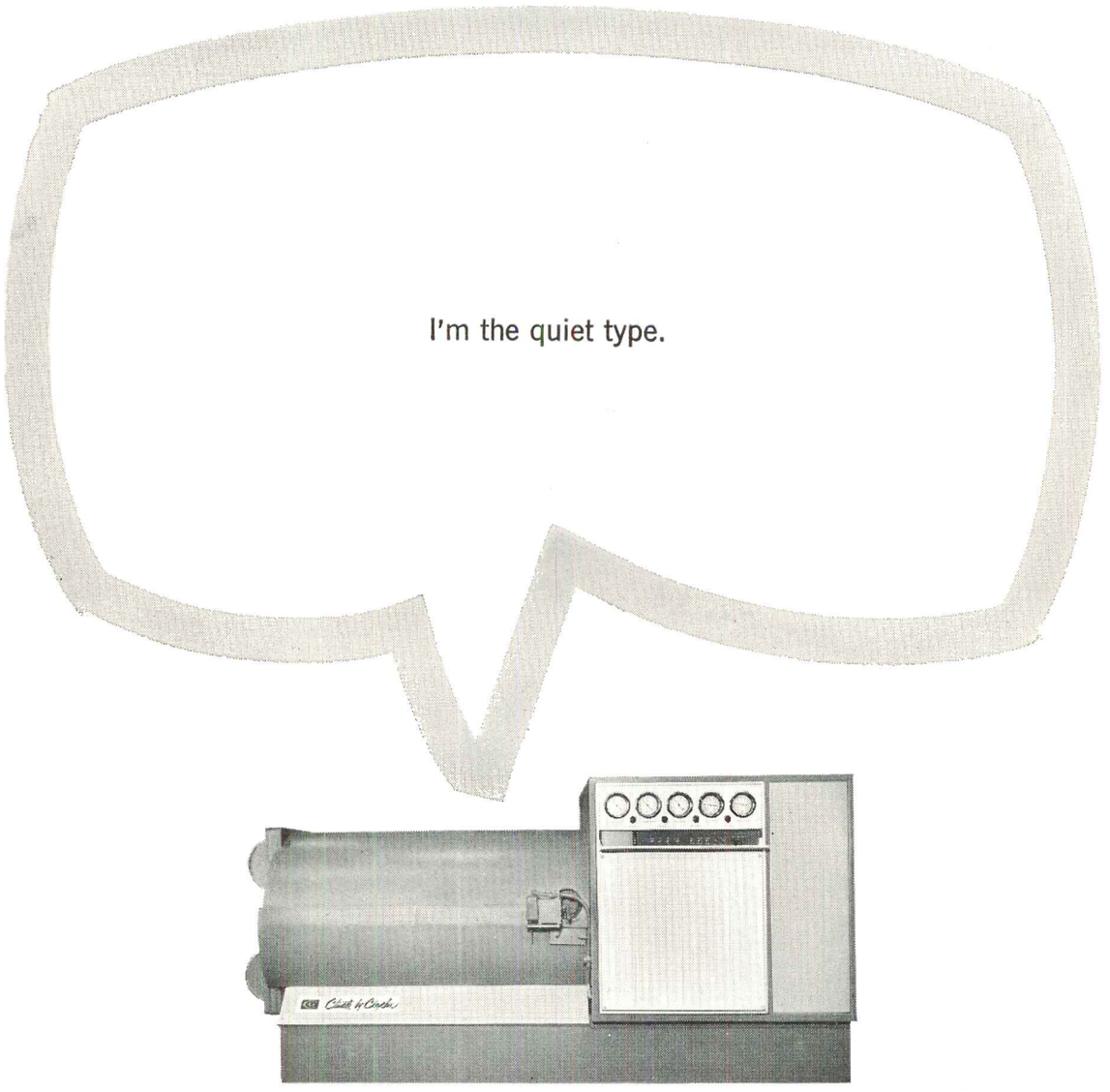
BETHLEHEM STEEL

BETHLEHEM STEEL

Steel

Steel for Strength

Hear what Chrysler engineering has done to centrifugal water chillers:



PEACE AND QUIET AT NO EXTRA COST

Compact new packaged design in hermetic centrifugal single-stage units includes an effective sound isolation cabinet as a standard feature.

What Chrysler engineering has just contributed to reciprocal water chiller design and performance now comes to 50-190 HP centrifugal units! Both types are now reduced to a more manageable size and weight — not by compromising quality — but by eliminating useless bulk and utilizing the latest developments in proven component design. Though smaller, they are just as carefully engineered, and as rugged as ever!

Check these important features.

Packaged Design. The "most packaged" unit on the market, factory-assembled. Just connect—and it's ready to go. Even the starter is factory mounted and wired.

Appearance. Sleek styling and low silhouette make this a handsome addition to any modern equipment room.

Installation. Unitized design simplifies rigging problems, even in the most limited space.

Quietness. No objectionable motor whine or clacking of relays! Isolated noise cabinet for the ultimate in quietness.

Accessibility. Control panel is at your fingertips, and floor-level arrangement permits convenient inspection and service of all components.

Models and Combinations. Four basic models and 66 combinations of components to provide customized units.

This latest advance in centrifugal machines is but one example of what Chrysler engineering capability is contributing in the area of applied systems. For more information about the new packaged centrifugal unit, write today to Chrysler Corporation, Airtemp Division, Dept. D-65, Box 1037, Dayton 1, Ohio.

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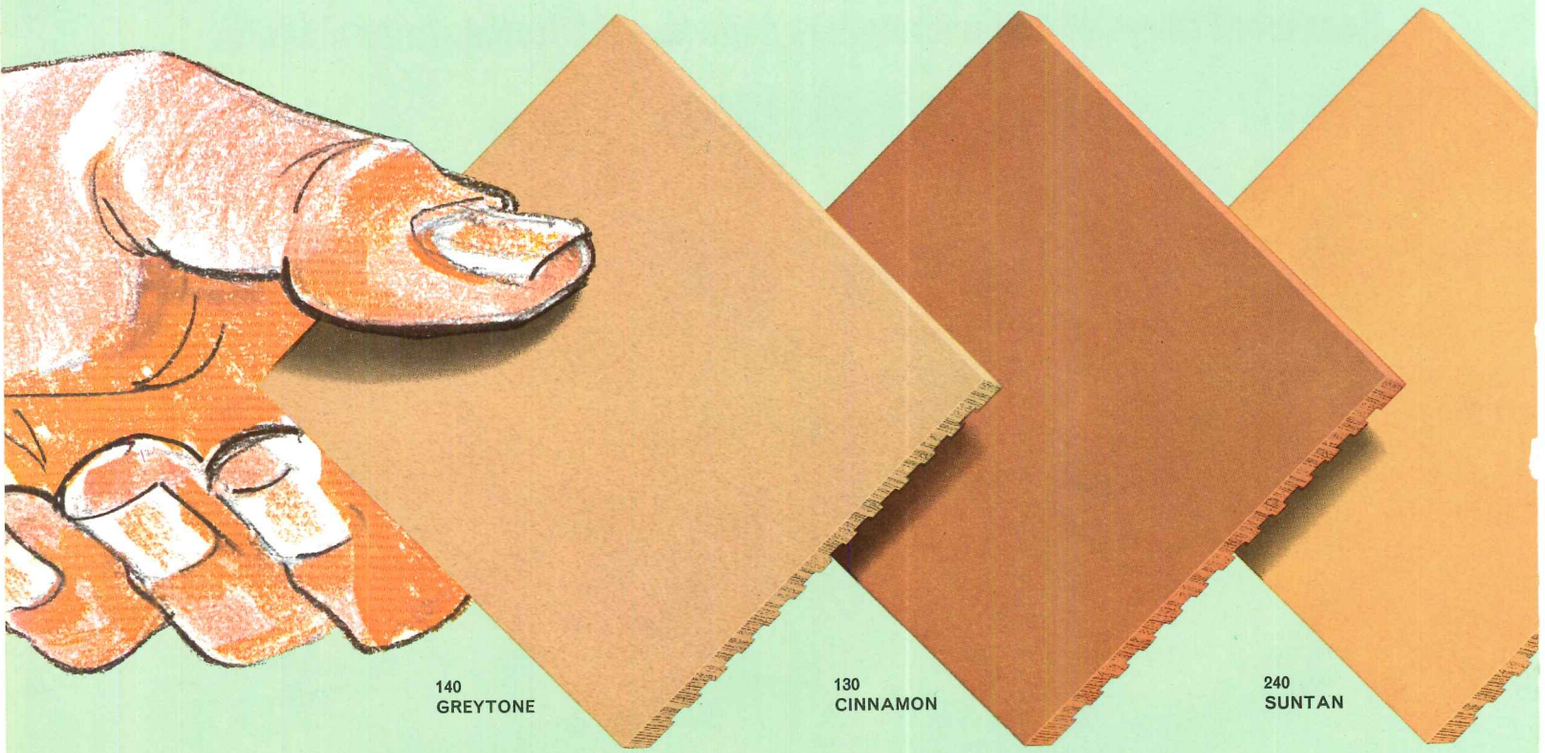
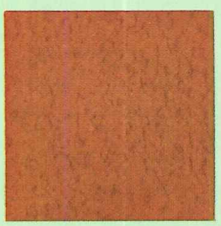


The Quarry Tile with the most in color selection and coast-to-coast service . .

QUARRY TILE *by . .*

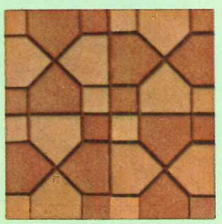
Special forms of Carlyle Quarry Tile serve special requirements admirably.

For free estimates on Mosaic Tile, see the yellow pages for your Tile Contractor, Ceramic



GOLF CLUB TILE
Irregular rippled texture gives excellent traction and a distinctively different appearance.

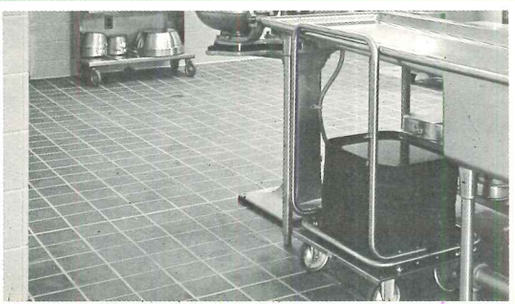
ABRASIVE SURFACE
Abrasive aggregate impregnated in the surface gives non-slip traction at stairs and other problem spots.



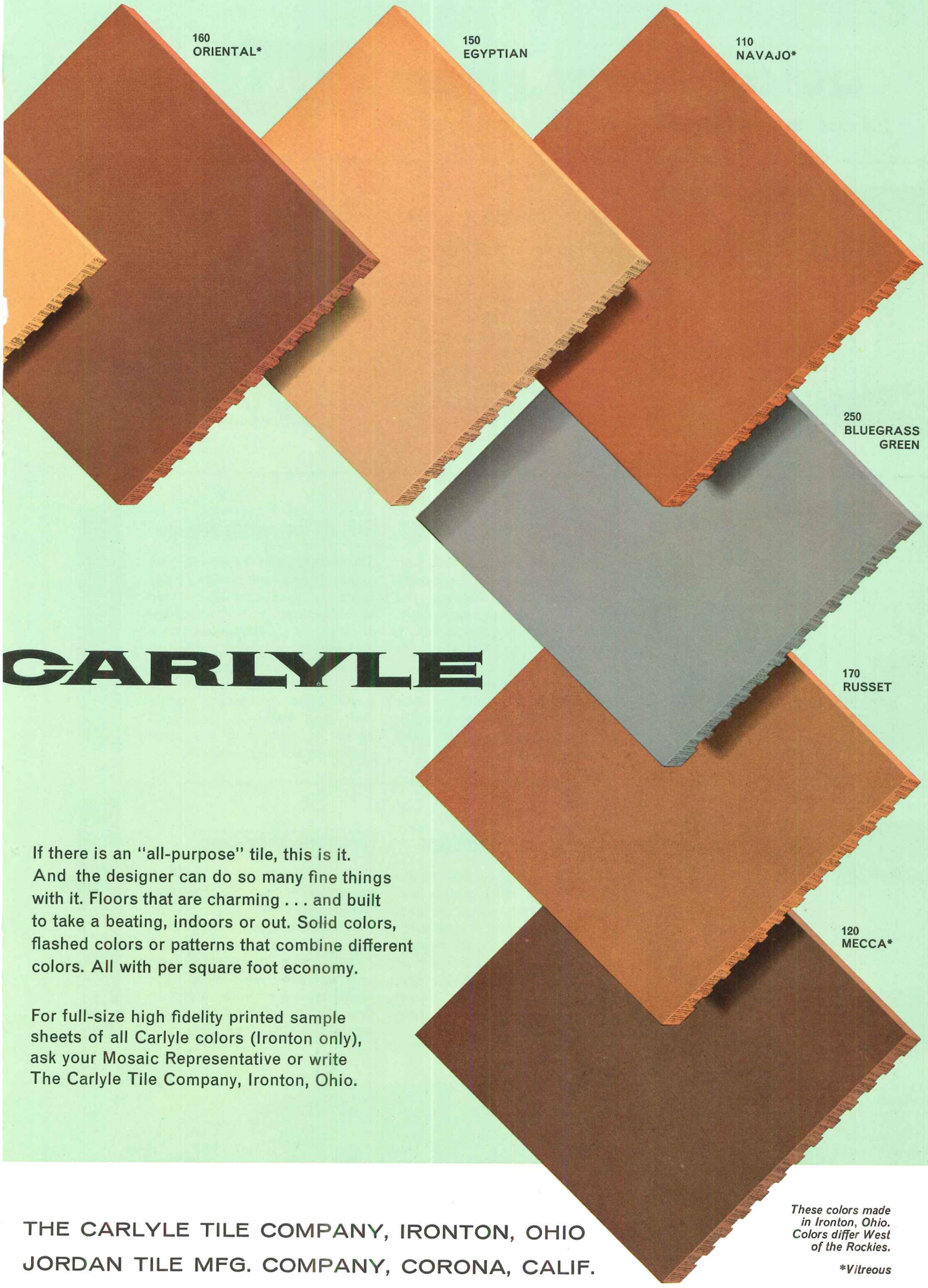
CHEROKEE PATTERNS
Of the same materials as regular quarry tile, in special cushion-edge shapes. Gives handcrafted appearance.

Golf Club Tile takes the wear in a prominent shopping plaza.

Vitreous Navajo Quarry Tile cuts work in a school kitchen.



The gay "plaid" effect of a Cherokee Pattern enlivens this lanai.



CARLYLE

If there is an "all-purpose" tile, this is it. And the designer can do so many fine things with it. Floors that are charming . . . and built to take a beating, indoors or out. Solid colors, flashed colors or patterns that combine different colors. All with per square foot economy.

For full-size high fidelity printed sample sheets of all Carlyle colors (Ironton only), ask your Mosaic Representative or write The Carlyle Tile Company, Ironton, Ohio.

THE CARLYLE TILE COMPANY, IRONTON, OHIO
JORDAN TILE MFG. COMPANY, CORONA, CALIF.

These colors made in Ironton, Ohio. Colors differ West of the Rockies.

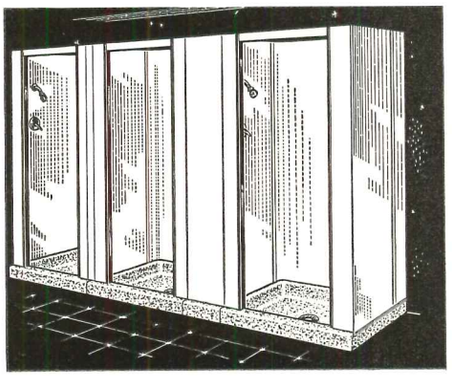
**Vitreous*

MOSAIC® *Subsidiaries of The Mosaic Tile Company*

QUICK FACTS FROM FIAT

...a handy guide in selecting the proper product for each application

SHOWER CABINETS



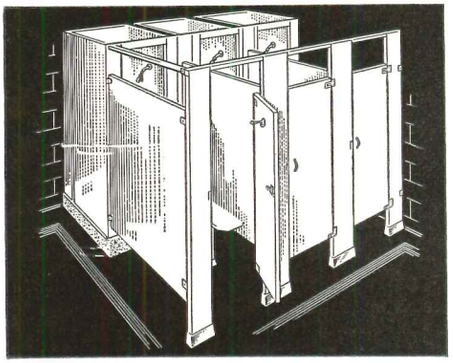
PRODUCT COMMANDER SHOWER

Sandwich panel, rigid wall construction. Installation costs drop because complete cabinet consists of only three factory-fabricated panels that "knife" together by means of double barrier joints attached. Wall panels quickly anchor to 6" deep PreCast terrazzo floor. Available 3 ways: all enamel; all stainless steel; stainless steel inside, baked-enamel outside.

APPLICATION INSTITUTIONS

For school dormitory or gymnasium, club or any other location that requires long, dependable service in spite of heavy traffic and rough use. Designed for individual or battery installation and adaptable to any floor layout. The **Commander** shower cabinet combines with coordinated dressing stalls also made by Fiat. Refer to Architectural File Sweet's $\frac{26C}{Fi}$.

DRESSING STALLS



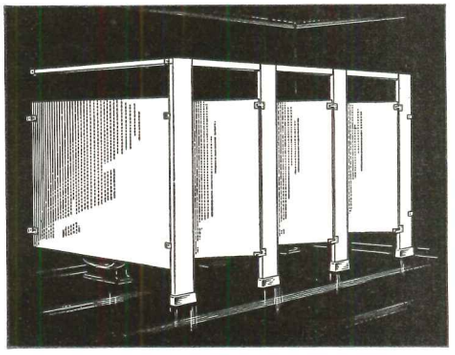
PRODUCT DRESSING ENCLOSURE

Designed with rugged, flush type panels, Fiat Dressing Enclosures combine with and augment the service of any shower stall. Bonderized-galvanized steel is finished with a long-lasting baked-on enamel. These quality enclosures may be specified for use with Fiat or other make shower cabinets, either with doors or with curtain rod and curtain. Hard wood seat optional.

APPLICATION ADDITION TO SHOWER

The usefulness of shower cabinets in institutions, factories, and clubs is greatly expanded when installed in combination with dressing enclosures to provide convenience and privacy in a wide variety of single and battery arrangements. Both should be by the same manufacturer to assure design and color harmony, and both should be placed in the same section of the specifications.

TOILET ENCLOSURES



PRODUCT TOILET ENCLOSURE

Duro headrail-braced model shown is the most simple and hence the least expensive toilet enclosure to install. It was deliberately designed to meet popular concepts of clean, modern design and yet was engineered to economize on details that do not detract from its appearance, nor lessen its performance or long-life.

TYPES AND APPLICATION

The Duro model is ideal for replacement, remodeling projects as well as new construction. No special reinforcement of floor, wall or ceiling required. Ceiling-hung and floor-braced models are also available with the "years-ahead" features that have earned a reputation for durability, low maintenance and easy installation.

©1963, Fiat Metal Mfg. Co., Inc.

See Sweet's $\frac{22B}{Fi}$ and $\frac{26C}{Fi}$ or write nearest Fiat office for literature.

NEW YORK — Plainview, Long Island
CHICAGO — Franklin Park, Illinois
LOS ANGELES — City of Industry, Calif.
SOUTHEAST — Albany, Georgia
CANADA — Orillia, Ontario

FIRST IN FEATURES / FIRST IN PERFORMANCE / FIRST ON-THE-JOB FROM 5 STRATEGIC PLANT LOCATIONS

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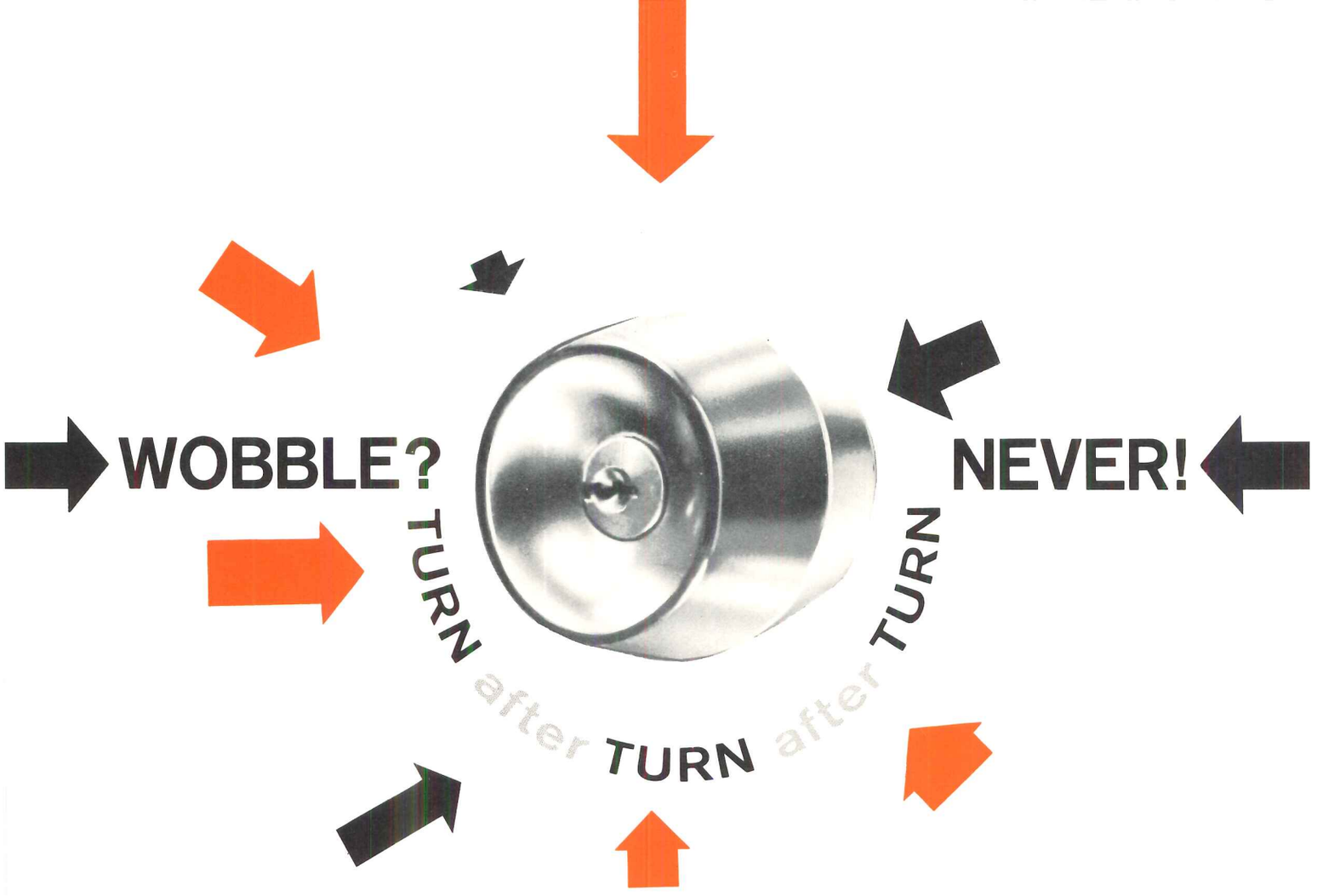

UNIT® Lockset by CORBIN introduces a unique feature—a heavy gauge frame tube goes all the way through the chassis to provide permanent alignment for the spindle . . . makes this lockset absolutely wobble-free!

Here, then, is a lock you can specify with confidence . . . hardware for heavy-traffic areas in hospitals . . . schools . . . institutions . . . commercial buildings of all types. The heavy gauge frame tube is staked to the frame, making frame and tube a permanent unit.

Also, it provides a complete, *full-length* bearing surface for the very heart of the lockset, insures minimum wear and long life—assures wobble-free performance for the life of the building.

And with CORBIN'S Master Ring cylinder you get absolute security with almost limitless keying combinations. Available in brass, bronze, aluminum or stainless steel trim.

UNIT® Lockset designed for heavy-traffic use

It pays to make it CORBIN—throughout!

Symbol of Integrity

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CORBIN®

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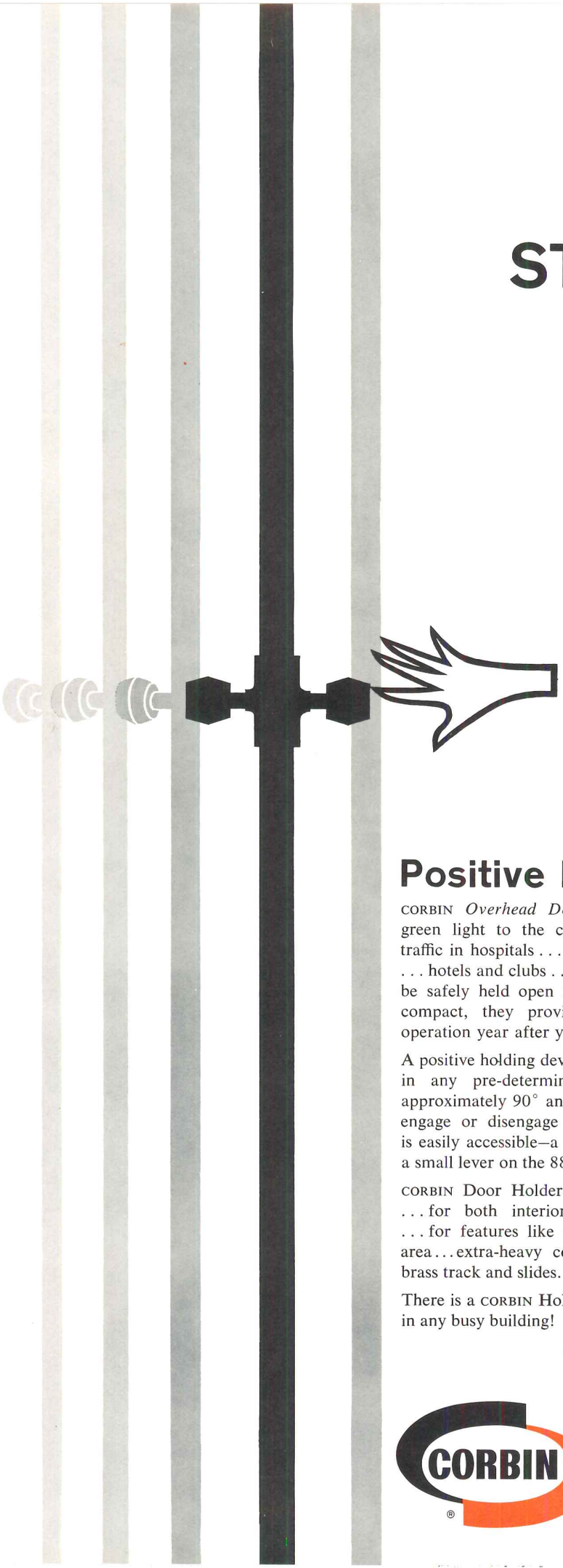
NEW BRITAIN CONNECTICUT

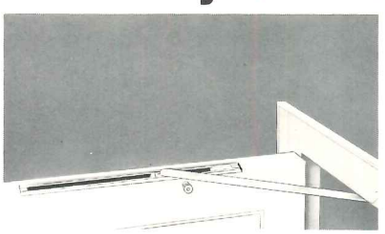
SEE OTHER SIDE FOR A COMBINATION PRODUCT IN THE CORBIN LINE . . .

STAYS PUT



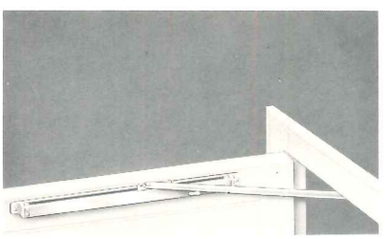
TIME after TIME after TIME

Positive hold-open for busy doors



CORBIN *Overhead Door Holders* give the green light to the constant movement of traffic in hospitals . . . schools . . . institutions . . . hotels and clubs . . . wherever doors must be safely held open for busy traffic. Neat, compact, they provide smooth, noiseless operation year after year.

A positive holding device provides hold-open in any pre-determined position between approximately 90° and 110°. The control to engage or disengage the hold-open device is easily accessible—a turn knob on the 870, a small lever on the 880.



CORBIN Door Holders are the ideal choice . . . for both interior and exterior doors . . . for features like these: greater holding area . . . extra-heavy construction . . . extruded brass track and slides.

There is a CORBIN Holder for any busy door, in any busy building!

It pays to make it CORBIN—throughout!

CORBIN®

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

The King Cole was completed last fall. This photo clearly shows the variety of attractive architectural effects that have been accomplished with concrete.

LUXURY IN CONCRETE

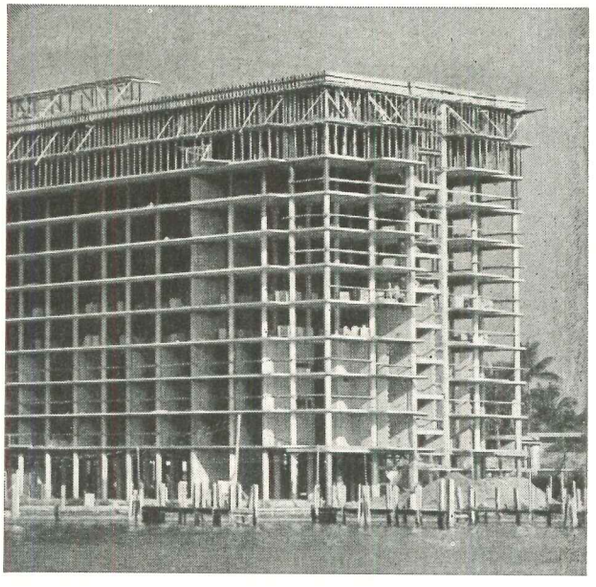
On Bay Drive at the crossroads of Indian Creek and Biscayne Bay in Miami Beach, occupants are enjoying the comfort and safety of the luxurious new King Cole Apartments. It's constructed almost entirely of concrete. The crescent shaped structural form is reinforced concrete. Partition walls are concrete masonry units. Walks, pools, canopies, boat landings—even the balcony railings are concrete.

3 LEHIGH CEMENTS USED

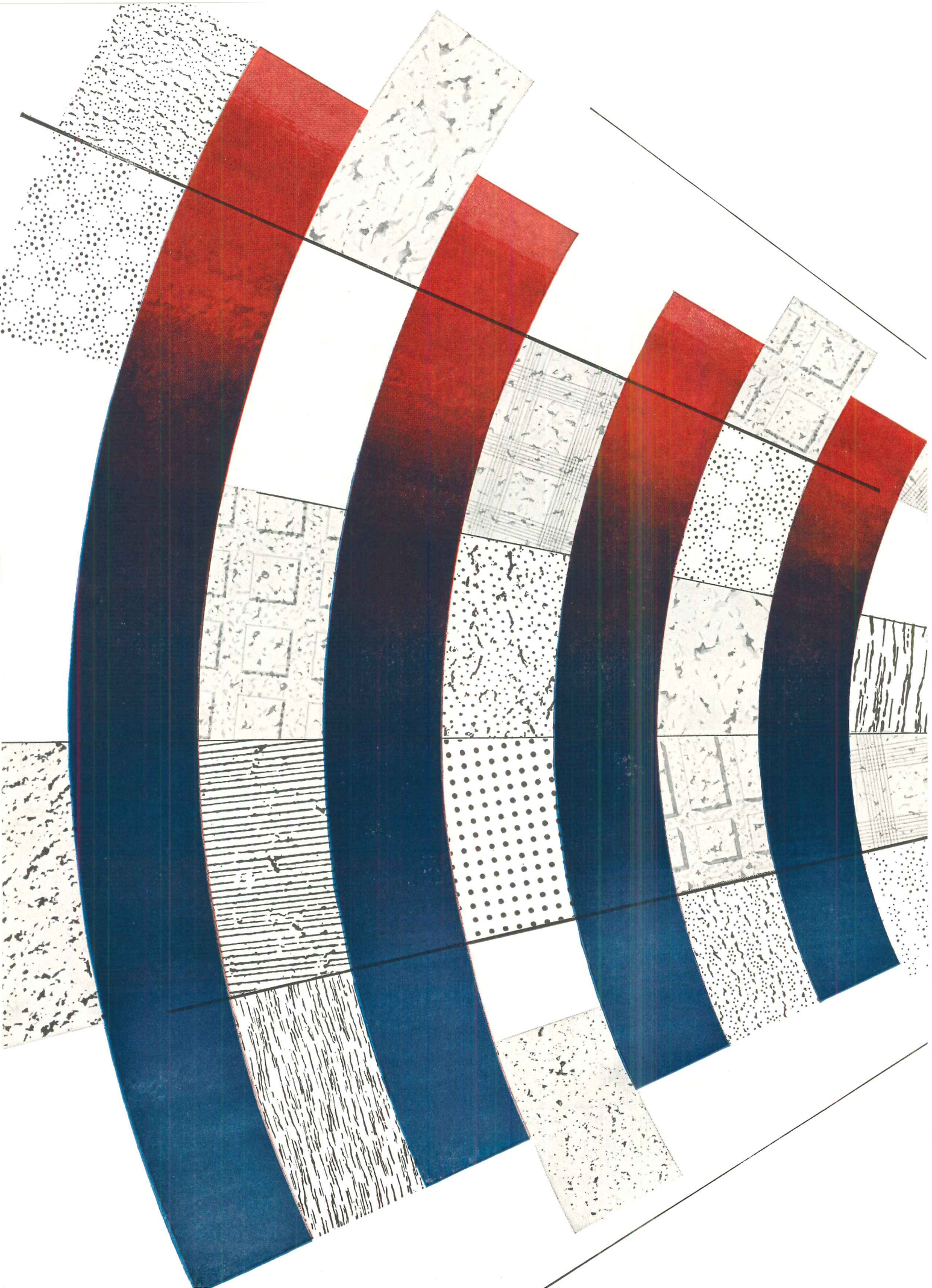
Acme Concrete Corp. used Lehigh Portland Cement in the ready mixed concrete. They used Lehigh Early Strength Cement for maximum production efficiency in the manufacture of the masonry units. And Cook & Pruitt, masonry contractor, used Lehigh Mortar Cement to lay up the masonry units. Lehigh Portland Cement Company, Allentown, Pa.

LEHIGH CEMENTS

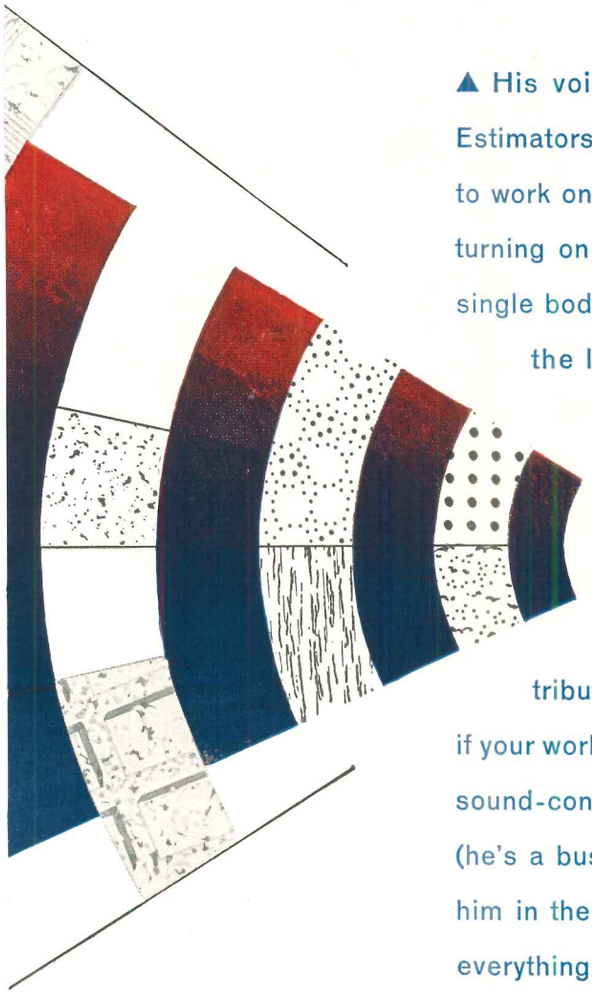
Owner—Robert A. Rautbord and Robert L. Blum, Chicago, Ill.
Architects—Fridstein & Fitch, Chicago, Ill., and Melvin Grossman, A.I.A., Miami Beach, Fla.
Contractor—Robert L. Turchin, Inc., Miami Beach, Fla.
Masonry Contractor—Cook & Pruitt Masonry Contractors, Inc., Miami, Fla.
Concrete Masonry Units and R/M Concrete—Acme Concrete Corp., Hialeah, Fla.



More than 500,000 concrete masonry units were required for partition walls in this 12-story structure. The masonry contractor selected Lehigh Mortar Cement to lay up the units just as they have done previously in many well-known hotels and apartments in the area. They find it helps their masons do a better job.



Is the man with the answers in esthetic sound-control getting through to you?



▲ His voice is respected because he commands an army. Estimators, designers, engineers, installers and inspectors go to work on your problem when he gives the word. As easily as turning on a faucet, he can put you in touch with the biggest single body of sound-control experience in the world. He offers the largest and most *varied* line of ceiling materials, acoustically *and* esthetically correct for today's demands, tested and proved in use. No one else can offer you even comparable variety and service. This man is at your beck and call. ▲ He's your local Acousti-Celotex distributor—a good man to know generally, and especially if your work leads you into the knotty-problem areas of esthetic sound-control. If he hasn't been getting through to you lately (he's a busy man) turn the tables and get through to *him.* Find him in the Yellow Pages and give him a phone call. You have everything to gain in dialing the man with the answers.

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Problem-solver in esthetic sound-control

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Canadian Distributor: DOMINION SOUND EQUIPMENTS, LIMITED, MONTREAL

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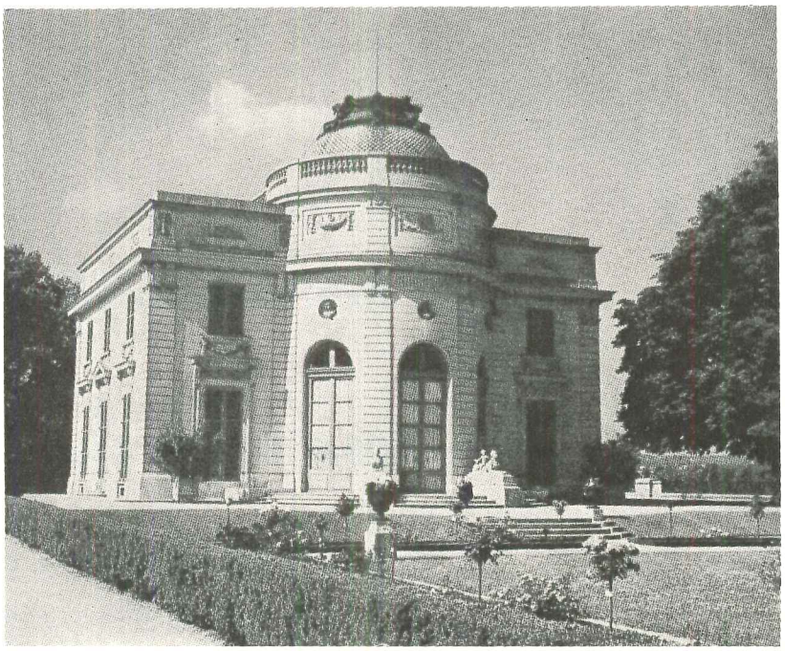


Bagatelle (Bois de Boulogne), by Bélanger
—from "Les Pavillons"

Macro-Landscape

MAN-MADE AMERICA: *Chaos or Control? An Inquiry into Selected Problems in the Urbanized Landscape. By Christopher Tunnard and Boris Pushkarev. Yale University Press, New Haven, Conn. 477 pp., illus. $15.*

"The mess that is man-made America" has had its share of attention over the past decade—with little visible indication as yet that the alarums have been heeded. The authors of this book take it for granted that their readers are familiar with it, and devote minimal space to a review of the hideous effects of billboards, open dumps and overhead wiring on the American landscape. Nor are they concerned with problems of "pure" design or of the architecture of individual buildings: if performance here is not always esthetically ideal, it is considerably more healthy than in "non-design" decisions such as highway planning or subdivision placement. Architecture as Architecture is discussed only in the last chapter, on the preservation of historical neighborhoods.

Though the burden of the authors' argument is for an improved esthetic in large planning, they fully recognize utilitarian, social and cultural demands. They further sensibly recognize that anything worth doing must be done the hard way. (Indeed, the only unqualified solution they offer to anything is an outright and absolute condemnation of billboards.) Only care and thought given to each problem as it arises can lead to improvement.

Getting to specifics, the authors do indicate a number of considerations which may, if applied with the requisite care and thought, improve matters. In residential planning, for instance, they waste no time tilting at windmills, and acknowledge that the single-family house is so integral a part of American culture that it must be accepted as a given factor. They point out, however, that low density does not prevent a crowded-seeming neighborhood, nor high density guaranty it. They point out further that genuine attention to such hard questions as placement in respect to nearby cities, over-all massing, cooperation with topography and internal traffic planning can put residential developments in greater conformity to the not-often-realized suburban dream. In their discussion of highway planning, too, the authors waste no time inveighing against the automobile. Nonetheless, when billions of public dollars are being spent for highways, and when a single cloverleaf interchange consumes 40 acres of land, the public has a right to more than mechanical execution of these costly instruments of transportation. Greater attention to road curvature and to existing topography, both natural and man-made, may not inevitably produce excellence on the order of the Taconic State Parkway in upper New York, but could noticeably improve both the safety and beauty of our highways. And so it is in planning industry, commerce, wilderness and recreation areas, and historical preservation, each of which the authors consider.

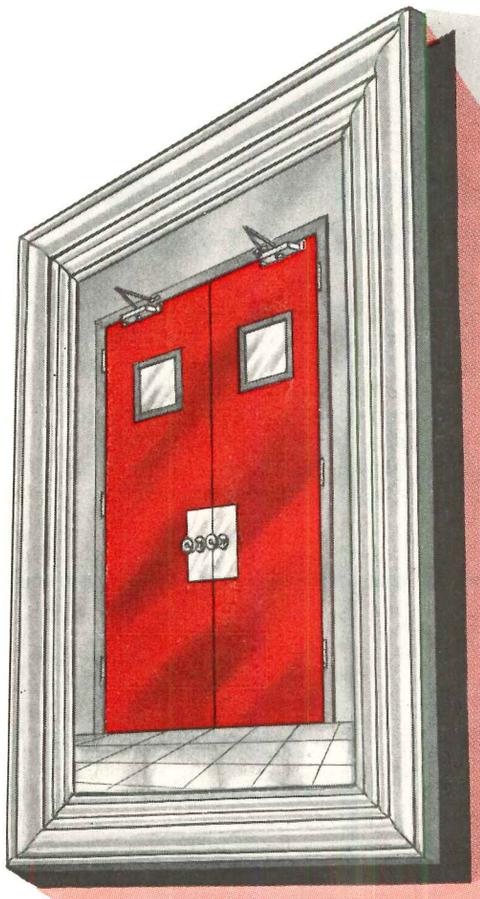
The ultimate arbiter of all these questions is, of course, the public. The authors indicate that professionals, if falling short of perfection, serve the public somewhat better than it deserves. Public inertia, cultural lag and penny-pinching would seem to conspire against any imminent improvement. But public inertia, as many a politician knows, cannot be relied upon, and if recent newspaper coverage of the urban "mess" demonstrates anything, it is probably that public inertia on these matters is just about at an end. In the meantime, architects and designers should give a serious hearing to Mr. Tunnard and Mr. Pushkarev.

Douceur de Vivre

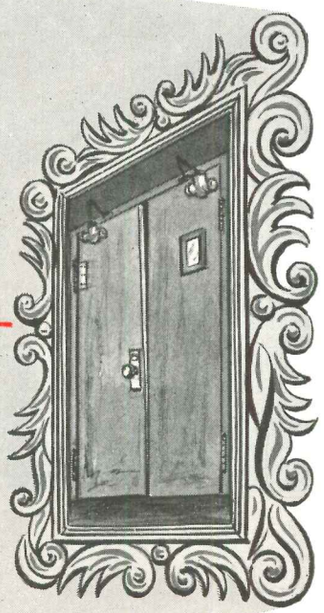
LES PAVILLONS. *French Pavillions of the 18th Century. By Cyril Connolly and Jerome Zerbe. The MacMillan Company, 60 Fifth Ave., New York 11. 211 pp., illus. $15.*

Life as aristocrats lived it in 18th century France may have been un-

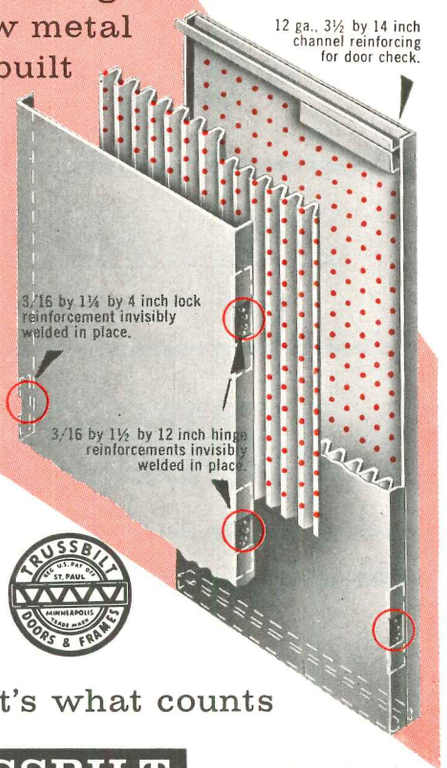
continued on page 58



Like the picture of Dorian Gray—



With Trussbilt's famous Trusscore construction... the most rigid hollow metal door built



Trussbilt shows what is inside a good door*

Trussbilt presents beauty and durability that goes deep inside the outer surface. Like the picture of Dorian Gray or a book with a fancy cover, you can't tell what's inside until you test it. You'll recognize a Trussbilt door when you open it or close it, and you'll recognize Trussbilt economy when you realize lower installation and maintenance costs. Remember, too, that quality, in the long run, is always more economical. Don't be fooled by outer appearances and the lowest price. Choose Trussbilt for guaranteed, lasting service.

What does a Trussbilt trademark guarantee? It guarantees . . .

- Adherence plus to the letter and spirit of Architects' specifications for fine quality workmanship.
- A door with a continuous Truss-shaped inner core and an average of 800 invisible spotwelds.
- All surfaces level to 1/32" both horizontally and vertically.
- Strength, durability and long service.
- Design flexibility and aesthetic appeal.
- Accuracy and full Underwriters Laboratory procedures.
- On door, 2 coats of baked-on primer are applied. On frames, a better than average 70-hour salt and spray tested primer is applied. They are hand-sanded and inspected before the enamel finishing surface is applied. This assures a long lasting, lustrous beauty.
- Work performed by craftsmen skilled in quality construction.
- 37 years of outstanding service to the building industry.

*That's what counts

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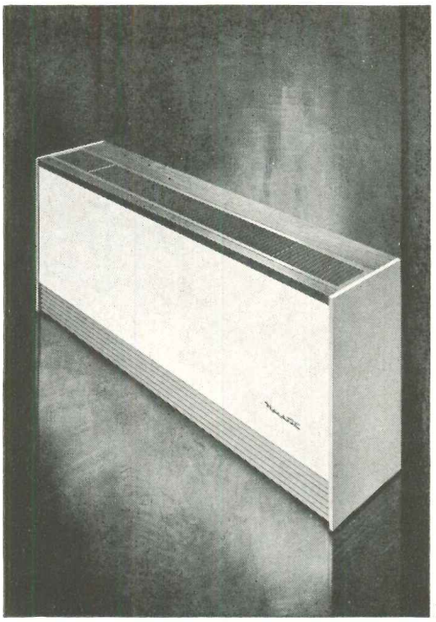

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Schools and colleges, with their greatly varying locations, spaces, occupancies, activities, and usage, find a unit system of thermal comfort conditioning to be the most economical. More unit systems are installed in schools than all other kinds; and more of the units are made by Nesbitt than by any other manufacturer.

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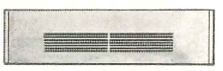
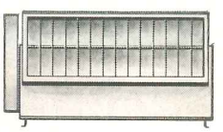
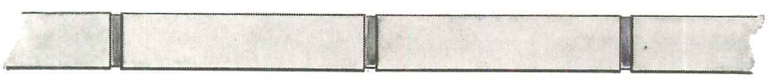


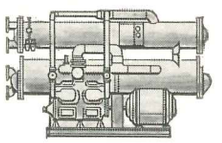
Horizontal Year-Round Syncretizer with the new Long-Life Motor and Vac-Clean Filter.



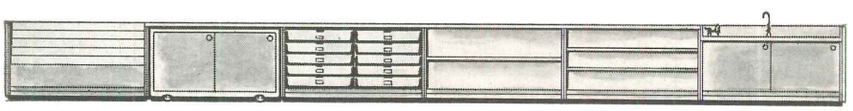
Multizone Central Station Air Conditioner —serves up to 20 separate zones of comfort.



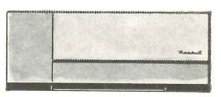
Architectural Sill-line—contemporary enclosures for insulated piping or perimeter radiation.



Packaged Water Chillers in refrigerating capacities ranging from 20 up to 250 tons.

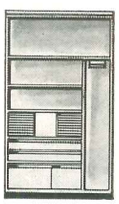


Nesbitt fixed or mobile Storage Cabinets—and Sink—integrated with the Syncretizer for ideal classroom convenience.

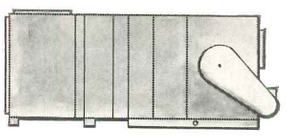


Roommate Air Conditioner with Humid-a-Guard Control System combines comfort and styling for administrative areas.

For more information on any of these products, write to John J. Nesbitt, Inc., Dept. O.



New tall cabinets for teacher-student wardrobes and storage.



Large-volume heating, ventilating, and air conditioning for auditoriums, gymnasiums, cafeterias, etc., or for central-station use.

MORE LEARNING PER SCHOOL DOLLAR

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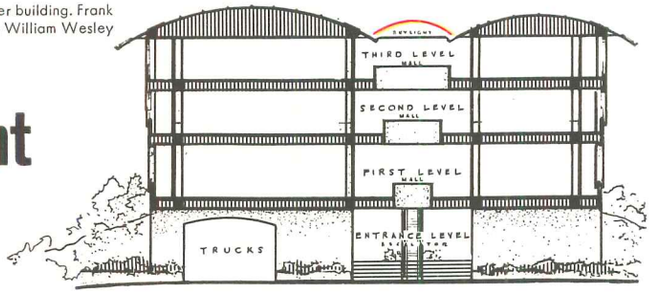
A soaring arch of Plexiglas admits natural light into mall areas of the Marin County Civic Center building. Frank Lloyd Wright, Architect; Taliesin Associated Architects of the Frank Lloyd Wright Foundation: William Wesley Peters, Chief Architect; Aaron G. Green, AIA, Architect Associated.

The 384-foot skylight is Plexiglas



Frank Lloyd Wright designed this skylight. PLEXIGLAS® acrylic plastic gave it form and substance. It is one of the distinguished features of a famed new structure, the Administration Building of the Marin County Civic Center, near San Rafael, California. The skylight is 384 feet long, 20 feet wide.

Each curved span consists of three large sheets of transparent PLEXIGLAS, supported by ribs made of channeled aluminum.

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The PLEXIGLAS is only one-quarter inch thick. It provides the required combination of strength, weather resistance, crystal clarity, and light weight. We will be pleased to send you detailed information on the use of PLEXIGLAS for continuous-arch skylights and other architectural applications.

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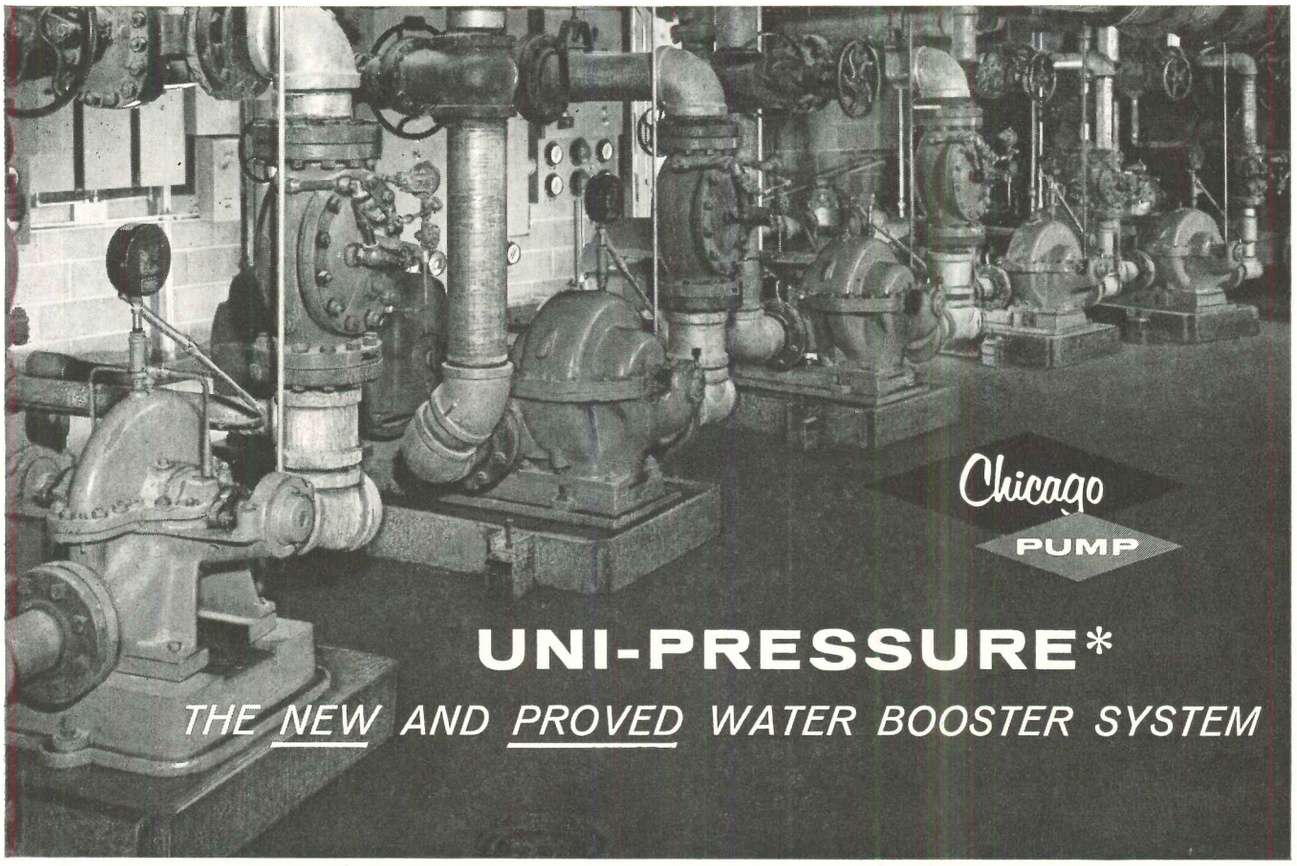
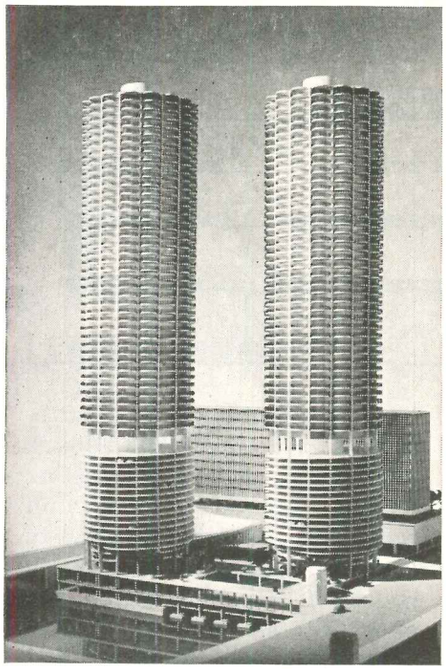


. . . Provides Constant Pressure at Constant Speed



MARINA CITY—
Twin 60-story towers and commercial building

THREE UNI-PRESSURE SYSTEMS
One—Low Level—860 GPM x 420 ft.
One—High Level—700 GPM x 601 ft.
One—for Commercial Building—285 GPM x 225 ft.

Over 85 System Sales Mark the Broad Acceptance of These Exclusive Uni-Pressure System Advantages:

CONSTANT SPEED — *No complex speed changing devices*

CONSTANT PRESSURE — *No "hunting" of control resulting in serious pressure variations*

LOWER COST — *Normally lower in cost than speed changing systems*

LESS SPACE NEEDED — *Requires space only for standard pump and motor*

STANDARD SIMPLE CONTROL — *No complex electrical, mechanical speed changing devices*

NO TANK REQUIRED — *Eliminates cluttered machinery room*

NO SLIPPAGE — *Speed changing drives have slippage factor — as much as 15%*

Some installations already in service for two years.

Call your nearest Chicago Pump Distributor or write direct for complete information including new Bulletin 110.

**Patents Pending*

©1963 CPFMC

fmc CORPORATION ®

HYDRODYNAMICS DIVISION
CHICAGO PUMP
622M Diversey Parkway • Chicago 14, Illinois

For more data, circle 26 on Inquiry Card

Which fixture ballast assures better lighting ...less trouble?

The ballast that wears this CBM emblem!

CBM CERTIFIED by ETL®

HERE'S WHY: Certified CBM Ballasts are made to exacting specifications for lighting performance . . . specifications established to fit fluorescent lamp needs. Then CBM Ballasts are checked and rechecked by Electrical Testing Laboratories to make sure that they meet the specifications *and continue meeting them.* Result: money-saving benefits that include long ballast life, high light output, power factor correction, longer lamp life (up to 12 months more!) UL listing, too! SPECIFY CBM BALLASTS FOR YOUR LIGHTING FIXTURES and get more value for your money. For more information, ask us to send you CBM NEWS.

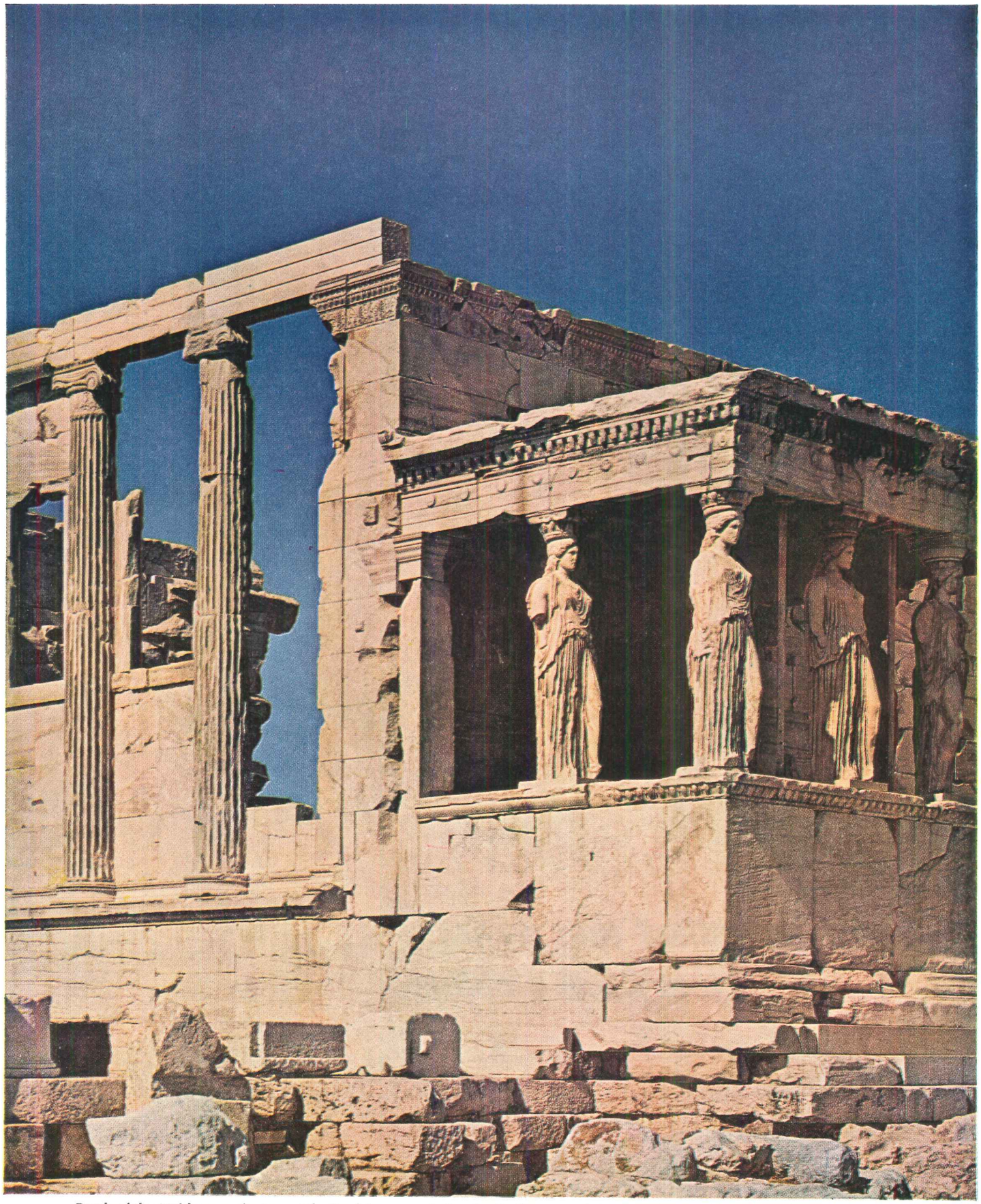
CERTIFIED BALLAST MANUFACTURERS, 2116 Keith Building, Cleveland 15, Ohio.

Participation in CBM is open to any manufacturer who wishes to qualify.

3-63

For more data, circle 27 on Inquiry Card

NEW LO-TONE® "FISSURA"
ACOUSTICAL CEILING TILE AND BOARD



Porch of the Maidens, or the Caryatids, Erechtheum — facing the Parthenon and the central area of the Acropolis. Height 18 feet.

BEAUTY THAT ENDURES

Announcing dramatic new FISSURA tile and board for ceilings with a new depth of beauty

New Fissura acoustical ceiling tile and board captures the classic elegance and beauty of fissured travertine marble. This totally new Lo-Tone product from Wood Conversion Company has deeper fissures that give this striking pattern a new depth of beauty. Its white surface provides excellent light reflection.

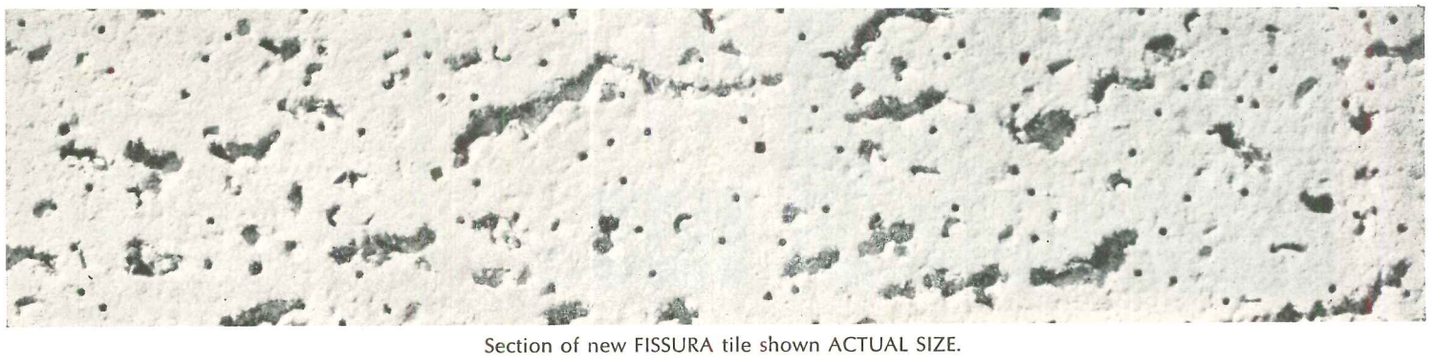
New Fissura tile is available in 3/4" thickness with tongue and groove kerf, as well as in butt joint, kerf and rabbeted. This assures a completely level ceiling and eliminates the need for splines between the edges of the tiles. This new ceiling tile can be installed by all regular application methods — including adhesives, Salco staples and concealed "Z" systems.

The new Fissura tile is available in "rights" and "lefts." This permits patterns to be installed at right angles, or in line, as desired. The architect has complete freedom and flexibility of the ceiling design.

New Fissura is available in the following types of products: F/R tile and ceiling board, ventilating tile and board, vinyl coated ceiling board, attenuation factor (AF) tile, and standard mineral tile and board.

Find your local Lo-Tone Acoustical Contractor in the Yellow Pages, or write direct to: Wood Conversion Co., St. Paul 1, Minnesota.

LO-TONE®
"FISSURA"
MINERAL ACOUSTICAL CEILING TILE AND BOARD



Section of new FISSURA tile shown ACTUAL SIZE.

For more data, circle 28 on Inquiry Card

Now...the ultimate TV/FM outlet for motels, hotels, apartment houses

JERROLD *ULTRA-TAP*

Now, from the world's leading manufacturer of master antenna systems, comes this simple, attractive, durable all-purpose tap-off unit for TV/FM—the new Jerrold ULTRA-TAP. Smart-design flush-mounting cover plates, in a variety of decorator colors and finishes, blend perfectly with any room decor.

The versatile ULTRA-TAP can handle TV and/or FM signals. It can be conveniently mounted together with an a-c power outlet under one cover plate.

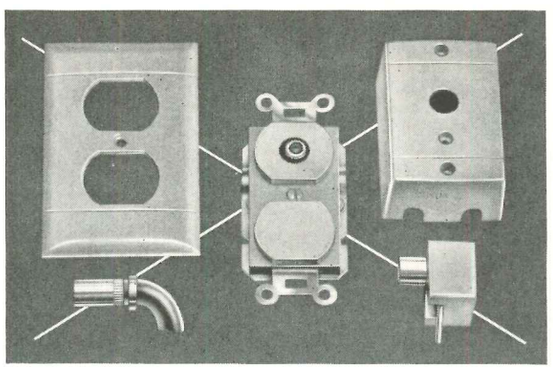


Illustration at left shows the basic outlet, which adapts to flush or surface mounting and accepts either 75- or 300-ohm solderless plug-in connectors. ULTRA-TAP is compatible with any TV signal-distribution system. Write for complete information on Jerrold's wide line of antennas and antenna systems.

JERROLD ELECTRONICS

A subsidiary of THE JERROLD CORPORATION

Distributor Sales Division, Philadelphia 32, Pa.

For more data, circle 29 on Inquiry Card

Required Reading

continued from page 50

real, but it was indeed "sweet." Mr. Connolly, in his superb introduction, has concentrated on the French *douceur de vivre*—the delicate taste, the spirited conversation, the absorption in art and thought. Architecturally, one can be happy that it was not at court the nobles could find these pleasures, and that for their own peace of mind they were forced to seek relaxation in less constrictive surroundings by building these small country houses. The excellent photographs, by Mr. Zerbe, reflect the refinement of taste and proportion displayed in these pavilions and gardens. In addition, while only an egomaniac would covet Versailles, these buildings are of an eminently covetable scale, and the reader may, if he wants, indulge in harmless daydreams of his own *douceur de vivre*.

Aging

RESEARCH REPORTS ON HOUSING FOR THE AGED. *Center for Housing and Environmental Studies, Cornell University, Ithaca, N.Y.*

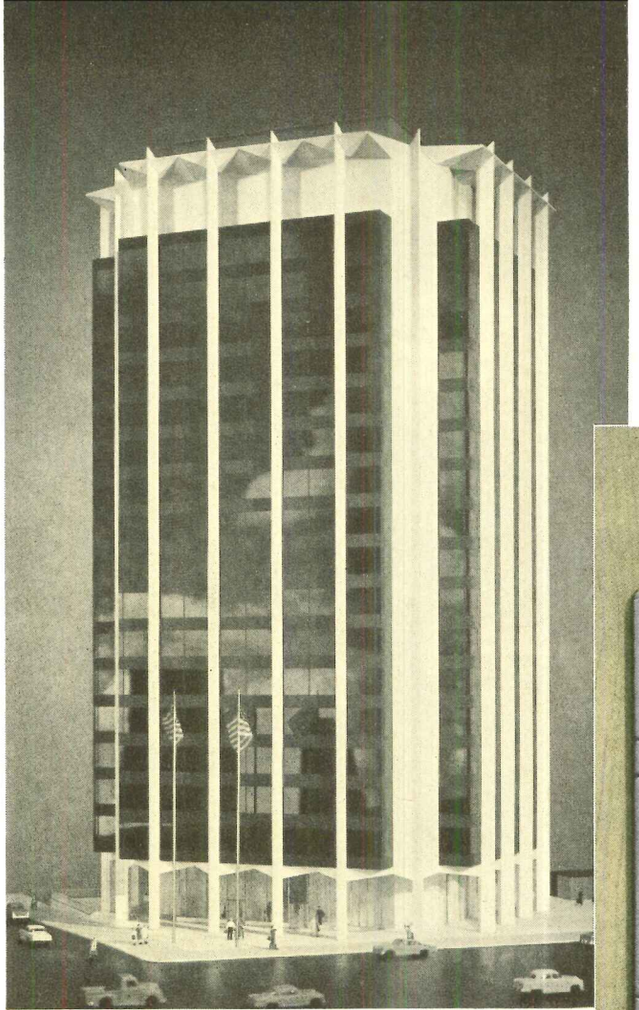
Three currently available reports from the Cornell research program directed by Glenn H. Beyer, professor of housing and design, cover various aspects of housing for the aged. Reports are analyses of data based primarily on interviews with 5,202 OASI beneficiaries in four statistical samples said to be representative of a total of 362,400 non-institutional elderly households across the U.S.

"Economic Aspects of Housing for the Aged" (1961, 64 pages, $2.50) provides background data of the samples studied as to age, sex, marital status, household composition, community, income, etc., and analyzes the over-all economic position, present housing situation and housing needs of various categories.

"Community Aspects of Housing for the Elderly" (1962, 54 pages, $2.00) deals with the planning implications of both habits and wishes of the aged regarding personal contacts and community facilities.

"Living and Activity Patterns of the Aged" (1963, 35 pages, $2.00) re-

continued on page 78



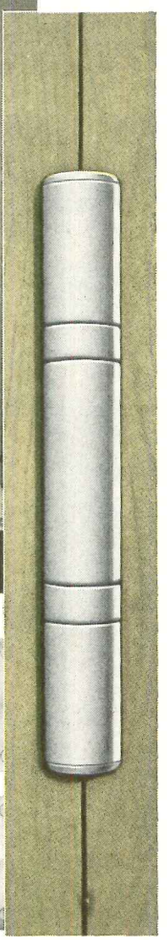
U. S. GYPSUM BUILDING
Chicago, Illinois

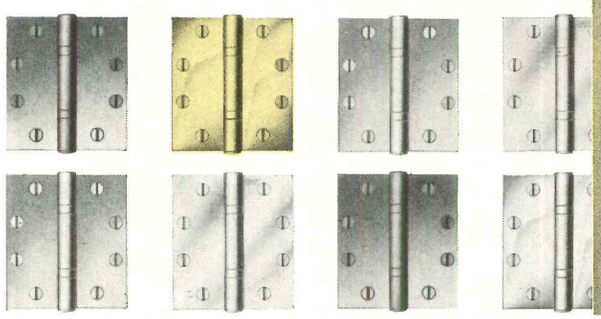
ARCHITECTS:
Perkins & Will

CONTRACTOR:
A. L. Jackson Company

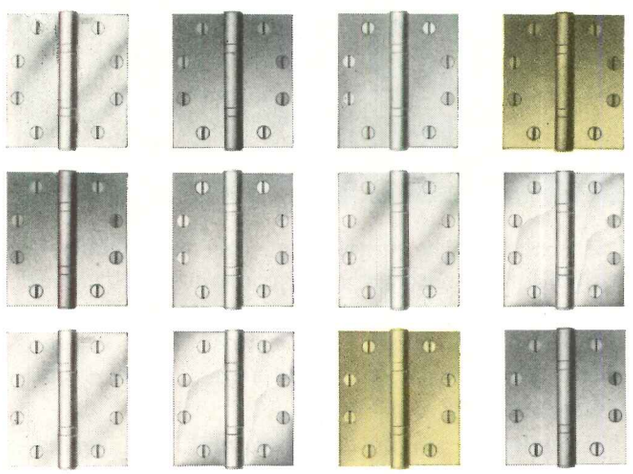
INTERIORS:
Maria Bergson, Associates

HARDWARE SUPPLIER:
Edward Hines Lumber Co.





STANLEY SLIM-LINE BB600 HINGES*



Designed to complement the beauty and durability of modern architecture . . . Stanley BB 600 hinges

SLIM-LINE design . . . the choice of architects . . . and features engineered by STANLEY out of long experience . . . practical reasons why an ever-growing number of architects are specifying BB600 Series Hinges for modern structures like the new U. S. Gypsum Building.

Here are a few of the Stanley-engineered features that make BB600 Hinges outstanding: a through-hardened pin of bar stock that will withstand, in shear, two tons at each bearing assembly . . . a brass inner sleeve to seal the bearing assembly, keeping lubrication in and foreign particles out . . . exclusive, patented Stanley full-jeweled radial thrust ball bearings to shoulder both lateral and vertical loads . . . chrome-alloy ball bearings with a crush strength of 1,100 lbs. per ball.

SLIM-LINE BB600 Series Hinges are available in a variety of models to satisfy a wide range of applications. All models are supplied in wrought steel, brass, bronze and stainless steel. For complete information, write to Stanley Hardware, Division of The Stanley Works, Lake Street, New Britain, Connecticut.

* Patents Pending

THE STANLEY WORKS®

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

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

CANADIAN PLANTS: HAMILTON, ONTARIO, AND ROXTON POND, P.Q.

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Does any manufacturer have every major component you need to air condition <u>any</u> hospital?

Maris © Ezra Stoller Assoc's.

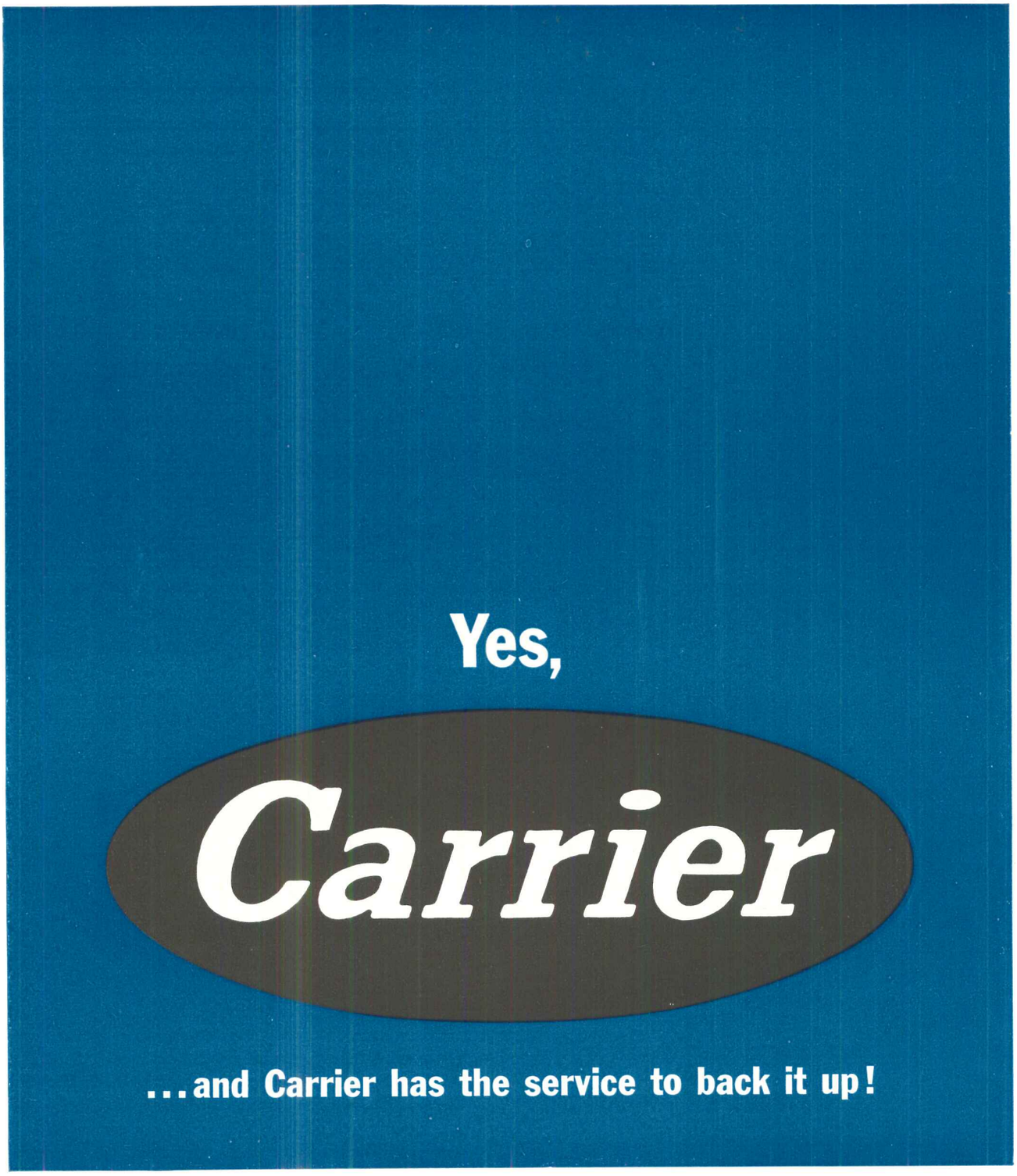
Riverside Methodist Hospital, Columbus, Ohio. Administrator: E. O. Mansfield. Architect and Consulting Engineer: Schmidt, Garden & Erikson, Chicago. Associate Architect: Inscho, Brand & Inscho, Columbus. General Contractor: G. W. Atkinson & Son, Columbus. Mechanical Contractor: The Huffman-Wolfe Company, Columbus.

CARRIER OFFERS:

Hermetic and open centrifugal water chilling packages
The first fully hermetic absorption water chillers
Hermetic reciprocating water chilling packages
Air-cooled, water-cooled and evap condensers; cooling towers
Induction, fan-coil, single and double-duct room terminals
Single-zone, multi-zone and spray-coil central apparatus
Supply and exhaust fans; sheet metal specialties
Packaged units; heat pumps; room air conditioners
Also: furnaces; unit heaters; icemakers

The scope of the Carrier line makes possible an installation of matched major components that meet the precise requirements of *any* air conditioning system for *any* hospital. For architect, engineer, contractor and owner, this all-Carrier approach has many significant advantages.

Initially, it simplifies design problems, centralizing responsibility for technical information in the local Carrier office. During installation and start-up, the same office—thoroughly familiar with the job—



is the fountainhead for everything from delivery schedules to certified prints.

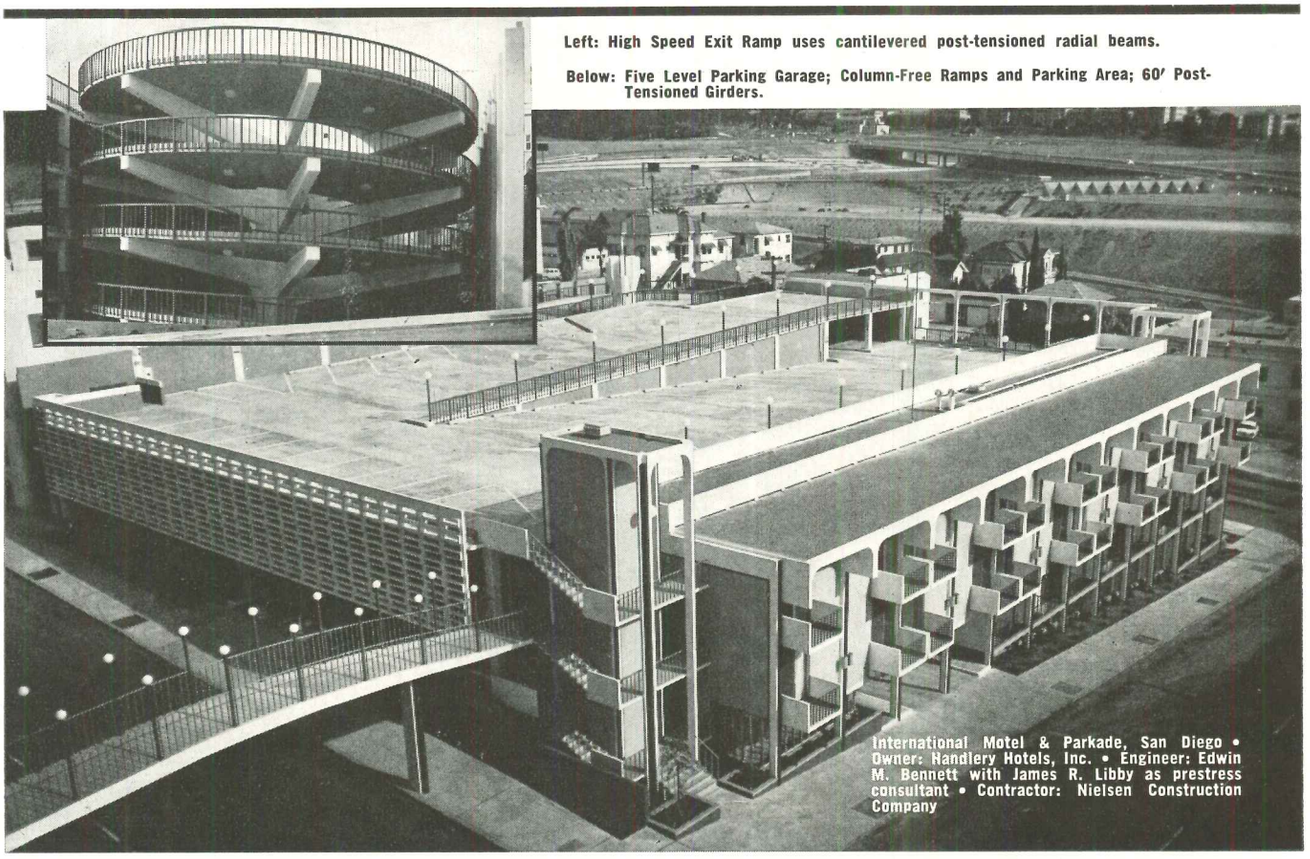
And after the plant has been turned over to the owner, responsibility for proper equipment performance continues to be centered on the same reliable shoulders.

Although not the only air conditioning manufacturer offering a broad line of components, Carrier is best prepared to serve the owner should service be needed. For our company and our dealers maintain the largest and best trained service organization in the business—over 11,000 men strong.

For information about components for *any* hospital job—or *any other* air conditioning project—call your Carrier representative. Or write Carrier Air Conditioning Company, Syracuse 1, N. Y. In Canada: Carrier Air Conditioning (Canada) Ltd., Toronto 18.

Carrier Air Conditioning Company

For more data, circle 31 on Inquiry Card



Left: High Speed Exit Ramp uses cantilevered post-tensioned radial beams.

Below: Five Level Parking Garage; Column-Free Ramps and Parking Area; 60′ Post-Tensioned Girders.

International Motel & Parkade, San Diego • Owner: Handlery Hotels, Inc. • Engineer: Edwin M. Bennett with James R. Libby as prestress consultant • Contractor: Nielsen Construction Company

COLUMN-FREE PARKADE INTERIOR AND DRAMATIC SPIRAL RAMP ACHIEVED WITH PRESCON SYSTEM

Structure Uses Post-Tensioned Concrete for Bridge, Spiral Ramp, Slabs and Beams.

Tucker, Sadler and Bennett, Architects and Engineers, determined that post-tensioned cast-in-place concrete was the most advantageous construction for the pedestrian bridge and parkade for the International Motel, San Diego.

The foot-bridge, connecting the parking area and convention hall, is a thin, graceful structure of post-tensioned flat slab concrete. The five-level parking garage is a continuously ramp type structure, the slabs being supported by 60-foot post-tensioned girders. Minimum depth of these long spans allowed a 10-foot story height and a column-free interior. The thin slab was post-tensioned in both directions, resulting in a crack-free, waterproof floor which allows washing by hose without water damage. The dramatic, yet economical, high-speed spiral exit ramp is 62 feet in diameter. It is constructed by using cantilevered post-tensioned radial beams projecting from a central 6-foot diameter column. Structural cost of the spiral ramp and parking facility, including foundations, slabs, beams, 25′ high retaining walls, 30′ deep x 4′0″ caissons and underpinning was $4.60 per square foot.

Here again, the Prescon System of post-tensioning concrete has been used by the architect and engineer to achieve graceful, functional construction with maximum space utilization, and long spans with minimum material usage.

YOUR FILES should contain the newest Prescon brochure on various sizes of parking garages and the basic 3-part Prescon System brochure containing examples of uses in many structures.

PRESCON

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a new Service Concept from FORMICA®

for creators of commercial / institutional interiors

A newly-created task force of representatives experienced in working with designers will devote full time to servicing you with a wide range of decorative building products. These specialists sole responsibility is to expedite into specifications and installation your creative imagination in the use of new and improved laminated plastic products. If your Formica service executive has not yet made himself known to you, please write us for quick service.

NEW!

- *Citation Series of laminated plastic.* A smartly coordinated line of solid colors, woodgrains and Special Designs. This line is being offered to professionals only, and is not generally available to the consumer.
- *V.I.P. vertical interior paneling.* A beautiful new product with Formica® laminated plastic pre-veneered to rigid Formica Supercore® flakeboard. Simple spline-joint installation over open studding.
- *Doors clad with Formica® laminated plastic.* Under special agreement with quality door manufacturers the country over, doors to Formica approved specifications are delivered to the job site prepared for hardware, ready to hang.

FORMICA CORPORATION • DEPARTMENT SP • CINCINNATI 32, OHIO • *subsidiary of* CYANAMID

a Special New Citation Series of

FORMICA®

laminated plastic

for the Interior Design Professional

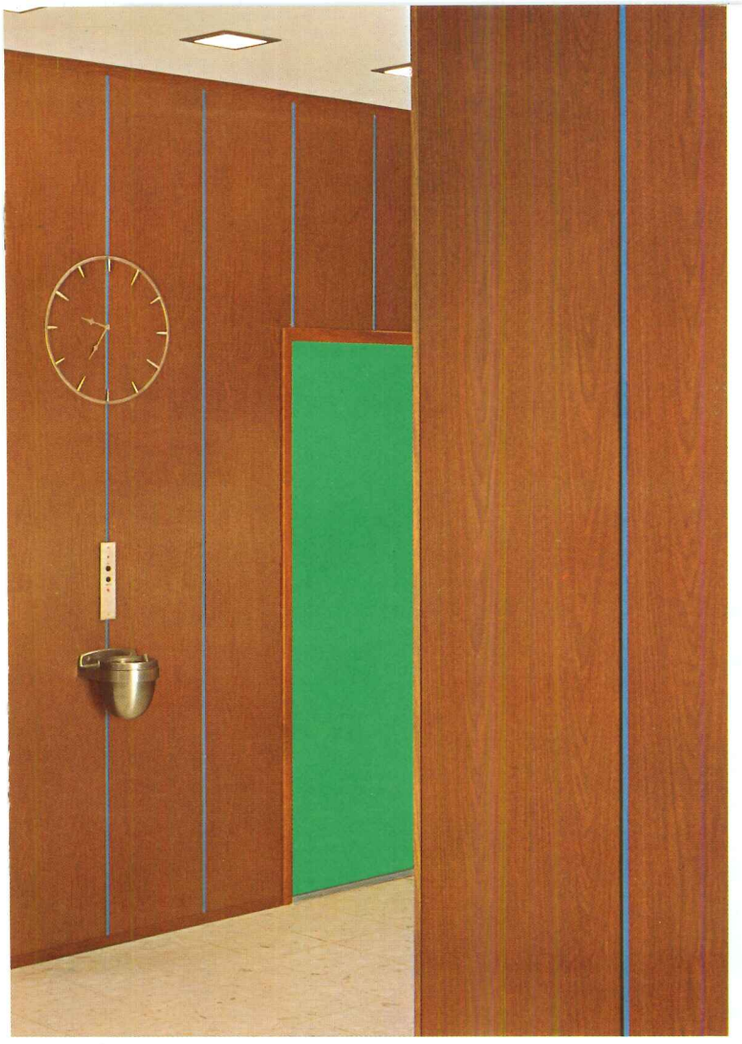
- **24 New Solid Colors—44 in all**
- **New Exotic Woodgrains**
- **Special Designs**

Now for the first time a brand new line of Formica laminated plastic has been created for the exclusive use of the skilled professional. Here are bold, solid colors styled up to your needs for dramatic colorful interiors—not watered down for mass acceptance. Colors like Emerald, Raspberry, Persimmon, Seal, and Fawn are typical of the exciting new decorating possibilities you have with Formica laminated plastic. A new finish makes all solid colors more resistant to stains and abrasions than ever before.

New woodgrains have all the beauty and realism of exotic and costly woods. Never before in a laminated plastic such depth and clarity of grain in shades like Malacca Teak, Island Driftwood, and many colorations of walnuts, cherries and oaks.

Even beyond these new horizons of decorating potential lies our service of Special Designs. We have dozens of imaginative designs on which you can specify your own color combinations in nearly endless profusion. For a modest extra charge, completely new and exclusive designs can be executed to your sketch or original art.

Complete information and samples available from your Formica service executive.



new... **FORMICA®**

v.i.p.*

* vertical interior paneling

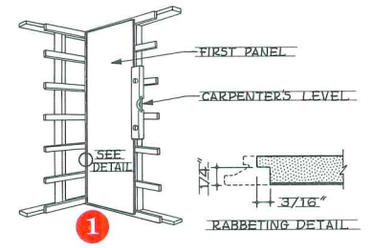
The Complete Simple Paneling System!

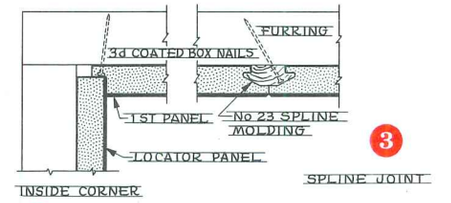
Combine the beauty, durability, and easy-to-clean qualities of Formica laminated plastic with a complete, simple, low-cost installation system manufactured by Formica Corporation.

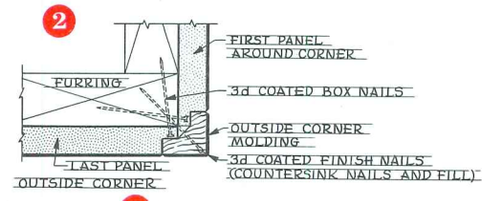
The result—new V.I.P. paneling.

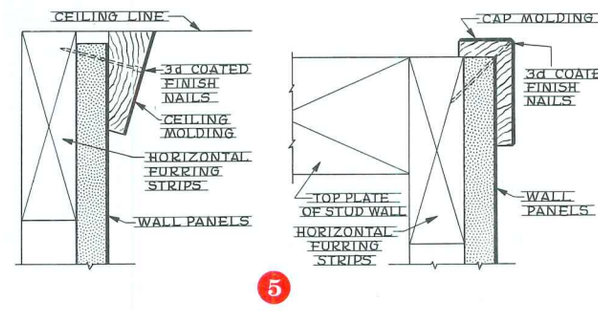
V.I.P. consists of 1/32″ Formica laminate bonded to ⅜″ Formica Supercore® flakeboard. Panels are 16″ wide, factory machined to accept a wooden spline (available in three widths) which is both the nailing and securing device for panel sections.

This new spline system permits unusual design freedom and maximum flexibility for special decorative effects. Write for additional information.







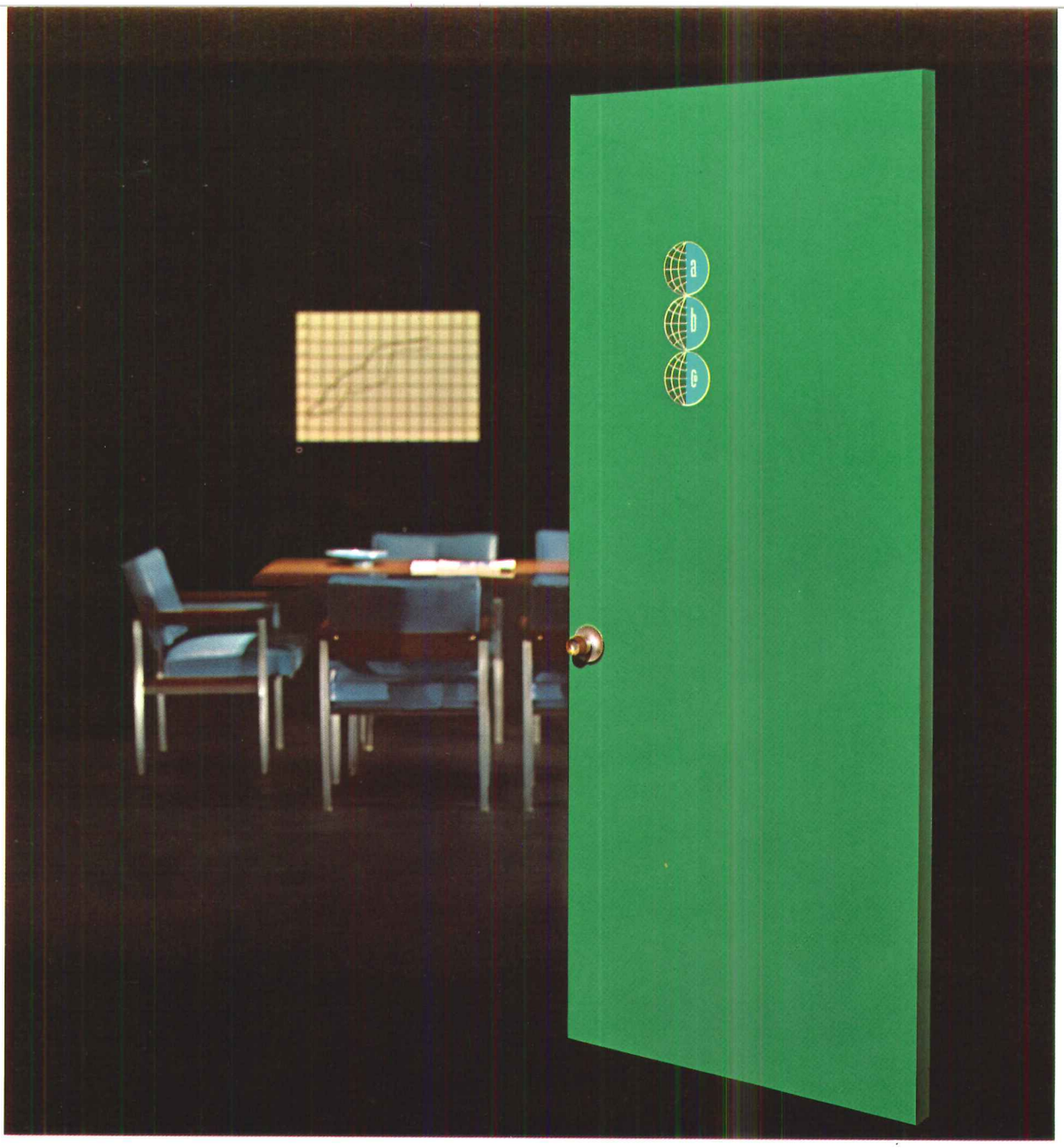


easy to install components

1. Start paneling at an inside corner.
2. Inside corner edge of panel is rabbeted (at site) to provide a method of fastening.
3. Spline is inserted on right edge and nailed to furring. Next panel fits securely into this spline. Continue progressively in this manner.
4. Outside corner molding fits snugly into rabbeted edges of panels as shown to provide a smooth edge.
5. Molding is secured by nailing through predrilled pilot holes. Matching ceiling and cap moldings are provided to give the entire installation a uniform "same pattern" appearance.

suggested uses:

• Restaurants • Banks • Motels • Shops • Shopping Centers • Offices • Institutions • Hospitals • Churches • Custom Residences



a really new kind of door... clad with... **FORMICA®**

laminated plastic

An interior door that is precision made — clean of line — prepared for hardware — installs in 20 minutes—maintenance free— lasts the life of the installation—colorful or muted as you specify.

Available Coast-to-Coast!

Authorized Manufacturers of Formica laminated plastic clad doors, carefully selected for their craftsmanship, are now located reasonably close to every building site. They will be pleased to serve you in every way possible . . . with samples, details, cost estimates . . . and doors.

Arizona.....Glen-Mar Door Mfg. Co., Phoenix
California.....General Laminated Products, San Francisco
General Veneer Mfg. Co., South Gate
Colorado.....Butler Fixture & Mfg. Co., Denver
Florida.....Oleson Industries, Tampa
Georgia.....Murphy & Orr Co., Forest Park
Hawaii.....Honolulu Sash & Door Co., Ltd., Honolulu
Indiana.....Burnet-Binford Lumber Co., Indianapolis
Iowa.....Van-Top, Inc., Holstein
Louisiana.....Topform, Inc., New Orleans
Michigan.....Wilburn Company, Grand Rapids
Plastic Tops, Inc., Detroit
Minnesota.....Aaron Carlson Co., Minneapolis
Missouri.....Melman Distributing Co., St. Louis
New Hampshire.Granite Flush Door Co., Manchester
New Jersey.....General Laminators, Inc., Weehawken
New York.....Jamestown Veneer & Plywood Corp., Jamestown
James A. Haggerty Lbr. & Millwork, Inc., White Plains
Ohio.....Pease Woodwork Co., Hamilton
Pennsylvania....Oxford Plastic Products Co., Oxford
Tennessee.....J. E. Chilton Millwork & Lbr. Co., Nashville
Texas.....Hawn Sash & Door Co., Corpus Christi
Elliott Shiels Planing Mill Co., Dallas
Utah.....Granite Mill & Fixture Co., Salt Lake City
Wisconsin.....Hardwood Products Corp., Neenah

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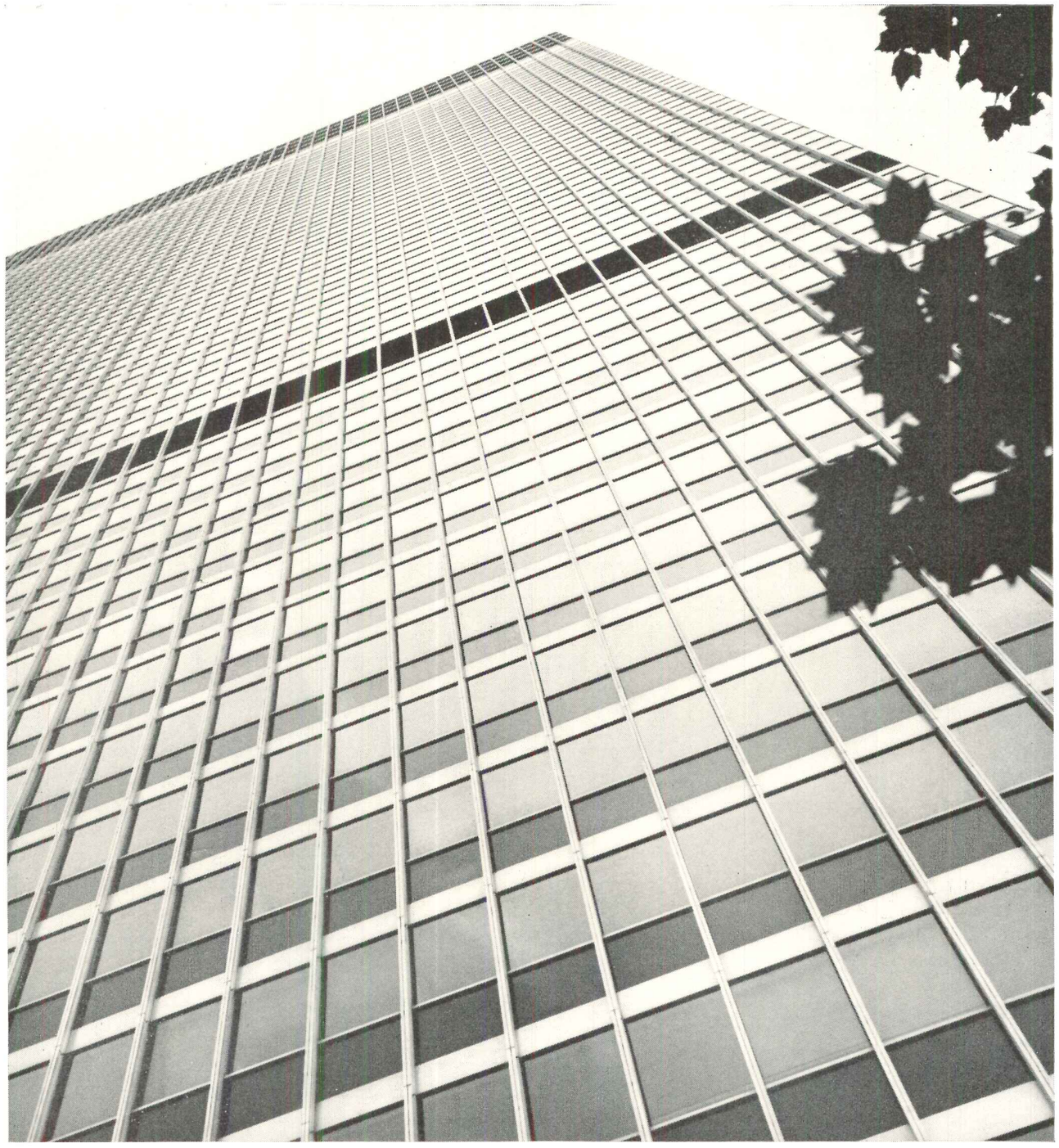

THERE ARE NO TAPES IN THIS SHOWROOM!

Over eight thousand Flexalum Twi-Nighters in this building—and not a tape to be seen. This exclusive Flexalum feature protects the clean lines designed into the Equitable Building, New York. Twi-Nighters could do the same for you. Other Twi-Nighter features: Aluminum slats give thermal control of sunny windows — guard air-conditioning equipment against overloads. 5-year guarantee, bonded by Continental Casualty Co., includes labor and materials, insures against costly maintenance. Write us for specifications and details on all special purpose blinds.

Flexalum®

Bridgeport Brass Company, Hunter Douglas Division, 30 Grand Street, Bridgeport 2, Connecticut.

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For more data, circle 34 on Inquiry Card

For more data, circle 35 on Inquiry Card →

some make **1**

some make **2**

but we make **3** *types of wall coverings*

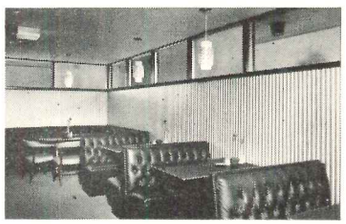
WOOD
ALL VINYL
VINYL FABRICS

Laminating Services makes three types of wall coverings — wood, vinyl fabrics and all vinyl. The result is the wealth of experience and know-how you'll notice when your L.S. representative comes calling. He will demonstrate our fine quality products.

Pliant Wood . . . .

Cloth-backed natural wood veneer. Easy to apply on any hard, smooth, dry surface — flat *or* curved. Manufactured to architect's specifications. Matched grain provides continuous-pattern beautiful in appearance for large and small wall areas — material is delivered to the job, matched and numbered to assure proper installation. Your choice of woods, imported and domestic.

VIN-L-FAB "22" . .



An exceptionally tough covering for heavy usage applications. Pure virgin vinyl with color fused to underside — durable — to withstand the hardest usage. Meets flame-spread rating, abrasion, tear strength, and other Government requirements. Available in a cloth-backed "upholstery grade", to provide design continuity between walls and furnishings. Vin-L-Fab "22" is available in 6 embossed patterns and an unlimited choice of colors. Special colors in solids, two-tones and stripes are available in small quantities.

VIN-L-FAB . . . . .

Durable vinyl fused to cloth backing. Adaptable to most all wall covering applications, it is available in weights and thicknesses ranging from heavy-duty to light weight. Vin-L-Fab is supplied in many embossed patterns and in a wide selection of colors. Meets G.S.A. requirements.

MANUFACTURERS OF WALL COVERINGS MADE WITH ROVANA®

NATIONAL DISTRIBUTOR FOR JOANNA WALL FABRICS
SAMPLES, SPECIFICATIONS, BROCHURES AVAILABLE ON REQUEST
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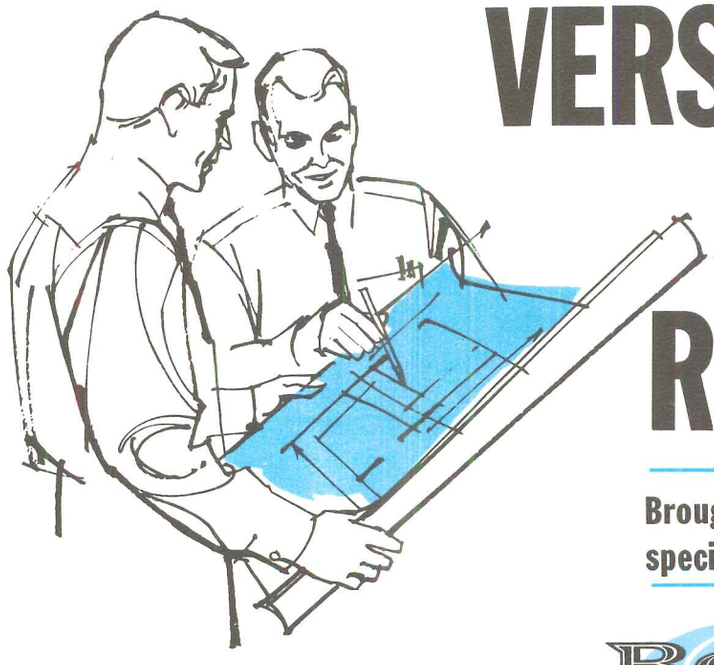
TODAY'S BEST BUY
in dormitory furniture



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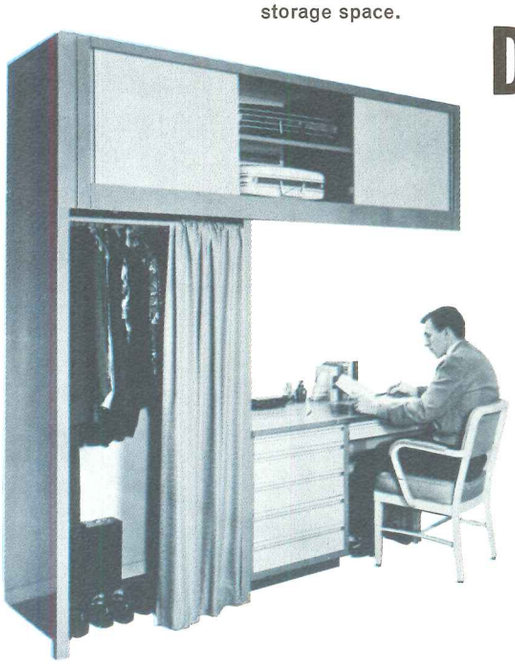
Brought to you in one low cost package by two specialists in their respective manufacturing fields.

Remco | SOUTHERN CROSS

Built-in Closets extend to ceiling... have generous storage space.



DAY AND NIGHT COMFORT WITH

Desks provide large work surface . . . book space . . . leg room.

Chests have full depth drawers . . . recessed pulls . . . silent nylon glides.

This built-in metal furniture is made for home-like living comfort and convenience with maximum utilization of space. ■ Highly adaptable for new construction or remodeling this proven line offers you low cost, design flexibility, minimum maintenance. ■ Modular units can be built in volume with variations for your specific requirements. Units are warp and sag-proof... built for years of trouble free service. Choice of attractive baked-on enamel finishes and plastic laminates. The Multi-Purpose Bed Lounger performs multi-functions in small space. It's a bed at night . . . a lounge by day. ■ As a lounge, it has "easy-chair" seating comfort . . . with your choice of handsome durable

EVERY FOOT OF FLOOR SPACE UTILIZED !!!!

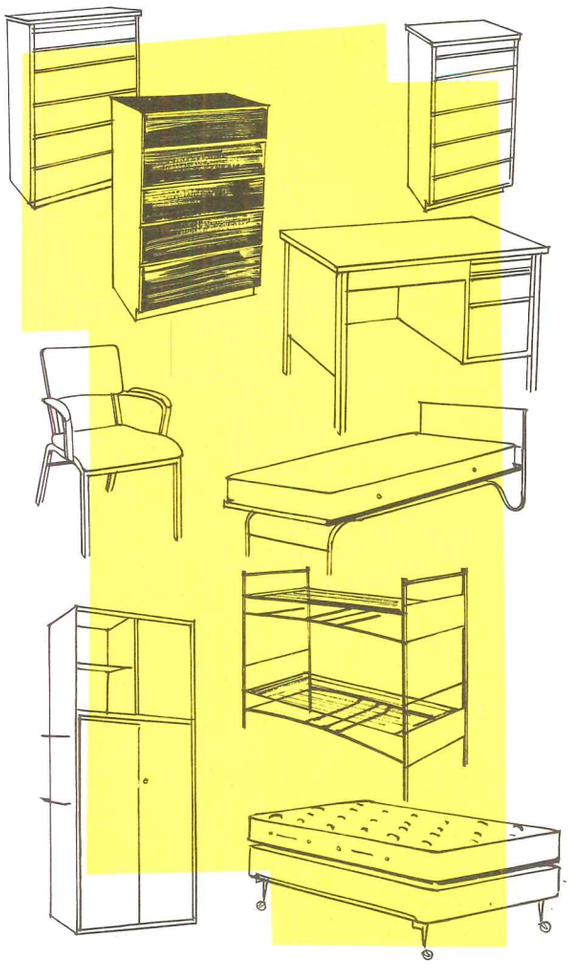
covers. One easy movement converts it to a roomy, luxurious bed. Bolster cabinets are used for storage and bookshelves.

Remco

SOUTHERN CROSS

Multi-Purpose Bed Lounger
Available in both 76" and 81" length. Choice of many styles.

PLUS an extensive line of free-standing movable metal furniture



All of the proven quality and design of our built-in furniture is also incorporated in our complete line of free-standing metal furniture. Whatever your need . . . from bunk beds to chests . . . from dormitory beds to wardrobes to desks is available from Southern Cross and Remco. ■ Reliance Engineering and Manufacturing Corporation has been engaged in manufacturing quality metal fixtures since 1917. ■ Southern Spring Bed Company is one of the oldest and largest manufacturers of sleep products, founded in 1883. ■ A combined manufacturing skill and know how of over 120 years! ■ Write today for further information. Personal consultation for specialized layouts, equipment and specifications is available on request at no obligation. ■ All items available on contract to members of the Educational and Institutional Cooperative Service, Incorporated, 1461 Franklin Avenue, Garden City, New York, Phone PI 7-0350.

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SOUTHERN CROSS

Southern Cross Dormitory Sleep Products
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The next building you design will be a better building if you specify a built-in ADT protection system

Better because functionally *complete*, from your client's point of view. Better because protective devices and wiring can be installed more economically, and with minimum exposure to view. Better because security hazards will be minimized from the day your client moves in.

Whether urban, suburban or rural, your project can be protected through one of many versatile, flexible, reliable ADT systems. Three basic types—connected to ADT central station, direct-connected to fire and police headquarters, or to client's proprietary center—adaptable to *any* plant security requirement. See Sweet's File, Section 33 b. Or call nearest ADT office (Yellow Pages) for free consultation, survey or specification data.

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PLAN PROTECTION NOW

Specify tested and approved ***ALLENCO***

- HOZEGARD CABINETS
- HOSE REELS, RACKS & CARTS
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- FIRE DEPT. CONNECTIONS
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See Sweets 29f/AL or write for catalog no. 52

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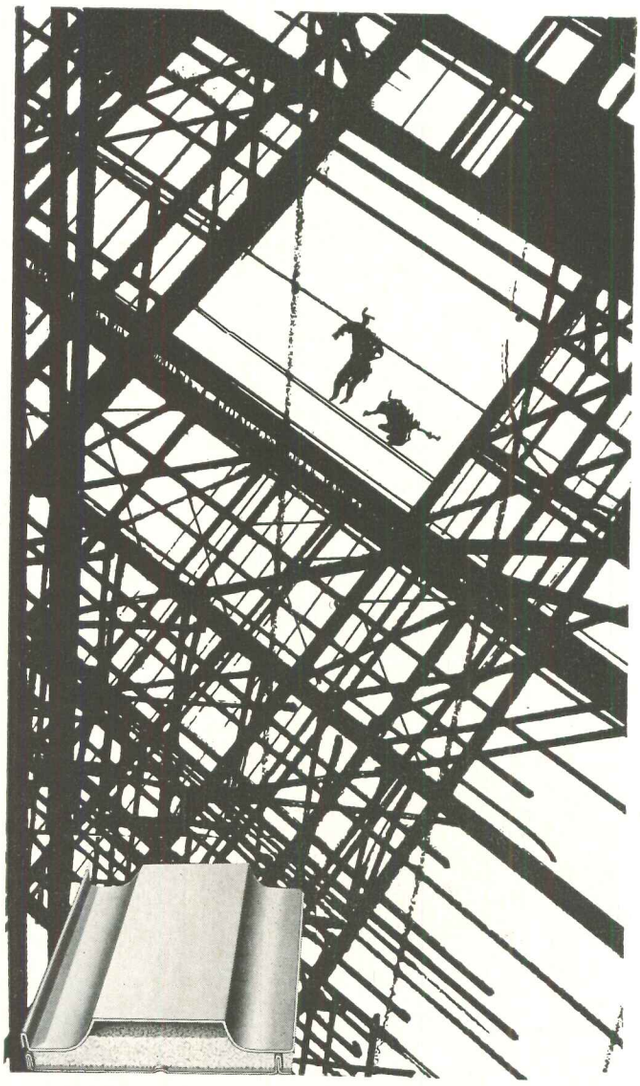

COVER STORY: **LOCATION?** A building under construction. **THE AUTHOR?** A free-thinking architect with an eye for practicality. **THE HERO?** Walcon's insulated 'S' Panel Wall. **TIME?** Remarkably brief—Walcon's 'S' Panels are pre-fabbed to fit the job, erected rapidly and economically. **PLOT?** A dramatic sequence of design, specification, custom planning, quick installation, years of attractive, maintenance-free service. **STORY CHANGES?** No trouble. Walcon 'S' Panels can be removed . . . even reused. **A CLASSIC?** This building will stand the test of time. No exposed fasteners to rust out . . . available in various gages of aluminum or steel . . . a full range of locked-in colors . . . surface patterns to suit the job. **CONCLUSION?** Investigate Walcon for a major role in your next project. Write or give us a call for 'full-spec' literature on the complete line of Walcon building products as sold, erected and serviced by the allied firm, W. Biddle Walker Company.

walcon

WALCON CORPORATION, 4375 SECOND ST., ECORSE 29, MICHIGAN
MIDWEST SALES-ENGINEERING OFFICE: 30 W. WASHINGTON ST., CHICAGO 2
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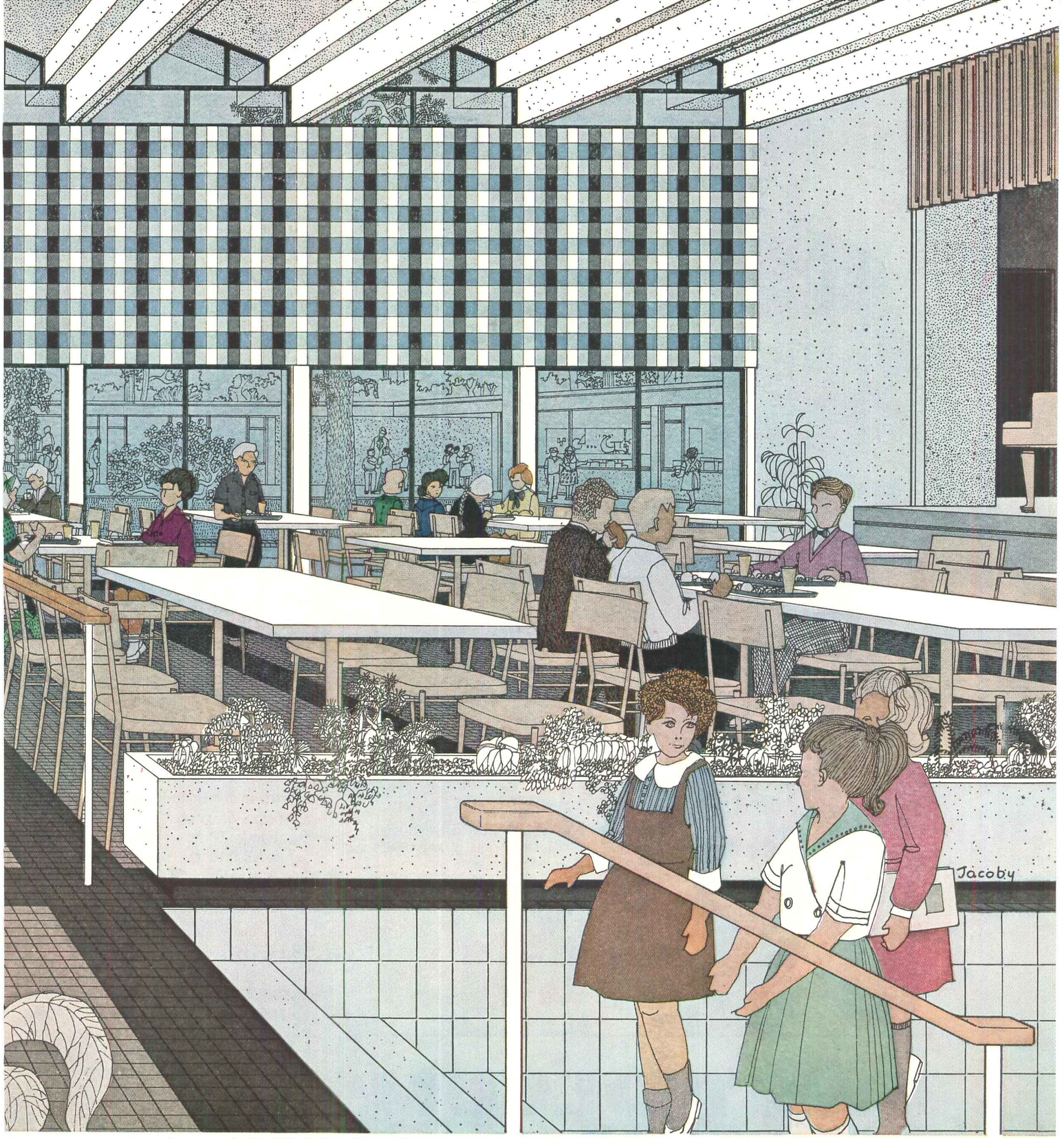
CERAMIC TILE PROVIDES COLORFUL BEAUTY

A bright, appealing environment . . . easy sanitation . . . rugged durability . . . and economical maintenance —these were the primary considerations in planning this school cafeteria. American Olean ceramic tile provided the complete answer on all four counts.

American Olean's cost-saving large size tiles were specified throughout for walls. Set vertically, they create a pleasing scale effect in the large, open areas. They also offered a simple, economical way to add a colorful design treatment on the feature wall above the windows.

*Murray Tile Company is a Division of American Olean Tile Company



Feature wall: 6″ x 4¼″, 47 Brite White, 98 Smoke Gray, 49 Gloss Black, 63 Flax Blue, 21 Cornflower. Other walls: 6″ x 4¼″, 18 Pastel Blue. Cafeteria floor: 2″ x 2″ ceramic mosaics, Dawn Gray and Ebony. Kitchen floor: Murray quarry tile, 6″ x 6″, Fawn Gray, Plate 497.

AND ECONOMY IN A SCHOOL CAFETERIA

Floors of handsome unglazed ceramic mosaics in the dining area and rugged Murray* quarry tile in the adjoining kitchen, provide maximum durability with easy cleaning and no upkeep. Write for new 1963 American Olean product catalog and Booklet 620, "Ceramic Tile for Schools"

CERAMIC TILE
American Olean

AMERICAN OLEAN TILE COMPANY • EXECUTIVE OFFICES: 1767 CANNON AVE., LANSDALE, PA. • A SUBSIDIARY OF NATIONAL GYPSUM COMPANY

*Total excellence starts with the prime coat!

The responsibilities of the first coat on metal are *big!* It must take hold, prevent rust, adhere tightly, and form a sound, compatible base for the intermediate primer and the top coat! Whether you specify it as a shop coat by the fabricator, or as a job-site application on structural steel by the painting contractor —you can rely on Rust-Oleum total excellence to *last and last.* Your assurance is over forty years of industrial proof! Your Rust-Oleum Factory Specialist and a Rust-Oleum Distributor will be happy to work hand-in-hand with you. Write for your free copy of Rust-Oleum Architectural Catalog No. 261-A, which includes complete specifications for coating Structural Steel, Steel Sash, Water Tanks, and Galvanized Metal—or contact your Rust-Oleum Distributor.

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Required Reading

continued from page 58

ports the distribution of household types, as to ownership and family composition, and the patterns of daily activities. Sections cover attitudes of the elderly toward living arrangements and implications of the findings.

Careers

ARCHITECT. *Creating Man's Environment. By Robert W. McLaughlin. The MacMillan Company, 60 Fifth Ave., New York 11. 201 pp., illus. $3.50*

Mr. McLaughlin has produced a very useful report on architecture for the young man or woman considering it as a career. He is sufficiently enthusiastic about the rewards—human and esthetic—to encourage the genuinely interested. At the same time, he is sufficiently honest about the rigors of training and practice to discourage the inadequately motivated. Mr. McLaughlin has done this, furthermore, without talking down to his young audience. He has also served the certain demand for inspiration by including brief autobiographies of varied architects: Louis Sullivan, Charles Follen McKim, Louis Skidmore, Eero Saarinen and Louis Kahn.

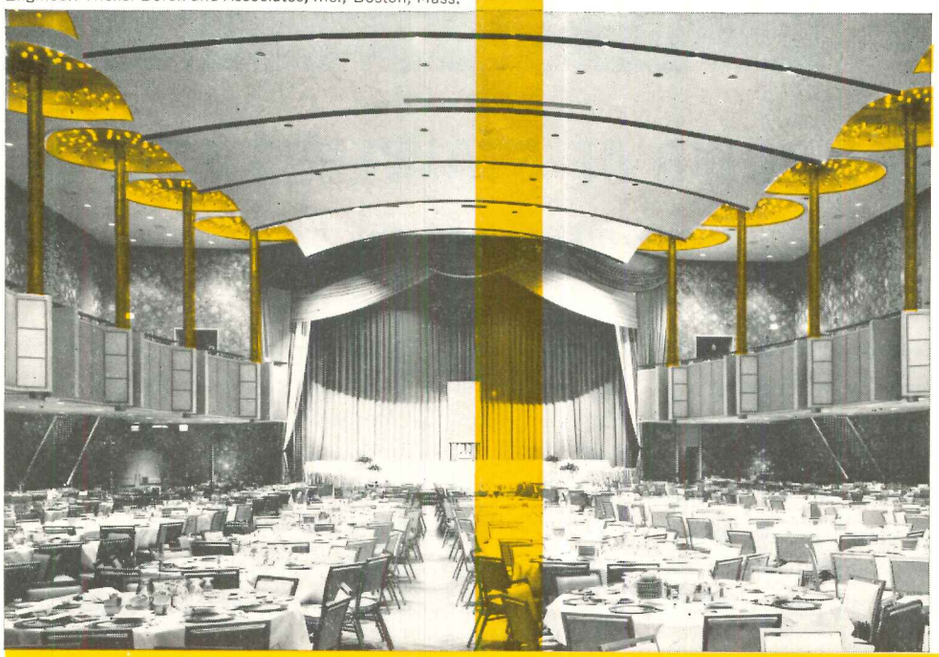
Baroque

BAROQUE EUROPE. *Introduction by James Lees-Milne; edited by Harald Busch and Bernd Lohse; commentaries by Eva-Maria Wagner. The MacMillan Company, 60 Fifth Ave., New York 11. 240 pp., illus. $15.*

Although the book includes a brief and appreciative introduction by Mr. Lees-Milne, and rather more detailed commentaries on the illustrations by Miss Wagner, the *raison d'etre* of this publication is the photographs. Numerous, skillful, well chosen and well reproduced, they are equal to the standards of this book's predecessors in the publisher's series on "Buildings of Europe."

NL creates this lighting for the Sheraton-Cleveland Grand Ballroom

Architect: Perry, Shaw, Hepburn and Dean, Boston, Mass.
Engineer: Nickel-Borek and Associates, Inc., Boston, Mass.



Creative designers agree that *lighting does* make the difference. Here is a typical example of NL creative engineering. More and more, every day architects and interior designers are calling on NL Corporation to enhance their planning with lighting created specifically to an architectural concept. Avail yourself of this service and plan your lighting with NL.

A complete catalog of original NL designs in contemporary or period styling is yours for the asking. Just write:

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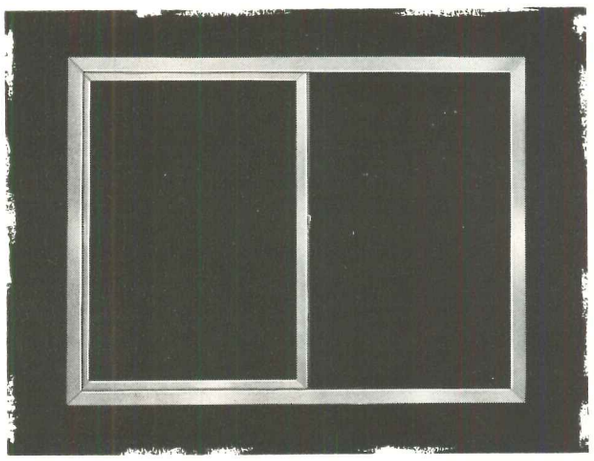
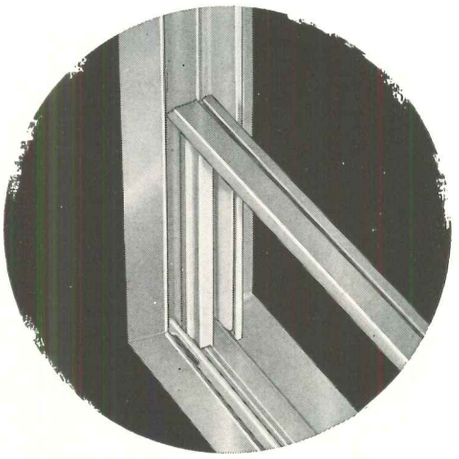
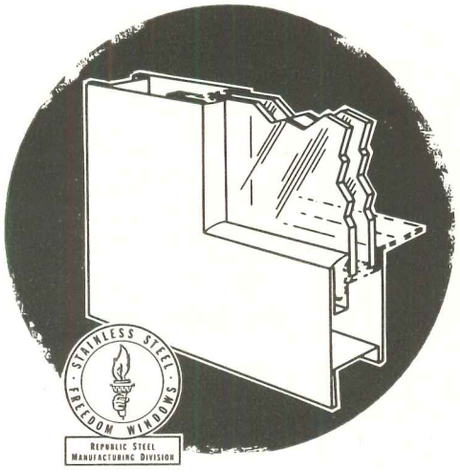


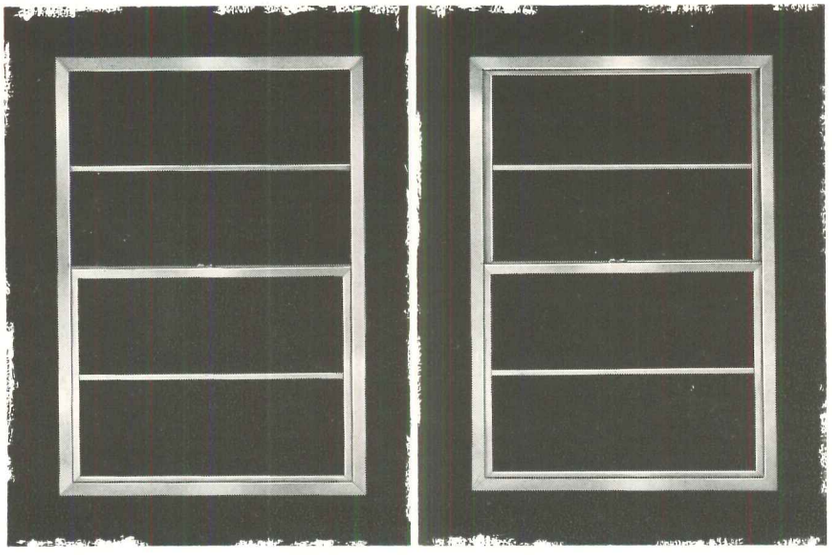


Superior construction of new FREEDOM Stainless Steel Windows includes mechanically braced, machine-mitered corner construction.

THE PERFECT WINDOW MATERIAL!



Patented folded fins snap in place for nailed attachment—removable for anchored or mullion type installations.



FREEDOM WINDOWS OF STAINLESS STEEL

. . . priced to specify; any apartment, any home!

Now, to enhance and add value to any design—FREEDOM WINDOWS of Stainless Steel! Slim, satin finished to blend perfectly with colonial, contemporary, or modern architecture, in your choice of double-hung, single-hung, or horizontal slider types. FREEDOM from window worries for you and your clients! FREEDOM from warping, swelling, shrinking, sticking. Rugged reinforcement, machine-mitered corners, and built-in permanent waterproofing. Unique, integral folding fins snap in place for nailing—removable for anchored or mullion type installations. FREEDOM from heat loss, cold transmission—trapped-air framing plus double glazing eliminates need for storm windows. Timeless resistance to dirt, acids, and alkali. FREEDOM from painting or peeling, and cleanable by washing. FREEDOM from pitting, corrosion, discoloration, cracking, chipping, flaking, for life. FREEDOM from *all* the too-familiar problems of aluminum and wood windows of the past! FREEDOM STAINLESS STEEL WINDOWS.

Literature and detailed specifications are available. Write, or ask your Republic representative, now!

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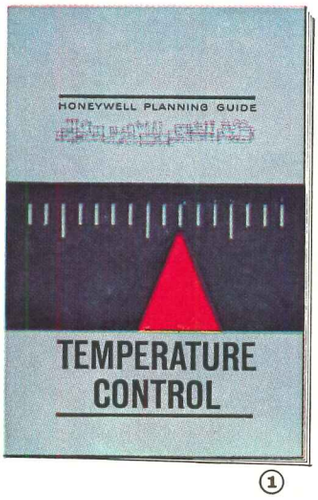
Mail coupon for free Planning Guides, facts on "one responsibility" savings.



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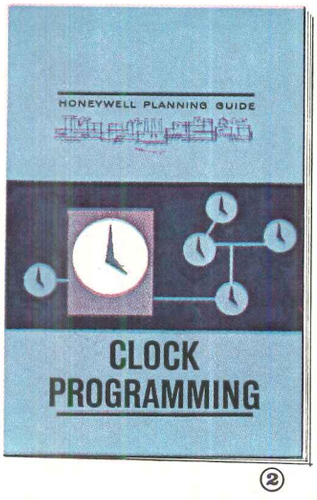

②

To: HONEYWELL, Dept. AR5-4, Minneapolis 8, Minn.

Six, new, authoritative Planning Guides that will help you advise your clients on how to get the best mechanical and electrical systems when they build or remodel.

I want Planning Guides circled below.

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☐ I want facts on "one responsibility" advantages.

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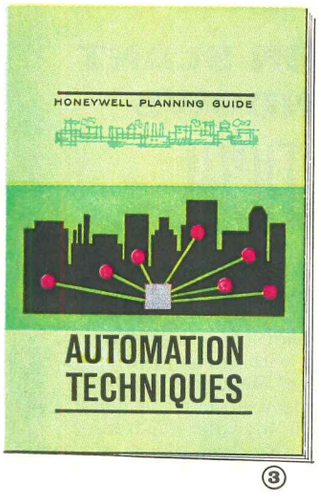

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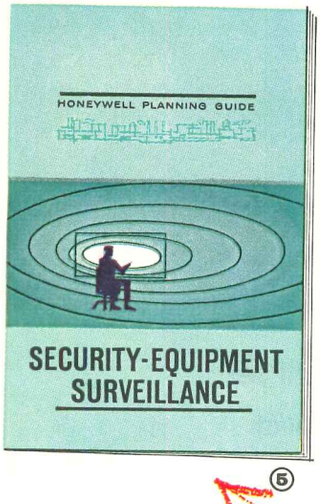

⑤

⑥

Now, one responsibility for all these building systems!

Honeywell will help coordinate your systems from manufacturing to installation to produce the most efficient, overall operation. And your clients will have just one number to call for service.

Just mailing the coupon at upper right will return your first Honeywell dividends.

You'll receive informative Planning Guides on the building systems of your choice. Also, practical facts on exactly how Honeywell's single responsibility can eliminate many unnecessary expenses and headaches when your clients build or remodel.

Two examples: How coordination of two or more building systems can reduce costly equipment duplication. How you can get customized installations at prices that make sense . . . not to mention the more obvious advantages of dealing with one, reliable manufacturer for service on a number of building systems.

If you're in a hurry, simply phone your local Minneapolis-Honeywell office and ask for "Commercial Division." We'll develop sound recommendations for your projects. *112 offices in the U.S. . . . others in all principal cities of the world.*

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Honeywell

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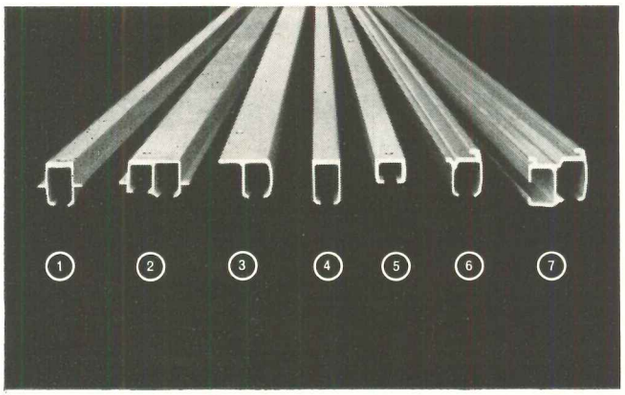

as you will see

in our book

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Kirsch ARCHITRAC® "ORIGINAL EQUIPMENT" DRAPERY HARDWARE

CATALOG is free for the asking (also in Sweet's). Address your inquiry to: Kirsch Co., 313 Prospect, Sturgis, Michigan. Ask, too, for price-estimating information, and about our nationwide consultation service.

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Not only modern in appearance, Elkirt Fabric Verticals are virtually maintenance free! They're "people proof", stay clean longer and operate noiselessly with spring tension on each louvre. Needless to say, Elkirt Verticals are versatile and decorative with literally hundreds of designs possible from choice of colors and fabrics.

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Almost as important as the window itself!

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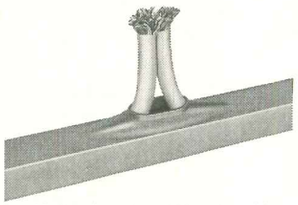
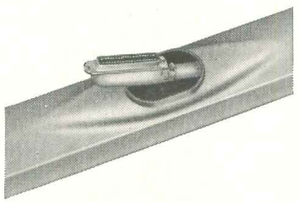
- [X] Architect
- [X] Consulting Engineer
- [X] Electrical Contractor
- [X] Telephone Engineer

BECAUSE THE INSERT IS SHAPED LIKE THIS ⬭ INSTEAD OF THIS ○ ...SQUARE D's NEW-DESIGN UNDERFLOOR DUCT HAS TREMENDOUS ADVANTAGES FOR EVERYBODY!



• Notice how two 100-pair cables can be looped in Square D's exclusive ellipsoid insert—previously a physical impossibility. Naturally—additional insert heights are available.



• See how easy it is to slip the amphenol connector into the ellipsoid insert and leave the cable undisturbed and ready for immediate reactivation.

• At first glance it may seem to be a simple, minor design change—but don't underestimate the significance of this new and exclusive ellipsoid insert. Here's what it does—

Makes it much easier to "fish" and pull cables...cuts installation time and cost drastically. Especially important in industrial installations because heavy, stiff power wires can be pulled without difficulty.

Permits looping two 100-pair telephone cables in one insert—see top photo at left.

Makes it possible, when telephones are moved from one location to another, to store amphenol connectors in the underfloor duct, leaving the cable undisturbed and ready for immediate reactivation—see bottom photo at left.

This new ellipsoid insert is only one of several reasons why Square D underfloor duct offers more in convenience, efficiency and economy. Ask your Square D Field Engineer for the complete story. Or write Square D Company, Department SA, Mercer Road, Lexington, Kentucky.

SQUARE D COMPANY

wherever electricity is distributed and controlled

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THE BEST IDEAS
ARE MORE EXCITING
IN CONCRETE
PAN AM

WORLD'S TALLEST "AIR-BORNE" BUILDING HAS 12 ACRES OF CONCRETE CURTAIN WALLS

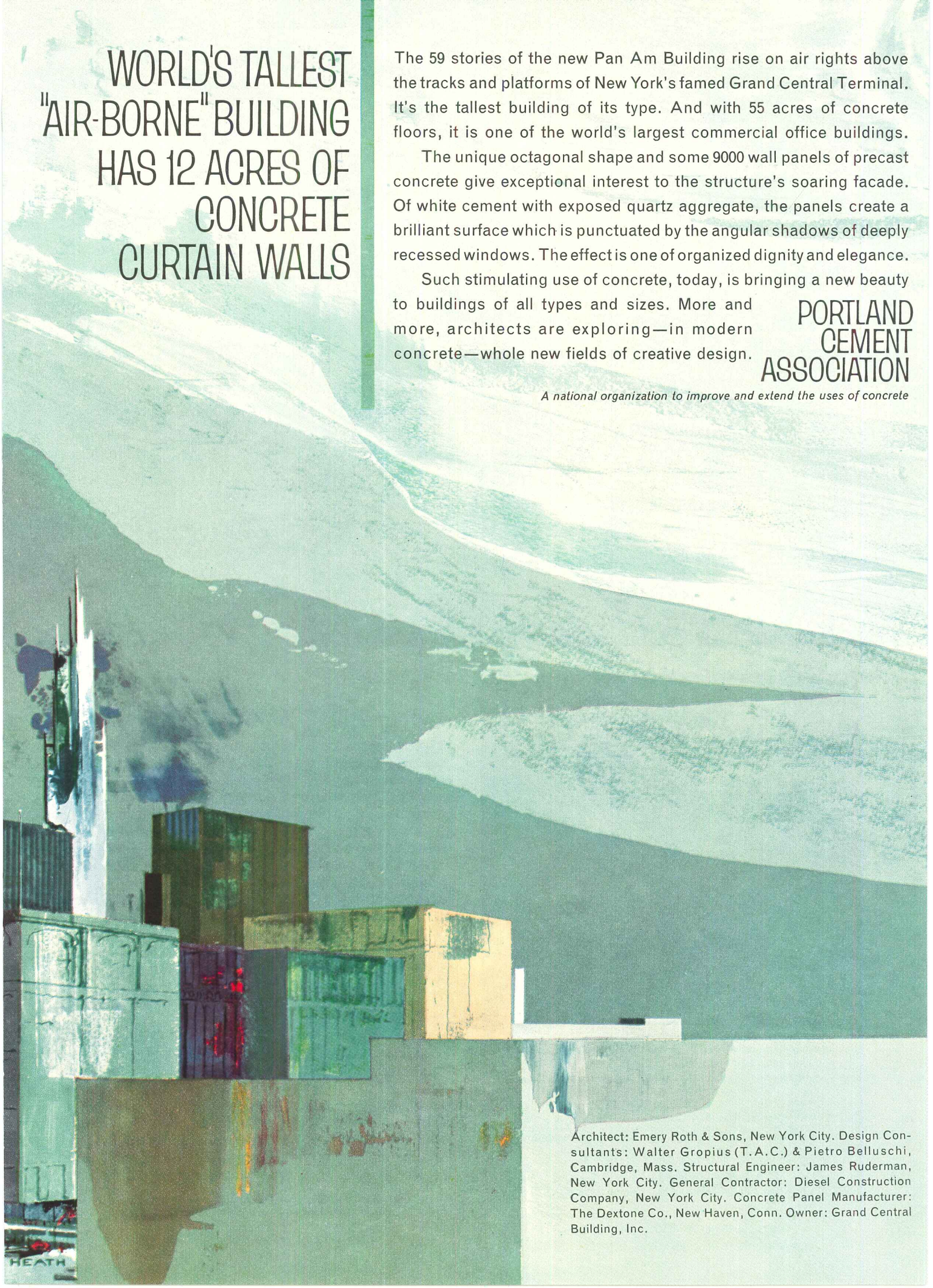
The 59 stories of the new Pan Am Building rise on air rights above the tracks and platforms of New York's famed Grand Central Terminal. It's the tallest building of its type. And with 55 acres of concrete floors, it is one of the world's largest commercial office buildings.

The unique octagonal shape and some 9000 wall panels of precast concrete give exceptional interest to the structure's soaring facade. Of white cement with exposed quartz aggregate, the panels create a brilliant surface which is punctuated by the angular shadows of deeply recessed windows. The effect is one of organized dignity and elegance.

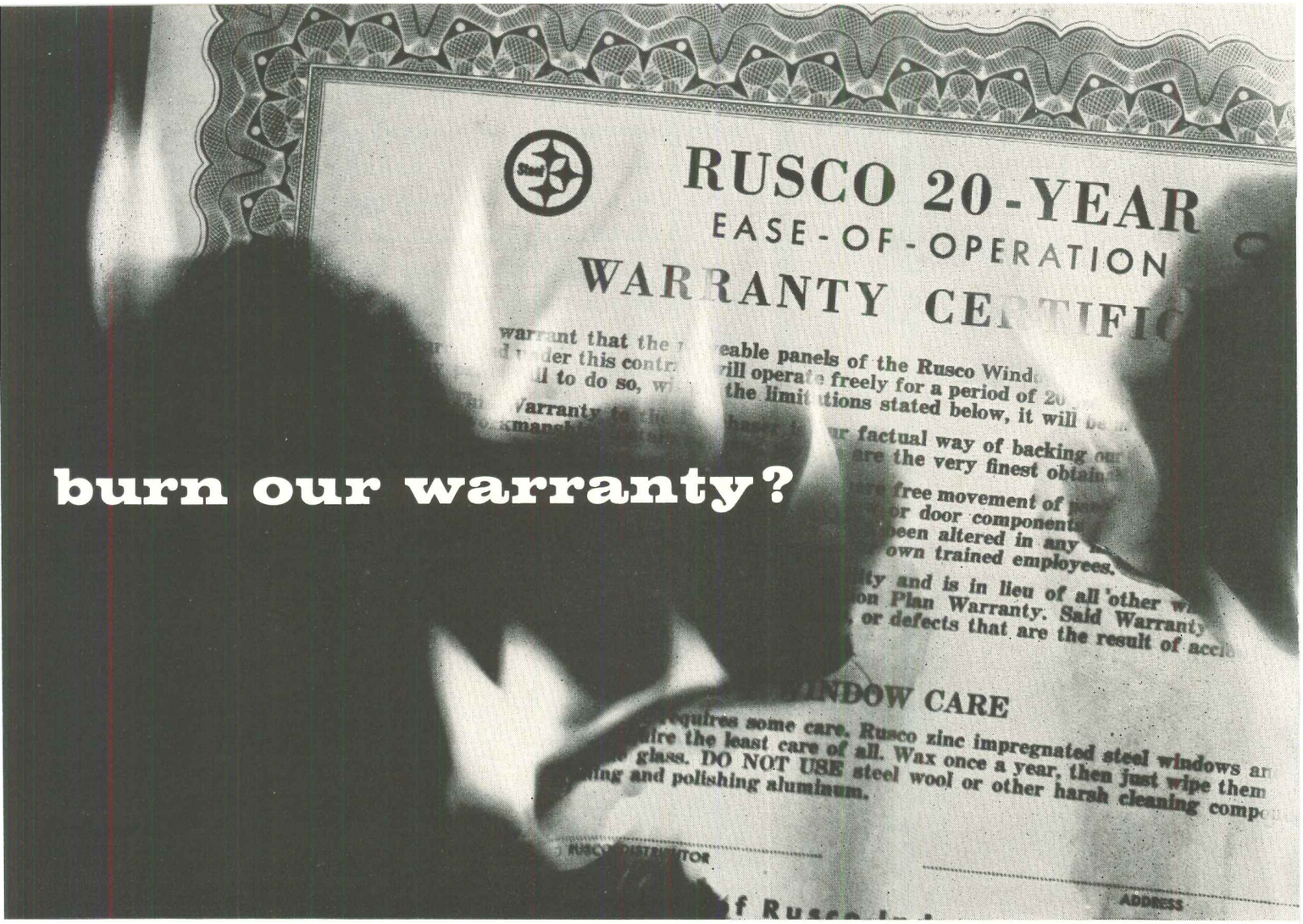
Such stimulating use of concrete, today, is bringing a new beauty to buildings of all types and sizes. More and more, architects are exploring—in modern concrete—whole new fields of creative design.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete



Architect: Emery Roth & Sons, New York City. Design Consultants: Walter Gropius (T.A.C.) & Pietro Belluschi, Cambridge, Mass. Structural Engineer: James Ruderman, New York City. General Contractor: Diesel Construction Company, New York City. Concrete Panel Manufacturer: The Dextone Co., New Haven, Conn. Owner: Grand Central Building, Inc.



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AWARDS GIVEN TO

Eleven manufacturers and two trade associations have won awards for outstanding product literature directed to the consulting engineer in the second Engineers' Technical and Product Literature Competition. A project of the Joint Committee of the Consulting Engineers' Council and the Producers' Council, the competition was initiated in recognition of the importance of the consulting engineer in the construction industry and the need for manufacturers' project literature that meets his specialized requirements. A total of 121 entries were made this year from 70 manufacturers and trade associations. Awards are to be presented at the C.E.C. annual meeting, on May 9 in Haddonfield, N.J.

Top awards in four classes went to: Baltimore Aircoil Company, Inc.; Minneapolis-Honeywell Regulator Company; Joseph T. Ryerson & Son, Inc.; and Inland Steel Products Company.

On the Jury of Awards were Leroy H. Nettnin, chairman and C.E.C.-P.C. Joint Committee co-chairman; Lester L. Bosch, president, C.E.C.; David K. Evans, president, Wisconsin Institute of Consulting Engineers; John A. Lofte, chairman, C.E.C. Manufacturers' Literature Standards Committee; Richard L. Thacker, president, Illinois Association of Consulting Engineers; and Harry P. Watson, president, Chicago Assoc., of Consulting Engineers.

The complete list of award winners is as follows:

Class I—Building product literature concerned primarily with basic technical information relating to a class of product where emphasis

For more data, circle 49 on Inquiry Card

LITERATURE FOR ENGINEERS

is upon the product rather than on merits of a particular make, ordinarily published by producers' associations and distributed to consulting engineers.

Exceptional Merit: The Noise of Cooling Towers, Baltimore Aircoil Company, Inc.

Certificate of Merit: Evaluation Guides (6), Worthington Corporation

Honorable Mention: Fire Resistance Design Manual, Gypsum Association

Special Commendation: Brick and Tile Engineering, Structural Clay Products Institute

Class II—Literature offering technical information relating specifically to product or products of a single manufacturer.

Exceptional Merit: Mechanical Engineer's Data File, Minneapolis-Honeywell Regulator Company

Certificate of Merit: Humidity Conditioning with Kathabar, Surface Combustion Division, Midland-Ross Corp.

Honorable Mention: Hydro-Graf, The Engineers' Time Saver, Bell & Gossett Company

Class III—Literature supplemental to Classes I and II, of technical and inspirational value, includes new developments, new product uses, new design ideas, visual presentations and recommended specifications.

Exceptional Merit: Lift-Slab Design & Construction, Joseph T. Ryerson & Son, Inc.

Certificate of Merit: Wire Rope for Structural Uses, Bethlehem Steel Company

Honorable Mention: Chemtite Pipe, Johns-Manville Sales Corporation

Class IV—"Space Advertising"

Exceptional Merit: The Challenge to the Consulting Engineer (3 page ad), Inland Steel Products Company

Certificate of Merit: Technical Advertising Program, Permanente Cement Company

Honorable Mention: The City of Sarnia, Pacific Flush Tank Company

NEW DRAINLINE BULLETIN!

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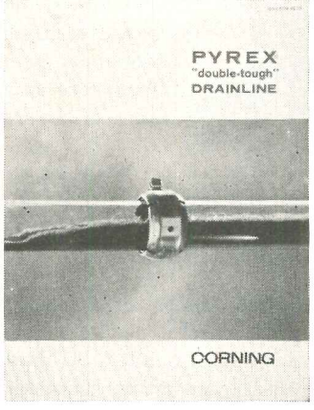
Find out why PYREX® brand drainline is your one best answer. Get the facts on how easily it installs.

Write today for Bulletin PE-39 to Building Products Department, Corning Glass Works, 8505 Crystal Street, Corning, New York.



CORNING
CORNING GLASS WORKS

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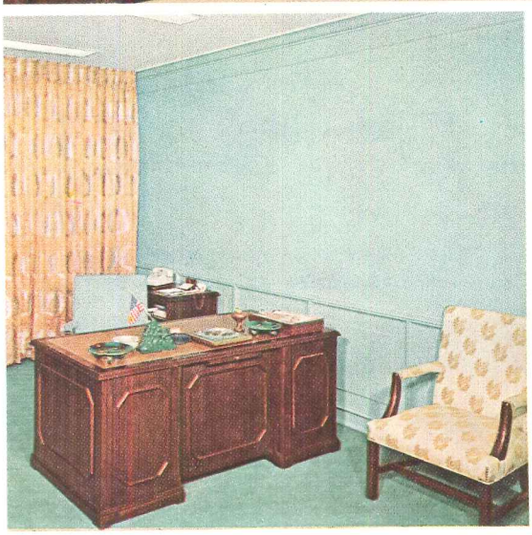

Bank for Savings & Trusts, Birmingham, Ala. Architect: Lawrence S. Whitten & Son, General Contractor: Daniel Construction Co., Painting Contractor: Vulcan Painters Ltd., all of Birmingham.

New bank adds interest...with color!

Ottis W. Airhart, "Man from Devoe" serving architects in Alabama.

From the swank, carpeted vaults 'way down below to the eighteenth floor above ground, this gleaming new home of the Bank for Savings & Trusts is a symbol of service and progress for one of the fastest growing cities in the South . . . Birmingham, Alabama.

One emphatic "must" of the architect was a most careful use of color . . . for atmosphere, beauty, a modern feeling and extra attractiveness for tenants. Devoe Paints were not only specified from the beginning, the Man from Devoe provided for mixing of special colors required and the timing of shipments to the building site.

We repeat our invitation to you to use the services of the Man from Devoe for any problem involving the technical aspects of paint. For example, he can take the grief out of color matching, with a spectrum of over 1,000 colors, bold and subtle, in the Devoe Library of Colors® system. It's ingeniously organized for easy handling and cross reference.

Or, if you wish, the Man from Devoe can supply technical data on paint formulae, costs, maintenance, or paint selection and performance for varying climatic conditions. He can even assist in the selection of special finishes that are designed for use where corrosion, erosion or other exceptional factors must be considered.

This service is complete, competent and with our compliments. To contact the Man from Devoe, simply call or write the Devoe office nearest you. Write us direct at Louisville, Ky., for a free "Rainbow Selection" of 300 colors from the Devoe Library of Colors.

DEVOE PAINT

DEVOE

Devoe & Raynolds Company, Inc.

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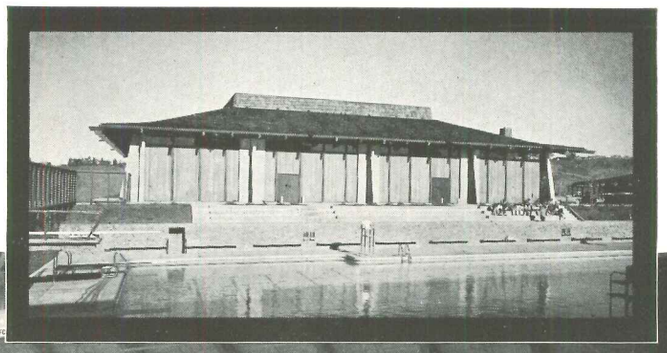
From its hilltop setting, the Foothill College gymnasium overlooks the beautiful 122 acre campus that received the American Institute of Architects First Honor Award for 1962. Architects for the project were Ernest J. Kump and Masten & Hurd, Architects Associated. Telescoping gym seats (below) were supplied by Safway Steel Products, Inc.



Versatile Safway gym seats make best use of space at

AWARD-WINNING FOOTHILL COLLEGE

One of the most active buildings on the campus of Foothill College is the gymnasium — center not only for student athletics, but for such community activities as concerts by the San Francisco Symphony Orchestra.

To provide maximum space utility, the gym was equipped with 40 rows of **Safway Telescoping Gym Seats.** Closed, they form an unbroken panelled wall on each side of the gym. Each bank projects only 36", making 7,832 sq. ft. of floor space available for athletic practice or recreational activities. Fully extended, they provide safe, comfortable seats for 2,254 spectators. For smaller crowds, any number of rows can be extended or closed, with each row automatically locked securely in place by **Safway's exclusive Row-Locks.**

SAFWAY MEETS ALL REQUIREMENTS

In specifying gymnasium seating, the Architects looked for the following factors:

- Vertical front and compactness when nested.
- Even distribution of weight to floor through many small wheels, instead of a few large wheels, for ease of operation.
- Simple construction, minimum moving parts.
- Approval of California Division of Architecture as meeting structural requirements for direct load and earthquake resistance.

Before you buy or specify gymnasium seating, get the facts on Safway telescoping seats. Our experienced engineers will provide detailed recommendations on request. Write for Bulletin 165X.

SW-68

SAFWAY®

SAFWAY STEEL PRODUCTS, INC. / 6228 W. State St., Milwaukee 13, Wis.

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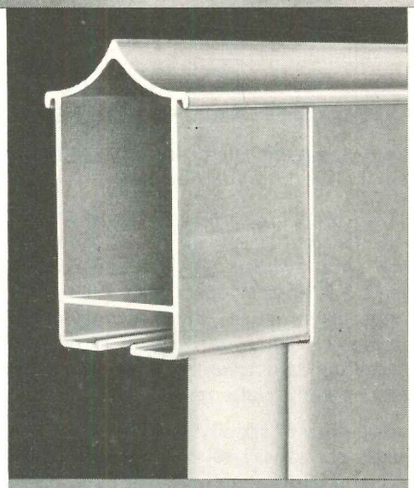
Pat. Pending



SPECIFY **WEIS**

HENRY WEIS MFG. CO., ELKHART, INDIANA

New Anti-Grip headrail discourages gymnasts — adds strength

A quick glance at the illustration of this new Weis headrail and you can almost "feel" the uncomfortable grip that awaits the youngster who has planned some extra-curricular gymnastics—a dangerous prank, common in public toilet rooms. Integral protective channels in the one piece extruded aluminum headrail cover the top edges of the stile to add greater strength, safety and improved appearance.

Prefabricated, Prefinished Products for the Building Industry

Weis belongs where toilet compartments really take a beating

STRIPLINE

DISTINCTIVE AIR DIFFUSERS

Stripline extruded aluminum slot-type air diffusers are designed to blend in perfectly with the decor. They are made with separate plaster frames and removable diffusing cores. Stripline is easy to install in sections or as a continuous unit. **No mounting screws on face of unit... surface unmarred.**

Stripline can be located in walls... ceilings... coves ...moulds... window sills and the air mixing vanes in the diffusing cores assure draftless air distribution regardless of location or length of unit.

You should have the Stripline catalog.
Write for your copy today.

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

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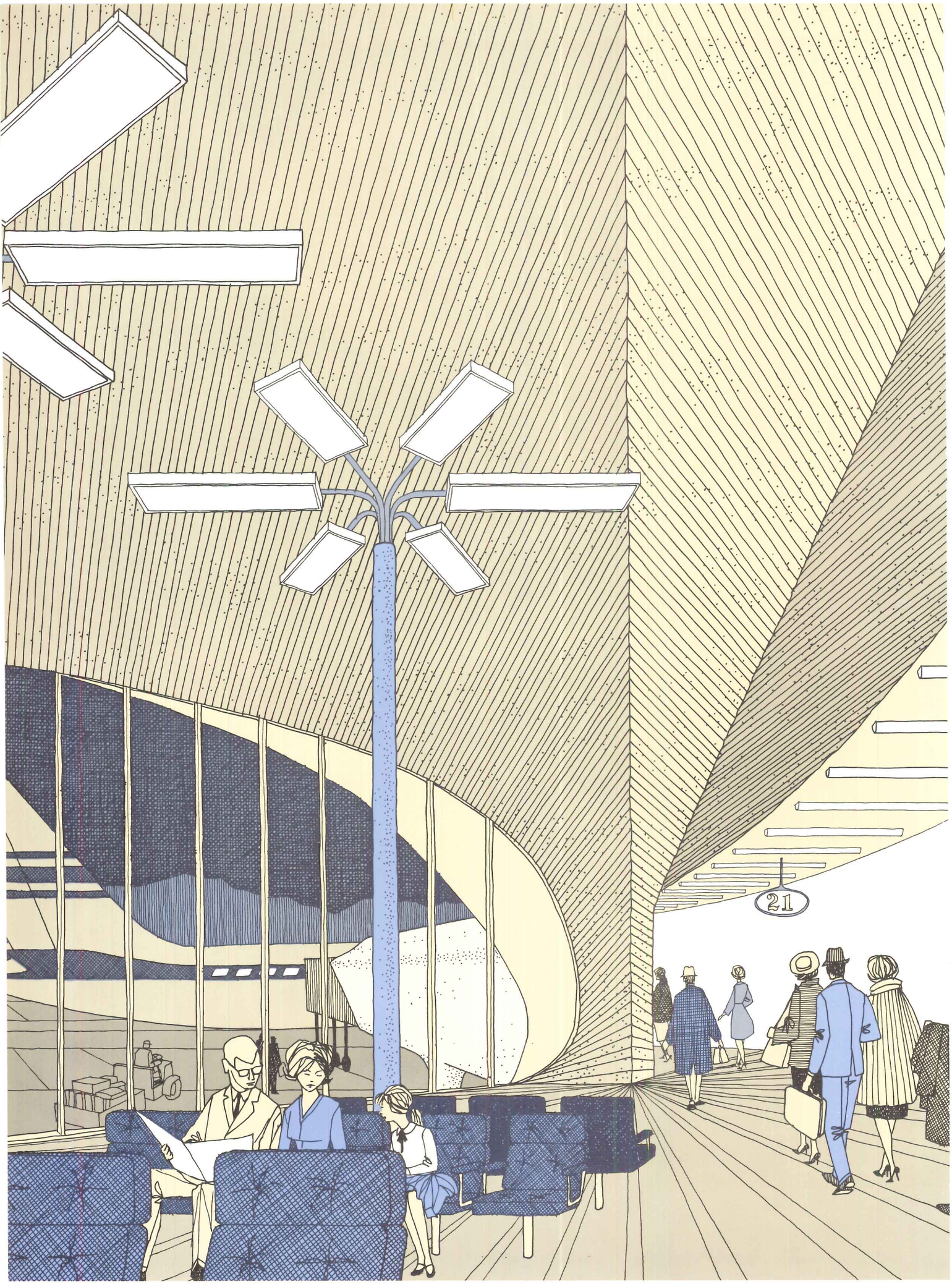


Airport terminal and loading passage. Drawing by Angelikis and Bailly, A.I.A.

EVOCATIVE IDEAS ON THE VISUAL ENVIRONMENT / NO. 3

The use of shell structures spanning great spaces poses particular illumination problems. From Sunbeam Lighting, some thoughts on the special needs... and some new application possibilties.

LIGHT IN BIG SPACES...AND LIGHT THAT GOES PLACES

The use of large shell structures to span great spaces offers many structural and design advantages and creates a multitude of new challenges. One of the most important: how to meet the many different lighting requirements of the resulting area and maintain the spatial effect that has been created.

The airport terminal concept shown at left illustrates one basic solution: separating the lighting fixtures completely from the ceiling structure. In this case, the architect has employed structural elements—or light standards—to provide the proper illumination and atmosphere for a passenger waiting area. (We hasten to add that Sunbeam Lighting does not produce the structural elements. We do offer a broad range of fixtures—and a broader range of diffusing elements—that could be used in this manner.)

While the light created in the waiting area says "sit down and relax," the light for the boarding passage that leads away from the area must serve an entirely different purpose. Here the illumination must lead the passenger forward as well as lighting his path. There is also a requirement for spatial integration with the sculptured ceiling form. All this has been achieved by the use of a plastic shielded single-lamp luminaires that yield high illumination as well as a sense of direction.

Special lighting products? No, not in this instance. Simply imaginative application ideas implemented by quality components. Sometimes, it is our job to stimulate this kind of thinking; sometimes to implement it. Always it is part of our function to develop new products that will make bold new concepts possible.

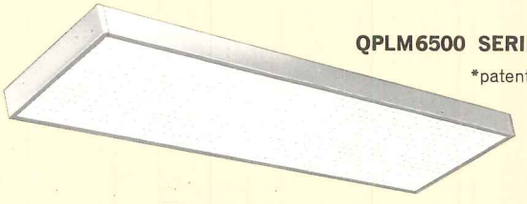
We have tried to illustrate several of these facets of our job in a new brochure that shows a selection of products in evocative visual environments. May we send you a copy?

Sunbeam Lighting Company

777 EAST 14TH PLACE, LOS ANGELES, CALIFORNIA / GARY, INDIANA / LIGHTING PRODUCTS THAT CONTRIBUTE TO IMAGINATIVE ARCHITECTURE

P2800 SERIES

A single lamp, plastic shielded commercial luminaire in a slender linear form. Excellent for corridor lighting and to create special effects where direction or linear values are important. Lengths are 24″, 48″ and 96″. Send for technical bulletin that includes photometric and application data.

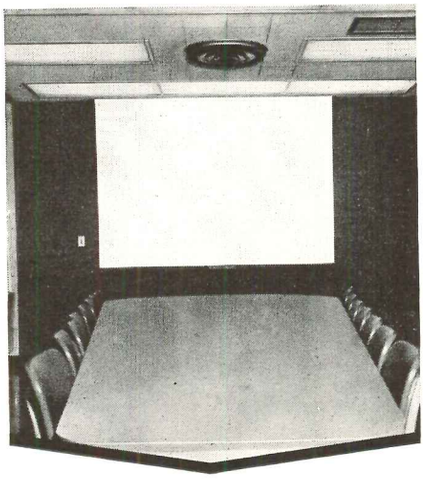


QPLM6500 SERIES*

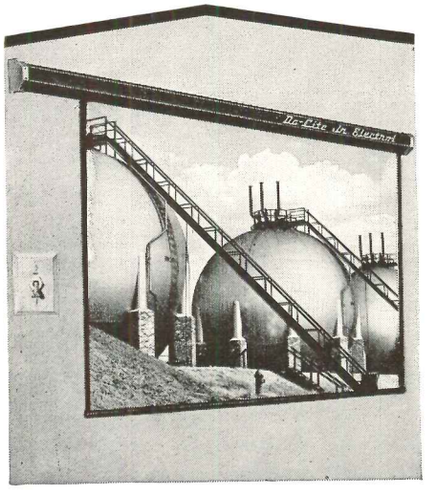
*patented

A shallow surface-mounted luminaire that features a miniature-celled plastic louver and metal sides. There are no hooks, no hinges, no visible hardware to detract from the clean, compact appearance. Two-lamp and four-lamp rapid start versions are available. Send for technical data.

they* enjoy the



BIG DIFFERENCE



because they chose
DA-LITE® SCREENS

***PERFECT CIRCLE CORPORATION** chose the convenience of an electrically operated Da-Lite Jr. Electrol® screen for its much-used conference room in the new prize-winning Rushville, Ind. plant.

For company management meetings or training sessions, a touch of a switch brings the screen down automatically into position . . . or returns it, out of sight. Local community groups, which also use this room, appreciate the unusual clarity and brilliance of projected pictures . . . the result of Da-Lite's new White Magic II Chemi-Cote beaded surface. Da-Lite electrically operated screens are available in a wide selection of sizes to fit your needs . . . can be installed on wall or ceiling or recessed in ceiling. With Da-Lite you get the Big Difference in quality—and the difference costs you nothing!

Write for specifications, prices and name of nearest Da-Lite franchised Audio-Visual Dealer.

DA-LITE SCREEN CO., INC., WARSAW, IND.

DA-LITE®

Perfection In Projection Since 1909

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ARCHITECTS AND ENGINEERS IN THE NEWS

Buckminster Fuller, Philip Johnson and **I. M. Pei** were among 12 eminent creative artists to be elected members of the National Institute of Arts and Letters, the nation's highest honor society of the arts. Formal induction is to take place at the Joint Annual Ceremonial of the National Institute and the American Academy of Arts and Letters this month.

Thorne Sherwood, F.A.I.A., partner in the Stamford, Conn. architectural firm of Sherwood, Mills and Smith, received the 1963 President's Award of the Columbia Architectural Alumni Association in February. The award is made annually to an outstanding alumnus of the School of Architecture for excellence in design, contribution to the profession and to the civic affairs of his community.

James Gamble Rogers II, partner in the firm of Rogers, Lovelock & Fritz, Winter Park, Fla., was awarded the Building Stone Institute's award for distinguished creative use of stone at the trade group's February annual convention.

Lloyd D. Knapp, recently retired Commissioner of Public Works, Milwaukee, Wis., has been named recipient of the 1962 Professional Recognition Award of the American Society of Civil Engineers. The citation read: "For his distinguished service to the engineering profession through 38 years of uninterrupted activity in behalf of the Society, for his exemplary professional conduct in gaining noteworthy achievements in the field of public works, and for his contributions to the profession through personal leadership and inspiration."

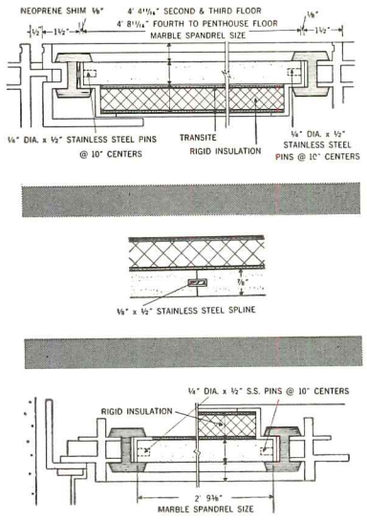
Linn Smith, F.A.I.A., architect of Birmingham, Mich., has been appointed president of the National Architectural Accrediting Board. He will serve a five year term, which began in January, 1963. Mr. Smith replaces **Albert S. Golemon.**

VERMARCO®

PANEL WALL

is a pre-assembled unitized section. Can be locked together for large panel-wall areas, or easily adapted to curtain-wall systems. On the Blair Building installation in Chicago, the architectural firm of C. F. Murphy Associates created its own special design constructed by Maul-Macotta Corp., Detroit, utilizing Vermarco Verde Antique Marble slabs finished to 7/8".

We have a large variety of 1/2" marbles suitable for panel-wall and curtain-wall installations. Any thickness over 1/2" can be supplied on order. For information, contact our nearest branch office or write: Vermont Marble Company, Proctor, Vermont.



VERMONT MARBLE CO.

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PROVED IN USE ON CHICAGO'S "MAGNIFICENT MILE"...

Architects: C. F. Murphy Associates

VERMARCO®

PANEL WALLS

The Blair Building is a striking addition to Chicago's North Michigan Boulevard. Spandrels faced in Vermarco Verde Antique® Marble provide the distinctive feature of this building.

Only 2" thick overall, these panels are made from an insulated core which is sandwiched between two asbestos cement sheets, then bonded to the marble slab. The unit is held in an aluminum frame by a vinyl weather-stop/expansion seal.

These space-saving walls have proved their utility through Chicago's summer heat and winter winds. And the beauty of this care-free Vermarco Marble will last the life of the building.

MARKWA®

MARKWA *thin* MARBLE TILE

As displayed at the Owens-Corning Fiberglas Center, New York City, in a Jane Ashley, A.I.D., interior. MARKWA is available in 15 colors, all ½" thick, high gloss or satin finish, 8" x 8", 8" x 12" and 12" x 12" size tiles, with matching trim, caps and corners.

VERMARCO®

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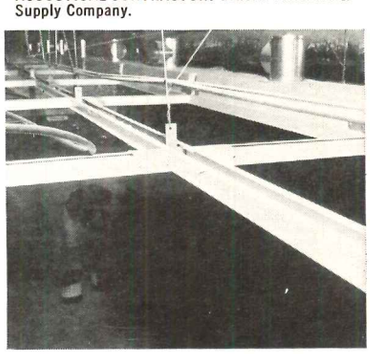
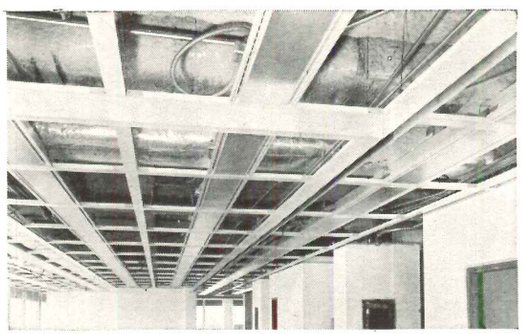
SECURITEE PAN SYSTEM SCORES AGAIN— CHOSEN FOR TOP SPOT IN INDIANAPOLIS

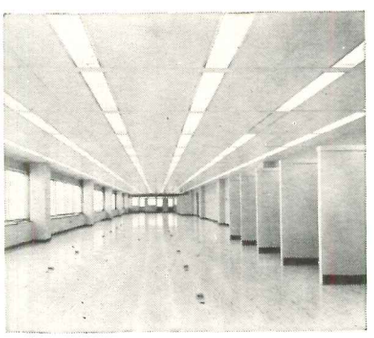
CITY-COUNTY BUILDING, Indianapolis, Ind.
ARCHITECT: Allied Architects & Engineers of Indianapolis, Inc.
GENERAL CONTRACTOR: Huber, Hunt & Nichols, Inc.
ACOUSTICAL CONTRACTOR: General Asbestos & Supply Company.



A specially designed direct hanging clip spaced 4′ 6″ on center supports the suspension system, including light fixtures.



Ceiling construction is made up of 4′ 6″ x 4′ 6″ module. Main runner pans 3½″ x 13′ 6″ length, cross pans 3½″ x 4′ 2½″ lengths.* (Partition ceiling channels are also attached to this assembly).



Modular design is easily and perfectly maintained in all areas. Installation made efficiently and economically.

More than 400,000 square feet of new ceiling in the $28,000,000 Indianapolis City-County Building is installed on W. J. Haertel's **SECURITEE PAN SYSTEM.**

Approved by both architect and acoustical contractor, **SECURITEE PAN SYSTEM** combines strength of main runners and cross pans to afford a true and level intersection at all points, even though more than normal weight loads are applied.

*Securitee SYSTEMS

*Can be furnished in any pan width 2″ to 6¾″, depending on the special modular requirements.

*T. M. REG. U. S. PAT. OFF.

For more information about this and other **SECURITEE SYSTEMS,** write . . .

W. J. HAERTEL & CO.
1932 15th Avenue, Melrose Park, Illinois
Phone FI 5-7995

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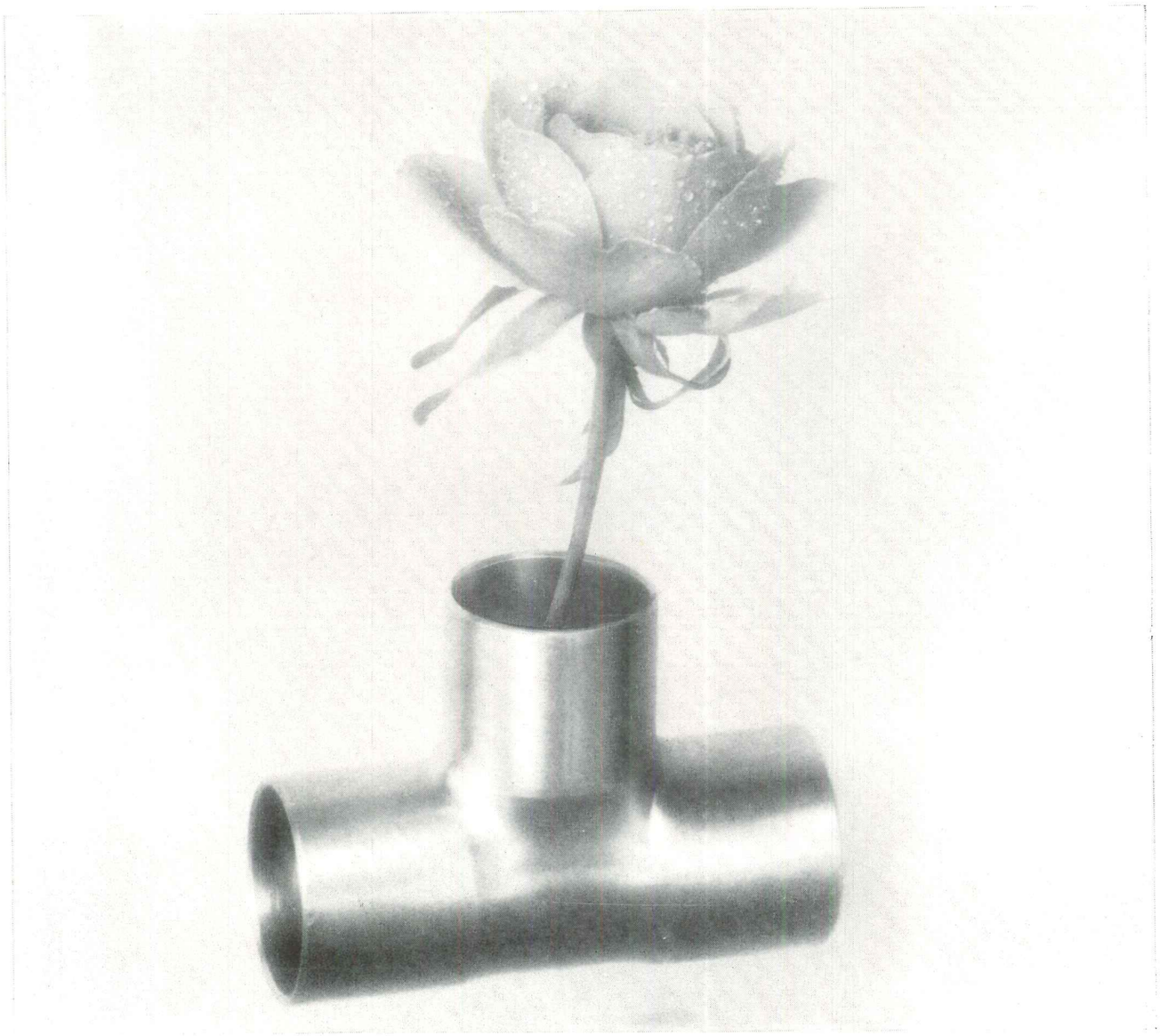
Award winner

That's what "Industrial Design Magazine" said when they cited our Viscount 65 lounge seating as "the best of the year's Product Design in the Multiple Seating Furniture Field." You will, too. Because of a new kind of base that actually flexes, you can curve it, bend it, twist it, or make it run arrow-straight. No more dead space. Just lots of comfortable chairs for people to sit on. Imaginative! Find your Royalmetal dealer in the Yellow Pages, or write Royalmetal Corporation, Dept. 10-E, One Park Avenue, New York 16, New York.

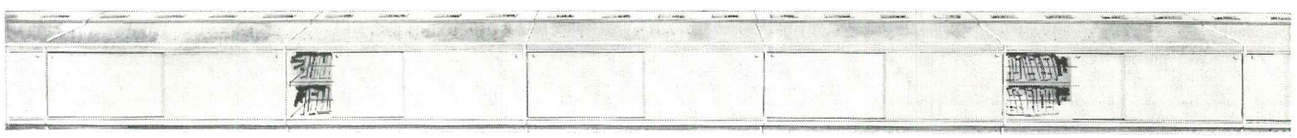
ROYALMETAL®



Freshest thing in mixing valves!

This simple tee weaves comfort into nature's freshness. Small, uncomplicated, it outperforms more costly mixing valves,. quietly and automatically, in the Lennox Hydronic COMFORT CURTAIN®. This tee operates in the secondary unit, mixing primary water (hot or chilled) with water recirculating through the coil. Its record: unmatched perfection! This system offers many benefits: lower power needs, smaller primary pumps, higher efficiency. Want more information on the pre-piped, pre-wired, pre-packaged COMFORT CURTAIN System for school classrooms? Write for information on "The Freshest Story Ever Told". Address: LENNOX, 43 S. 12th Avenue, Marshalltown, Iowa.

LENNOX *Comfort Curtain®*



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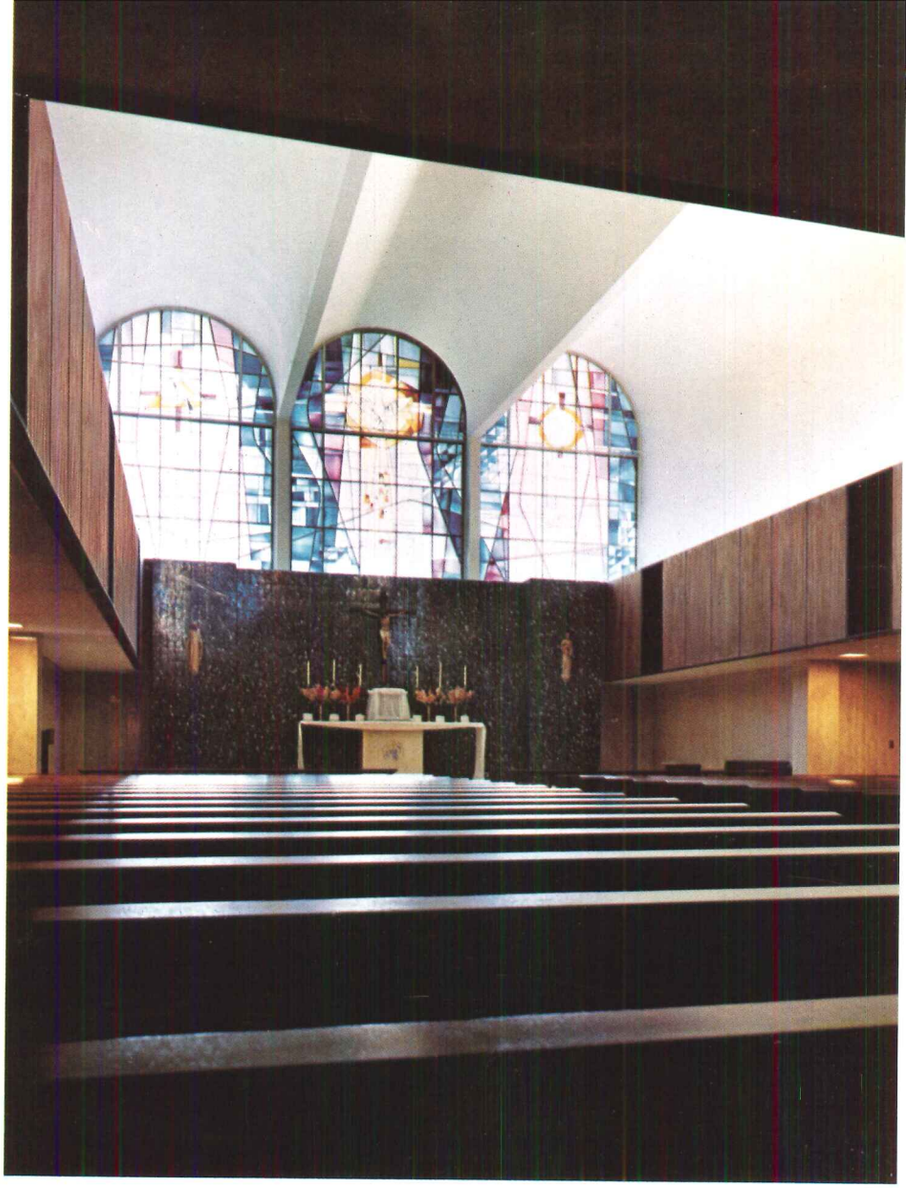
In Ohio, architects specify Pratt & Lambert

They know they can depend on P&L paints and varnishes.

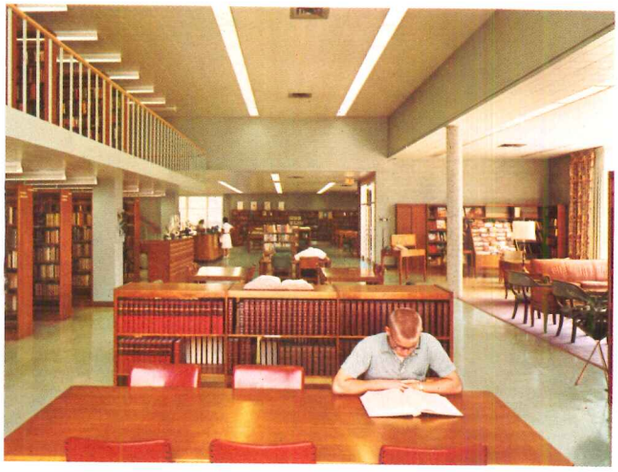
Some of the fine buildings in Ohio recently finished with P&L products, are shown here. In each case, the architect specified Pratt & Lambert and saw to it that P&L products were used.

Insistence on quality . . . the wide range of exclusive P&L Calibrated Colors® . . . the "tools" furnished to make an architect's work easier . . . and the dependability of their products make Pratt & Lambert a favorite among architects everywhere.

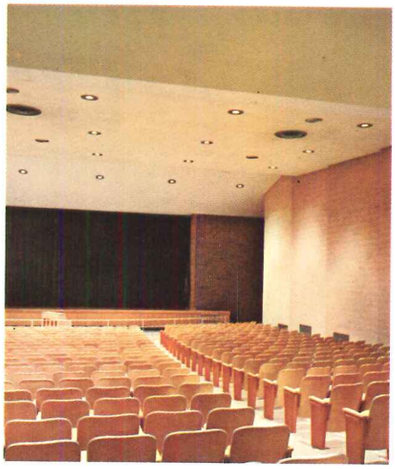
Rely on your P&L representative. You'll find his knowledge and experience on all types of finishing problems invaluable. Ask him about surface preparation, new products, specifications, colors. You can depend on him to recommend the right finishes for maximum protection and service. Phone him or write: Pratt & Lambert Architectural Service Department, 3301 38th Ave., Long Island City, 1, N. Y.; 4900 S. Kilbourn Ave., Chicago 32, Ill.; 75 Tonawanda St., Buffalo 7, N. Y.; 254 Courtwright St., Fort Erie, Ontario.



CHAPEL, DIVINE WORD SEMINARY, Perrysburg. Architects, Munger Munger and Associates. P & L products used are Vapex Wall Primer, Lyt-all Double Duty Primer, Lyt-all Flowing Flat, Okene Preservative and Wood Stain.



AMOS MEMORIAL PUBLIC LIBRARY, Sidney. Architects, Freytag and Freytag. P & L products used are Lyt-all Double Duty Primer, Lyt-all Flowing Flat, Primafil and Solidex.



AUDITORIUM, SIDNEY HIGH SCHOOL, Sidney. Architects, Freytag and Freytag. P&L products used are Primafil, Solidex, Lyt-all Double Duty Primer and Lyt-all Flowing Flat.

LOUNGE, FLOWER HOSPITAL, Toledo. Architects, Richards, Bauer & Moorhead. P&L products used are Vapex Wall Primer and Lyt-all Flowing Flat.

■ OTHER BUILDINGS RECENTLY COLOR-STYLED WITH PRATT & LAMBERT PAINT AND VARNISH INCLUDE:

RESIDENTIAL CENTER FOR WOMEN, BOWLING GREEN STATE UNIVERSITY, Bowling Green. Architects, Munger Munger and Associates.

WILSON MEMORIAL HOSPITAL, Sidney. Architects, Freytag and Freytag.

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A world of

SECURITY

The trim, modern lines of this Ambassador mortise lock are fully matched by Lockwood's built-in rugged security and trouble free performance.

No holes mar the escutcheon plate which conceals the screw attachment underneath. Every inch of the Ambassador spells life-time appeal and dependable service, which explains why Lockwood makes the world's finest mortise lock.

Lockwood Ambassador Design Mortise Lock

LOCK UP WITH LOCKWOOD

LOCKWOOD

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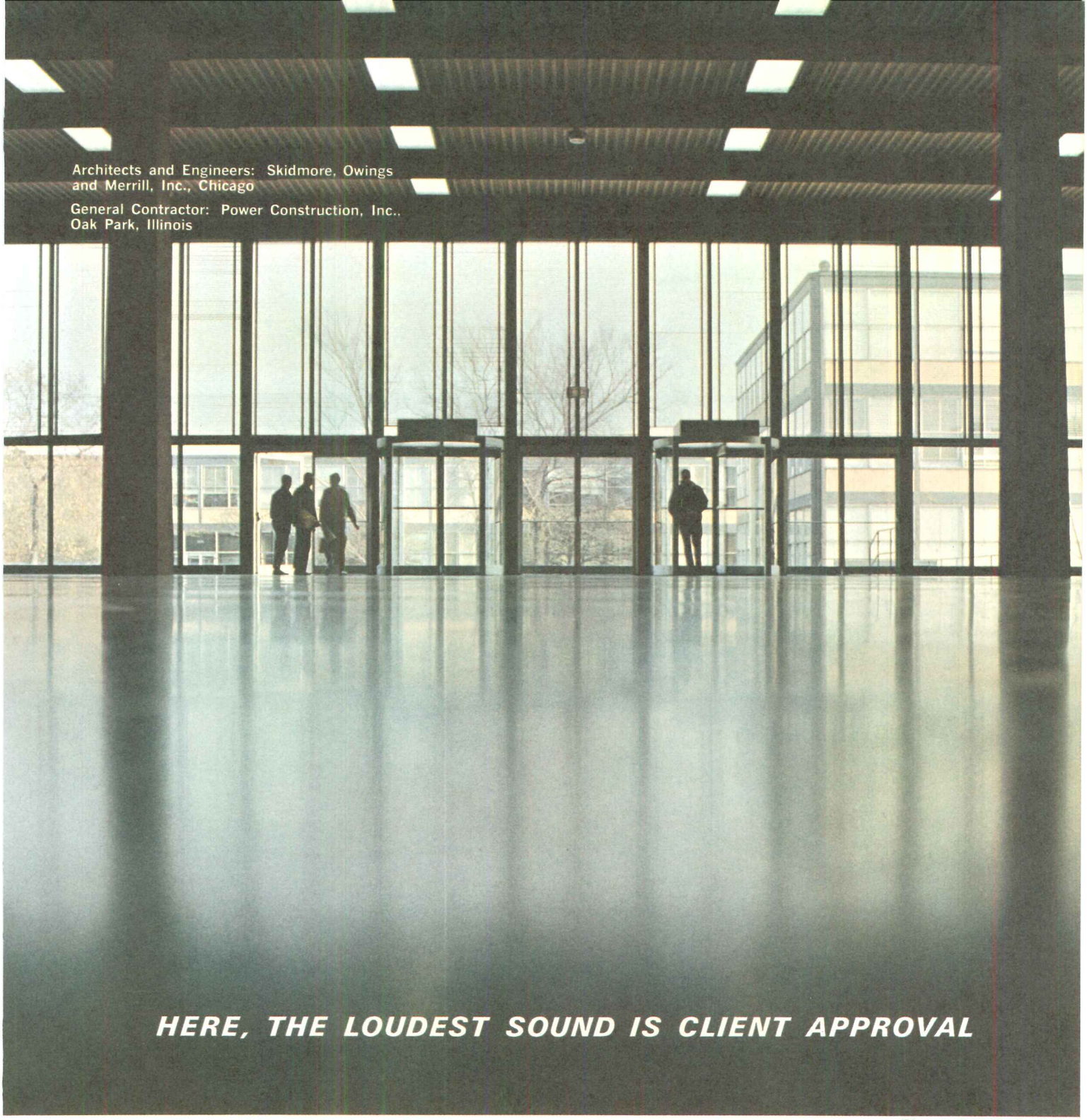

(Photo by Hedrich-Blessing)

Inland Acoustideck® aids acoustical control in campus center **The column-free main floor of Hermann Hall at Illinois Institute of Technology, Chicago, houses an auditorium, ballroom, dining rooms, various lounges, and building manager's office. ■ Here, Skidmore, Owings, and Merrill uses Inland Acoustideck as a combination steel roof deck and exposed acoustical ceiling with a noise reduction coefficient of .70. The Acoustideck spans purlins hung from 96′ plater girders at 8′ intervals. ■ The underside of the Acoustideck exposed as a ceiling is painted white. As a new Inland exclusive, all Acoustideck is delivered to a job-site painted on both sides with Inland's new two-coat primer*. Acoustideck is part of a complete line of Inland roof systems. See Sweet's, section 2i/Inl. Or write for catalog 248.**

**Inland's new primer provides superior protection through phosphate coating followed by carefully controlled application of an undercoat of baked epoxy-based paint and exposed coat of alkyd-melamine enamel. Details upon request.*

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EP-26

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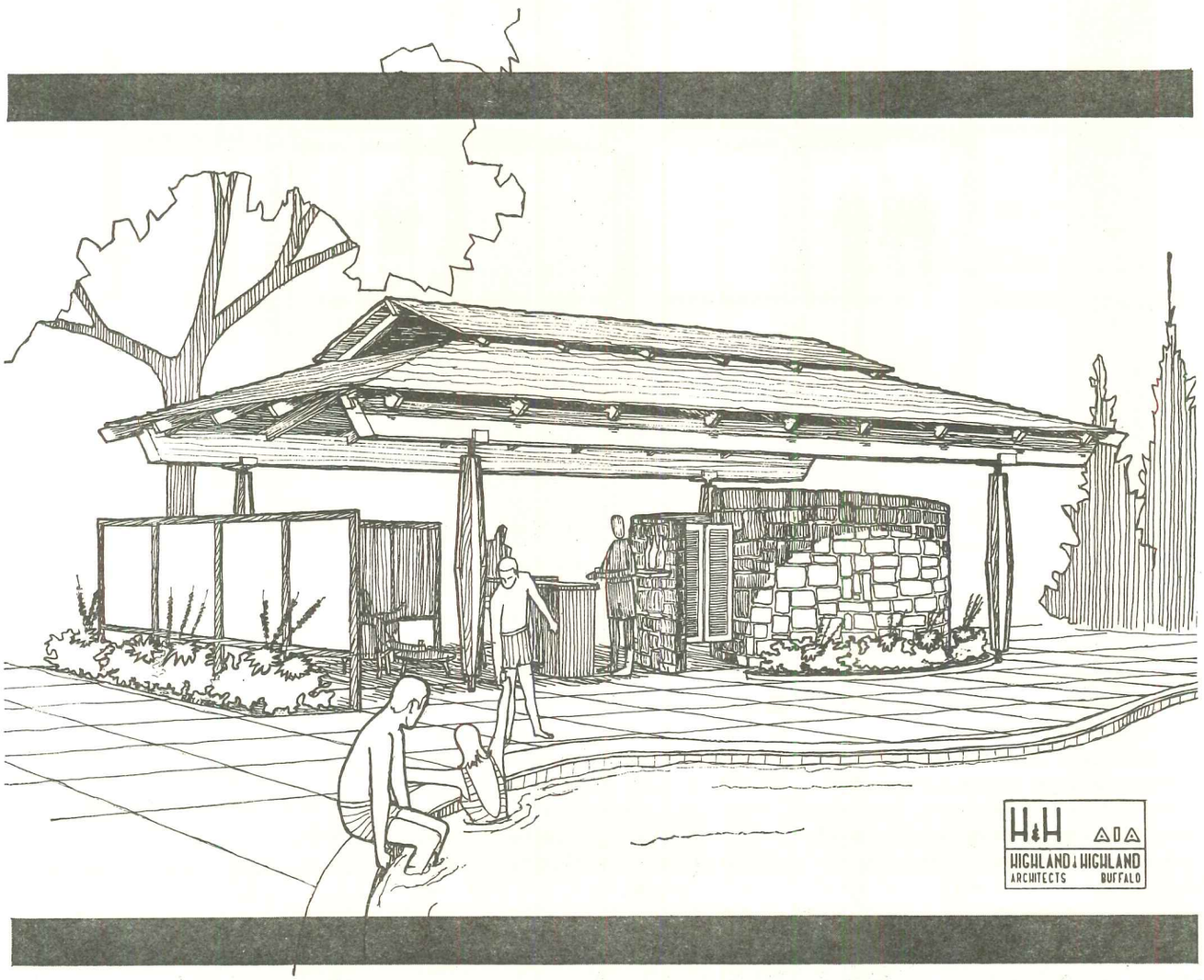
DESIGN INSPIRATIONS NO. 11 *USING OSMOSE TREATED WOOD*

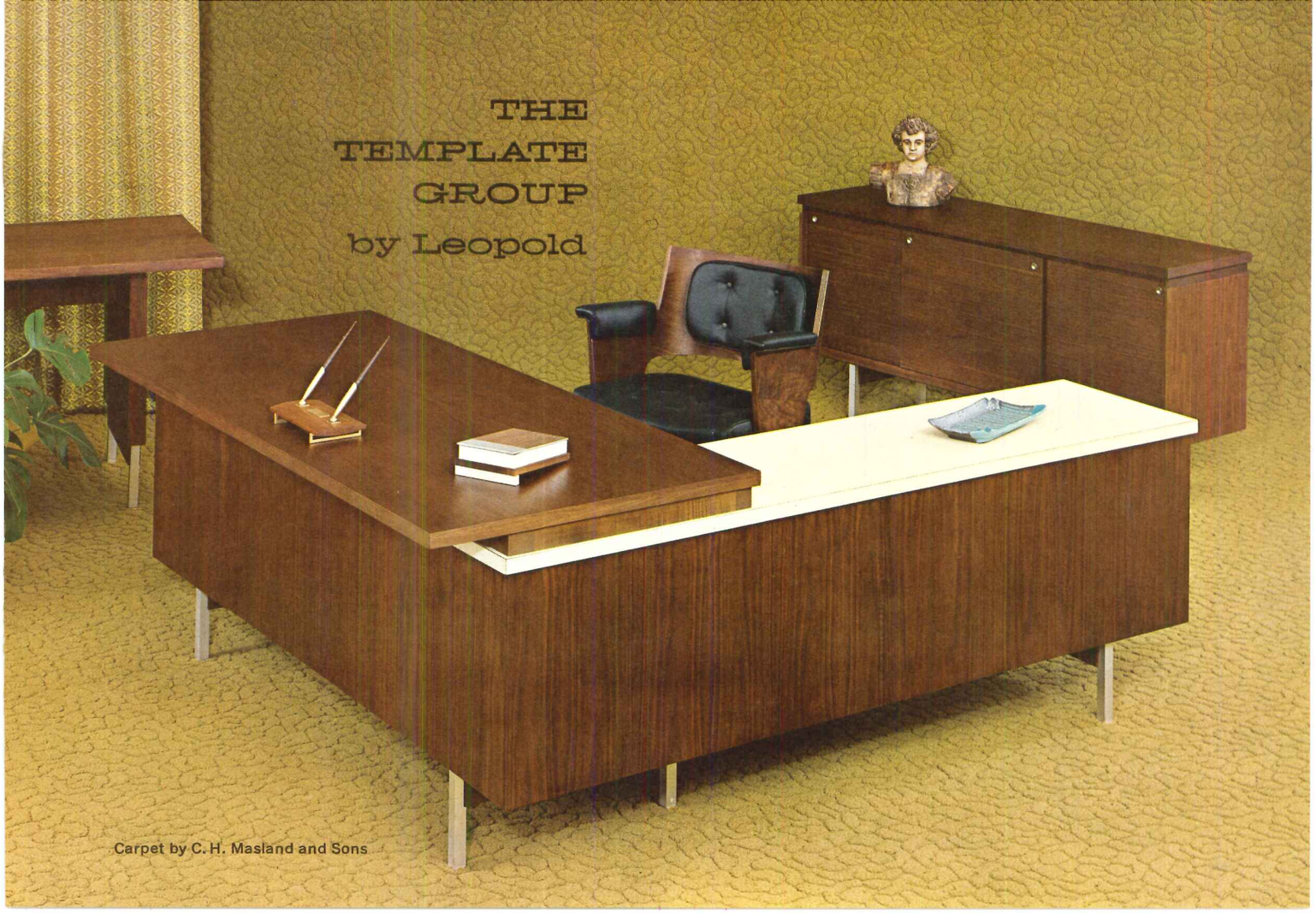


THE POOL-SIDE CABANA

Wood serves a double function in the design of this airy pool-side cabana. The unusual "ventilated umbrella" construction was used to take advantage of wood's structural strength and at the same time create a pleasing effect on a limited budget. Note the unique roof-on-roof design. It acts as nature's own air conditioner to force cooling updrafts even on the most sultry days. However, this freedom of design, which permits easy infiltration of foul weather as well as fair, requires an extra measure of protection . . . OSMOSE PRESSURE TREATED WOOD . . . for all roof members, plus corner posts and framing for the translucent panels. When you specify OSMOSE, you offer an inexpensive life insurance policy against decay and termites. Get the full OSMOSE story. It is presented in an informative 20 minute color movie. Write, stating desired showing date.

OSMOSE WOOD PRESERVING CO. OF AMERICA, INC., 980 ELLICOTT ST., BUFFALO 9, N.Y.

For more data, circle 65 on Inquiry Card


THE
TEMPLATE
GROUP
by Leopold
Carpet by C. H. Masland and Sons

A. The distinctive desk in the Richmond, Va. Eskimo Pie Corporation office of the General Manager has a split-level top. The laminated plastic work area is 21¾″ wide; the 15¼″ wide raised walnut surface along front of the desk is ideal for conference use.

B. The mortgage loan department of the Western National Bank, Cicero, Illinois. Desks from The Template Group were selected for both officers and secretaries.

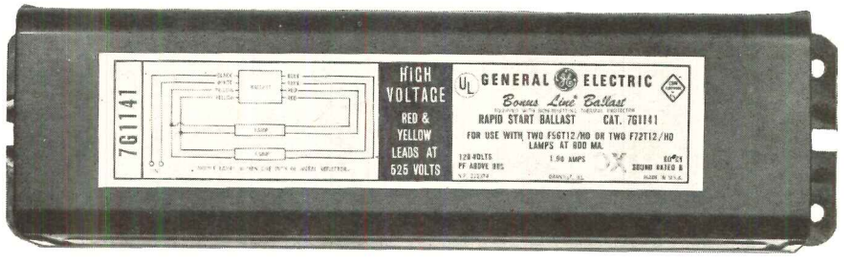
C. Executive desk with top overhang at front and sides is combined with matching closed-front cabinets in this New York office of Merrill Lynch, Pierce, Fenner & Smith, Inc.

Available in natural oil or DuPont "DULUX"® finish; Textolite tops, too. Write on your letterhead for brochure.

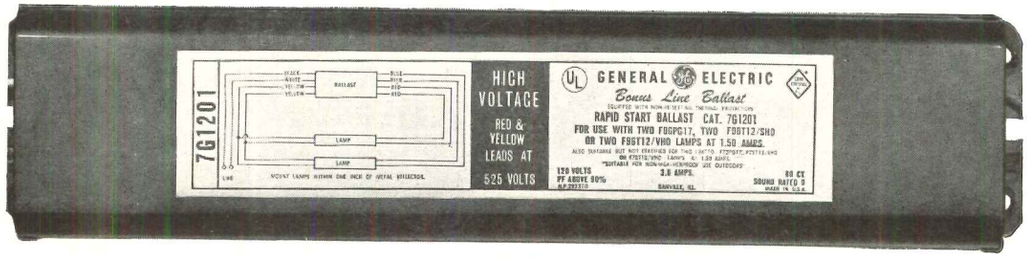
THE TEMPLATE GROUP

by The Leopold Company
Burlington, Iowa

Accent on VALUE



NEW GENERAL ELECTRIC 800-MA BALLAST



NEW GENERAL ELECTRIC 1500-MA BALLAST

the quiet, reliable ones

(they're money savers, too)

New application opportunities

A major breakthrough in materials technology has enabled General Electric to reduce sound levels and improve the reliability and efficiency of Bonus Line® ballasts for 800- and 1500-ma lamps.

Result: new application opportunities and reduced operating costs for higher lighting levels in industrial, commercial, and institutional buildings.

Introduction of these new 800- and 1500-ma ballasts follows General Electric's development of a new, improved insulation system which permits use of precision-wound coils . . . reducing core and coil size . . . and losses . . . and sound levels . . . and weight.

Lower sound levels

Sound output has been substantially reduced, making these the quietest 800- and 1500-ma ballasts ever designed by General Electric.

In classrooms, conference rooms, even private offices—where critical sound requirements previously dictated use of lamps with lower light output—new G-E Bonus Line ballasts for 800- and 1500-ma lamps now make it possible to achieve higher lighting levels with no change in audible sound levels.

Greater reliability

Accelerated life tests indicate up to four times greater reliability during the normal applied life of new G-E 800- and 1500-ma ballasts.

Major reason for this greater reliability: increased insulation dielectric strength and improved thermal stability.

Result: users benefit from longer ballast life and greatly reduced replacement costs.

Lower operating costs

Reduction of ballast core-and-coil size and a new circuit have reduced ballast losses by as much as 10 watts per unit.

Minimum power savings are estimated at $480 per year,* unmatched by comparable ballasts for total performance.

Efficiency is up, and operating costs are down.

Bonus Line features

Part of the Bonus Line family, these new 800- and 1500-ma ballasts contain an internal, non-resetting protection system designed to prevent smoking and leaking at end of product life . . . and an improved power capacitor with longer life proven in service.

Be sure to include these new products in your next lighting job. For further information, send the coupon below for our bulletin describing these new ballasts in detail.

* Based on typical installation of 500 ballasts, operating 16 hours per day, 6 days a week, 50 weeks a year, @ average 2¢/kwh.

Section B403-07
General Electric Company
1430 East Fairchild Street
Danville, Illinois

☐ Please send bulletin GEA-7364, describing your new Bonus Line ballast models for 800- and 1500-ma lamps.

Name_____
Firm_____
Street_____
City_____ Zone____ State_____

Progress Is Our Most Important Product

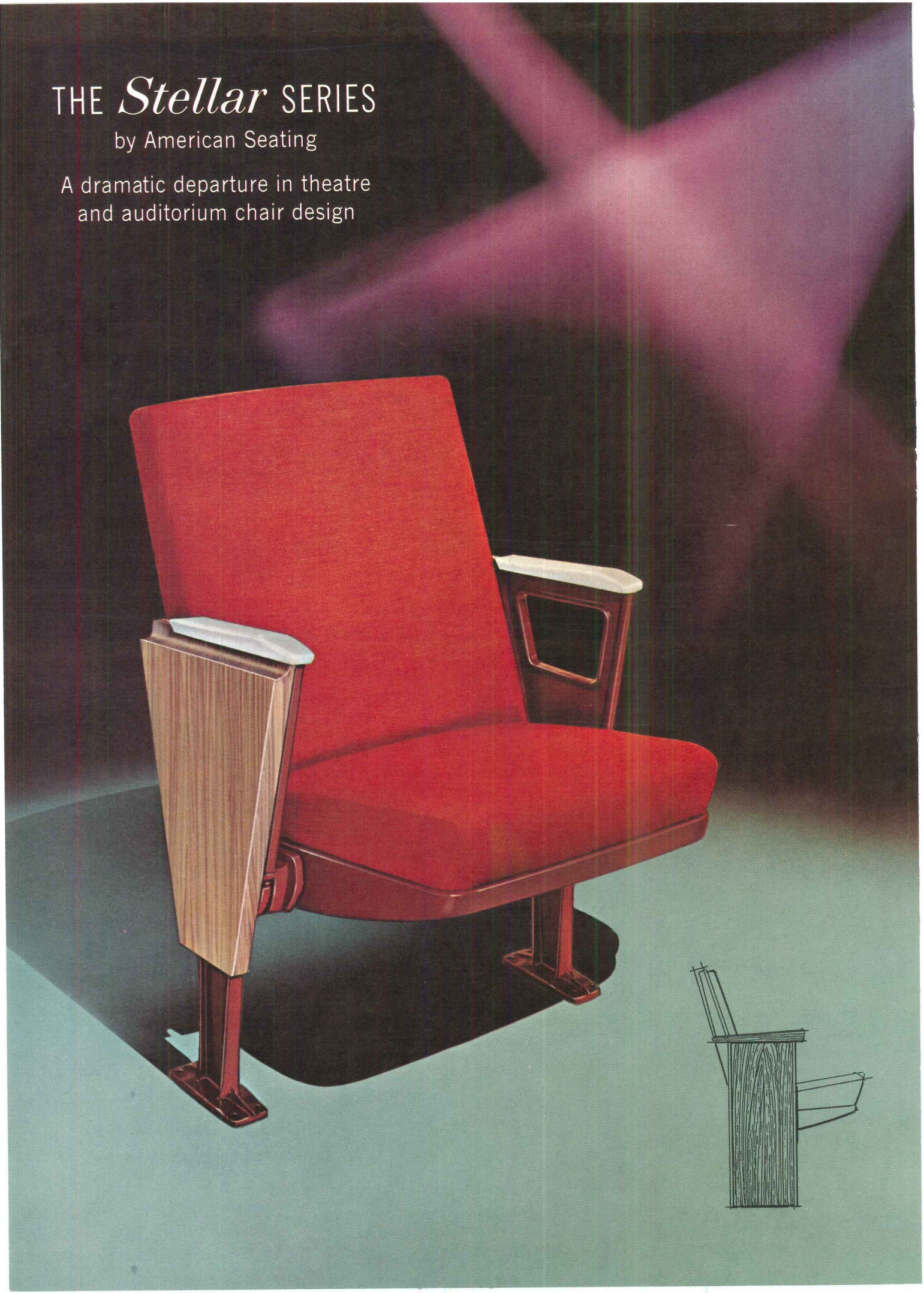
GENERAL ELECTRIC

For more data, circle 67 on Inquiry Card

THE *Stellar* SERIES

by American Seating

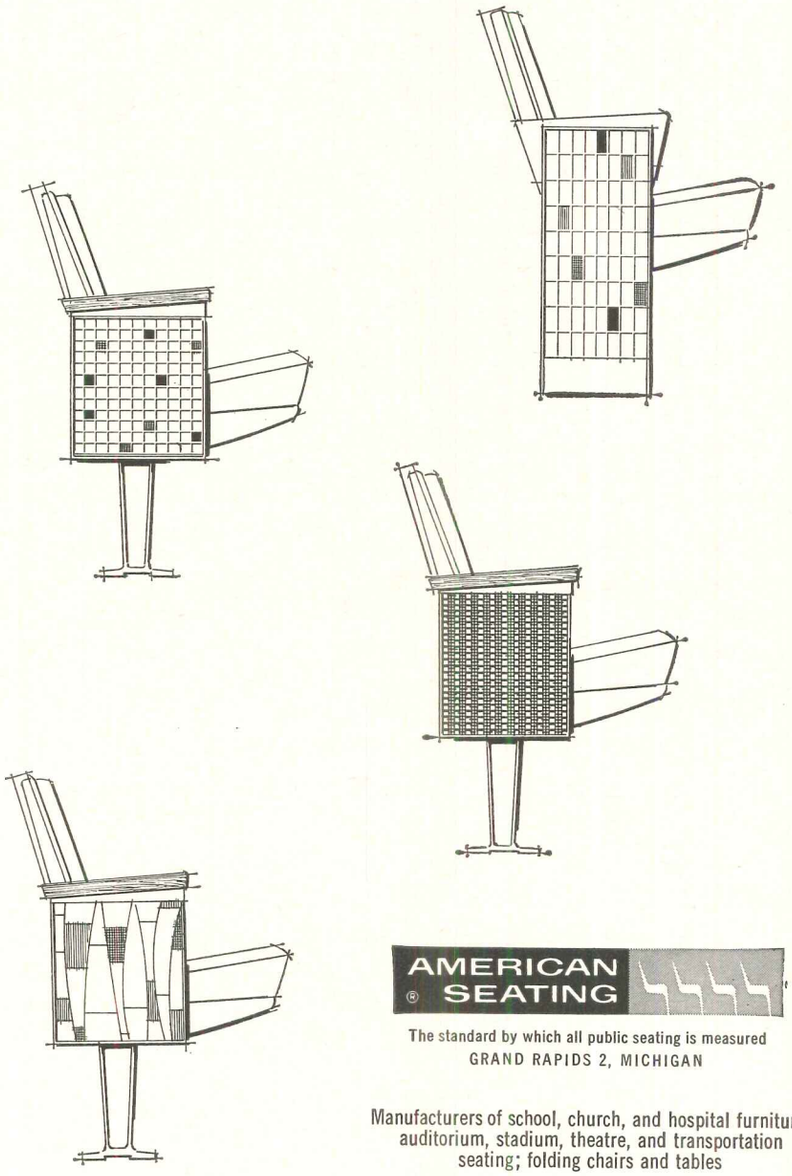
A dramatic departure in theatre
and auditorium chair design



The look is new

The idea is new

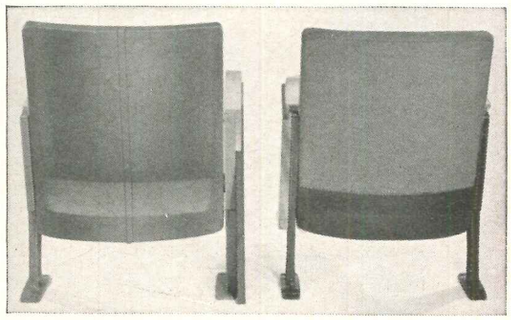
You select every element of the design



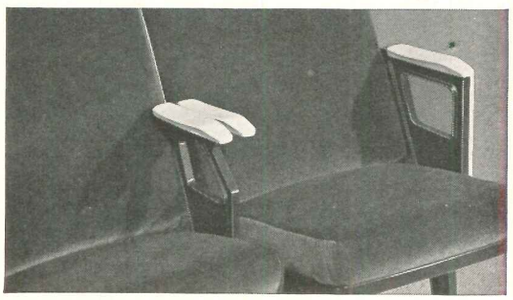
Colors, textures, shapes, sizes—you can work with them all. The Stellar Series by American Seating gives you free hand with fabrics, a wide choice of aisle standards. You can select from several widths and styles of seat and back, several types of mounting.

The idea? To make theatre seating an integral part of theatre design. The key to it is choice—and the Stellar Series is the first and only chair to offer you choice of every element of design.

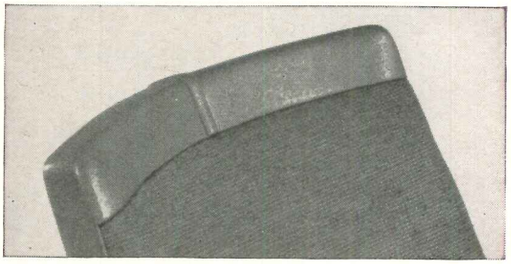
Talk to American Seating about any problem involving seating. Technical advice on floor plans, vision, chair spacing economies, and other subjects is available at all times. *Write Dept. AR-1 for brochure on new Stellar Series.*



The Stellar chair has a very long back to protect the seat from feet. There are three variations of the Amerflex® plastic back (left), and two of the upholstered back (right).



Single or double armrests are available. You may choose either type.



Exclusive Soil-Guard (optional) protects the upholstery at the top of the chair back.

AMERICAN SEATING®

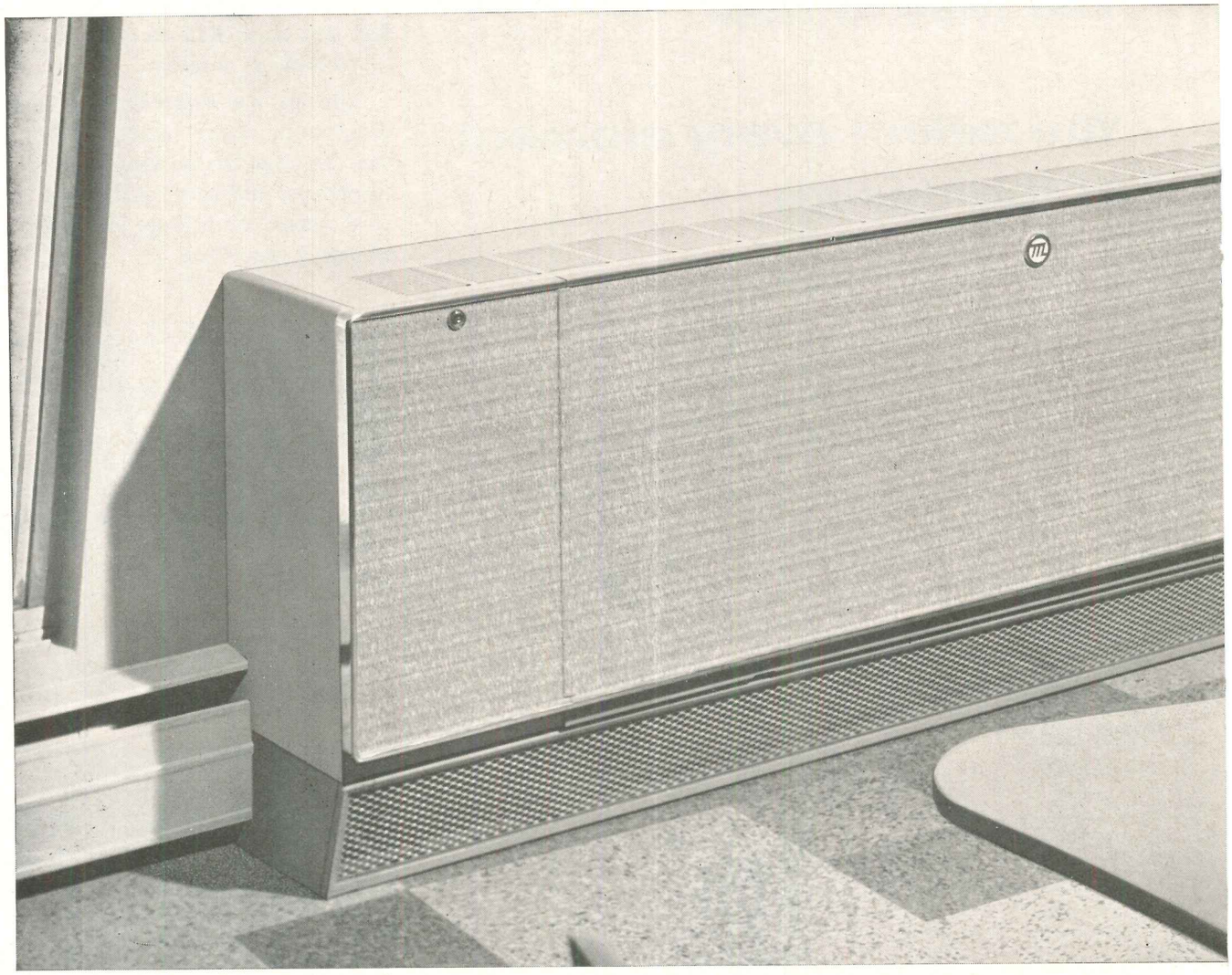
The standard by which all public seating is measured

GRAND RAPIDS 2, MICHIGAN

Manufacturers of school, church, and hospital furniture; auditorium, stadium, theatre, and transportation seating; folding chairs and tables

For more data, circle 68 on Inquiry Card

another new school chooses Modine

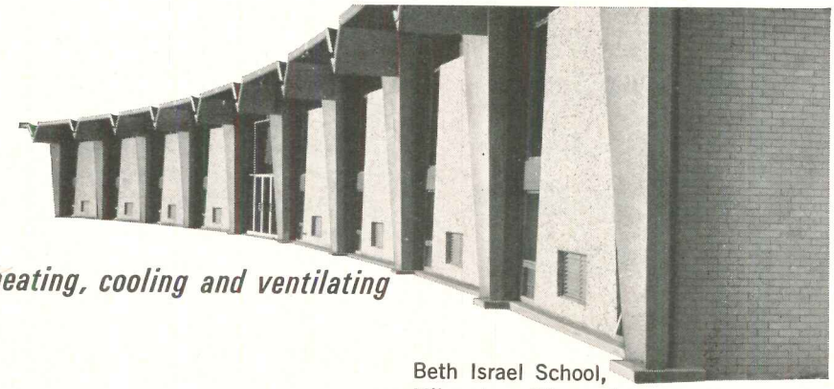


school-vent's roll call is growing fast!

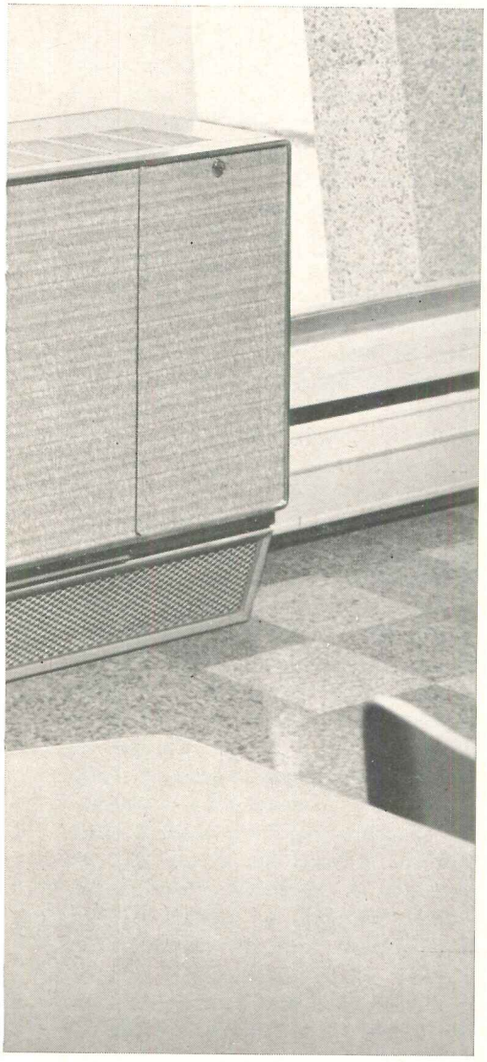
- St. Monica's School, Indianapolis, Ind.
- Carver County School, Mayer, Minn.
- Mt. Pleasant School, Racine, Wis.
- St. Stephans's School, Monona, Wis.
- Janes School, Racine, Wis.
- Riverside-Brookfield High School, Riverside, Ill.
- Erlanger School, Erlanger, Ky.
- Rolling Meadows School, Rolling Meadows, Ill.
- Carthage College, Kenosha, Wis.
- A. O. Marshall School, Joliet, Ill.
- Triton Central High School, Shelby County, Ind.
- Goodland School, Racine, Wis.
- Ringwood Elementary, Ringwood, Ill.
- Anderson College, Anderson, Ind.
- Marquette Jr. High School, Madison, Wis.
- Waterloo Township School, Indianapolis, Ind.
- Beth Israel School, Milwaukee, Wis.
- Middletown High School, Middletown, Ind.
- Harlem Jr. High School, Rockford, Ill.
- No. Shore County Bay School, Skokie, Ill.
- Plum Grove School, Palatine, Ill.
- Pachelle High School, Columbus, Ga.
- Marion College, Fond du Lac, Wis.
- New Cass Township School, Dugger, Ind.
- Geo. C. Marshall School, Vancouver, Wash.
- Grand Rapids School, Grand Rapids, Minn.
- Lake Shore Elementary, Vancouver, Wash.
- Glendale Jr. High School, Salt Lake City, Utah
- Lakeview Elementary, Lakeside, Cal.
- Washington Township School, Westwood, N.J.
- San Jacinto College, Houston, Texas
- Brooklyn School, Portland, Ore.
- Olivet Community School, Olivet, Mich.
- Hamilton School, Salt Lake City, Utah
- W. Lamar High School, Houston, Texas
- East High School, Bremerton, Wash.
- Cross Lutheran School, Pigeon, Mich.
- Arcadia Elementary School, Olympia Fields, Ill.
- Washington Elementary School, Westfield, Ind.
- Florence State College, Florence, Ala.
- North High School, Vancouver, Wash.
- Mitchell Jr.-Sr. High School, Mitchell, Ind.
- Negro School for the Blind, Jackson, Miss.
- Mirror Lake School, Federal Way, Wash.
- Horace Mann Jr. High School, Salt Lake City, Utah
- Horlick High School, Racine, Wis.
- Dewey Intermediate School, Bremerton, Wash.
- Thelma Buffey School, Flint, Mich.
- Mississippi Delta Jr. College, Moorehead, Miss.
- Lewis & Clark College, Portland, Ore.
- Bly Elementary School, Bly, Ore.

school-vent®

UNIT VENTILATOR for heating, cooling and ventilating



Beth Israel School,
Milwaukee, Wisconsin



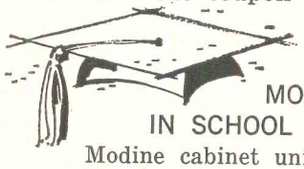
Modern schools coast-to-coast are choosing Modine SCHOOL-VENT unit ventilators. And for good reason! These units are the result of more than five years of research, engineering and testing . . . are *specifically designed* to meet specifications of architects, engineers and school officials.

SCHOOL-VENT units have a unique *air-control* system that automatically adjusts to temperature and fresh air requirements. An ideal "educational climate" is *quietly* maintained . . . summer, winter, spring and fall. Operation is economical. So is maintenance, thanks to such user benefits as pushbutton lubrication and slide-out filters.

Important too, of course, is SCHOOL-VENT's modern, attractive styling . . . together with design simplicity and installation flexibility. Units are thinner and lower than most other equipment of this type . . . 13" x 28" compared to the normal 18" x 32".

Seven handsome colors to choose from! And SCHOOL-VENT beauty is virtually student-proof. Heavily-reinforced, welded-steel cabinets defy abuse. Front panels have scuff-resistant vinyl inserts.

Modine SCHOOL-VENT unit ventilators heat with steam or hot water . . . cool with central-source chilled water. Five sizes: 500 to 1500 cfm. Bulletin 1261 has full data. Mail the coupon today!



MODINE HAS EARNED "HIGHEST GRADES" IN SCHOOL COMFORT FOR MORE THAN 30 YEARS!

Modine cabinet unit heaters, convectors and conventional unit heaters have served schools — large and small — for more than three decades. Thousands of schools throughout the country are currently enjoying the economical comfort provided by these units.

- Endicott College, Beverly Farms, Mass.
- Rehabilitation Center Ellis School, Ellisville, Miss.
- Frank White Elementary School, Park Rapids, Minn.
- Wauseon Elementary School, Wauseon, Ohio
- Union High School District #2, Franklin, Wis.
- Hebrew Teachers College, Brookline, Mass.
- Maplewood Academy, Hutchinson, Minn.
- Glenns Valley Elementary School, Marion County, Ind.
- Kempton Elementary School, Saginaw, Mich.
- Vose Elementary School, Beaverton, Ore.
- East Gate School, Ft. Rucker, Ala.
- Happy Camp School, Happy Camp, Cal.
- Perry Elementary School, Southport, Ind.
- Johnson Elementary School, London, Ky.
- Camp Ground Elementary School, London, Ky.
- Oscoda Elementary School, Oscoda, Mich.
- Walterville Grade School, Walterville, Ore.

TIL HEAT TRANSFER CREATIVE CENTER®

V-1470

MODINE MANUFACTURING COMPANY
1510 DeKoven Avenue, Racine, Wisconsin

Please send SCHOOL-VENT Bulletin 1261 ☐; also data on Modine's other school comfort equipment ☐.

Name .....

Address .....

City .....State .....

In Canada: Sarco Canada, Ltd., Toronto 8, Ontario

For more data, circle 69 on Inquiry Card

MAEKAWA, PROUVÉ, DOXIADIS GROUP WIN AWARDS FOR 1963

The International Union of Architects (U.I.A.) has announced the winners of the Auguste Perret and Sir Patrick Abercrombie Awards for 1963.

The Perret Award, "to encourage merit and activity . . . in the field of architecture and architectural technique," is conferred upon Kunio Maekawa, architect, of Japan, and Jean Prouvé, engineer, of France. The Abercrombie Award, "to encourage merit and activity . . . in town planning, criticism, education and international collaboration in professional matters," is conferred upon the planning group led by Constantin Doxiadis.

The citations read as follows: *Maekawa*—"The important contribution that Japan is now making to world architecture owes much to Maekawa's leadership and example, and he has been largely responsible for establishing the high standard of work, both practical and professional, on which this contribution depends. His own buildings have authority and distinction and have demonstrated new possibilities in the plastic expressiveness of reinforced concrete." *Prouvé*—"A constructor in the true sense of the word and a dedicated research worker, Jean Prouvé recognized very early the need to rationalize building by introducing new technical and industrial methods. He pioneered the fulfilment of this need by his invention of a great variety of building elements in metal, well suited to mass production and of a high esthetic quality. In collaboration with architects, he has always set an example of precise and fruitful teamwork." *Planning Group led by Doxiadis*—"This group of architects, economists and social and territorial planners has been responsible, and continues to be responsible, for some notable achievement in providing solutions to urgent present-day planning problems, especially those of the newly developing countries. By creating the Technological Institute in Athens the group has assisted in the training of skilled personnel equipped to tackle problems now arising in many parts of the world."

The awards will be presented at the VIIth U.I.A. Congress in Havana and Mexico City in September.

Members of the awards committee were: Sir Robert Matthew, president, R.I.B.A., president, U.I.A., Edinburgh; Professor Maté Major, president, Hungarian Union of Architects, Budapest; J. M. Richards, editor, Architectural Review, London; Professor Albert Roth, Zurich Polytechnic, editor of Werk, Zurich; Pierre Vago, secretary general, U.I.A., president, Committee of l'Architecture d'Aujourd'hui, Paris; Guilio Carlo Argan, director, Institute of Art History, University of Rome; Sven Markelius, Stockholm.

WHEN YOU SPECIFY
DUMBWAITERS
...the name to remember is
Sedgwick

Sedgwick manufactures a complete line of dumbwaiter equipment for all types of service, including — schools and institutions, hospitals and hotels, restaurants and clubs, offices and banks, residences and public buildings, factories and stores.

There are nine distinct types of Sedgwick dumbwaiters, each individually engineered and designed for capacities of 5 to 500 pounds.

When you use Sedgwick engineering (based on experience since 1893) and specify Sedgwick equipment, your clients will be assured of dumbwaiters that exactly fit the needs and will give many years of safe, dependable and trouble-free service.

Other Sedgwick Products
★ SIDEWALK ELEVATORS
★ FREIGHT WAITERS
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Nationwide Service
Sedgwick
MACHINE WORKS
142 WEST 15th STREET
NEW YORK 11, NEW YORK

See standard specifications and layouts in SWEETS 24a/Se

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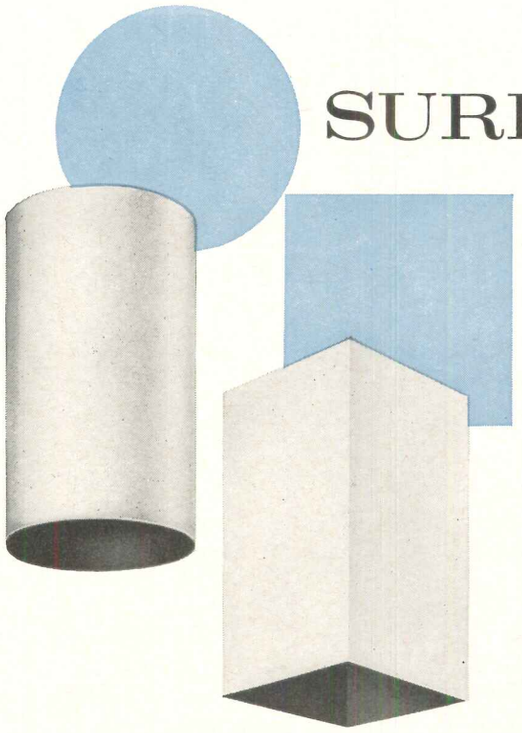
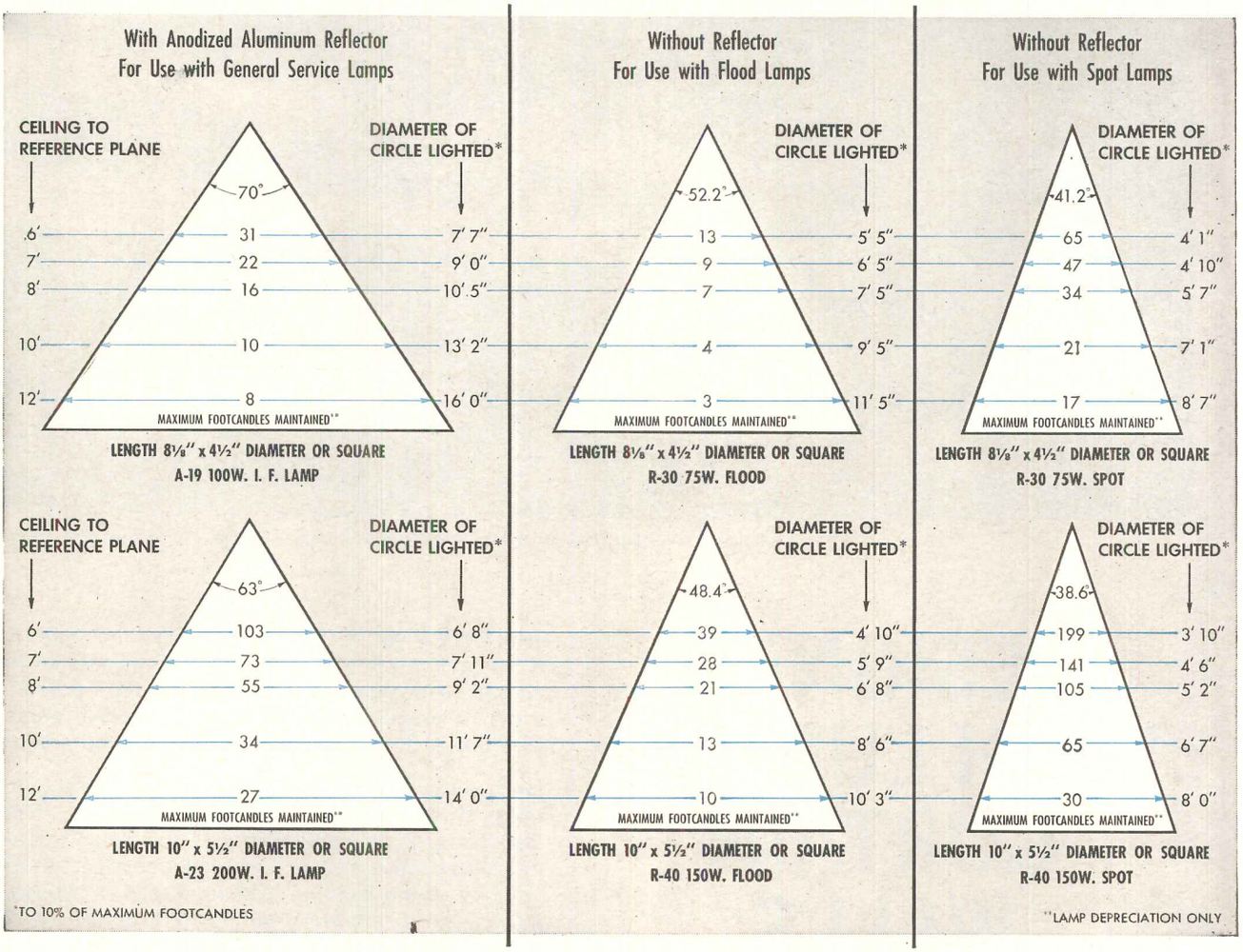


Introducing SURFACE ART FORMS TRADE MARK BY ART METAL

and the lighting they provide

- **Circular and square, both in 2 sizes.**
- **Matte black finish inside and out; or low gloss white outside and matte black finish inside.**
- **Anodized aluminum, natural or brass outside finish available on special order.**
- **With reflectors for use with economical general service lamps or without reflectors for use with floods or spots.**

Surface Art Forms have been designed for use in lobbies, reception rooms and other areas where decorative but efficient lighting units are desirable. Noteworthy is their black matte interior finish which controls brightness. We would like to send you a descriptive folder. Write to Art Metal Lighting Division, Wakefield Corporation, 1814 E. 40th Street, Cleveland 3, Ohio.

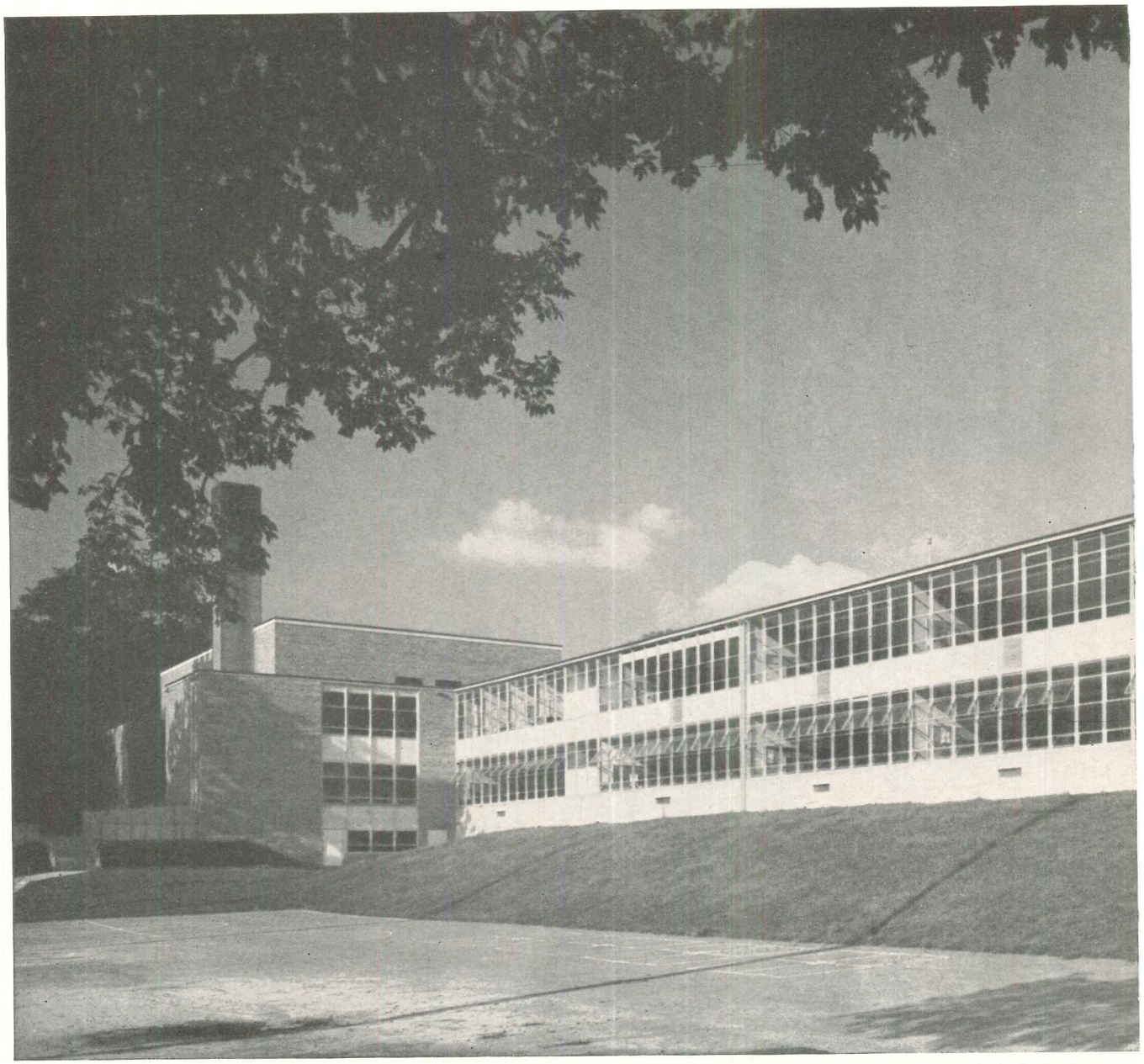


ART METAL
Lighting Division

WAKEFIELD CORPORATION
1814 E. 40th St., Cleveland 3, Ohio

In Canada, Wakefield Lighting Limited, London, Ontario

For more data, circle 71 on Inquiry Card



Whittier School, Cincinnati, Ohio. Architect & Engineer: James E. Allan, Cincinnati, Ohio. Contractor:

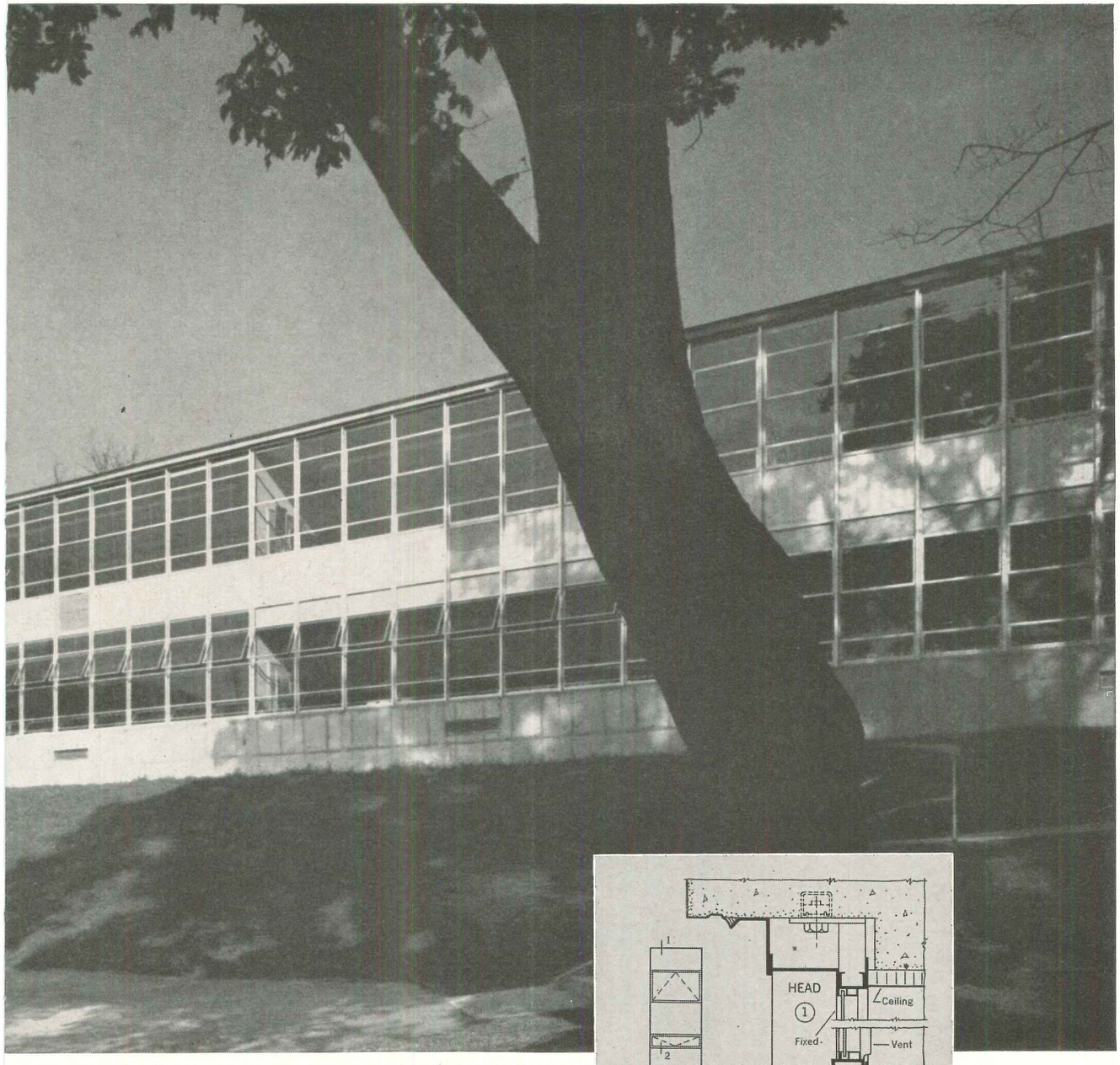
DESIGNED WITH LUPTON CURTAIN WALLS,

THIS SCHOOL WAS COMPLETED FOR JUST 15^{65} PER SQUARE FT.!

The 64,589 sq. ft. Whittier School, Cincinnati, Ohio, is an interesting example of how intelligent planning and good design can keep the modern school well within a practical budget and still provide complete comfort—including abundant sunlight and fresh air.

LUPTON aluminum curtain walls helped keep the cost of the Whittier School at a reasonable level . . . helped, also, to combine eye appeal with functional economy. And they expose, rather than hide, attractive structural features of the building. Like hundreds of schools designed with curtain walls, springing up across the country, Whittier provides a pleasant atmosphere, ideal for students and faculty.

When you plan a new school, consult with qualified building materials manufacturers. They know the practical applications of their products. The LUPTON man,

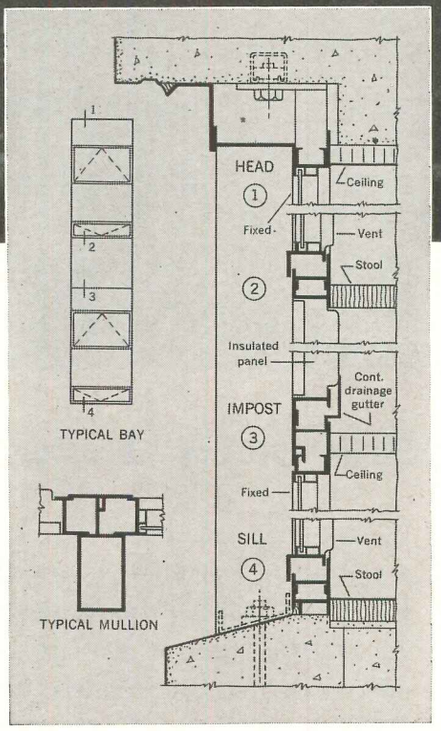


Brose Construction Co., Cincinnati, Ohio. Photograph by George Stille.

for example, can show you the possibilities of curtain wall construction and explain how LUPTON's one-source responsibility . . . from architect's design to finished installation . . . can cut costs, save time, help meet deadlines and assure final satisfaction.

For complete details, talk to your local LUPTON man or call any of the offices listed below.

Main Office and Plant: 700 E. Godfrey Avenue, Philadelphia 24, Pa. **West Coast Office and Plant:** City of Industry (Los Angeles County), California. **Sales Offices:** San Leandro, California; Oak Brook (Chicago), Illinois; New York, New York; Cleveland, Ohio; Dallas, Texas. Representatives in other principal cities.



Typical wall section with LUPTON Curtain Wall

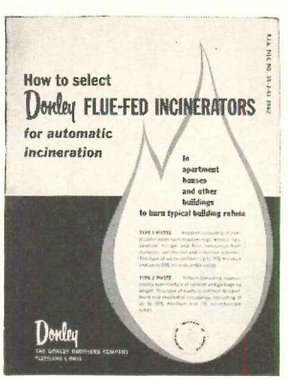
LUPTON®

MICHAEL FLYNN MANUFACTURING COMPANY

For more data, circle 72 on Inquiry Card

Some architects learn the hard way!

. . . especially when clients forget to ask for garbage and trash disposal facilities in new buildings. Let's face it! Suggesting "built-in" refuse disposal is really up to you. So let Donley put all the facts at your fingertips . . . selector charts, plans, construction details and specifications . . . for flue or direct-feed installations. Eliminate guesswork. Send for Donley's idea package today.



INCINERATOR INSTITUTE OF AMERICA MEMBER

Donley BROTHERS

SEND FOR YOUR INCINERATOR SELECTOR CHART TODAY!

THE DONLEY BROTHERS COMPANY
13972 Miles Avenue
Cleveland 5, Ohio

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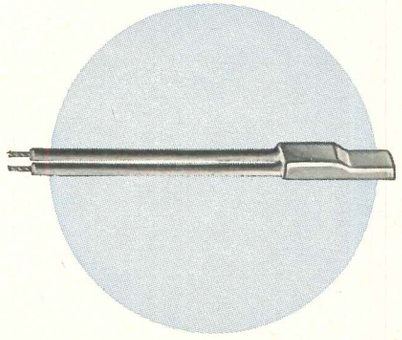
10934-DB

ADVANCE QUALITY and PERFORMANCE

MORE THAN SKIN DEEP

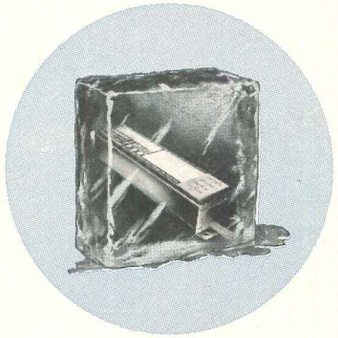
ADVAN guard®
ADDS YEARS TO BALLAST LIFE

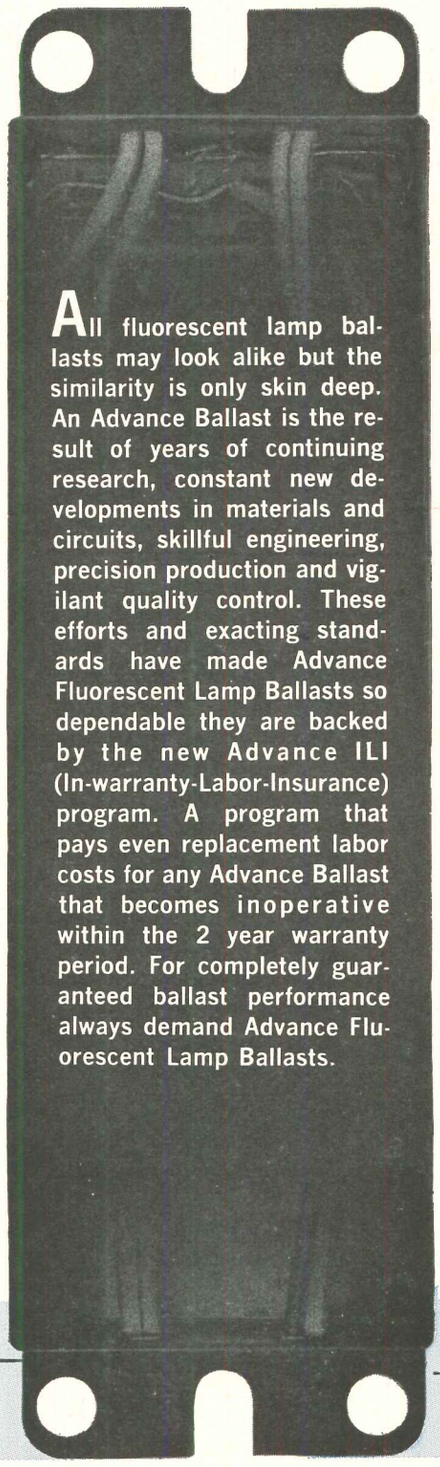
ADVAN-guard,® a built-in thermally actuated automatic resetting protective device that prevents premature destruction and adds years to ballast life.



KOOL KOIL

An exclusive Advance design. Kool Koil Ballasts operate 15° to 20° cooler and provide up to 15% more light output.

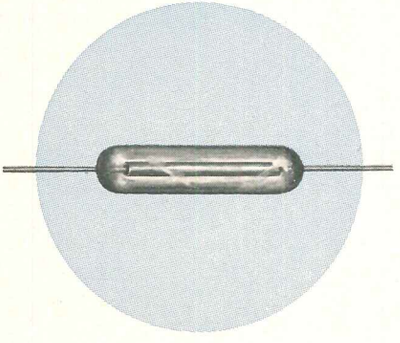




All fluorescent lamp ballasts may look alike but the similarity is only skin deep. An Advance Ballast is the result of years of continuing research, constant new developments in materials and circuits, skillful engineering, precision production and vigilant quality control. These efforts and exacting standards have made Advance Fluorescent Lamp Ballasts so dependable they are backed by the new Advance ILI (In-warranty-Labor-Insurance) program. A program that pays even replacement labor costs for any Advance Ballast that becomes inoperative within the 2 year warranty period. For completely guaranteed ballast performance always demand Advance Fluorescent Lamp Ballasts.

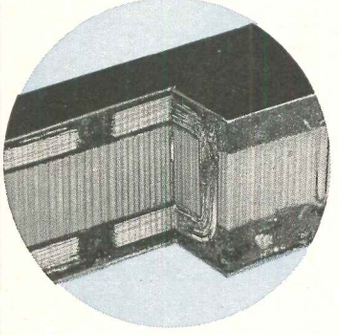
EQUIPPED WITH NON-RESET
FUSE LINK
THERMAL PROTECTOR

Fuse-Link is a temperature sensitive non-resetting protector that opens and destroys the ballast when it is subjected to abnormal temperatures.



SOLID-FIL

This Advance Solid-Fil development design incorporates the principle of Drip-Free Unitized Ballast Construction.



"The Heart of the Lighting Industry."

In Canada: Advance Transformer Co. Ltd.,
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ADVANCE® TRANSFORMER CO.
WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF FLUORESCENT LAMP BALLASTS
2950 NO. WESTERN AVE. CHICAGO 18, ILL. U.S.A.

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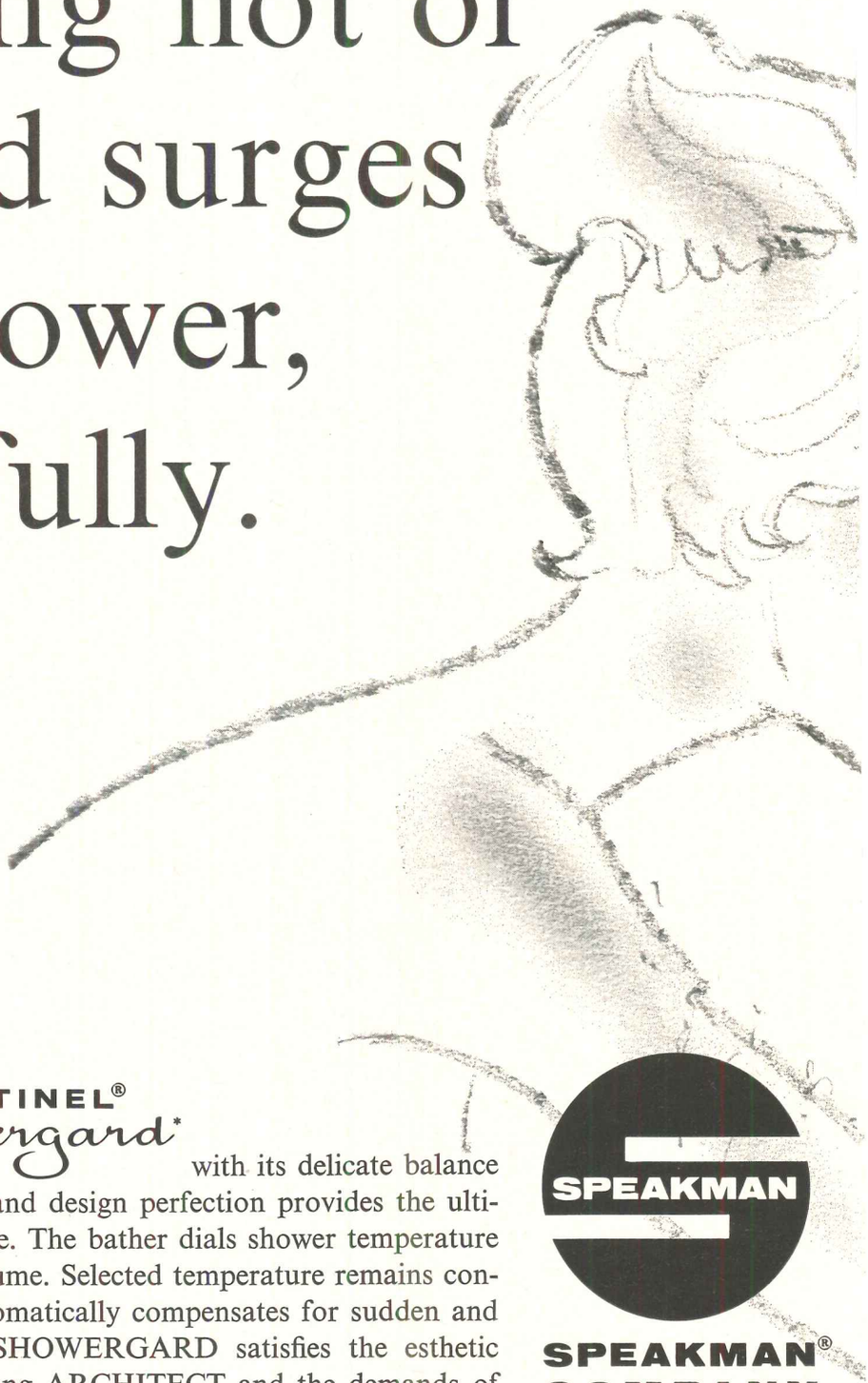
Speakman prevents steaming hot or icy cold surges in a shower, beautifully.



NEW SENTINEL® Showergard* with its delicate balance between functional excellence and design perfection provides the ultimate in safe showering pleasure. The bather dials shower temperature and flicks a lever to adjust volume. Selected temperature remains constant as SHOWERGARD automatically compensates for sudden and dangerous pressure changes. SHOWERGARD satisfies the esthetic values of the most discriminating ARCHITECT and the demands of the most exacting ENGINEER. Available with acrylic dial or polished chrome plated brass lever handle. For details, write for brochure S-113.

*T.M. Property Speakman Company

SPEAKMAN

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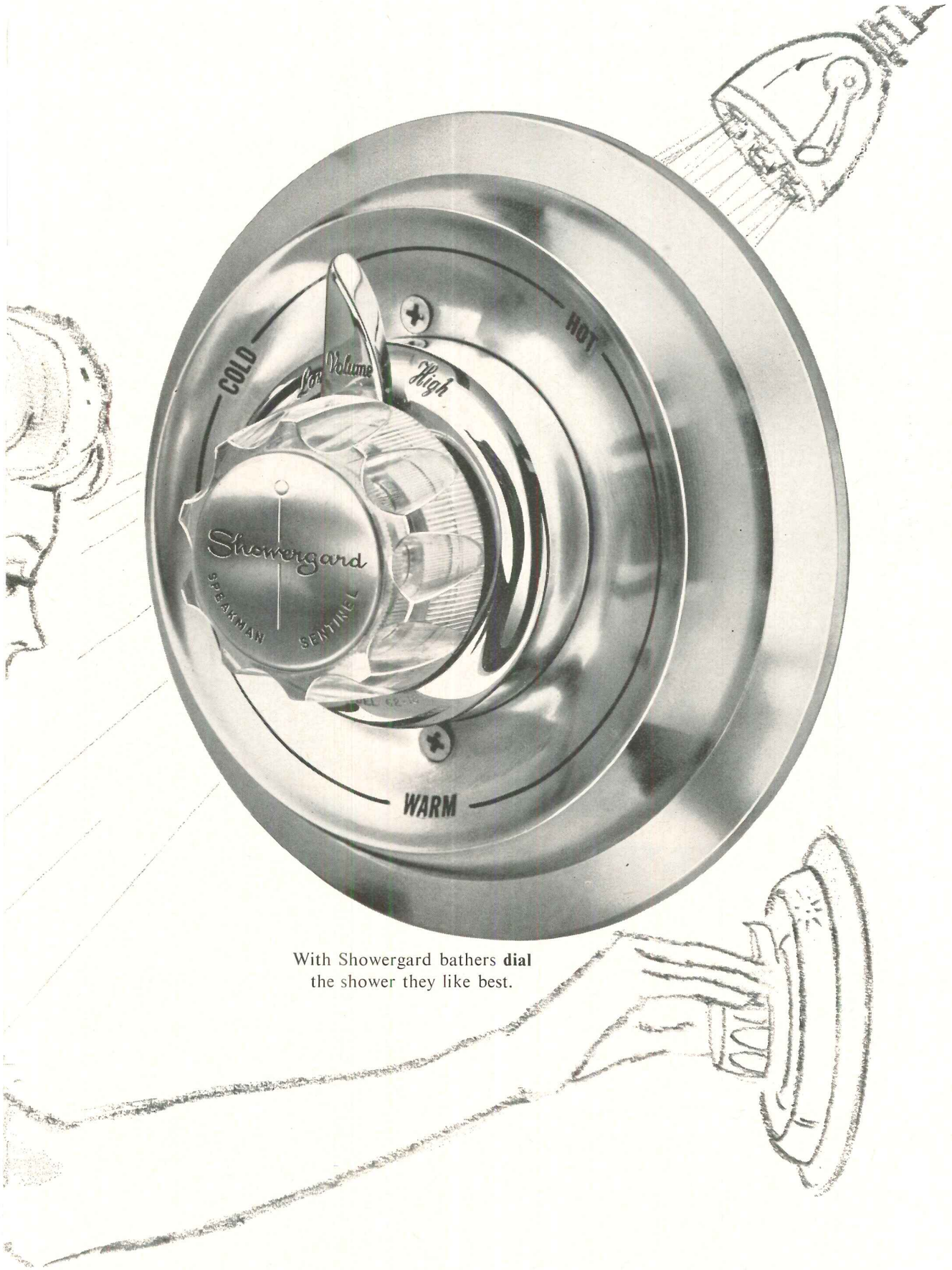

With Showergard bathers **dial**
the shower they like best.

WHEN YOU SPECIFY SPEAKMAN, YOU SPECIFY SPEAKMANSHIP— THE MODERN APPROACH TO WATER MANAGEMENT IN THE HOME, THE PLANT AND THE INSTITUTION

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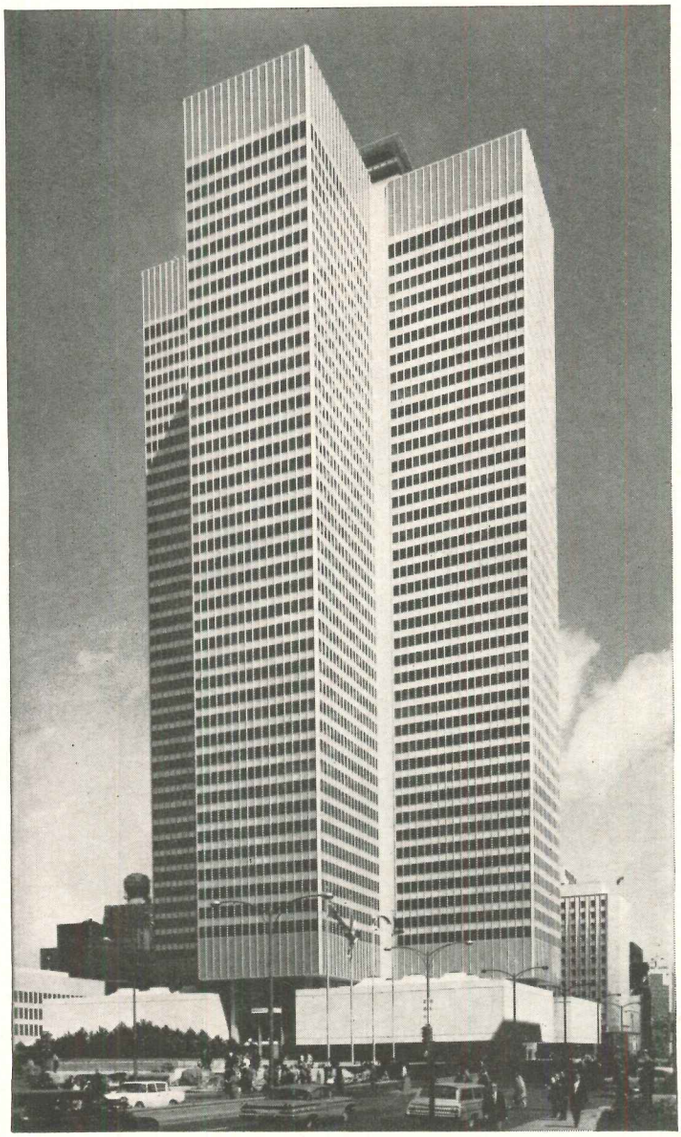

Place Ville Marie

Montreal

Largest Building Complex Ever Constructed in Canada

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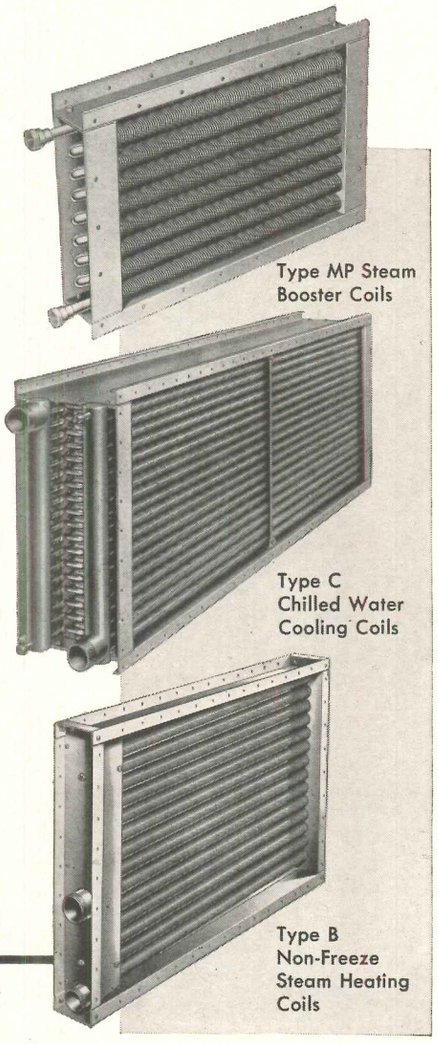

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Modern smooth-fin design of Aerofin coils permits ample heat-exchange capacity in limited space – permits the use of high air velocities without turbulence or excessive resistance.

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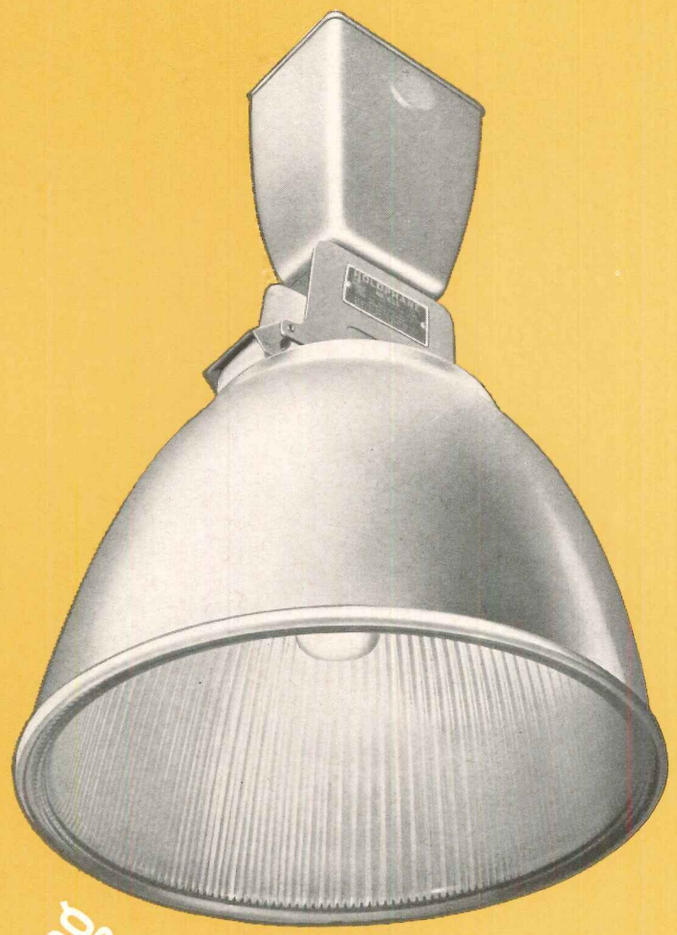
NEW!... for Gyms, Arenas and Field Houses

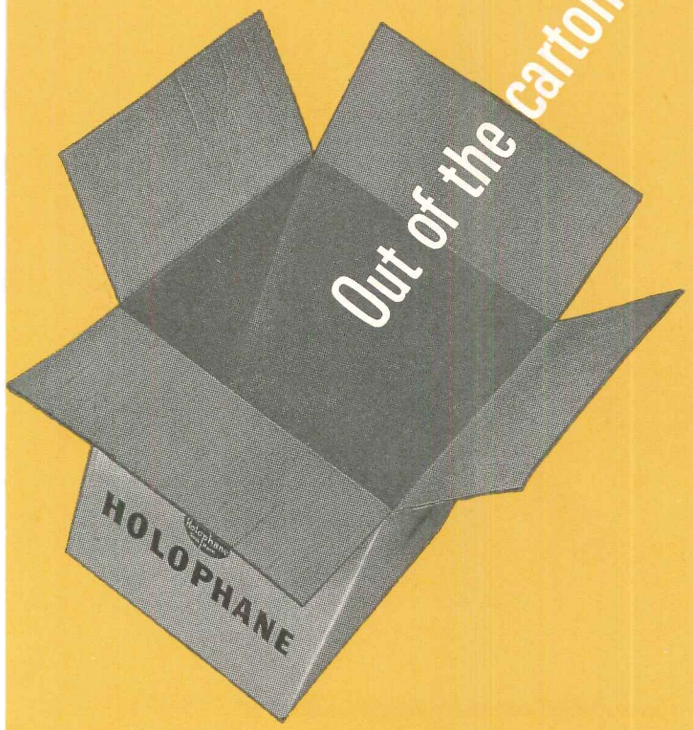
HOLOPHANE

Prismpack

The Mercury Luminaire that is Installed Instantly



Out of the carton...onto the ceiling



PRISMPACK ends the complications of ballast, fixture, lamp and holding devices...Holophane engineers produced this all-in-one luminaire to make installation of mercury lighting as simple as A,B,C...A: Lift luminaire out of carton...B: Hang it on ceiling...C: Connect two line wires ...And in a matter of minutes, unit is ready for operation!

This new luminaire, with its integrated ballast mounted in a special housing, has many basic advantages...The prismatic reflector delivers highest utilization of light; it provides a sharp cut off (above 45°) with wide spread illumination; it shields the light source, minimizes glare; airflow through open top and bottom keeps unit clean. Moreover it is economical to install and maintain...From every viewpoint, PRISMPACK is superior to any mercury luminaire ever offered. Write for engineering data.

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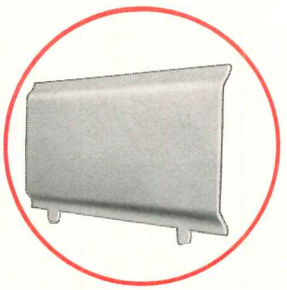
"DROP-IN"

DOOR CLOSER REINFORCEMENT



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A heavy 12-gauge, one-piece strip "drops" thru slots in the top of the door. Two sturdy lugs lock securely into, and become an integral part of the interior grid system, thus providing a firm, permanent anchor for the door closer. Fenestra closer reinforcements are designed to fit major makes of door closers and receive either left or right hand mountings.

. . . for another new development . . . be sure to ask your Fenestra distributor about the Fenestra CERTIFIED Door . . . a standard steel door certified fire-resistant for 1½ hours. For more information call your local Fenestra distributor or write Fenestra Incorporated, Door Products Division, 4040 West 20th Street, Erie, Pennsylvania.

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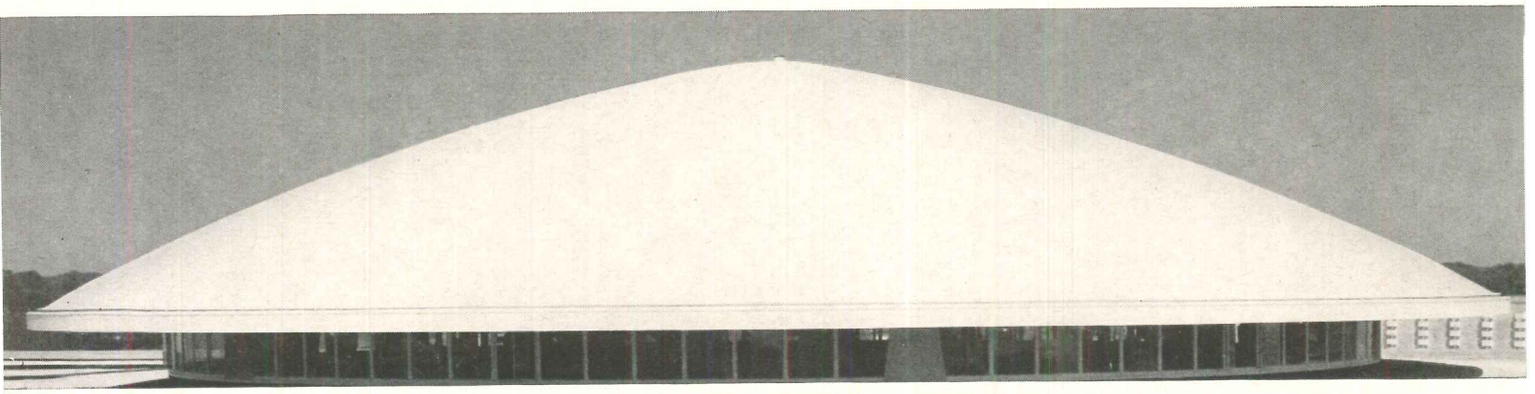
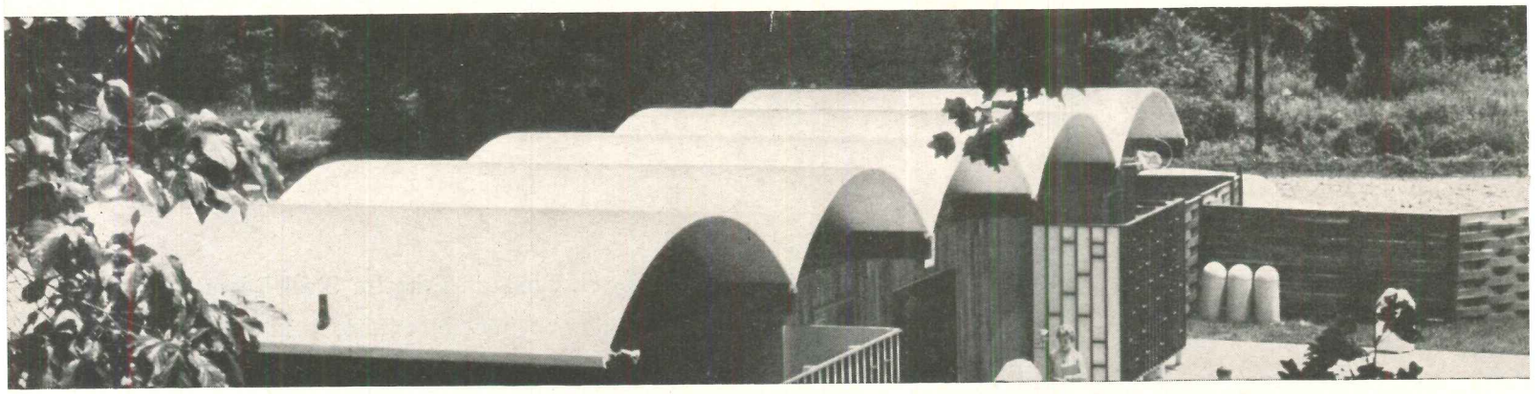
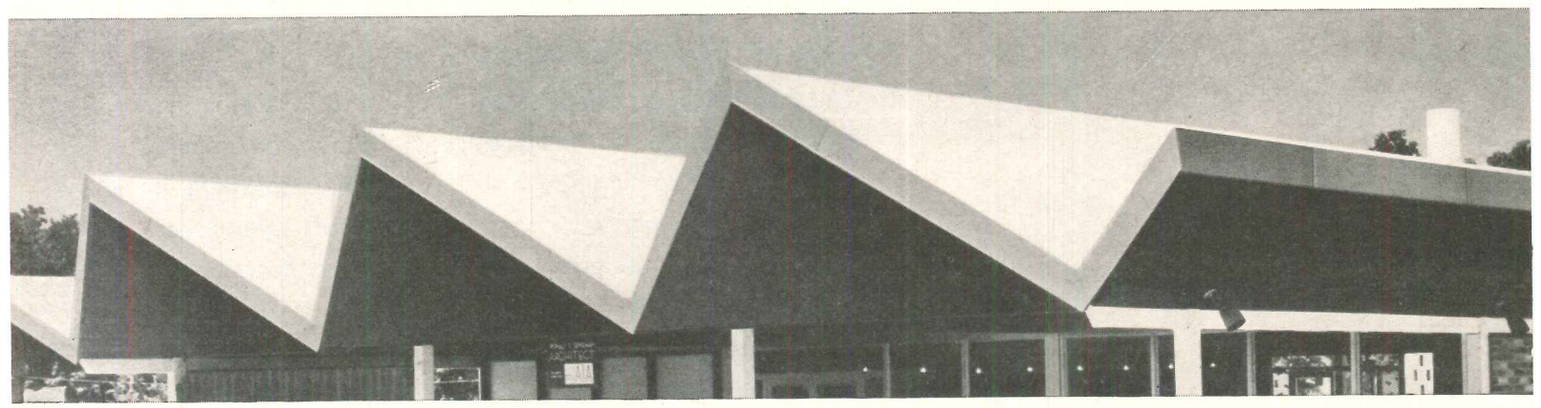
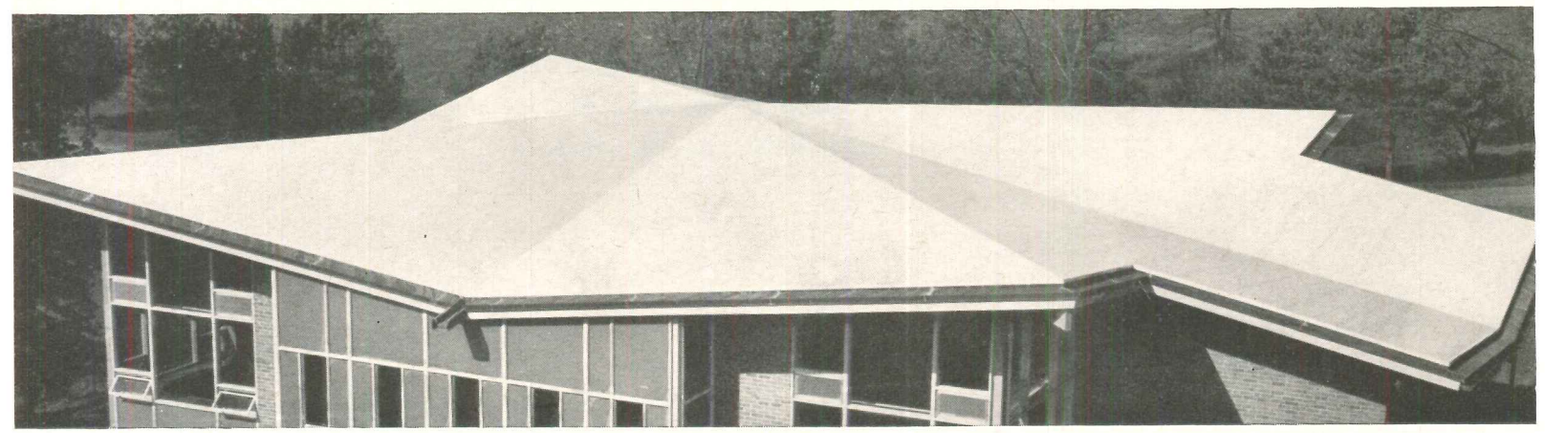
GIVE ANY ROOF LASTING BEAUTY

with new **RUBEROID T/NA 200** roofing membrane









Applications on structures like these above prove it: New Ruberoid T/NA 200* roofing membrane provides an attractive appearance for even the most unusual roof contours. It combines DuPont's new TEDLAR® PVF film with tough Ruberoid asbestos felt. Predicted life expectancy for T/NA 200: twenty-five years or more. Write today for full information on T/NA 200 or refer to Sweet's Architectural and Industrial Construction File: 8a/Ru.

RUBEROID

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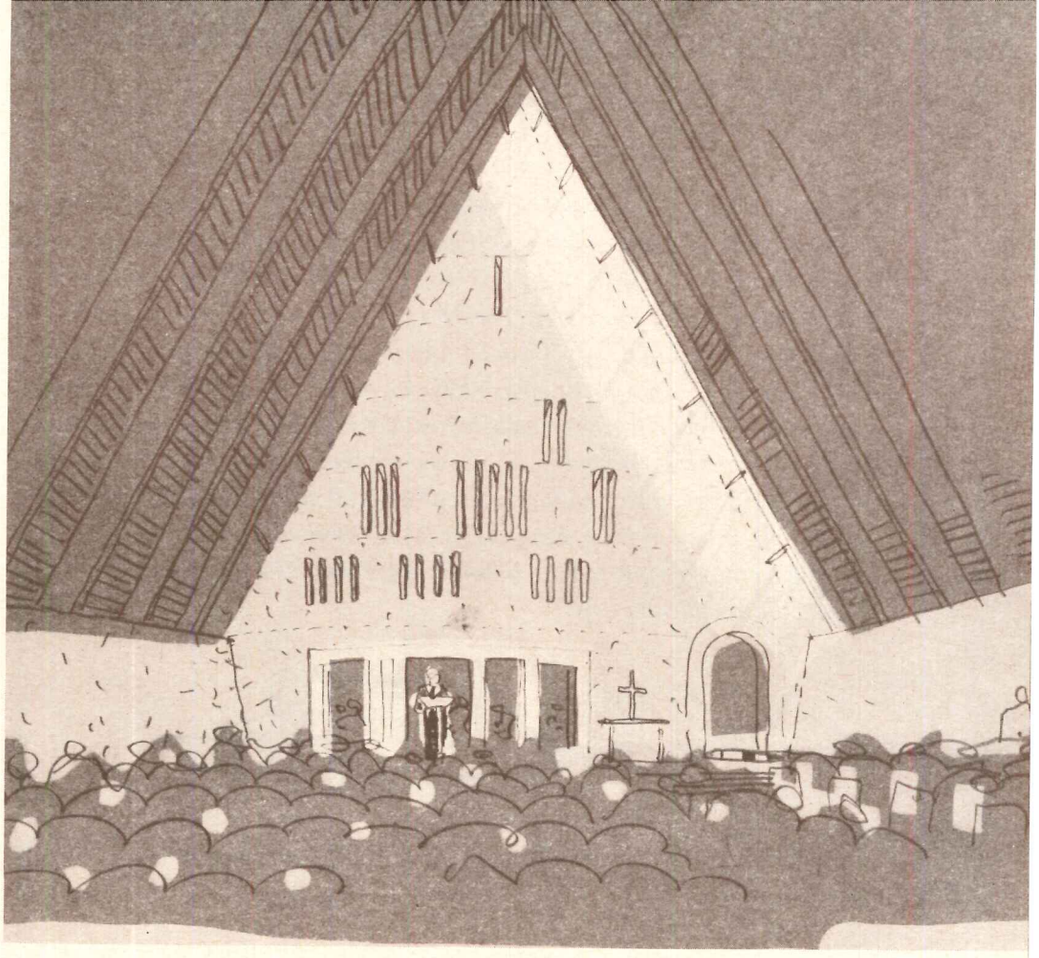


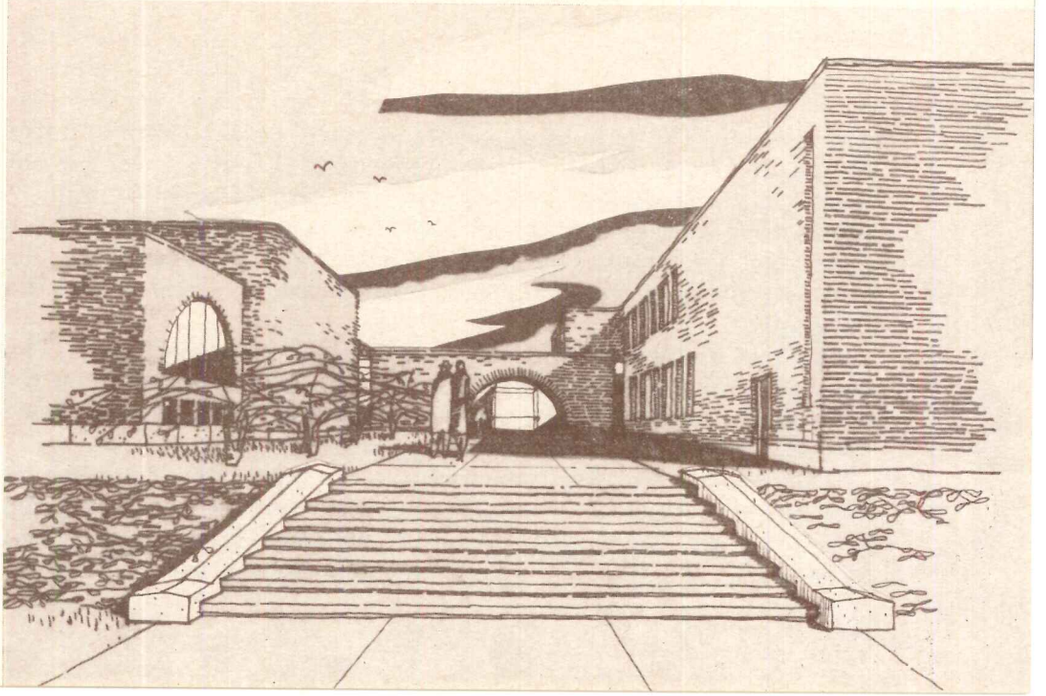
ARCHITECTURAL RECORD

MAY 1963

Current Work of

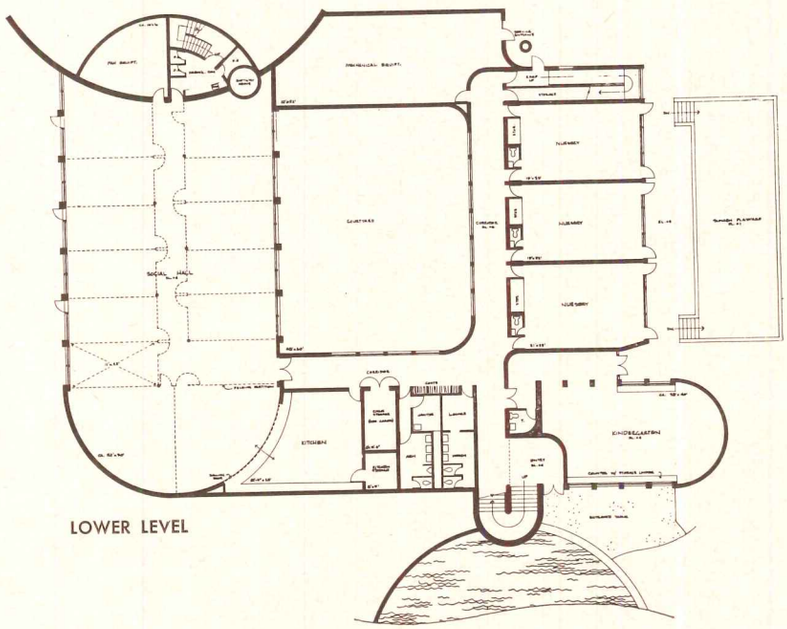
HARRY WEESE

Projects that show how this Chicago architect is developing a significant architectural continuum—six designs truly of today deeply rooted in tradition

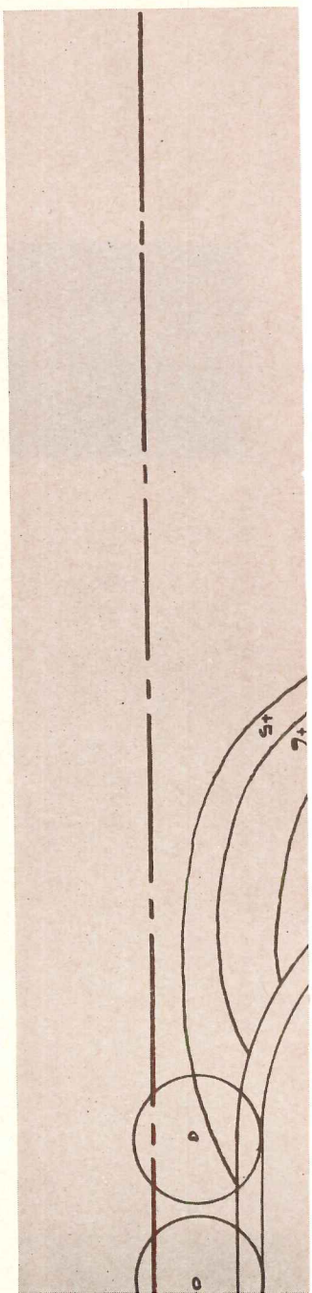


Architecture only proves itself in terms understandable to its users; it must work effectively in large and small ways. It must fulfill its program explicitly. If present day architecture is ever to mature, it needs to eschew the fashion of the hour and consider the realities of decades. The art of building is not relearned every generation; it is an ongoing thing. We must find the thread of this continuum and build well. The environment should nourish the architecture. The sources of inspiration are in the nature of the problem to be solved, the setting both man-made and natural, and human nature. Human nature is the constant factor. We have had the same sensory equipment for a million years, albeit a bit dulled and jaded currently. The joy and the stimulus in architecture is the discovery of fresh combinations of old ingredients appropriate to present problems. Faced with the choice, I would rather be right than contemporary.

— Harry Weese



LOWER LEVEL



FIRST BAPTIST CHURCH

Columbus, Indiana

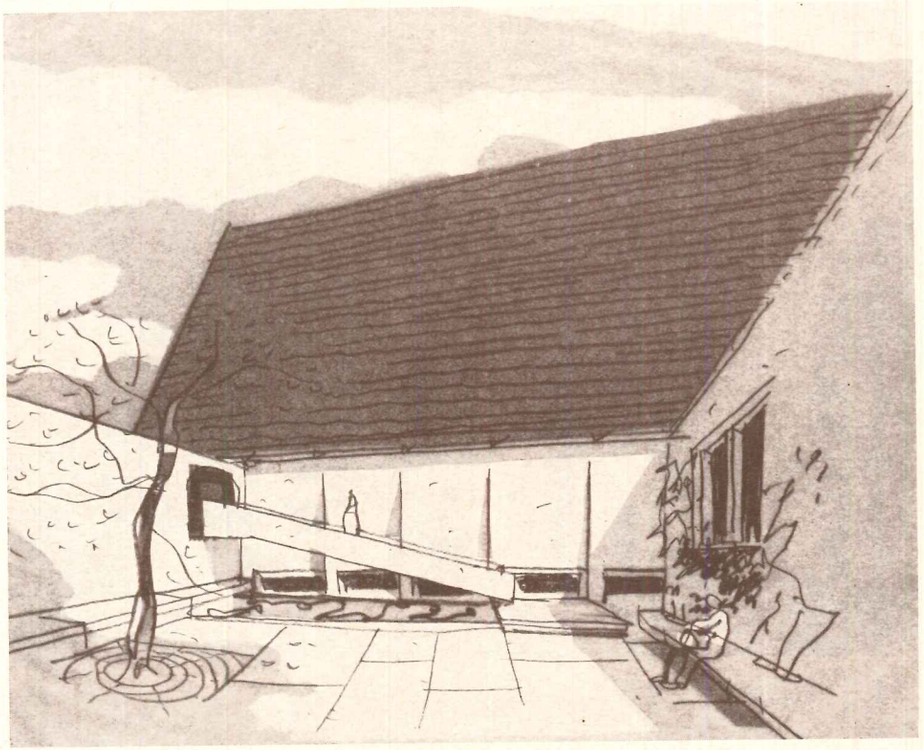
Harry Weese: "The form of this church stems from the effort to integrate the functional and educational requirements to permit the worship spaces —sanctuary and chapel—to dominate the ensemble architecturally. The helical drive-walk bordering the reflecting pool offers entrance to both upper level (worship, educational and administrative spaces) and lower level (social and educational space, with immediate access to an outdoor play-yard).

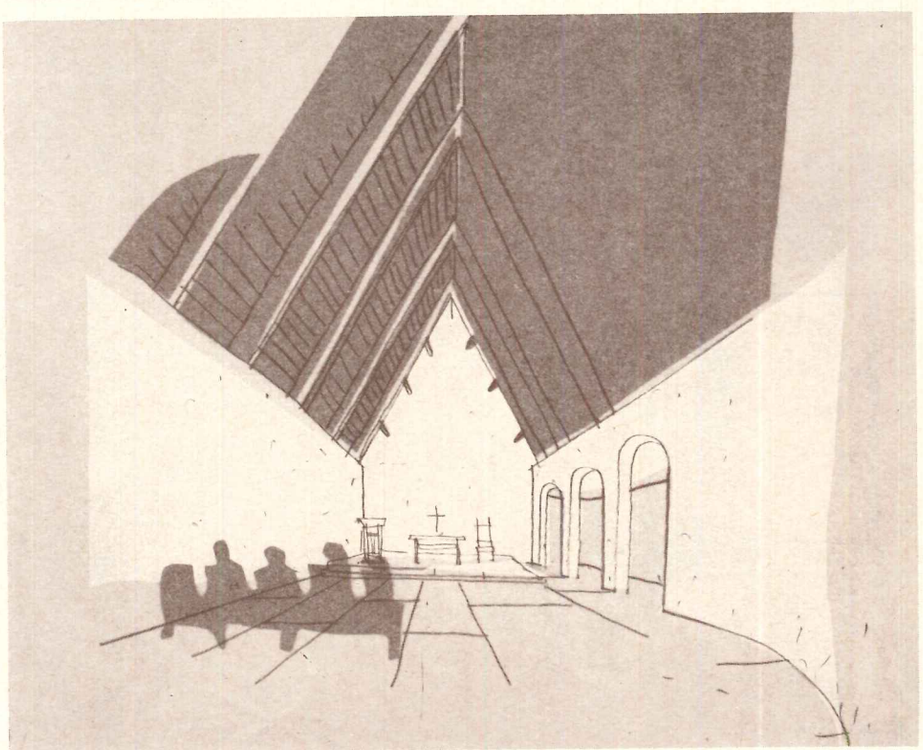
"Walls of white-painted *in situ* concrete (poured against 1 by 6 boards) are curved for space flow. Sanctuary and chapel end walls are curved to modulate the daylight entering from a continuous glass strip. Timber and wood shingles roof the important upper-level spaces; offer contrast.

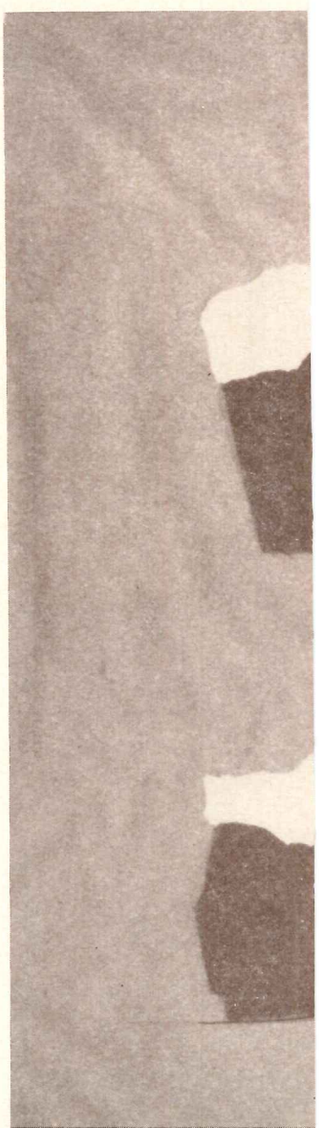
"The sanctuary, which is pictured at the top of the preceding page, seats 500 on both sides of an off-center aisle focused on the communion table and cross. The curved end wall is punctured to act as a screen for organ, choir, and baptistry access, shielding these elements from view."

CLASSROOM
CLASSROOM
LOUNGE - CLASSROOM
NARTHEX
CHAPEL
+9
+10
+11
+12
+13
+14
+7
170 CARS
40

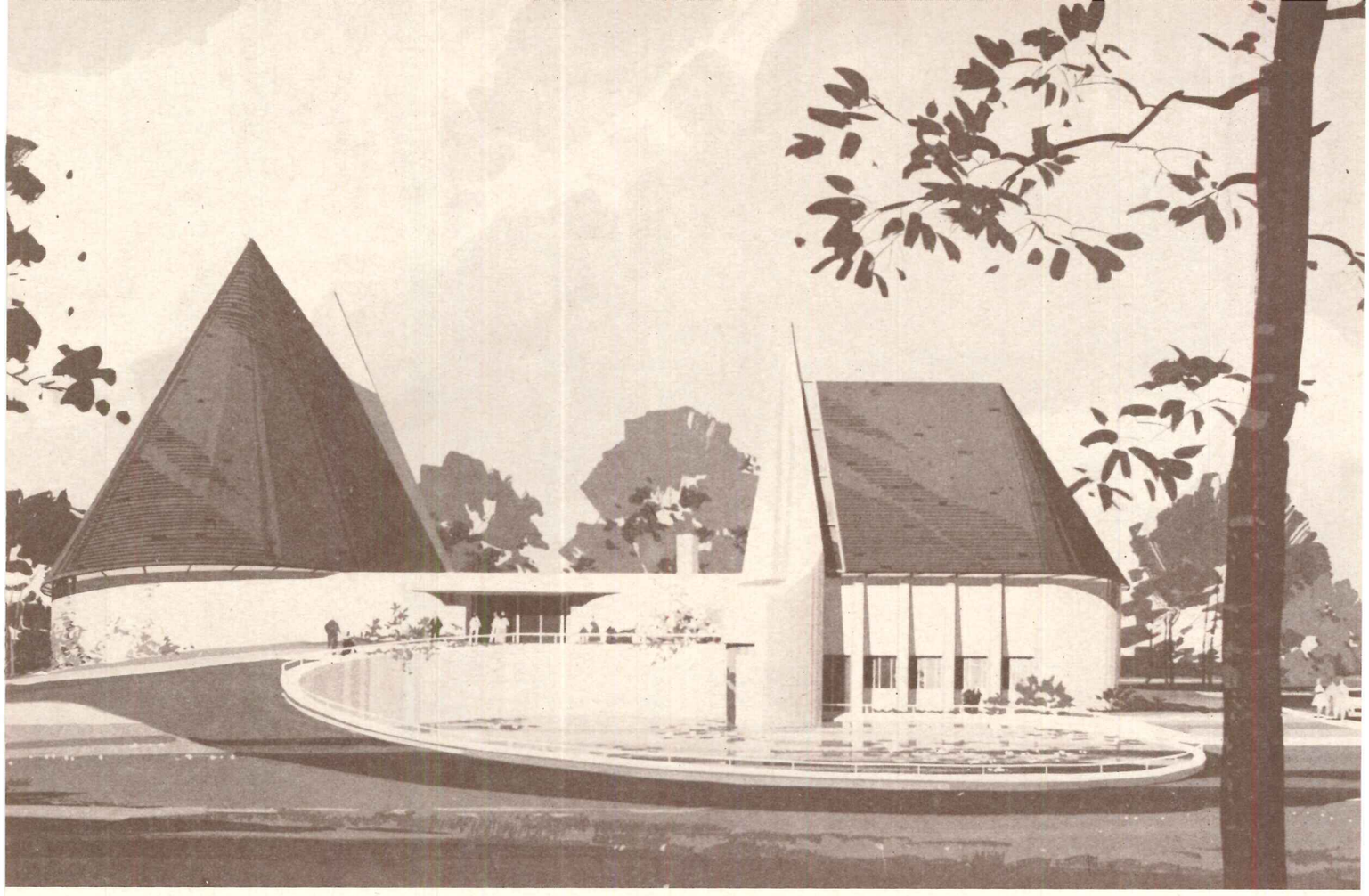
Current Work of Harry Weese: Baptist Church, Indiana

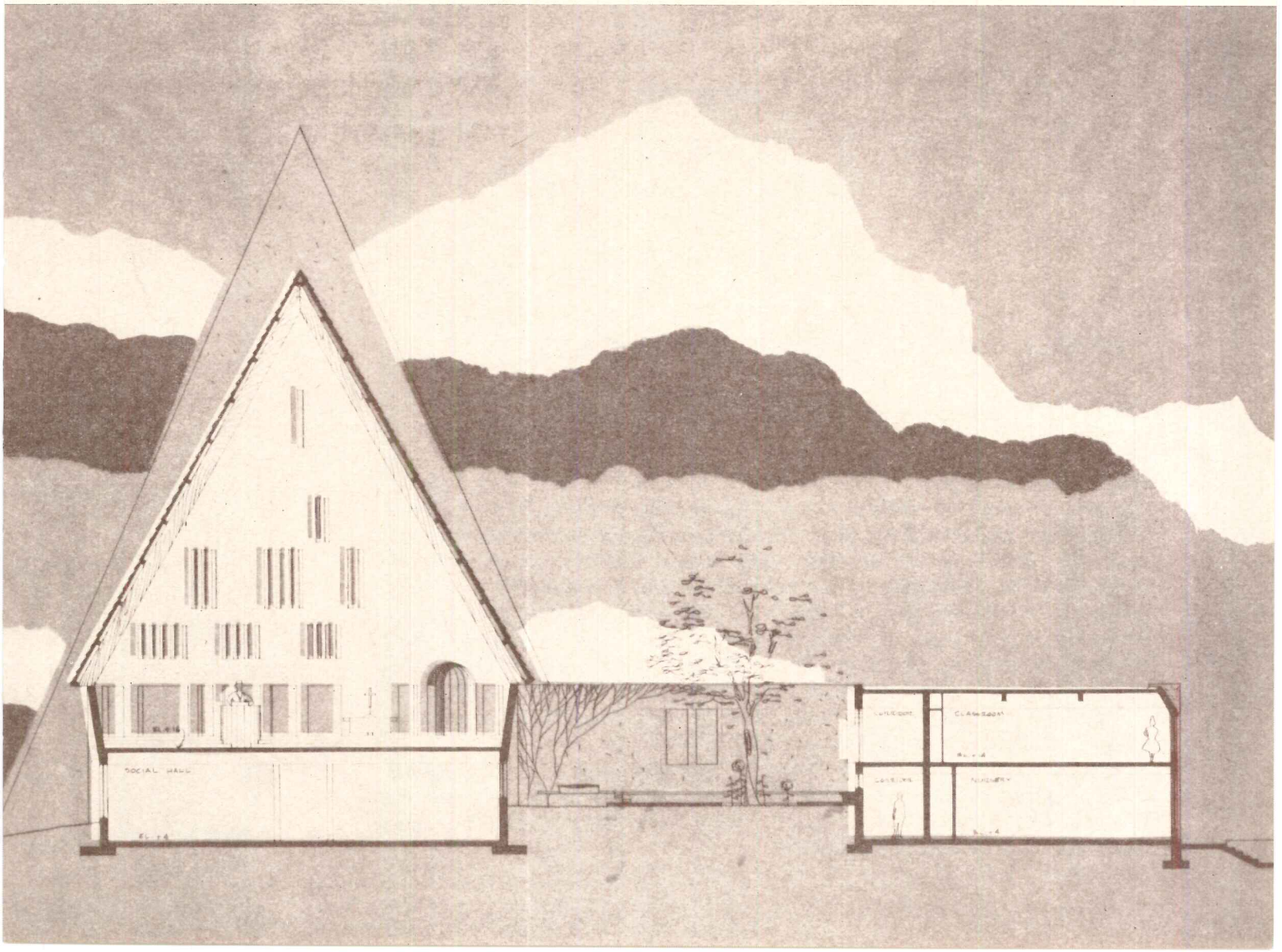


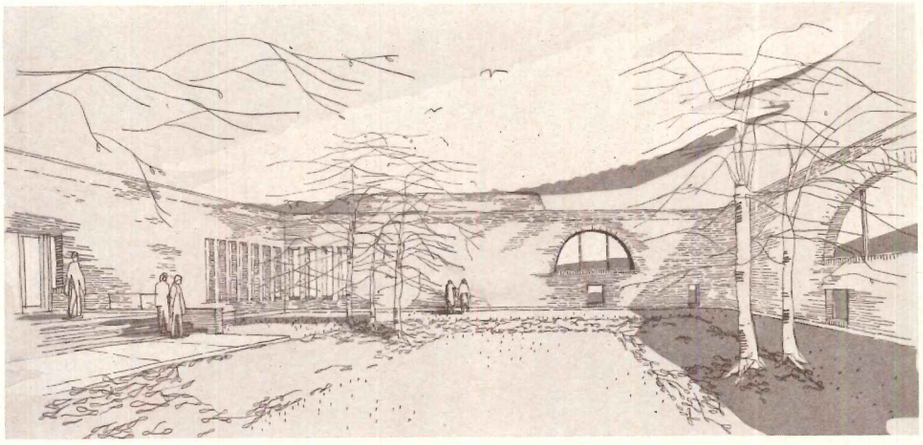


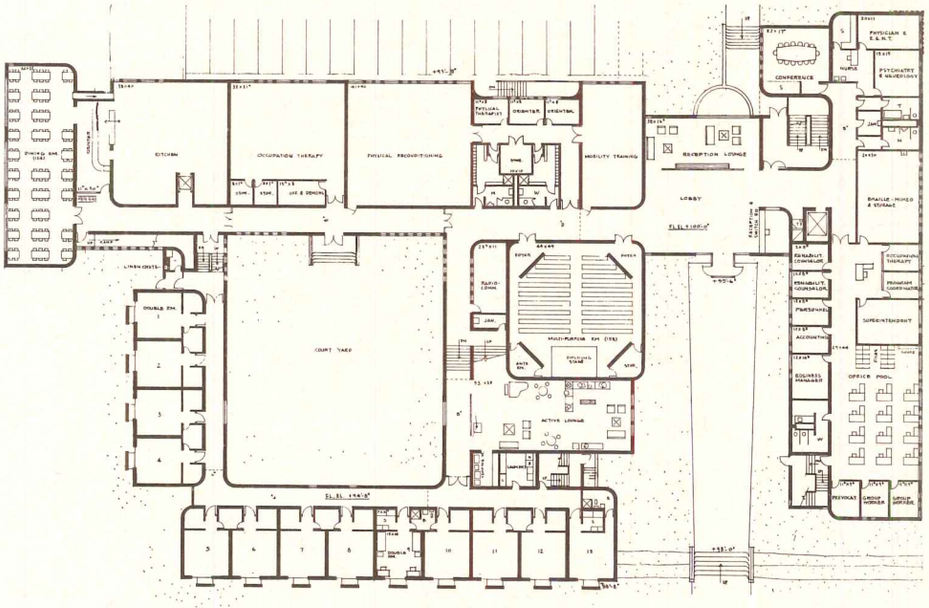


Harry Weese: "The central courtyard (*top*) provides relief from the self-containment of the worship spaces, and acts as a fair-weather classroom or meditation area. Natural ventilation and simple finishes are part of the Spartan program which puts the emphasis on form rather than on material. Educational facilities for the older children are at upper level, with proximity to the chapel (*immediately above*), which doubles as a junior worship space. Young children's facilities are on the lower level."




SOCIAL HALL
CLASSROOM
NURSERY



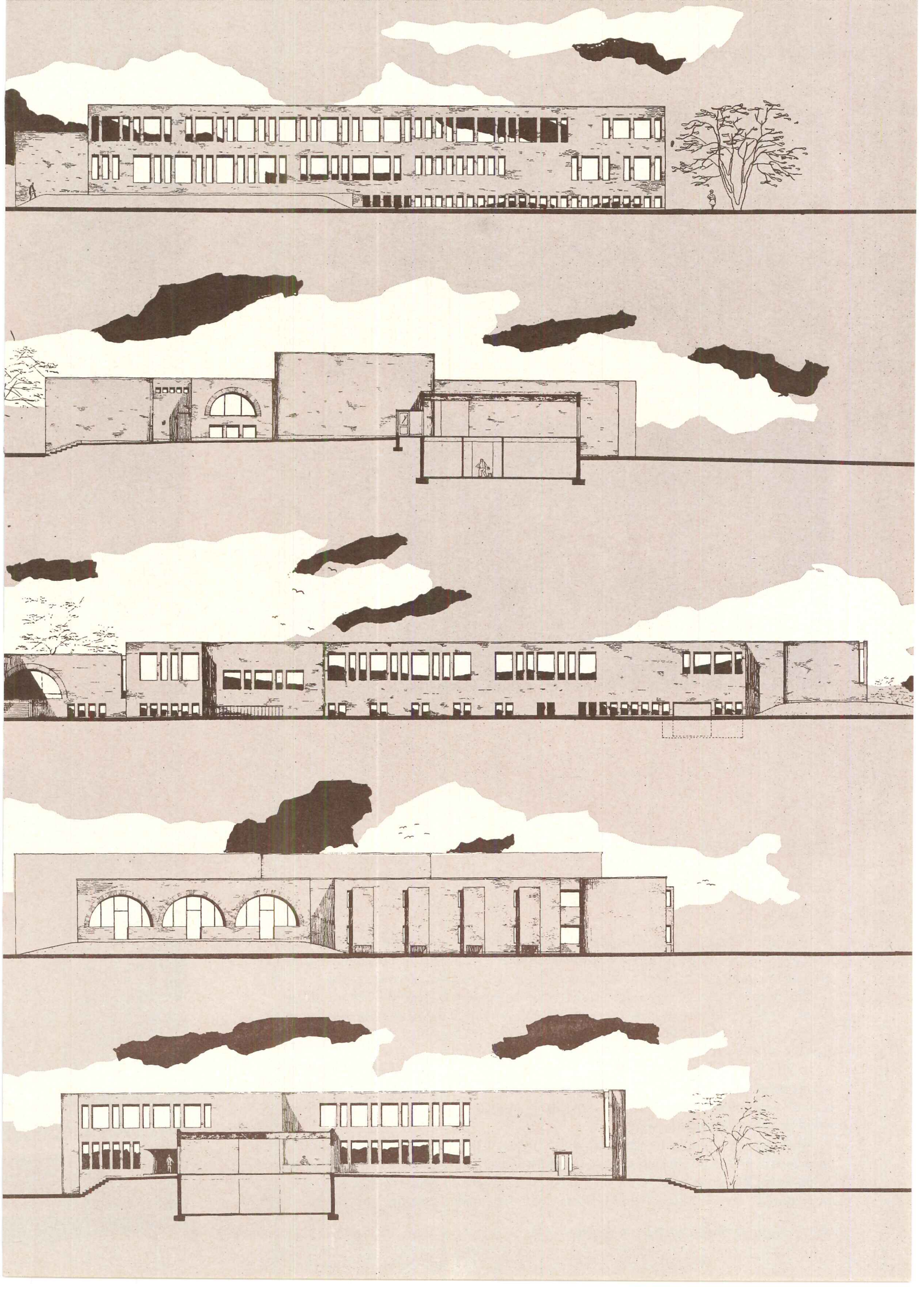


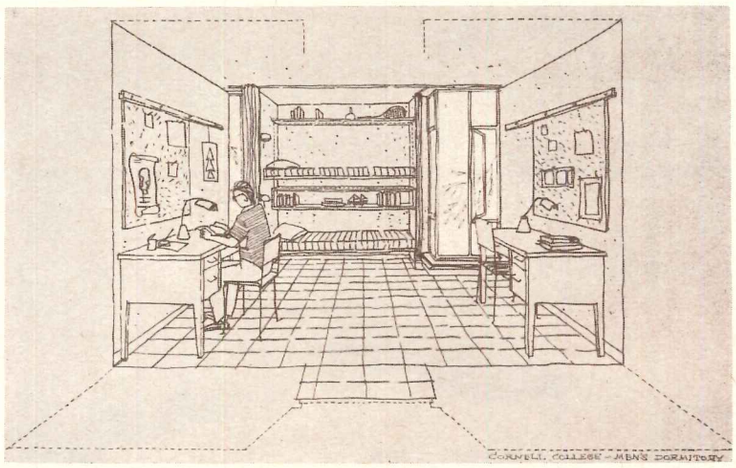
CENTER FOR VISUALLY HANDICAPPED

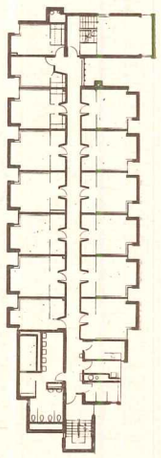
Department of Mental Health, State of Illinois, Chicago, Illinois

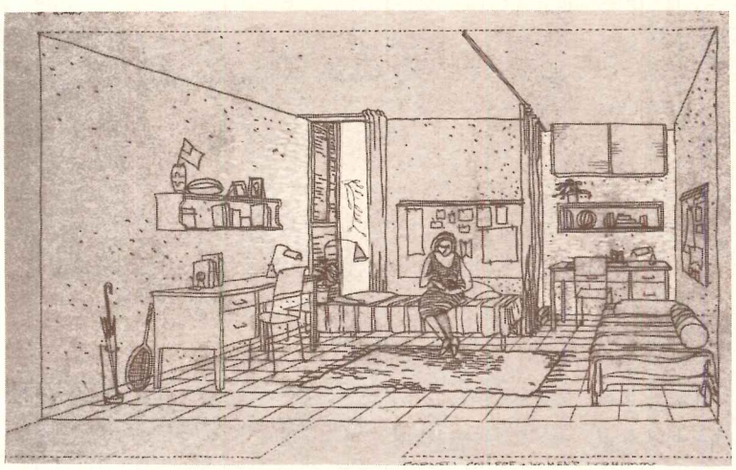
Harry Weese: "Located in the Medical Center on the near west side of Chicago, this facility will serve newly blinded people from 18 to 65 years of age. Two resident classes of 52 persons each can be accommodated each year. The facility is not designed with special features but is intended to promote the philosophy of the program: maximum mobility and independence for the blinded individual. To this end academic and Braille courses will be taught, in addition to training in complete mobility and exploratory manual training. Administrative vocational guidance and clinic offices are provided; space for a future bowling alley is included. Dormitory rooms on two levels enclose a recreational courtyard (*above, top*) used also for beginning obstacle instruction."

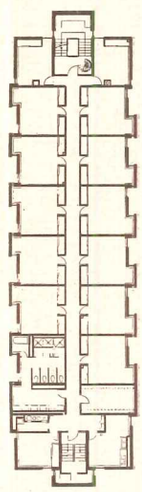
Here, masonry of an almost Richardsonian character is played against fenestration of a completely new kind (glass without frames and windows turned at right angles to the wall) to create an original architecture distinctly of today but rooted in tradition.

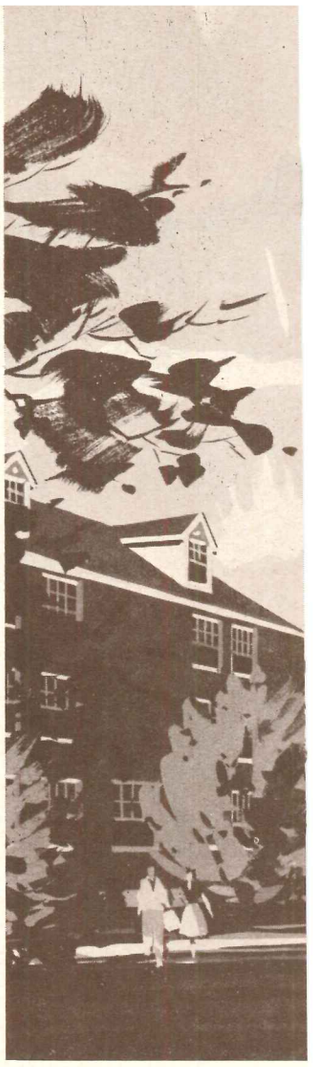












RESIDENCE HALLS

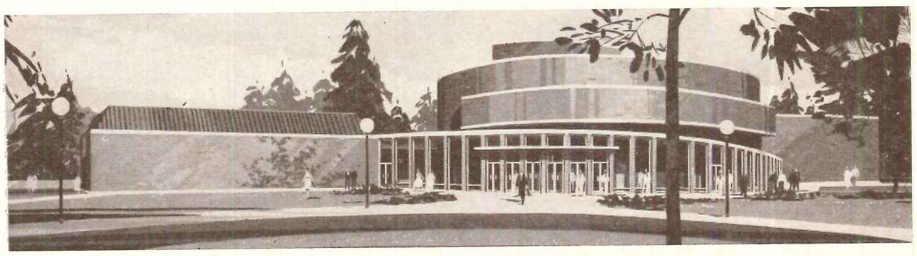
Cornell College, Mt. Vernon, Iowa

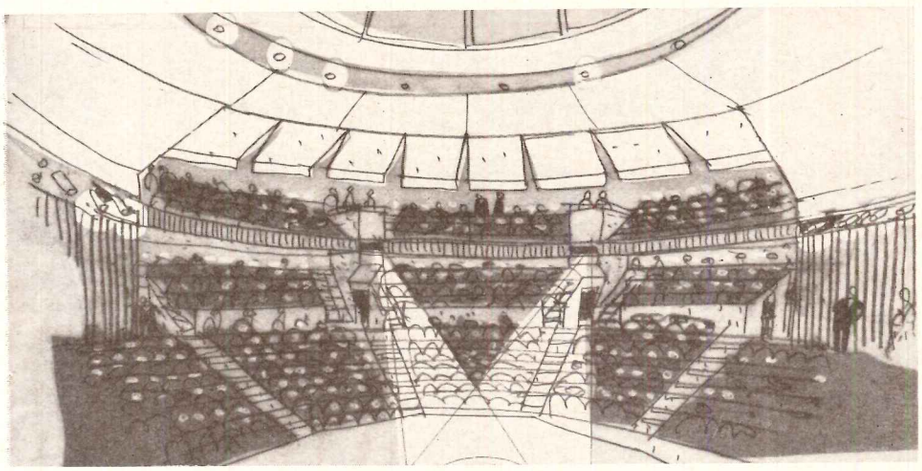
These halls—one for men and one for women—comprise the first stage of a campus expansion program for a small college with existing buildings ranging from very early Greek and Gothic revival to post-war in style.

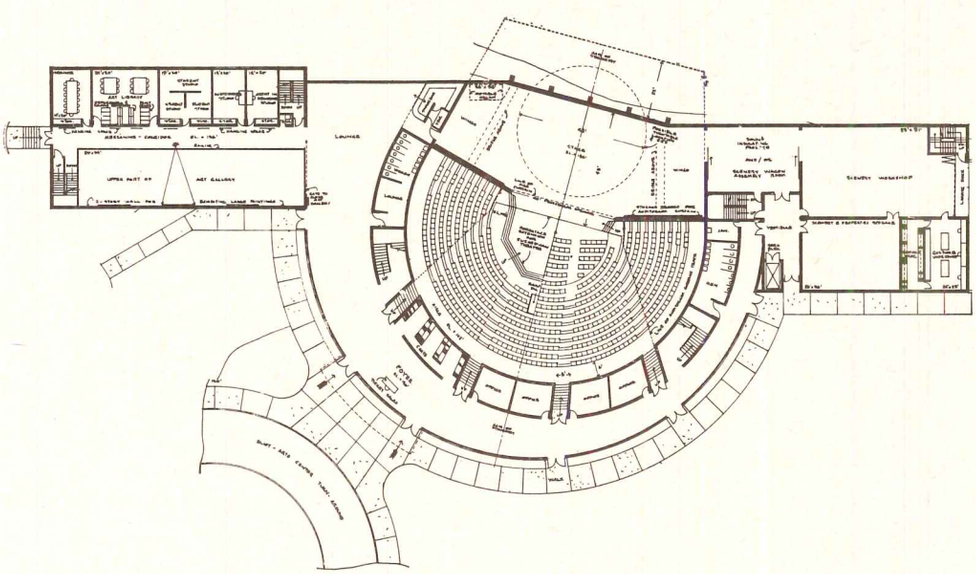
The men's hall will house 75 students on three levels placed over a lounge level. Typical double suites (*top sketch, above*) will have double bunks in niches expressed on the exterior. Small lounges of more intimate character are provided on the landing levels of both buildings.

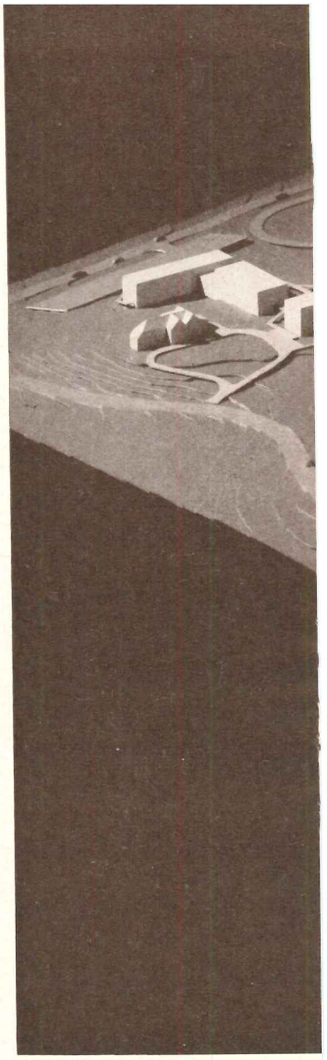
In the women's hall (*lower sketch, above*) a more flexible furniture arrangement is possible, and a dividing curtain is furnished. The "desk niche"—also expressed on the exterior—makes possible a desk and bed combination along one wall.

Materials are red brick bearing walls, precast bearing partitions, galvanized steel sash, lead-coated copper spandrels and mansards. On both buildings, perimetral mansards will provide an attic crawl space 5 feet wide for heat mains and exhaust fans. Center roof areas will become sun decks.







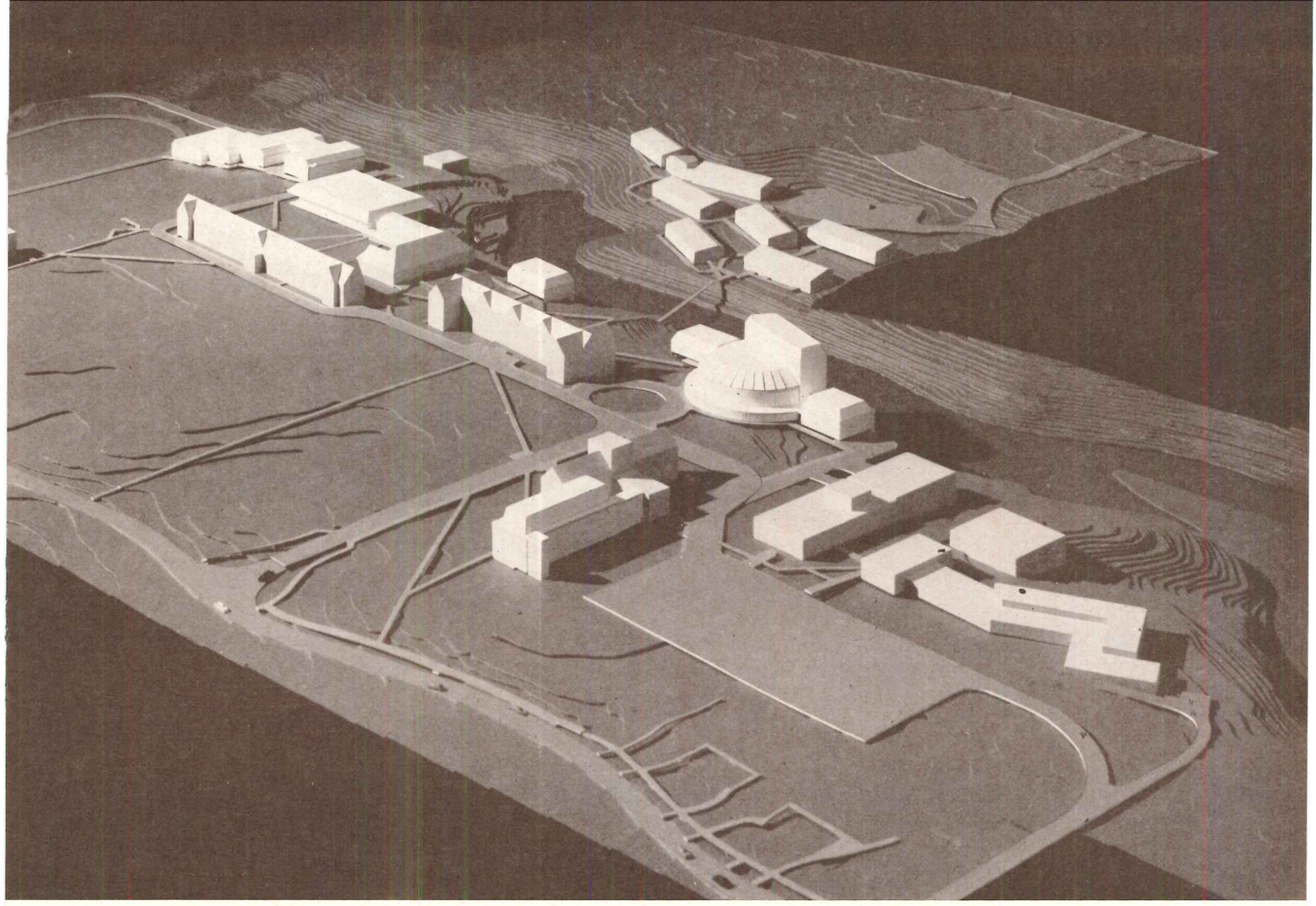


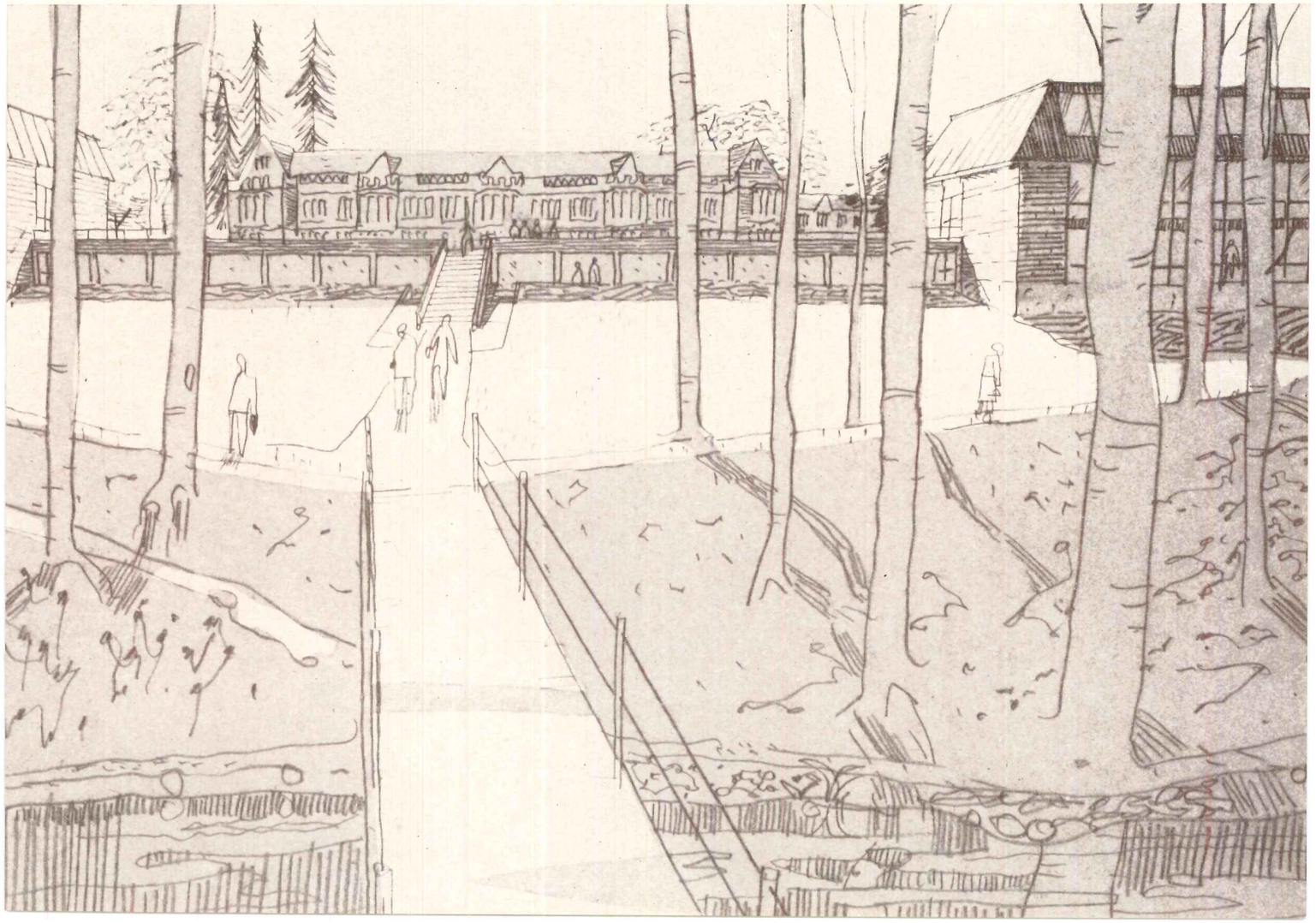
REED COLLEGE ARTS CENTER

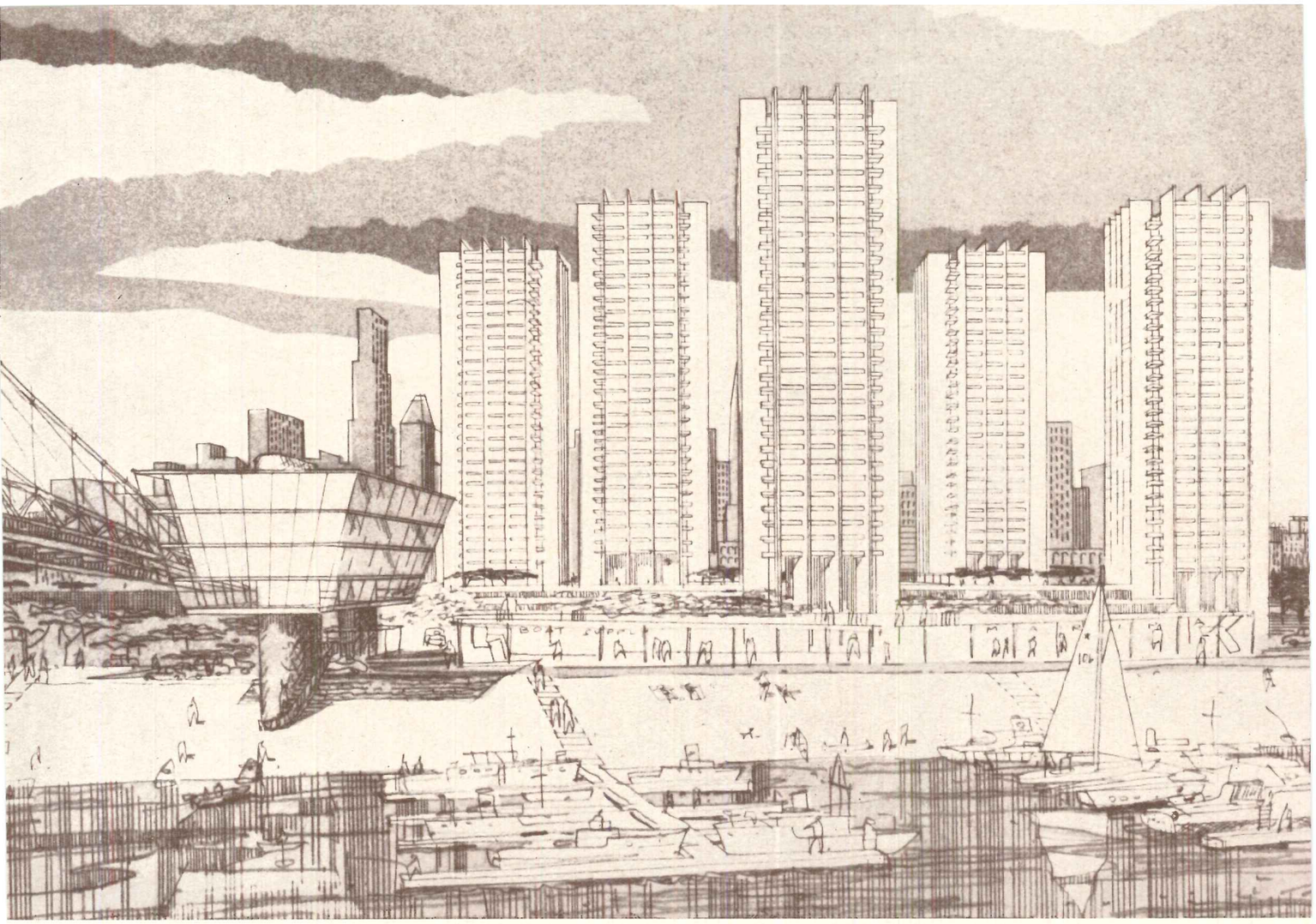
Portland, Oregon

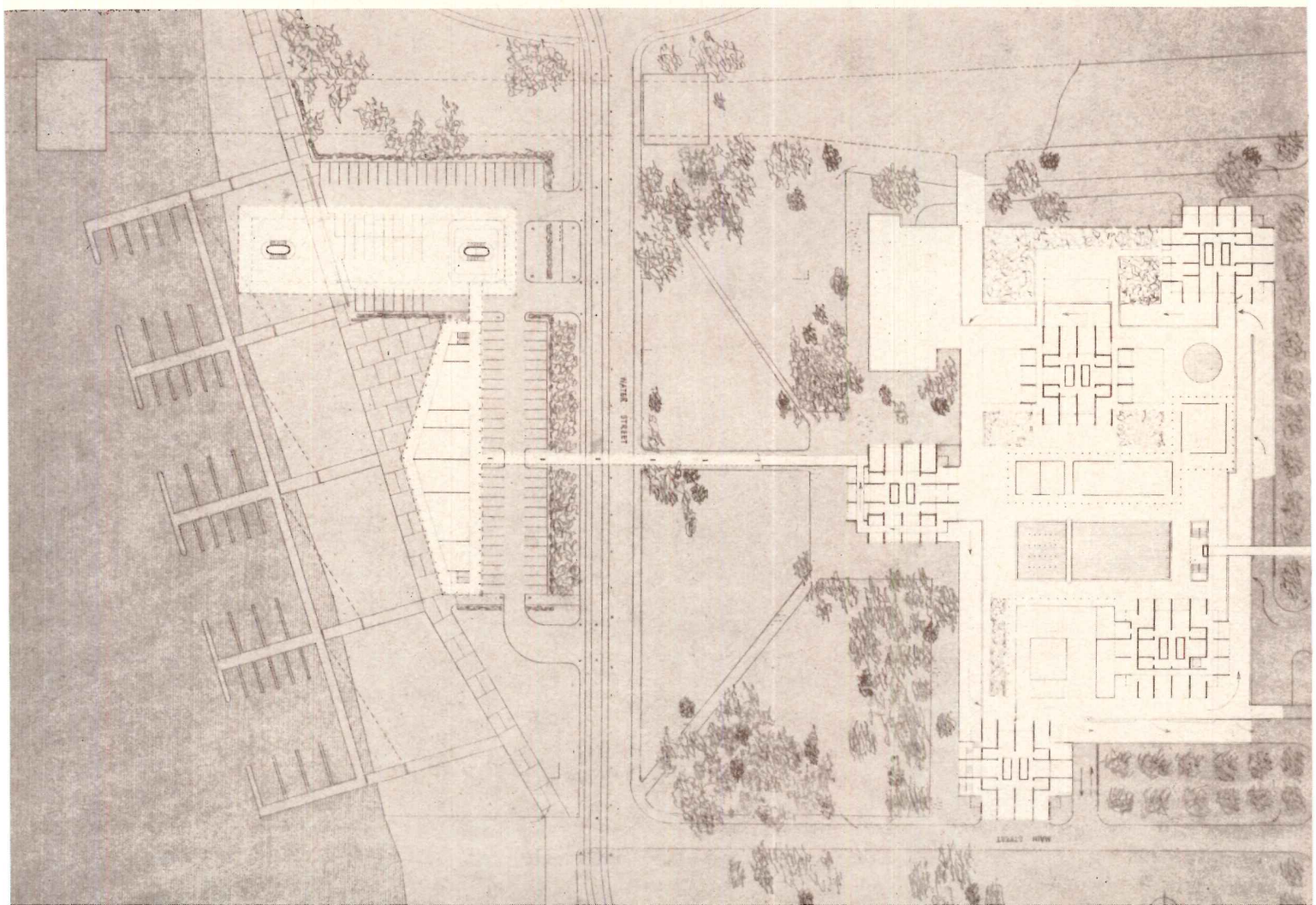
Harry Weese: "In addition to facilities for fine arts, music and drama, a theater with great flexibility of size and mobility of form was required. Wide variation in audience size and a corresponding range of forms were provided for, from standard proscenium theater to intimate Greek performance. The proper fan-shaped room for proscenium productions is gained by slatted wood curtains eliminating two wedges of seating. Shutters and hinged ceiling panels can open and close balcony seating as required.

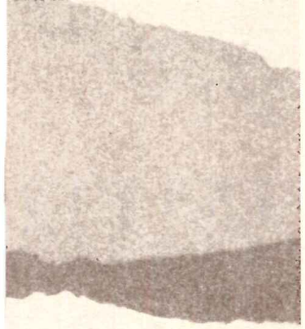
"Art classrooms, studios, and library are housed in a wing which is mirrored in the separated music wing; the two flanking the main administration building (*sketch at right*)." The architect's scheme for the master plan is shown in the model photo which anticipates future growth.

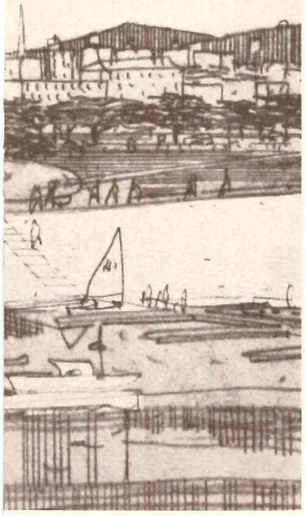


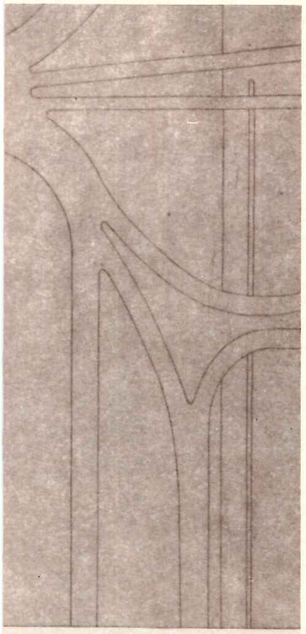


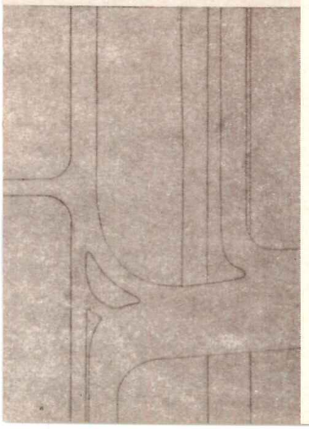


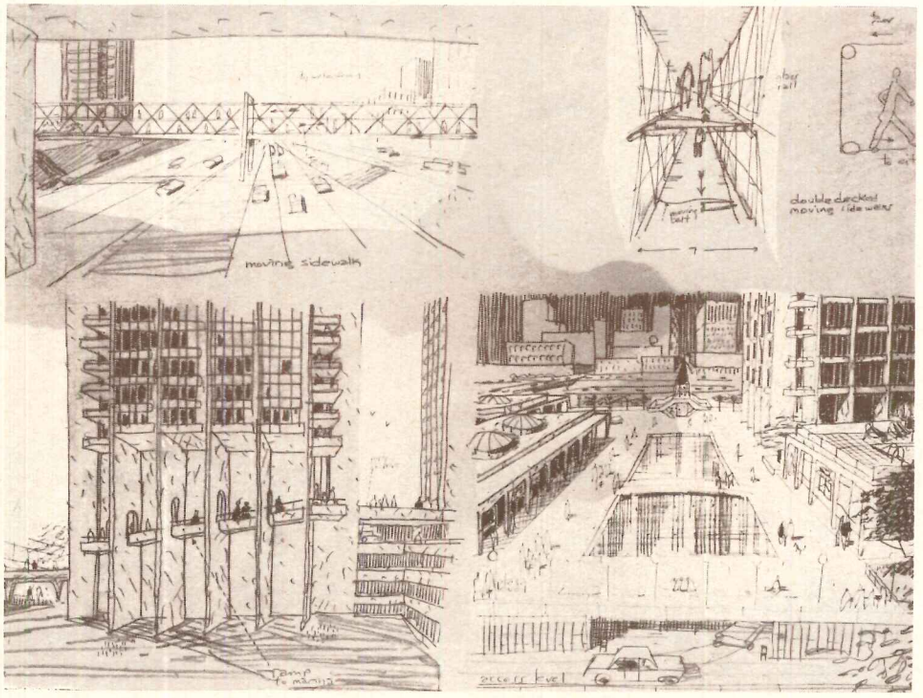

MAYNE STREET
MAIN STREET











CINCINNATI RIVERFRONT REDEVELOPMENT

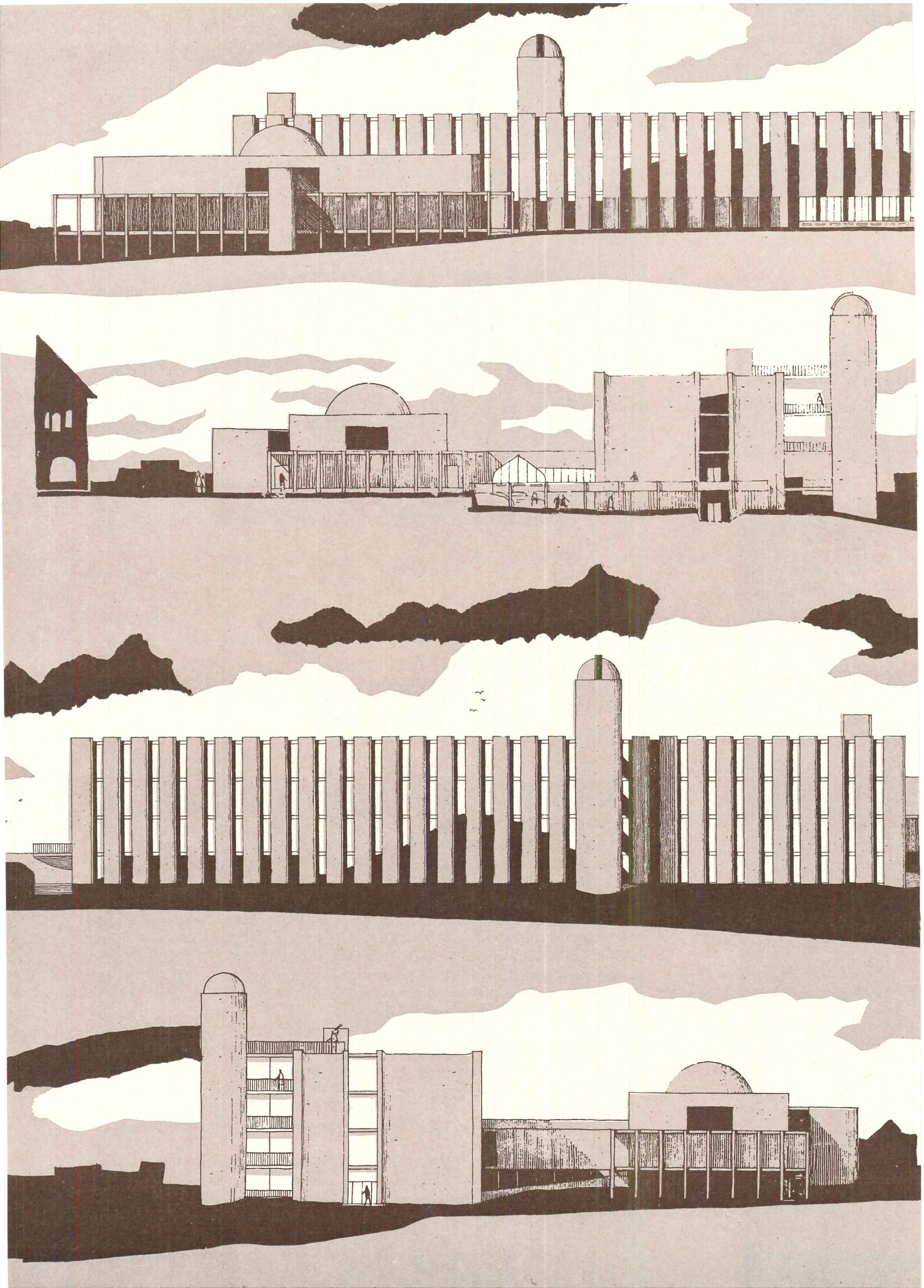
DEVELOPER: *Bush Construction Company*

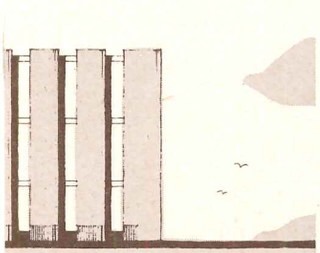
Harry Weese: "This submission won an urban renewal competition for a new community of 3,500 on Cincinnati's riverfront. This complex is the only private development in the city's Central Riverfront Project, a one-half mile strip of parks and recreational facilities along the Ohio River.

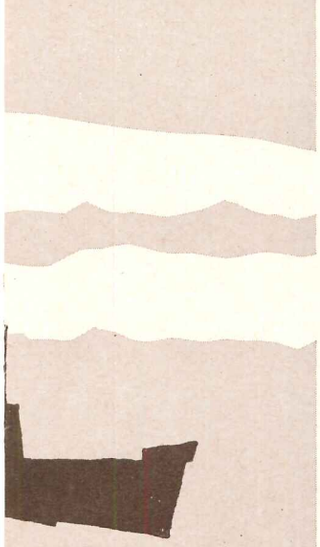
"The 12-acre development will consist of five 30-story apartment towers containing 1,200 units, raised above flood level on a five-story parking structure. The top deck of this structure will form a large landscaped plaza carrying communal facilities such as convenience shops, restaurant, day nursery, swimming pool, etc. A 90-unit motel, marina, and restaurant will be built on a separate site at water's edge. The complex will be linked to downtown Cincinnati by a double-decked pedestrian conveyor 1,200 feet long, which will also form the main approach to the riverfront park.

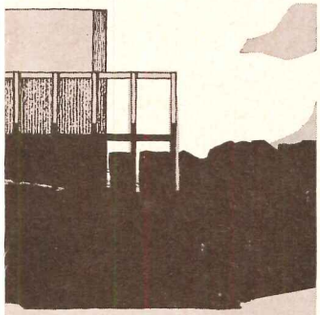
"The parking structure and towers will be built of concrete, the latter by means of slip-formed shear walls with precast spandrels and balconies. All structures below the 80-foot flood stage (recorded only once in the past century) are designed so they can be cleared before the onset of a flood, will offer minimum obstruction to the current, and can be hosed down. Apartments will range in size from efficiencies to large, three-bedroom units; all will have views of the river, and most will be able to see the Cincinnati skyline as well.

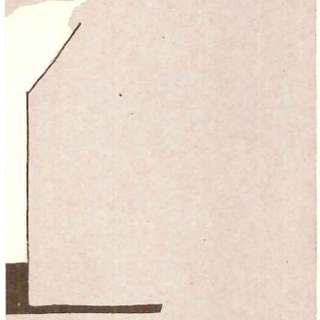
"Construction of stage one—three towers and the bulk of the parking structure and ancillaries—is due to begin as soon as land is acquired. Total cost of the project is estimated at $25 million; the first stage will cost approximately $13.5 million."

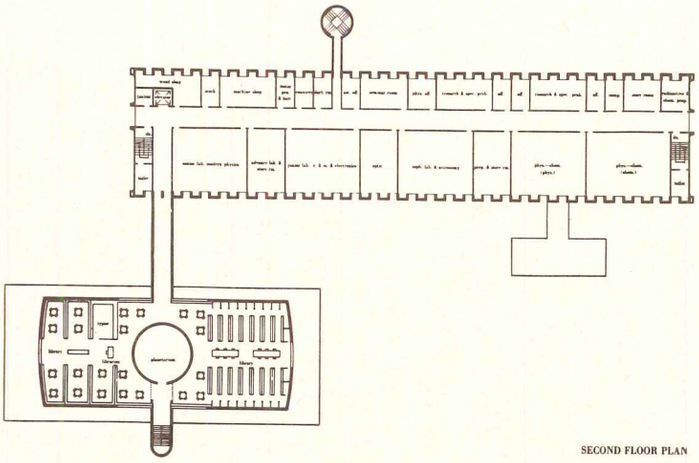




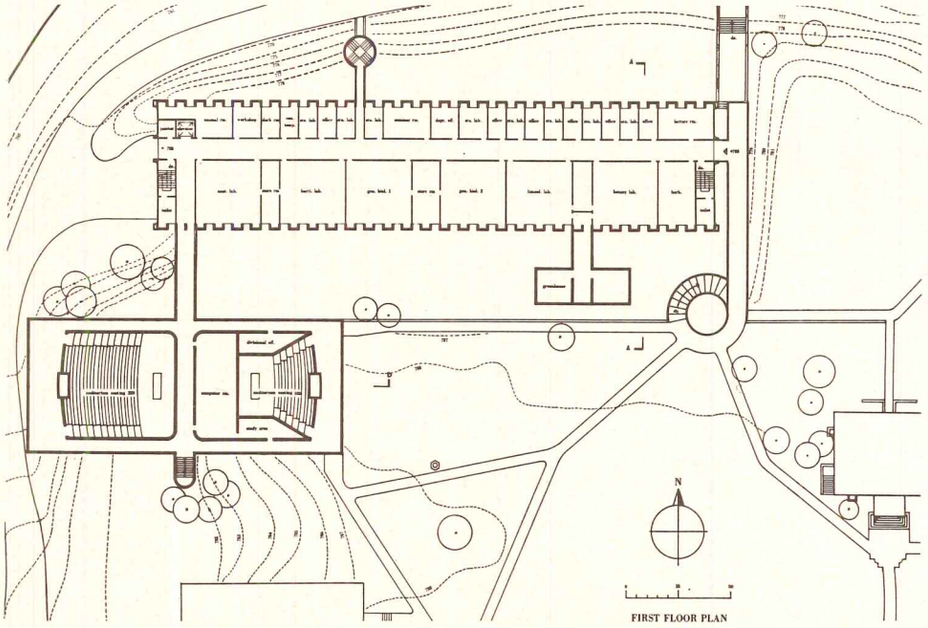








SECOND FLOOR PLAN



FIRST FLOOR PLAN

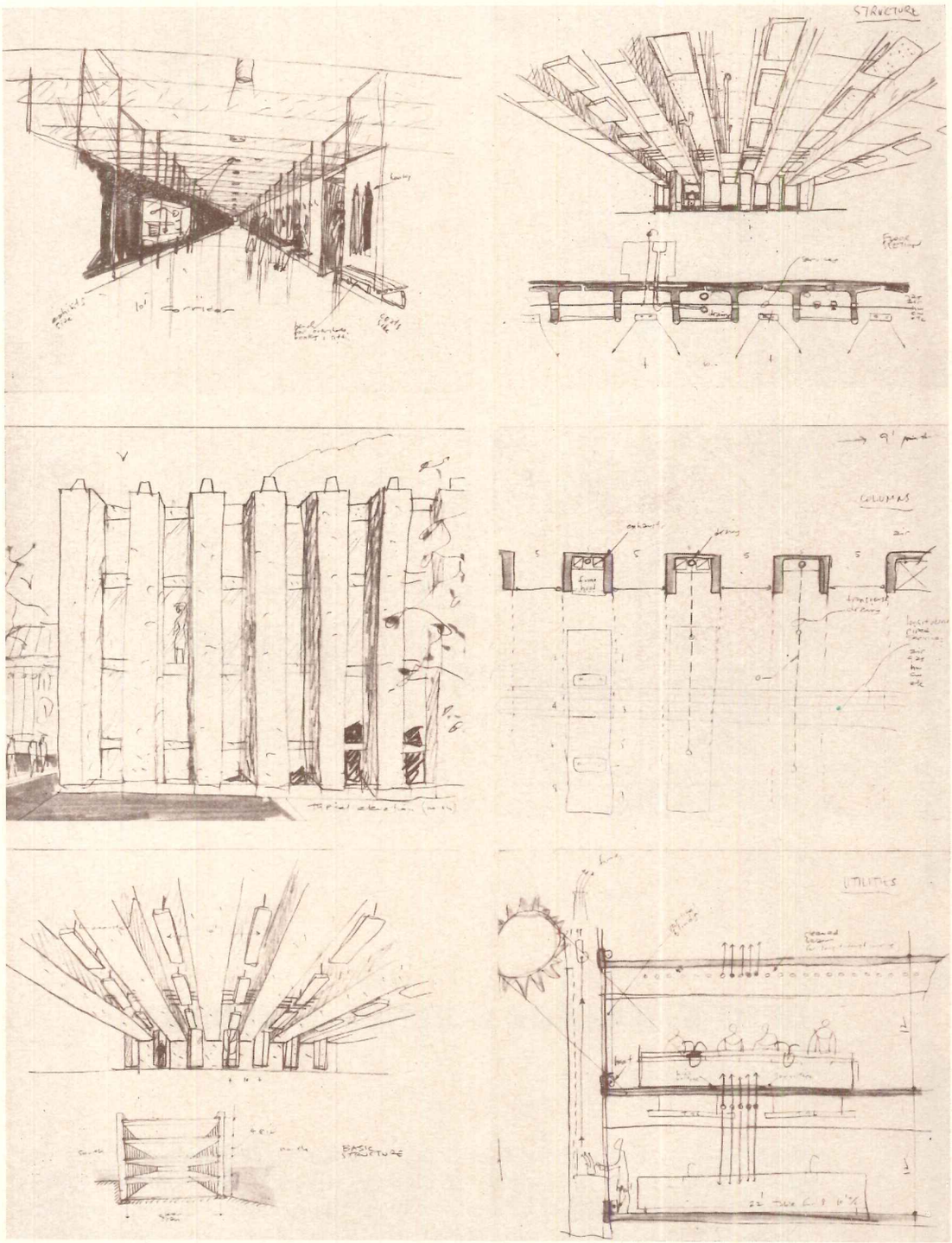
BELOIT COLLEGE SCIENCE BUILDING

Beloit, Wisconsin

Harry Weese: "Each of the four floors in this science building houses one department, except in the case of biology, which is large enough that it had to spill over into part of another floor. The departmental unit contains offices and laboratories; inter-departmental facilities are separated. The latter consists of two lecture-auditoriums with their adjoining preparation and storage rooms, a science library, a planetarium and an observatory. The observatory will be added at a later date.

"Each floor of the departmental building falls naturally into two parts—offices and laboratories—which are separated for the length of the building by a wide corridor. The college required great flexibility in plan so over-subscribed departments might borrow space from those under-subscribed. The program also called for a building that could be enlarged in case of future need; the design makes this possible.

"A series of wide, hollow columns runs along each side of the building and support precast concrete beams spanning the 60-foot-wide building. These columns rise the full height of the four floors; have windows between them of the same width; become, in truth, the architecture itself."



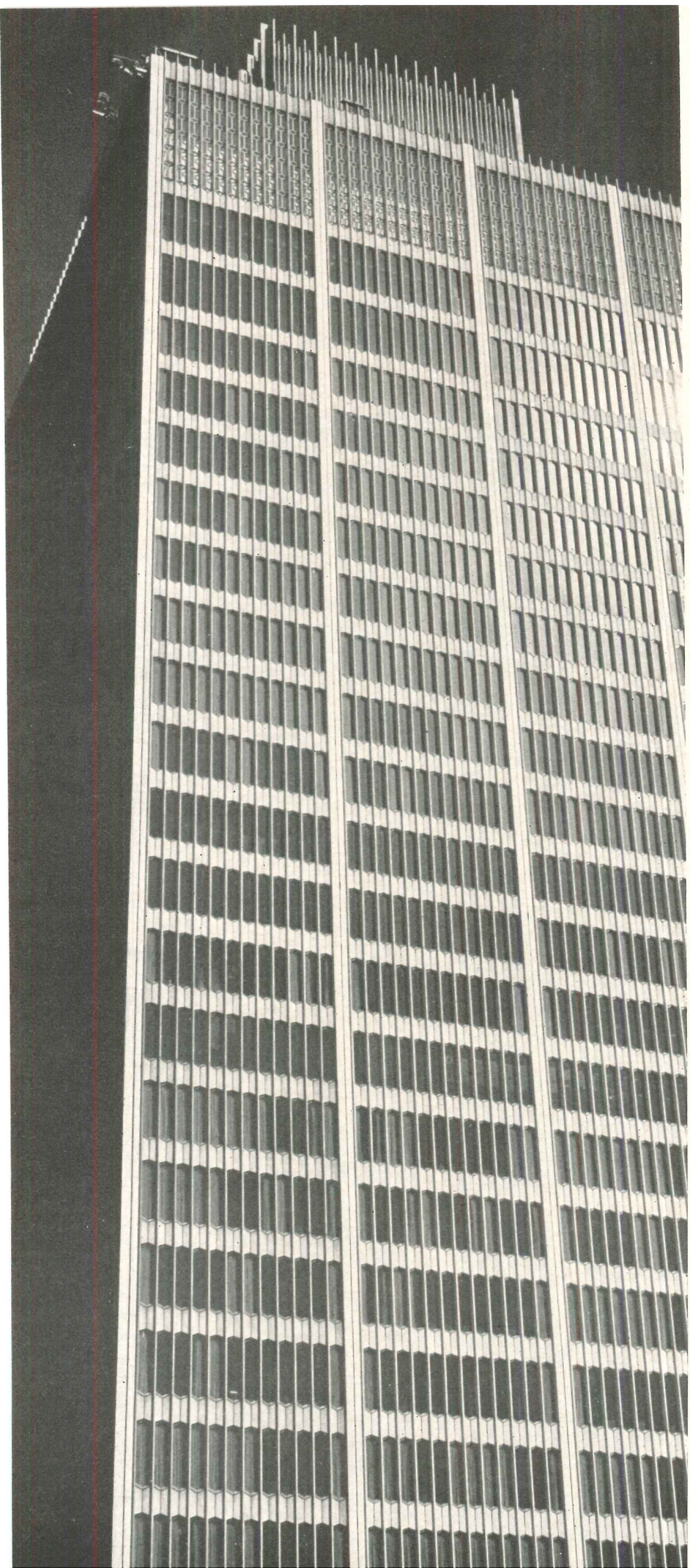
Harry Weese: "The use of hollow, U-shaped columns that run from grade to roof and comprise the outer wall of the building, and the accompanying single span system means that corridors running the length of the building may have clerestory windows for light in the corridor. Also—if need so dictated—corridors could be differently located on various floors.

"The hollow columns have a second important function. In laboratories, fume cabinets and sinks can be fitted into the recess; and the columns provide a continuous vertical space for exhaust ducts and waste pipes from these fittings. Waste pipes from laboratory benches also lead into the columns. Where there are no fume cabinets or sinks, the column recesses become closet space.

"On the laboratory side compressed air, gas, hot and cold water, and electricity run the length of the building under each floor, passing through sleeves in the precast concrete beams. For maximum flexibility and ease of maintenance these pipes are exposed, and can supply either up into the laboratory above or down to the bench below."

YAMASAKI'S FIRST SKYSCRAPER

New headquarters for Consolidated Gas Company adds a lively note to Detroit's Civic Center and down town skyline by means of a 32-story-high curtain wall of sparkling white precast concrete



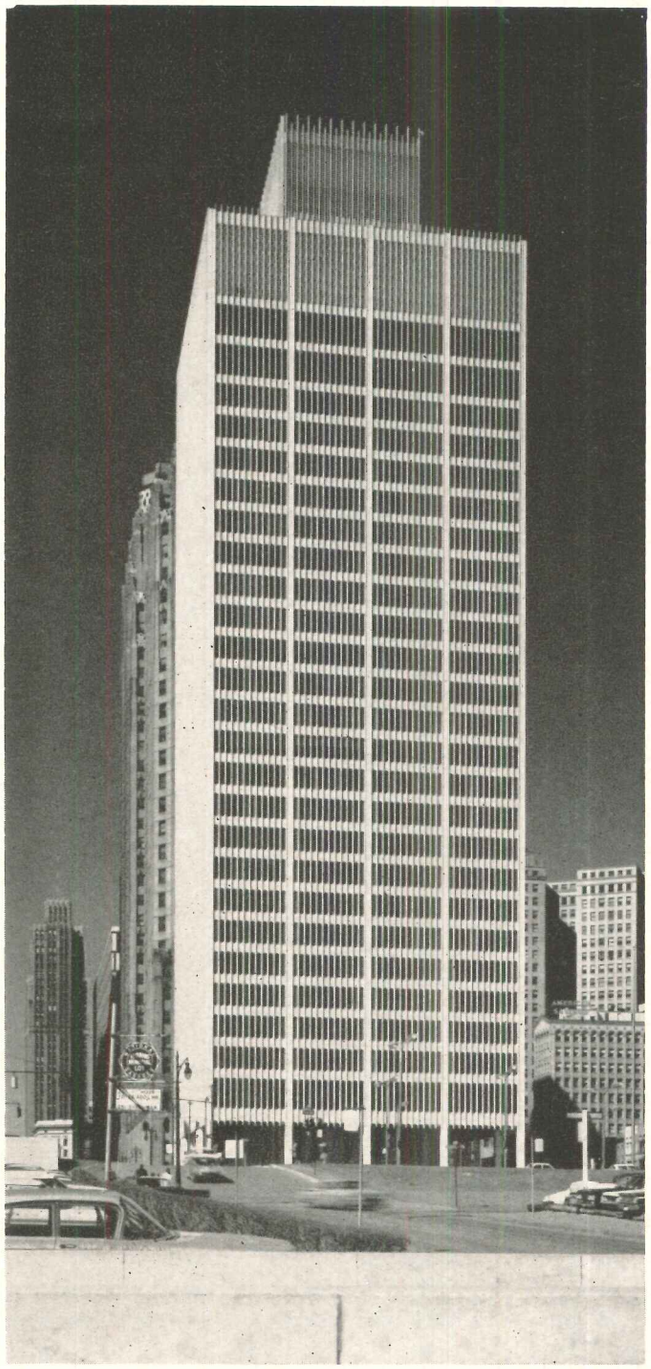
NEW HEADQUARTERS FOR THE CONSOLIDATED GAS COMPANY

"The appeal and the inspiration of the tall office building lie, of course, in the element of loftiness, in the suggestion of slenderness and aspiration, the soaring quality as of a thing rising from the earth as a unitary utterance, Dionysian in beauty. The failure to perceive this simple truth has resulted in a throng of monstrosities, snobbish and maudlin or brashly insolent and thick-lipped in speech." This concept for the American skyscraper, stated by Louis Henry Sullivan* early in tall-building history, continues to excite the imagination of designers. Architect Minoru Yamasaki says of his design for this Detroit skyscraper: "We wanted to develop an aspiring sense of verticality which is inherent and necessary to a building of this height, and which we knew would give a sense of reaching for the sky. The white, quartz-aggregate precast skin enabled us to develop this sense of verticality with the most delicate components, and further attain the richness so necessary to modern architecture."

He further explains: "The precast skin was designed with extended hexagonal openings to suppress the horizontal lines of the spandrels, and to give form and texture for over-all interest. We deliberately put a crown (housing boilers and cooling towers) on the building. The crown will be illuminated by night in a pale blue color, reminiscent of a gas flame. The white marble for columns relates the building to the remainder of the Civic Center. We felt that white precast concrete for the skin gives the necessary variety appropriate to a utilities building and still maintains the color of the neighboring buildings. It also makes possible an interesting design

* Louis H. Sullivan, The Autobiography of An Idea, Dover, New York.

Balthazar photos



Above: view from across the river

FACTS AND FIGURES

32 stories; 430 feet high; 450,000 square feet (15,000 per floor); building cost $20 million.

Plan is square and composed of 16 bays each 30 feet 4 inches on a side; bay divided by 13 yields twelve—2-foot 4-inch windows and a column; mullions are 5 inches wide and glass is recessed 11 inches; basic module for building is 4 feet 8 inches.

Precast, prestressed, quartz-aggregate panels from 4 to 6 inches thick were 24 feet in height (two floors) and secured in place by welding buried angles to steel frame; joints are at window centers; fixed sash are of stainless steel; glass is polished plate.

Both boiler and air-conditioning systems fueled by natural gas.

Building is set back 57 feet from Jefferson Boulevard curb to conform to a new building line; entrance on this (principal) side is by way of a 30-foot-wide white marble bridge spanning a reflecting pool.

The structure is the tallest all-welded steel frame in the world; rests on a system of belled-out caissons that reach down 115 feet below ground level to hardpan.

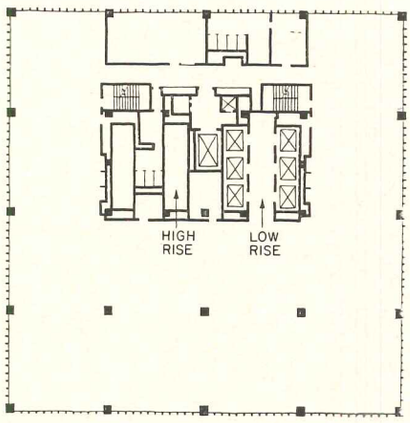
without involving the high cost of carving marble.

Yama continues: "We tried a 4 foot, 8 inch module, practical and obvious; but I disliked the proportion. When we halved it to arrive at the final 2 foot, 4 inch module I began to get excited about the exterior. The smaller width served two purposes: it gave an infinitely more 'vertical look' to the building; and it practically eliminated the feeling of acrophobia when one is high in the tower, even though the glass extends nearly to the floor. Both were important considerations—the first obvious in developing verticality, the second because I place the feeling of security and comfort in the environment we create ahead of any esthetic dogma."

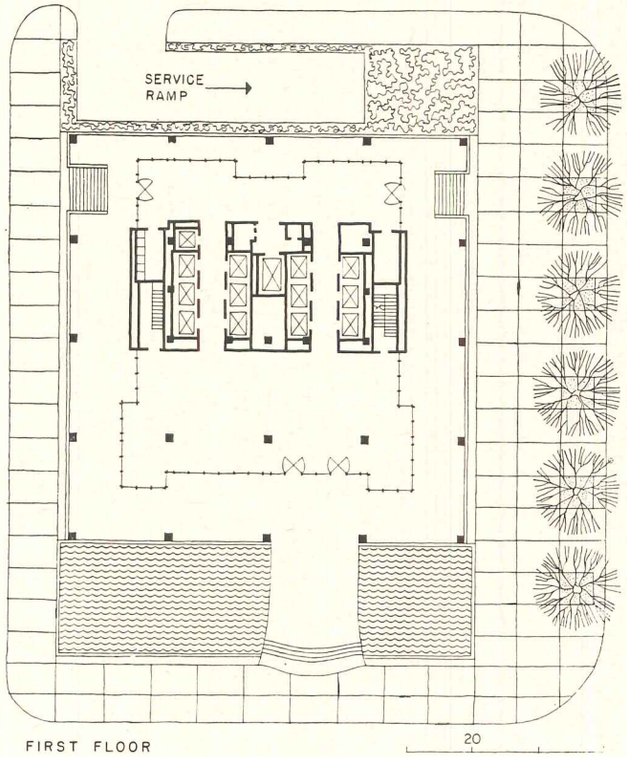
The building makes a striking picture in its setting—a favorable plot backed up against the bustle of downtown Detroit and facing across Jefferson Boulevard to the openness of the park-like Civic Center and the river beyond. Many of the means of architectural expression have been combined here with considerable sensitivity and style to bring a handsome building into being. Its air of openness, lightness, and understandable scale contrasts sharply with the stolid formality of the Seagram Building. The architecture of the Gas Company possesses the virtue of refinement; the last square inch has been cunningly detailed. We would be hard put to name more than just a few buildings that have as much or more pure visual appeal.

But consider the idea that lies behind the glamour—the tall building thought of as "soaring," as having "aspiring vertically, a sense of reaching for the sky." Is this concept reasonable for an office building, or is it romantic fancy? The single space in a Gothic cathedral does indeed soar gloriously upward in aspiring verticality, to disappear in the mysterious twilight of the vaults. And the result is an ambience of mystery, awe, reverence—all as it should be, and all in the nature of the function, the space and the structure.

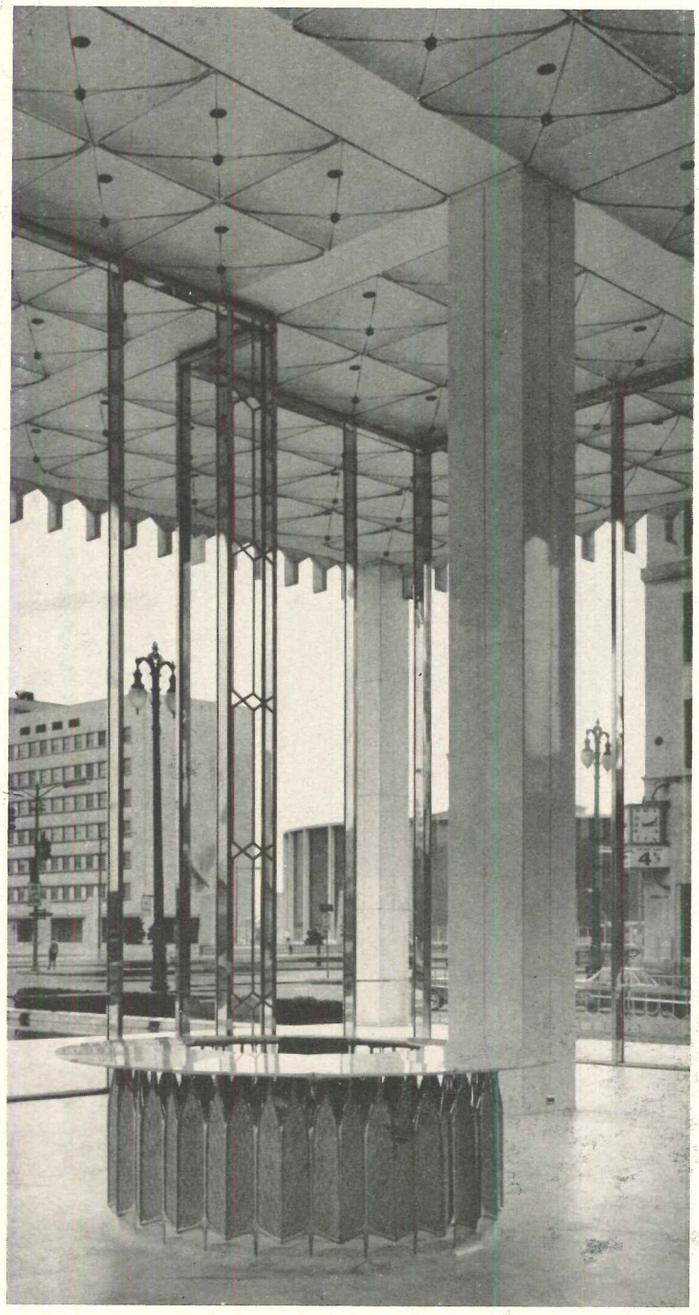
The hardheaded rationalist will tell you the real nature of a tall office building goes more like this: it is a



TYPICAL FLOOR (7th)



FIRST FLOOR

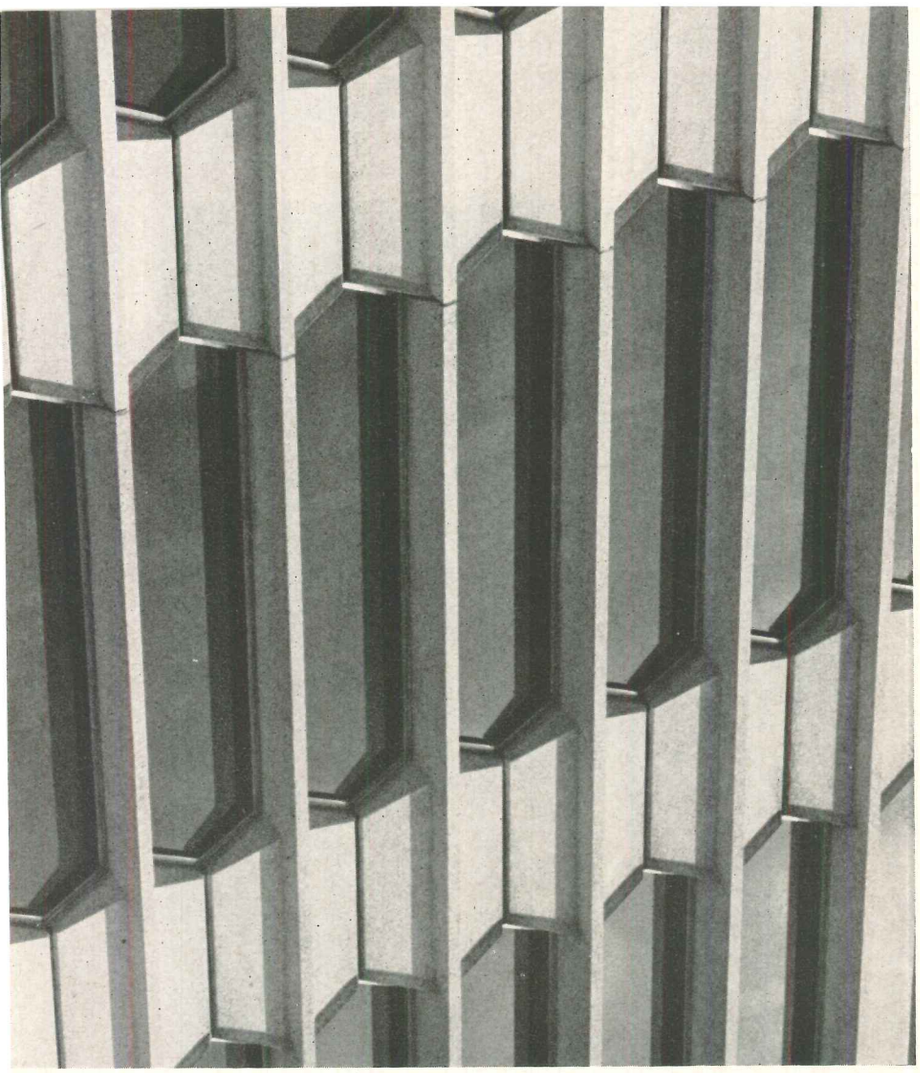


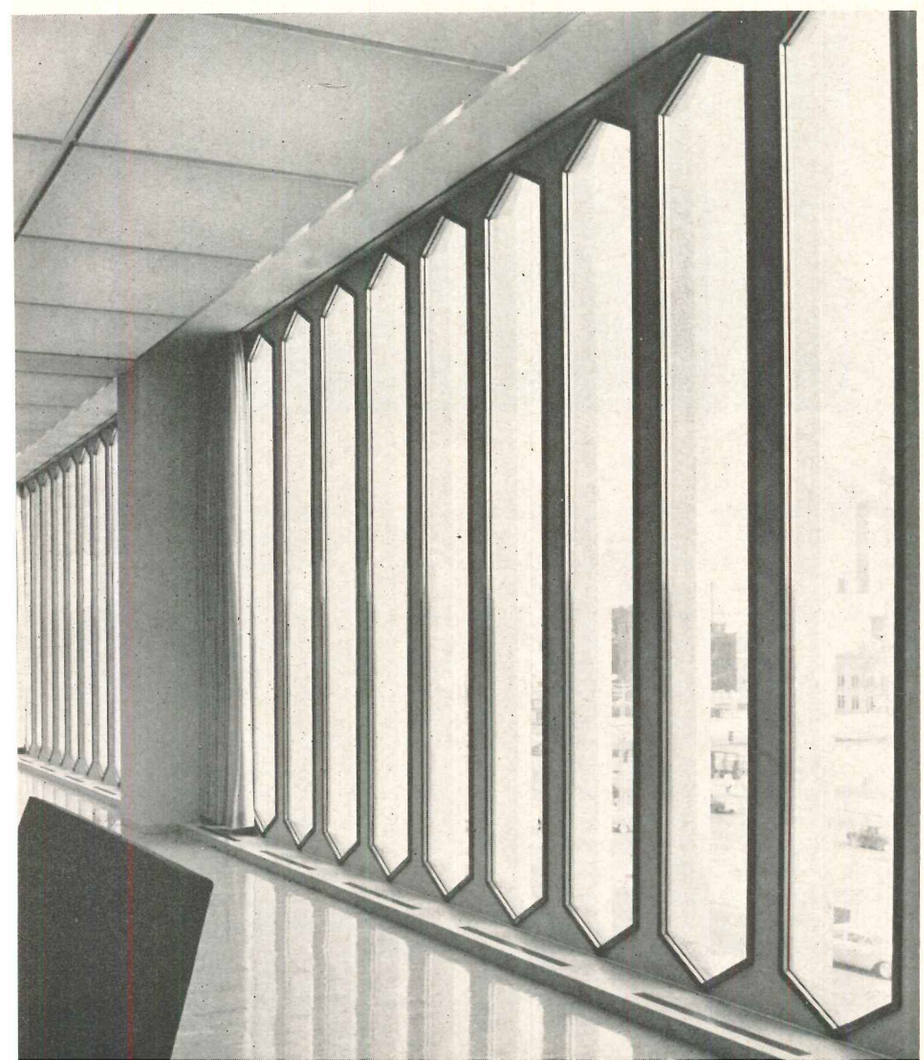
THE 30-FOOT-HIGH LOBBY has walls, floor, and columns of white marble, and is reached by way of a white marble bridge over a reflecting pool on the Jefferson Boulevard side, or from stairways giving to the two side streets. At ground level, the entire building appears to come down upon a platform of white marble—a classical touch that lends a considerable amount of dignity for the pedestrian passerby. The lobby interestingly uses a single color: elevator lobbies are carpeted in deep blue, and a pattern of suspended blue lights twinkle overhead at night.

Architect Yamasaki explains: "The Gas Company president, RalphMcElvenny, felt from the beginning that we should give the first floor to the city. Consequently, the enrichment of the building reaches a climax in the lobby. With the exception of the core, the lobby is open and possesses—I believe—a sense of welcome and a quality of transparency fitting for a kind of center for Detroit.

"Because lightness was of paramount importance in the glass wall of the lobby, I proposed that the mullions be placed in tension to reduce their cross section to an absolute minimum. (ARCHITECTURAL RECORD of August 1960, pages 141-146, includes details of lobby, also of curtain wall, and a general article on the building.) Our experience with the St. Louis airport—where the mullions appear to support the shell—led to this idea. The mirror finish on the stainless steel of the mullions also aids in making them appear lighter. The resulting delicacy was a very important consideration to me.

"In a high place people have a tendency to look up, and I feel that when they do so they should be rewarded with something more than just a flat ceiling, so the lobby ceiling was enriched. At night the blue lights will sparkle and give the effect of jewels supported by the four arms of the crosses below the coffers. Lee DuSell detailed the lights, and also designed the reception desk and elevator doors. In about a year we will have a piece of sculpture by Giacomo Manzu standing in the pool, with a quiet fountain at its base."





series of horizontal spaces defined by a series of horizontal slabs about 12 feet or so apart, arranged in a vertical stack and held in position by continuous columns. Also, that the essence of each level lies in its horizontality: people move about horizontally and spaces are so planned; continuous or grouped windows doggedly make horizontal bands (no matter how you point them); daylight enters horizontally; one usually looks out horizontally; utilities spread horizontally, and so on. The tall structural frame has a vertical over-all configuration, but its true character is that of a *cage,* in which the column faces seldom count for more than the spandrels, and often for less.

The carefully planned vertical facing of the Gas Company makes its point from nearby, but as one moves away the delicate mullions count for less and the true pattern of the cage emerges. It is interesting to note that this effect seems to increase with distance. From across the river, the Canadians have a view (top, page 145) that speaks for itself. And at last, at dusk, the interior lights come up and the cage pattern again blazes into life.

The Gas Company will have every reason to enjoy its new headquarters: the building boasts a high ratio of top quality, daylighted office space; access, circulation and service are well planned; the waffle slab floor system ingeniously combines structural, mechanical, power, and communications systems within a commendable 3-foot floor to ceiling height (ARCHITECTURAL RECORD, August 1960, pages 204-206, details and article); the striking lobby and accompanying second floor customer area should serve admirably to create favorable public relations and build a "prestige" corporate image—as will the entire building. A nearby power plant adds to the already high percentage of dirt in the formidable Detroit atmosphere, which soils the precast facing more rapidly than was anticipated. However, the built-in window washing machine handles this problem adequately by making periodic cleaning relatively easy.

—James S. Hornbeck

Second floor customer reception area; seats are for demonstration meetings

Second floor office reception area

Typical second floor office

Two views of the 25th-floor executive headquarters

Headquarters Office
Michigan Consolidated Gas Company
Detroit, Michigan
Ralph T. McElvenny, Chairman of the Board and President
Huly Daly, Executive Vice President

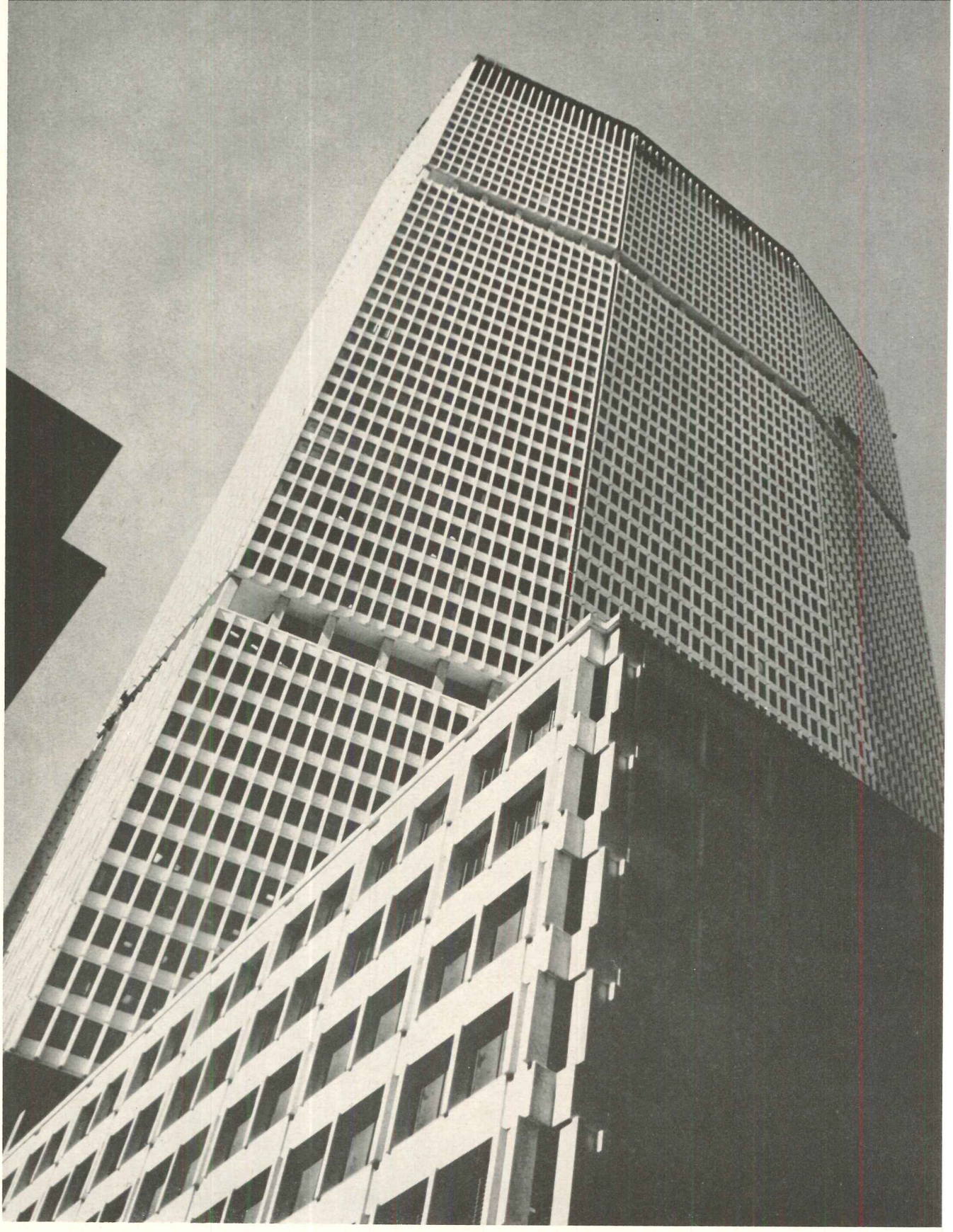
ASSOCIATED ARCHITECTS AND ENGINEERS:
Minoru Yamasaki—Smith, Hinchman & Grylls

ARCHITECTURAL DESIGN:
Minoru Yamasaki and Associates
Minoru Yamasaki, Firm Sponsor
Aaron Schreier, Project Director
Harold Tsuchiya, Project Director

ENGINEERING DESIGN, WORKING DRAWINGS SPECIFICATIONS, FIELD SUPERVISION:
Smith, Hinchman & Grylls
Robert Hastings, Firm Sponsor
F. J. B. Sevald, Project Administrator
J. J. Andrews, Project Director
R. H. May, Project Director

CONSULTANTS:
W. B. Ford Design Associates, Interiors
Bolt, Beranek and Newman, Acoustics
D. Lee DuSell, Lobby lights, desk, elevator doors

Bryant and Detweiler Company
GENERAL CONTRACTOR:

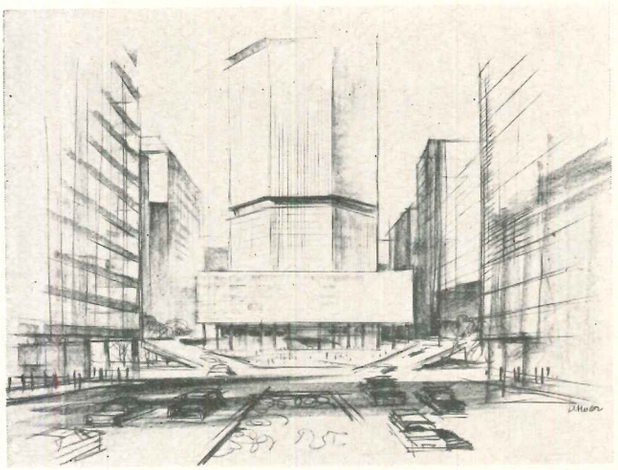


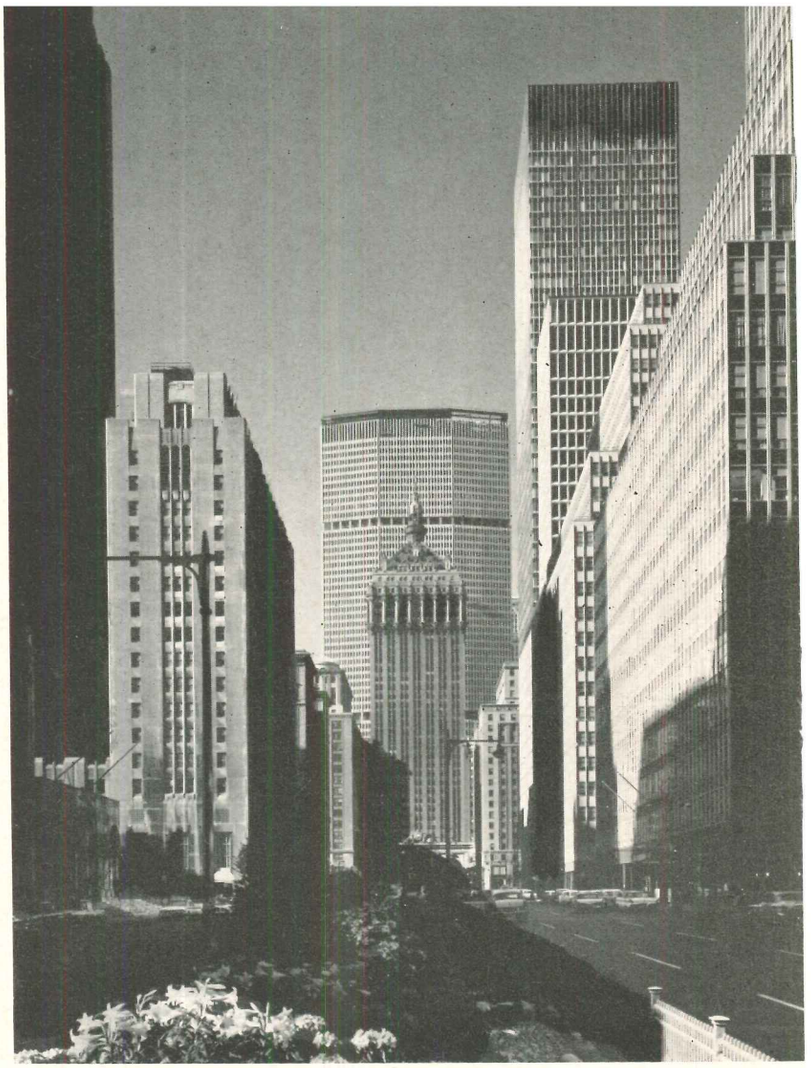
Joseph W. Molitor photos

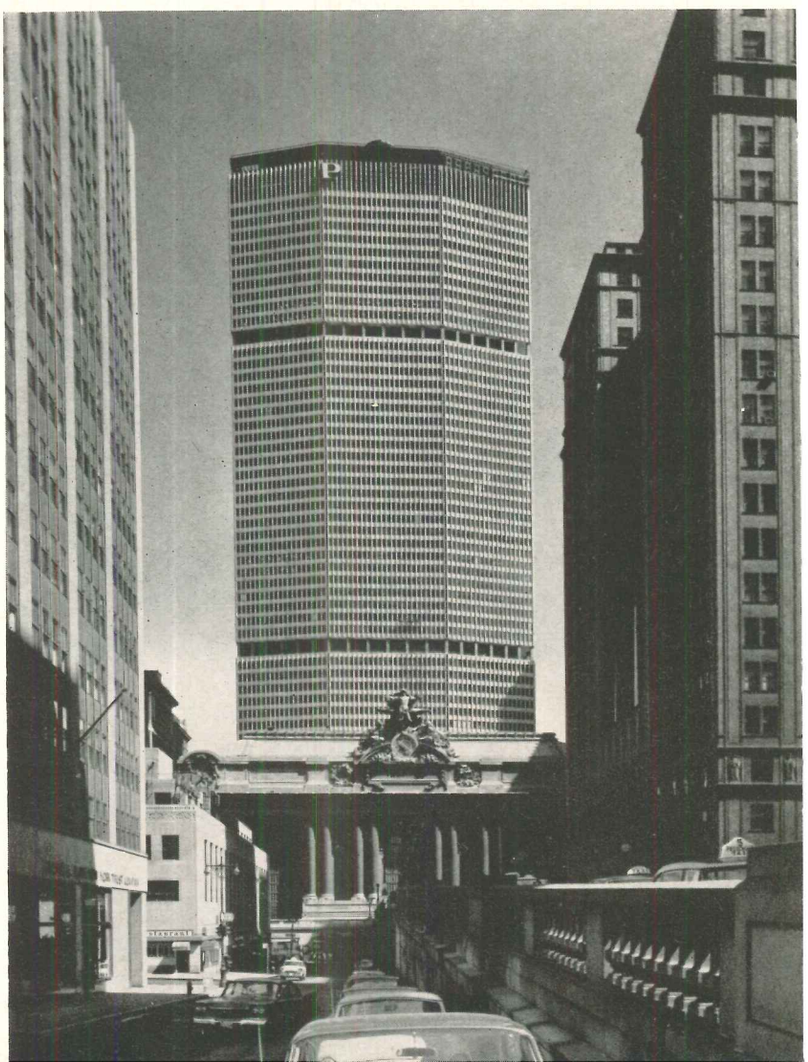
THE PROBLEM OF PAN AM

Gropius, Belluschi and Roth contend with tough economic imperatives and achieve an excellent architectural solution

Pan Am Building







Above: how Pan Am would look if the New York General tower were removed and its site became a park. Although Gropius knows that this eventuality is unlikely, he also considers it the optimum solution. View from the north (*top right*) shows the New York General tower and from the south (*bottom*) the Grand Central Terminal. Pan Am closes the Park Avenue vista from the north and south. On the opposite page (*top*) is the view from the east on 44th. From the west on 44th (*bottom*) Pan Am is positioned on the axis of the street

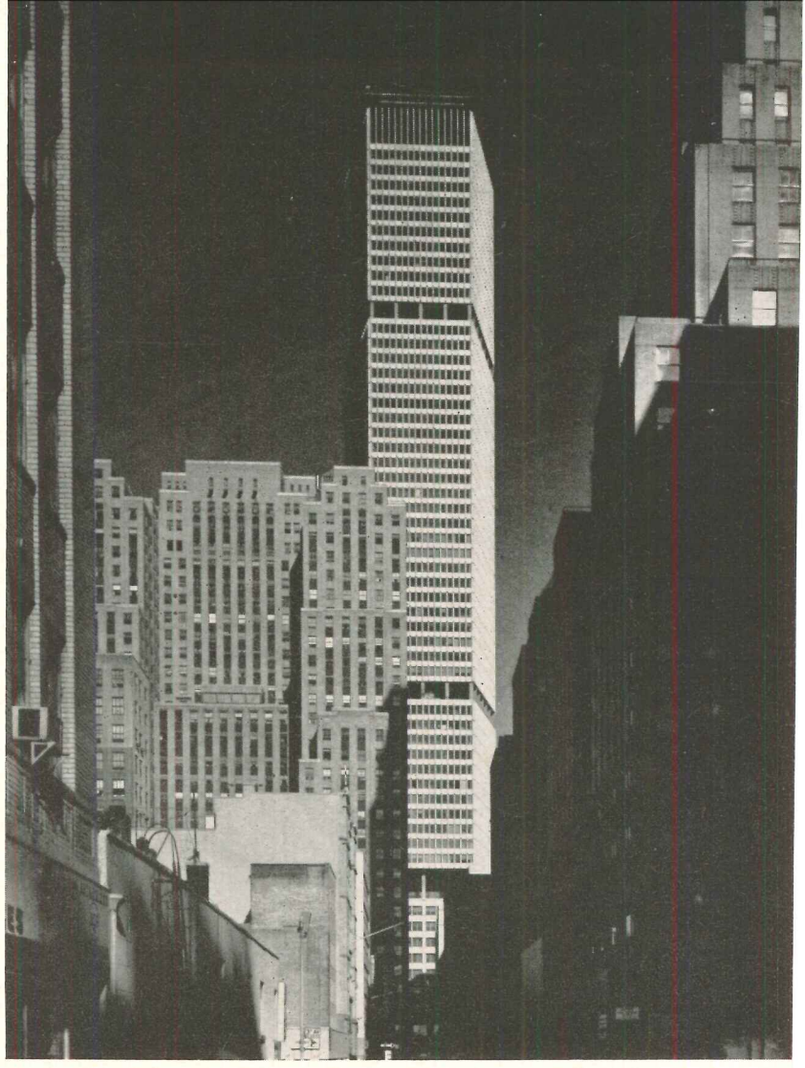
OWNER: *Grand Central Building, Inc.*
ARCHITECT: *Emery Roth & Sons*
DESIGN CONSULTANTS: *Walter Gropius (The Architects Collaborative), Pietro Belluschi*
STRUCTURAL ENGINEER: *James Ruderman*
MECHANICAL AND ELECTRICAL ENGINEERS: *Jaros, Baum & Bolles*
GENERAL CONTRACTOR: *Diesel Construction Company, Inc.*

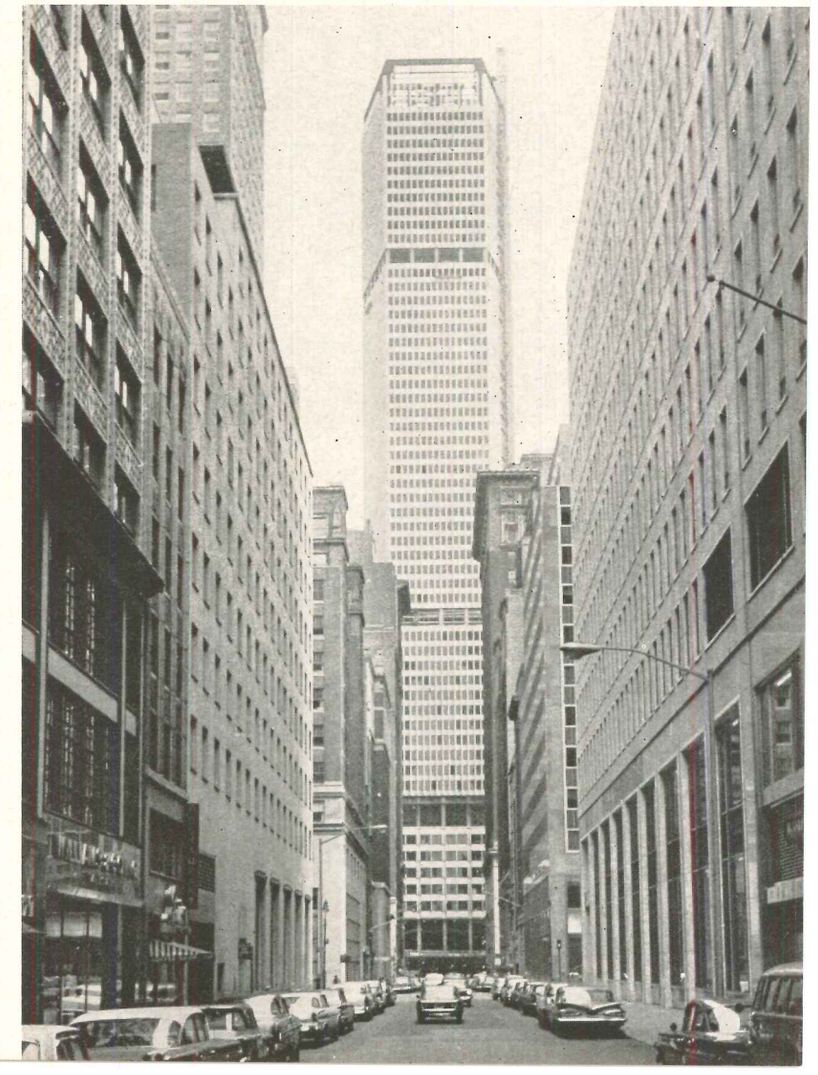
The Pan Am Building is now open for business. It is larger than any other commercial office building and is second only to the Pentagon and the Chicago Merchandise Mart in size. Its entrepreneurs are celebrating the fact that the building is already 95 per cent rented and 100 per cent financed, a highly successful speculation. Were it also acclaimed as a work of art, and a gift to the citizens of New York and the world, its owners would surely be happier still, but as it is the building has received much derision, little praise. Much of this criticism is misinformed and unfair. Newspapers whose real estate pages are models of indifference to the social and esthetic implications of the events they report have given free rein to their art critics and editorial writers, who have been blasting away at Pan Am with holy zeal. For those of the public who care, and more seem to this time, Pan Am is the last straw. Aided by a slanted press and his own emotion, the concerned citizen sees the building as a monstrous symbol of the greed of real estate speculators in dark collusion with city hall. He accuses these interests of callous indifference to the welfare of the ordinary man, for putting up a building whose 17,000 new occupants and 250,000 daily visitors will crowd him on pavement and subway platform, slow his taxi and jam his restaurants, whose tenant-craving bulk has blotted out his sky. All have pronounced the building ugly, of course, for how could it be otherwise?

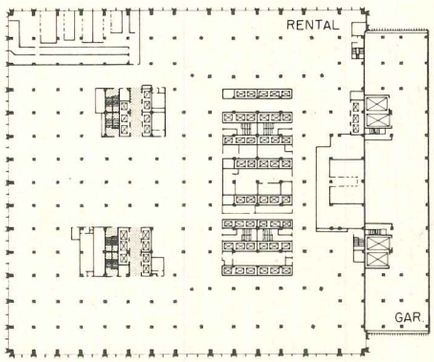
This universal disparagement of Pan Am is extremely unfortunate for two important reasons. The journalistic criticism it has so far received does not contribute to anyone's understanding of the real forces which shape cities and buildings. To understand all is not necessarily to forgive all, but to know more is to cope better, and the economic and social dynamics behind Pan Am should be better comprehended by both citizen and architect. As serious as the failure of this type of criticism to educate is its unfairness to the architects of the Pan Am Building, Walter Gropius, Pietro Belluschi and Richard Roth, and to its late owner, Erwin Wolfson.

If a painting or sculpture fails as a work of art, it fails as a thing of consequence, excuses are irrelevant, and it does not deserve our regard. If a building is less than a total esthetic success, however, it may be a brilliant compromise with incontrovertible forces which reasonable criticism must consider. Pan Am is such a brilliant compromise.

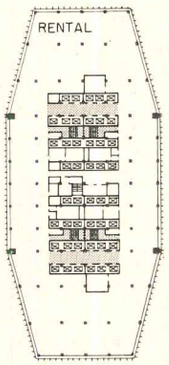
Most of New York's postwar office buildings are ziggurat towers whose indefinite form is determined by the maximum allowable rental space which can be packaged on the site. Erwin Wolfson sacrificed 600,000 square feet of the rentable space which the New York City zoning ordinance allowed so that his architects might achieve an *architectural* solution, in terms of exterior massing, interior space and pedestrian circulation. Pan Am is decisive in form and explicit in its relationship to the site.



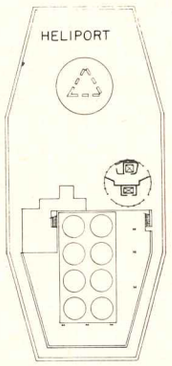




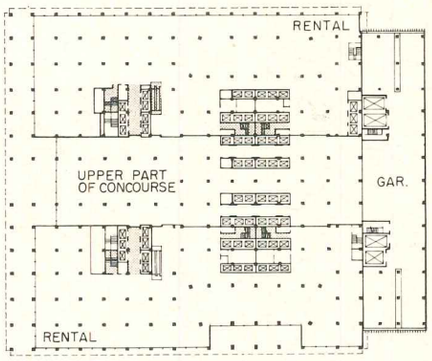
THIRD FLOOR



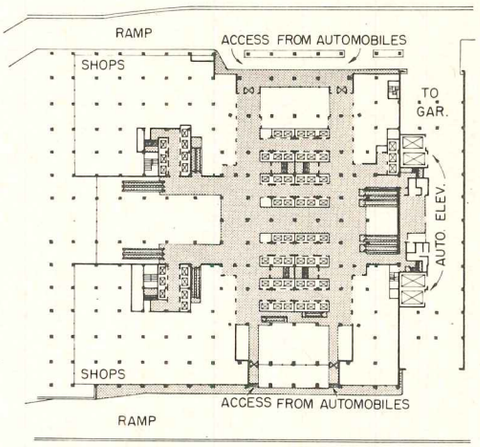
TYPICAL FLOOR



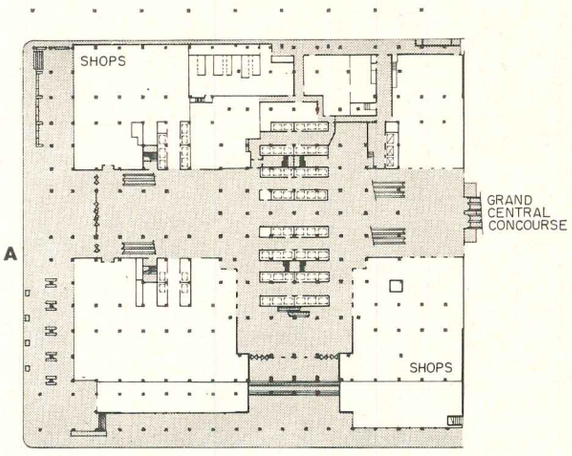
ROOF PLAN



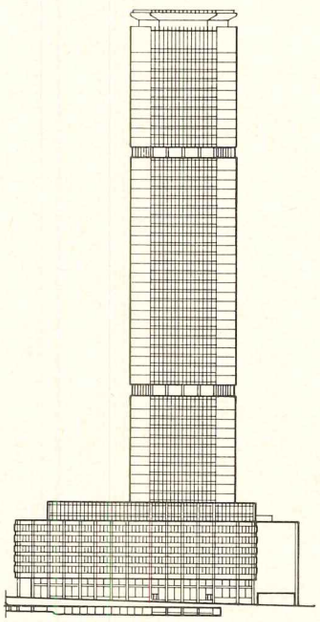
SECOND FLOOR (MEZZANINE)



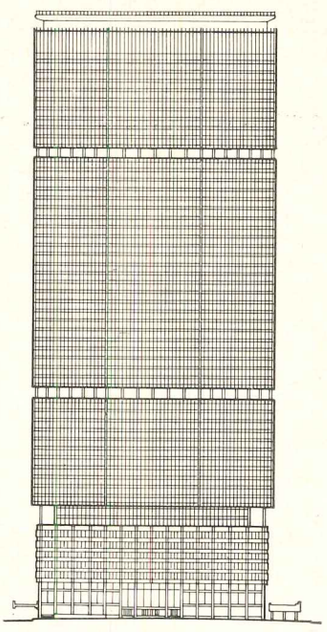
LOBBY FLOOR



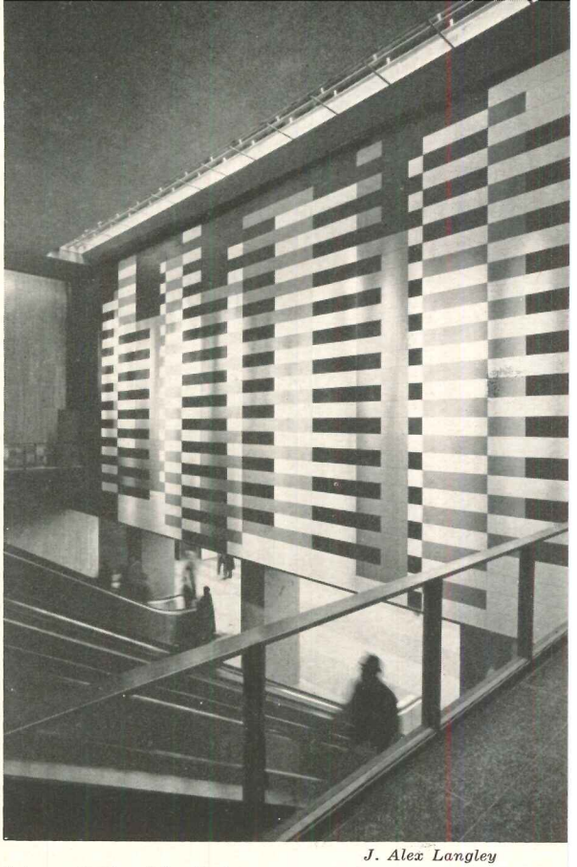
STREET FLOOR



ELEVATION **B**

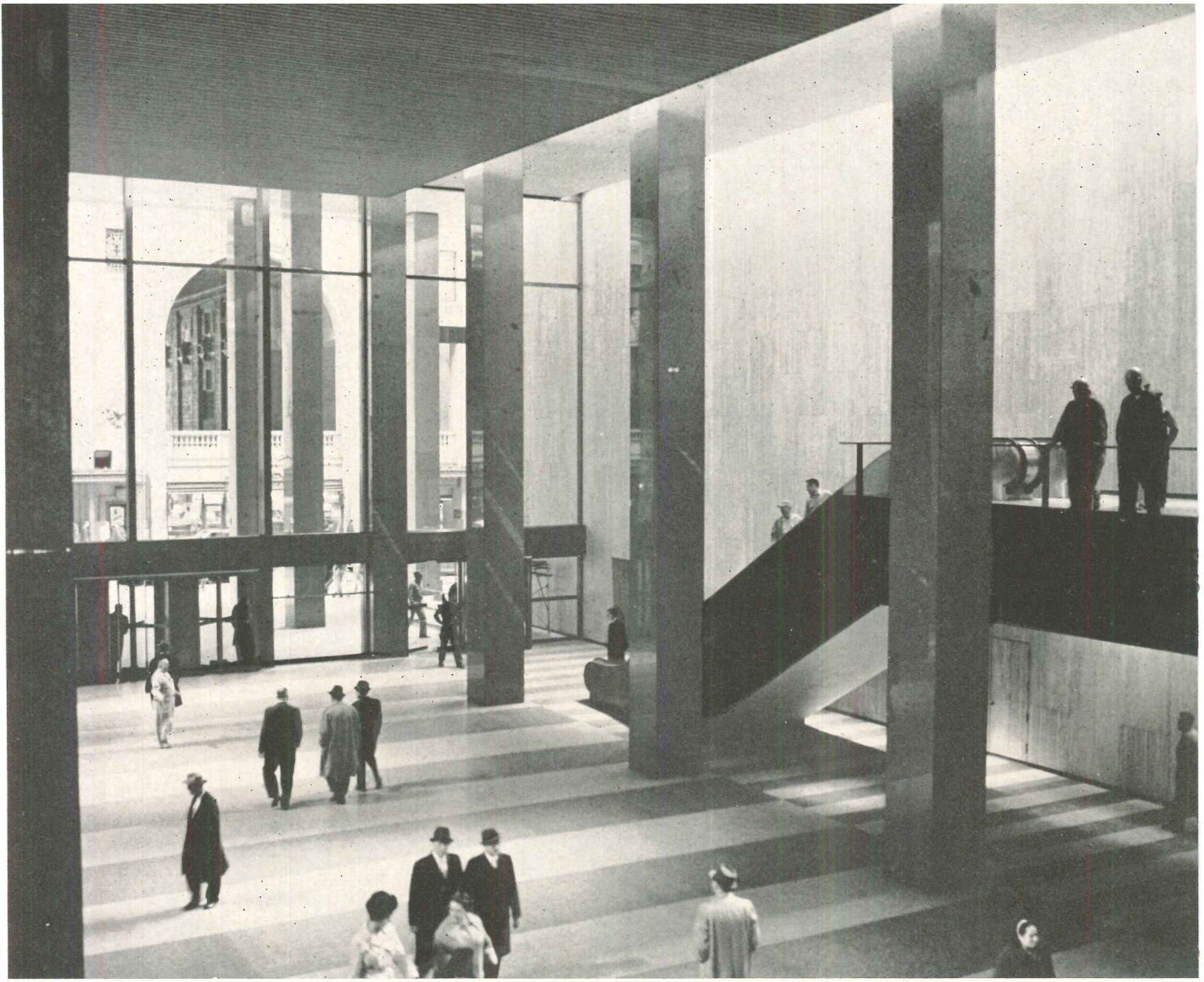


ELEVATION **A**



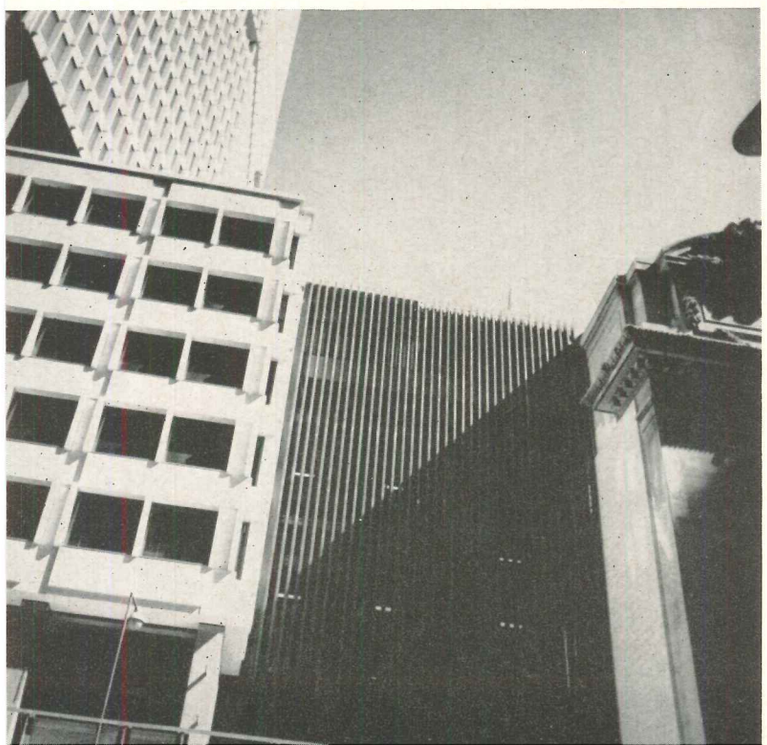
J. Alex Langley

Above left: Entrance to Pan Am from Grand Central Terminal is restrained in design. Escalators are a major circulation element connecting the terminal concourse to 45th Street by means of the street floor of the Pan Am building. Direct access north to 45th Street from the terminal was not possible before Pan Am. *Above right:* Mural in laminated plastic by Josef Albers. *Bottom:* Lobby screen was designed by Gyorgy Kepes. A wire sculpture by Richard Lippold (not shown) is being constructed



Above: Street floor concourse looking north toward 45th Street. Escalators lead to lobby at mezzanine level. *Bottom left:* Pan Am adjoins Grand Central Terminal by means of a carefully studied link which conceals a parking garage accessible from the east and west ramp. *Bottom right:* Great interior of famous terminal has been left intact. Access to Pan Am is also an exit from the concourse through former entrance to track

J. Alex Langl



The broad prismatic face of the tower is centered on Park Avenue, whose width it just exceeds, and the narrower face is pinpointed on the east-west axis of 44th Street. Gropius and Belluschi, who were called in early to act as design consultants at the suggestion of Richard Roth, wanted to place the tower in such a way as to avoid visual ambiguity. A setting of glass skyscrapers of different heights and varying setbacks along the Park Avenue building line presents a shifting aspect at best, and in a city which is continuously transforming itself, only the old street patterns are fixed. To these Pan Am relates. Both design consultants believed that the axis of Park Avenue should be closed by Pan Am. Gropius conceived the building as "a strong point of reference for the unbalanced building masses that are situated north and south of Grand Central Station."

The 49-story tower of the structure which rests on a 10-story base is a broad octagon designed to catch different intensities of light which subdivide its form and diminish apparent bulk. According to Roth it was not good money-making practice to make this type of splay in an office tower because of increased construction cost and the loss of four rentable wedges, but Wolfson made this concession to the esthetic recommendations of his design consultants. Gropius had control of the design of the exteriors of the building as well as of the public spaces in the interior, and had been entrusted by Wolfson with the leadership of the whole design process in order to establish consistency and unity of appearance. He has long felt that the curtain wall lacks solidity and the definition that can be obtained by the movement of light on surfaces capable of casting and receiving shadow. The precast concrete panels which he designed for Pan Am are bold in scale and in good proportion to the building's over-all mass.

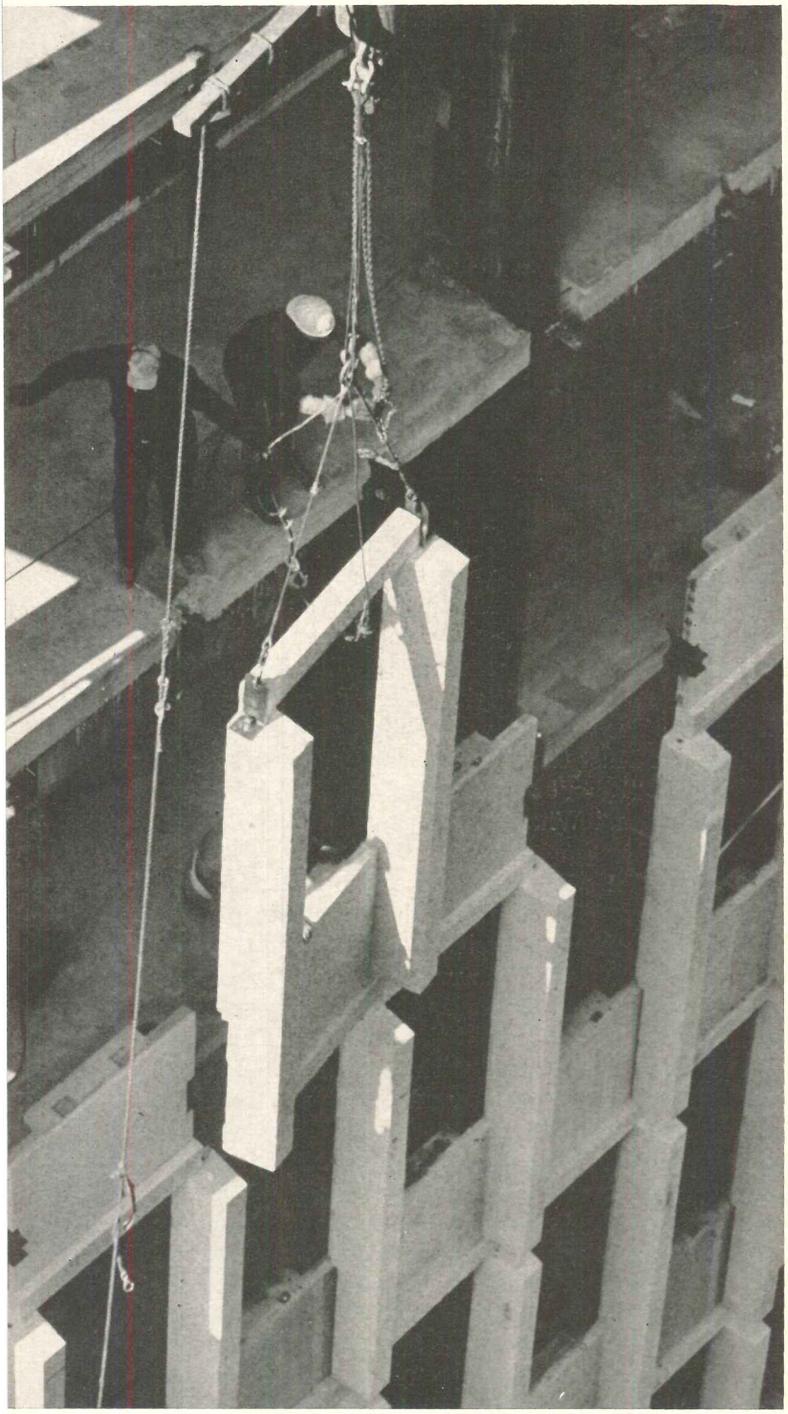
The broad face of the tower was not made to face north and south primarily to reduce the air conditioning loads, but this argument supported the esthetic decision. Although it presently serves as a backdrop for the New York Central Building, now called the New York General Building, as seen looking down Park Avenue from the north, it was not conceived as such. The owners of the New York General Building have a new 99-year lease with the railroad but older office space may one day become as ephemeral as the pre-war apartments which graced Park Avenue north of Grand Central. Gropius believes that in a perfect world the site of the New York General Building should become a park. (See sketch on page 152.)

The days are numbered for old concourses, too. The great old terminal designed by Reed and Stem and Warren and Wetmore and completed in 1913 is considered one of the finest railway stations in the world. It has been currently spared, not through the force of anybody's architectural conviction, nor "save the concourse" pleas, but only because James O. Boisi, vice president in charge of real estate for the New York Central, didn't include it in the 3½-acre air rights parcel offered Wolfson for development. The site he offered lay between the terminal and the New York General Building and was occupied by the six-story Grand Central Terminal Office Building. Asked about the several more comprehensive schemes for the Grand Central properties (notably that designed for Webb & Knapp by I. M. Pei in 1954) which incorporated the plots occupied by the terminal as well as the New York General tower, Boisi stated that the Zeckendorf scheme involved 10,000,000 square feet and 50,000 people, and was too big in his opinion. "I serve no purpose making grandiose plans." His purpose is to encourage carefully limited development schemes to deliver income to the railroads as soon as possible. The schemes must be readily financed, buildable within a fairly short period, with more than a reasonable chance of success. According to Boisi, the financial plight of the railroad is too extreme to permit it to wait the maturation of bigger plans. The railroad owns the air rights over the tracks under Park Avenue, on the west up to but not including the Racquet Club, and on the east up to and including the Waldorf. Below these points all the elegant, much lamented but not very profitable apartments gradually disappeared at a pace controlled by the railroad, and were replaced by office buildings carefully timed not to glut the market. Must the great concourse take its turn? Said Boisi: "I don't consider the terminal inviolate; it is a burden." What will replace it? Boisi is not yet sure.

The architects all revere the terminal. Richard Roth contends that he would have had no part of the Pan Am scheme were it to "detract from, or materially alter Grand Central Terminal." Pan Am treats its elderly neighbor as though it were going to last. The architects held the height of Pan Am's base to 10 stories to align with the terminal cornice, which is being carried around the corner to finish the now partially exposed north wall. The approach from the concourse to the Pan Am building has been designed with great restraint so as not to further violate a great interior, already marred by gigantic advertising displays. According to Gropius's associate, Alex Cvijanovic, the architects fought hard to teach their clients the value of the underplayed entrance. Had Pan Am insisted that its entrance from the concourse compete with the Kodak sign, one could only pity Gropius, Belluschi and Roth.

Both Gropius and Roth assert that Erwin Wolfson was determined to put up the best building he could, consonant with a reasonable return on his investment. Costs had to be held to $25 per square foot in contrast to the $40 per square foot of the Seagram Building. Said Roth: "Erwin wanted to put up a building he could be proud of that wouldn't

J. Alex Langley



Precast panels were manufactured with great precision. They had been budgeted in the $6-per-square-foot range, but turned out to fall within an $11-per-square-foot range. Since the Diesel Construction Company was at the same time erecting the Bankers Trust office building which also has a precast concrete curtain wall, Wolfson bought the company which was to fabricate the panels, thus keeping the cost down and preventing delay. Panels are composed of quartz chips, predominantly white with a small proportion of gray, set in a cement matrix

hurt the city or him."

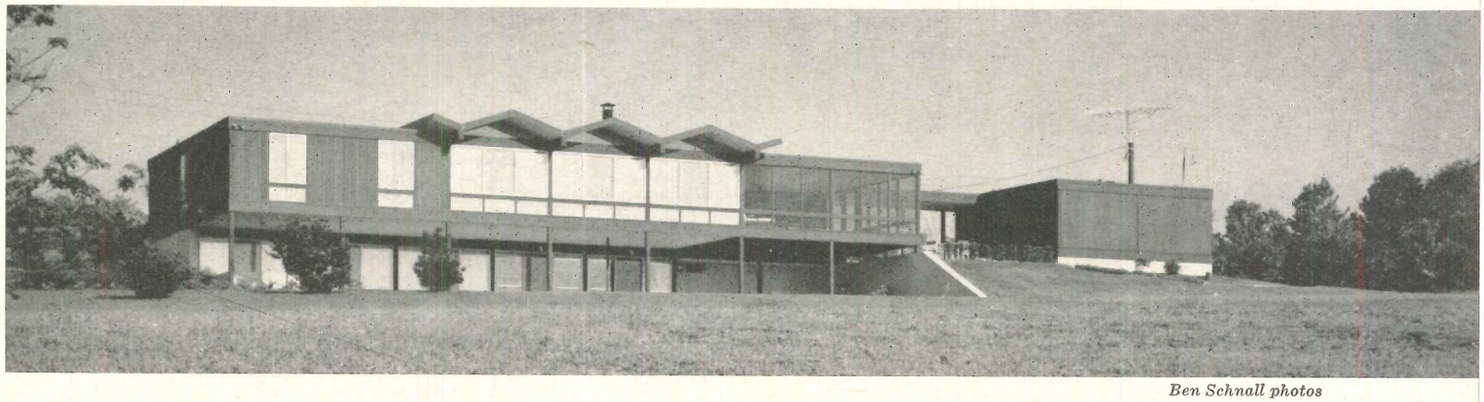
In addition to giving up the aforementioned 600,000 square feet of rentable space to three-story lobbies and a generous 40-foot setback on 45th Street with a three-story undercut, Wolfson put in six more pairs of escalators than the two which were actually required for the building's tenants. Escalators cost a lot, and these were located to facilitate pedestrian traffic from the terminal concourse through the Pan Am Building, to 45th Street on the north or Vanderbilt Avenue on the west. It is now easier than before for those on foot to get in and out of the terminal.

James Boisi doubts that there will be 17,000 souls in the Pan Am Building when all the floors are occupied. He thinks the figure will range from 7,000 to 10,000. Considering the fact that tenant companies put their executive echelons and supporting staff in high quality office space and that these people can't be crowded, he may be right. The more humble workers who used to be packed in have been either replaced by automation or relocated in the suburbs where rents are cheaper. Boisi notes that many of the tenants will have moved from office buildings within 15 blocks of Pan Am, so the building can hardly be accused of drawing new hordes to the Grand Central area. Pan Am is at the hub of East Side transportation facilities and many of these people arrived at Grand Central en route to their former buildings and jammed sidewalks, subway platforms, taxis and buses on their way. Now they will simply take the elevator up to the office. Vertical versus horizontal circulation in the Pan Am context has been more fully discussed by Emerson Goble in his article "Pan Am Makes a Point" (May 1962, pages 195-200).

This concentration of office buildings in the Grand Central district makes a large contribution to the city's economic life, and these structures are great taxpayers as well. All the Pan Am architects agree that the city must increase its transportation facilities to accommodate them. Said Belluschi: "There is one point that you really cannot gloss over, and that is the congestion in the subways. Of course . . when a baby grows out of his shoes, you don't cut his feet down, or cut off his toes, you just buy new shoes; and we are used to growth in this country."

Roth feels that eventually all surface transportation with the exception of diplomats, cars, buses, taxis and automobiles driven by the handicapped must be banned from the Grand Central area. People will walk, as they do in the Wall Street district. He predicts that Pan Am will have the most serious impact on its surroundings at lunch time because the building lacks adequate restaurant facilities and so does the area. Says Roth: "We will have to wait and see what happens to people; the full force will be felt by next Christmas when everyone will be in."

—Mildred F. Schmertz



Ben Schnall photos

A ZONED, FLEXIBLE HOUSE FOR A GENTLY SLOPING SITE

Joseph Stein's two-level plan gives individual privacy and big spaces for entertaining

Residence for Mr. & Mrs. Jay Vlock
Woodbridge, Connecticut
ARCHITECT: *Joseph Stein*
ASSOCIATE: *Robert Keating*
CONTRACTOR: *Alfred Jabs & Son*
LANDSCAPE ARCHITECT: *Charles Middleleer*

This trim, sprightly house, for a couple with three children and a live-in domestic worker, uses the slope of the land to provide a separate section at basement level for the maid and children. This area includes a playroom and a big concrete terrace opening out onto a meadow.

The adult area on the main floor has the master bedroom, study and living room connected by folding doors so that the three rooms can be used together or separately as desired.

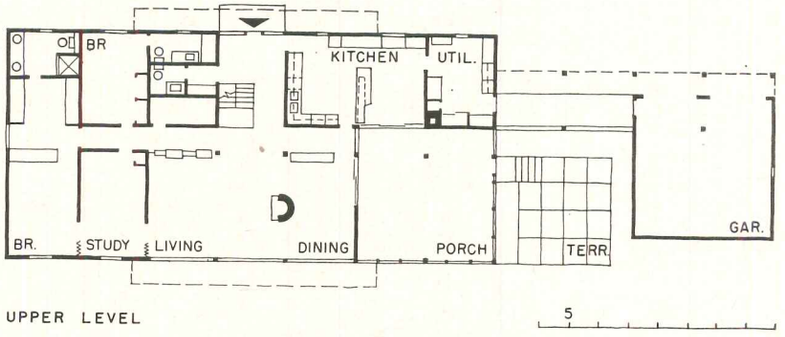
At the other end of the main floor, the dining area opens onto a large screened porch and a paved open terrace, providing separate outdoor living spaces for the parents.

The living-dining room is a big area—36 feet long. It has been topped by a folded plate roof to create a height proportionate to the dimensions of the space. The focal point of this area is a fireplace by Will Reimann, head of the Sculpture Department of Williams and Mary College. All interiors are painted gypsum board, with floors of oak, sheet vinyl or ceramic tile.

The structure of the house has a wood and steel frame on poured concrete foundations. The exterior is redwood siding with a stained finish. The roofing is 5-ply built up.

The heating system of the house is divided into three zones, each with its own warm air furnace, and provision for air conditioning.

Provision was made to prevent dampness and condensation on floors and walls below grade by use of insulation board and dampproofing.



UPPER LEVEL

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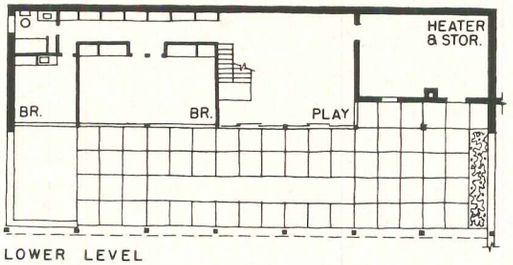
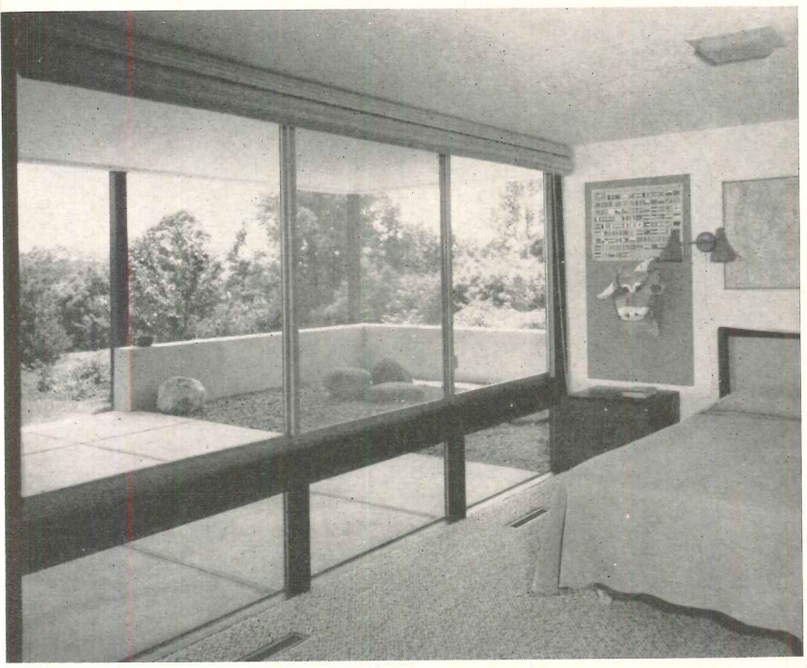
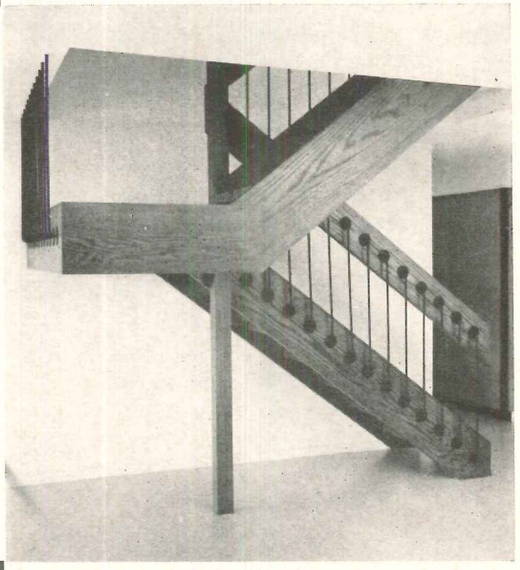


LOWER LEVEL





The convenience of the covered play terrace off the children's bedrooms on the lower level of the Vlock house can be noted in the photo *(above)*.

Space for children's meals and family breakfasts is provided off the kitchen *(below)*. The kitchen has nice finishes, with walnut cabinets and plastic laminate counters. Equipment includes a built-in range, garbage disposer, stainless steel sink, and an artesian well for the water supply.

Of special note in the house is the careful attention paid to such details as the staircase shown *(right)*.

CORPORATE ARCHITECTURAL PRACTICE

By Dudley Hunt Jr.

In a time when architectural projects are becoming increasingly diverse and complex, it goes without saying that each architectural office must tailor its organizational pattern to its own objectives and the needs of its clients, if it is to practice effectively. No single organizational form can possibly be expected to meet the wide variation of objectives of architects or the needs of their clients.

As a result, there are large offices and small, single practitioners and partnerships, firms of architects and engineers; and there are professional corporations of architects and architect-engineers. Obviously one form is not inherently more competent, or more ethical, or more creative than another; these are characteristics of individuals. It would seem reasonable to expect that if the individuals in a firm are ethical and competent and creative, this will carry over into the affairs of the organization —whether proprietorship, partnership or corporation. Since the corporate organization, if not the newest, is certainly the most newsworthy form of architectural practice, it would seem worthwhile at this time to examine how it works in some detail.

Some architects would appear to be opposed to any type of corporate architectural practice. Others, having recognized that the corporate form has certain unique advantages, have organized their practices as corporations; there is something of a trend in the direction of corporate practice today. Many of the offices now practicing as corporations have been incorporated only recently, but a few have been organized in this manner for many years.

Some architects now practice as individuals or in partnerships, but have incorporated portions of their practices, such as their drafting rooms. In these cases, the principals usually act, in their own names, as professional architects—or as architects and engineers—and farm out some portion of design, production and other functions to their corporations. In some instances, this sort of arrangement is necessary because of state laws; in others, it is a matter of choice or conviction on the part of the firm's principals. Other firms practice wholly—and openly—as professional corporations.

About half of the states now permit some form of corporate practice by architects. Many of these states also extend similar privileges to other professions. For engineers, only nine states completely prohibit all forms of corporate practice. And the list of such states is becoming smaller. What is the significance, to the architectural profession and to clients, of this trend in state law and the accompanying tendency of architects toward incorporation? One way of getting at the answer is through an examination of the corporate practice of a respected and successful firm that adheres to the standards of ethics of the architectural profession. Such a firm is Smith Hinchman & Grylls Associates, Inc.; and its principals have deep convictions about the values of corporate practice, based on 60 years of continuous practice as a corporation offering architectural and engineering services.

It would be extremely unwise, if not downright foolish, to attempt to generalize about the corporate practice of architecture from the experiences of one firm. The present principals of SH&G would be the first to admit this. At the same time, the lessons that have been learned by a successful firm in 60 years of continuous corporate practice, and the attitudes that have been developed toward both the corporate form and practice in general, cannot be lightly dismissed.

One Firm's Corporate Practice

Robert F. Hastings, president of SH&G, explains the firm's attitudes this way: "In today's society, the majority of our clients are corporations, commissions, committees, authorities or government agencies. Corporate practice has the great advantage of permitting us to operate in a manner that is most familiar to these clients. It has made it possible for us to establish a reputation for the sort of continuity and stability that is extremely important to such clients when they are about to embark on large-scale and complex projects that require many years to complete. We have clients that we have served for over 50 years.

"We also believe that this continuity and stability helps keep our key personnel together over the years.

For professionals who are interested in group practice, the corporate organization gives each the opportunity to excel and to gain full recognition for his work. This makes for improved professional services for clients, as well as for more satisfactory careers in our firm. This is difficult in an individual or partnership practice, in which only one—or a few—principles can gain more than minimum recognition.

"We believe corporate practice makes all of these things possible. And this is only the beginning of a long list of benefits. Such a list would surely include the opportunity to develop a credit standing that would be very hard for individuals to establish, a reputation for financial responsibility and more effective use of capital and income for the benefit of the firm, its employes and its principals.

"We believe that architects and engineers must be qualified to perform or coordinate all of the numerous disciplines that contribute to the creation of environmental structures and the spaces between them—if they are to perform effective and comprehensive services for clients and the public. The corporate form of practice helps immeasurably in making this possible."

Benefits of Corporate Practice

The added benefits that SH&G believe are to be derived from corporate practice might be summed up as continuity, stability and flexibility. If these can be attained, the organization will be strengthened and client recognition will follow. Of course, all of these elements are inter-related. In order to see how such objectives are attained, an examination of how this firm puts them into practice should prove useful.

One important aspect of the corporate form is the amount of flexibility it allows in financial matters. In the establishment of a continuous line of credit and in the handling of income, pensions, profit-sharing and retirement plans, trust funds, deferred compensation plans, group life and hospitalization insurance, taxes, retention of net income and similar matters, a corporation usually has considerably more latitude than an individual proprietorship or partnership. This means that a corporation can ordinarily choose a financial course for itself from among a much larger number of possibilities than an individual or a partnership.

In the case of SH&G, a number of the financial tools available to corporations have been used to advantage, in combinations believed by the firm's management to be best suited to the immediate and long-term needs of their practice. For example, during their 60 years of continuous corporate practice, the firm has been able to establish an excellent line of credit with local financial institutions; and the firm's financial standing has been enhanced over the years. Such sources of capital are used by the firm when supplementary funds are necessary.

Incentives for Key Personnel

Another example of the way SH&G uses corporate financial tools is to provide incentives for key personnel to remain with the firm. Methods of accomplishing this include making it possible for such people to become members of the stockholder-management team and through provisions for adequate retirement income. Other benefits are also provided: among the incentives offered by SH&G are a profit-sharing retirement plan, group life and hospitalization insurance, and the payment of bonuses as additional compensation in recognition of services rendered. SH&G payments to all of these plans are deductible, under present Federal tax rulings, as reasonable and necessary business expenses; and all have been set up under provisions of the U.S. Internal Revenue Code, where applicable.

How Voting Stock is Handled

Voting stock in the firm may be held only by professional architects and engineers. And provisions have been made so that the Board of Directors always has legal control of the corporation. The right to buy and hold stock is limited by the Board to employes it believes have earned the privilege and are ready to assume the attendant responsibilities. It has been the experience of SH&G that the bonus plan has afforded younger key associates with the means to purchase voting stock when offered to them. A large portion of the voting stock, offered each year, is offered to—and is bought by—such younger men. In this way, the firm recognizes ability and talent, and makes rewards for contributions and assumption of responsibilities to its future leaders. In addition to the increased financial return the stock-purchase plan makes possible, the younger associates also achieve a greater sense of belonging to the organization of which they are part, and they gain additional security. Ordinarily, senior members of the firm are also offered—and purchase—additional shares of voting stock in the firm each year.

The stock which is bought by active firm members, under the stock purchase plan, comes into the treasury of SH&G by purchase from stockholder-staff members retiring from the firm. Retirement is now mandatory between 65 and 70 years of age in this firm. A condition of the ownership of stock is that it be sold back to the firm on retirement. The usual terms of the sale are the payment of 25 per cent of the value of an individual's stock in cash upon retirement and a SH&G note for the remainder. Notes are usually paid off in 10 equal annual installments, along with 7 per cent interest. This procedure accomplishes two important things: (1) it provides an orderly plan for passing ownership

from retirees to the active professionals remaining in the firm; (2) those who retire receive predictable amounts of cash and payments over a period of 10 years, permitting them to retire with an income. The benefit to the firm as a whole is in the establishment of continuity and stability of operation and ownership. Although those who retire will no longer be owners of any part of the firm, their knowledge and maturity are often valuable to the firm. In such cases, SH&G often makes use of their services on some sort of partial salary, per diem, or retainer basis.

Profit Sharing and Retirement

The Board of Directors of SH&G ordinarily authorizes an annual contribution to the employes profit-sharing retirement plan. This plan is administrated by an independent trustee. All employes of the firm, whether stockholders or not, participate in the plan after they have completed four years of continuous service with the firm. No employe contributions are made to the plan. The amount contributed annually by the firm varies according to the profitability of operations, but is limited by law to no more than 15 per cent of the total compensation of any individual participant.

Any person retiring from the firm at age 50 or later can withdraw his allocated portion of the trust fund and the interest it has earned, at the time of his retirement. This can be in a lump sum, or in one of a number of forms of annuity that will give him monthly payments over a period of years. If an employe leaves the firm before age 50, he receives 10 per cent of his portion of the trust for each year of service. If he has participated in the trust for 10 years, he gets it all. If an employe is laid-off, he does not lose his share in the trust for a period of two years. If he is rehired within that time, he can immediately resume his participation. If not, he can withdraw an amount in the proportion discussed above.

Undoubtedly, the SH&G retirement plan helps in the establishment of continuity and stability for the firm, in much the same manner as the stock purchase system. It, too, contributes to employe morale and satisfaction. An added benefit to the firm is that an arrangement exists by which SH&G can obtain needed capital by borrowing up to 50 per cent of the value of the trust through the sale to the trust of 6 per cent preferred stock. This type of stock may only be sold to the trust. This arrangement was approved by the Internal Revenue Service. In actual practice, this privilege has been exercised by the firm only in a limited way.

Additional Uses for Funds

After providing for all of the necessary costs of operating its practice, including Federal income taxes, SH&G generally retains a certain amount of net income that may be used for payment of dividends or use in the business. A nominal amount of this is paid in dividends on preferred stock. In recent years, the firm has ordinarily retained the remainder for corporate expansion and other requirements, rather than paying dividends on the voting stock. The principals of the firm believe this to be in the best interests of the company.

Current operating expenses are generally met out of current income, and when required, with funds received from sale of treasury common stock, by borrowing from local banks, and in unusual cases, by the sale of preferred stock to the employes profit-sharing trust.

The avenues open to a corporation in the handling of its finances have only been touched upon here to give some indication of the sort of latitude and flexibility possible in a corporate practice. This leads to stability and continuity; and to increased financial flexibility in the matter of credit. SH&G maintains that their line of credit, which is of great importance in their practice, could not possibly be matched in amount or flexibility by the combined credit of all of the firm members as individuals.

All of this adds up to a sound financial structure, upon which a dependable and responsible organization can be built. An important result of this is a staff of satisfied individuals who recognize—and receive recognition for—their roles in the organization. Of at least equal importance is the recognition and acceptance that comes from clients as a direct result of a reputation for responsibility based on stability and continuity.

The principals of SH&G consider the continuity of their firm's existence over a long period of time to be one of the prime necessities in order to effectively practice architecture and engineering today. They believe corporate practice contributes heavily to this. This may not be the case in very small offices; but when a firm grows to the point where no one man can be an expert in all of the important aspects and diverse skills required in a complex practice, SH&G believes a corporation is better adapted to success than any other organizational form. When this stage of growth is reached, it becomes necessary for a single principal to delegate responsibilities and the necessary attendant authority. In other words, some kind of organization is then required.

SH&G believes it is difficult—if not impossible—to get strong, talented people to put their whole professional lives and futures in the hands of a single person or a group of partners, and devote themselves wholeheartedly to an enterprise in which they are simply employes. On the other hand, if an organization, as opposed to an individual, is to be successful, it must discover and hold on to just this type of strong, talented person. The corporate form makes this possible: first, by offering such a person position and authority; and secondly, through orderly prog-

ress toward ownership and control. In addition, a corporation makes it possible for its president and others in leadership positions to commit the organization—as they must almost continuously—without committing others in the organization personally, as would be the case in a partnership. It goes without saying that this is a basic principle of the corporate organizational form.

Personnel Assignments and Responsibility

Many other advantages may accrue to an office from the corporate form. It should be sufficient to point out a couple: responsibilities can often be more clearly and definitely assigned than in other forms of practice; and a man can be used in his best capacities. In partnerships it is often impossible to make such clear-cut and logical assignments. Occasions that cause personality clashes in other types of organizations can often be kept to a minimum in a corporation of the SH&G kind. A man is more likely to devote himself to an organization of this sort, than to an individual to whom most of the recognition will inevitably accrue, one who will probably reap a large proportion of all of the other benefits of practice.

Importance of the Firm Name

Another thing that contributes to continuity, and to a good reputation among clients for continuity, is the name of the practice. In the case of practice by an individual, when the practitioner dies or retires, the name of the firm must usually be changed. In many cases, this causes great—sometimes insurmountable—problems. The reputation of the firm, or some important part of it, is lost with the change in the firm's name. The same thing is true of a partnership. Yet the value of a good name is an established principle of business and law. It is well-known that companies habitually go to great lengths to preserve these values. That such values are recognized by professionals other than architects and engineers is demonstrated very well by the number of lawyers who retain the names of deceased, or retired, former firm members on their letterheads. Doctors, too, recognize this, as evidenced by the increasing number who are organizing themselves into group practices under some generalized name that can be permanently retained, with the names of individuals subordinated to the name of the practice.

The stockholders of SH&G fully recognize and respect the value inherent in a name. This is shown by the fact that the name of this firm has been changed only once, in 1907, since the firm was founded in 1903. In addition, in 1956, after the original founders had died, the firm added "Associates" to its name thereby bringing it to its present form. This was done to reflect more accurately the corporate structure of the organization. On the other hand, if the name had been changed each time a principal (stockholder) was brought in, no one in the organization knows how many changes this would add up to. Some idea of what this would have entailed is indicated by the fact that while there are now 11 stockholders, there have been 29 in the life of the firm. Other than the original four subscribers to the first stock issue, these people have entered the firm at various times; and some have left and come back.

Over the years, the firm has, on numerous occasions, examined the possibility of changing its name. It has always decided against this, because of the value of the name for identification, continuity and client recognition. An important point bearing on the decision to retain the name is the dedication of SH&G to an ideal of group practice. This presupposes that the whole will be greater than the sum of its parts. And it is founded on the principle of combined effort on the part of architects and engineers for the good of all, and—most importantly—for effective present-day practice for environmental structures of all kinds, all sizes and every degree of complexity.

Ethical and Effective Practice

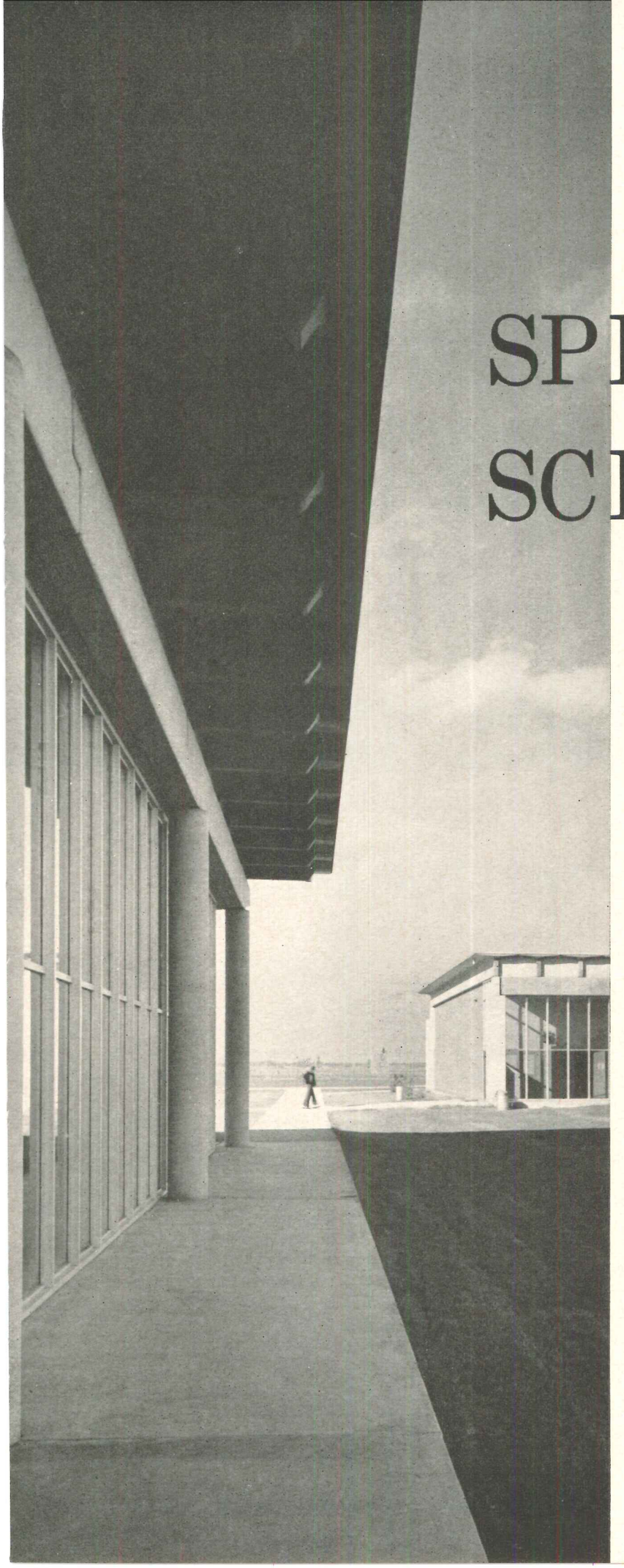
Can a corporation actually practice architecture, or architecture and engineering, ethically as well as effectively? And without the danger of losing control to nonprofessionals? The principals of Smith, Hinchman & Grylls Associates, Inc. believe this is entirely possible, and make a strong effort to demonstrate it in their own firm. They have drawn up the following suggested standards for corporate architectural practice: "An incorporated architectural firm should conform to the following basic requirements:

"All members of the Board of Directors and officers must be professional architects who actively participate in the affairs of the corporation. Nonvoting stock may be held by professional architects and engineers, or others.

"Transferability of stock interests must be limited to the extent necessary to insure continuity of administration and control of the corporation by professional architects.

"The corporation and its directors and officers shall abide by the ethical standards of the American Institute of Architects."

In the case of an architectural and engineering firm the same rules would apply, with these modifications: approximately 50 per cent, or more, of the members of the Board of Directors and officers would have to be architects, the remainder professional engineers. Approximately 50 per cent, or more, of the voting stock interest must be held by professional architects, the remainder by professional engineers. Transferability of stock interests would be limited to insure control by professional architects and engineers and continuity of administration by them.



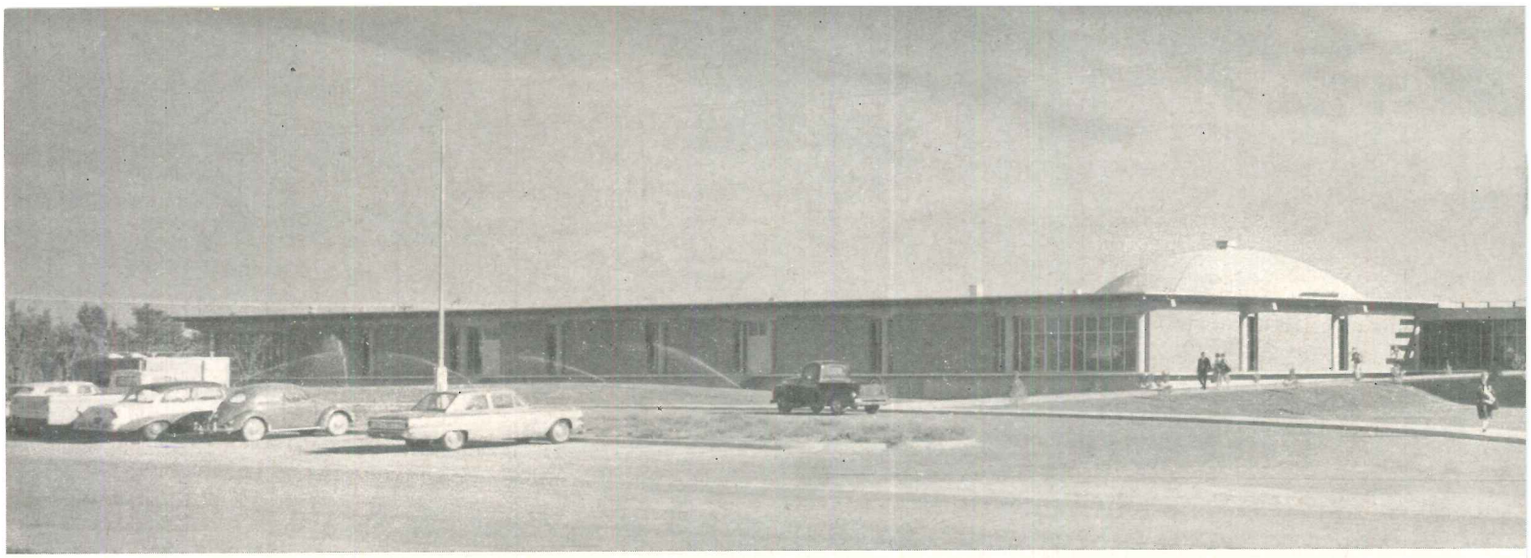
BUILDING TYPES STUDY 319
®

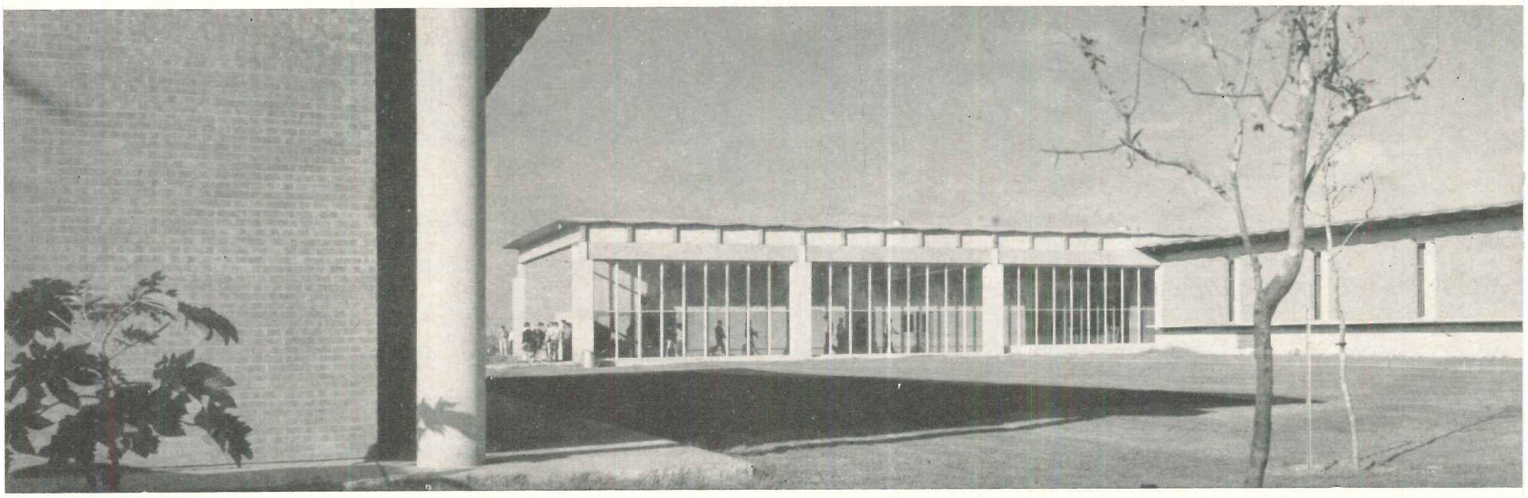
SPECIAL SCHOOLS

1. A FLEXIBLE SCHOOL ENVIRONMENT
2. TEACHING AND RESEARCH COMBINED
3. SCHOOL FOR AGES 3 TO 14
4. EDUCATION WITH REHABILITATION
5. TRAINING MENTALLY HANDICAPPED
6. PRIVATE COEDUCATIONAL SCHOOL

It is becoming increasingly obvious that there is a great need throughout the country for more, and better, specialized schools to complement our general public school systems. These facilities should provide for children with any of the major disabilities, mental or physical, as well as for educational research and special teaching programs. Considerable efforts are being made in many areas to fill this gap—and a number of the resulting buildings are presented in this study.

There are also implications for our general public schools. Within the infinite variety found in any large group of school children, there are those whose variance from the physical or mental average should be better provided for: those with partial disabilities in sight, hearing or physical action. Our lead school, a public high school, is special in offering a flexibility adaptable to any such forward thinking programs.





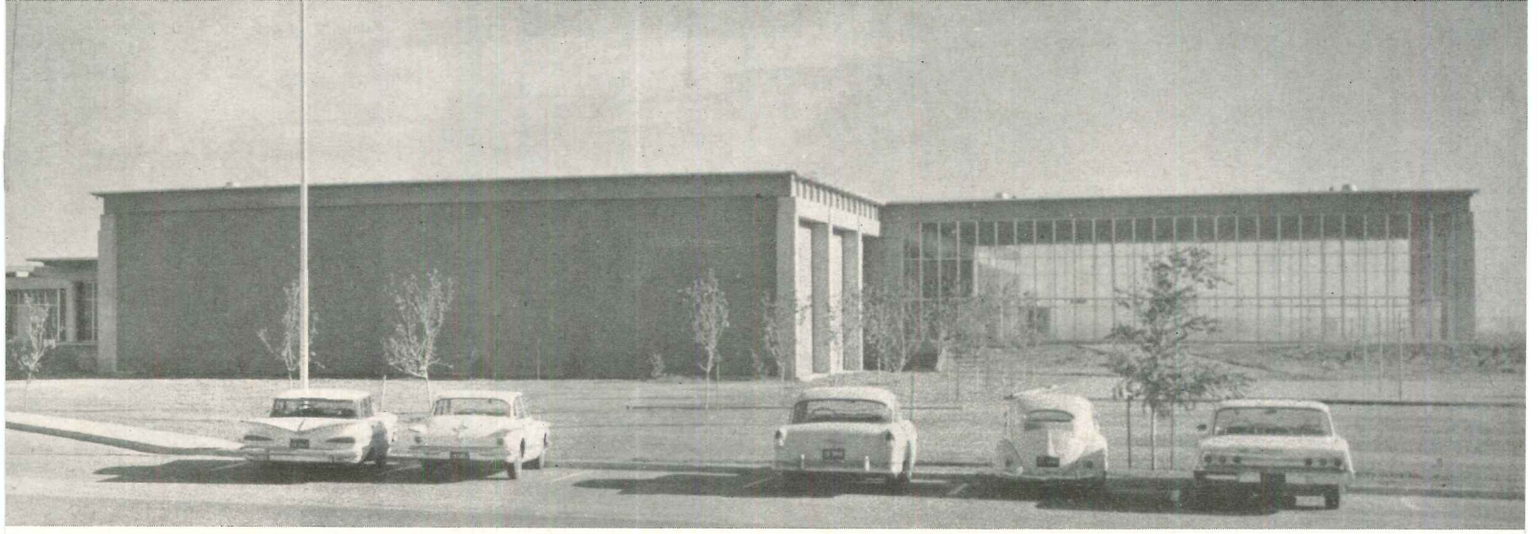
Special School:
1. A FLEXIBLE ENVIRONMENT FOR LEARNING

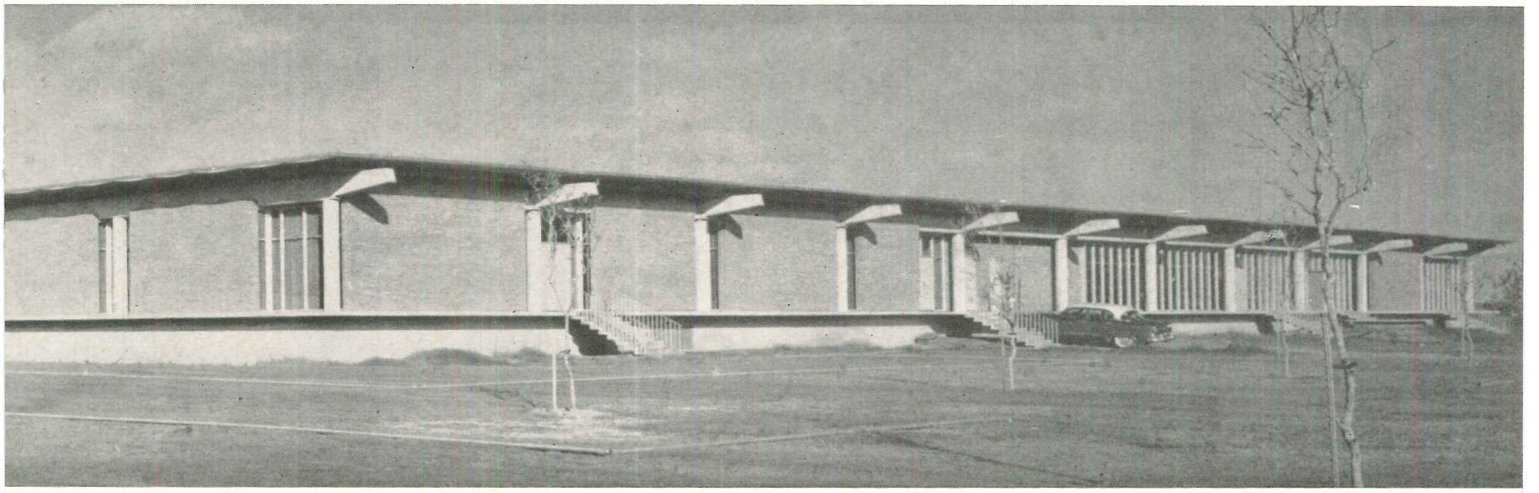
Andrews Senior High School
Andrews, Texas
ARCHITECTS:
Reid, Rockwell, Banwell and Tarics
MECHANICAL ENGINEERS:
Kasin Guttman & Associates
ELECTRICAL ENGINEER:
A. S. Malayan
ACOUSTICAL ENGINEER:
Dariel Fitzroy
LANDSCAPE ARCHITECTS:
Royston, Hanamoto & Mayes
CONTRACTOR:
Warner Construction Company

The architect of this school, John Lyon Reid, stated the design concept of the building in ARCHITECTURAL RECORD, June 1960: "We believe that total flexibility—or as close to that as possible—is a necessary attribute of the secondary school building of today, facing, as it does, the problem of a growing, changing, improving educational philosophy." From this basic premise were developed most of the numerous and varied special qualities of the school.

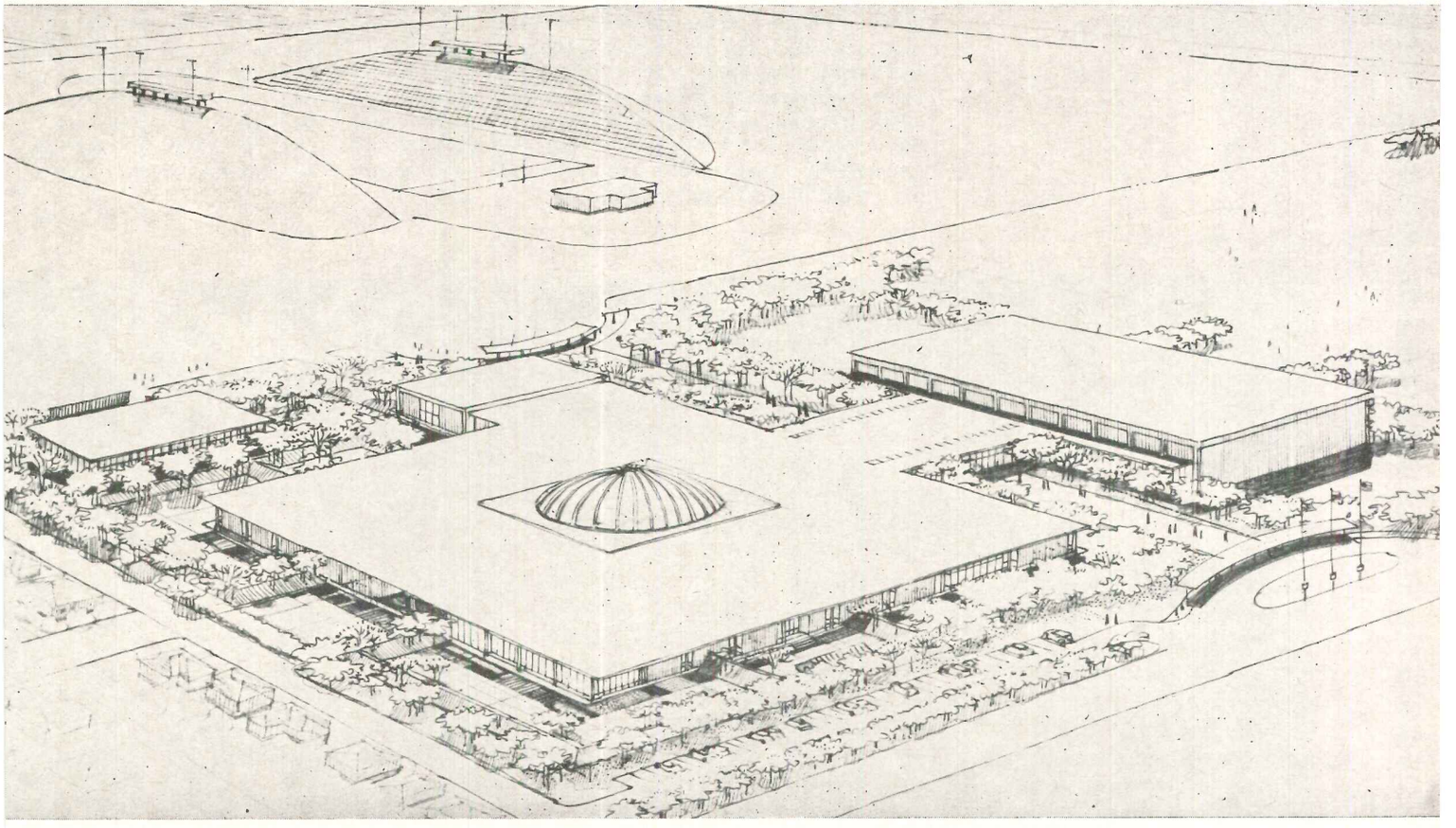
Most important, perhaps, of these special qualities is the over-all concept of the school as a great enclosed space, as free of columns and other fixed elements as possible, within which partitions and fixtures can be moved around almost at will to fit the spaces to the teaching. This, as is well-known, has often been called the "loft" plan. Roof spans vary from 30 feet for classroom areas to 105 feet in the physical education area. Ceiling heights are varied to fit specialized needs. Certain activities such as swimming, shops, and the little theater are permanently placed. Other than the exceptions that stem from such special requirements, the spaces of the building lend themselves to almost universal interchangeability of functions. Even the utilities are adaptable to such changes, since all supply, return and waste ducts, and piping are located in a 4½-foot-high space under the raised floor of the building. This space is also used for maintenance and modifications of the systems.

Most of the partitions in the classroom areas are movable types, and for the most part there are no doors. Lighting is provided by fluorescent tubes above aluminum and plastic grids.



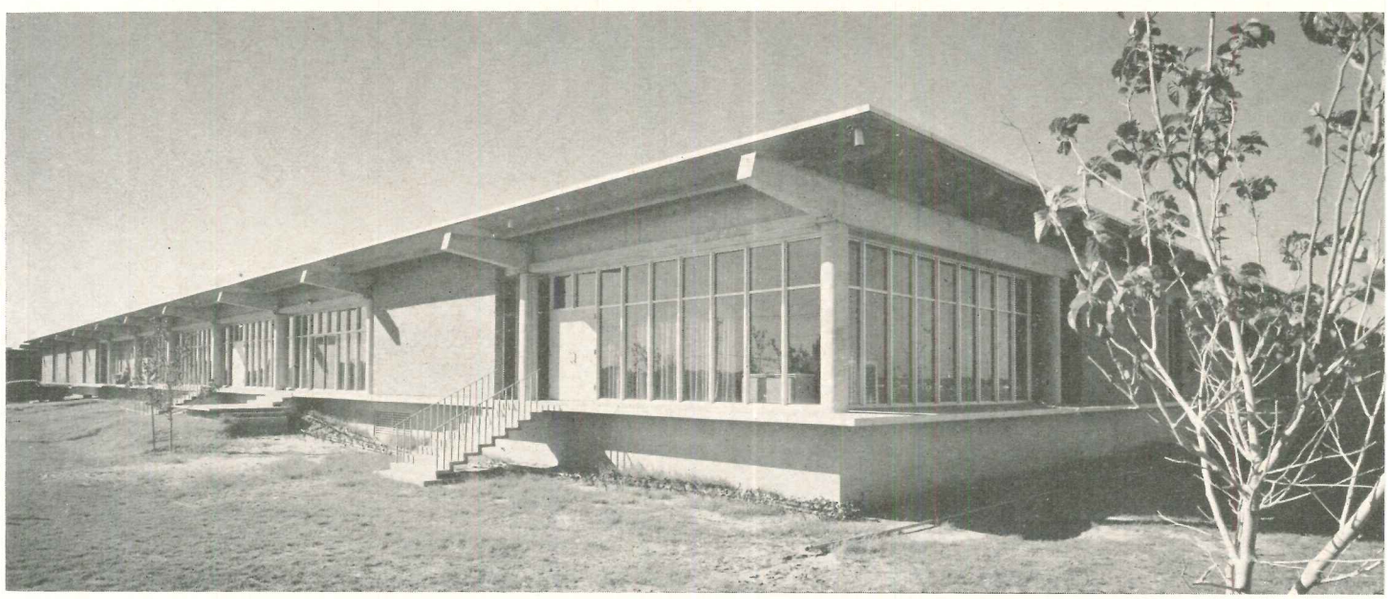


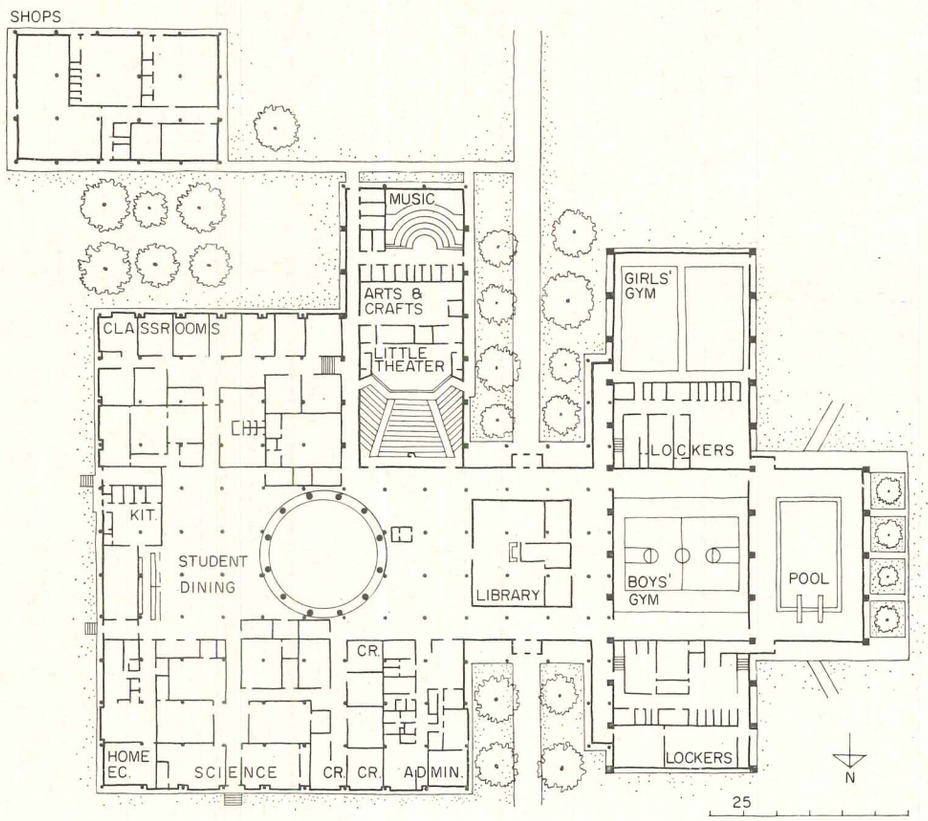
Roger Sturtevant photos



Schools:
Andrews High School

A dominant element of the design of this school is the great central dome (*above and across-page, top*). Primarily, the area under the dome serves as an open concourse, much as in a large airport or railroad station, for student and faculty traffic between classes and for informal gatherings. A folding platform that serves as a stage and can be positioned anywhere in the dome area makes it possible to use the area for lectures, concerts, dramatic productions and student rallies. The area is also capable of being used for assemblies or social events of various kinds. Importantly, the dome serves to unify the school building, particularly in its plan; and its symbolism of the freedom of the concept and plan cannot be denied




SHOPS
MUSIC
ARTS & CRAFTS
CLASSROOMS
LITTLE THEATER
GIRLS' GYM
LOCKERS
KIT.
STUDENT DINING
LIBRARY
BOYS' GYM
POOL
CR.
HOME EC.
SCIENCE
CR.
CR.
ADMIN.
LOCKERS
N
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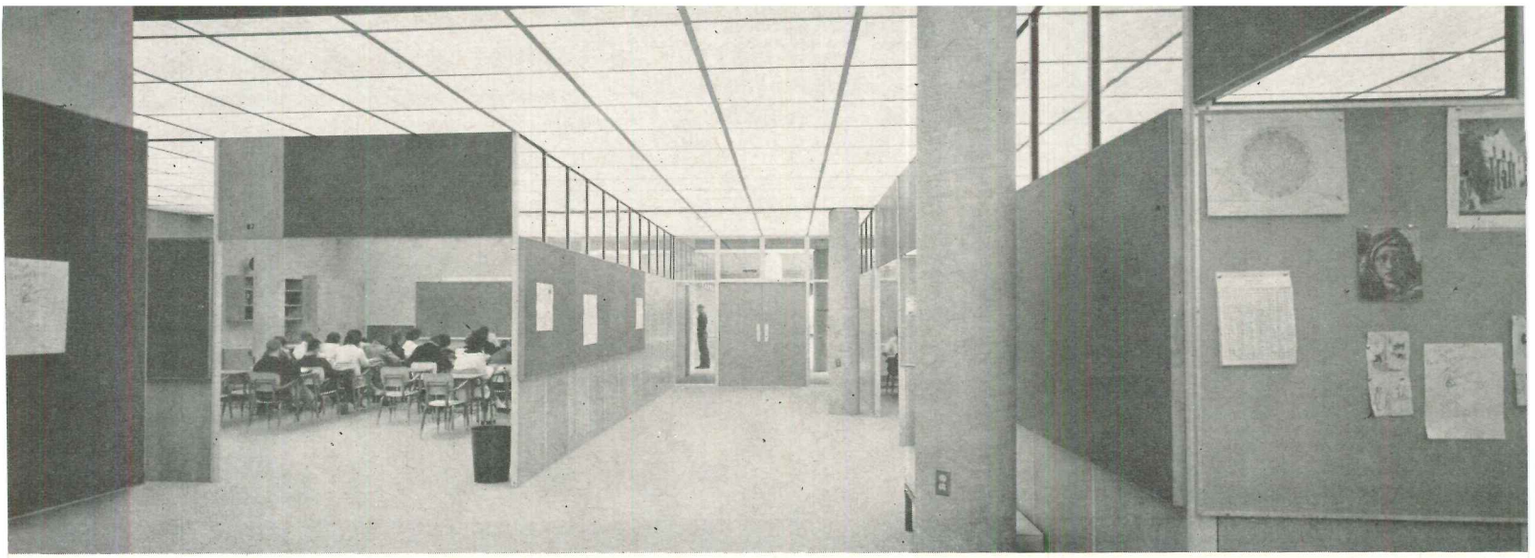
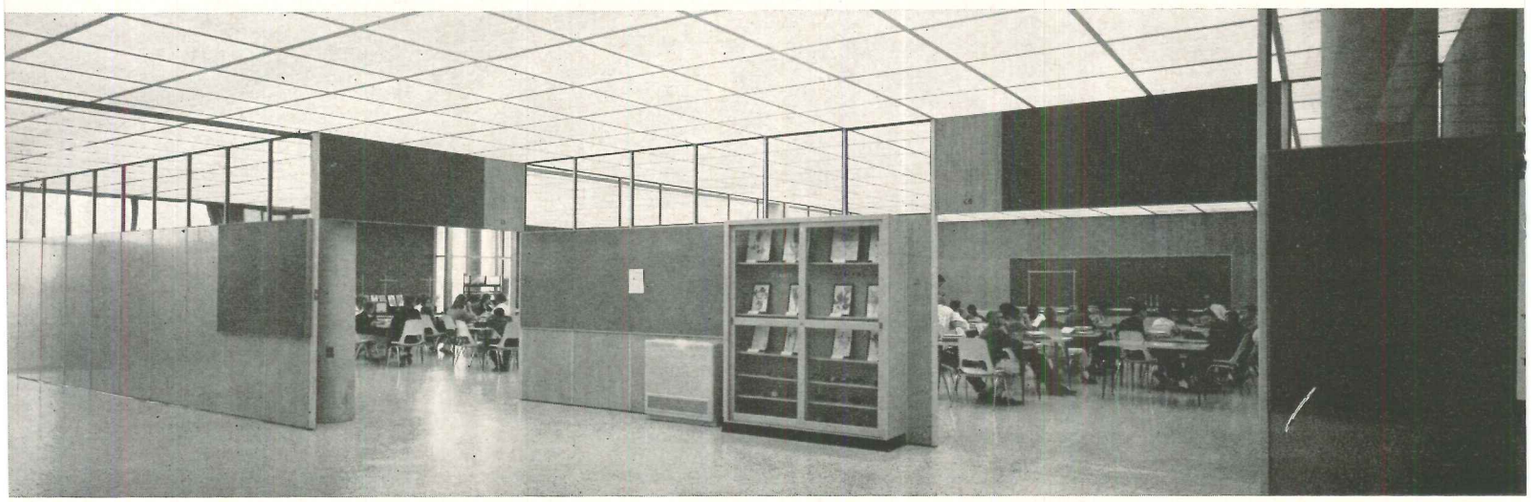
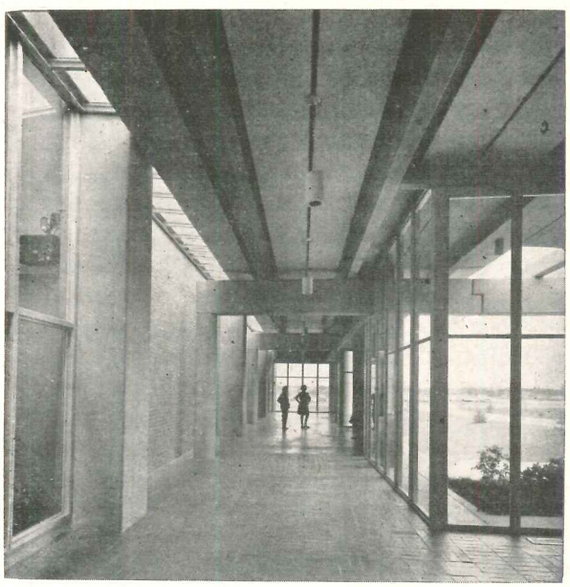
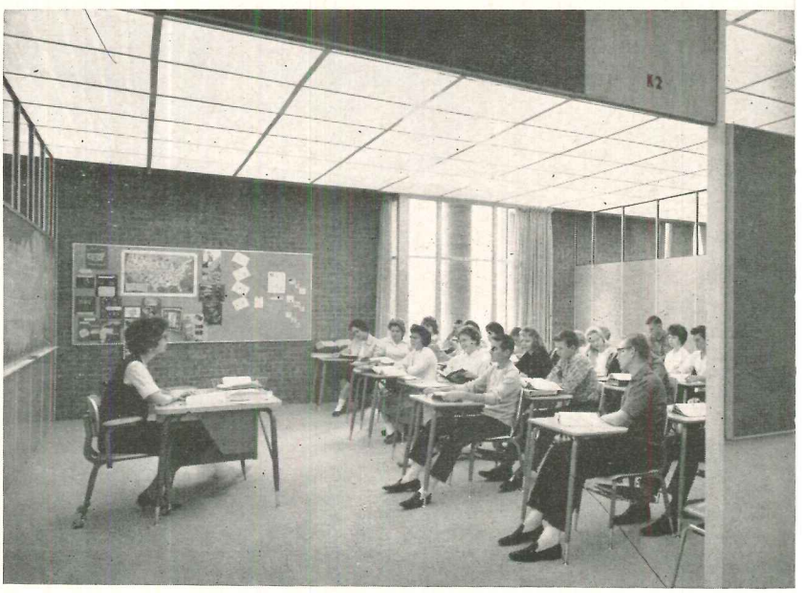




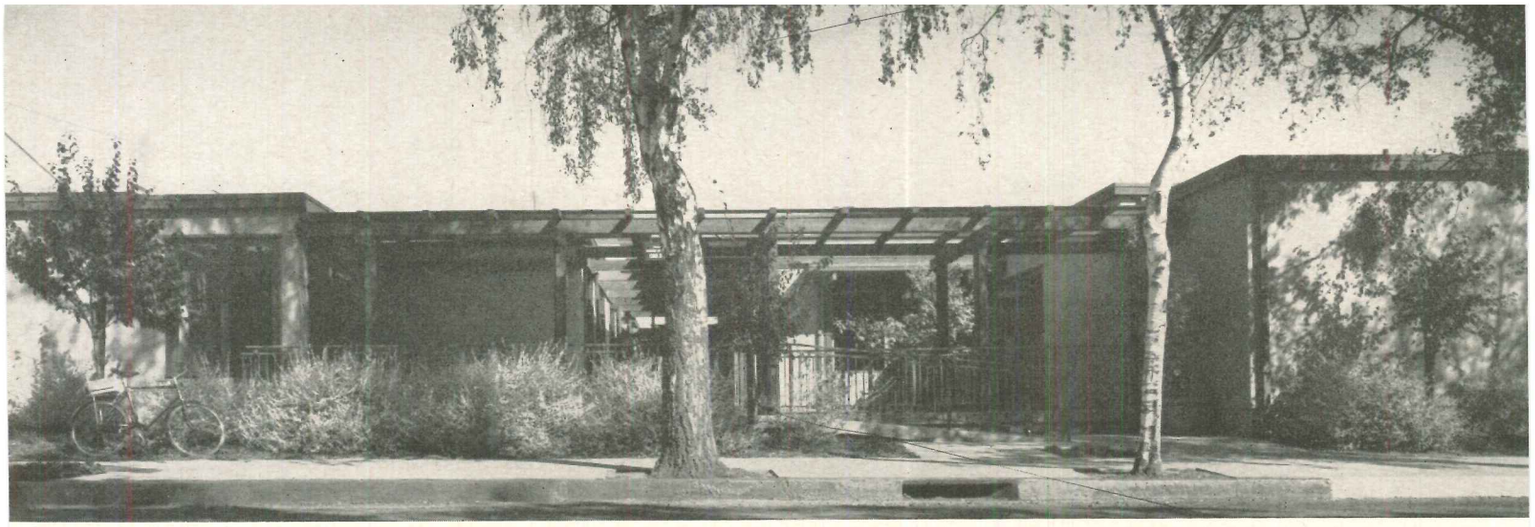
Schools:
Andrews High School

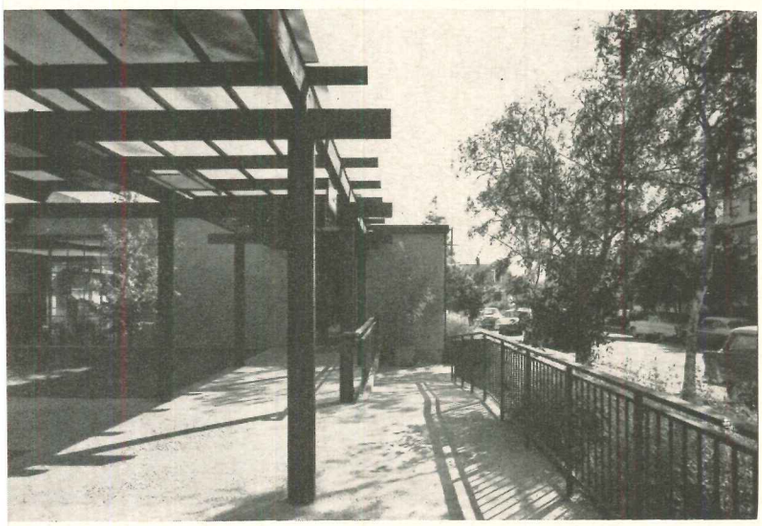
The open and extremely flexible characteristics of the classroom areas of this school may be seen in the views on this page. Movable partitions are made of hollow core natural wood panels supported between metal uprights anchored at floors and ceilings. For the most part, the panels stop short of ceilings as shown. The uprights also support chalk and tack boards and cabinets. In order to maintain high comfort levels, the school has been made as air-tight as possible and air-conditioned against the twin Texas problems —heat and dust. Classroom areas are carpeted for comfort and acoustical reasons. Other acoustical treatments include perforated acoustical fiberboard in corridors and slit resonators in the gymnasium and little theater

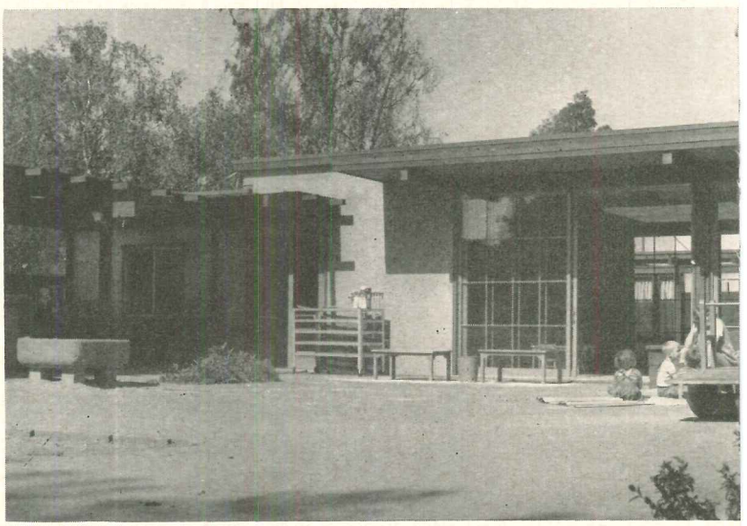




The school is unusually well equipped to enable students to participate in a great variety of educational activities; of these, the boys' gymnasium is shown (*above*) and the enclosed swimming pool (*below*). A similar gymnasium for girls adjoins that shown. Other specialized facilities include a music room, library, little theater and shops. The prestressed concrete frame of the school was designed to resist winds and tornadoes of the greatest intensity known in the area. The fire-resistive qualities of the frame and most of the other materials not only contribute to safety, but also have led to lower fire insurance rates and reduced maintenance. The cost of the building was $12.56 per square foot for a total cost of $2,510,700





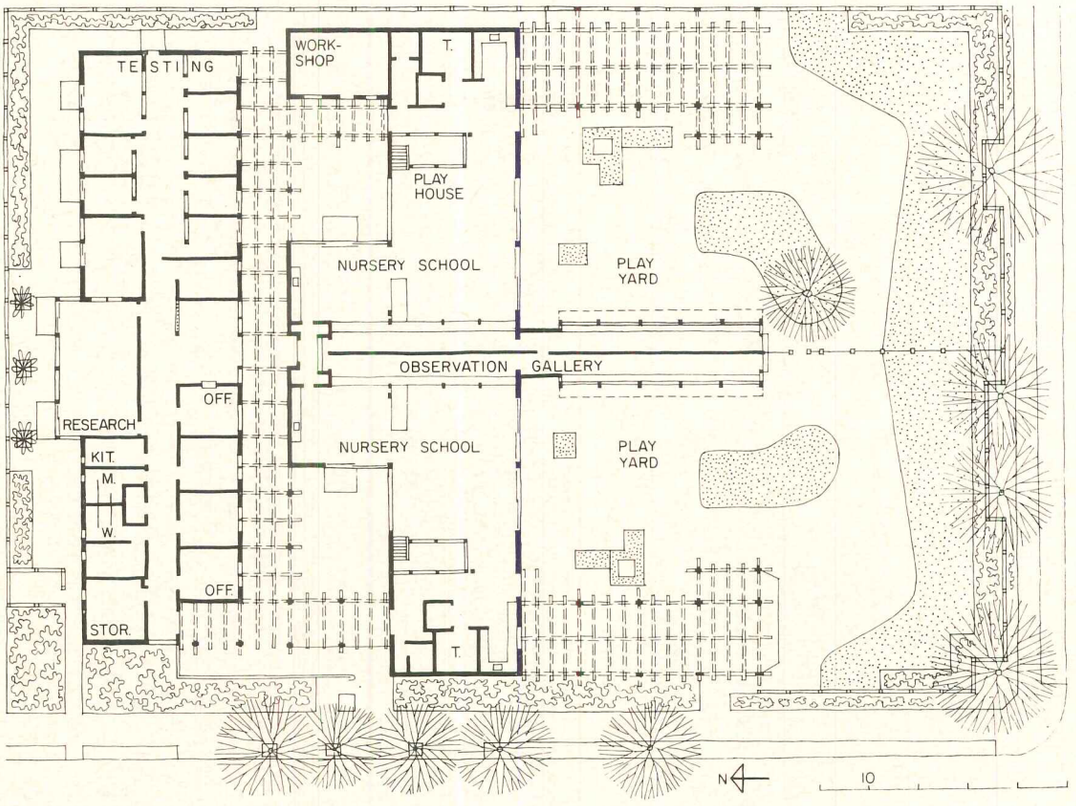


Special School:
2. NURSERY FOR TEACHING, RESEARCH, TESTING

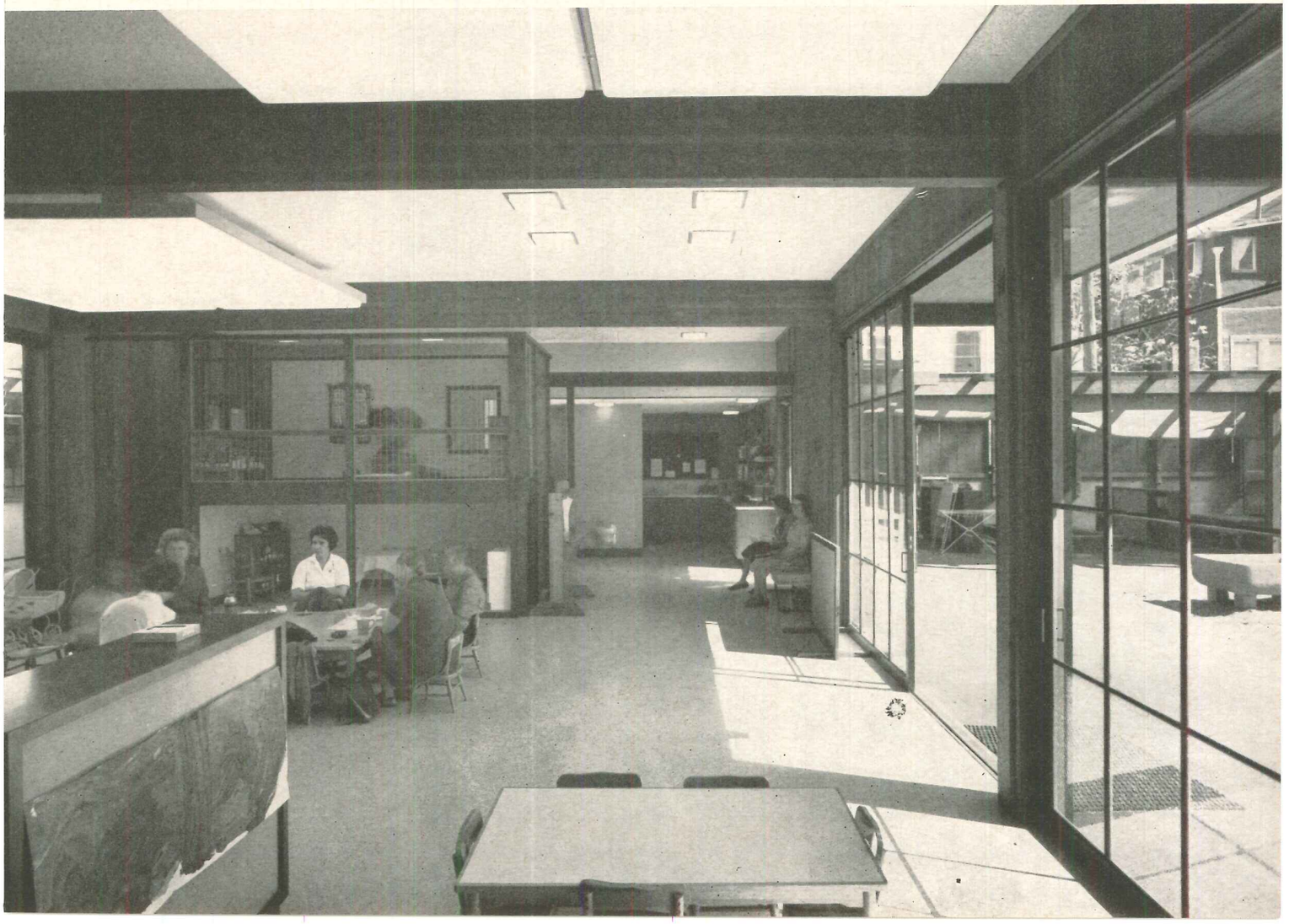
Child Study Center
University of California
Berkeley, California
ARCHITECT:
Joseph Esherick
STRUCTURAL ENGINEERS:
Gilbert, Forsberg, Diekman & Schmidt
MECHANICAL ENGINEER:
Daniel Yanow
ELECTRICAL ENGINEER:
Ben Lezin

Two closely related, but separate, major functions are performed in this building—study and testing of infants from birth to the age of 4 and nursery school instruction of 3- and 4-year-olds. As a result, the design of the center is compounded of a nice balance between the scientific efficiency of facilities for testing, study and observation and the scale, textures and spatial characteristics of proper nursery school architecture.

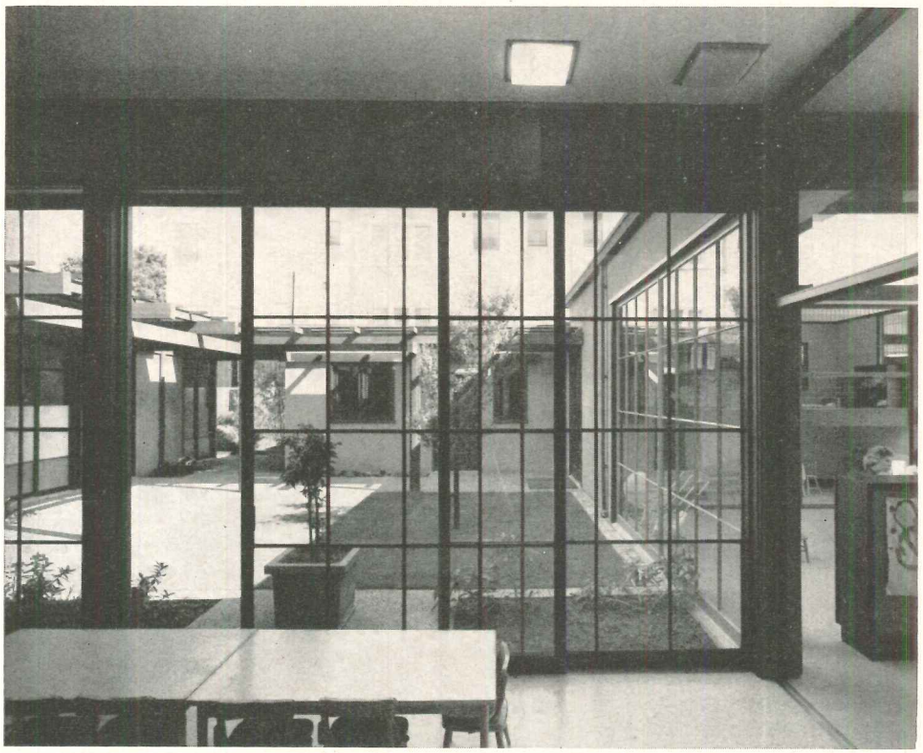
The plan of the center is comprised of three main elements—an administration and testing wing, and two complete nursery schools. One of these is occupied by 3-year-old children, the other by children of 4. Each is a complete unit with its own play area, storage, toilets and other required facilities. Each nursery has an observation gallery that extends along the side of the main nursery room and out into the play yard, thus allowing observation of almost all of the activities of the children. The observation galleries are raised above the nursery floor level and above the normal line of vision of the children. Two layers of wire mesh, slightly offset from each other and painted white, help to obscure observers from the children, at the same time allowing the observers to see and hear clearly. When children enrolled in the nursery are to be tested, they are brought into the testing areas for special games that seem to them to be an extension of the regular nursery activities. Pre-nursery school children, enrolled in the programs of the center, are also brought to the administration-testing wing periodically for studies and testing.

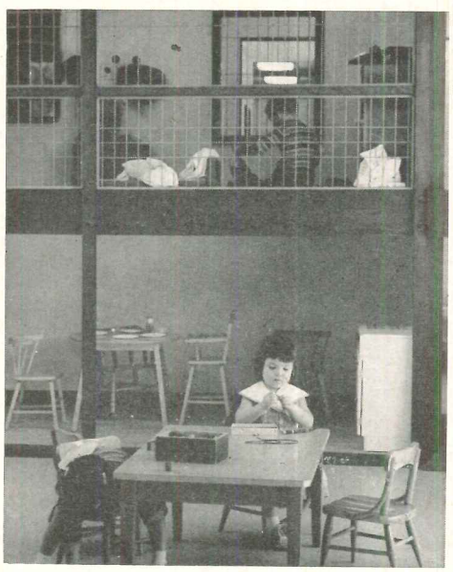


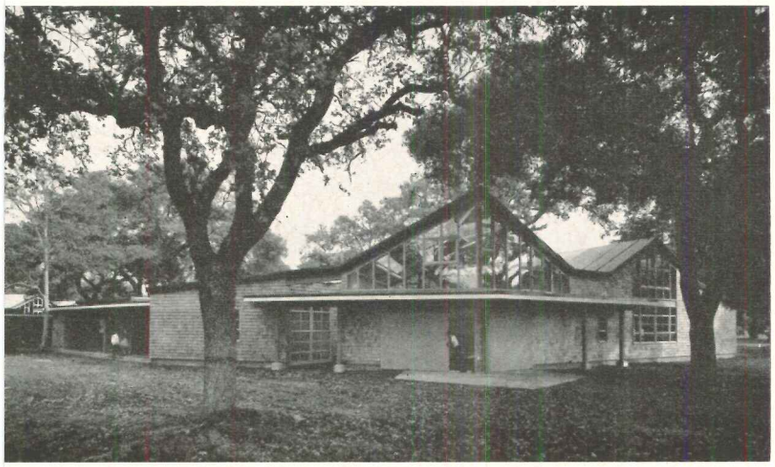
Roy Flamm photos

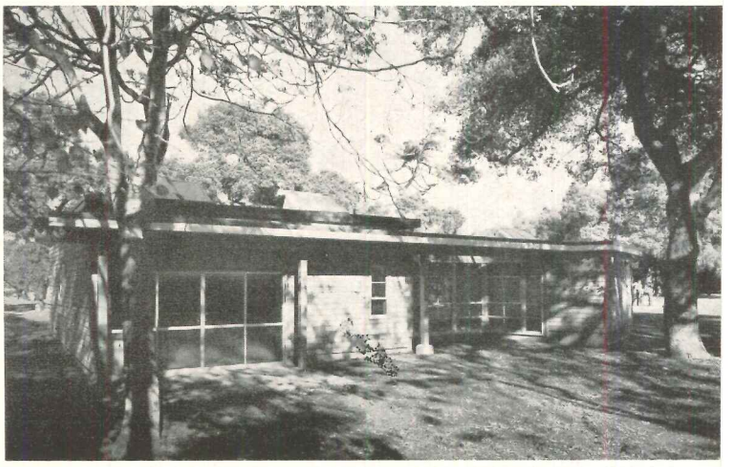


In order to properly fit the design of this building to the needs of both the small children and the adults who use it, the over-all scale is that normal to adults, but the spaces and forms are consciously simple. Details and small elements tend to be smaller-scaled. This, together with the materials used—resawn cedar wall paneling, wood framing, vinyl flooring and plaster—have resulted in a residential quality that is simple, but rich and in harmony with the activities of both children and adults. Interior and exterior spaces have also been simply handled, but are varied in size and aspect, thus contributing to the atmosphere of informal efficiency of the center. Movable casework permits rearrangement of interior spaces into smaller or larger areas for special activities of all kinds. Colors are subdued, except for bright, many-hued, plastic panels that roof the trellises around the building.









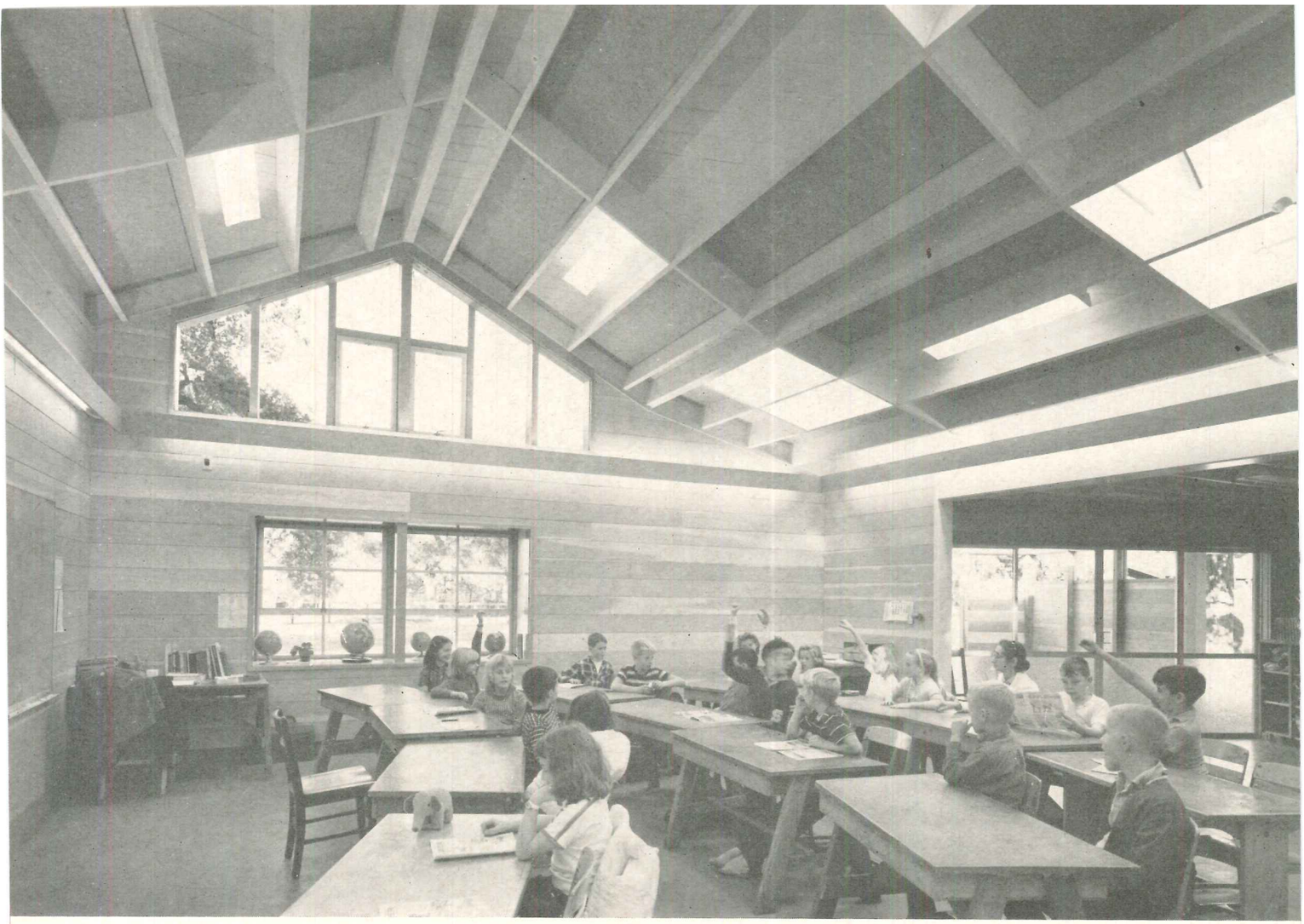
Roger Sturtevant photos

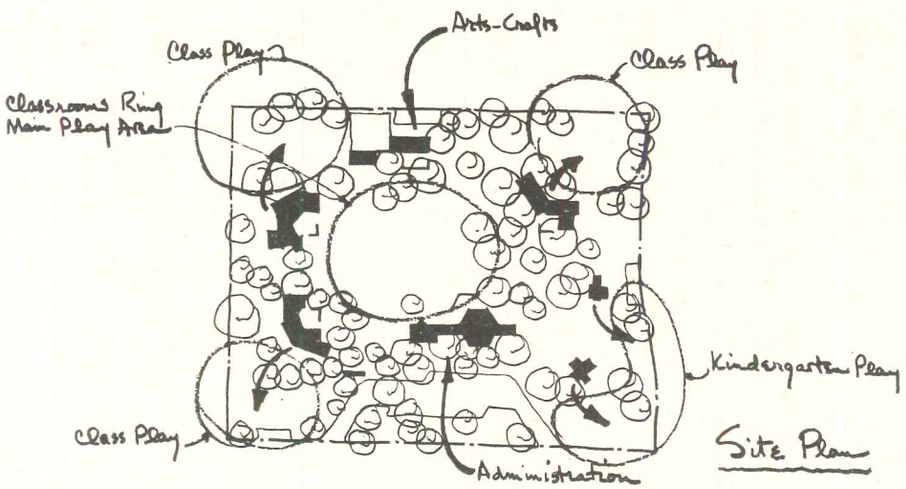
Special School: 3. AGES 3 TO 14 IN ONE SCHOOL

The Peninsula School
Menlo Park, California
ARCHITECTS & STRUCTURAL ENGINEERS:
Gillis & Forell
MECHANICAL ENGINEER:
Daniel Yanow
ELECTRICAL ENGINEERS:
Smith & Garthorne

The most immediate impact of the design of this private school is that it seems not to have been designed at all; rather, the school nestles in its site as if it had been there all along. As a matter of fact, this effect is exactly what the architects and their clients intended. Built to replace the 80-year-old building formerly occupied by the school, the new buildings recapture most of the atmosphere and educational inducements of the old. Classrooms are irregular in shape and are irregularly placed on the site. No two rooms in the entire complex are exactly alike. This also was by design, since the educational philosophy of this school holds that "the individual character of each child must be nourished and sustained in an atmosphere as free as possible of pressures toward artificial conformity."

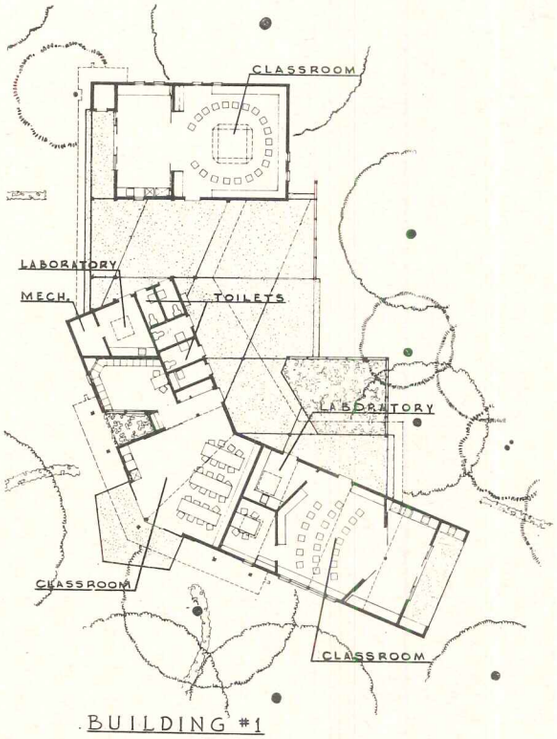
How well the architects succeeded in fitting the new school to its existing philosophy is evident in the illustrations. There is an open quality, not only in the building plans, but in the spaces in and around the buildings. Not a tree was cut on the site: the results of such care are apparent in the illustrations. Unpaved paths wander through the grounds from building to building between outdoor play and activity areas. All around the buildings are places for children to play, to build things, to dig in the ground. Each classroom, though unique in design, has working areas with sinks and work-counters and quiet areas that are distinct from the main classroom. Each classroom also has its own private outdoor area, separated naturally with planting, walls, and trees from the similar areas of the other classrooms.



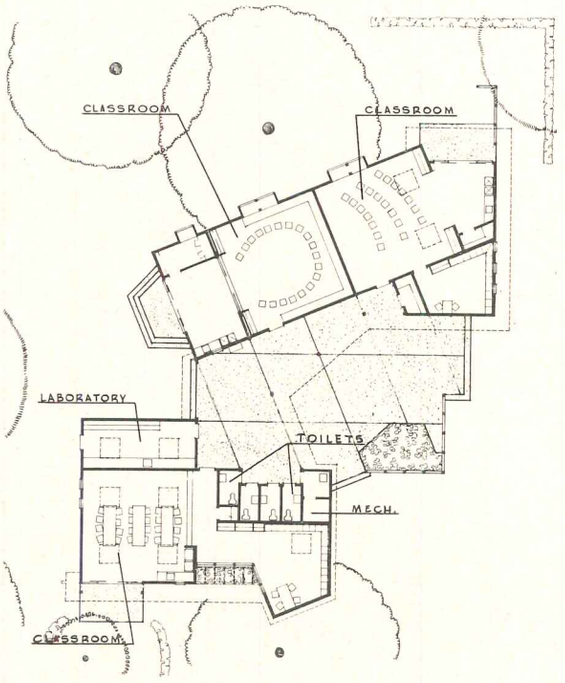


The spacious, informal design of this school is well-fitted to individual development and instruction of individual children. This is the exact opposite of the sort of assembly-line instruction that often takes place in more prosaic or standardized schools. The rooms here have an air about them—an air that exactly fits a school in which the teachers often feel the need to change teaching schedules and settings in order to better fit them to some special project or task.

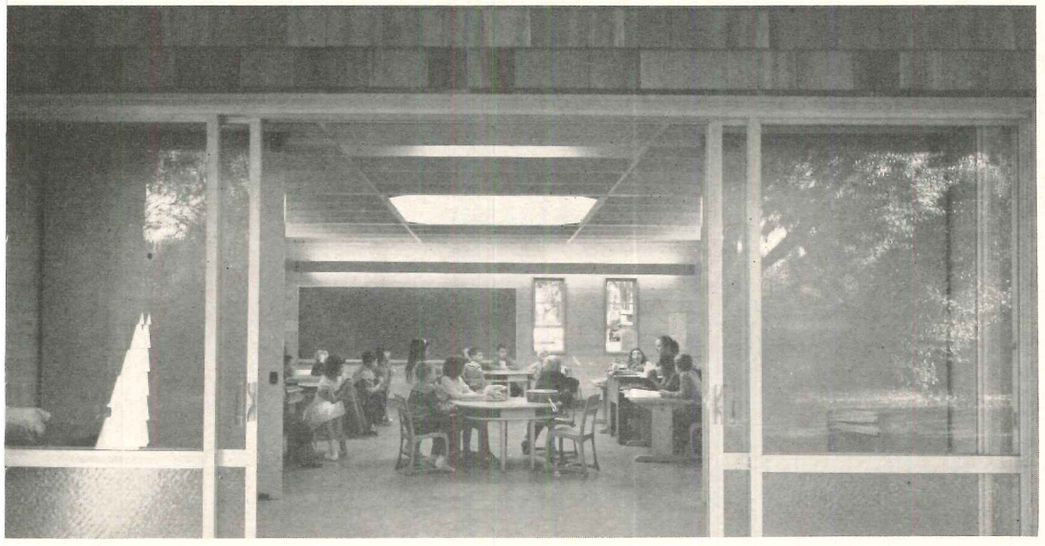
Part of the atmosphere of the school is derived from the finishes and materials used. Exterior walls are cedar shingles left to weather naturally. Interior wall surfaces are mostly shiplap redwood that has been waxed. Floors are waxed concrete and the underside of the roof decking is exposed on the ceilings. Fixtures and hardware are rugged and simple; for example, the sliding aluminum doors are hung on barn-door hardware. Windows are simple aluminum projected types. Most furniture, cabinets and bookshelves were constructed by students and staff, each class carrying out the ideas that seem to best serve its own needs. Building framing is wood, mostly exposed

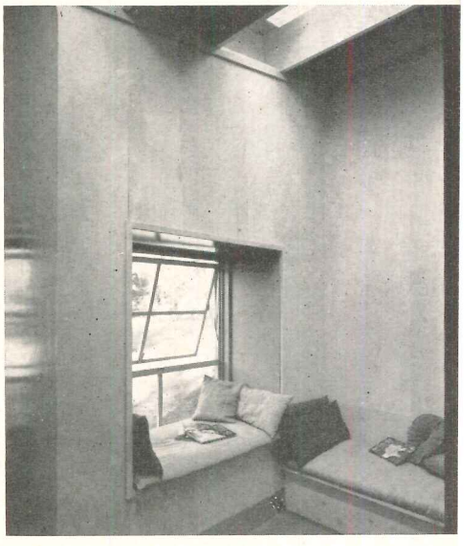


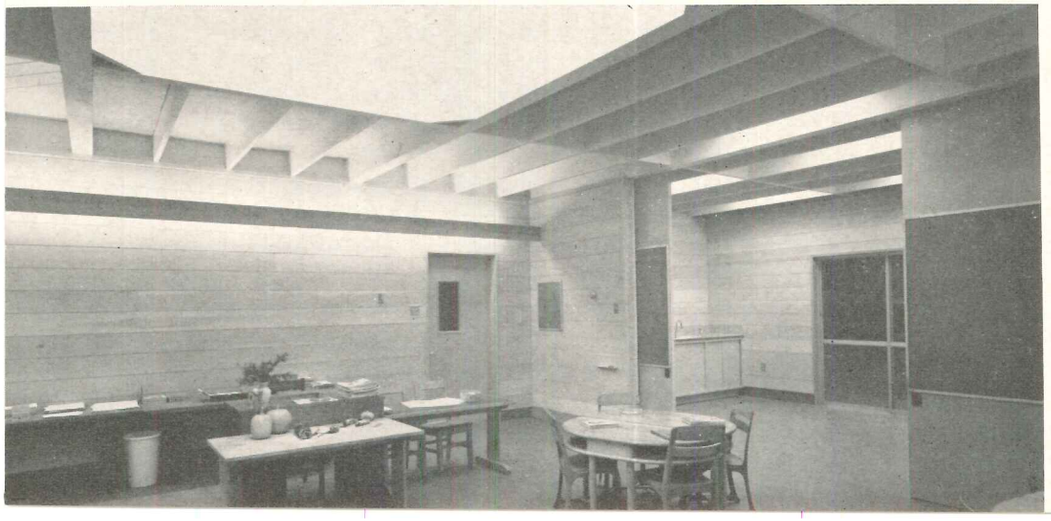
BUILDING #1

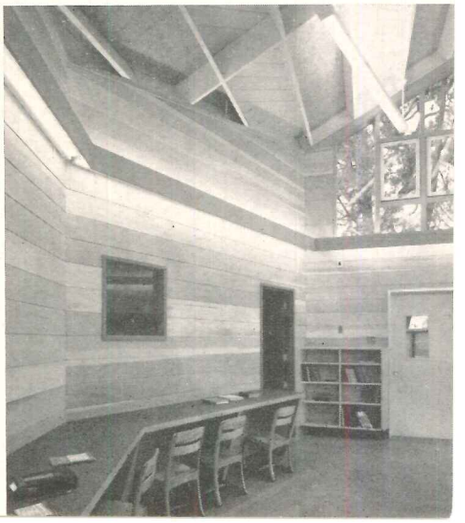


BUILDING #2









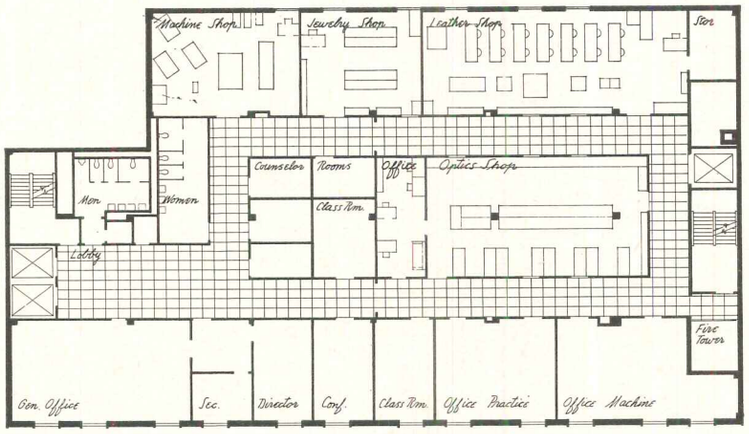
Special Schools:
4. EDUCATION COMBINED WITH REHABILITATION

Institute for the Crippled and Disabled
New York City, New York
ARCHITECTS:
Sherwood, Mills and Smith
STRUCTURAL ENGINEERS:
Werner-Jensen & Korst
MECHANICAL ENGINEER:
Bernard F. Greene
CONTRACTOR:
Starrett Bros. & Eken

Unusually complete facilities for the crippled and disabled have been brought together with efficiency and good taste in this building. Facilities are provided for training, treatment, rehabilitation and research.

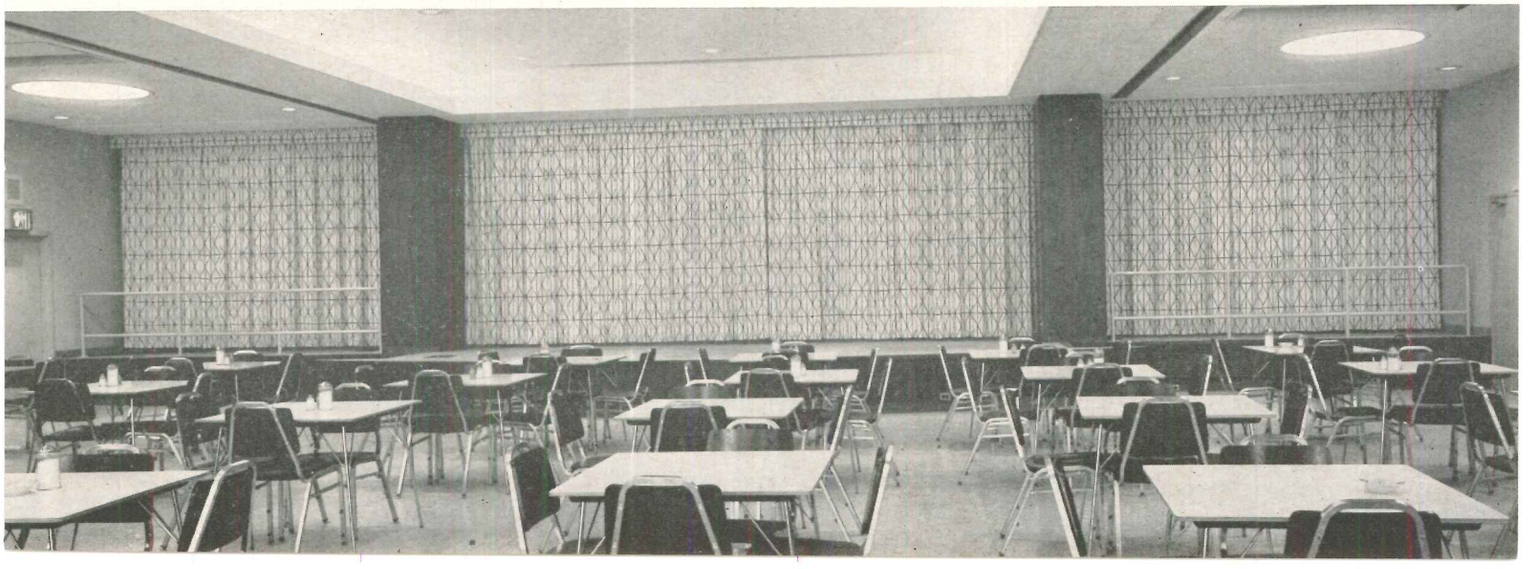
Out-patients are trained in vocations such as jewelry making, metal or wood working, optical mechanics and handcrafts. Most of the area of the three top floors is devoted to shops for such purposes. Patients are treated and fitted for prosthetic and orthopedic devices on the first floor, where the devices are also manufactured in complete shops for corsets, limbs, braces and plastics. The second floor of the building is mainly devoted to a patient lounge and a large combination cafeteria and auditorium, which is provided with a stage, dressing rooms, and a complete control room for sound and lights. This room is used by patients for presentations, meetings, and theatrical performances and for staff and instructional purposes. Research and observational activities are performed on the third floor, for the most part. Here are located a large physiological work area, research and testing rooms, X-ray, electronic measurement laboratory and library.

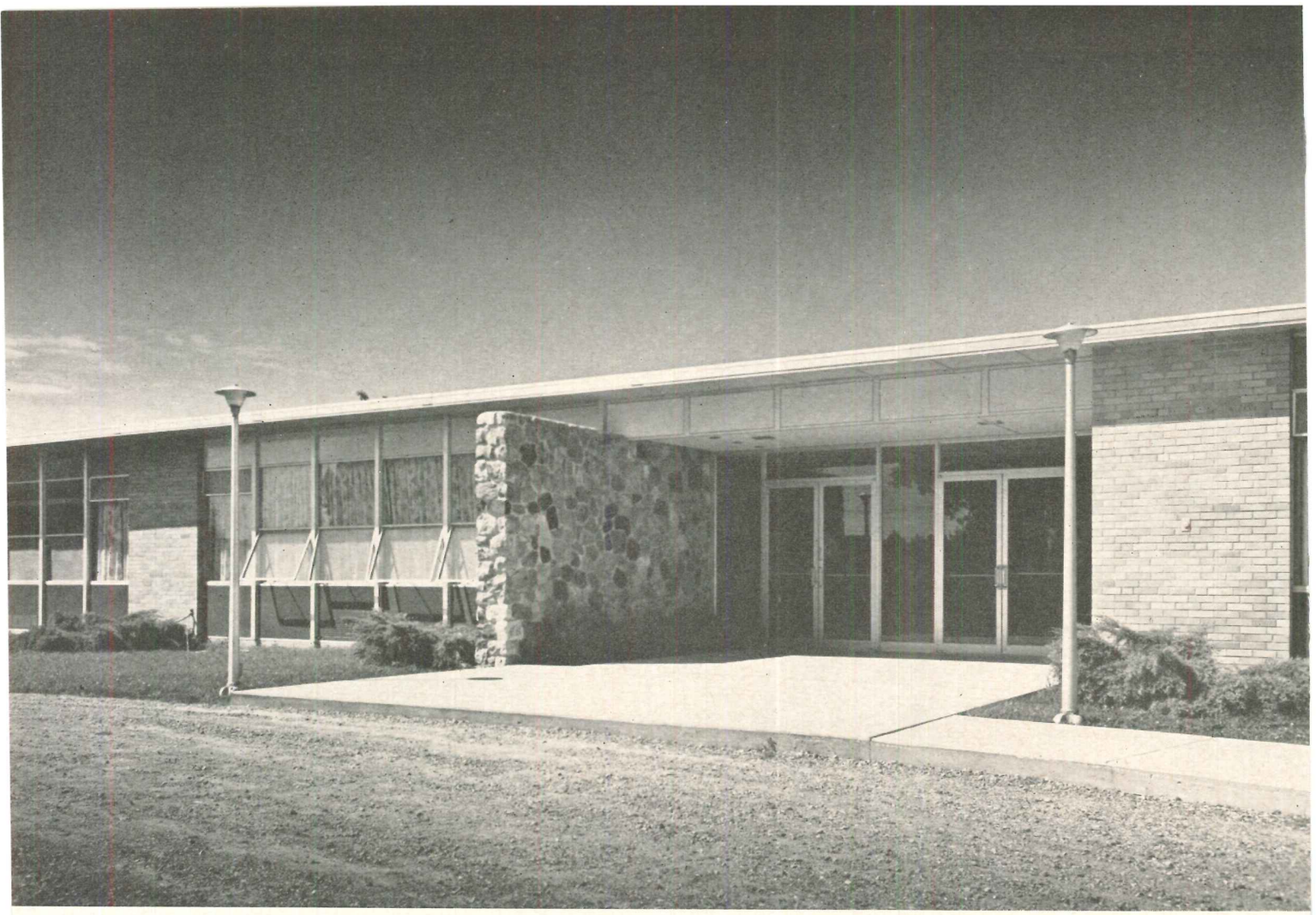
In the materials, finishes and furnishings of the building, the architects who also served as interior designers, have provided an atmosphere of permanence, stability and security. These characteristics, together with the simplicity of the interiors, their airiness and brightness, contribute to the treatment and rehabilitation of the patients. For the same purpose, contemporary sculpture has been placed in a number of locations in the building.



FOURTH FLOOR

George Cserna photos





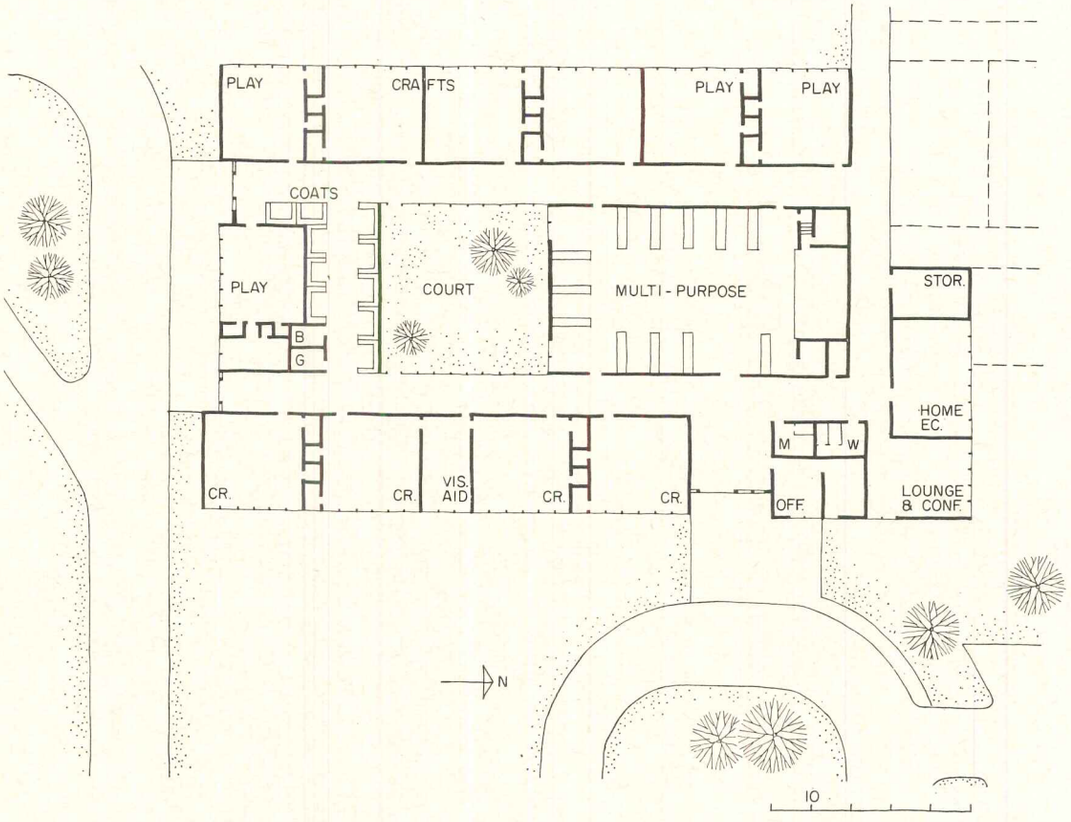
Special School:
5. TRAINING FOR MENTALLY HANDICAPPED CHILDREN

Children's Retreat and Training School
Grand Rapids, Michigan
ARCHITECTS & ENGINEERS:
J. & G. Daverman Company
CONTRACTOR:
Omega Construction Company

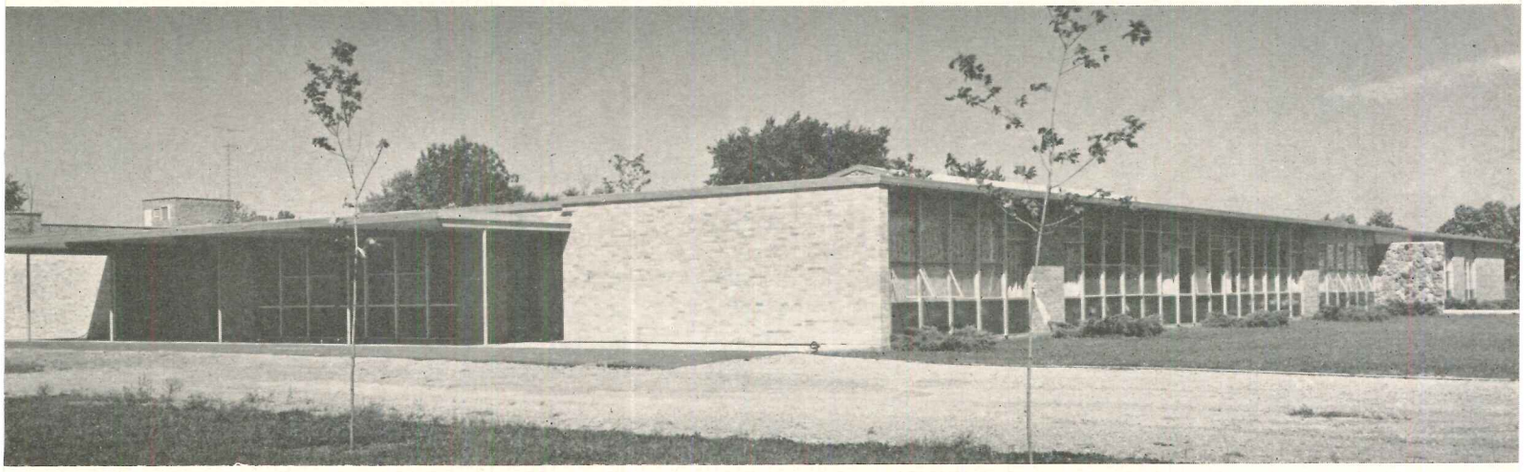
This private school is one of the few in the country that provides care and training for mentally handicapped children with I.Q.'s of less than 55. Most of these children will never be able to recognize their surroundings and will require constant nursing care for the rest of their lives. In addition, the school enrolls children who, with training, are capable of maturing to a level where they can attend to their own personal needs. A third group of children includes those who can be educated, but not in regular schools. Special facilities required for the care and training of these three groups of children have been provided in this building, together with the sort of pleasant environment that is so essential to their well-being and progress.

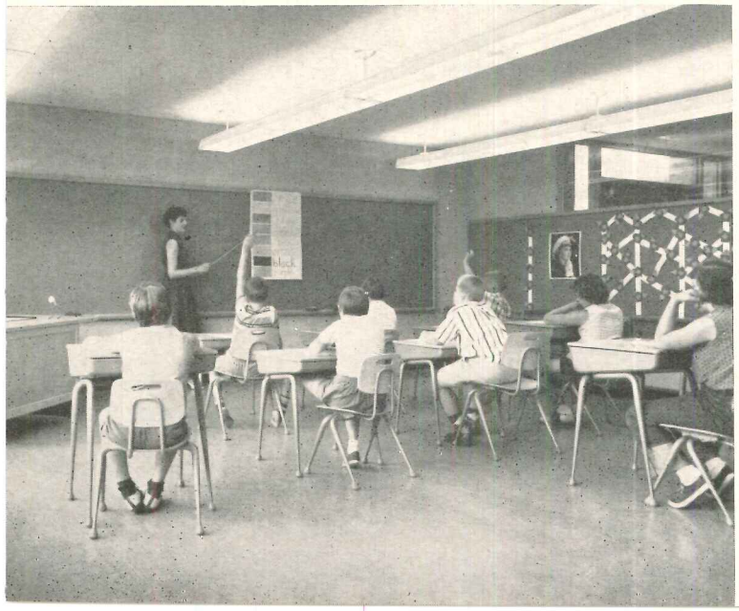
The attention span of mentally handicapped children is very brief; many of them require constant supervision, some are also physically handicapped. These considerations led to a building with a large courtyard in the middle, for interest and for shortening of circulation patterns. The range of ages, from 6 to 18, housed in the building called for extreme flexibility of all group activity areas; this has been accomplished through extensive use of portable furnishings such as wardrobes, cabinets, and science instructional units, and through the large number of play and activity rooms provided.

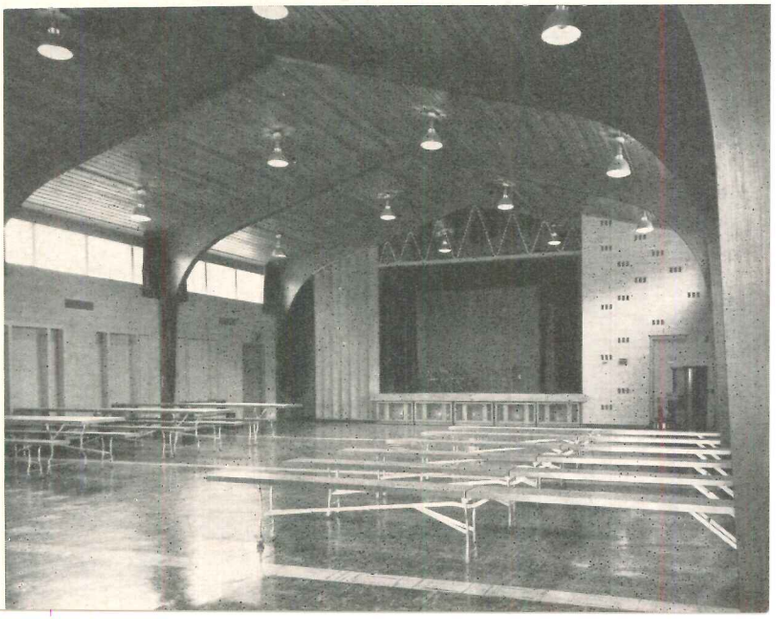
Other special requirements for the care and treatment of the children have been met through the provision of a large number of toilets located near every treatment or activity area, by colors rather than numbers for room identification, and by relatively impervious materials such as concrete block with special glazes.

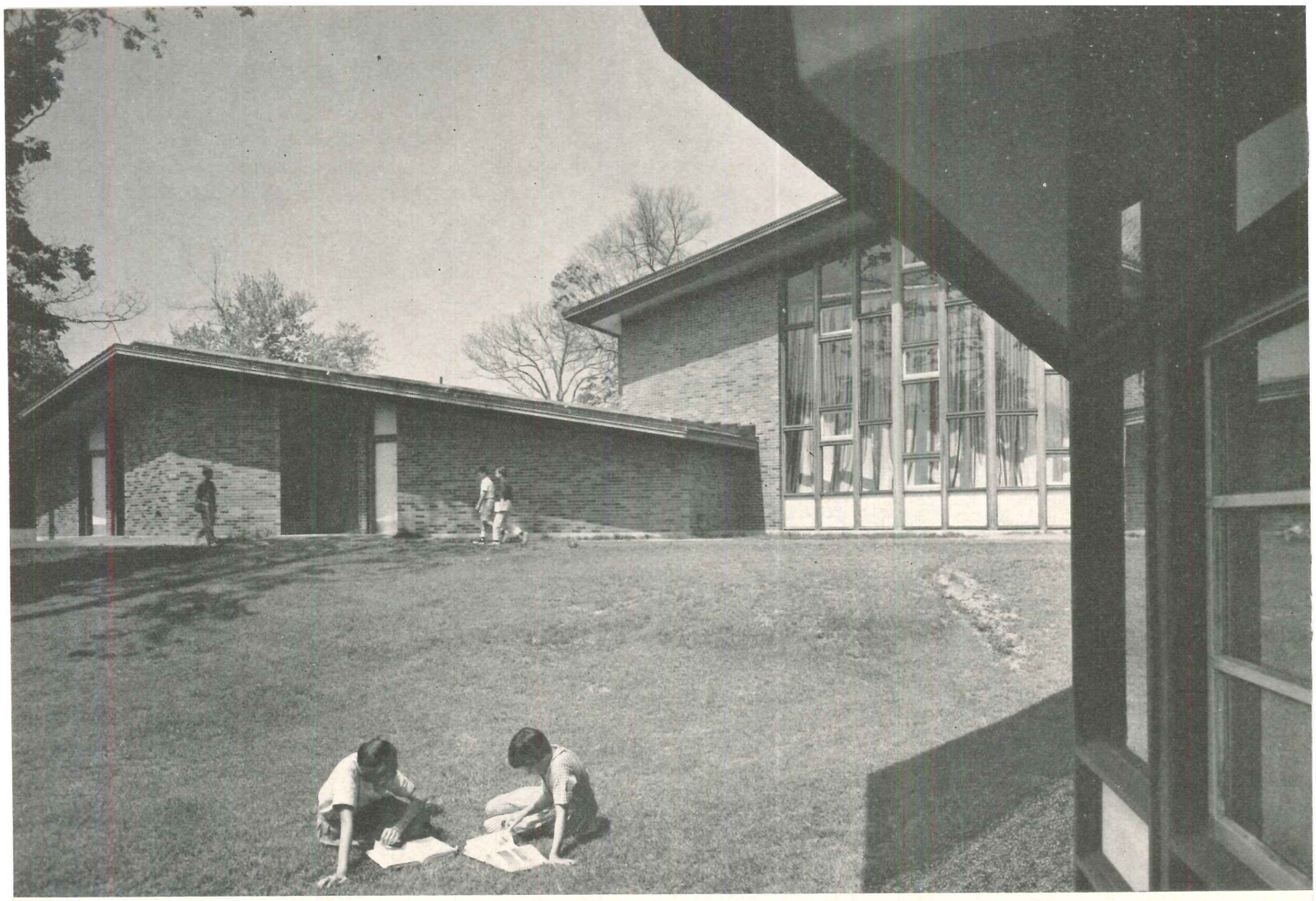


Rinco photos









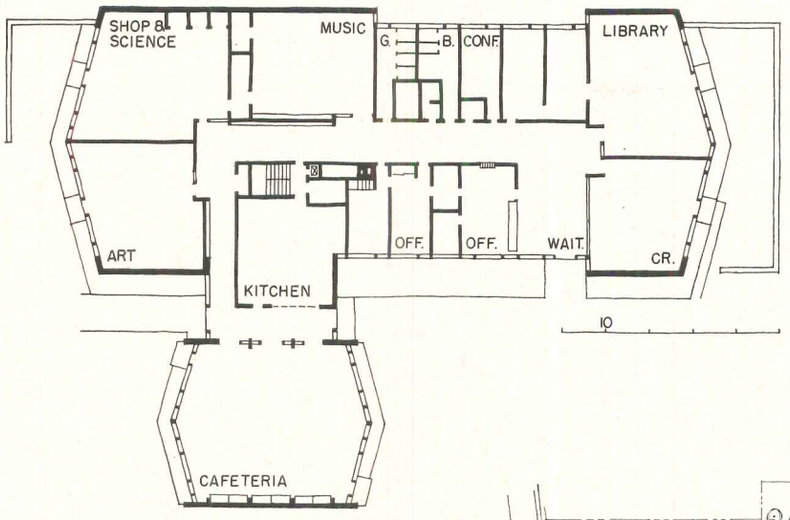
Special School:
6. PRIVATE COEDUCATIONAL ELEMENTARY SCHOOL

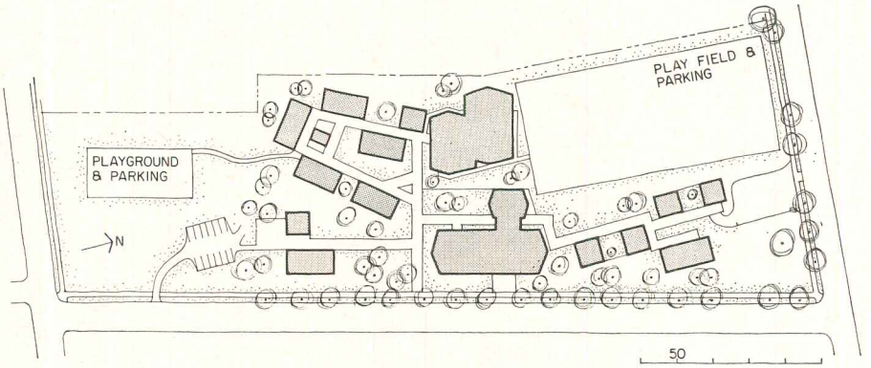
The Foote School
New Haven, Connecticut
ARCHITECTS:
Perkins and Will
and Carleton Granbery
STRUCTURAL ENGINEER:
Henry A. Pfisterer
MECHANICAL ENGINEERS:
Hubbard, Lawless & Blakeley
CONTRACTORS:
Cusano & Ocone, Inc.
and Edwin Moss & Son, Inc.

Located on a 7½-acre site in a residential area of New Haven near Yale University, this school has an enrollment of 230 students in kindergarten through eighth grade. Its design, simple and residential in character, is composed of a number of decentralized elements connected with covered walkways.

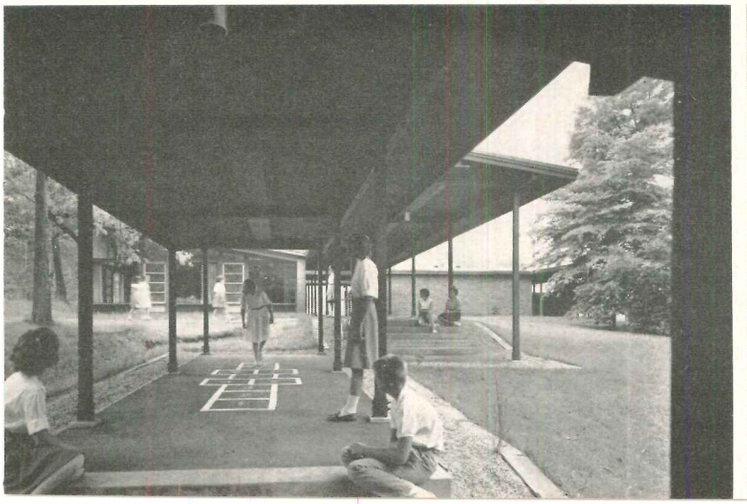
Major elements of the school include a commons unit, an assembly-play unit, and a number of single and double classroom buildings. The class rooms are smaller than average since the usual class here is composed of less than 20 students. All classrooms are square, they come in three sizes according to the grades to be housed, and the interiors are varied to fulfill the functions needed for various grade-levels. Except for those in the first four grades, students move between classrooms in the manner customary in secondary schools. Teachers of the higher grades concentrate on only one—or at most, a few—subjects. The assembly-play building is mainly given over to gymnasium and auditorium activities. There is a movable stage, a basketball court and locker rooms. The commons houses the library, shop, music and visual aids, art, offices and the cafeteria. Eventually the wall between the library and classroom in this building will be torn down and the entire area of both rooms will become library space.

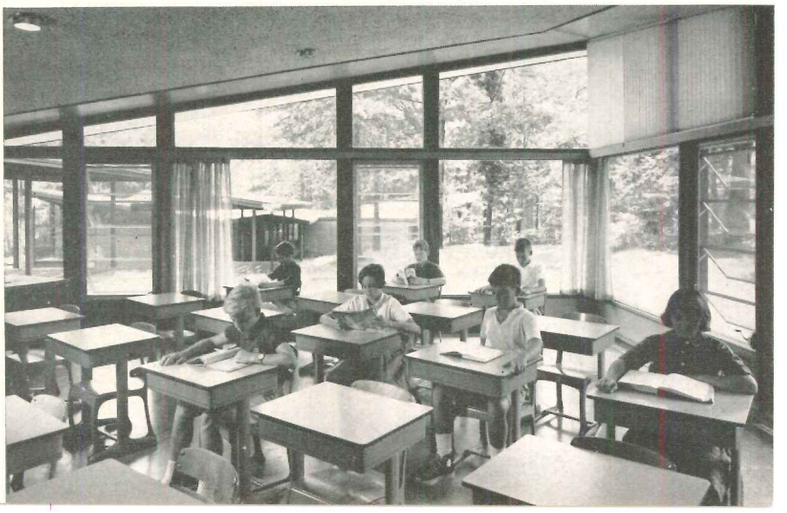
The site is large enough for expansion of the facilities if the enrollment grows enough to warrant this; the master plan of the campus, made with this possibility in mind, includes provisions for the future addition of several single or double classroom units.

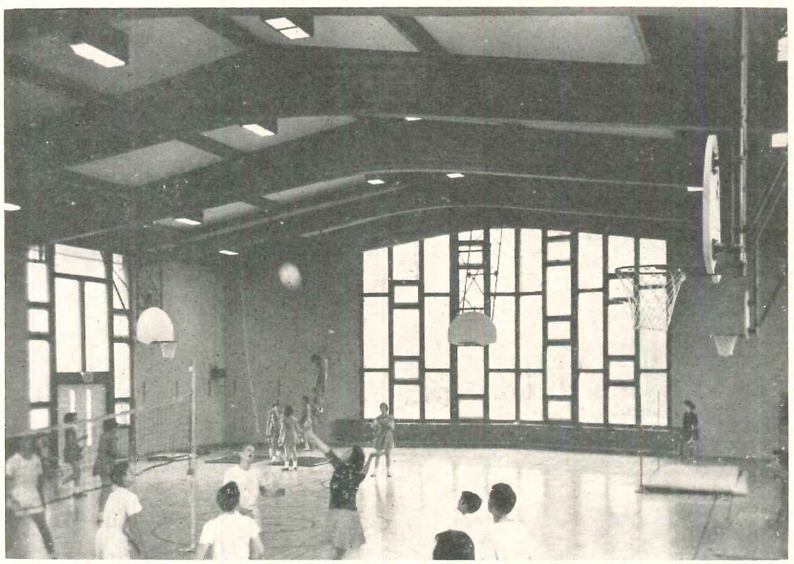




Joseph W. Molitor photos

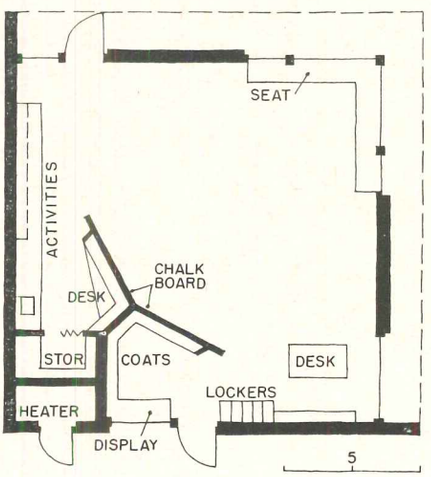






In the views on the left may be seen, (*top to bottom*), the assembly-play unit set up for use as an auditorium with the stage in place; the same area, with chairs put away, in use as a basketball court; and a view of a typical classroom. As shown, the roof structure of the assembly-play unit is laminated wood; other materials include concrete block bearing walls with brick exteriors, redwood window frames and aluminum sash. Ceilings are acoustical tile, floors wood, walls fabric-faced tackboards except assembly unit which has painted concrete block walls.

Classroom plans are generally as shown, except for variations in size, and details of the interior. Each is heated with its own separate, hot air system



Architectural Engineering

New Curtain Wall Specification

The new metal curtain wall specification promulgated by the National Association of Architectural Metal Manufacturers (N.A.A.M.M.) issued last December has eliminated some restrictions which were found to be unrealistic and incompatible with general testing practice. For example, dynamic as well as static testing is now permitted for determining water leakage. Test loadings have been reduced in the new specification. Several items of warning regarding too literal use of the specification were issued by Wayne F. Koppes, A.I.A., technical director of the Metal Curtain Wall Division, speaking before an A.S.T.M. committee meeting in Montreal last February: (1) the architect should recognize that many curtain wall systems on the market have been thoroughly tested and proven in use; therefore, proper certification of performance should be acceptable in lieu of further testing; (2) structural performance, air infiltration and water infiltration are not necessarily of equal importance; therefore, the architect should specify only tests considered essential. The test for water leakage is usually most important since this can be determined only by testing. Structural performance sometimes can be determined by standard engineering calculations. In other cases it depends on the complex and indeterminate interaction of assembled parts, and can be verified only by testing. The test for air infiltration is usually the least important, because satisfactory resistance to water leakage usually assures that air infiltration will not be excessive.

Concrete Bibliography

A bibliography listing U. S. Government research reports, translations and other technical documents on concrete and cements is now available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. for 10 cents a copy. The bibliograph covers references collected from 1940 to 1962, covering such topics as lightweight aggregates, cellular and air-entrained concrete, precast and prestressed concrete, glass-fiber reinforced concrete, soil cement mixtures, fire resistance tests and concrete for radiation shielding.

New Data on Air-Conditioning Loads

The 1963 ASHRAE Guide and Data Book to be published next month by the American Society of Heating, Refrigerating and Air-Conditioning Engineers will include a rewritten chapter on air-conditioning cooling load, with improved data on outdoor design temperatures, new tables for simplified selection of solar heat gain through glass, and a new section on residential load calculations.

N.A.H.B. Research House

The latest in a series of research houses developed by the National Association of Home Builders will incorporate a number of new building components among which are: (1) a steel foundation which can be erected in any kind of weather; (2) reinforced plastic bathroom components and plastic plumbing; (3) aluminum and plastic windows and doors. The Rockville, Maryland house is reported to be the first constructed under FHA's new experimental program.

"Fluidized" Plastic Coatings

A unique coating process in which heated materials are coated with plastic by dipping in dry "fluidized" plastic powders has been described in a 46-page Army report released by the Office of Technical Services, U. S. Department of Commerce. Coatings of 5-40 mils may be applied in a single dip without sags, runs or other unsightly defects. It should be possible, according to the report, as a result of further research, to permit coating large objects, such as building panels. The process works by preheating an object and dipping it into the powdered plastic material kept "fluidized" by an ascending column of air. The publication can be obtained by ordering AD 288 243 from OTS, U. S. Department of Commerce, Washington 25, D. C. Price $1.25.

This Month's AE Section

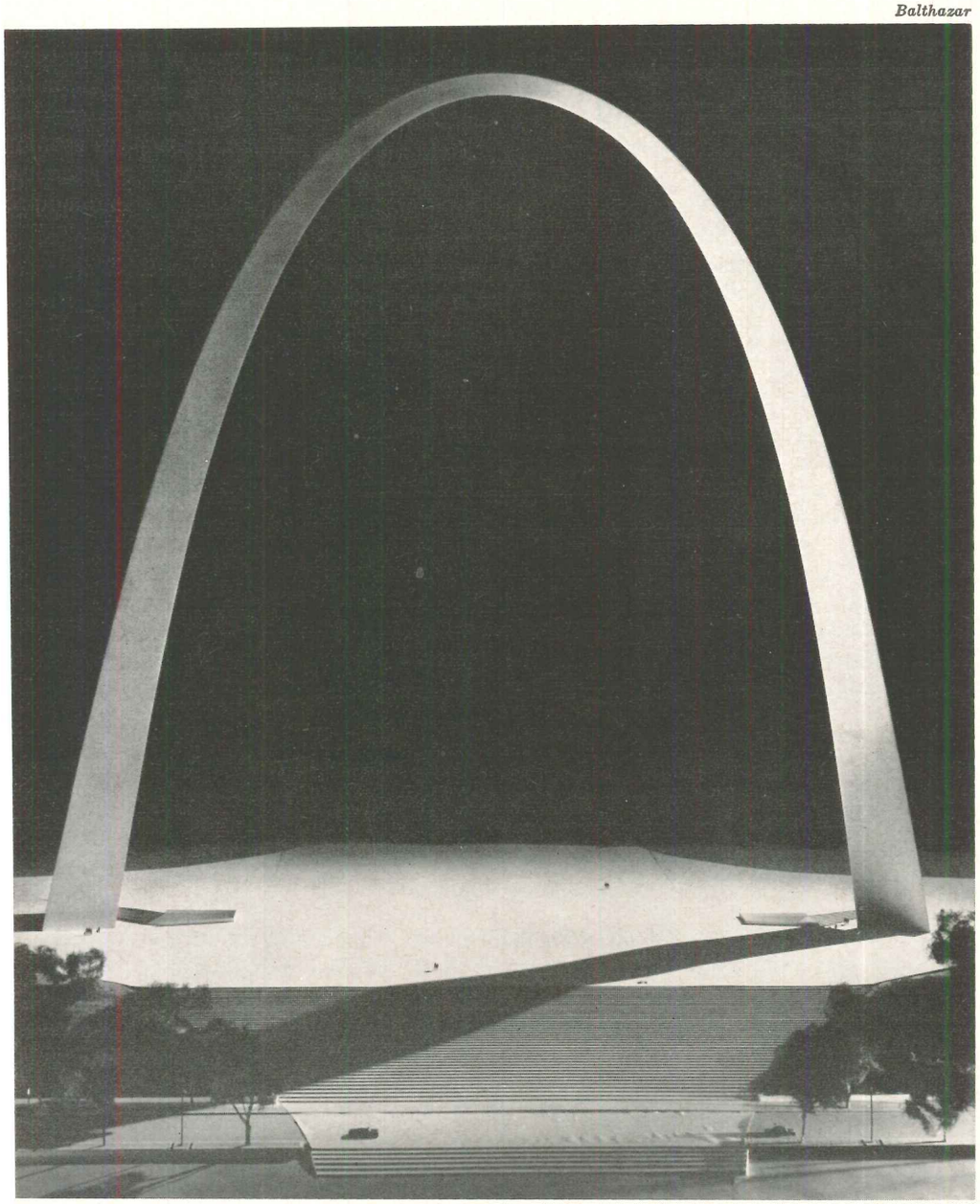
ENGINEERING OF SAARINEN'S ARCH, page 188. *AUTOMATIC CONTROLS CAN CUT LIGHTING COSTS*, page 192. *VENDING MACHINES WORK FOR FOOD SERVICE*, page 194. *BUILDING COMPONENTS*: Infrared Units for Space Heating, page 201. *Products*, page 203, *Literature*, page 204.

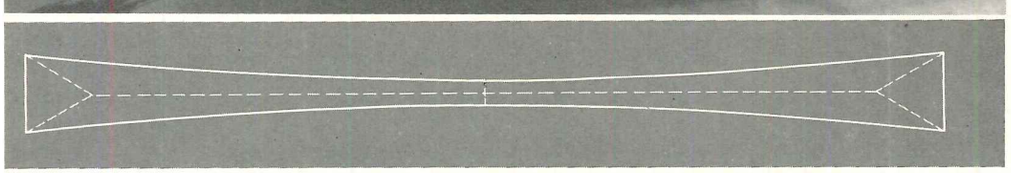
ENGINEERING OF SAARINEN'S ARCH

Symbolizing St. Louis as gateway to the West, Saarinen's arch will soar to a lofty 630 feet. The simple, though carefully proportioned, form does not give clues to the complex engineering: The hollow arch uses its wall for structure. Two eight-car trains curve their way to the top

Jefferson National Expansion Memorial
ARCHITECTS: *Eero Saarinen and Associates*
STRUCTURAL ENGINEERS: *Severud-Elstad-Krueger Associates*
PASSENGER CONVEYANCE SYSTEM: *Richard B. Bowser, Consultant*
CONTRACTOR: *MacDonald Construction Co.*

Balthazar





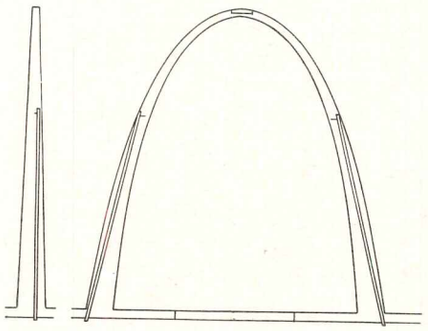
Superbly elegant in its pure, simple form, the Gateway Arch will not, and indeed it should not, disclose the complexity of engineering behind the shimmering stainless steel skin that gives the arch strength and utility. While the Eiffel Tower reflected advanced technology in the use of iron framing, this arch shows no structural "skeleton" because there is none. The steel skin, itself, and a concrete core half the way up are stressed to carry gravity and wind loads to the ground.

The arch takes its basic shape from an inverted catenary curve. Actually the catenary is "weighted," like a chain heavier at the ends than at the center; this weighted catenary can be expressed mathematically. The arch, of course, is not flat, but has a triangular section, making the arch seem taller than it is wide, although these dimensions are exactly the same, 630 ft, and providing greater structural strength.

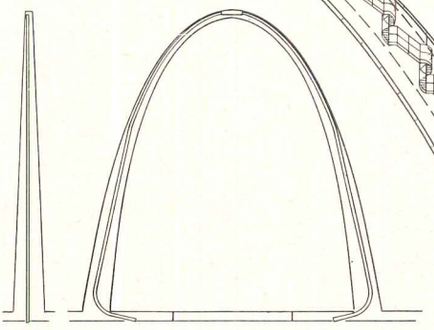
Because of the arch's curved shape, no conventional moving transportation was possible for taking sight-seers to the observation level in the crown. The principal transportation is an eight-capsule (car) train for each leg of the arch which follows a curved hatchway to within a few feet of the top (dashed lines in drawing, *right*). Supplementing the trains are elevators in each leg rising to a height of 370 ft.

Squeezing train and elevator hatchways as well as stairs into the decreasing triangular cross section was no mean problem because of the confinement of the space, as was making the triangular section strong enough to take loads due to gravity, moving transportation and wind.

The arch has a double-skin wall with space between outer and inner skins varying from 36 in. at the base



Elevators go up only to 370 ft level



Trains follow curved hatchways to top

to 7⅝ in. at a height of 390 ft. From there to the top this spacing remains constant. The outer skin is ¼-in. stainless steel plate throughout. The inner skin is type A-7 carbon steel, ⅜-in. thick, except in the corners where it is 1¾-in. thick for greater stiffness.

The space between the double-skin wall is filled with concrete up to a height of 300 ft, forming a composite section of concrete and steel which increases stiffness against wind forces with a minimum of material.

From the crown of the arch to the point where the composite section begins, the direct compressive loads are carried completely by the outer stainless steel skin and the inner carbon steel skin. These two skins are connected to each other by diaphragms, run vertically on 2-ft centers. The diaphragms also serve as stiffeners for the inner skin to prevent it from buckling. The outer skin is stiffened by steel angles spaced halfway between each diaphragm.

The double-skin wall is shop-fabricated in 12-ft high sections which are spliced together during erection.

The stiffeners and vertical diaphragms are interrupted at each splice because of field fabrication problems, so they do not contribute to arch action, but are effective in resisting tendency of outer and inner skins to buckle or bend.

Stiffness of the arch is especially critical in the lower half because a small movement there would result in a much larger movement at the top. Sway of the arch at the crown is calculated to be about 18 in. with a design wind load of 155 mph.

A squeezing force is applied to the concrete core of the wall "sandwich" by high tension steel bolts pulling the outer stainless steel skin and the inner carbon steel skin together against the concrete, creating a friction bond. Connectors welded to the inner face of the stainless steel skin hold the bolts there to avoid showing of bolts on the surface of the arch; the inner skin is pierced by bolts and held by nuts. For local bending, the outer and inner skins act as the top and bottom flanges of a beam, providing a stressed-skin action which is comparable to modern aircraft design.

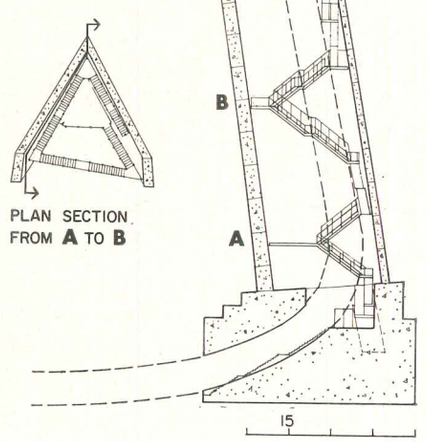
To prevent tension stresses in the concrete induced by wind loads acting on the arch, the concrete core is post-tensioned in the outer corners of the arch by approximately 120 steel tendons per corner. This post tensioning is stepped off and decreased to approximately 76 tendons per corner at the top of the concrete core. In addition, some post-tensioning is necessary in the inner tip of the arch to overcome tension stresses induced by wind action parallel to the arch plane.

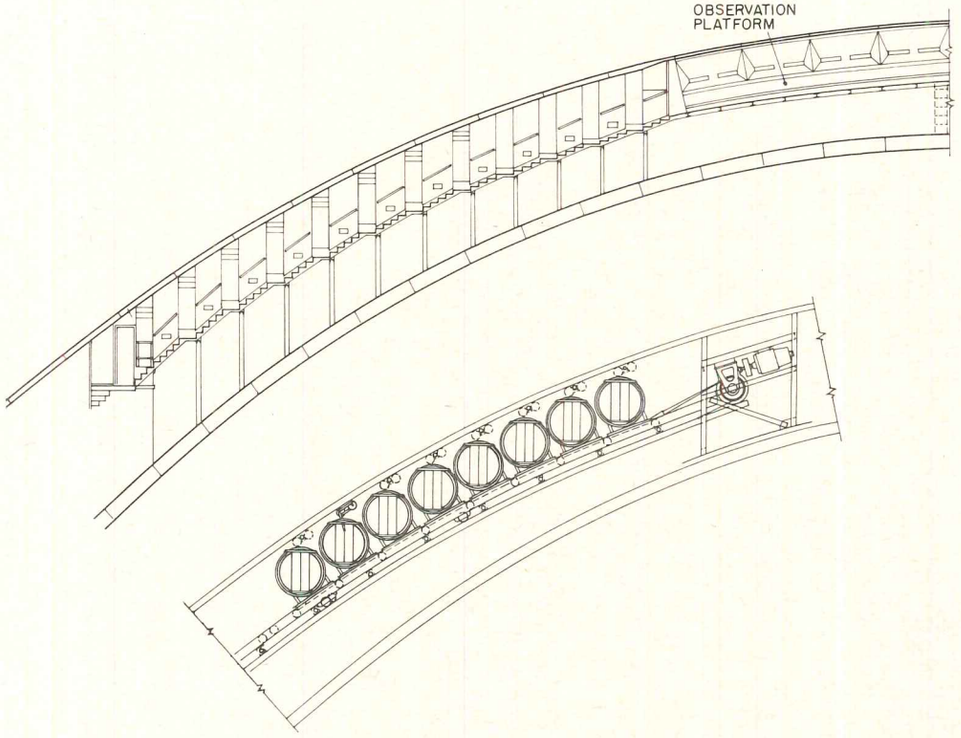
Both legs of the arch are being erected simultaneously, acting like free-standing "cantilevers" until the "keystone" section has been put in place. The two "cantilevers" are jacked apart before the crown section is installed. This force creates compression stresses in the back wall and the outer corners of the triangular section, thus greatly reducing the post-tensioning in these corners.

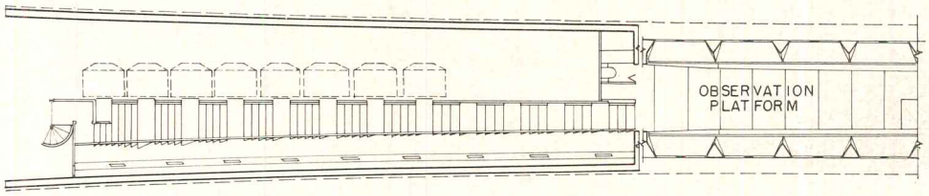
The cantilever erection method eliminates scaffolding. To resist wind loads during erection, a stabilization truss will connect the free-standing cantilevers at approximately 530 ft.

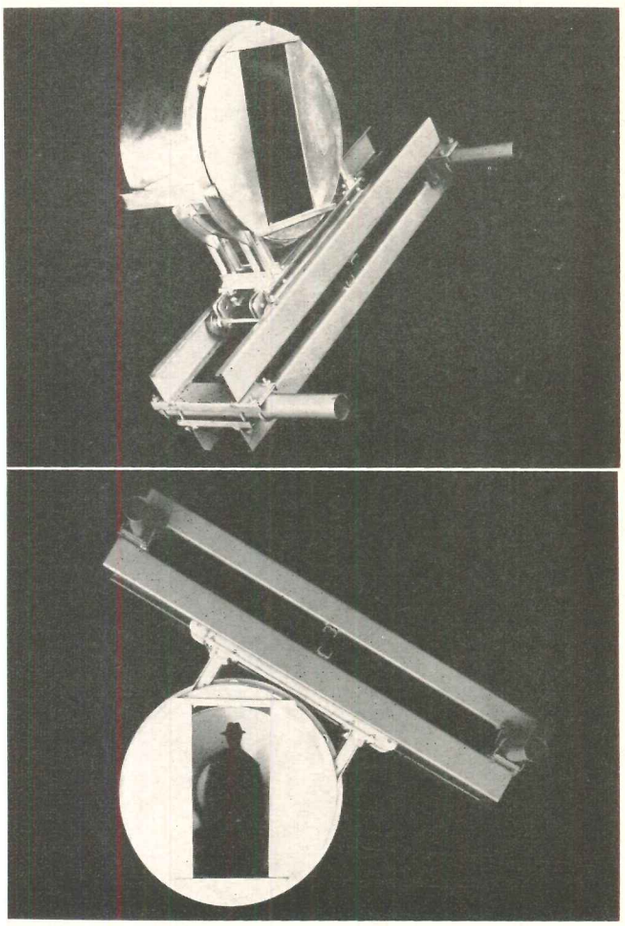
Wind tunnel tests were undertaken by the late D. B. Steinman in 1948 to identify the wind pressure and suction distribution over the length of the arch due to varying wind direction.

A wind vibration investigation was made by Severud-Elstad-Krueger,

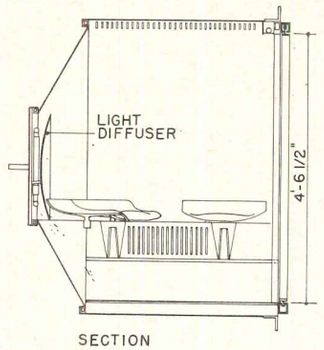




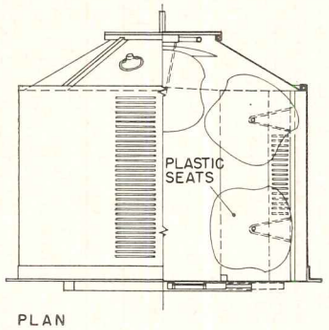




Train cars rotate about their axes to keep passengers upright during travel. Model photos show a car at start of trip and near top. Train wheels ride inside the large channel, counterweights in small channel. *Above*: debarking passengers walk a few steps to top



SECTION



PLAN

and was confirmed by a computer analysis, undertaken by Fairchild Stratos Corp. The results showed that there is no wind velocity which could cause the arch to resonate over its total length. This is due to the continuous dimensional change of the arch section.

Because of its triangular cross section, the arch has excellent resistance to torsion moments induced by wind. In fact, the torsional rigidity is as great as the bending capacity of the section.

Dr. Hannskarl Bandel of Severud-Elstad-Krueger is partner in charge of structural design, under the direct supervision of Fred N. Severud. Werner Gottschalk of this office is coordinator.

Transportation

The eight, five-passenger capsule trains will travel from below ground at the base of the arch to the observation platform at the top in 2¼ minutes travel time at a speed of 340 feet per minute (3.86 mph).

The capsules ride on railway type wheels running in channel tracks which follow the arch to the top.

So that the capsules will remain upright during their total travel, they are mounted in a ring carrier which rotates a total of 150 degrees, Ferris-wheel fashion, on roller bearings in front and a pinion bearing at the back. A stabilizing gear motor is provided for each capsule to correct for minor imbalances.

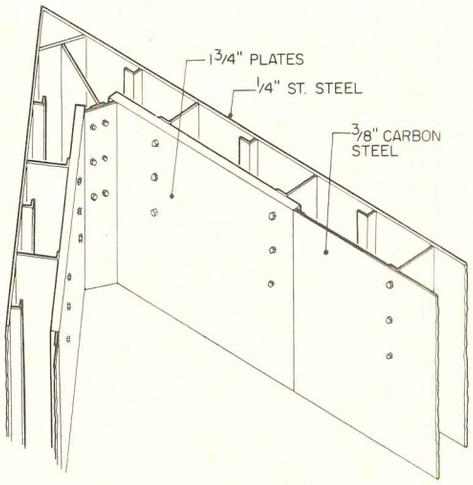
There are two trains, one in each leg of the arch. When traffic is heavy they will carry passengers in one direction only to avoid confusion in movement of people at the top. One train will operate only for up traffic and the other for down traffic.

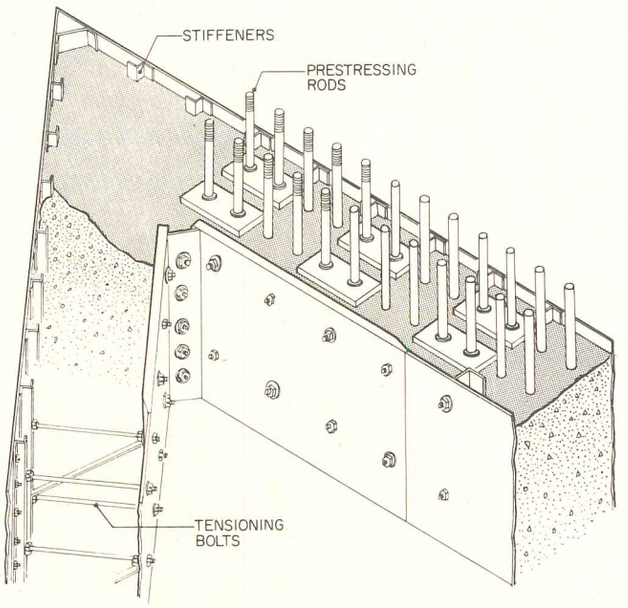
Two trains operating one way will make a complete cycle every 5.47 minutes, carrying 440 people per hour.

One elevator is provided in each leg rising to a height of about 370 ft (two-thirds of the way) and carrying 12 passengers each.

The elevator equipment will be standard except for heavy guide rails, special roller guides, and a modified car sling required for the slanted hatchway.

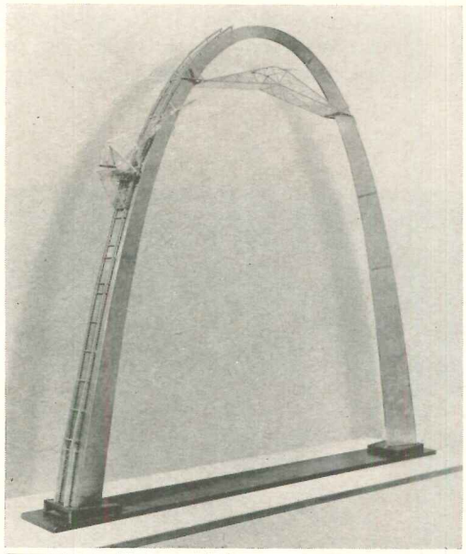
The trains have overspeed safety devices which clamp on the outside channel track flanges. Impact load will be absorbed by an oil buffer linkage between the safety device and the last capsule of the train.

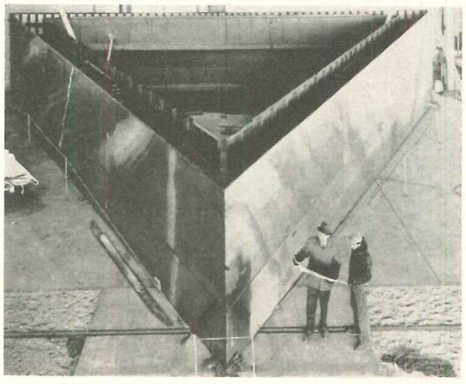


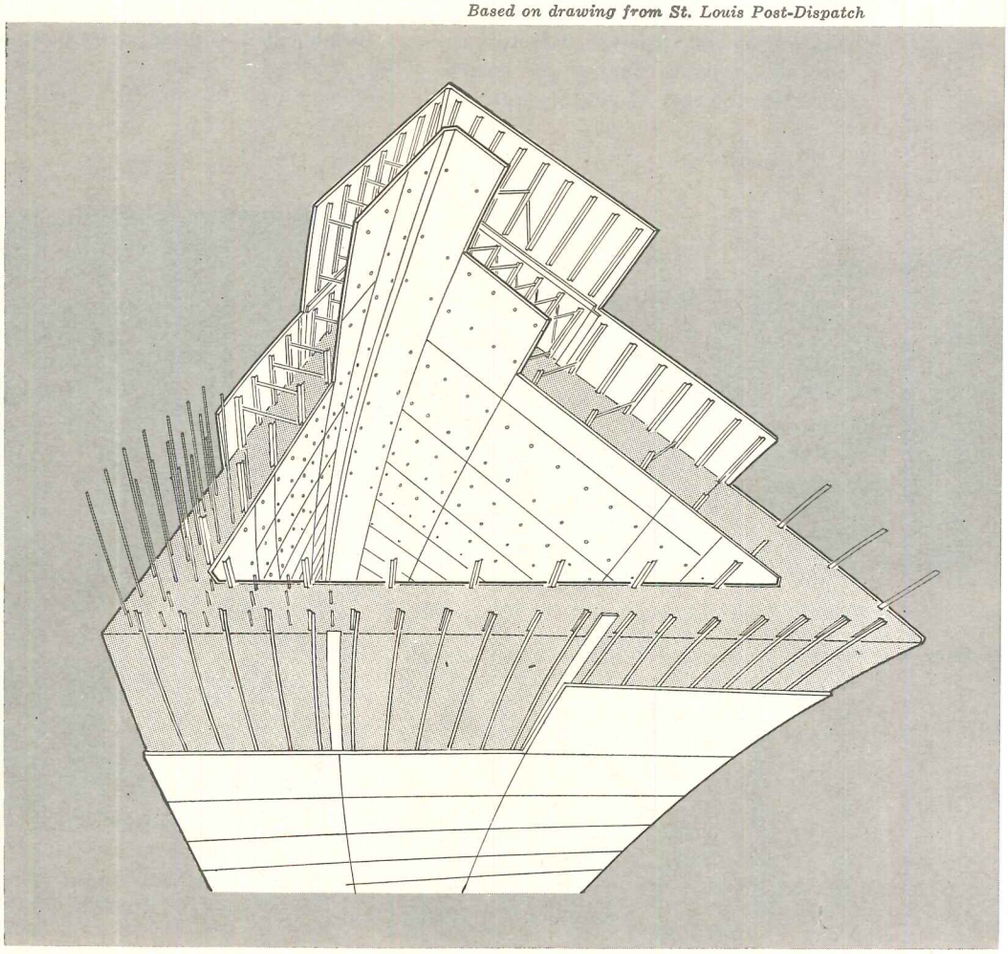


Arch wall construction is one type up to 300 ft; another from there to the top. From ground to 300 ft, a concrete core between the stainless steel exterior skin and carbon steel interior skin increases stiffness of arch to resist wind. High tension bolts squeeze skins against concrete to provide composite action. Post-tensioning rods prevent tension stresses in the concrete. Above 300 ft, the skins are tied together merely by steel plate diaphragms. Here stainless steel is stiffened by angles; inner skin by diaphragm flange. Concrete was stopped at 300 ft to reduce weight of the arch so that earthquake loads are in the range of wind loads. Arch will be erected without scaffold by using crane which travels up completed sections. Photo *(below)* shows 12-ft-high, 54-ft-wide section

Based on drawing from St. Louis Post-Dispatch







AUTOMATIC CONTROLS CAN CUT LIGHTING COSTS

New automatic controls turn off rows of lamps in steps as daylight becomes stronger. Motors even close draperies or blinds when too much daylight or solar heat comes in the room

By William P. Chapman, Director of Research and Development, Johnson Service Company

Demonstrated economies in electric lighting costs along with a desirable reduction in solar heating load through windows can be achieved with automatic control of electric light and daylight. Assuming that a prescribed level of illumination is to be provided on working surfaces, a control system can be arranged to turn off, successively, rows of electric lights as more and more daylight is available; and then, even, to close draperies or Venetian blinds as the daylight becomes even stronger.

When such an automatic control system is taken into account in engineering design, economies can result due to: (1) lower initial cost of the air-conditioning plant, (2) reduced operating cost of air conditioning, and (3) reduced operating cost of the electric lighting.

In a carefully metered field test in four schoolrooms during an entire semester, the cost of electric light in two rooms without automatic illumination level control was 46 per cent more than for two comparable rooms with automatic control. This cost includes the effect of intermittent operation on life of fluorescent lamps in the automatically controlled room.

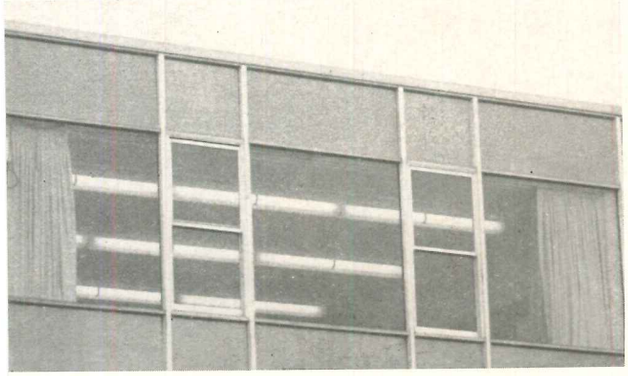
In another field test being conducted in a different school, automatic illumination control has been installed to see if overheating could be mitigated. Several rooms in this school become oppressively warm when the outdoor temperature exceeds 65 F during periods of bright sunshine. (This school is not air conditioned.)

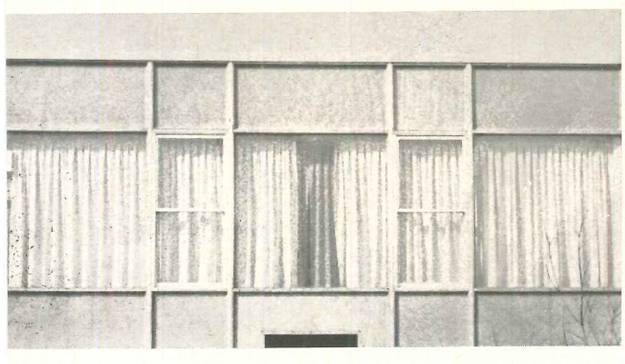
Types of Control

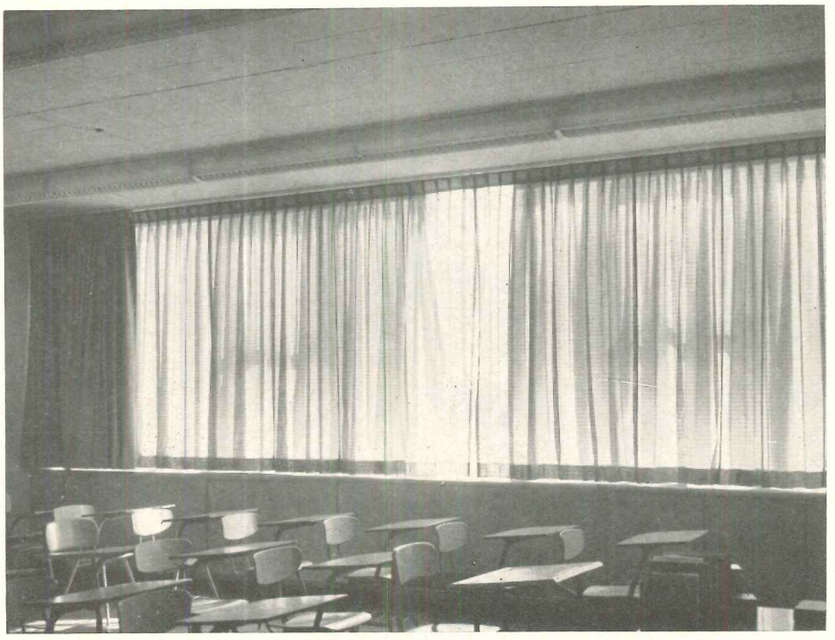
There are two ways that automatic illumination control can be accomplished: (1) open loop control and (2) closed loop control.

In open loop control, a light sensing device (a silicon or selenium cell) is placed inside the window to measure the intensity of light passing through it. The cell generates a tiny electrical current, varying in magnitude according to the amount of light striking it. This small current in the test experiments is translated into a variable air pressure by means of a transducing device. (In the open loop system transducer pressures vary from 2 to 13 psi.) This air pressure operates electrical switches which turn rows of lights off or on in predetermined succession. The pressure switches are adjusted so each responds to a different magnitude of pressure.

Assume, for example, that the amount of daylight coming into the classroom is so small that all lights are needed. As daylight increases, the cell registers this increase, causing an increase in air pressure out of the transducer which opens the pressure switch on the first row of lights. As the daylight continues to







Automatic controls were added to a classroom of an existing school to determine the effectiveness of closing draperies to reduce the solar heat load. Two sets of translucent draperies for light and heat control, and one opaque set for use during audio-visual instruction, were installed

increase more pressure switches open.

In the first experiment mentioned earlier, which was conducted at the Heather Drive Elementary School in Aurora, Illinois, there were six rows of lights. The lights were controlled so that the row of lights nearest the wall are turned off when the outdoor illumination is 1,500 footcandles; second row at 1,000 ftc; third row at 850 ftc; fourth row at 700 ftc; fifth row at 600 ftc; and sixth row (next to window) at 500 ftc.

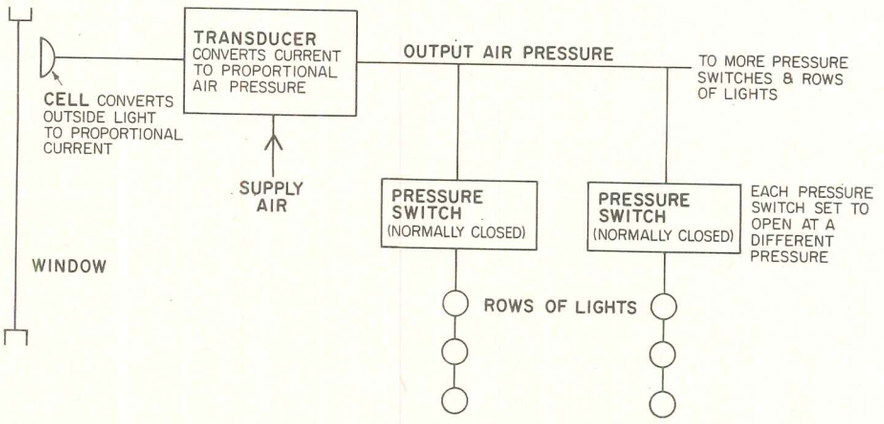
In the closed loop system, the light cell is not inside the window, but rather is mounted on the ceiling. Several cells can be used on a classroom ceiling in a large room with their outputs being averaged so that individual bright spots do not give a "false" reading. In this position the cell measures the intensity of light in the room instead of intensity of light coming through the window. The closed loop system is more sophisticated than the open loop system since it permits the use of a motor to control draperies or Venetian blinds automatically.

The closed loop system works this way: when the daylight is at a minimum, all lights are on and the shading devices are open. When sufficient daylight enters the room to contribute light to the equivalent to one row of lamps, the row nearest the windows will be turned off. As more daylight enters, successive rows of lights will be turned off. If still more daylight enters, a motor can be actuated to operate blinds or draperies.

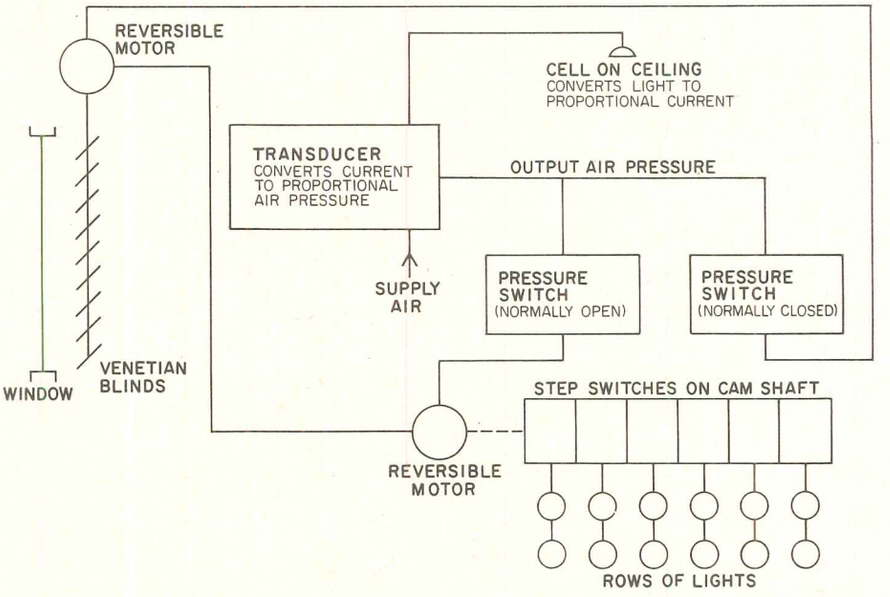
A difficulty with the open loop system is that it does not cope with the problem of direct glare. If a room is oriented so that sun can shine directly on an occupied area, then the occupant might adjust a shading device. Since the light cell is directly behind the glass, it does not detect the reduced illumination inside the room due to closing of the shading device.

With the closed loop system, if shading devices are closed manually to shut out glare and this causes too much reduction in daylight, then the lights will automatically go on.

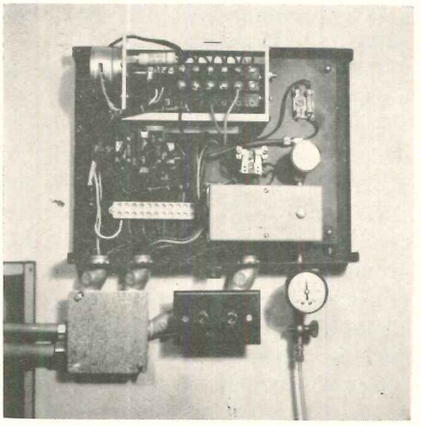
How do school children react to the automatic switching of lights? Teachers at the Heather Drive School reported that while lights going on and off automatically first produced amusement, the pupils soon became accustomed to the operation.



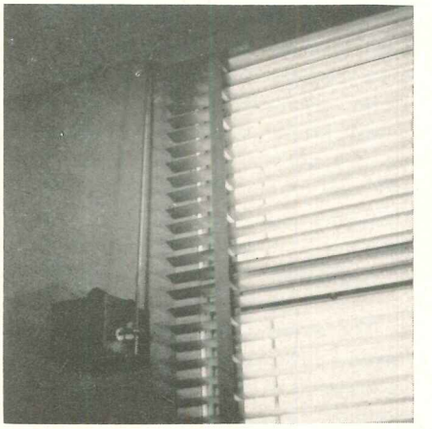
OPEN LOOP CONTROL system has light-sensitive cell directly behind the window. As daylight increases outdoors, increasing air pressure out of the transducer operates a series of pressure switches in succession to turn off the lights



CLOSED LOOP CONTROL system has light-sensitive cell on ceiling. As daylight increases, cell causes motor to turn cam shaft until it shuts off enough lights to bring back room illumination to a predetermined level. When all lights are off, and there is still too much illumination in the room, the cell causes a motor to rotate Venetian blinds or to close light-diminishing draperies. Cam shaft motor is electrically tied to shading-device motor so that this motor does not operate until all lights are off



Control box (with cover off) for closed loop system. Cam shaft motor and step switches can be seen at top of box



Laboratory model of automatic motor controller for Venetian blinds. Motors can also be used to close draperies

VENDING MACHINES WORK FOR FOOD SERVICE

Automatic food vending is catching on because many foods now can be dispensed from machines which require a minimum of space and practically no supervision from the building occupant. The author discusses what the vending industry provides and factors in architectural planning

By Howard P. Vermilya, A.I.A.

In response to a need for fast, economical, round-the-clock food service, food vending from automatic machines has come of age in the last two years, after an extended period of testing. While the volume of vended foods is now small compared to that of cigarettes, candy and beverages its potential in automating food operations deserves careful examination by architects.

A significant step in raising quality of food vending has been the entrance of large nationally operating catering concerns into the food vending field. In some cases there have been mergers between large operating venders and catering firms.

Increasing attention is being given to the design of the food dispensing area as an aid in gaining the acceptance of food vending.

Advantages of Food Vending

For the architect solving his clients' food service problems, automatic food vending has a number of features with which he should be familiar:

1. It requires less space since the kitchen may be eliminated.
2. Food service space or locations can be decentralized to provide satellite serving areas close to the users.
3. The location of the food service area is made more flexible since the only services required are power and water, permitting it to be placed where kitchens would be prohibitive or not permitted. Most food is in packages when received at vending locations, consequently the flow of supplies and waste disposal are less of a problem. There is very little if any odor accompanying food vending.
4. The capital investment can be reduced by the elimination of the kitchen space and equipment. It may be reduced further by leasing or contracting for the use of the vending machines rather than buying them.
5. Standardization of vending machine design has progressed to a point which permits the creation of attractive food service areas when these areas are anticipated in the planning stages.

From an operating standpoint there are additional advantages:

1. Twenty-four hour service is practical with a minimum amount of manual service.
2. The provision of food and its preparation is placed in the hands of specialists in this field, requiring only minimal supervision of the facility on the premises.
3. Vending machine maintenance is usually a function of the vending operator.
4. The vending machines can be changed, increased or decreased in number to meet changing conditions of use.
5. The type of food service can be adapted to the need. It can vary from refreshment items to complete meals.
6. Service can be provided at times and places where it would be unprofitable if manual services were required.
7. Other advantages are the control of portion sizes, important in cost control, and the elimination of pilferage.
8. The cashiering function may be handled automatically by coin and dollar-bill changers.

Food vending may also be used to supplement manually operated restaurants, cafeterias or snack bars in which cases it is used generally to provide food service during the periods when the manual operation is closed down. Usually the same food is provided in the vending machines as is served in the manual operation—off-peak time being used to load the machines. In some cases vending has replaced the manual snack bar type of service, often changing a losing operation into a profitable one. In other cases, vending machines have been used to widen the selection provided by a small manual kitchen specializing in a few items. Food vending also permits a central, manually operated kitchen to provide food for decentralized satellite food service areas. This latter method of operation is particularly desirable in large institutions or commercial and industrial operations spread over large areas. Kitchens can be located in non-valuable areas.

Where Food Vending Is Used

The most successful vending locations have been those catering to the so-called captive groups. The largest of these is the employe group in factories and office buildings. Other locations have been colleges, hospitals, convention halls and sports arenas and transportation stations. Neighboring school systems for older grades, in which children are tall enough to operate the machines, may well consider vending locations served from one central kitchen.

Manufacturers have standardized height of vending machines using width and depth variations where changes in bulk are demanded. Also there are standard colors to choose from. Standardization of heights, usually 79 in. to allow movement through doorways, permits the use of a valance to build the machines into the structure. Where the machines of only one manufacturer are used, it is possible to obtain special fronts which are applied over those of the machines for visual unification.

The Food Vending Operation

The food vending industry is comprised of the following parties:

1. The vending machine manufacturer
2. The vending operator
3. The caterer
4. The location operator (tenant or building owner)

The usual way the industry works is for the manufacturer to sell ma-

chines to the vending operator who installs the machines, maintains them, and provides food under contract, in a location provided by the location operator or management. This process is not always followed however—the vending machine manufacturer may sell machines directly to the location operator. Additional functions of the manufacturer are to: (1) provide service on parts; (2) train personnel in maintenance of machines and in the vending operation, including food preparation; (3) offer consultation in menu planning and packaging techniques; and (4) provide assistance in the layout of the vending location, usually at the request of the vending operator. Manufacturers also offer consultation service directly to architects. The larger vending operators also can provide architects with advice and help in the layout of vending areas.

The *full-line vending operator* has his own commissary; others usually arrange through a caterer for the preparation of the food. Several full-line operators are national in scope. These operators will also operate manual kitchens at the vending location.

The vending location operator (building tenant or owner) provides the space, the utilities, the furniture, condiment stands and housekeeping facilities. Depending on whether he intends to operate his own food preparation facilities or contract for the food, he will purchase the vending machines, lease them, or merely provide space and facilities for their installation.

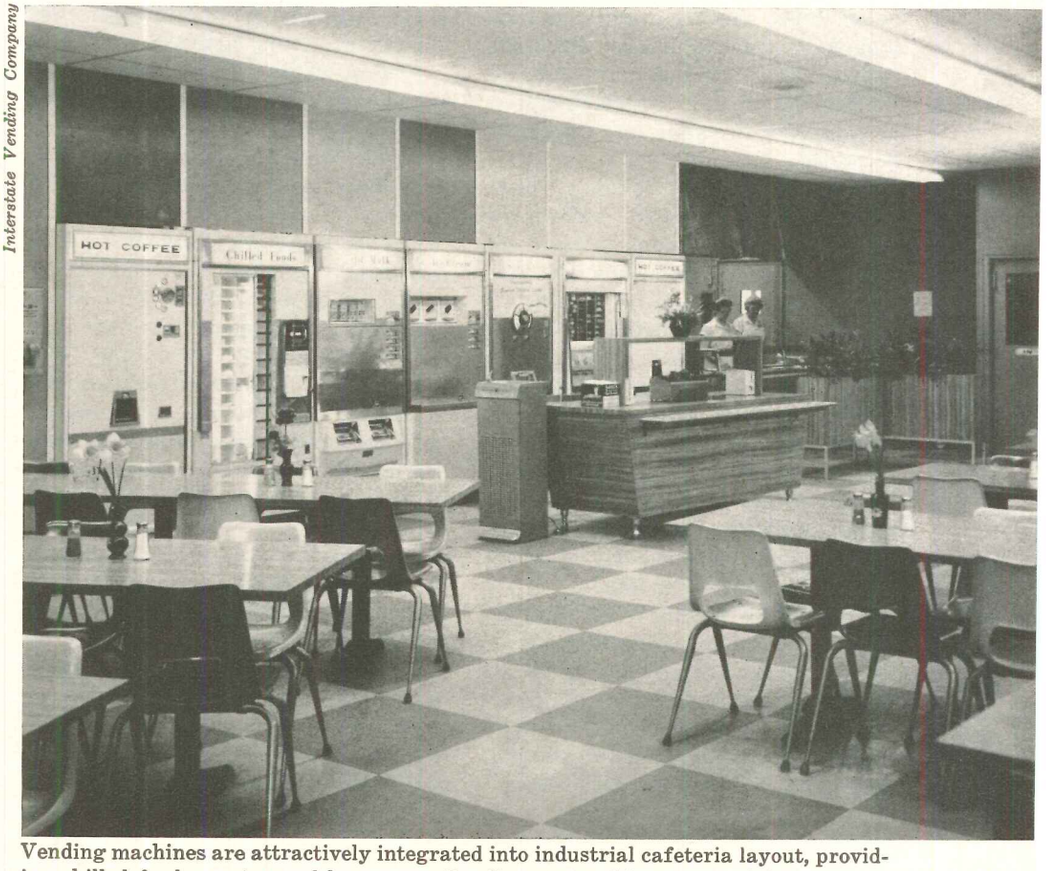
When the location operator contracts with a vending operator for machine installation maintenance and operation, he may receive a commission on the sales, or pay a charge, depending on the volume or value of the location to the vending operator.

The range of foods which can be served in vending machines is almost unlimited. Menus can be changed daily, repeating on a two- or four-week basis.

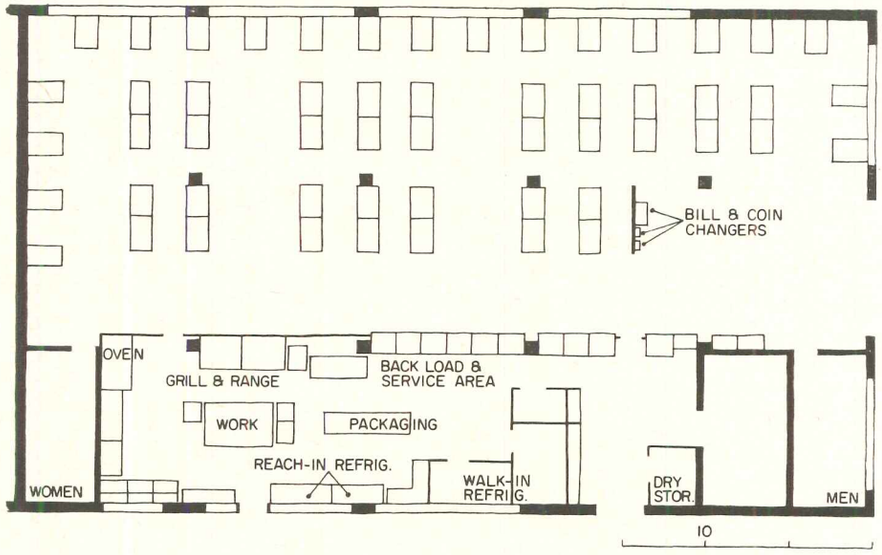
For the coffee break or other refreshment purposes, it is usual practice to install one or more beverage machines and possibly one or more refreshment machines or frozen food machines. This installation can also serve to supplement home prepared lunches.

Where selection for complete meals is desired, additional machines may

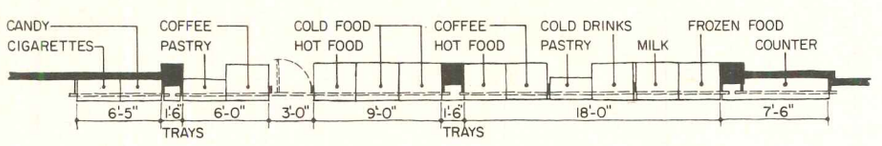
Interstate Vending Company



Vending machines are attractively integrated into industrial cafeteria layout, providing chilled foods, pastry and beverages. Condiment stand is seen at right, center



In this installation, some of the vended foods are prepared on the premises. Vending machines are now available which can dispense the following foods: *Hot* (100-160 F): soups, sandwiches, casseroles, entrees, desserts. *Refrigerated* (32-44 F): sandwiches, salads and cold plates, desserts, entrees (when infrared or microwave heating is available). *Frozen food* (0-28 F): ice cream and entrees (to be heated). *Refreshment*: cakes, pastry and candy. *Below*: the vending units used in plan (*above*)



be installed. If this demand is limited, there are combination machines vending both hot and cold items. If the demand is large, hot, refrigerated or frozen food vending machines may be added.

There has been some use of self-service infrared and micro-wave (high frequency) ovens to heat refrigerated or frozen foods. The infrared oven works quite readily (2 minutes) with refrigerated items, while the more expensive micro-wave oven will work quite rapidly with both refrigerated or frozen dishes. Shelf-life is of less concern when food is so heated, than when served in the hot food vending machines, but direct purchase of hot food from the vending machine obviously is a less time consuming operation.

The shelf-life (length of time between preparation—consumption) of vended foods varies. That of frozen foods is almost indefinite; of refrigerated items not so long (24 hours or more) and of heated items, shorter still (8 to 12 hours on most items).

Location and Space Requirements

During the developmental period of food vending, there has been a growing recognition of the importance of the atmosphere created by the vending location itself.

A well chosen, defined space is desirable, with good access for the servicing functions and the patrons.

Often it is possible to locate the vending installation effectively without using prime space.

To determine numbers of machines required, a rule of thumb that six persons per minute will pass by a bank of equipment can be used. Capacities of a machine in terms of number of persons to be served are used by some manufacturers.

Desirable total space suggested for a food-vending facility is 15 sq ft or more per person; 20 sq ft or more are suggested when there is a kitchen. With a food-vending installation a person usually takes 10 minutes to serve himself and 20 minutes to eat his food.

The basic areas to be provided at the vending location are:

1. Change making area
2. Servicing and storage area
3. Condiment area
4. Seating area
5. Trash disposal area

The *change making area* is located near the entrance. Change may be made manually or by automatic coin changers or bill changers.

The *servicing area and the storage areas* are often located behind the wall in which the machines are banked. This is particularly desirable where machines may have to be serviced or loaded with merchandise when in operation. Most food vending machines may be loaded from either the front or rear, while beverage and refreshment machines are serviced from the front only. The size of this area will depend on the facilities for storage of prepared packaged food items needed between servicings by a vending operator. In a large installation it may require the provision of warming ovens, refrigerators or freezers. It should also provide for miscellaneous cleaning and paper supplies, condiments and tableware. Storage for trash may be necessary where pickups are infrequent. In addition, the vending operator uses carriers to bring merchandise to the location which may require storage until his next trip. If food is wrapped in this area, work table space should be provided. Where manual snack bars or kitchens are used, these areas are usually combined with the service and storage areas.

The minimum distance behind front loaded refrigerated machines should be 8 in. to allow for ventilation of the refrigeration equipment. Behind rear loaded equipment, this distance should be not less than 3 ft.

The space in front of the machines should allow for the operation of the machine and permit persons to pass or wait behind the operator. Here a minimum aisle of 7 ft is recommended, but 8 to 10 ft is more acceptable. This space is rarely railed off as in a cafeteria. The purpose is to permit easy access to the machines and easy return without going to the end of the line. Spacers between machines will permit easier use and less congestion. Placing like machines together in groups tends to lessen congestion.

Condiment area usually follows the service area. At least 4 linear ft of counter per hundred persons is recommended by one company to provide tray supplies, where used, and space for condiments, napkins and tableware. This area often is located in the line of equipment, but because of possible congestion it may be placed in an island location. Tray stands will normally be placed near the change makers.

Seating areas will vary considerably depending on the nature of the food service. Industrial areas may use long tables seating eight or more persons. Hospitals and educational institutions, on the other hand, may use two- and four-person tables. Transient locations may use stand-up tables or counters as a supplement to smaller tables. Refreshment vending may eliminate tables entirely.

To determine the area required or the seating, 12 sq ft per person may be used as a guide. This would not include the aisle space in front of the machines, and it might have to be increased if the exit locations or shape of the space required more aisles than normally.

The most efficient table width when long tables are used is 30 in. which allows one person to sit opposite another. Its length will be in multiples of 2 ft, the usual space occupied by one person. A 3-ft-square table, or a round table, seating four persons will occupy less area than the 30 by 48-in. table often used. Square tables sometimes are placed diagonally to the traffic flow to create a less institutional appearance. When a person is seated, the rear of the chair will be 18 in. from the edge of the tables. Aisles should normally be 36-in. wide.

Waste disposal areas are located near the exits to avoid cross-traffic. Their capacity should be large enough to avoid emptying between waste pickups unless storage is provided. Through-the-wall disposal units, which can be emptied from behind, can be used. The practice of providing cabinets below condiment stands for waste disposal would not seem one to be encouraged.

Other vending devices—most food vending locations will include cigarette machines near the entrances. They may also include novelties and newspapers.

Utility Requirements

Electricity—All machines operate on 115-volt lines with varying amperage requirements. Lines are often run overhead to permit outlets for each machine. Machine cords are usually about 6 ft in length.

Water: ½-in. line required for some beverage machines. Pressure should be adequate.

Drains: None required unless sinks or water fountains are used.

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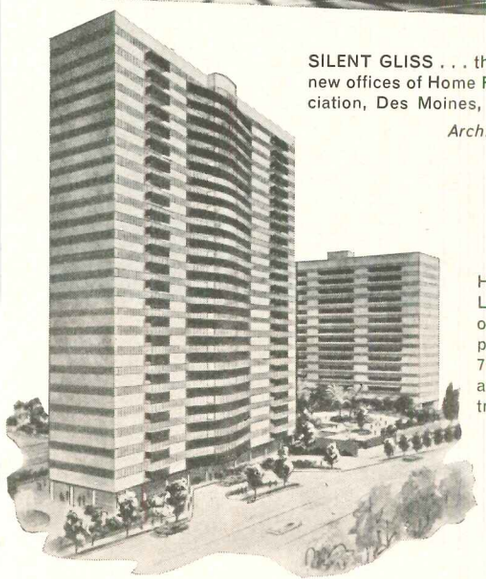

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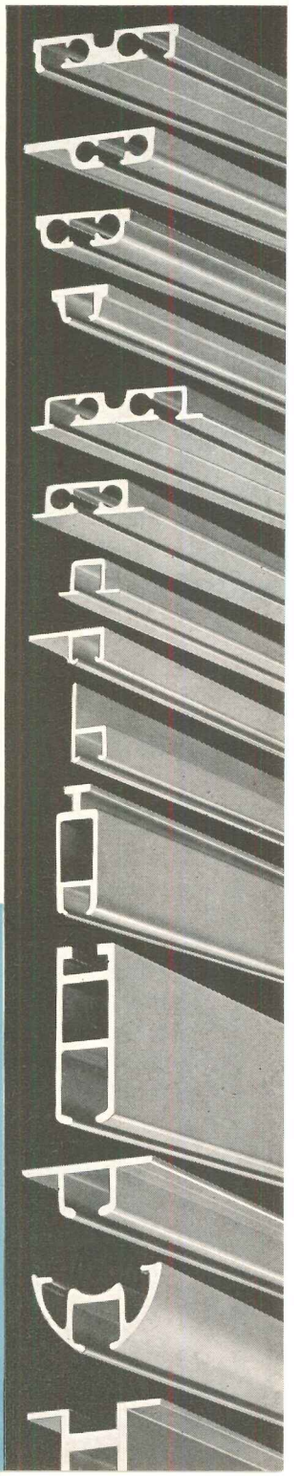

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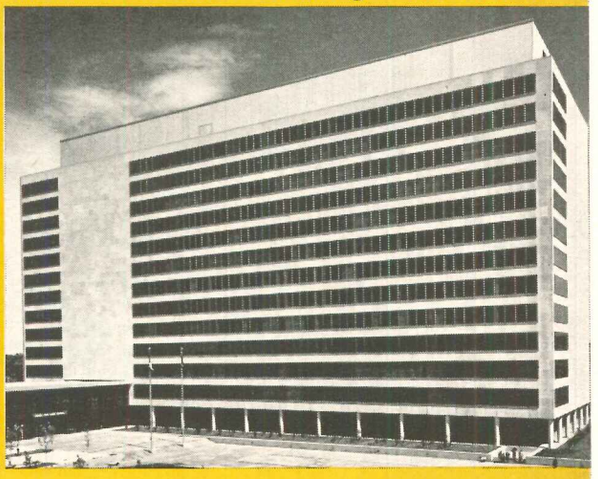

Indiana State Office Building, Indianapolis, Indiana
Architect and Engineer: Graham, Anderson, Probst & White, Chicago, Illinois; and Raymond S. Kastendieck, Gary, Indiana
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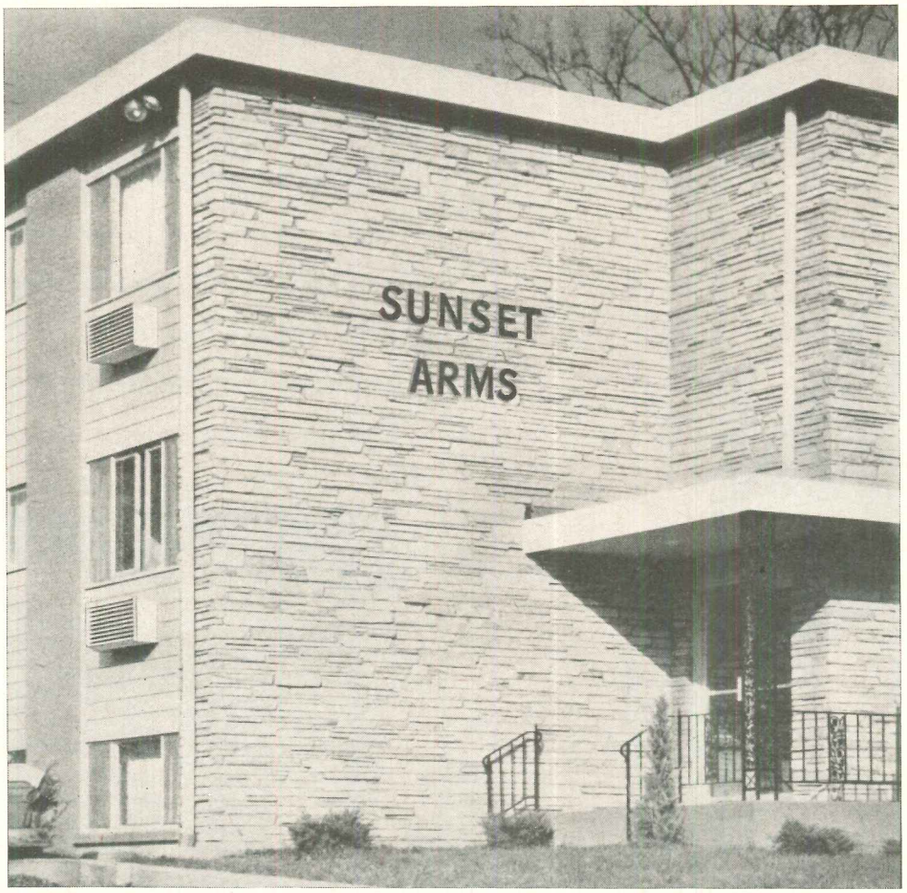

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Some tips on application, plus a pictorial and tabular survey of typical electric and gas-fired equipment

By Robert S. Emerick, Consulting Engineer

The most salient characteristic of infrared heating is that the radiant rays pass through the air between the point of origin and the surface on which they impact, without losing their energy. For this reason, an individual exposed directly to infrared energy may feel comfortable in an ambient temperature that literally would leave him cold.

Infrared heating is appropriate for many factory, shop and warehouse operations. As often noted by craftsmen, infrared provides fast heating for both their hands and the material on which they are working. The impact of heat from a fully energized emitter, whether gas-fired or electric, is felt in seconds after it is turned on.

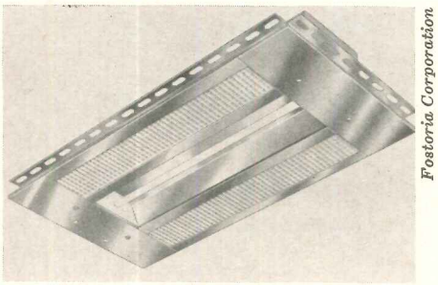
Thermostatic control of the individual emitters permits the production of heat to be concentrated on a small area where work is in progress, despite relatively cold conditions in the surrounding spaces.

Another good point, floor areas that "see" the emitter warm up relatively fast. Areas which are hidden from direct rays may need augmenting, however. Workers with their feet under a bench, for example, may complain of a cold floor unless auxiliary heating is provided by some means such as an electric mat.

Since infrared rays travel through the air without heating it, spaces subject to chill blasts from opened doors may require either a draft-blocking system or conventional air warming stations as auxiliary to the radiant units. Warming stations have the effect of treating the drafts as ventilation air.

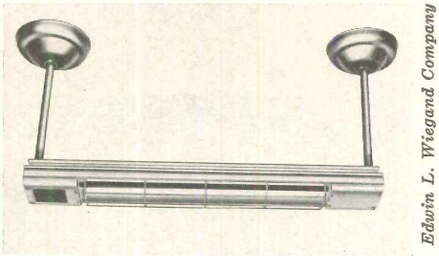
Unit Locations

Infrared emitters may be placed at elevations above the floor considerably higher than is good practice with other forms of heat. Placement



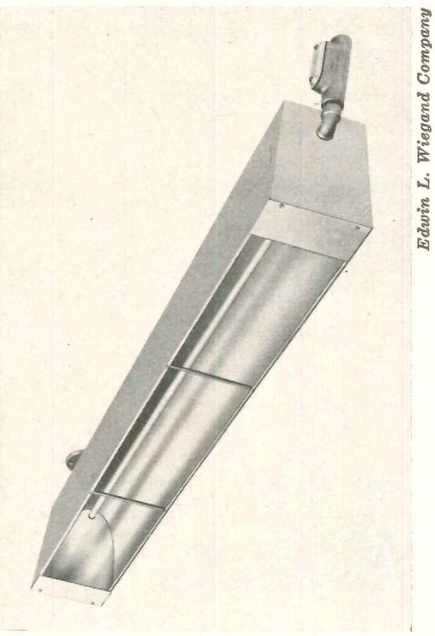
Fostoria Corporation

Quartz-tube ceiling fixture has louvers to let out air above ceiling which gets heated by back of the reflector



Edwin L. Wiegand Company

"Optically" correct reflector for high ceilings uses either a quartz tube or a metal-sheathed heating element

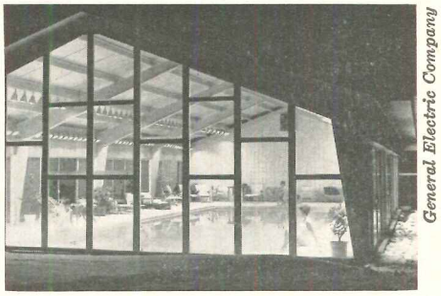


Edwin L. Wiegand Company

Refractory insulated resistance-wire element inside a metal tube is heating element for this ceiling fixture

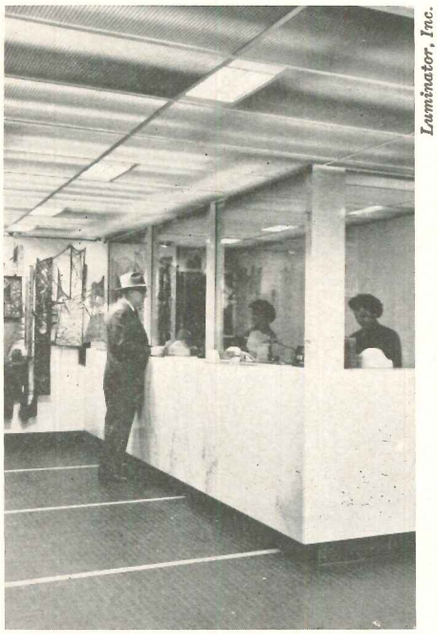
S & C Electric Company

Quartz lamps heat an enclosed marquee



General Electric Company

Glassed-in pool uses infrared lamps



Luminator, Inc.

Bank patio has infrared ceiling units

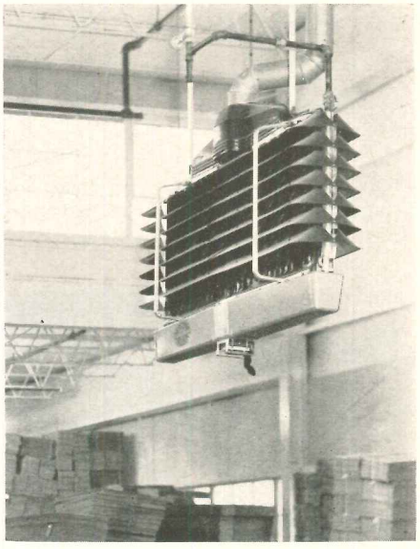
COMMERCIAL SIZES OF INFRARED SPACE HEATERS

Type	Emitting surface	Surface temp., F	Unit range, Btu per hour	Mounting* ht., ft.
Gas-fired, horizontally mounted	Perforated, ceramic mat	1,600	24,000 to 48,000	12 to 45
Gas-fired, horizontally mounted	Perforated, stainless steel	1,500	38,000 to 40,000	12 to 45
Gas-fired, vertically mounted	Alloy steel form under vitrified enamel	1,500	62,500 to 125,000	8 to 16
Electric tubular	Quartz tube	4,000	375 to 4,000 watts	9 to 23
Electric lamp and reflector	Glass lamp	4,000	250 to 375 watts	10 max.
Glass panel, vertically mounted	Special glass	325-400	400 to 3,000 watts	Mounted in wall

*Net clearance between floor and bottom of heater

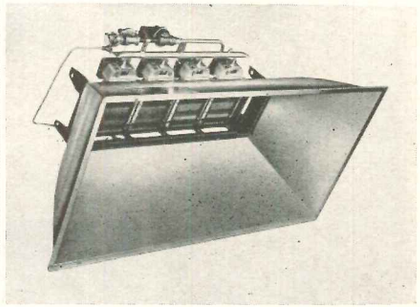
Notes: All gas-fired heaters are suitable for natural, manufactured or l.p. gases, the supply orifice being changed by the manufacturer before shipment. Electric units are designed for a life in excess of 5,000 hours at the rated voltage

Bettcher Manufacturing Corporation



Gas heater has horizontal deflectors

Perfection Division, Hupp Corp.



Gas heats ceramic block in this fixture

Space-Ray Corporation

Stainless steel infrared fixtures

at 20 ft is not unusual, and 25 ft doesn't diminish their effectiveness. This is an an advantage where ceilings must be high.

Examples

The photos at top of the previous page shows typical electric designs. Infrared rays, generated in internal coils, are sent out by the enclosing quartz or metal tubes. This form of heater, rather than the electric lamp shape, is usually preferred for outdoor installations (such as the drive-in windows of banks) because, first, its greater heat output provides a more effective challenge to the weather, and, second, it is suitable for higher mounting.

The lower left photo on this page shows a typical gas-fired heater. The point of combustion is at the surface of a ceramic plate or block, the gas reaching the surface through numerous small orifices. Directional control of the rays emitted is accomplished by a metal reflector, mounted behind each ceramic plate.

The upper left photo illustrates another type of gas-fired unit; metal shields arranged in a vertical sequence direct the rays downward. The right-hand photo shows stainless steel, gas-fired units in a shop.

Both infrared quartz units and gas-fired units have been designed for snow melting applications. Gas-fired units must be properly designed to minimize the danger of blow-out due to wind. Pressurized chambers and high-pressure are two techniques designed to solve the problem. Although re-ignition is automatic, the Btu output could be seriously reduced if interruptions were not prevented.

Maintenance of gas infrared units is mainly a matter of periodic cleaning. The tiny orifices of gas-fired units clog from air-borne dust when the heater is not in service. For this reason, a cover encasing the unit is recommended for the summer months.

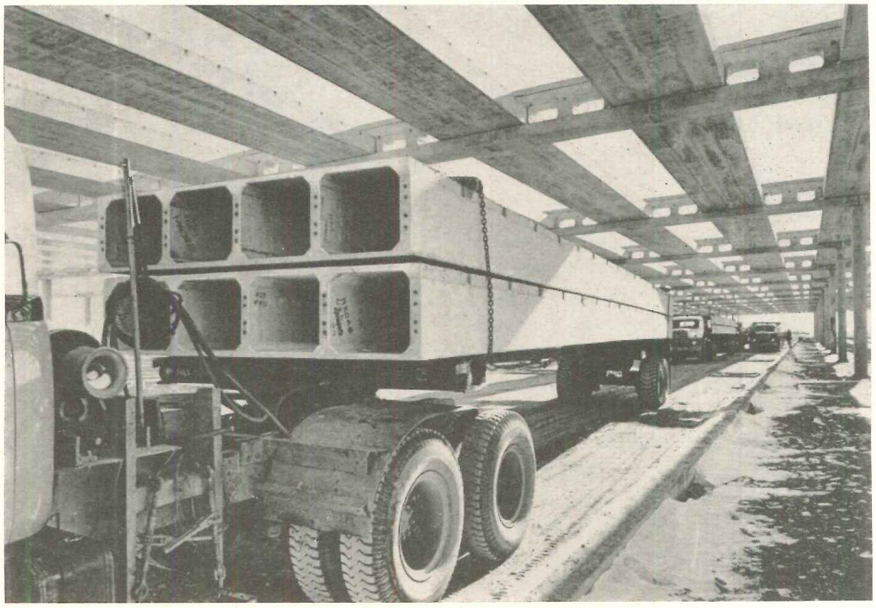
Electric units simply burn out. Minimum life can be expected at 5,000 hours when operating on the design voltage. Although these heaters can, and do, operate successfully on reasonable increases or decreases of the voltage intended, the higher voltage shortens their lives. However, replacement of the infrared quartz tube or filament lamp is neither expensive nor difficult.

For more information circle selected item numbers on Reader Service Inquiry Card, pages 269-270

PRESTRESSED CONCRETE UNITS FOR WALLS AND ROOFS

Dynacore prestressed concrete units are flat, hollow building members with pretensioned wire cables placed in both directions. Units up to 90 ft long are made of 7,000-psi lightweight concrete cast as 8-ft-wide slabs, 20-in. deep, with four longitudinal voids which can be used as raceways and air passages. A Chicago factory (*right*) has a roof of 50-ft slabs on 16-ft centers fitted to precast beams with interspaces bridged by gypsum decking. An adjoining freezer building has 50-ft-high *Dynacore* slabs acting as a load-bearing wall supporting a roof made up entirely of *Dynacore* units. *Material Service Division, General Dynamics Corp., 300 West Washington St., Chicago 6, Ill.*

CIRCLE 300 ON INQUIRY CARD



HIGH-OUTPUT LAMPS WITH QUIET BALLASTS

A new method of ballast mounting reduces ballast sound levels so that 1,500 MA extra-high-output fluorescent lamps may be used for semi-quiet installations, such as schools and offices. The *Encore* system, with the new ballast mounting, provides an economical indirect lighting system. Fixtures are of extruded aluminum, with nine stock anodized aluminum colors, in 4-, 6- and 8-ft lengths. Lightweight fixtures are suspended from the ceiling by aircraft cable only 3/32 in. in diameter. The units can also be wall-mounted in a valance or spline system. *Encore* units are made with three types of diffusers—a metal V bottom, a low-brightness acrylic lens and a clear acrylic lens. To speed installation and provide low maintenance, *Encore* fixtures plug together electrically. Units are prewired for power supply. *Benjamin Div., Thomas Industries Inc., 207 E. Broadway, Louisville 2, Ky.*

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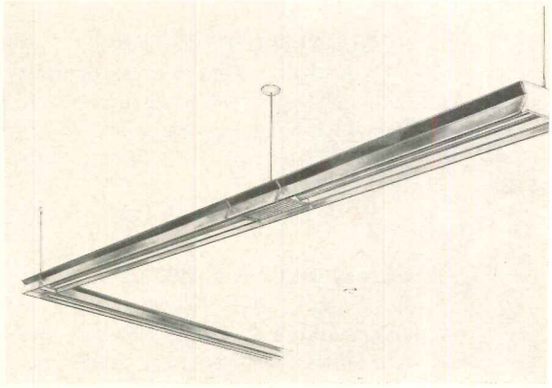
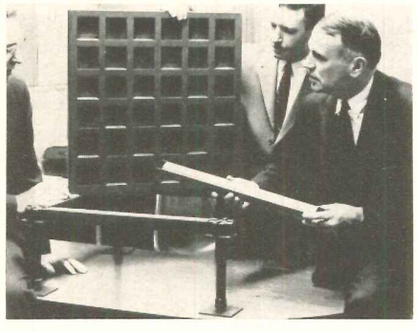


FULL-ACCESS FLOOR FOR COMPUTER AREAS

A modular system of all-steel panels and integrated understructure using removable stringers makes possible the design of small functional areas in new construction and renovations without alteration of the basic structure. The removable stringers for the *Infinite Access* floor are designed to provide easy under-floor accessibility while assuring maximum lateral stability. Panels are 2 ft square. No metal is exposed on the top where it might produce shock or grounding. Floor coverings may be selected from a variety of materials. The *Infinite Access* floor provides for ramps, steps, grills, etc. *Tate Engineering, Inc., Architectural Products Div., 516 S. Eutaw St., Baltimore 1, Md.*

CIRCLE 302 ON INQUIRY CARD

more products on page 218



Office Literature

For more information circle selected item numbers on Reader Service Inquiry Card, pages 269-270

STORE EQUIPMENT

Catalog of *Trimlok* store equipment gives illustrations and details on gondolas, half gondolas, hangrail gondolas, components, tables, showcases, accessories and wall sections. *American Fixture Inc., 2300 Locust St., Saint Louis 3, Mo.*

CIRCLE 400 ON INQUIRY CARD

SUPERMARKET COOLING

Brochure describes *Roof-Top Powerhouse,* a roof-mounted compressor room for remote air-cooled condensers. *Melchior, Armstrong, Dessau Inc., 730 Grand Ave., Ridgefield, N.J.*

CIRCLE 401 ON INQUIRY CARD

CONCRETE GARAGES

Nine parking garages are described and illustrated in 12-page booklet on the *Prescon* system of post-tensioning prestressed concrete. *The Prescon Corp., P.O. Box 4186, Corpus Christi, Tex.**

CIRCLE 402 ON INQUIRY CARD

ACOUSTICAL PLASTER

(A.I.A. 39-B) Folder gives technical information on *Mute* acoustical plaster which has an average noise reduction coefficient of .60. *Ohio Lime Co., Woodville, Ohio*

CIRCLE 403 ON INQUIRY CARD

GLASS BLOCK CATALOG

A 12-page glass block catalog includes illustrations of the new gray and other colors, new shapes and new sizes available. *Owens-Illinois Glass Co., Toledo 1, Ohio**

CIRCLE 404 ON INQUIRY CARD

SECTIONAL SCHOOL CABINETS

Sectional school cabinets for classroom, administrative and recreational areas use a patented load-bearing frame consisting of a versatile corner-post metal extrusion with corner fingers which fit into channels at top and bottom. Fold-out poster shows possible arrangements. *Brunswick Corp., School Equipment Div., 2605 E. Kilgore Rd., Kalamazoo, Mich.*

CIRCLE 405 ON INQUIRY CARD

PLAYGROUND EQUIPMENT

Park and playground equipment of all kinds are presented in a 20-page catalog. Included are climbers of various sizes and heights, a fireman's slide and hobby horse swings. *The Mexico Forge, Inc., Mexico, Pa.*

CIRCLE 406 ON INQUIRY CARD

AIR CONDITIONING

(A.I.A. 30-F-12) Eleven different designs for the external air openings in buildings using incremental systems of air conditioning are shown in eight-page brochure. Typical wall sections and standard louver designs are illustrated. *Air Conditioning Div., Remington Corp., Auburn, N.Y.*

CIRCLE 407 ON INQUIRY CARD

SAND, AGGREGATE STEAMER

Data sheet gives details on steamer for thawing sand or aggregate so the material can be mixed with cement. *L. B. White Co., Inc., 3235 George St., LaCrosse, Wis.*

CIRCLE 408 ON INQUIRY CARD

FOLDING PARTITIONS

"Some Thoughts About Sound" is an eight-page technical bulletin on problems encountered when selecting folding partitions for sound control. *Clopay Corp., Commercial Products Div., 1400 Academy Ave., Detroit 20, Mich.**

CIRCLE 409 ON INQUIRY CARD

CHURCH STEEPLES

Church steeples and insulated panels of architectural porcelain enamel are illustrated and described in folder. *Carter-Miot Engineering Co., 1114 Bryan St., Columbia, S.C.**

CIRCLE 410 ON INQUIRY CARD

ALUMINUM WINDOWS, WALLS

(A.I.A. 16-E) Details on aluminum windows and wall system are given in eight-page booklet. *Albritton Engineering Corp., P.O. Box 31, Bryan, Tex.**

CIRCLE 411 ON INQUIRY CARD

VINYL WALLCOVERINGS

Full color pictures of office, hotel, store, restaurant and house interiors illustrate eight-page brochure. Fabric textures, wood grains and sculptured effects in a wide range of colors are shown. *L. E. Carpenter and Co., Empire State Bldg., New York 1, N.Y.**

CIRCLE 412 ON INQUIRY CARD

RIGID FRAMES

Reyco Rigids, pre-engineered rigid frames for use as clear spans are described in catalog. *Reynolds Mfg. Co., Springfield 2, Mo.**

CIRCLE 413 ON INQUIRY CARD

HEAT-PUMP RATINGS

A 150-page bulletin gives ratings for Worthington's line of heat pumps. *Worthington Corp., Harrison, N. J.*

CIRCLE 414 ON INQUIRY CARD

SCHOOL FURNITURE

Classroom furniture for teachers and students, auditorium seating and lounge furniture are illustrated in 32-page, color catalogue. *Griggs Equipment, Inc., Belton, Tex.*

CIRCLE 415 ON INQUIRY CARD

POLARIZED LIGHTING

Technical paper gives test data on *Polrized* lighting panels, designed to minimize glare. *Polrized Panel Corp., 9301 Wilshire Blvd., Beverly Hills, Calif.*

CIRCLE 416 ON INQUIRY CARD

LAMINATED PLASTIC

(A.I.A. 35-C-12, 23-L) Paper reproductions of *Formica* laminated plastic colors, patterns and woodgrains are included in 16-page booklet, "Architect's and Designer's Idea Book." *Formica Corp., 4614 Spring Grove Ave., Cincinnati 32, Ohio**

CIRCLE 417 ON INQUIRY CARD

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

more literature on page 258

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BUSINESS FURNITURE

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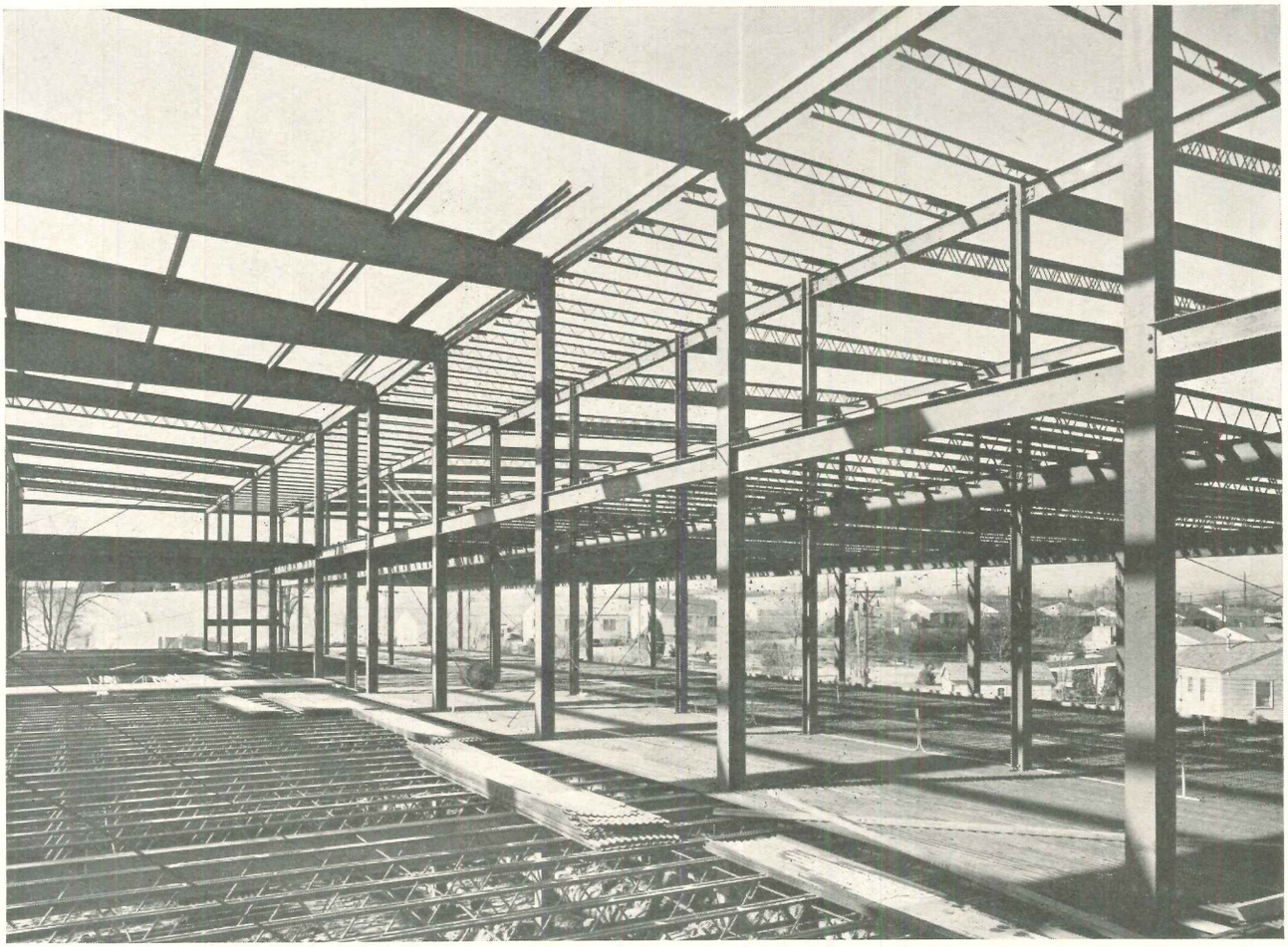

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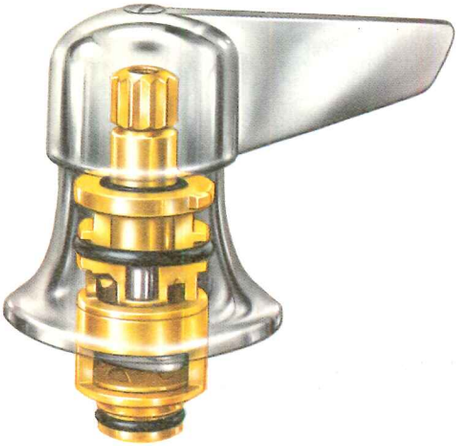

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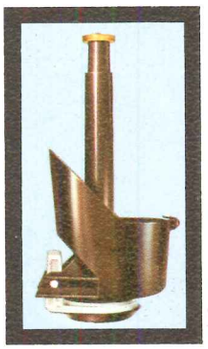

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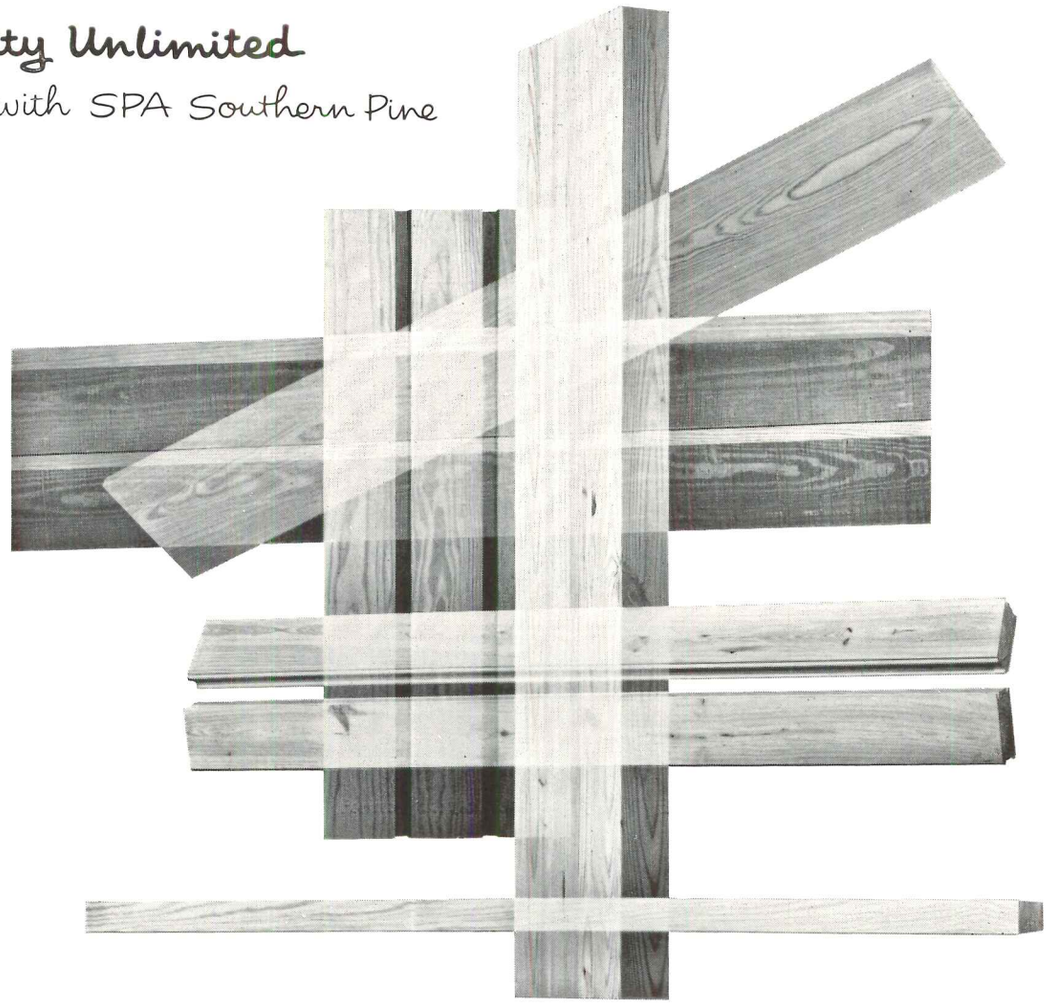

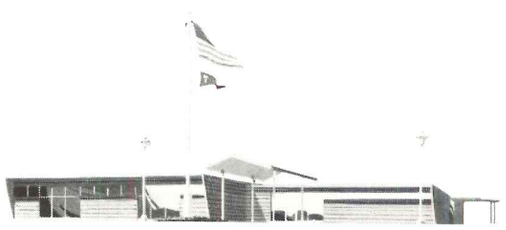

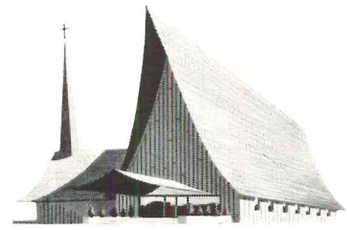

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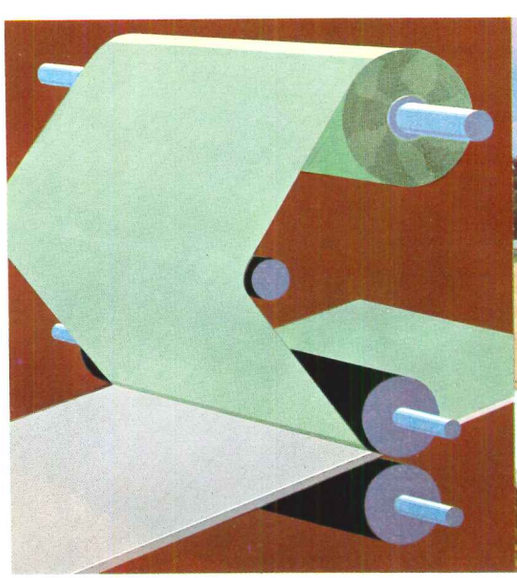

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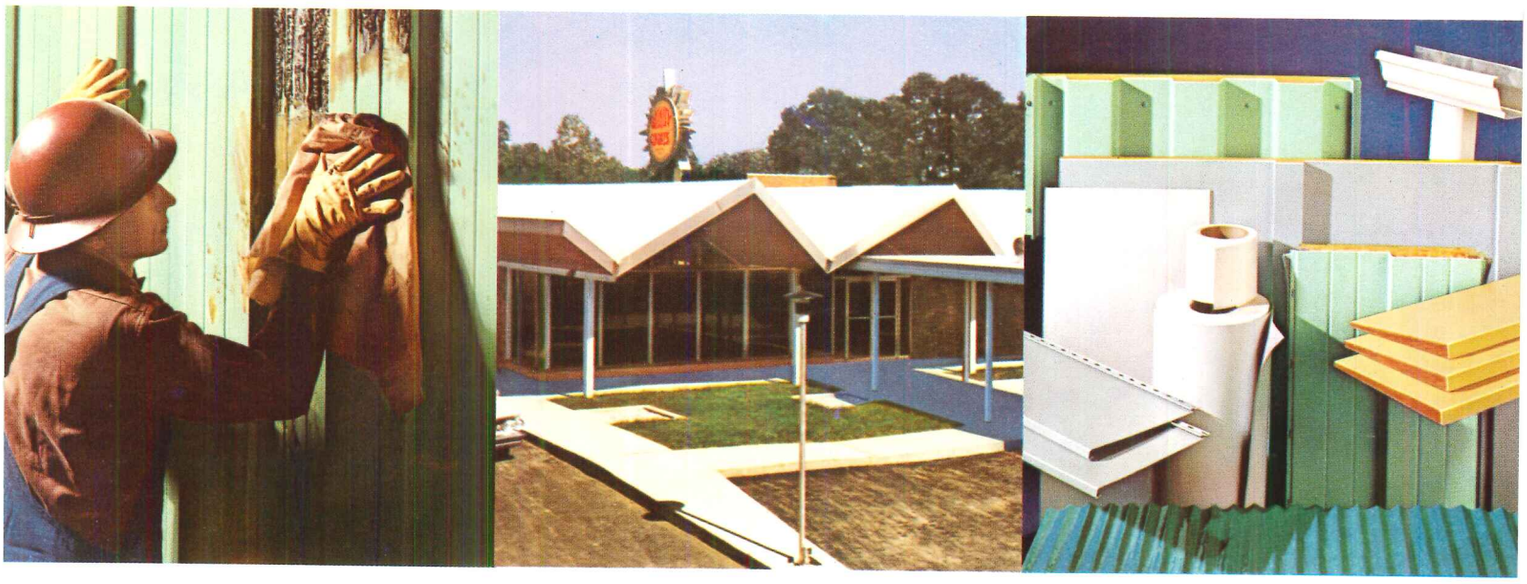

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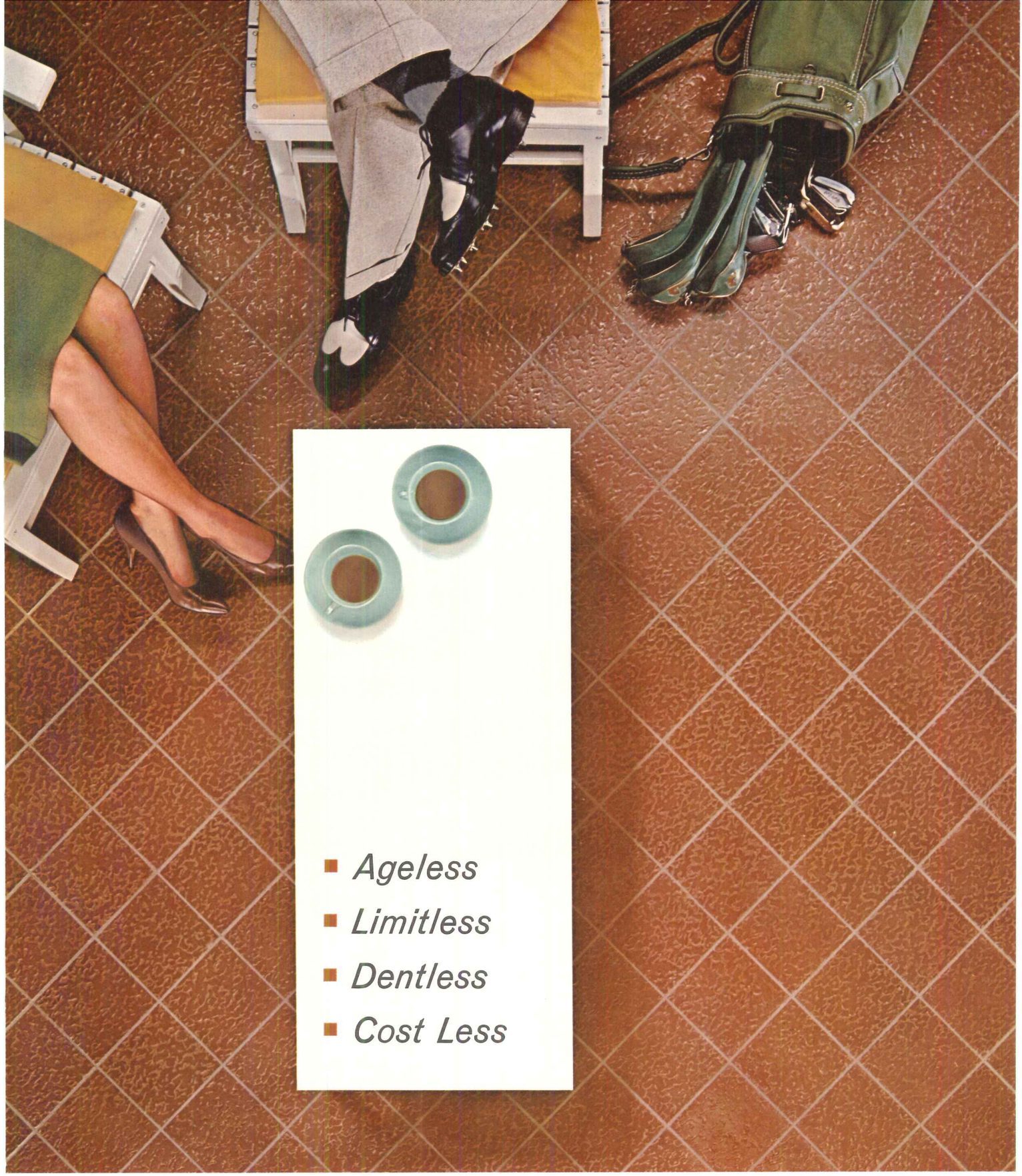

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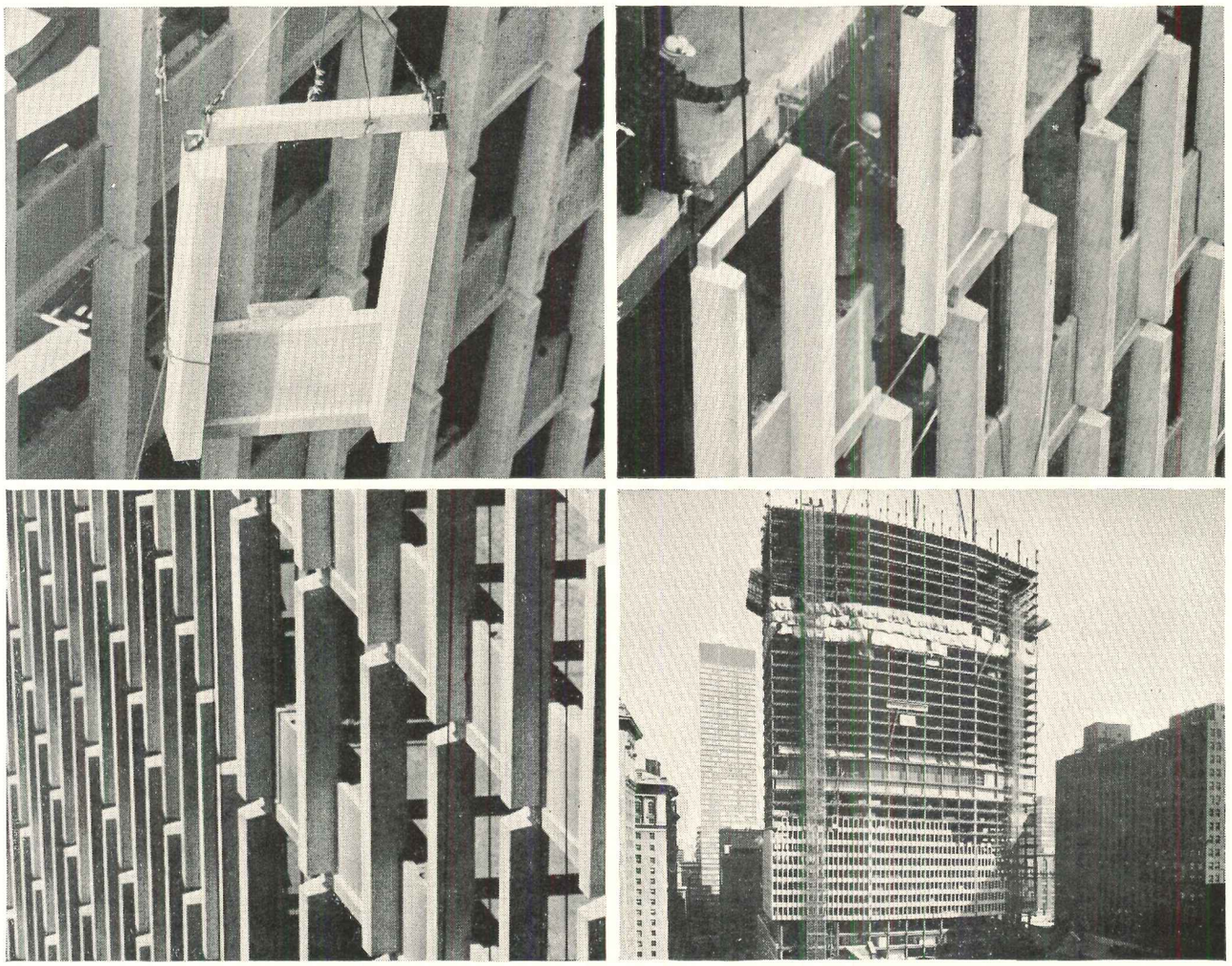
Only Textured Quarry Tile offers an almost limitless choice of colors and patterns. Only Ceramic Tile resists dents caused by furniture, cleats and spikes. When you consider that Quarry Tile is frostproof, fireproof, scratchproof, fadeproof, waterproof and never needs waxing . . . it really is most economical.
Write for the new, full-color story about . . .

TEXTURED QUARRY TILE BY

Summitville

TILES, INC.
Summitville, Ohio

9,000 precast white concrete panels for Pan Am. On the broad base section of this 59-story office building next to New York's Grand Central Terminal, individual sections of spandrel and mullion units were hoisted up the side and bolted into place. To enclose the tower, beginning at the tenth floor, one-piece floor-to-floor panel units weighing 3,500 pounds each were raised and positioned on the building frame in a striking pattern. The architects chose ATLAS WHITE portland cement to bring out the sparkling beauty of the eggshell color and exposed aggregate. For detailed information on the use of ATLAS WHITE cement (regular, air-entraining and waterproofed types) in precast concrete or structural concrete, write to Universal Atlas, 100 Park Avenue, New York 17, N. Y.

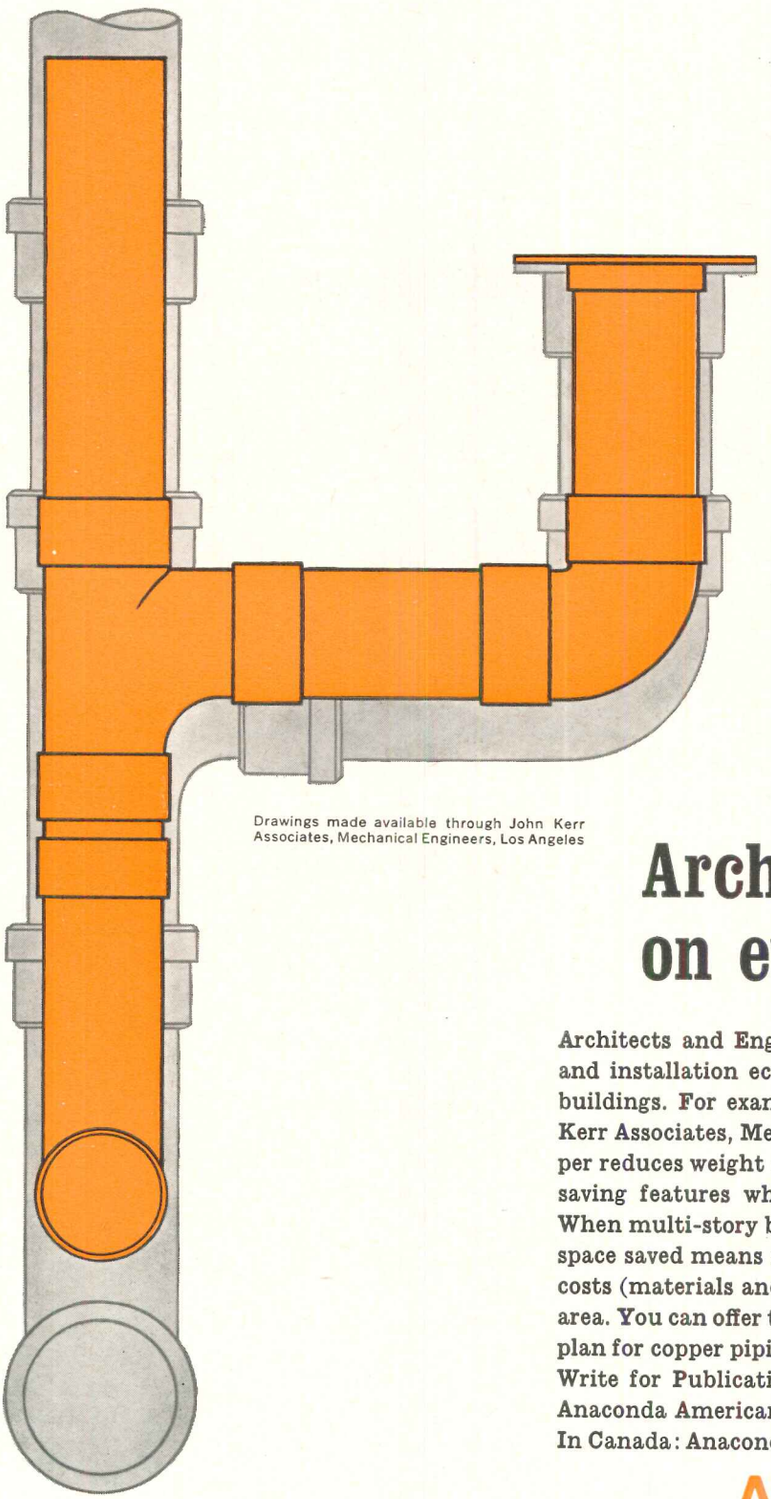


Pan Am Building being erected in New York. Owners: Erwin S. Wolfson, New York, and Jack Cotton, London. Architects: Emery Roth & Sons, New York. Design Consultants: Walter Gropius (T. A. C.) and Pietro Belluschi. Structural Engineer: James Ruderman. Geni. Contractor: Diesel Construction Co., New York. Concrete Panel Mfr.: "Mo-Sai" by The Dextone Co., New Haven.

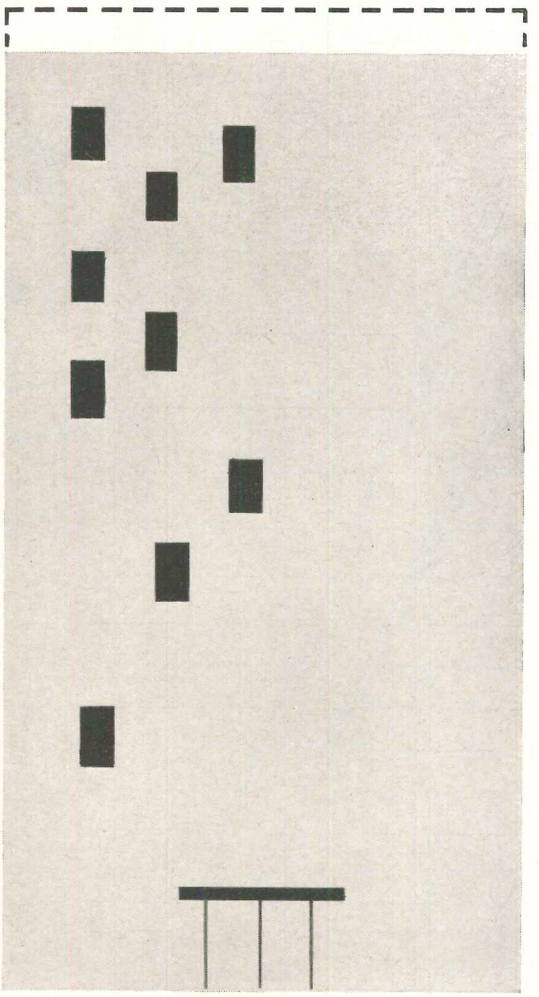
USS **Universal Atlas Cement**
Division of
United States Steel

"USS" AND "ATLAS" ARE REGISTERED TRADEMARKS WQ-8

For more data, circle 88 on Inquiry Card



Drawings made available through John Kerr Associates, Mechanical Engineers, Los Angeles



Architects save more on every floor

Architects and Engineers are telling us about the space savings and installation economies of All-Copper plumbing in high-rise buildings. For example, D. F. Dickerson, Vice-President of John Kerr Associates, Mechanical Engineers, Los Angeles, writes, "Copper reduces weight of the piping system and provides many space-saving features when distributing water or collecting wastes." When multi-story buildings are designed for copper plumbing the space saved means substantial reductions in general construction costs (materials and installation) and more usable, rentable floor area. You can offer these floor-to-floor savings to your clients if you plan for copper piping in the blueprint stage. You're the key man. Write for Publication B-1, "Pipe, Tube and Fittings." Address: Anaconda American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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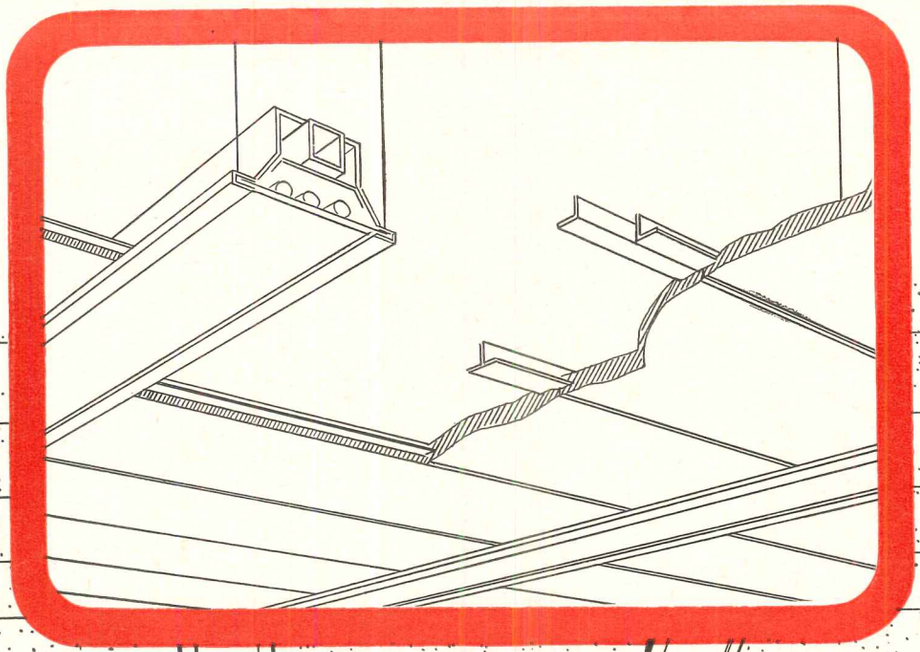
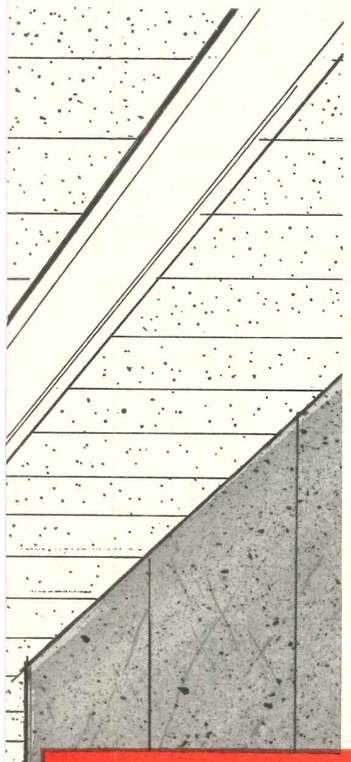
Simpson®



Simplicity in sound design

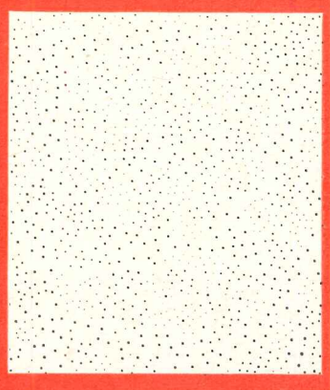


Acoustical ceilings with clean, uncluttered lines are now made possible with new SIMPSON PCP LINEAR acoustical tile...Class I, UL listed.

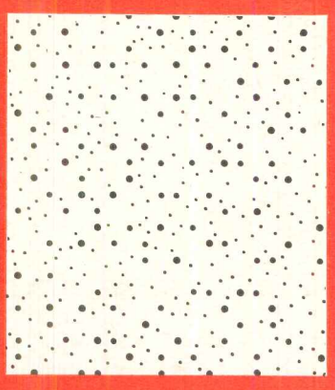
You get greater design freedom with new *LINEAR* acoustical tile. It permits lighting (and air handling) troffers to be the only visible means of support, or you can use *single direction* T-Bar suspension. All areas are easily accessible for maintenance.

Simpson *LINEAR* provides the highest sound conditioning values, complete Class I flame spread protection...*plus* the economy and durability found only in woodfiber tile. Available in two handsome sculptured textures and two perforated patterns...and in lengths up to 48 inches...*LINEAR* fits all modular and light spacing requirements, permits installation of square or rectangular light and air ducts with minimal adaption.

Linear is but the latest in the Simpson line of acoustical ceiling materials ranging from woodfiber to *UL* tested tile and board for time-rated floor/ceiling assemblies.



PETITE



RANDOM

FISSURED

STRIATED

For complete technical and cost data, see your Simpson Certified Acoustical Contractor (listed in the Yellow pages) or write to:

SIMPSON CERTIFIED Simpson ACOUSTICAL CONTRACTOR

SIMPSON TIMBER COMPANY
2140 Washington Building • Seattle 1, Washington

PCP
PYRO-CHEM PROTECTION

S3A5 (9882)

hi po — HOUSING INDUSTRY PROMOTIONAL OPERATION — SPONSOR

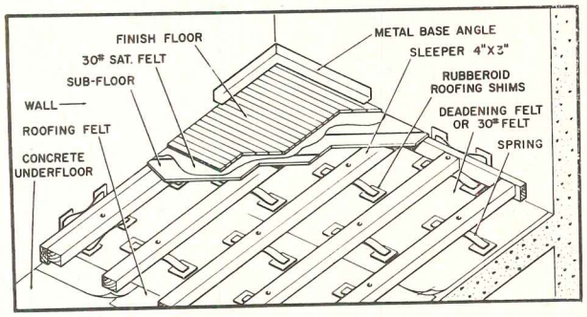
For more data, circle 90 on Inquiry Card

Product Reports

continued from page 203

RESILIENT GYMNASIUM FLOOR

A "floating" floor system consists of an active floor separated from a concrete base by spring steel leaves of controlled flexibility. Neither floor nor support is



rigidly connected to the building, with a lateral cushioning spring providing contact between floor and walls. There is a 4½-in. open ventilating space between the wood floor and the concrete slab. *Springaire Floors, 9716 Conner Ave., Detroit 13, Mich.*

CIRCLE 303 ON INQUIRY CARD

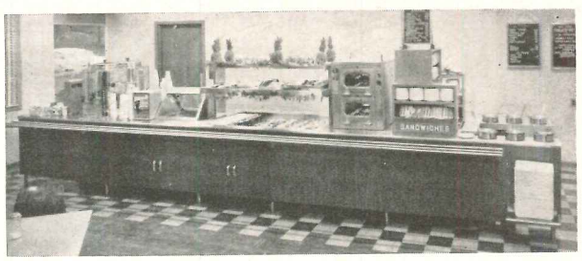
ROOF-TOP HEATER, AIR CONDITIONER WITH MODULAR COMPONENTS

A line of roof-top combination heating and air-conditioning units is made of modular, matching components which can be elevated into position with an A frame, then assembled. Three-ton units are 28 in. high, while the 8- and 11-ton units are 52 in. high. A new down-stream duct furnace with balanced flue is used. *Lennox Industries, Inc., 200 S. 12th Ave., Marshalltown, Iowa*

CIRCLE 304 ON INQUIRY CARD

PREFABRICATED CAFETERIA COUNTER

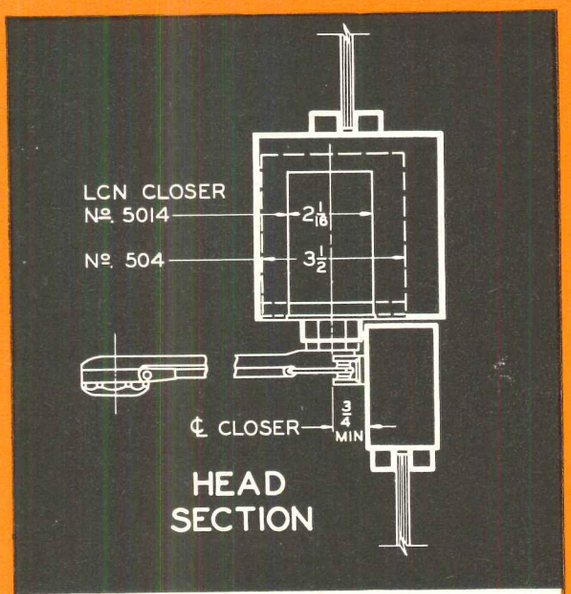
A unitized cafeteria counter designed to serve as many as 900 meals an hour is manufactured as a complete, tested, pre-plumbed and pre-wired piece of



equipment, ready for installation. The semi-automatic counter can be installed in 22 linear ft and requires no back-up or storage equipment. It can be operated by two people. It is free-standing and symmetrical, and customers move along both sides. *S. Blickman, Inc., 536 Gregory Ave., Weehawken, N.J.*

CIRCLE 305 ON INQUIRY CARD

more products on page 226



Installation Details

for LCN overhead concealed door closer installation shown on opposite page

The LCN series 5000 & 500 closers' main points:

1 Efficient, full rack-and-pinion, two-speed control of the door

2 Mechanism entirely concealed; arm visible on inside of an out-swinging door

3 Hydraulic back-check cushions door if thrown open violently, saving door, wall, etc.

4 Double lever arm provides maximum power to overcome wind and drafts

5 Series 5000, tho' smaller, has wider range and higher capacity than Series 500

Complete Catalog on Request—No Obligation, or See Sweet's 1963, Sec. 19e/Lc

LCN

LCN CLOSERS, PRINCETON, ILLINOIS

A Division of Schlage Lock Company

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

For more data, circle 91 on Inquiry Card ➔

MODERN DOOR CONTROL by

LCN

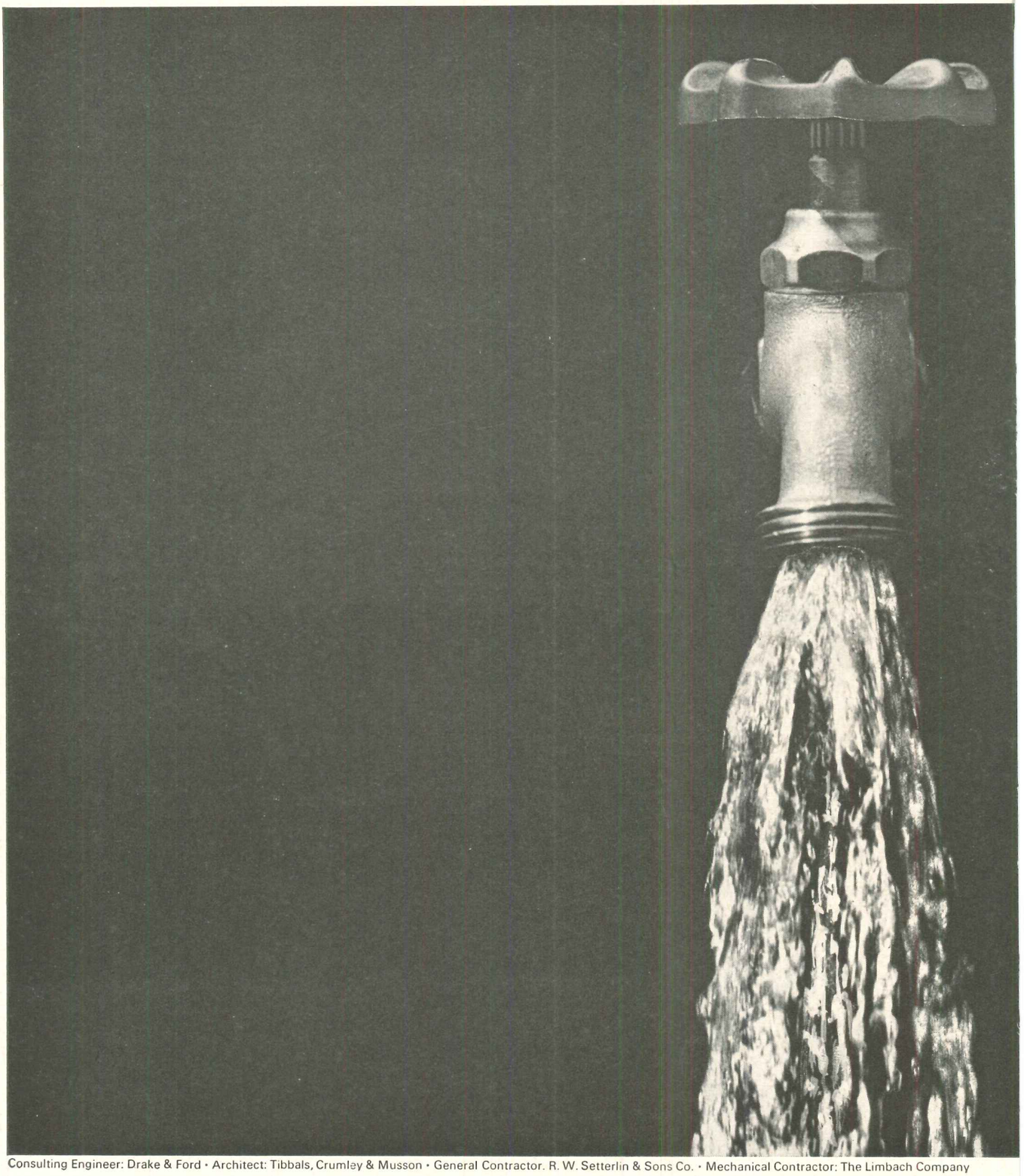
Closers concealed in head frame

Memorial Union Building, Oregon State University, Corvallis, Oregon

Newberry, Roehr & Schuette, Architects

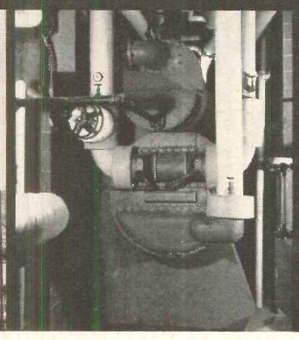
LCN CLOSERS, PRINCETON, ILLINOIS

Installation Details on Opposite Page



Consulting Engineer: Drake & Ford • Architect: Tibbals, Crumley & Musson • General Contractor. R. W. Setterlin & Sons Co. • Mechanical Contractor: The Limbach Company

This is the only refrigerant in a Gas-powered Carrier Air Conditioning System



Just one reason why it's cutting costs in this new 12-story luxury apartment building in Columbus, Ohio. The others: (1) The 252-ton capacity Carrier Gas-powered absorption refrigeration unit is steam-powered by the same gas-fired boilers that supply heat and hot water. This cuts installation, equipment, operating costs to the bone. (2) Peak performance even at partial loads. (3) Whisper quiet, trouble-free . . . few moving parts. (4) Unbeatable economy and dependability of clean, low-cost gas. Good reasons why you should call your local Gas Company. Or write Carrier Air Conditioning Company, Syracuse 1, N.Y. ***For heating and cooling. . . Gas is good business***

AMERICAN GAS ASSOCIATION

For more data, circle 92 on Inquiry Card

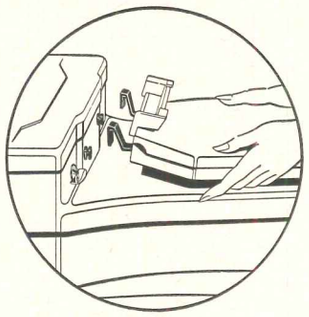
What closet looks this good yet has its best features hidden?

CHAMPLAIN BY KOHLER

That low, attractive profile is the Kohler Champlain closet.

There's no doubt about its good looks—its appeal to people interested in better things.

But outward attractiveness is only part of the story. There's the new low tank (only 19″ from floor to tank top), the elongated bowl that will not overflow. Flushing is quiet—almost silent—and thoroughly clean because of the strong vortex water action. Large water area and deep water seal in the bowl offer greater sanitation. And as an added safeguard, water in the tank is isolated from fresh water lines by a vacuum breaker which safeguards against back siphonage.



The Champlain offers the extra touch for your better homes, hotels, and motels...for your finer apartment buildings.

When you consider that Kohler has been making fine products for 90 years, you'll know why the Champlain, like all Kohler products, rates such high public confidence.

The Champlain is worthy of your attention...and your client's attention.

KOHLER OF KOHLER

Kohler Co., Established 1873, Kohler, Wisconsin

ENAMELED IRON AND VITREOUS CHINA PLUMBING FIXTURES • ALL-BRASS FITTINGS • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

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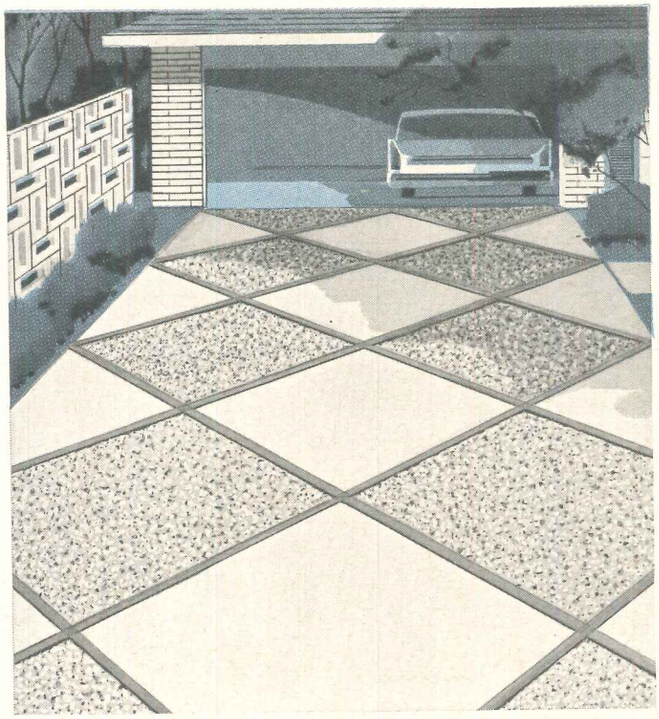
For more data, circle 94 on Inquiry Card ➔

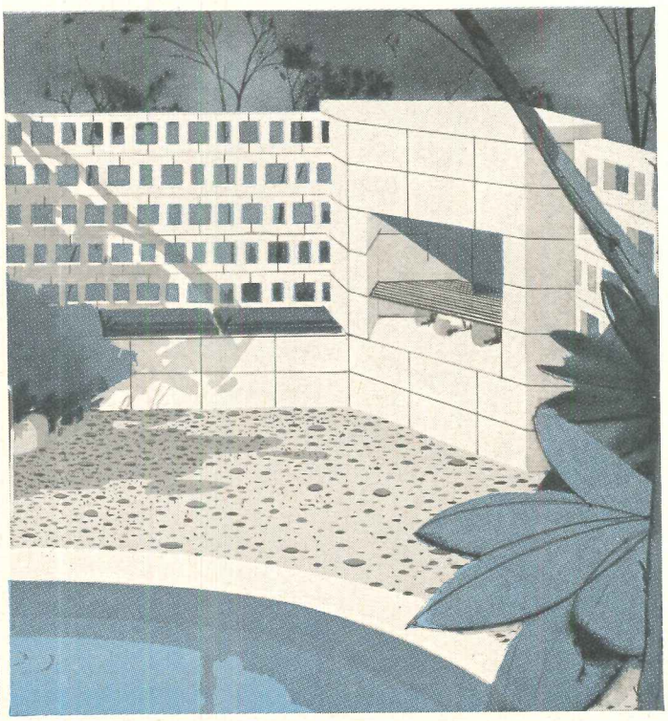
REDWOOD . . . what material could be more appropriate for building your new church?

For planning materials or architectural data write, on your letterhead: Department A-19, California Redwood Association, 576 Sacramento Street, San Francisco 11.

The paneling shown is FactriSawn®, a trademarked, Certified Kiln Dried product of these mills... THE PACIFIC LUMBER CO. • GEORGIA-PACIFIC CORPORATION • UNION LUMBER CO. • ARCATA REDWOOD CO. • WILLITS REDWOOD PRODUCTS CO. • SIMPSON TIMBER CO. . . . which form the CALIFORNIA REDWOOD ASSOCIATION



A HANDSOME CONCRETE DRIVEWAY *adds distinctive styling to any home. Textures, patterns and colors can be chosen to harmonize with house designs, landscaping and the neighborhood.*

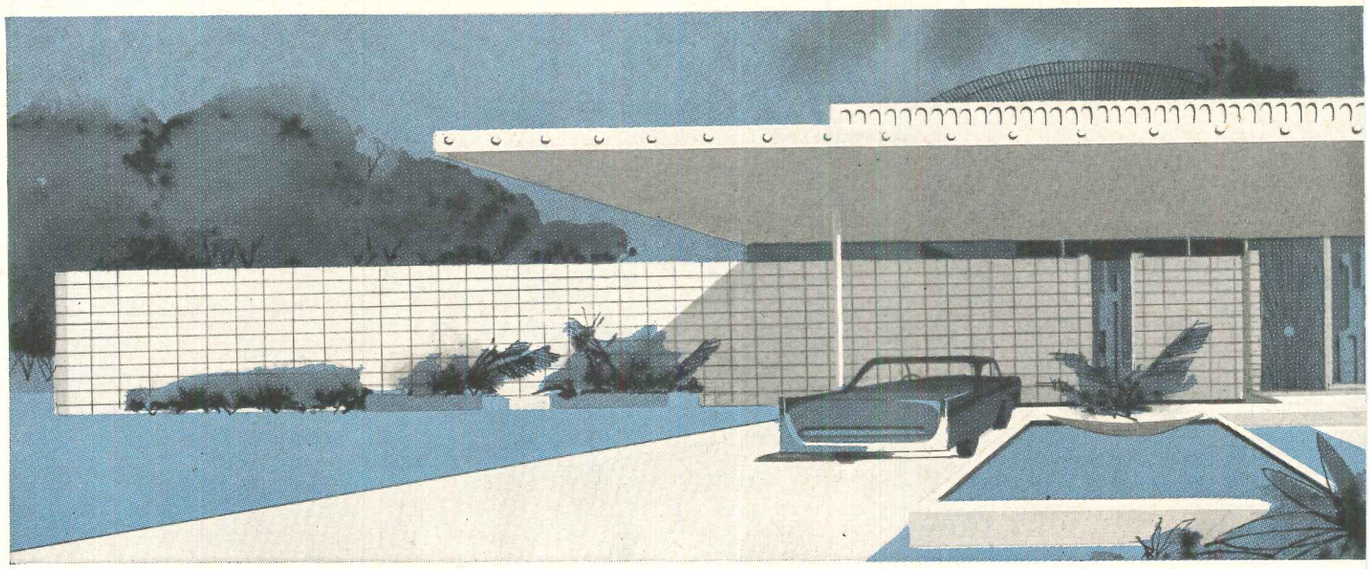


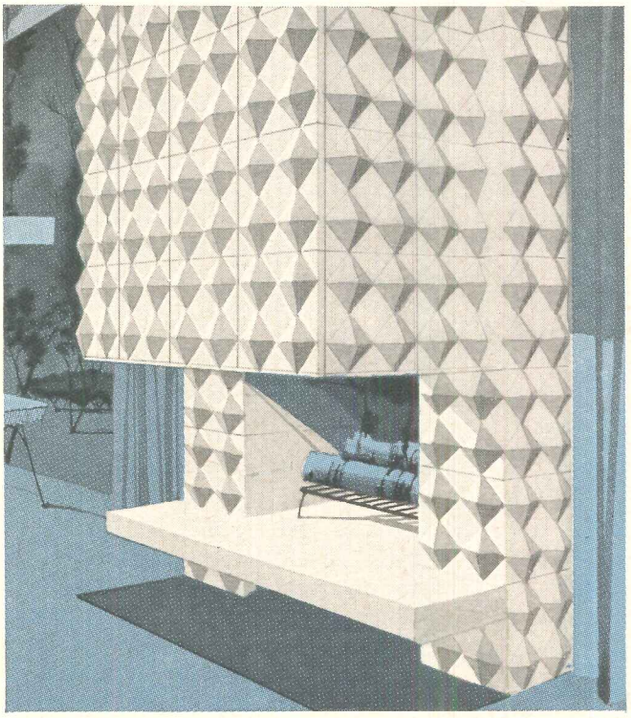
SCREEN WALL OF CONCRETE MASONRY. *Lacy pattern is created from sections of standard block. Planters to patios, concrete can be both high-style and practical.*

Fresh ideas from the Horizon Homes Program...

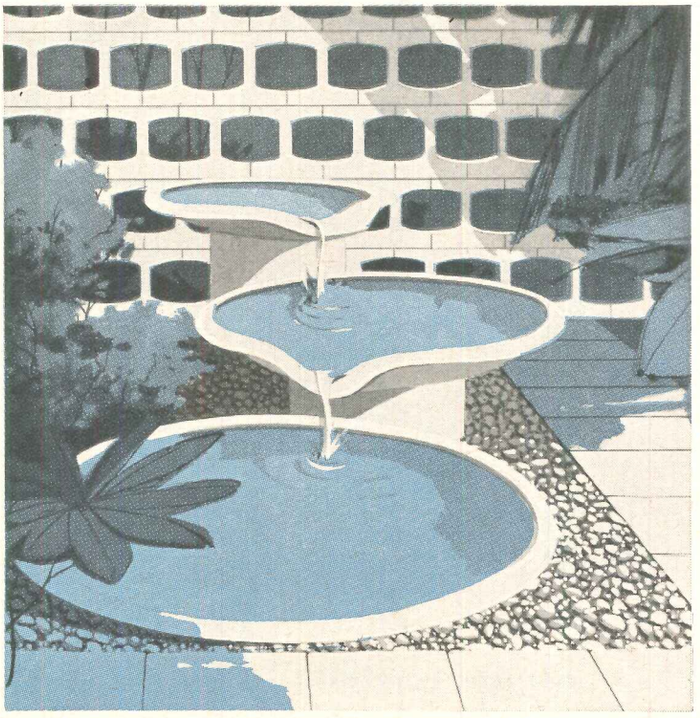
modern concrete *stimulates new and varied designs*

This prize-winning home from the Horizon Homes Program features a prestressed concrete roof, with an open skylight centered above an interior courtyard.





A CONCRETE MASONRY FIREPLACE *can be dramatically spectacular or quietly conservative. The wide variety of new masonry shapes and sizes provides custom styling to suit every type of home.*



A GRACEFUL FOUNTAIN *of colorful concrete shells adds a touch of elegance to a patio corner. Concrete basins are easily precast with integral color and a variety of textures.*

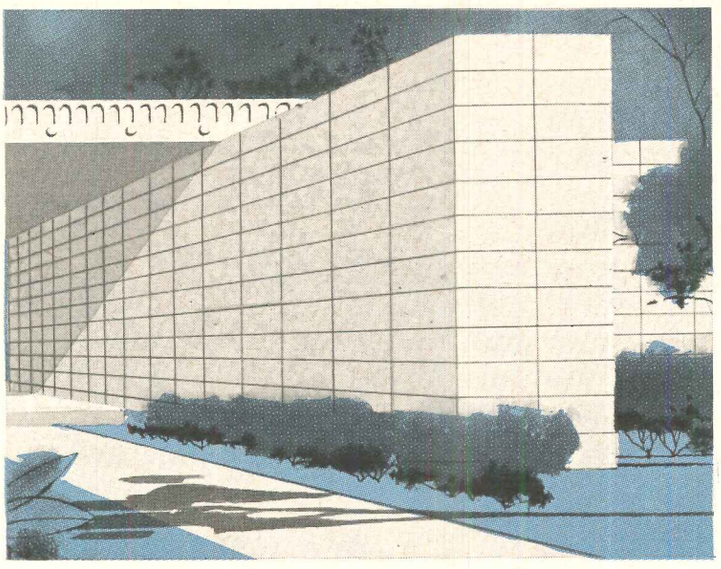
Concrete, today, has new excitement for homes. Architects are proving this with the ideas created for the annual Horizon Homes Program, sponsored by the nation's concrete industries.

From dramatic structural innovations to intriguing decorative effects, concrete offers endless possibilities for making home owning more satisfying and less work. Almost any shape, pattern, color or texture is readily achieved with concrete.

More and more, the versatility of modern concrete is winning appreciation from architects seeking to express fresh concepts in home design. Plan to enter the 1963 Horizon Homes Program which offers recognition for imaginative designs with national and regional awards. Contact the district office of the Portland Cement Association in your area for complete details.

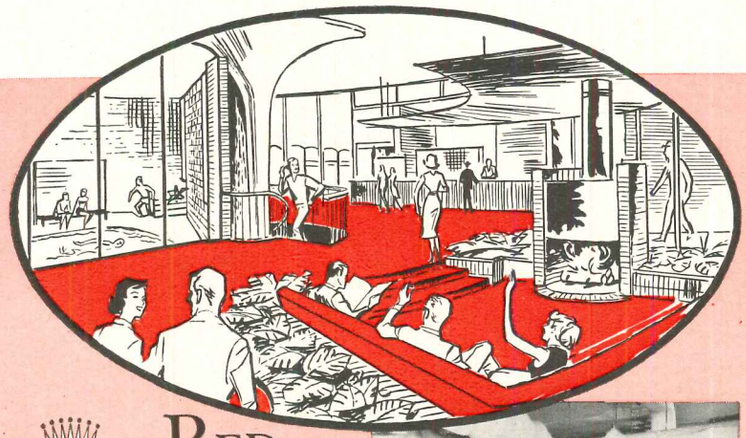
Portland Cement Association

A national organization to improve and extend the uses of concrete



HORIZON HOMES OF MODERN **CONCRETE**

For more data, circle 95 on Inquiry Card

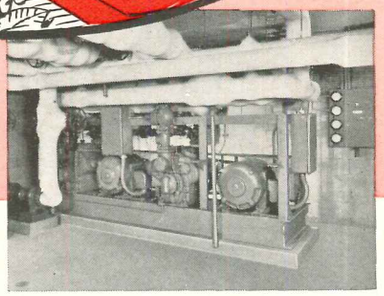


RED CARPET INN

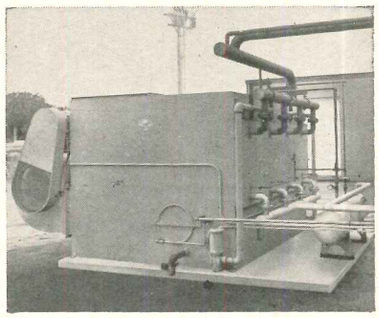
Milwaukee's "Convention City"

assures comfort for gracious living with

AIR CONDITIONING by Vilter®



This flooded type R-22 Uni-Chiller incorporates two 8-cylinder VMC compressors each having a capacity of 100 tons at 35° suction and 105° condensing. The chiller has a capacity of 200 tons when circulating 480 gpm while cooling it from 55° F. to 45° F.



This VXF 200 evaporative condenser fills the system's condensing requirements. The 16" x 8' long receiver was also supplied by Vilter.

The Red Carpet Inn is "Midwest's finest," and provides the ultimate in comfort air conditioning. Its modern accommodations — 127 guest rooms, 24-lane bowling alley, exhibition hall and meeting rooms, executive conference rooms and dining areas are completely air conditioned by Vilter equipment.

Air conditioning is accomplished by piping chilled water to conditioned areas. Vilter's water chilling equipment includes an R-22 Uni-Chiller incorporating two 8-cylinder VMC compressors and a 24" dia. x 9' long water chiller, an evaporative condenser and a liquid receiver. This equipment has a capacity of 200 tons of refrigeration when circulating 480 gpm while cooling it from 55° F. to 45° F.

Since each compressor is equipped with 25, 50 and 75% capacity reduction, the system features optimum flexibility and can effect operating economies by matching horsepower requirements to the actual cooling loads. Added insurance for dependability is obtained through the use of two separate compressors.

When you want flexibility, high efficiency and utmost dependability in performance in an air conditioning system, be sure to contact your Vilter representative or distributor, or write direct.

Ask for Bulletins 220 and 143

CONSULTING ENGINEER — Holland-Beseke & Kurtz, Inc., Milwaukee
CONTRACTOR—Kuetemeyer Plumbing and Heating Co., Milwaukee
OWNERS—Samsons Enterprises

Vilter® MANUFACTURING CORPORATION
2217 SOUTH FIRST STREET • MILWAUKEE 7, WIS.

REFRIGERATION AND AIR CONDITIONING

Air Units • Ammonia and Halocarbon Compressors • Two-Stage and Booster Compressors • Water and Brine Coolers • Blast Freezers • Evaporative and Shell and Tube Condensers • Pipe Coils • Liquid Transfer Systems • Valves and Fittings • Pakice and Polarflake Ice Machines • Air Agitated Ice Builders

For more data, circle 96 on Inquiry Card

Product Reports

continued from page 218

PATTERNED LOUVERS ON AIR GRILLS

Custom Staccato extruded aluminum air grills have louvers recessed at various intervals, with the intervals varied according to the design wanted. Raised sections on each louver have a brushed satin aluminum finish to contrast with the anodized dark finish of the rest of the louver. *Titus Mfg. Corp., Waterloo, Iowa*

CIRCLE 306 ON INQUIRY CARD

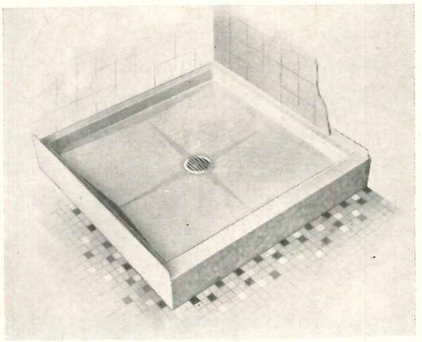
PATIENT CARE CONSOLE

A special patient room console for intensive care units provides all lighting requirements and incorporates all major bedside services, including oxygen and vacuum outlets, retractable accessory support arms and special temperature and pulse sensing equipment. One or two patients can be served from a single console. *Sunbeam Lighting Co., 777 E. 14th Place, Los Angeles 21, Calif.*

CIRCLE 307 ON INQUIRY CARD

LIGHTWEIGHT SHOWER FLOOR

Cascade shower floor is made from limestone and resin and formed by hydraulic presses into a lightweight



unit which can be installed on the sub-floor without sub-pan or backing-up. A 32-in.-square unit weighs only 45 lb. *Fiat Metal Mfg. Co., Inc., Plainview, L.I., N.Y.*

CIRCLE 308 ON INQUIRY CARD

COLORFUL TEXTURED ALUMINUM SHEET

Dynasyl colorful aluminum sheet is available in six colors and three patterns as well as smooth finish. DuPont's *Mylar* film is bonded to the sheet to give maximum corrosion resistance and minimum color fading. *W. J. Ruscoe Co., 487 Kenmore Blvd., Akron 1, Ohio*

CIRCLE 309 ON INQUIRY CARD

Reprinted from
Milwaukee Sentinel, March 15, 1963

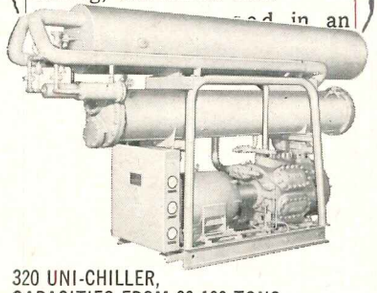
Vilter Pushes For Leadership

Vilter Manufacturing Corp. here has embarked on an aggressive campaign to capture a major share of the one billion dollar a year air conditioning business in the commercial and industrial area.

It has completed year long field testing operations of a new unit called the 320 compressor which the company says will make it competitive with anything on the market.

The company has been on the so-called fringe of the air conditioning field, according to A. A. Silverman, president, but with the introduction of the new compressor added to allied lines, Vilter hopes to establish itself as a leader in the field.

The unit can be utilized effectively in hospital, hotel, motel and office building air conditioning systems as well as industrial refrigeration systems where durability is a greater need than if its application were limited to comfort air conditioning, Silverman said.



320 UNI-CHILLER,
CAPACITIES FROM 20-100 TONS

Vilter offers you a complete line of compact, rugged, integrated air conditioning equipment that has proven an efficient answer to a wide range of commercial and industrial application problems. Vilter standard and custom-designed Uni-Chillers are available for use with either Refrigerant 12 or 22. Uni-Chillers are shipped completely assembled and include a holding charge of refrigerant.

Vilter®

MANUFACTURING CORPORATION
2217 South First Street, Milwaukee 7, Wisconsin

For more data, circle 96 on Inquiry Card

PRODUCT BRIEFS

Modular laboratory furniture in 29- or 34-in. heights is adaptable to a variety of installations. *Sturdilite Products, Inc., 3001 Palmolive Bldg., Chicago 11, Ill.*

CIRCLE 310 ON INQUIRY CARD

Alarm chime has a penetrating and attention-commanding tone, for use where large numbers of persons must be alerted to danger. *Notifier Corp., 3700 N. 56th, Lincoln 4, Neb.*

CIRCLE 311 ON INQUIRY CARD

Wall bracket exterior lighting fixture has a crystal prismatic refractor lens that provides efficient asymmetric light distribution. *The Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo.*

CIRCLE 312 ON INQUIRY CARD

Light-sensitive smoke detection device starts an alarm signal whenever a specific smoke density is present in the air. *Edward Co., Inc., Norwalk, Conn.*

CIRCLE 313 ON INQUIRY CARD

Molded fiber glass globes are used for colorful, lightweight, weather-resistant lamp fixtures. *Marplex Co., 348 Washington St., El Segundo, Calif.*

CIRCLE 314 ON INQUIRY CARD

Lightweight steel purlin joists, in 4- and 7-ft lengths, are designed to be compatible with the Waco *Hi-Load* shoring system which supports total working loads of as much as 10,000 lbs. *Waco-Porter Corp., Schiller Park, Ill.*

CIRCLE 315 ON INQUIRY CARD

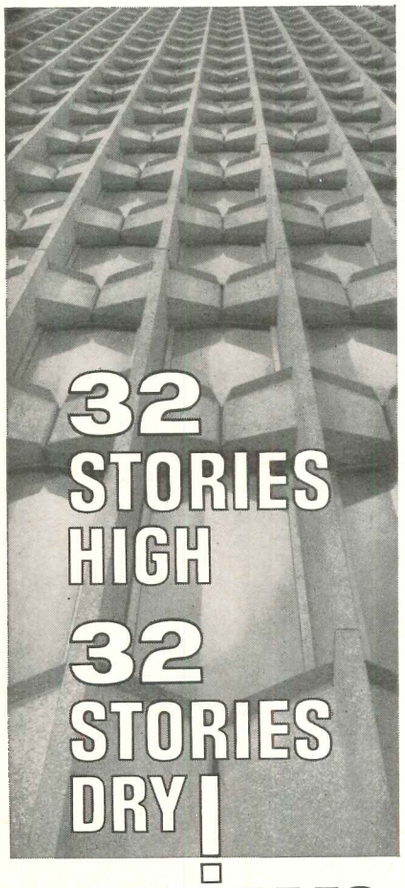
Strong, lightweight metal grating is made of 18-gage steel with a triple-rib design. *United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill.*

CIRCLE 316 ON INQUIRY CARD

Correction: Thin line louvers of extruded aluminum can be made in any length up to 40 ft *without* mullions or exposed fastenings (incorrectly described as *with* mullions, etc., in the March issue, item 316). Triangular and other special shapes can be supplied. *Construction Specialties, Inc., 55 Winans Ave., Cranford, N.J.*

CIRCLE 317 ON INQUIRY CARD

more products on page 238



WILLIAMS
EVERLASTIC
SEALS AND GASKETS

SELECTED TO LOCK MOISTURE OUT

building: Michigan Consolidated Gas Company, Detroit.

architects: Minoru Yamasaki—Smith, Hinchman and Grylls, Assoc.

problem: Effectively sealing the joints of thousands of pre-cast exterior wall panels and interior marble panels.

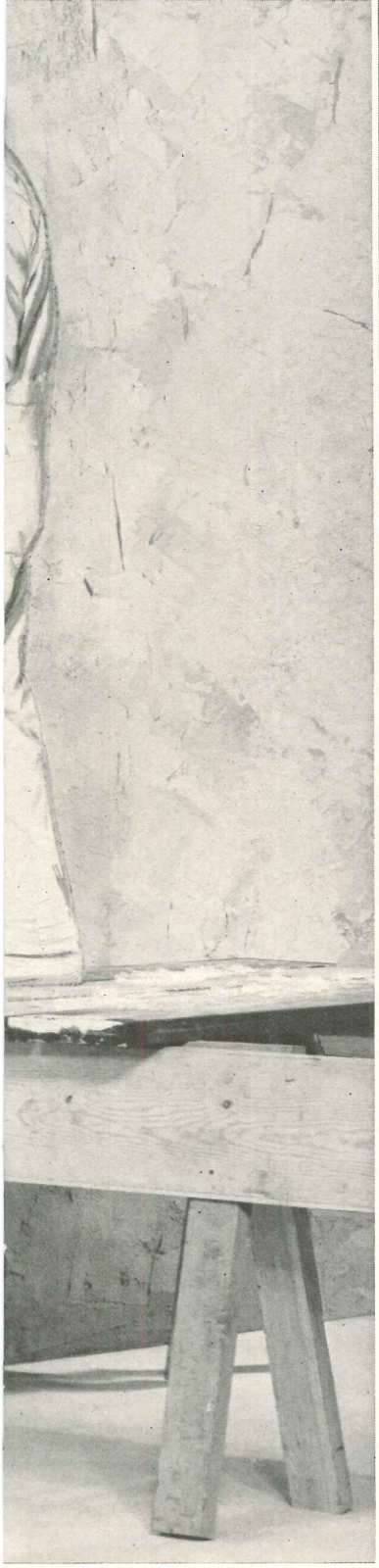
solution: Williams Everlastic die cut neoprene gaskets and Williams Double Wing seals.

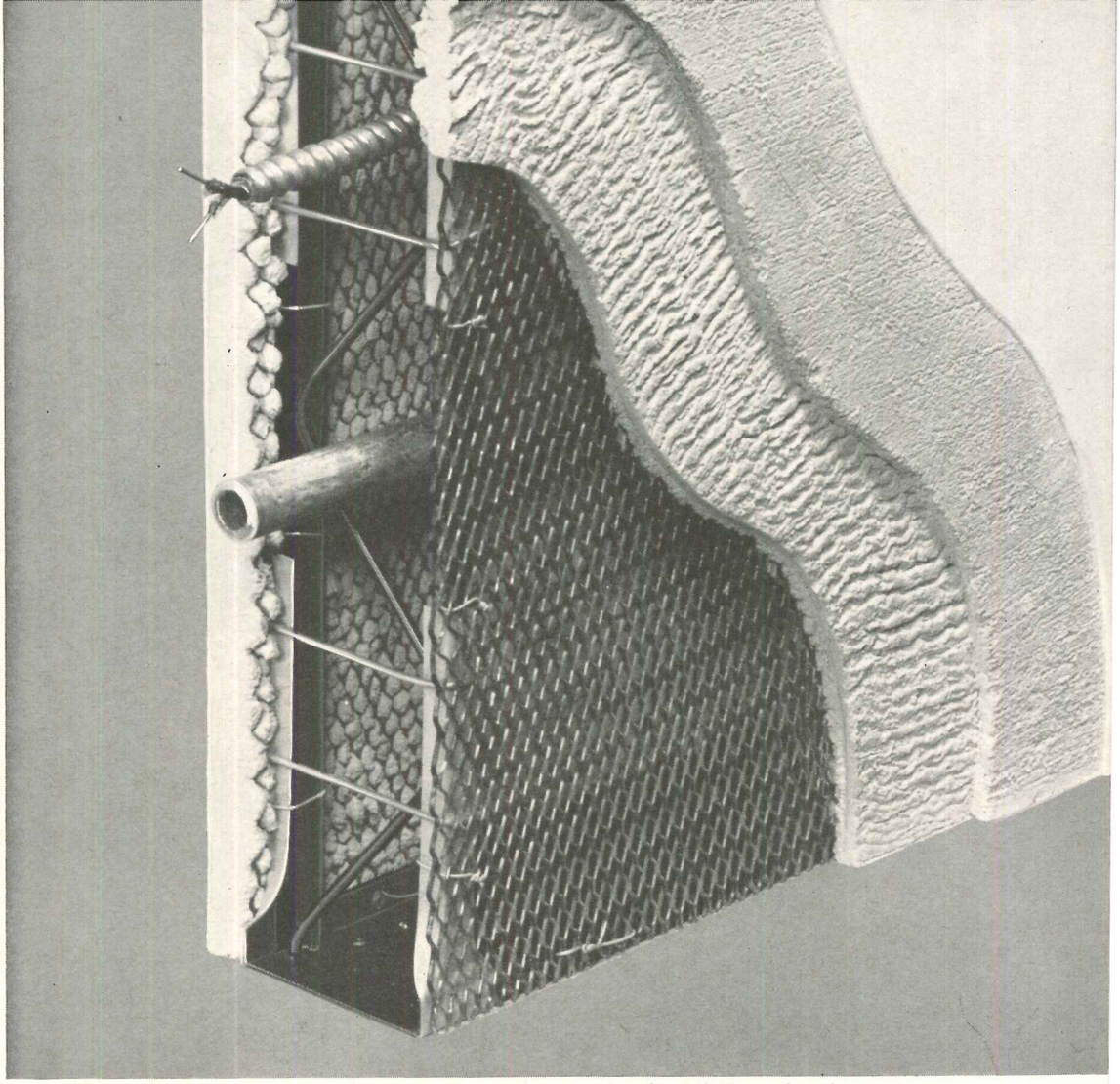
FREE! *Write for new catalog covering technical details of Williams Seals, Gaskets, Waterstops and the remarkable new EVERLASTIC Polyurethane Sealing Compound.*

WILLIAMS
SEALS and GASKETS DIV.
WILLIAMS EQUIPMENT and SUPPLY CO., INC.
Box 86, Hazel Park, Michigan

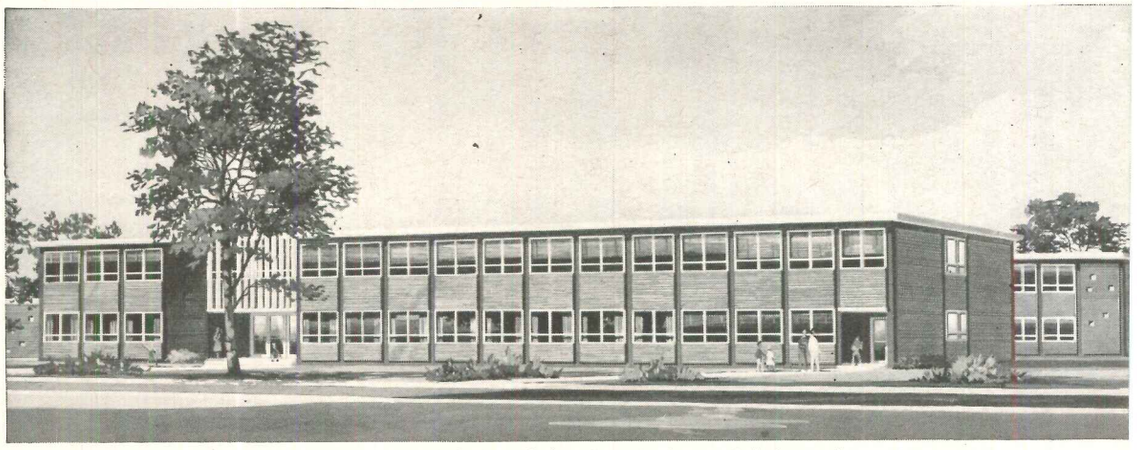
For more data, circle 97 on Inquiry Card

The Gold Bond difference: **Fireproof construction for only $11.02 per square foot at Rochester School #35**





Photograph of cutaway section shows how utilities pass through openings in Holostud, and how steel studs with shoes fit into metal floor track.



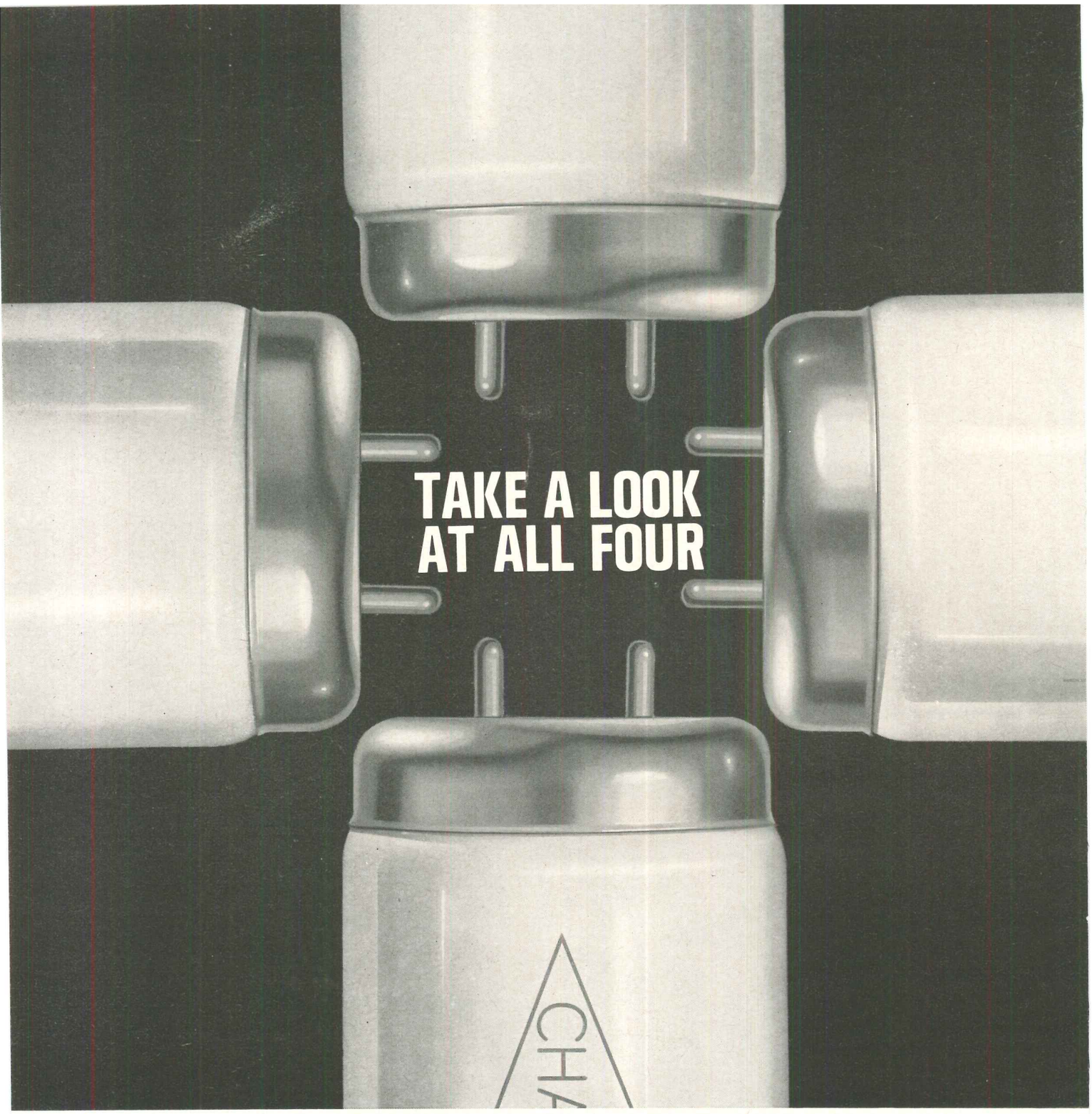
Architects: Arthur J. Stickney & Associates. In charge of design, and supervisor: D. Kohlstaedt. General Contractor: Roman Luke Co. All of Rochester, New York.

Gold Bond Holostud System saved this school $38,000 just in exterior masonry backup. And steel Holostud, finished with Gold Bond metal lath and plaster, continued to save money on all interior partitions. Holostud partitions go up fast. You'll have a partition that earns a 2-hour fire rating plus excellent resistance to sound transmission. Electrical conduit and pipe find free passage through large openings in the diagonal webbing. For a lightweight, non-load-bearing partition at low cost, it's hard to beat. All metal accessories are supplied from the same source, National Gypsum Company. Your Gold Bond Representative can give you all the details about the Holostud System. Or write for the new Gold Bond® Holostud Construction Manual, Dept. AR-53, National Gypsum Company, Buffalo 25, N. Y.

Gold Bond materials and methods make the difference in modern building

Gold Bond
METAL PRODUCTS

For more data, circle 98 on Inquiry Card

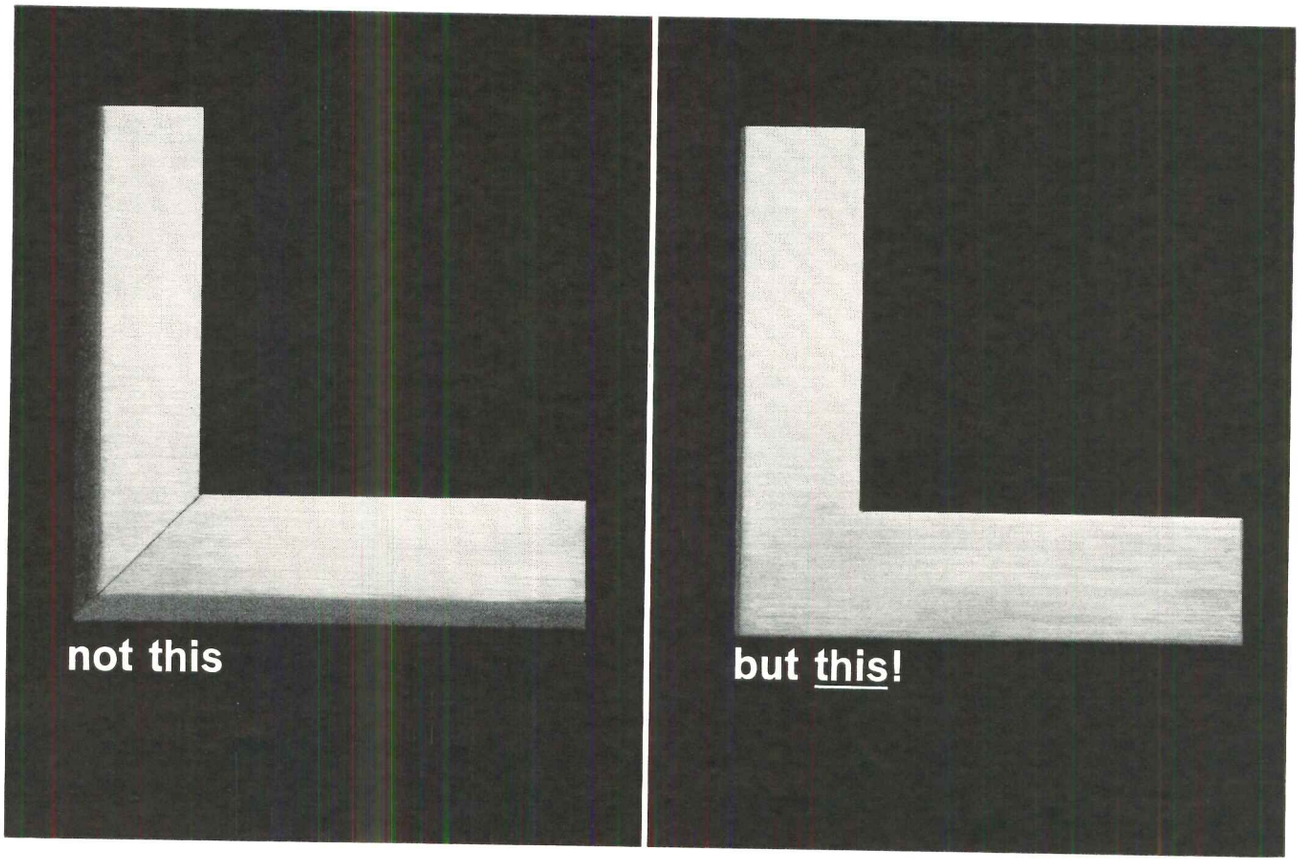


There are four leaders in the lamp industry. You know the other three. Our name is Champion. ■ Naturally, all four have much in common. What makes Champion different? Most importantly — we're lamp specialists. In two ways. For one thing, we make lamps *only* — thousands of different kinds. They have been our one product since 1900. ■ Then, our field is commercial and industrial lighting — exclusively. Always has been. That's why we know it so well — and why we can offer the kind of service we do. You won't ordinarily find Champion lamps in the supermarkets (unless you look in the fixtures). ■ Being specialists, we can concentrate on making superior lamps. All Champion lamps are made under one roof, to a rigid set of production standards. Every one of them is quality-controlled through more than 200 inspections. ■ Over the years we have developed our own special techniques and products. For example, a coating developed in our laboratory for the cathodes of our fluorescents that makes for long and efficient lamp life. Or our Very High Output lamps — the Champion VHO T12 line. They fit *all* standard high-intensity fixtures . . . no need for special positioning. They're trimmer and lighter than others, too. ■ Industrial or commercial lighting represents a big expenditure. When it's time to buy, take a close look at all four. We think you'll buy Champion. For full information, call your local Champion distributor or write Champion Lamp Works, Lynn, Massachusetts.

CHAMPION Lamps

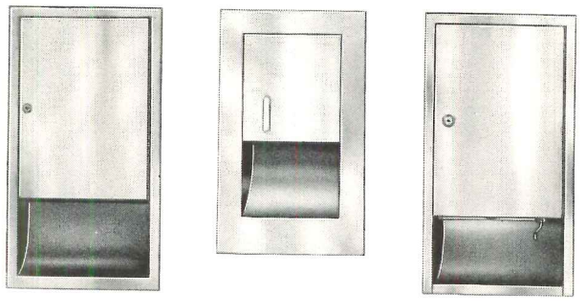
OUR ONLY BUSINESS *FOR OVER HALF A CENTURY*

For more data, circle 99 on Inquiry Card



No mitered corners

on any of the new Recessed Washroom Accessories now available from West!



West one-piece frame construction will last a lifetime. And every one of West's new recessed cabinets and accessories have matching design.

With this new line of high-quality equipment, you can now make West your *one source of supply* for both recessed and projection-type accessories . . . for any washroom you may plan. West will also do special fabrications to your specifications.

Your West Construction Specialist can give you expert technical advice on all recessed cabinet and washroom accessory needs—including disposal units, wall-mounted units, mirror and shelf units, and medicine cabinets. And remember, 80 years of dependability stand behind the quality of all West washroom products. So why go anywhere but West?

WEST CHEMICAL PRODUCTS INC.

West Chemical Products, Inc.
Accessories Dept., Construction Div.
42-16 West Street
Long Island City 1, New York

Please send me a catalog on West's new "family" of recessed washroom accessories.

NAME

TITLE

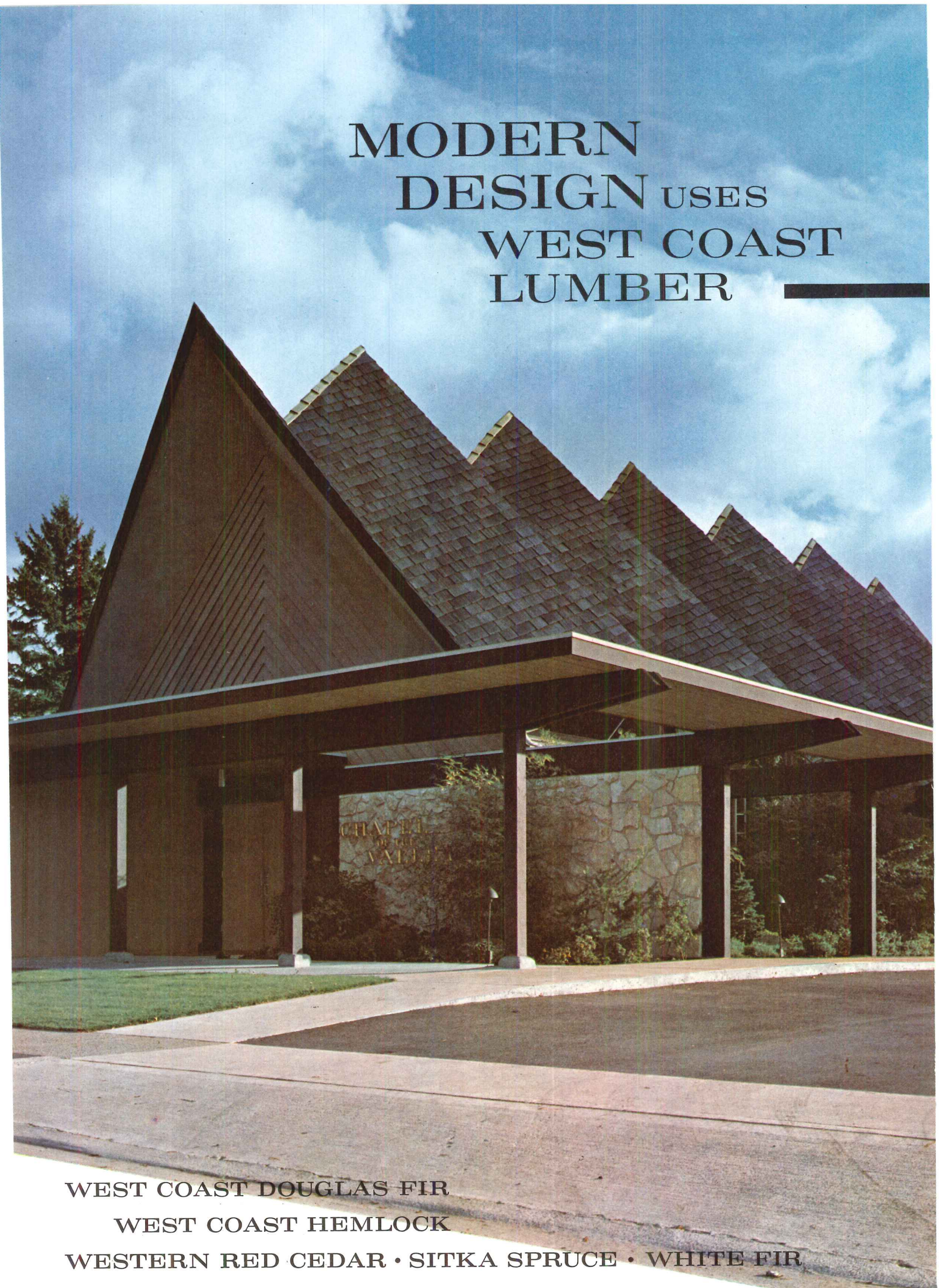
COMPANY

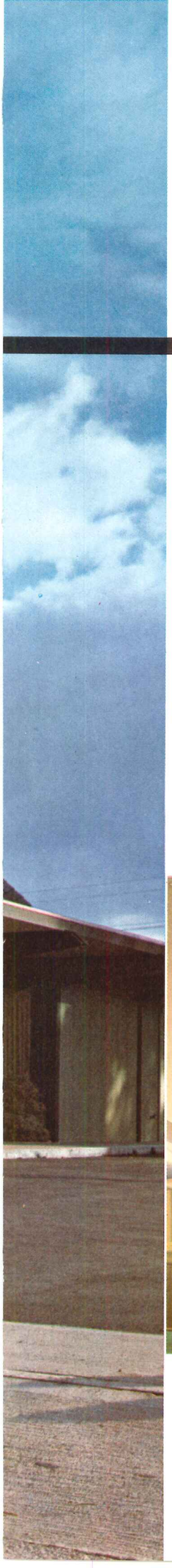
ADDRESS

CITY ZONE STATE

For more data, circle 102 on Inquiry Card

For more data, circle 103 on Inquiry Card →


MODERN
DESIGN USES
WEST COAST
LUMBER
WEST COAST DOUGLAS FIR
WEST COAST HEMLOCK
WESTERN RED CEDAR • SITKA SPRUCE • WHITE FIR



for FUNERAL HOMES

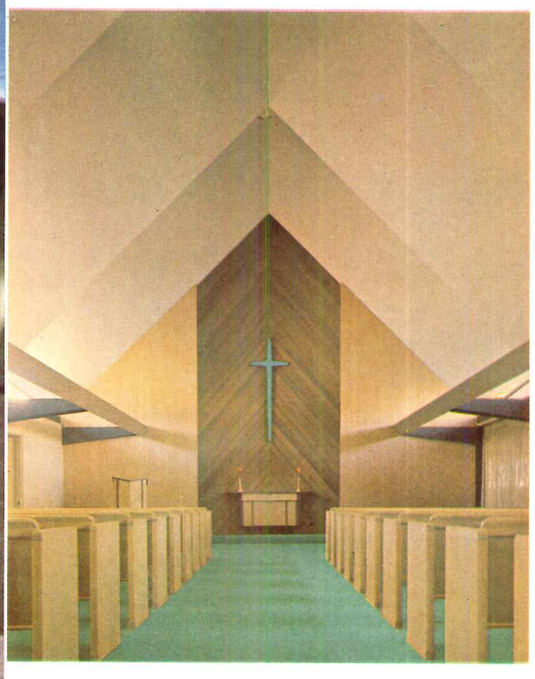
A combination of on-the-job construction and off-site fabrication is demonstrated in this unusual funeral home in Redmond, Washington. Using standard sizes and grades of West Coast Lumber, the architect designed an economical post and beam base structure and surmounted it with a series of folded plate sections to form the roof.

The character of the chapel is subtly expressed in the natural, quiet atmosphere created by the design with West Coast Lumber at the entrance, in the foyer and at the altar. Exposed Douglas Fir beams and ceiling of tongue and groove West Coast Hemlock carry the same feeling into the office, family and slumber rooms and display area that surround chapel.

The stress grades of West Coast lumber are used in framing the folded plate sections as well as for the posts and beams. Western Red Cedar bevel siding, applied diagonally, results in an attractive gable pattern and is repeated as an effective background to the altar.

This funeral home is a practical example of the architect's ingenuity in effectively using the standard sizes and grades of coast region lumber to meet a design objective economically. The retail lumber dealer conveniently located in your community is your source of West Coast Lumber information and supply.

ARCHITECT: Harold J. Nesland, Sibold & Nesland.



Following are the standard sizes and grades of West Coast Lumber used in building the funeral home illustrated on these pages.

MILL 10 WCLB STAND W. C. H.

West Coast Douglas Fir 2" x 10" joists. 2" x 4" and 2" x 6" wall and partition framing. Sub floors are 1" x 8" shiplap.

MILL 10 WCLB 1750-f DOUG FIR

West Coast Douglas Fir. Posts: 4" x 6" and 6" x 12". Beams: 3" x 16", 4" x 16" and 6" x 16".

MILL 10 WCLB SEL DEX PAT. 405

West Coast Hemlock 3" x 6" double tongue and groove decking.

MILL 10 WCLB A

Western Red Cedar 1" x 8" bevel siding. Used for interior and exterior applications.

MILL 725 WCLB C

Western Red Cedar 1" x 8" paneling center V-grooved. Used for interior and exterior applications.

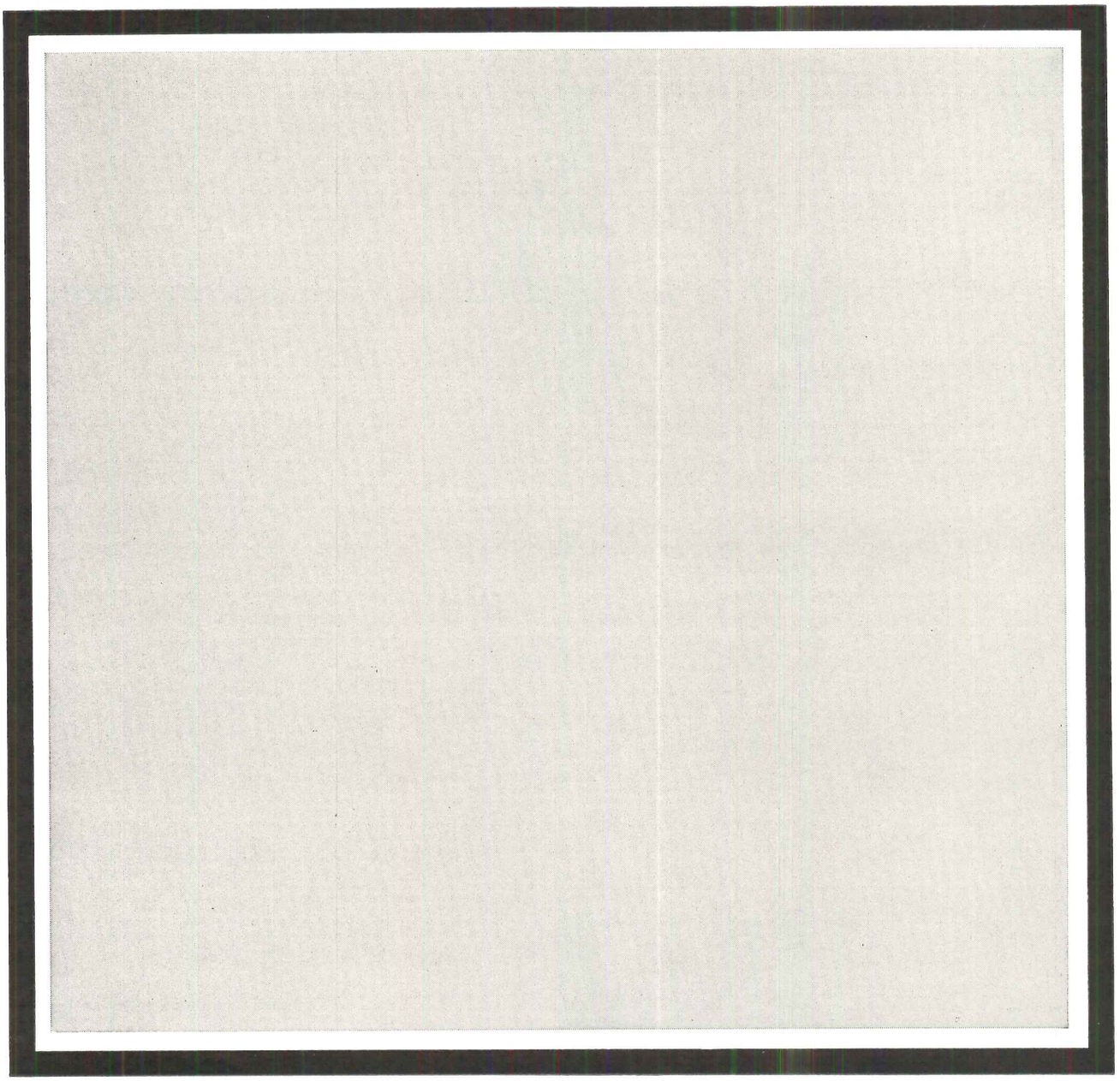
MILL 725 WCLB B&BTR

West Coast Douglas Fir, vertical grain, used for finish and millwork.

"Bright New World of West Coast Hemlock," 8-pages in full color. Full of design ideas. For your personal copy write:

WEST COAST LUMBERMEN'S ASSOCIATION

1410 S. W. MORRISON STREET PORTLAND 5, OREGON



PERFECT ILLUSTRATION OF THE IDEAL HOSPITAL* LAUNDRY

See all the shiny, massive, expensive, power-devouring equipment? See all the personnel that must be paid, fed and negotiated with? See all the linens that must be bought, washed, ironed, folded — and replaced? See all the costly linen-storage space — space that's so badly needed for a new lab, extra rooms or whatall?

See?

Fact is, the ideal hospital laundry has none of these things, of course. All it has is a sensible, money-saving, trouble-free, smooth-running Linen Supply service . . . and all the fresh, clean linens it needs (everything from bedsheets to surgeons' masks) . . . when it needs them.

See?

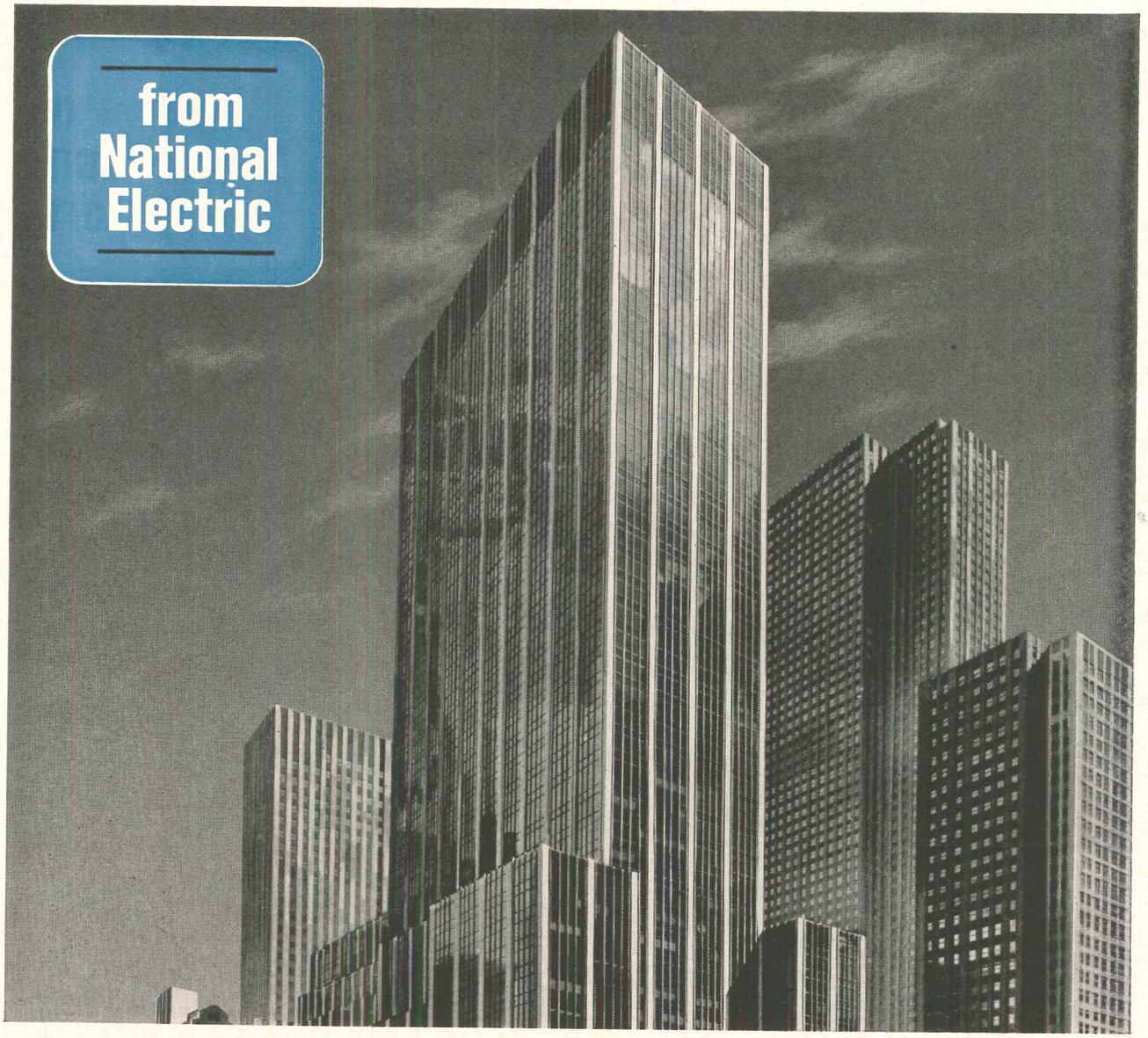
More details? Call the Linen Supply Man nearest you. You'll find his name in the Yellow Pages under "Linen Supply" or "Towel Supply".

**Also . . . motel, hotel, restaurant or school.*

FREE DESIGN GUIDES!
They give case histories and suggestions for providing more efficient linen supply service in motels, hotels, schools, restaurants and hospitals, as well as for commercial firms, professional offices and various institutions. Write today.

LINEN SUPPLY ASSOCIATION OF AMERICA • 975 Arthur Godfrey Road, Miami Beach 40, Florida

For more data, circle 104 on Inquiry Card



Owner: Rock-Uris Inc.; Builder: Uris Buildings Corporation; Designer: Emery Roth & Sons, Architects; Engineer: Jaros, Baum & Bolles; Contractor: Arc Electrical Construction Co., Inc.

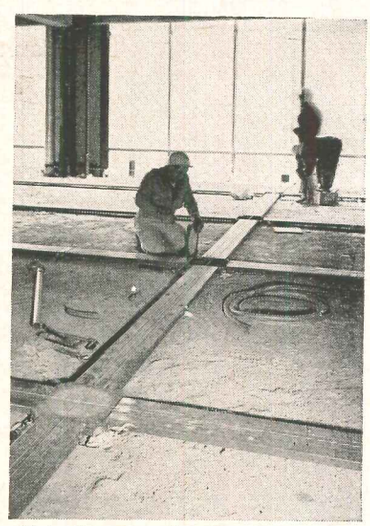
41 miles of Flushduct power 43 floors in Sperry Rand Building

National Electric Flushduct puts power and communications lines in place throughout the 43 floors in the New York Sperry Rand Building. Flushduct's 1⅜" overall depth fits perfectly in the 1⅜" fill between the concrete base and the bottom of the floor tile, permitting a flush finish for the tile and cover plates.

Other equally versatile, easily installed underfloor raceway systems are Nepcoduct (1⅜" x 2⅞" or 6⅜") and Jumboduct (4" x 4") designed particularly for industrial and commercial construction and modernization. All are double protected inside and out by galvanizing and acid resisting enamel. Smooth, low-friction interiors provide easiest fishing.

For full information on Underfloor Raceway systems and other outstanding National Electric products, Surface Raceways, Headerduct, Floor Boxes, Conduit, Cable, and Electrical Tape, contact your local distributor or write: National Electric Division, H. K. Porter Company, Inc., Porter Building, Pittsburgh 19, Pa.

NATIONAL ELECTRIC . . . THE BEST WAY TO PUT POWER IN PLACE

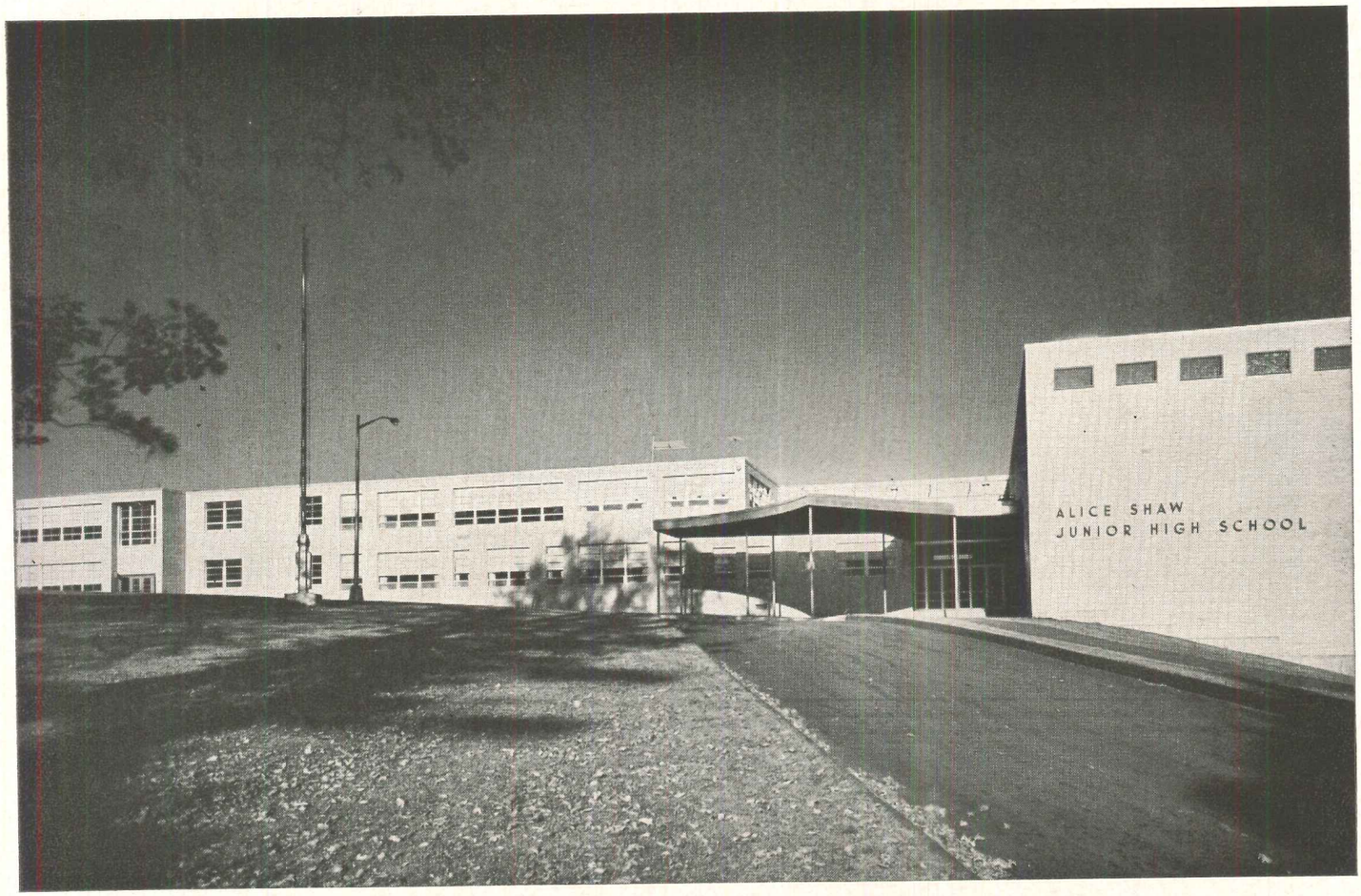


Note three section Flushduct and large diameter junction boxes

PORTER ***NATIONAL ELECTRIC DIVISION***
H. K. PORTER COMPANY, INC.

For more data, circle 105 on Inquiry Card

Natco buff face brick was used on the exterior walls of the Alice Shaw Junior High School in Swampscott, Massachusetts. Natco ceramic glazed Vitritile was used in much of the interior. The John M. Gray Company of Boston was the architect—General contractor was John Bowen Company, Inc., Boston.

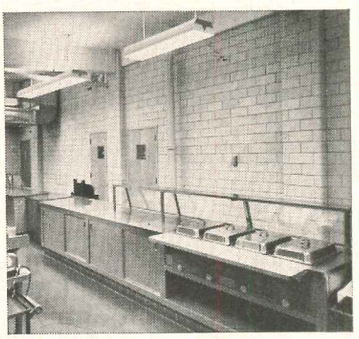


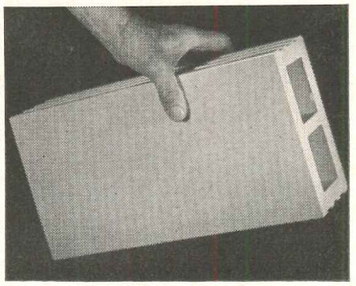
Why Natco Vitritile was used in this junior high school

SANITATION—The ceramic glazed surface of Vitritile made it perfect for use in the high school kitchen and cafeteria. Cooking residue and food spillage cannot penetrate or collect on Vitritile's hard surface. Plain soap and water maintains the sanitation.

MOISTURE RESISTANCE—With a dozen hot showers steaming at the same time, it is imperative that the wall surfaces in the locker room and showers are able to resist moisture. Vitritile will not flake or peel regardless of the extent it is exposed to water and steam. Again, it's the Vitritile ceramic glazed surface that makes it downright impervious to moisture.

MARK PROOF—With 700 students inhabiting a school, scuff marks and scribblings are bound to appear on the walls. Natco Vitritile in the corridors, stairwells, and lavatories render these markings, at worse, temporary—a damp sponge removes them from the smooth, hard Vitritile surface.





Natco Vitritile (lower right) is completely fireproof and comes in three nominal face sizes: 8″ x 16″, 5⅓″ x 12″ and 5⅓″ x 8″, in 2″, 4″, 6″, and 8″ thicknesses. Kitchen (upper right) and corridor (above) show typical installations.

natco corporation

GENERAL OFFICES: 327 Fifth Avenue, Pittsburgh 22, Pa. **BRANCH SALES OFFICES:** Boston • Chicago • Detroit • Houston • New York • Philadelphia • Pittsburgh • Syracuse Birmingham, Ala. • Brazil, Ind. • **IN CANADA:** Natco Clay Products Ltd., Toronto, Ontario

For more data, circle 106 on Inquiry Card

Connors Bulb Tee Sections application data is contained in this eight-page brochure. Architectural specifications, load-span tables and deflection graphs applicable to gypsum, structural wood fiber and lightweight concrete roof decks are shown. Refer to Sweets Architectural Catalog under section 2g/Con or write for a free copy: Connors Steel Division • P. O. Box 118 • Huntington, West Va.

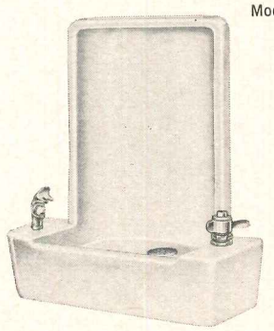
PORTER *CONNORS STEEL DIVISION*
H.K. PORTER COMPANY, INC.

SPECIFY A440 STEEL

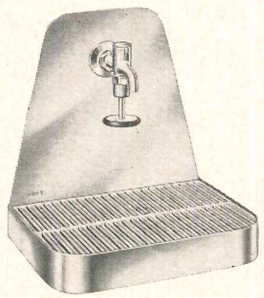
For more data, circle 107 on Inquiry Card

Wherever he is in school...

Model 77

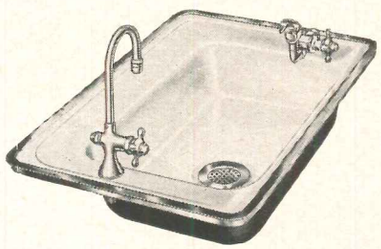


Model 440

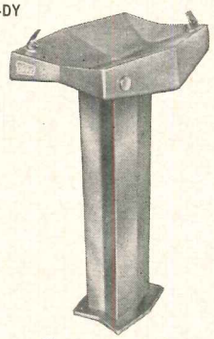


Johnny wants

Model 2050



Model 36-DY



a drink of water

Haws complete line of fountains and coolers

fits every school area. When Johnny wants a drink in classroom, corridor, cafeteria or outdoors, there's a Haws fountain to suit the situation. To protect Johnny, all Haws fountains have sanitary design. To protect the fountains, they're cast in hi-strength Tenzaloy aluminum, stainless steel, bronze, vitreous china, fiberglass and enameled iron. Vandal-proofing keeps Haws fountains working smoothly and looking sharp. Multiple bubbler models meet "rush hour" demands; color and design provide decoration. There's a Haws fountain to fit your "specs." Write for the new Haws catalog.

Insist on HAWS – a quality product!

More to choose from.....

Model 10X

Model 7J

Model HDFC

Since 1909

HAWS DRINKING FAUCET COMPANY

GENERAL OFFICES:
1441 Fourth Street • Berkeley 10, California

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

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Product Reports

continued from page 227

SLAB FORMING SYSTEM

A flat slab forming system adaptable to multi-story construction uses standard steel-ply forming equipment with slab panels which can be removed and re-used soon after

placement of concrete while leaving all support shoring in place. A sliding ledger angle on the stringer eliminates need for reshoring. Each tubular steel shore supports up to 60 sq ft of formed deck with a minimum of lateral bracing. *Symons Mfg. Co., 200 E. Touhy Ave., Des Plaines, Ill.*

CIRCLE 318 ON INQUIRY CARD

CONCEALED EXIT DEVICES

A new line of concealed vertical rod exit devices for narrow stile or hollow metal doors features simple quarter-turn positive bar lockdown. They are available in stainless steel, aluminum and bronze exterior finishes, and are UL listed for panic. *Sargent & Co., New Haven 9, Conn.*

CIRCLE 319 ON INQUIRY CARD

SUSPENDED CEILING

Armstrong suspended ceiling is an economical, easy-to-install, incombustible "lay-in" ceiling for light

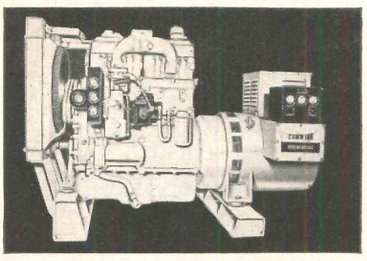
commercial and residential construction. The acoustical panels are made of compressed mineral fiber and carry a Class-A incombustible rating. *Armstrong Cork Co., Lancaster, Pa.*

CIRCLE 320 ON INQUIRY CARD

more products on page 242

FIRE! and perhaps with it a general power failure. At this moment nothing is more important than emergency electricity. Automatically your Cummins Diesel generator set springs to life to restore the power you need. Lives are not endangered—accidents are averted—perishables remain safe. We'll provide an emergency power unit tailored to match your kilowatt needs. The diesel, generator and controls are serviced and warranted from one source. The saving during one power failure could more than pay the cost. For details, contact the Cummins Distributor listed in your Yellow Pages under "Engines—Diesel."

CUMMINS



CUMMINS DIESEL GENERATOR SETS

CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA

For more data, circle 109 on Inquiry Card

THE JANITROL SKYLINER
Installation and Cost Problems of

The versatile Janitrol Skyliner® *roof-mounted* heating-cooling-ventilating system offers many cost and space-saving advantages for single-story buildings.

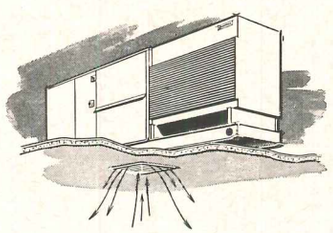
Shipped completely factory assembled, tested and ready to install, the Skyliner package goes in *fast* with *less* labor. No water or sewage service, refrigerant piping or charging and complicated wiring are required. There's no need for an equipment room.

And not a single cubic foot of usable inside space is required for the Skyliner system. Conditioned air may be circulated through a ceiling diffuser under the unit in the conditioned area.

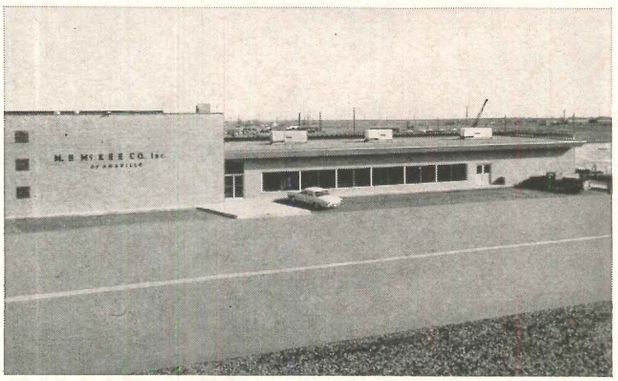
One or more Skyliner units may be used to provide a simple, efficient zone-controlled comfort system, with each Skyliner controlled by its individual thermostat. A wide range of capacities matches the needs of each zone.

The Skyliner is completely enclosed in a weather-proof, insulated, aluminized steel cabinet. The unit has been operationally tested in 60 m.p.h. winds and for two hours at 12-inch/hr. rainfall.

For detailed engineering and specification sheets, call your local Janitrol representative or write the factory. Ask for A. I. A. File 30-C-43.

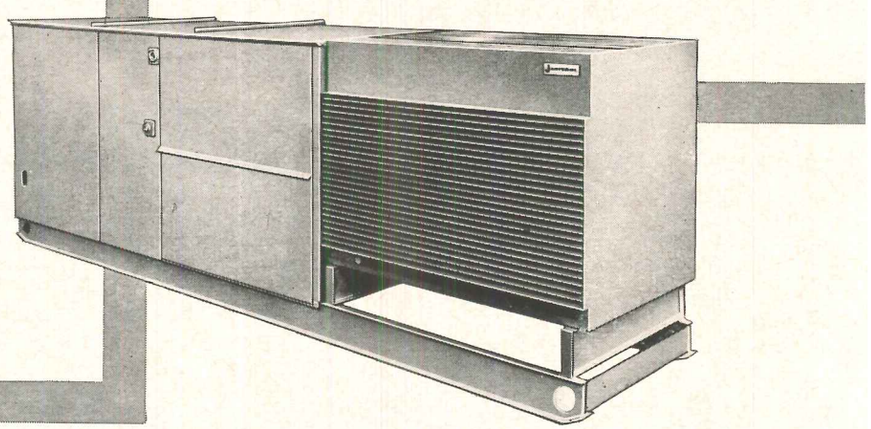


Conditioned air is circulated through a short concentric duct and ceiling diffuser beneath unit in conditioned area. No extended duct system is needed. No stack is required. Flue gas exhauster and filter signal are furnished.



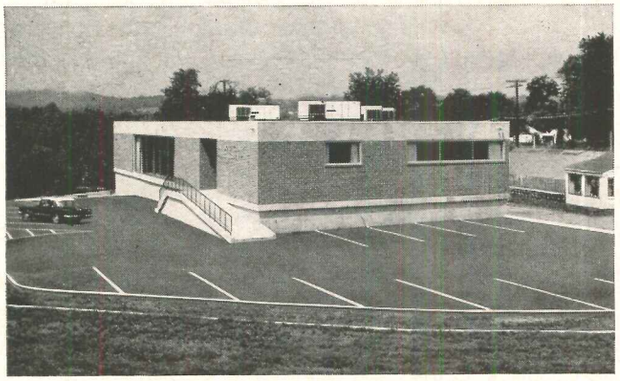
Utilization of all interior space for display and warehousing, plus client satisfaction with Janitrol products, prompted these mechanical-industrial contractors, M. B. McKee Co., Inc., to use the new Janitrol Skyliner system in their own Amarillo, Texas, branch office-warehouse building. Fuel costs for both heating and cooling have been nominal and the employees appreciate the unusually quiet operation.

Overall economy and attractive, low silhouette were factors in selection of eight Janitrol Skyliner roof-mounted units for W. T. Grant Store #994 at Longfellow Center, Chico, California. Six units cover the retail area plus one each for warehouse and office. Architect: Kahl & Davis, Red Bluff. General Contractor: Highnell & Strange, Chico. Consulting Engineer: Charles & Braun, San Francisco.

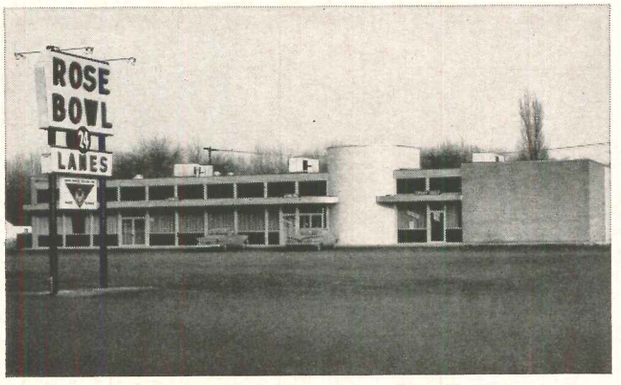


SYSTEM CONQUERS SPACE,

Heating-Cooling One-Story Buildings

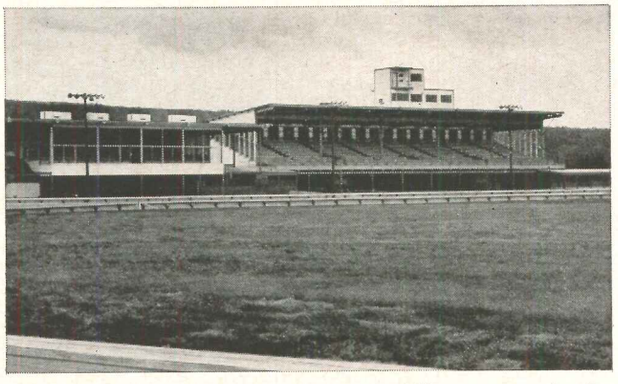


More usable inside space, made possible by the roof-mounted Skyliners, increases the efficiency of the Arbutus Branch of the Baltimore Public Library. The operating economy and quietness of this system have been most satisfactory. Architect: Donald B. Ratcliffe, Baltimore. Contractor: Kirby & McGuire, Baltimore, Heating Contractor: W. E. Kingswell, Inc., Baltimore.



Elimination of equipment room, by using the Skyliner roof-top system, provided extra inside space for the Rose Bowl Lanes, West Seneca, N. Y. Each of the five units is thermostatically controlled to provide the individualized comfort needed in the bowling lanes, lounge, restaurant and sport shop. Owners: Harlem-Clinton Plaza Corp., West Seneca. Heating Contractor: J. G. Fisher, Inc., E. Aurora, N. Y.

Easier installation and lower overall cost, in comparison with a large central system, were realized by installing eight Janitrol Skyliner units in the F. W. Woolworth store at Grand Central Plaza, Elmira, N. Y. Operating costs are lower, too. Architect: Joseph A. Cornell, Corning. Consulting Engineer: Charles W. Personius, Pine City, N. Y. General Contractor: McLane Construction Co., Elmira.



Economy of operation plus the ease of adding more units for future expansion made the Janitrol Skyliner system ideal for use in the Hinsdale (N.H.) Raceway Clubhouse. Four units heat and air condition this glass enclosed area from spring through fall. Bottled L-P gas is the fuel used for heating. Architect: H. E. Davidson & Son, Boston. Heating Contractor: H. W. Taylor Co., Hinsdale, N. H.

see our catalog in Sweet's

JANITROL® DIVISION
Midland-Ross Corporation
COLUMBUS 16, OHIO

For more data, circle 110 on Inquiry Card

■ Why Troy? 1. Troy can supply *everything* needed to *wash, extract, tumble, press, iron, fold* and *stack* every type of washable. 2. No one has been manufacturing power laundry equipment longer than Troy—which explains the superb *efficiency, safety, operability* and *durability* of Troy machines. 3. Troy people are expert in preparing operating costs, personnel and floor space requirements, equipment specifications, layout and work flow . . . and servicing what they sell! *So when there's a laundry in the job, get Troy on the phone.* Or write. Also see the Troy catalog in Sweet's.

AMETEK

TROY LAUNDRY MACHINERY
A DIVISION OF AMETEK, INC.
EAST MOLINE, ILLINOIS

For more data, circle 111 on Inquiry Card

Product Reports

continued from page 238

EXPERIMENTAL OVEN

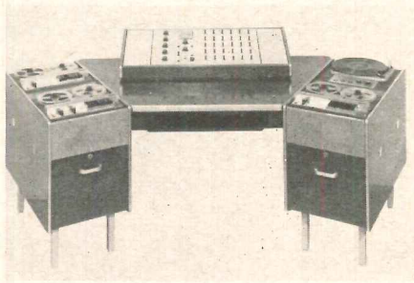
An experimental oven, designed to apply heat directly to food at a high rate while minimizing heat loss to the kitchen, has no walls or door. When the oven is in use, aluminum

sheets drop down from an overhead unit. The "door" is an air screen. Oven burners are sunk 4 in. below the counter rack, and there are overhead infrared heaters. *American Gas Assoc., 420 Lexington Ave., New York 17, N.Y.*

CIRCLE 321 ON INQUIRY CARD

MODULAR LANGUAGE LAB

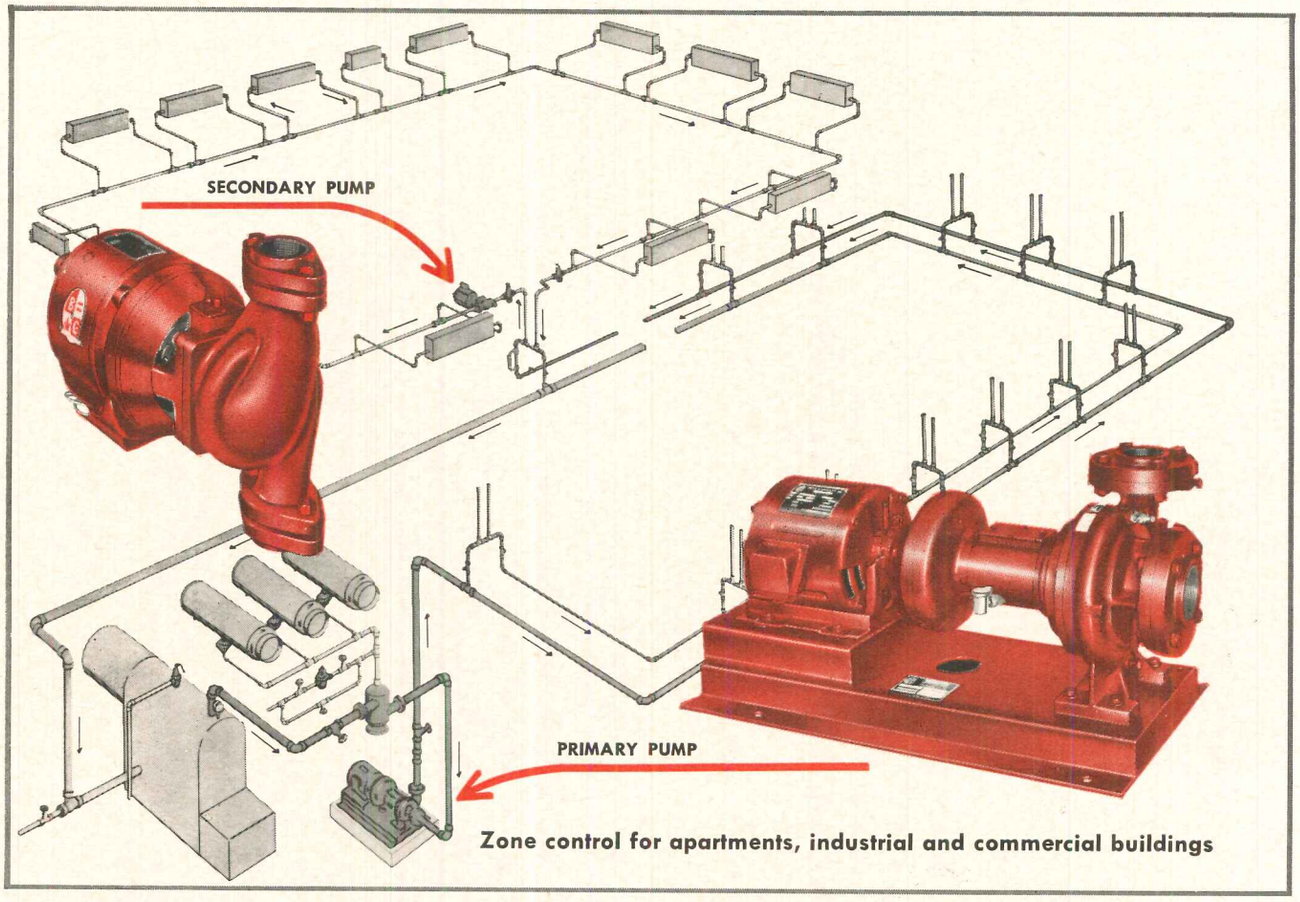
A new line of language laboratory equipment is modular with regard to both furniture and electronics, so a lab may be expanded at any time. Furniture used has a wood core finished



with a walnut plastic laminate. Metal trim is brushed aluminum. Teacher's console shown gives teacher full visibility of the classroom as well as the board itself; it too may be expanded if needed. *Educational Electronics Div., Thompson Ramo Wooldridge, Inc., 6325 Huntley Road, Columbus 24, Ohio*

CIRCLE 322 ON INQUIRY CARD

more products on page 250



Zone control for apartments, industrial and commercial buildings

B&G® PRIMARY AND SECONDARY PUMPING CUTS OPERATING COST...IMPROVES HEAT CONTROL

Apartment houses, in particular, are normally hard to heat economically yet provide comfort for all tenants. The principle of primary and secondary pumping, as developed by B&G engineers, solves many problems for the designing engineer in providing automatic temperature control in such buildings.

The problem of heat balance can be best solved by zone control, in which various areas are controlled separately from other areas. Zone control assures that the correct amount of heating or cooling will be delivered to the proper location when needed.

The circulated water system, when designed for primary and secondary pumping with B&G *quiet* pumps, offers unique advantages because of its adaptability to zone control with minimum equipment and maximum economy of operation.

For full information, engineers are invited to write for the design and installation manual illustrated here.

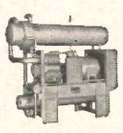
BELL & GOSSETT COMPANY

Hydro-Flo® Division • Dept. HO-32, Morton Grove, Illinois

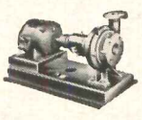
Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

AMERICA'S MOST COMPLETE LINE OF HEATING AND COOLING EQUIPMENT

Booster Pumps


Package Liquid Coolers

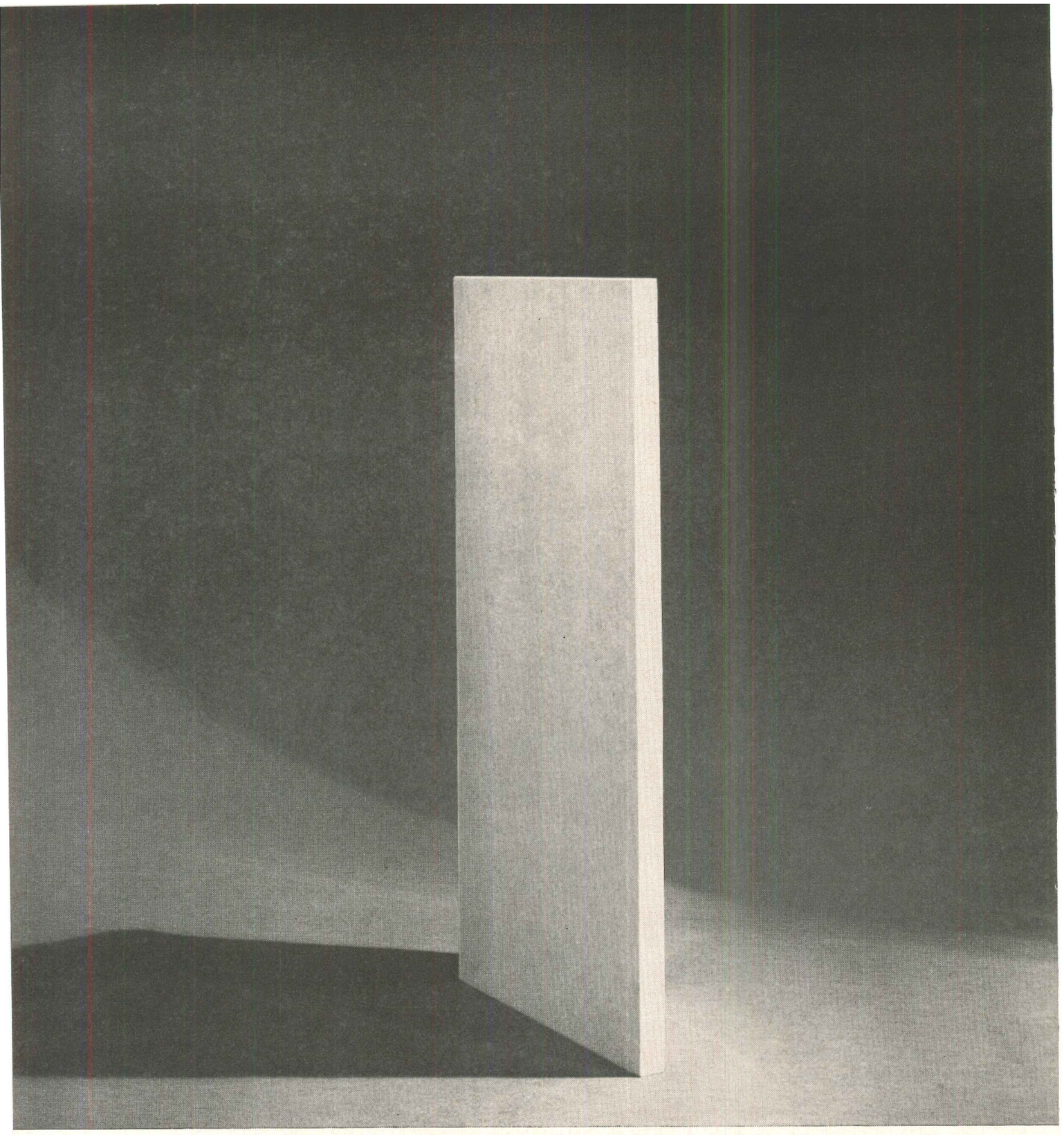
Refrigeration Compressors


Centrifugal Pumps

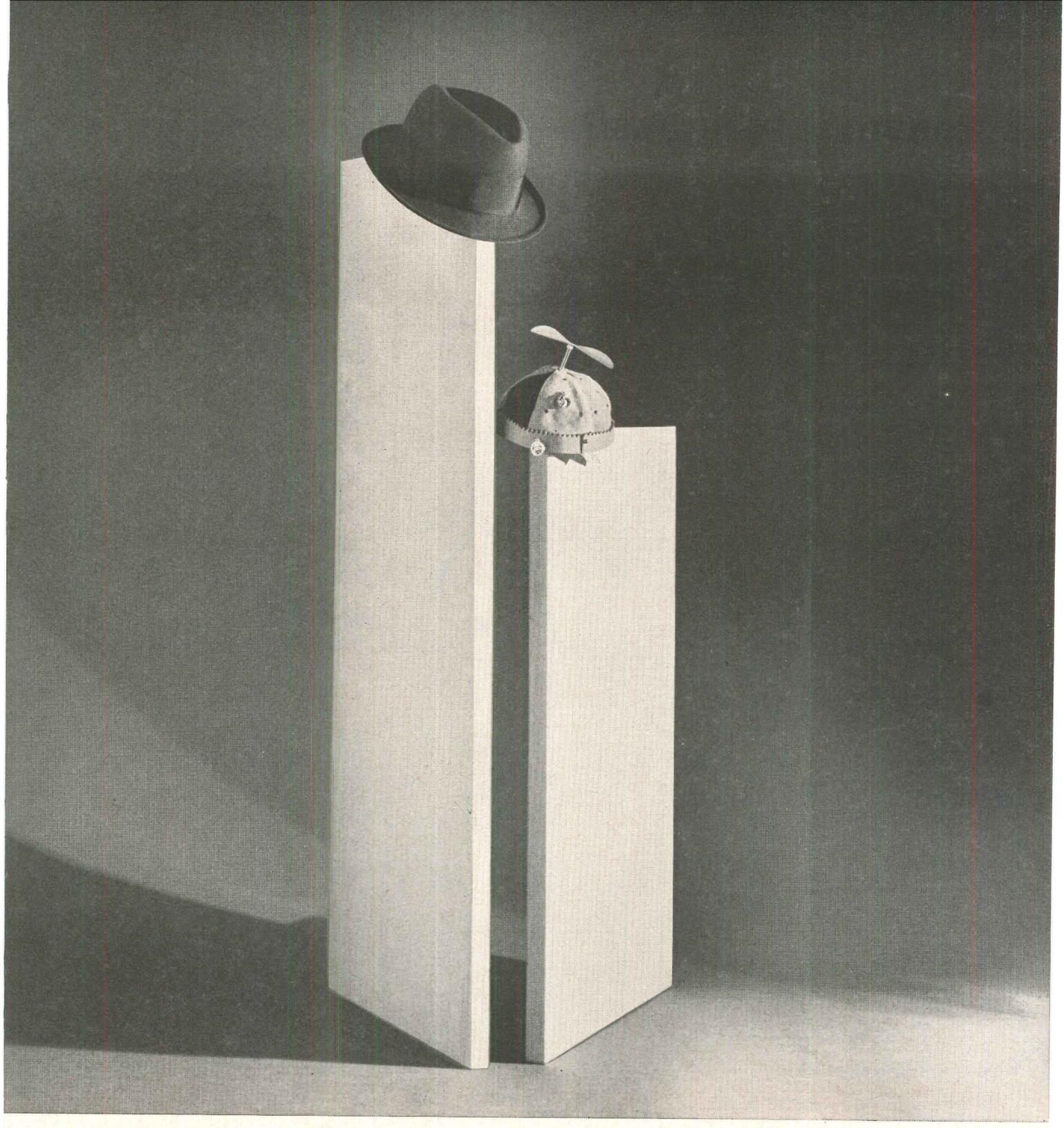
Heat Exchangers

Oil-less Air Compressors

For more data, circle 112 on Inquiry Card



Roofmate FR is the most dependable insulation since Styrofoam®.



Like father, like son.

We extrude both from the same polystyrene, by the same exclusive process. Just like Styrofoam wall insulation, Roofmate® FR roof insulation stays dry permanently; keeps the insulating efficiency you specified. It also ends worries about roof blistering and cracking caused by waterlogged insulation.

Competitive in price as a material, Roofmate FR saves on installation: as much as one dollar a square! It's lightweight (less than 25 lbs. to the bundle) but tough. We give it a high-density skin top and bottom to take the beating a roof insulation gets. Roofmate FR is pleasant to handle; easy for roofers to fabricate, fit and install. Roofmate FR comes in thicknesses to meet standard "C" factor requirements. Want more data and specifications? Just see our insert in Sweet's Architectural File, or write us: The Dow Chemical Company, Plastics Sales Dept. 1001N5, Midland, Michigan.

DOW

For more data, circle 113 on Inquiry Card

Classroom storage is a job for the expert!

From St. Charles comes complete, custom-built beauty and flexibility for every classroom storage need. And only St. Charles gives you such completeness... such a broad range of experience in the design, and construction of casework for **Food and Clothing labs... Arts & Crafts and Science rooms.** St. Charles is your assurance of maximum use of space... uncompromised strength and durability... long-range economy. New 72-page catalog available at request on your letterhead.

St. Charles Manufacturing Co., Dept. ARS-5, St. Charles, Illinois

St. Charles

CUSTOM SCHOOL STORAGE FURNITURE

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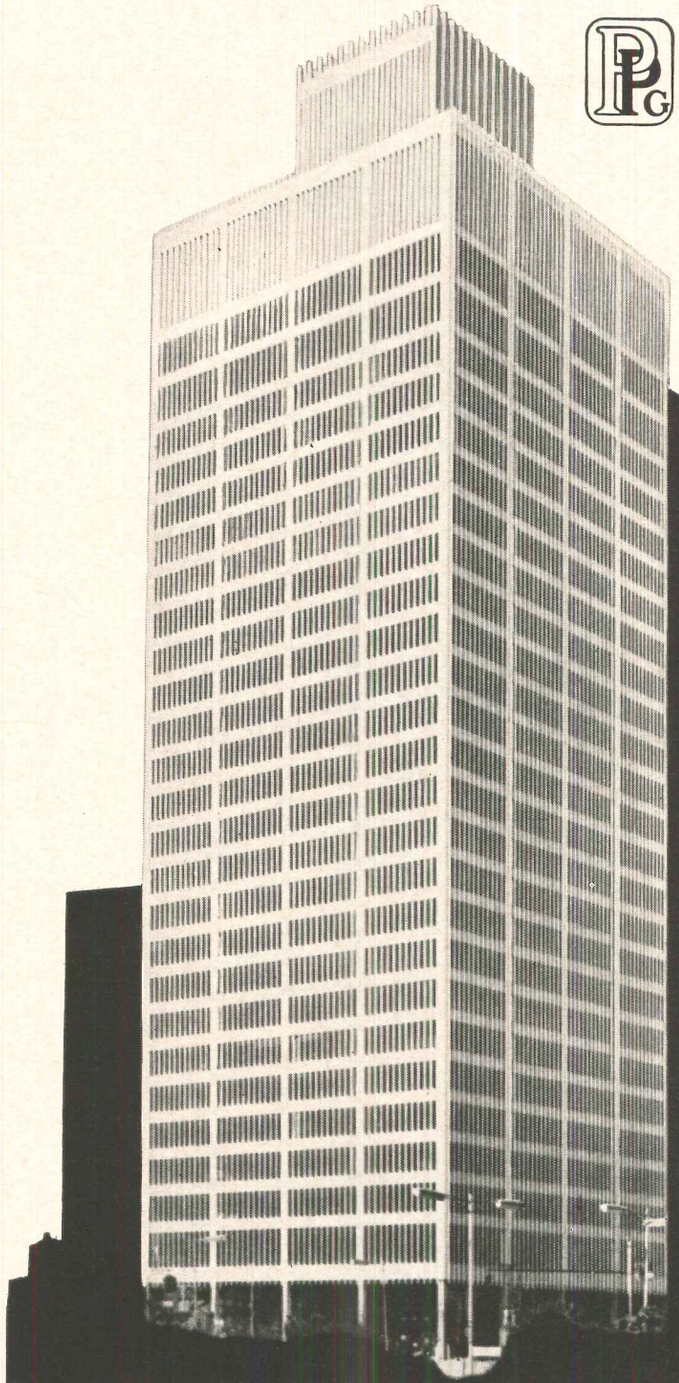

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USED EXCLUSIVELY IN NEW MICHIGAN CONSOLIDATED GAS BUILDING!

Architects Minoru Yamasaki–Smith Hinchman and Grylls, Associate Architects and Engineers, Detroit, designed and engineered this first tall building in the world in which structural columns and window units are the same width. This makes possible complete coordination of the structure and the module.

• **Speedhide Paints** were a natural choice for this beautiful new office building because of their smart, modern colors, high hiding characteristics, excellent color retention and extreme durability.

• **You can have complete confidence** in the ability of Speedhide Paints to do the job you want done in the best way possible for any of your buildings. So when you think of paint, think of Pittsburgh Speedhide.

FREE! Mail Coupon at right for illustrated brochure explaining the modern Pittsburgh COLOR DYNAMICS® Painting System.

• **Color Dynamics** is scientifically based on known psychological reactions to the energy in color. For an interesting Color Dynamics brochure, simply mail the coupon, or contact your local PPG representative.

NOTE: Specifications for the new SPEEDHIDE line can be found in Section 15 Pi, Sweet's Architectural File.

Pittsburgh Plate Glass Company,
Paint Div., Dept. AR-53,
Pittsburgh 22, Pa.

- ☐ Please send booklet with full information on new Pittsburgh SPEEDHIDE line.
- ☐ Please send me your free brochure on COLOR DYNAMICS.
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PITTSBURGH PLATE GLASS COMPANY

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extra features and extra quality **COUNT BIG...**

This is McQuay's versatile line of heavy-duty, single and multi-zone Seasonmasters, providing the extra features and extra quality that count big when you're selecting central-station air conditioning. Note McQuay's attention to details. This is the type of engineering know-how that pays off in superior performance. Consider, too, Seasonmaster economy—not only at the time of purchase, but the economy of installation and operation as well. Then count the models—44 altogether in low and medium-pressure sizes from 700 to 38,100 cfm—and you'll see why there's a dependable McQuay Seasonmaster that best fits your specific requirements.

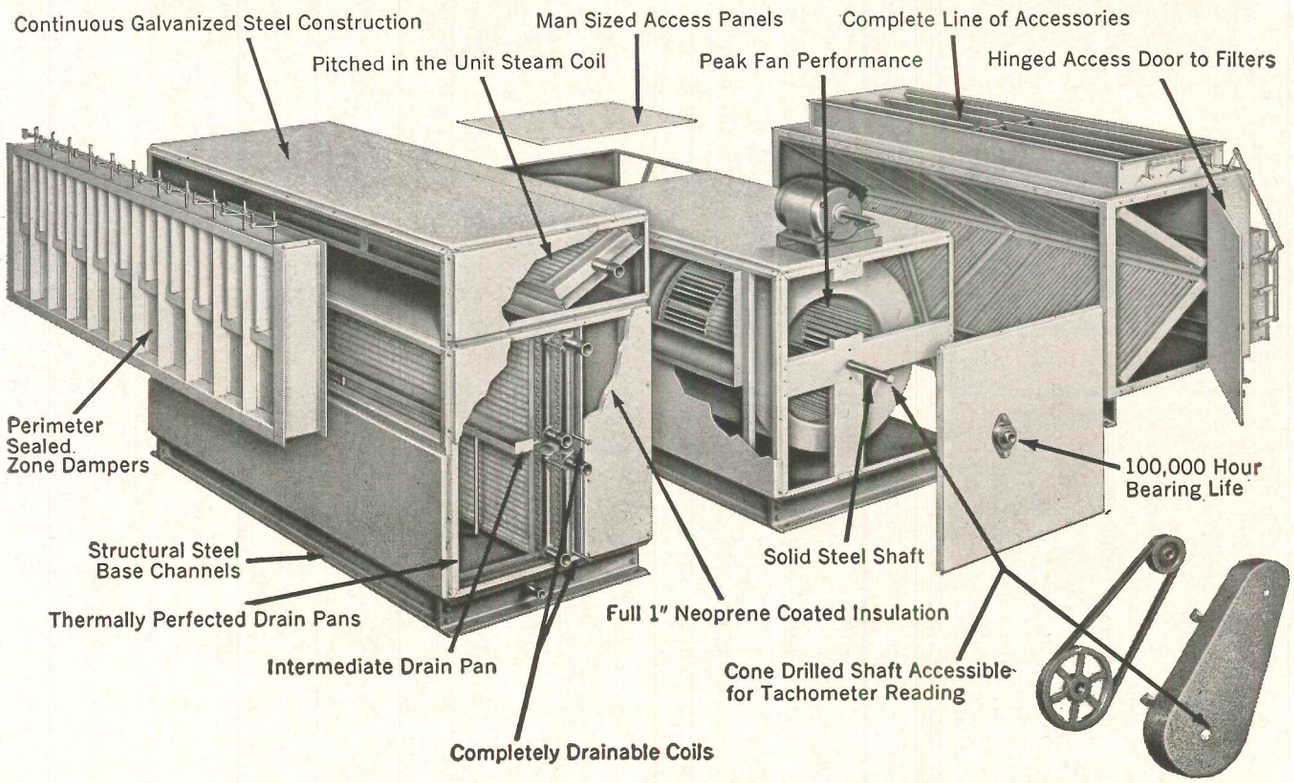
Sectionalized Dura-Frame Construction
All Seasonmaster casings are ruggedly built of heavy-gauge continuous galvanized steel with structural steel supports. McQuay's "Structo-Panel" and "V Channel" design, with little welding to break down, assures greater rigidity and lasting strength while minimizing vibration. Sectional construction adds versatility and makes installation trouble-free.

Full Neoprene Coated Insulation
All panels exposed to conditioned air are fully protected by one-inch thick neoprene coated insulation to guard against sweating. The neoprene coating forms a moisture seal and protects the insulation from air erosion.

Complete Coil Selection
An unlimited selection of McQuay rippled fin Hi-F coils is available to economically match every heating and cooling requirement. Coils for hot or chilled water, steam, or direct expansion are featured with the Seasonmaster in the improved $\frac{5}{8}$" tube size for maximum heat transfer efficiency. All coil headers are wholly enclosed in the coil section, which is insulated and equipped with a full-sized double drain pan. On large units, an intermediate drain pan between coils prevents the bottom coil from being blocked off with condensate. Drain connections are provided on both ends of the drain pan to facilitate ease of piping. Coil connections are gasketed where they come through casings. Coils are completely drainable, with steam coils pitched in the unit for full condensate removal.

Perimeter Sealed Zone Dampers
For multi-zone application, the Seasonmaster features dampers pinned to the damper rod and perimeter sealed neoprene gasketed zone dampers to prevent the dampers from working loose and to virtually eliminate air leakage.

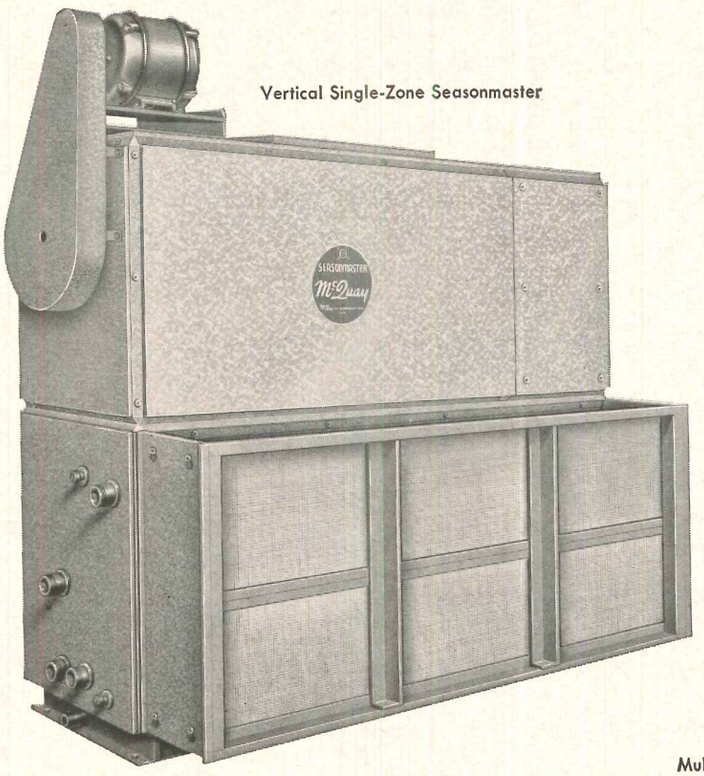
Compact, Space-Saving Design
McQuay Seasonmasters offer greatest flexibility of unit arrangement and full-rated capacity while occupying the smallest amount of space.



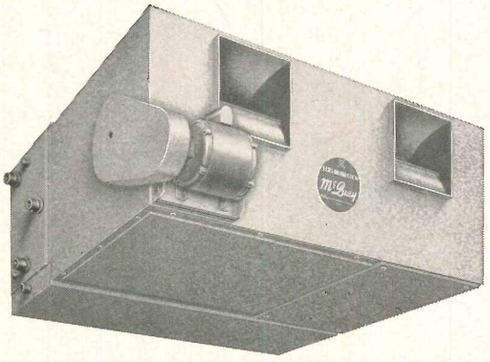
in this versatile line of single and multi-zone

Seasonmaster®

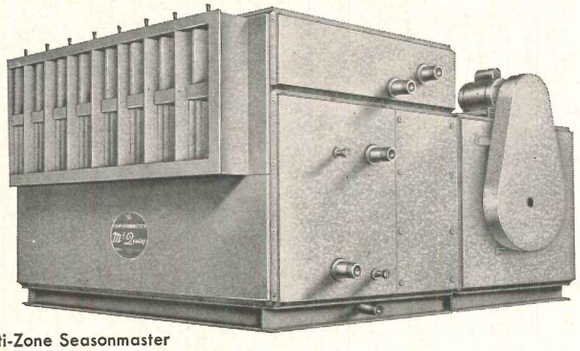
AIR CONDITIONING UNITS



Vertical Single-Zone Seasonmaster



Horizontal Single-Zone Seasonmaster



Multi-Zone Seasonmaster

Dynamically Engineered Blower Assembly

All Seasonmasters feature McQuay's exclusive matched fan assemblies, individually balanced electronically to insure peak performance. Full-sized solid steel shafts are used exclusively. The shaft is cone-drilled with an access hole provided in the belt guard to facilitate the taking of tachometer readings.

100,000 Hour Bearing Life

Bearings used in the Seasonmaster line are of an advanced design that eliminates the four major causes of bearing failure—overloading, inadequate lubrication, contamination, and physical damage. Bearing design assures minimum noise level and vibration. Bearing size is the same as the diameter of the fan shaft—shaft ends are not turned down to compromise smaller size bearings.

Large Access Panels

Easy access to all parts of the Seasonmaster is provided by man-sized panels, making necessary maintenance or service fast and simple. A hinged access door is provided on angular filter sections for easy servicing.

Full Line of Accessories

McQuay Seasonmasters are made even more flexible by a complete line of accessories for air cleaning and mixing and for applications requiring special temperature and humidity control.

Despite all the quality extras you get from McQuay—the extras you pay premium prices for elsewhere—the Seasonmaster is competitively priced. Your McQuay representative is ready to help you select the Seasonmaster that best fits your needs. Or write McQuay, Inc., 1605 Broadway N.E., Minneapolis 13, Minnesota.

McQuay INC. MEANS QUALITY

MAKE THE SEASONS COME TO YOU

AIR CONDITIONING • HEATING • REFRIGERATION

MANUFACTURING PLANTS AT FARIBAULT, MINNESOTA • GRENADA, MISSISSIPPI • VISALIA, CALIFORNIA

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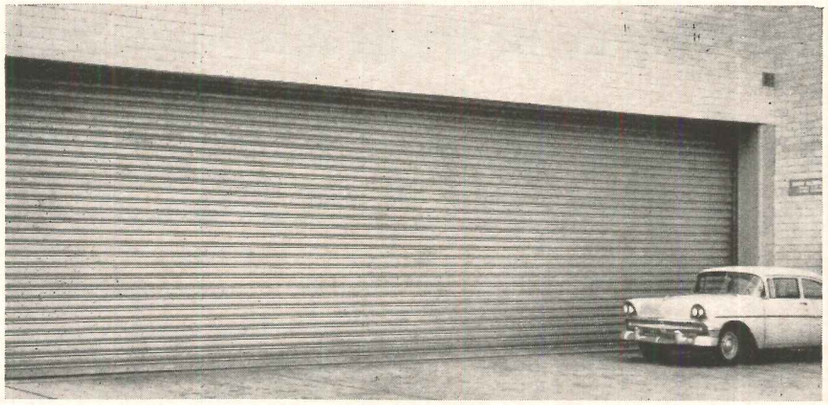

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Are You Overlooking Doors?

STOP . . . wasting storage space with doors that take up needed floor and overhead space when open! STOP . . . wasting valuable man hours with inefficient, back-breaking doors! STOP . . . take a good look at Kinnear ROLLING DOORS! They save time, cut costs, increase protection and add a neat clean-cut appearance to any structure.

Kinnear Doors open straight upward, coiling compactly above the opening, clearing the entire doorway — floor, wall and overhead space, inside and outside the building is always fully useable. When closed, their interlocking all-metal slat curtain provides extra protection against vandals, intruders, wind, weather and fire.

Kinnear Motor Operated Doors offer complete automation, saving valuable time and labor. And, with push-button switches you can have remote control from any number of convenient locations. Their prompt closing cuts loss of heat in winter and cooled air in summer for still greater efficiency.

Extra heavy galvanizing and paint bond give many extra years of service life. Since Kinnear Doors last longer it's important to know that every door is REGISTERED — full details and drawings are kept in fireproof vaults. Even after a half century or more of continuous use any part for any door can easily be replaced. Get all these benefits and more — write today for full details!

KINNEAR® ROLLING DOORS
Saving Ways in Doorways

The Kinnear Manufacturing Co.

FACTORIES:
1860-80 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Representatives in All Principal Cities

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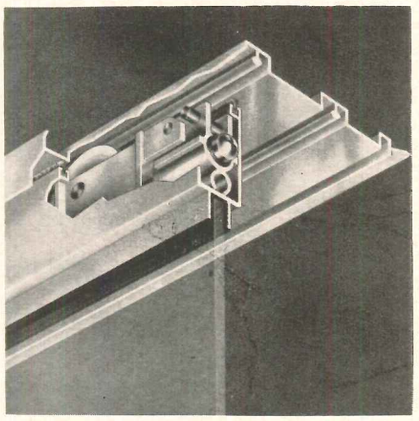
Product Reports

continued from page 242

ALUMINUM SLIDING DOOR

Mildor aluminum glass sliding door can be installed with just one standard-sized screwdriver and can be



interchanged without reversing header, frame or track. *Miller Industries, Inc., 16295 Northwest 13th Ave., Miami 69, Fla.*

CIRCLE 323 ON INQUIRY CARD

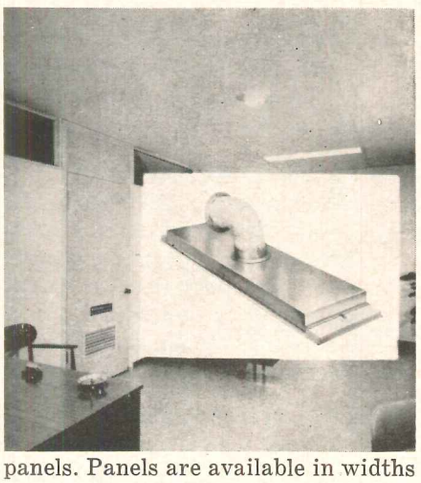
DORMITORY FURNITURE

A line of modular built-in and free-standing furniture for dormitory rooms provides for a variety of floor plans. Ceiling-high wardrobes are available in seven widths, ranging from 24 to 60 in. *Royalmetal Corp., One Park Ave., New York 16, N.Y.*

CIRCLE 324 ON INQUIRY CARD

ACOUSTICAL, AIR DIFFUSER CEILING ASSEMBLY

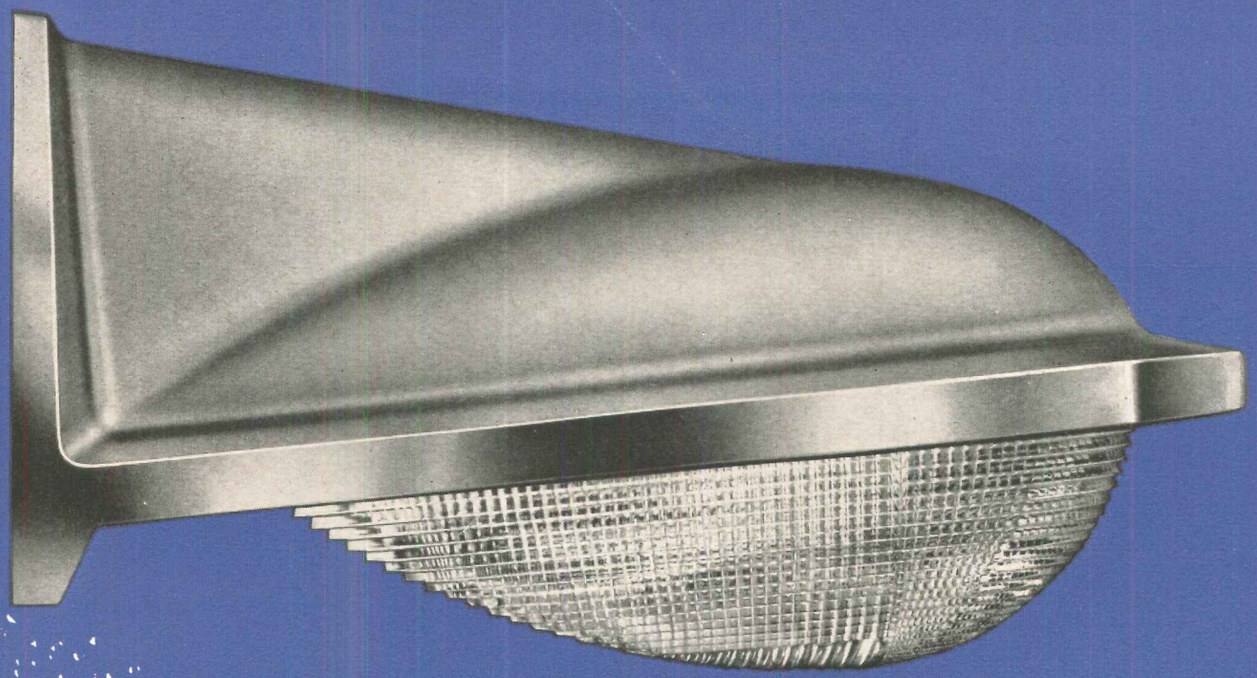
A combination acoustical and air diffusing system integrates *Multi-Vent* air diffusion panels with *Soundlock* metal acoustical ceiling

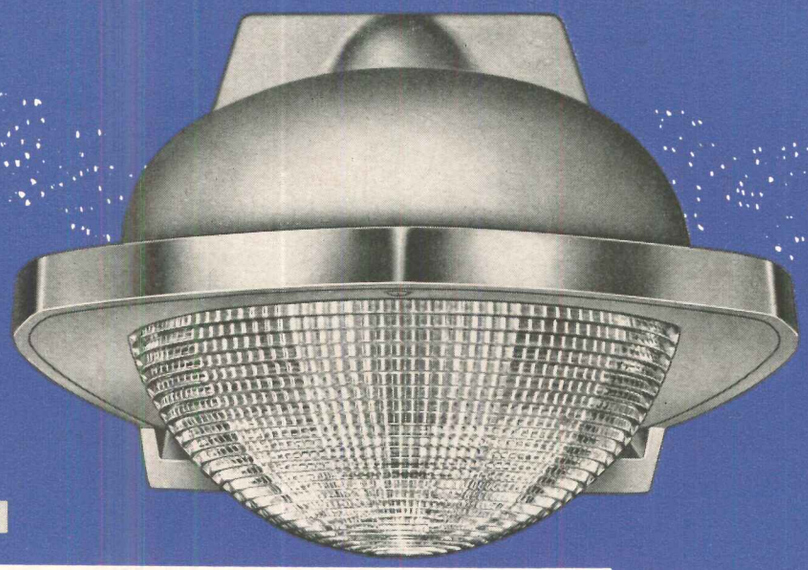


panels. Panels are available in widths from 12 to 30 in. and in lengths up to 6 ft. *The Pyle-National Co., 1334 N. Kostner Ave., Chicago 51, Ill.*

CIRCLE 325 ON INQUIRY CARD

For more data, circle 118 on Inquiry Card →





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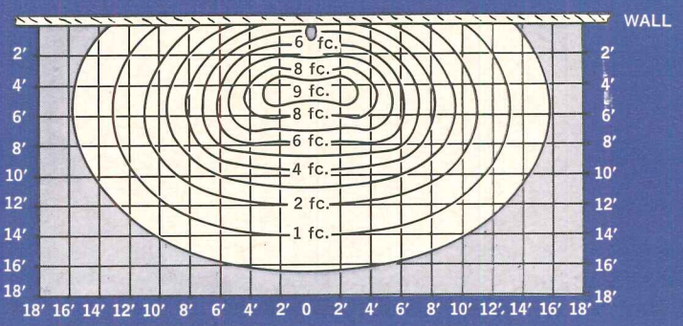
Thunderbird*

UNIQUE AMONG PRISMATIC BRACKETS

1. Dynamic Contemporary Design
2. Best In Light Utilization
3. Minimum High-Angle Glare Light
4. Cast Aluminum — Alzak Finish
5. Extends 11"; max. 5" height and width backplate
6. 2 Sizes: 75/100W and 150/200W
7. Companion Units (White Glass)
8. Write for Brochure.



ISOLUX CHART — 200W T-Bird Bracket at 8'0" mtg. Amazing uniformity and utilization. Spacing not to exceed 2.25 x Mtg. Ht.

*T.M. and Pats. Pending

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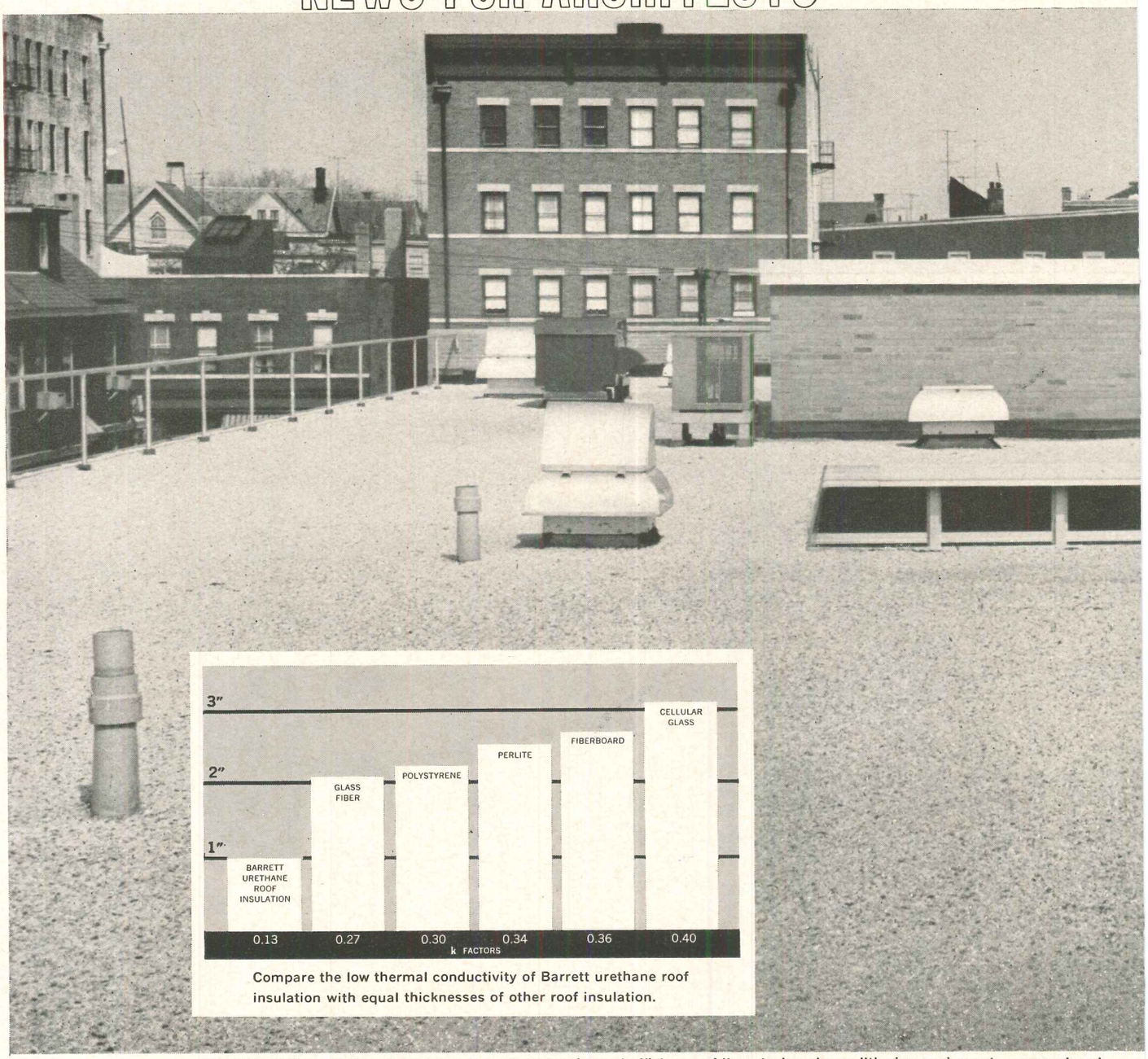
NEWS FOR ARCHITECTS



Compare the low thermal conductivity of Barrett urethane roof insulation with equal thicknesses of other roof insulation.

Barrett urethane roof insulation provides maximum thermal efficiency while reducing air conditioning equipment space and costs.

BARRETT URETHANE ROOF INSULATION CUTS APPLICATION

Save duct and enclosure space, reduce air conditioning equipment size, and provide a more efficient heat and cooling system for your client. You can do this with Barrett urethane roof insulation, a new foamed plastic insulation panel containing billions of tiny, closed cells sandwiched between two layers of a tough roofing membrane. This assembly provides a unique combination of properties which make it a superior roof insulation—particularly for air conditioned or electrically heated buildings, and other structures designed for optimum comfort. Barrett urethane roof insulation has a K factor of 0.13 as compared to a range of 0.27 to 0.40 for commonly used roof insulations. This means you can design a roof that is half as thick, and still maintain maximum thermal efficiency.

Barrett urethane roof insulation is specifically designed to insulate built-up roofs. It will not bend, buckle or melt when mopped with hot pitch or asphalt. It has a rugged, work-on,

AND EQUIPMENT COSTS IN AIR CONDITIONED BUILDINGS

walk-on surface that stands up under normal roof construction. Urethane will not rot or absorb water. For less critical insulation requirements, Barrett offers and recommends surface-sized fiberboard insulation.

Free offer: Send today for a free copy of Barrett's heat transfer calculator, the fast, easy way to determine the thickness of Barrett urethane roof insulation for any insulation value.

BARRETT IS A REGISTERED TRADE MARK OF ALLIED CHEMICAL CORPORATION.

Allied Chemical Corporation, Barrett Division (Dept. AR-4)
40 Rector Street, New York 6, New York

☐ Please send me Barrett's Heat Transfer Calculator.
☐ Please have a representative call.

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COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE_____

Allied Chemical

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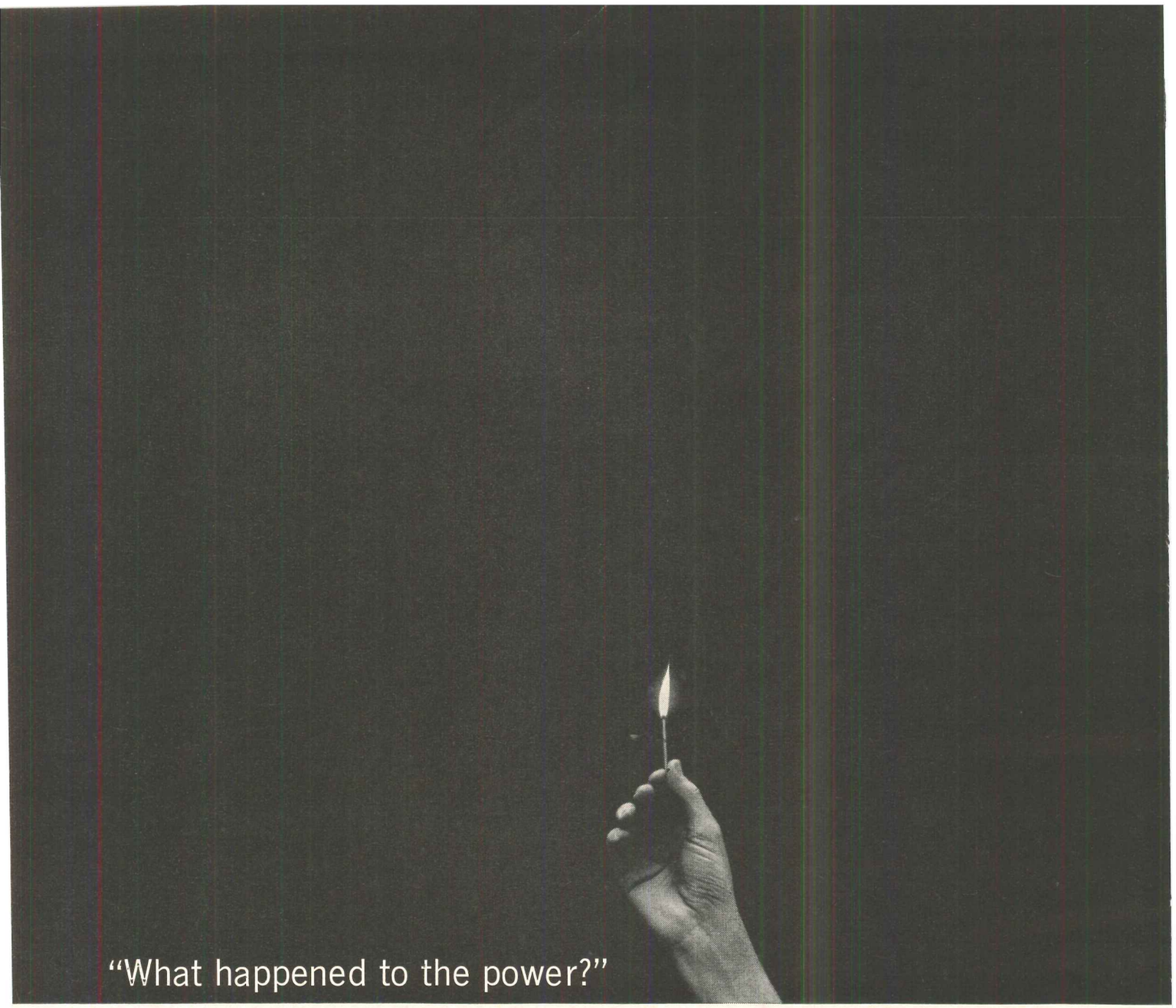


Here's trouble—even in a modern industrial plant. Power failures stop processing systems dead—ruining machinery and materials.

But not in a plant whose vital needs are protected by Caterpillar power. This is how Kearney & Trecker's big machine-tool plant takes advantage of its well-engineered power system.

When one of Kearney & Trecker's highly machined parts is being heat treated, a power failure could stall it in the furnace. Just a few extra moments at such high temperatures could ruin the part.

And—in the same extra moments—the gas atmosphere in the furnace could build up to explosive proportions.

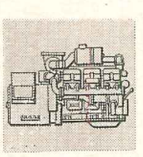
Could, but doesn't. Because a reliable Cat D333 Diesel Electric Set takes over these important power needs immediately, automatically . . . keeping the processing line in motion and supplying power to pumps and protective gas generators. And that's just part of the story of this well-planned installation.

This unit provides complete standby electrical power for all of the boiler room equipment serving this 784,000 sq. ft. facility as well as emergency lighting and power throughout the entire building.

Kearney & Trecker previously had a Cat Electric Set for standby. When their operation expanded, however, more power was needed. The present Cat D333 Electric Set was the answer. And, due to its modern compact design, the D333 produces twice the power of the former unit but occupies exactly the same floor area.

When special requirements call for unusual power generation, remember the versatility and range of the Caterpillar line. For further information on this complete line of Electric Sets, contact your Caterpillar Dealer or write direct for full-color "Cat Electric Sets" brochure.

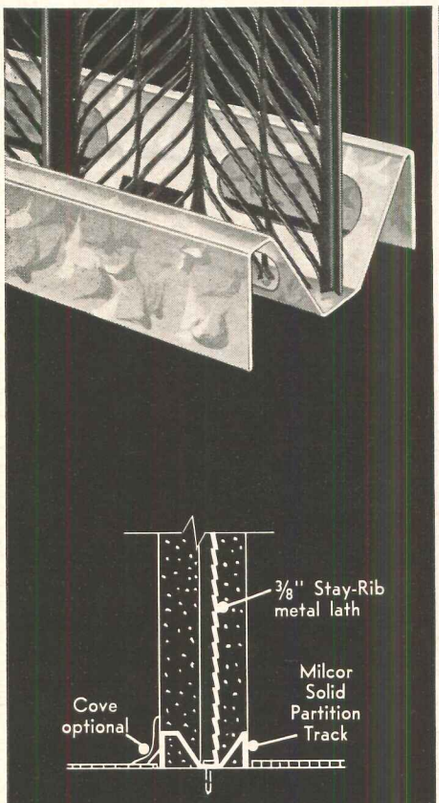
CATERPILLAR
ENGINE POWER



Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

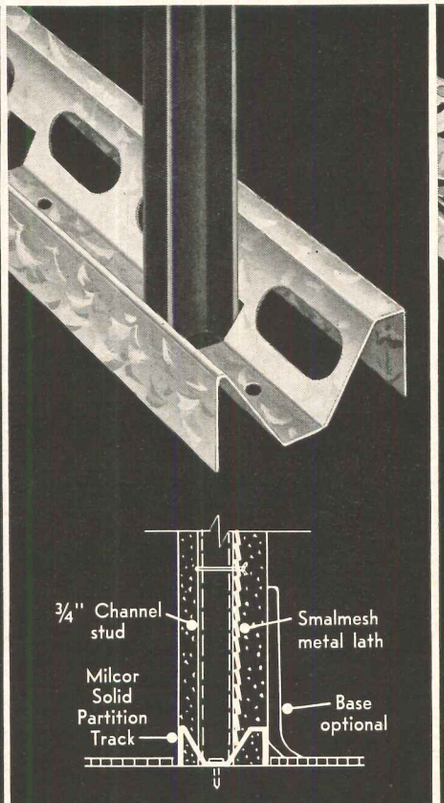
Caterpillar Tractor Co., General Offices, Peoria, Ill. · Caterpillar Americas Co., Peoria, Ill. Caterpillar Overseas S.A., Geneva · Caterpillar of Australia Pty. Ltd., Melbourne · Caterpillar Brasil S.A., São Paulo · Caterpillar Tractor Co. Ltd., Glasgow · Caterpillar of Canada Ltd., Toronto · Caterpillar France S.A., Grenoble · Caterpillar (Africa) (Pty.) Ltd., Johannesburg

For more data, circle 120 on Inquiry Card



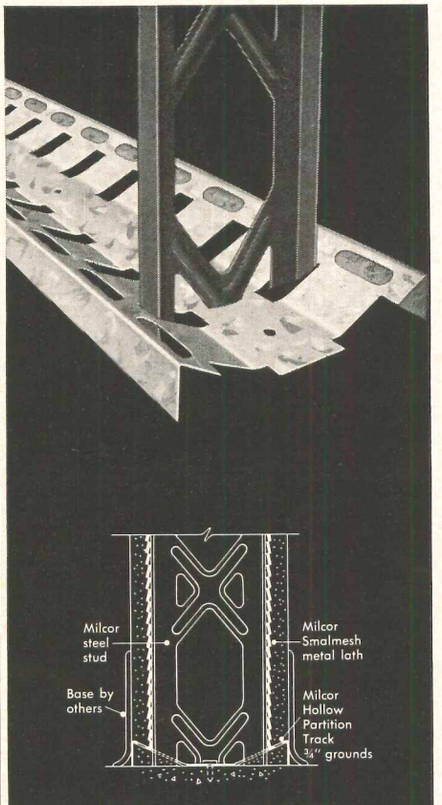
V-groove holds lath without need for ties. Track is galvanized steel, furnished in 2", 2¼" or 2½" widths.

Studless solid plaster partition



Retaining slots 4" o.c. hold channel studs. Track is galvanized steel, furnished 2", 2¼" or 2½" wide.

Channel stud solid partition



Retaining slots 2" o.c. hold Milcor Steel Studs. Track galvanized. Furnished for 3¼" or 4" studs, ¾" or ⅞" grounds.

Steel stud hollow partition

New Milcor Partition Tracks

speed and improve installation of non-bearing plaster walls!

Strong, fire-resistant, metal reinforced plaster walls can be installed faster than by previous methods, because erection is simplified. These new Milcor floor tracks: 1. Eliminate ties, stud shoes or other supplemental fastening of studs at the floor; 2. Save installation of separate plastering grounds; 3. Provide desired stud spacing without premeasuring. ◆ Straight, level walls with full plaster thickness are assured. Retaining slots automatically align the studs. The sides of the track provide strong, true, uniform plastering grounds — protected against damage from on-site traffic by the strength of the inverted channel design. ◆ For further information, see Sweet's section 12a/In or write for Cat. 202.

ML-63

Member of the INLAND Steel Family

MILCOR®

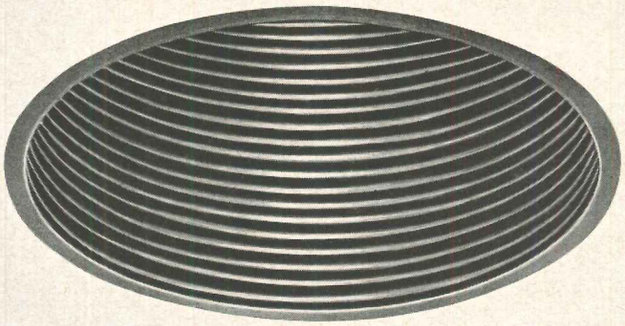
Inland Steel Products Company

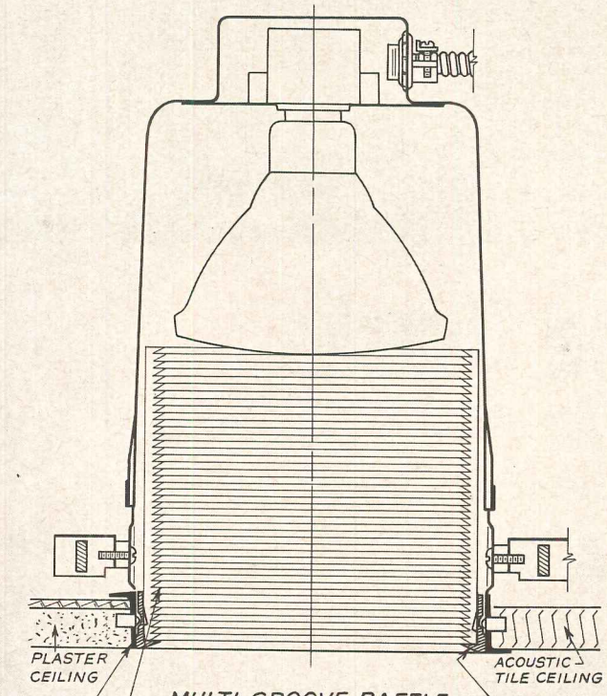
DEPT. E, 4033 WEST BURNHAM STREET, MILWAUKEE 1, WISCONSIN

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

For more data, circle 121 on Inquiry Card

Almost nothing to show for your money



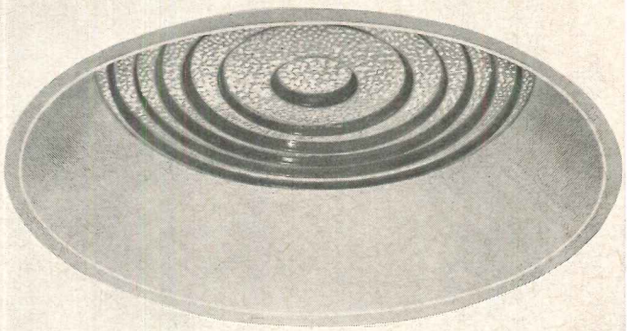


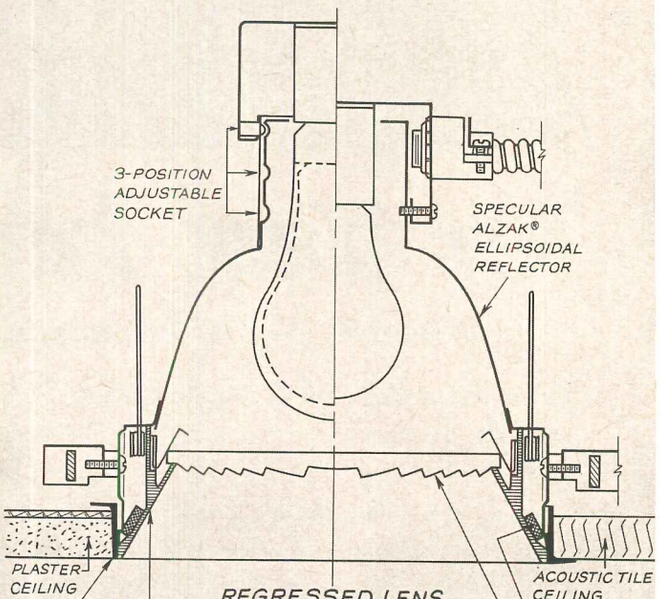
MULTI-GROOVE BAFFLE

BAFFLE: MOLDED HIGH TEMP. PHENOLIC, MATTE BLACK, FINE-SCALED CONCENTRIC GROOVES MINIMIZE REFLECTED GLARE (U.S. PAT. NO. 3,040,172).

DIE CAST BAFFLE RETAINER FOR PRECISE MATING FIT, SATIN BLACK.

DIE CAST REVERSIBLE PLASTER FRAME, PRECISE JOINT, NON-CORROSIVE, BAKED SATIN WHITE ENAMEL (U.S. PAT. NO. 2,998,511 & OTHERS PENDING).





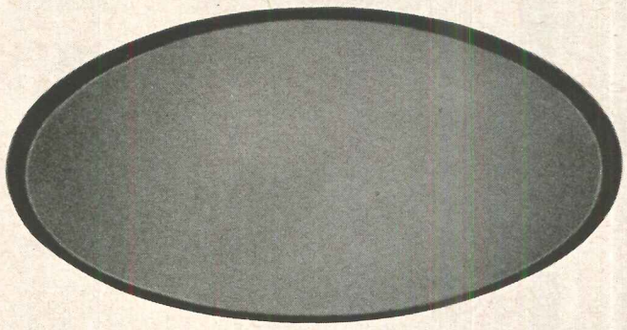
REGRESSED LENS

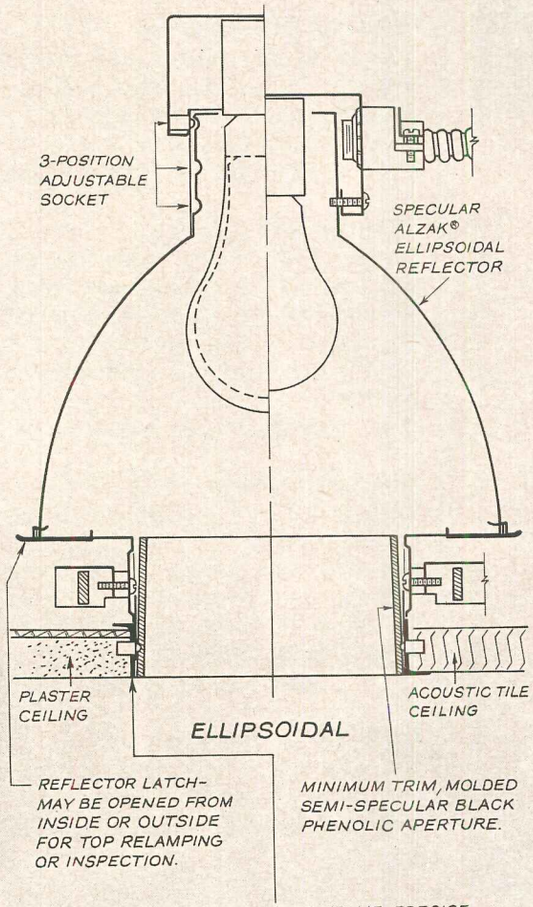
DIE CAST LENS BEZEL, LENS REGRESSED 1½", BAKED SATIN WHITE ENAMEL.

FRESNEL LENS, BLACK COLOUVERING®

BLACK POLYURETHANE LIGHT AND DUST SEAL.

DIE CAST REVERSIBLE PLASTER FRAME, PRECISE JOINT, NON-CORROSIVE, BAKED SATIN WHITE ENAMEL (U.S. PAT. NO. 2,998,511 & OTHERS PENDING).



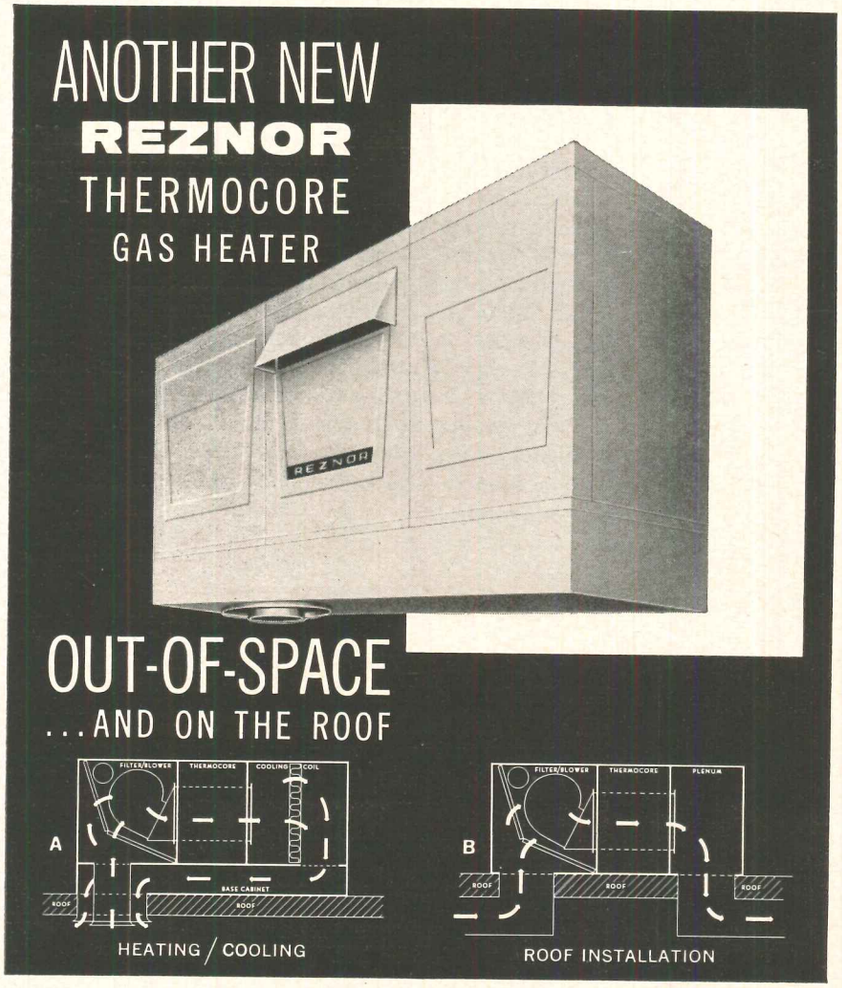


Just a minimum of trim. Hardly a trace of surface brightness. No awareness of light source. But the discerning professional sees at a glance that Lightolier gives him much more than meets the eye with these new Calculites. The secret of the disappearing trim is Duo-Cast®—Lightolier's exclusive die-cast reversible combination trim and plaster frame. These photos and mechanical drawings reveal the kind of precision mating and clean detailing now possible with Calculites. Shown here are but three of the 96 sizes and styles of Calculites available to solve your wide, narrow and medium beam downlighting problems. See them at Lightolier Showrooms in New York, Chicago, Dallas and Los Angeles—or at any of these Lightolier Distributors:

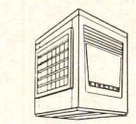
ALABAMA Birmingham: Mayer Elec. Sup. Co. **Mobile:** F. E. Smith Elec. Co. **ALASKA Anchorage:** Northern Sup. Co. **ARIZONA Phoenix:** Brown Wholesale Elec. **Tucson:** Beacon Ltg. Fix. Co. **ARKANSAS Little Rock:** Adcock Ltg. & Sup. **CALIFORNIA Bakersfield:** San Joaquin Whlse. Elec. Co. **Fresno:** Electrical Suppliers, Inc., Incandescent Sup. Co. **Los Angeles:** Gough Industries, Inc., Osipow Elec. **Oakland:** Incandescent Sup. Co. **Palm Springs:** Tri-County Elec. Whlsrs. **Redding:** Incandescent Sup. Co. **Riverside:** Tri-County Elec. Whlsrs. **Sacramento:** Capital Whlse. Elec. Co., Incandescent Sup. Co. **San Bernardino:** Tri-County Elec. Whlsrs. **San Diego:** Sunlight Elec. Sup. Co. **San Francisco:** California Elec. Sup. Co., Incandescent Sup. Co. **San Jose:** Incandescent Sup. Co. **Stockton:** Phillips & Edwards Elec. **COLORADO Denver:** Central Elec. Sup. Co. **CONNECTICUT Bridgeport:** B. M. Tower Co., Inc. **Hartford:** Beacon Light & Sup. Co. **New Haven:** Grand Light & Sup. Co. **New London:** United Elec. Sup. Co. **South Norwalk:** Klaff's Inc. **Stamford:** Marle Co. **Waterbury:** Starbuck Sprague Co., Suburban Supply Co. **DELAWARE Wilmington:** Tecot Elec. Sup. **DISTRICT OF COLUMBIA Washington:** Maurice Elec. Sup. Co., National Elec. Wholesalers **FLORIDA Miami:** Farrey's Whlse. Hdwe. Co. **GEORGIA Atlanta:** Atlanta Ltg. Fix. Co., Electrical Wholesalers, Noland Co. **Augusta:** Hart Elec. Sup. Co. **Columbus:** P. & W. Elec. Sup. Co. **Macon:** Noland Co. **HAWAII Honolulu:** Hawaiian Light & Sup. Co. **ILLINOIS Champaign:** Tepper Elec. Sup. Co. **Chicago:** Creative Lighting Division–Elec. Whlsrs., Efengee Elec. Sup. Co., Englewood Elec. Sup. Co., Harlo Elec. Sup. Co., Hyland Elec. Sup. Co., Metropolitan Elec. Sup., Steiner Elec. Co., Wholesale Elec. Sup. Co. **Elgin:** Fox Elec. Sup. Co. **Joliet:** Joliet Elec. Sup. **Kankakee:** Lang Elec. Sup. Co. **Rockford:** Englewood Elec. Sup. Co. **Springfield:** Springfield Elec. Sup. Co. **INDIANA Ft. Wayne:** Mossman-Yarnelle Co. **Gary:** Englewood Elec. Sup. Co. **South Bend:** Englewood Elec. Sup. Co. **IOWA Des Moines:** Weston Lighting, Inc. **KANSAS Kansas City:** W. T. Foley Elec. Co. **Wichita:** Architectural Lighting, Inc. **KENTUCKY Louisville:** Henry J. Rueff Co. **LOUISIANA Baton Rouge:** Electrical Wholesalers, Inc. **Harvey:** I. C. Elec. Sup. **New Orleans:** Interstate Elec. Co., Lighting Inc. **MAINE Bangor:** Standard Elec. Co. **Portland:** Holmes Elec. Supply Co. **MARYLAND Baltimore:** Baltimore Gas Light Co., Dominion Elec. Sup. Co., Dorman Elec. **Hagerstown:** Noland Co., Tristate Elec. Sup. Co. **Salisbury:** Artcraft Elec. Sup. Co. **MASSACHUSETTS Boston:** Boston Lamp Co., Mass. Gas & Elec. Light Co., Henry L. Wolfers, Inc. **Pittsfield:** Carr Supply Co. **Springfield:** Eastern Elec. Sup. Co., M. W. Zimmerman, Inc. **Waltham:** Standard Elec. **Worcester:** Benjamin Elec. Sup. Co. **MICHIGAN Benton Harbor:** West Michigan Elec. Co. **Detroit:** Fife Elec. Co., Madison Elec. Co., Michigan Chandelier Co. **Flint:** Royalite Co. **Grand Rapids:** Enterprise Elec. Sup. Co. **Jackson:** Electric Wholesale Sup. Co. **Kalamazoo:** West Michigan Elec. Co. **Lansing:** Michigan Elec. Sup. Co. **Muskegon:** Fitzpatrick Elec. Sup. Co. **Pontiac:** Standard Elec. Sup. Co. **Saginaw:** Schmerheim Elec. Co., Standard Elec. Sup. Co. **MINNESOTA Duluth:** Northern Elec. Sup. Co. **Minneapolis:** North Central Elec. Distr. Co., Northland Elec. Sup. Co., Terminal Elec. Corp., Whlse. Ltg. Elec. Sup. Co. **St. Paul:** Lax Elec. Co. **MISSISSIPPI Jackson:** Stuart C. Irby Co. **MISSOURI Kansas City:** Glasco Elec. Co., Rossner Elec. Sup. Co. **St. Louis:** M. K. Clark, Glasco Electric Co. **Springfield:** Southern Materials Co. **MONTANA Great Falls:** Glacier State Elec. **Missoula:** Western Montana Elec. **NEBRASKA Lincoln:** White Electric Supply Co. **Omaha:** Electric Fix. & Sup. Co. **NEVADA Reno:** Western Elec. Dists. Co. **NEW HAMPSHIRE Portsmouth:** Mass. Gas & Elec. Light Co. **NEW JERSEY Atlantic City:** Franklin Elec. Sup. Co. **Camden:** National Elec. Sup. Co. **Cherry Hill (Delaware Township):** Flynn's Camden Elec. Sup. Co. **NEW MEXICO Albuquerque:** The Lighting & Maint. Co. **NEW YORK Binghamton:** Freije Elec. Sup. Co. **Buffalo:** Buffalo Incand. Light Co. Inc. **Nanuet (Rockland Co.):** Rockland Lighting **Niagara Falls:** Hysen Supplies Inc. **Poughkeepsie:** Electra Sup. Co. **Rochester:** Rowe Electric Sup. Co. **Schenectady:** American Elec. Sup. Co. **Syracuse:** Superior Elec. Corp. **White Plains:** Wolar Lighting Corp. **NORTH CAROLINA Asheville:** Electric Sup. Co. **Charlotte:** Independent Elec. Sup. Co. **Durham:** Noland Co. **Greensboro:** Elec. Sup. & Equip. Co. **High Point:** Electric Sup. Inc. **Kinston:** Kinston Elec. **Raleigh:** Electrical Equipment Co. **Winston-Salem:** Noland Co. **NORTH DAKOTA Fargo:** Border States Elec. Sup. Co. **OHIO Akron:** The Sacks Elec. Sup. Co. **Alliance:** Robertson Sup. Co. **Cincinnati:** B. & B. Elec. Co., F. D. Lawrence Electric Co., Richards Elec. Sup. Co. **Cleveland:** The H. Leff Electric Co., Midland Elec. Co. **Columbus:** Elgee Elec. Co., The Loeb Elec. Co. **Dayton:** Duellman Elec. Co. **Lima:** State Elec. Sup. Corp. **Springfield:** The W. W. Elec. Co. **Toledo:** Gross Elec. Fix. Co. **OKLAHOMA Oklahoma City:** Elec. Sup. of Oklahoma, Hunzicker Bros. **OREGON Portland:** Baker-Barkon Co., Malloy Robinson Co. **PENNSYLVANIA Allentown:** Coleman Elec. Co. **Erie:** Kraus Elec. Co. **Harrisburg:** Fluorescent Sup. Co., Schaedler Bros. **Hazleton:** Power Elec. Co. Inc. **Lancaster:** Graybill's **New Castle:** Midwestern Elec. Co. **Norristown:** Norristown Elec. Sup. Co. **Philadelphia:** Gold Seal Elec. Sup. Co., Logan Elec. Sup. Co., Inc., Pyramid Elec. Sup. Co., Inc., Rumsey Elec., Silver's Elec. Sup. Co., Sylvan Elec. Fix. Co., West Phila. Elec. Sup. Co. **Pittsburgh:** Allied Elec. Sup. Co., Argo Lite Studios, Brown & Green, Wally Elec. Sup. Co. **Reading:** Coleman Elec. Co. **Scranton:** Lewis & Reif, Inc. **Uniontown:** Pioneer Electric Dist. **West Chester:** West Chester Elec. Sup. Co. **Wilkes-Barre:** Anthracite Elec. **Williamsport:** Lowry Electric Co. **York:** Graybill's **RHODE ISLAND Pawtucket:** Major Elec. Sup. Co. **Providence:** Leavitt Colson Co., Tops Elec. Sup. Co. **SOUTH CAROLINA Columbia:** Capital Elec. Sup., Noland Co. **Greenville:** Sullivan Hdwe. Co. **SOUTH DAKOTA Watertown:** J. H. Larson Elec. Co. **TENNESSEE Chattanooga:** Mills & Lupton Sup. Co., Noland Co. **Knoxville:** The Keener Co. **Memphis:** Belvedere Lighting Co. **Nashville:** Nashville Elec. Sup. Co. **TEXAS Brownsville:** Electric Fix. Sup. Co. **Dallas:** Rogers Elec. Sup. Co. **El Paso:** E & M Supply Co. **Ft. Worth:** Anderson Fixture Co., Cummins Supply Co., General Industrial Sup. Corp. **Houston:** Anderson Lighting Co., Gulf Coast Elec. Sup. Co., Inc., Marlin Associates, Worth Elec. Sup. Co. **Lubbock:** Homer G. Maxey & Co. **San Antonio:** Electrical Distrib. Co., Southern Equip. Co., Worth Elec. Sup. Co. **Waco:** Dealers Elec. Sup. Co. **VIRGINIA Arlington:** Dominion Elec. Sup. Co. Inc., Noland Co. **Lynchburg:** Mid-State Elec. Sup. Co., Inc. **Norfolk:** Noland Co. **Richmond:** Atlantic Elec. Sup. Co. **Roanoke:** Noland Co. **WASHINGTON Seattle:** Seattle Lighting Fix. Co. **WEST VIRGINIA Bluefield:** Bluefield Supply Co. **Charleston:** Capitol Light Co., Goldfarb Elec. Sup. Co. **Wheeling:** The Front Co. **WISCONSIN Appleton:** Moe Northern Co. **Eau Claire:** W. H. Hobbs Supply Co. **La Crosse:** W. A. Roosevelt Co. **Milwaukee:** Electri-Craft Lighting, Lappin Electric Co., Standard Elec. Sup. Co. **Racine:** Milch Elec. Sup. Co. **CANADA Edmonton:** Alberta Elec. Sup. Ltd. **Montreal:** L.D.G. Products, Inc., Union Elec. Sup. Co. Ltd. **Toronto:** Revere Elec. Dist., Toronto Ltg. Studios, Union Elec. Sup. **PUERTO RICO San Juan:** Sole Electric

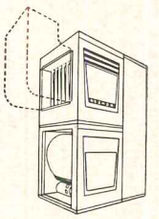
LIGHTOLIER®

For more data, circle 122 on Inquiry Card



SO GOES THE UNIT HEATER! Now what does this mean to you? Why, it means that the only visible part of the heating apparatus is a simple ceiling diffuser. This is made possible by Reznor's new heat center called THERMOCORE. A cabinet blower draws air from the room through the center of the diffuser and filters. THERMOCORE warms the air which is returned to the room through the base cabinet as shown in diagram A. Diagram B shows an installation without the base cabinet where two roof openings and ceiling diffusers are used. Or you can pick a Reznor roof-mounted unit that adds cooling too. But remember, you don't have to go outside with Reznor's new line of unit heaters or Reznor's heating and heating/cooling systems. Because the line is so broad, you can pick an assembly to go with THERMOCORE! Result: You get the exact comfort you want. Look for REZNOR in the yellow pages and write today for literature about Reznor roof-mounted unit and heating systems.





REZNOR®

REZNOR MANUFACTURING CO.
Dept. AR-3 **MERCER, PENNSYLVANIA**
A Division of BELL & GOSSETT CO.

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Office Literature

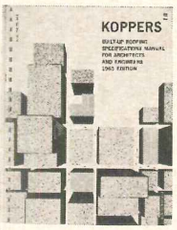
continued from page 204

WOOD LAB FURNITURE

A revised edition of "Recommended Specifications for Wood Laboratory Equipment" establishes minimum requirements for scientific laboratory equipment installations. *Laboratory Equipment Section, Scientific Apparatus Makers Assoc., 20 N. Wacker Dr., Chicago 6, Ill.*

CIRCLE 418 ON INQUIRY CARD

BUILT-UP ROOFING



(A.I.A. 12-B) A 28-page specification manual for built-up roofing gives complete details for new roof construction, re-roofing, insulation, flashing, waterproofing and dampproofing for flat and steep decks using a variety of deck materials. *Tar Products Div., Koppers Co., Inc., The Koppers Bldg., Pittsburgh 19, Pa.**

CIRCLE 419 ON INQUIRY CARD

MOBILE BLEACHERS

(A.I.A. 13-J-1) Mobile steel bleachers with detachable wheel unit are described in folder. *Standard Steel Bleacher Div., Three Rivers, Mich.*

CIRCLE 420 ON INQUIRY CARD

WASHROOM DESIGN

(A.I.A. 29-J) Basic washroom designs for office buildings, service stations and factories are described and illustrated in 16-page booklet, No. 2694. *Scott Paper Co., Philadelphia 13, Pa.**

CIRCLE 421 ON INQUIRY CARD

CRYSTAL LIGHT FIXTURES

(A.I.A. 13-F-2) Custom-made Italian crystal lighting fixtures, ranging in size from 6-in. globes to 7-ft chandeliers, are illustrated in 16-page booklet. *A. W. Pistol, Inc., 8-10 Drake Ave., New Rochelle, N.Y.**

CIRCLE 422 ON INQUIRY CARD

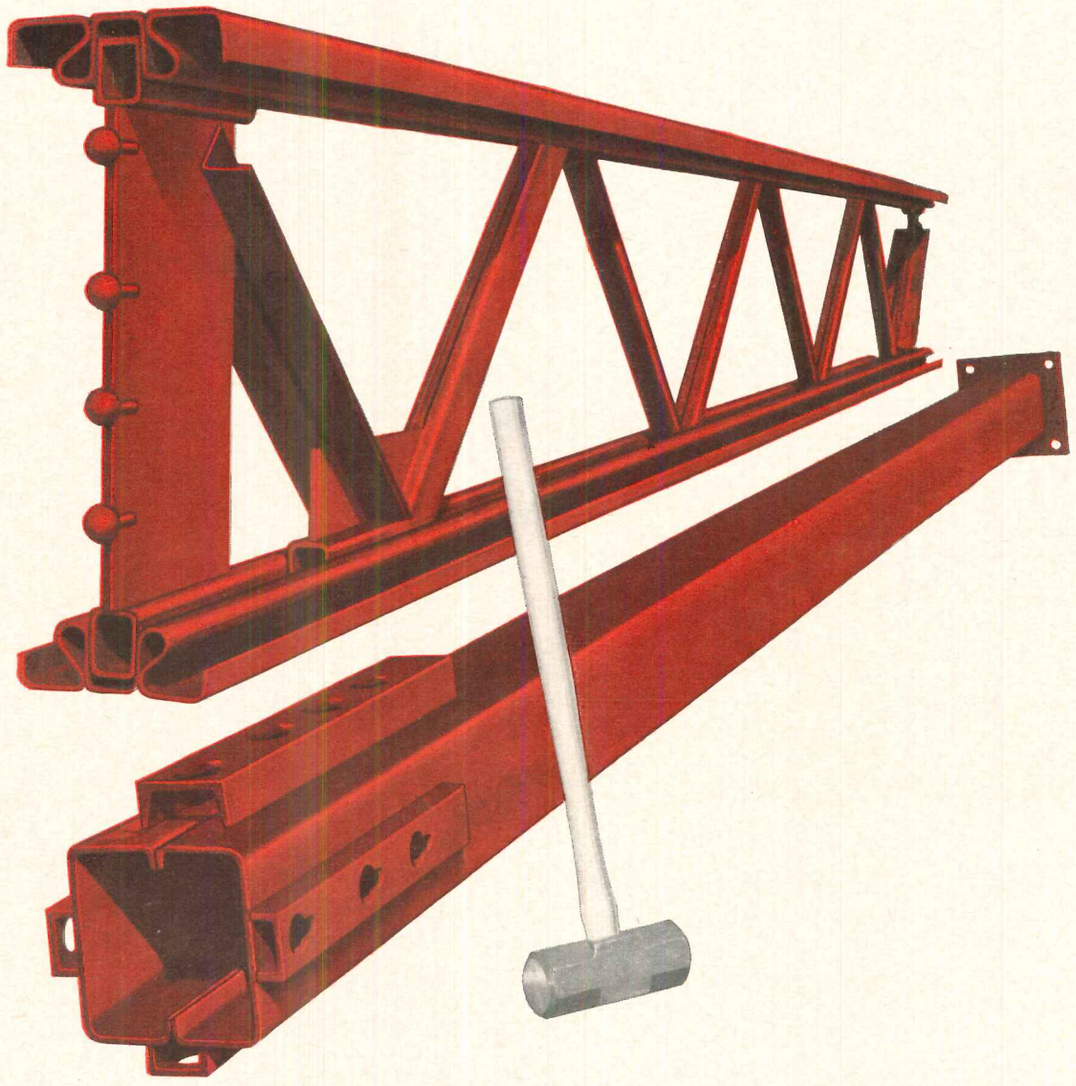
DRAFTING TABLES

Drafting tables with fingertip control of board positioning are described in folder. *Hamilton Mfg. Co., Two Rivers, Wis.*

CIRCLE 423 ON INQUIRY CARD

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

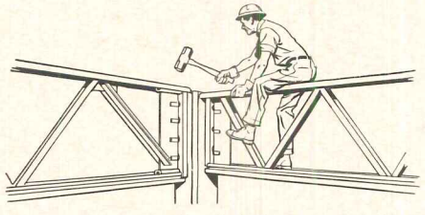
more literature on page 266



The complete light construction kit

(NO ON-THE-JOB BOLTING, WELDING OR RIVETING)

Only a sledge is necessary to tap V-LOK® framing into place. Simplified assembly of this strong, rigid system



means you can build *faster*, with resultant savings in time and money. Income-producing occupancy begins weeks sooner.

This comprehensive system is ideal for all light construction such as schools, warehouses, shopping centers and factories. Important from a long-range standpoint, V-LOK facilitates future expansion. Architects and builders are now specifying V-LOK more than ever. You will too when you become acquainted with it. Write today for our complete Design Manual.

Steel

MACOMBER INCORPORATED

CANTON 1, OHIO

SUBSIDIARY OF SHARON STEEL CORPORATION

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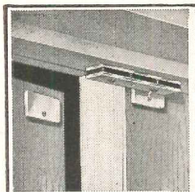
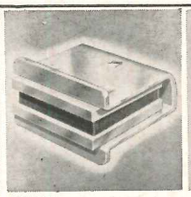
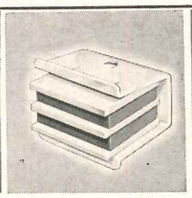
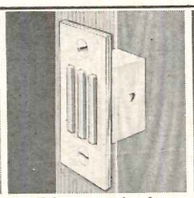
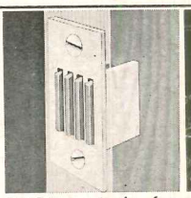
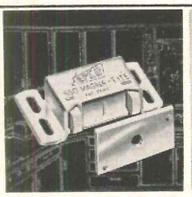

#543 catch for pairs of large doors

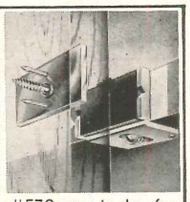

#555 snap-in catch for metal doors

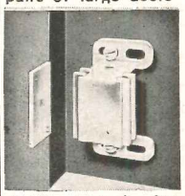

#558 snap-in catch for metal doors

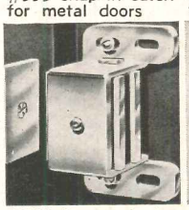

#556 catch for 1⅜" sliding doors

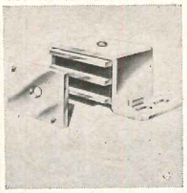

#557 catch for heavier sliding doors

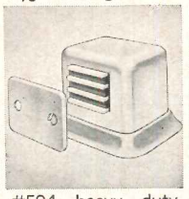

#560 catch for cabinet doors


#570 catch for fine furniture

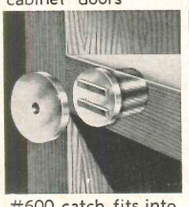

#590 catch for cabinet doors

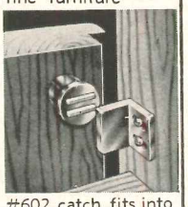

#591 heavy duty catch for cabinets


#592 extra heavy catch for doors


#594 heavy duty magnetic door stop

#595 magnetic door closer assist

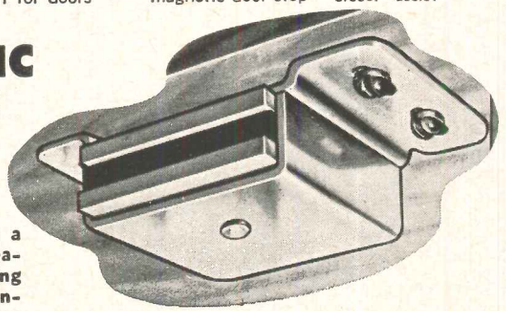

#600 catch fits into ⅝" bore in shelf

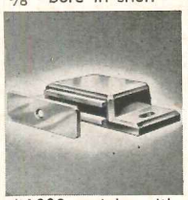

#602 catch fits into ⅞" bore in door

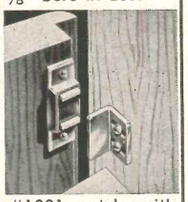
EPCO MAGNETIC CATCHES

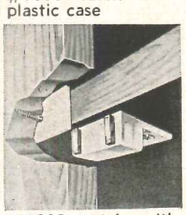
to meet every need or specification!

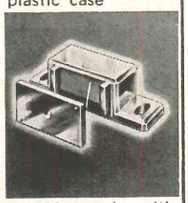
The EPCO family of catches includes a style for every building need. Each features "touch" closing and secure holding power. Each is self-aligning to an enlarged strike, and to mount in diverse ways simply and quickly. Each is handsomely encased and has lifetime magnets.


#593 magnetic catch with extremely heavy duty holding power for large passage doors


#1000 catch with plastic case


#1001 catch with plastic case


#1002 catch with plastic case


#1003 catch with plastic case

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FREE 32-Page Catalog on all EPCO magnetic catches, track and pulls available on request.

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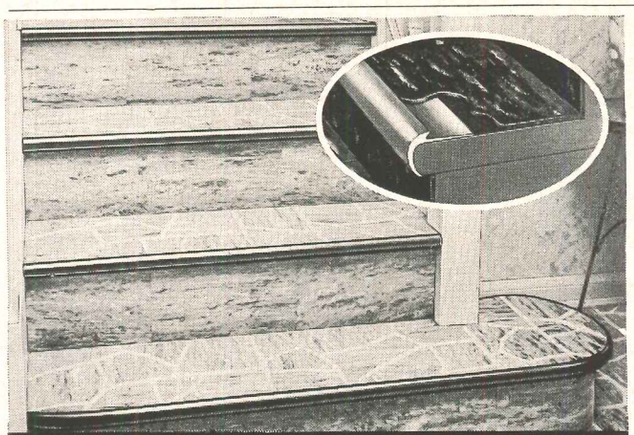

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Designed to remain beautiful, this 100% flexible, highest-quality Bull-Type vinyl affords scuff-proof, wear-resistant and washable nosings on Residential, Commercial and Institutional staircases. Available in 7 Decorator colors to enhance any decor. Mercer Stair Nosing affords fast, simple installation with contact cement, for straight and contour forming. Suitable for .125 and .080 materials. 12' and 3' lengths packed 120' per carton. Ask to see Mercer NITE-GLO Stair Nosing . . . illuminates in the dark for extra safety.

In Gold, Pearl-White, Pearl-Beige, Black, Dark Brown, Beige and Gray.

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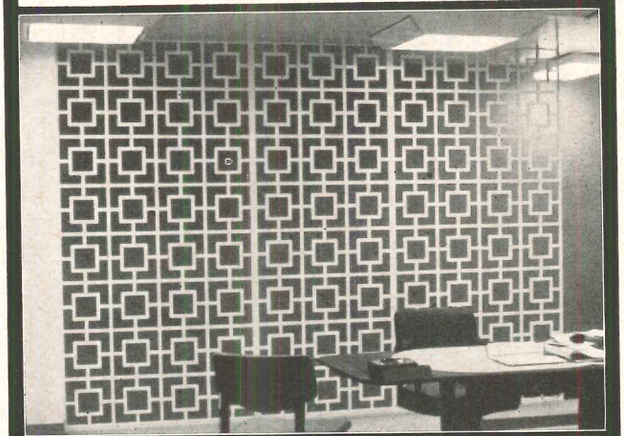
. . . Architects Voorhees, Walker, Smith, Smith and Haines used KARVALUM® screens in Union Square Savings Bank in New York. Available in more than 100 patterns (R-16 shown) and in a variety of colors and thicknesses KARVALUM® screens and grilles may solve your decorative security problems. Write for catalog EMK-61 showing other patterns, applications and technical information.



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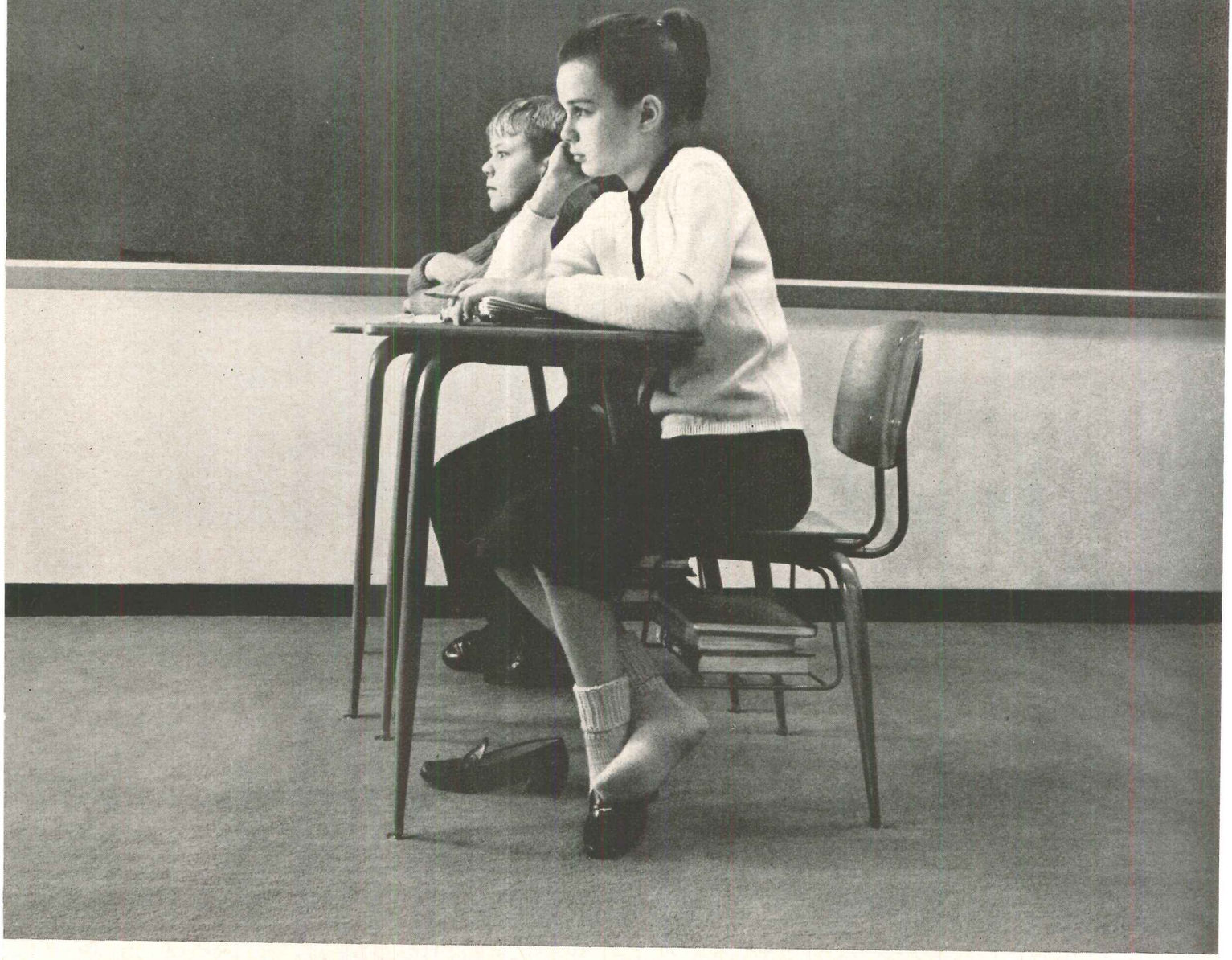
This high school girl does less giggling and whispering in class and she's paying more attention to her work. What's the reason?



Carpeting.

Carpeting in schools is past its pioneer stage. Many schools, public and private, all over the country have had carpeting for some time now, and some remarkable things have happened.

As expected, carpeted floors improved classroom acoustics and cut down on corridor noise.

But—and this came as a surprise—carpeting had interesting psychological effects on students of all ages.

For example, at Shaker High School in Newtonville, N.Y., there was less fooling around, less dropping of books and pencils. It was quieter in the halls. Students showed more pride in the looks of their school, more interest in studying.

And—this may come as another surprise—carpeting is actually very economical to maintain. A few quick minutes with the vacuum every day and classrooms and corridors are in shape.

What kind of carpeting should you pick for a school? A good choice is carpeting made with Acrilan® acrylic fiber in the pile.

Acrilan is the man-made fiber that is as practical as it is luxurious: in one classroom, at Shaker High, carpeting made with Acrilan has been down 4 years, has not shown signs of wear, has never needed a complete cleaning.

Thinking of putting acoustical floor covering in a school? Trust the big red "A."

For more information contact School Carpet Department, Chemstrand, 350 Fifth Avenue, New York 1.

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acrylic fiber
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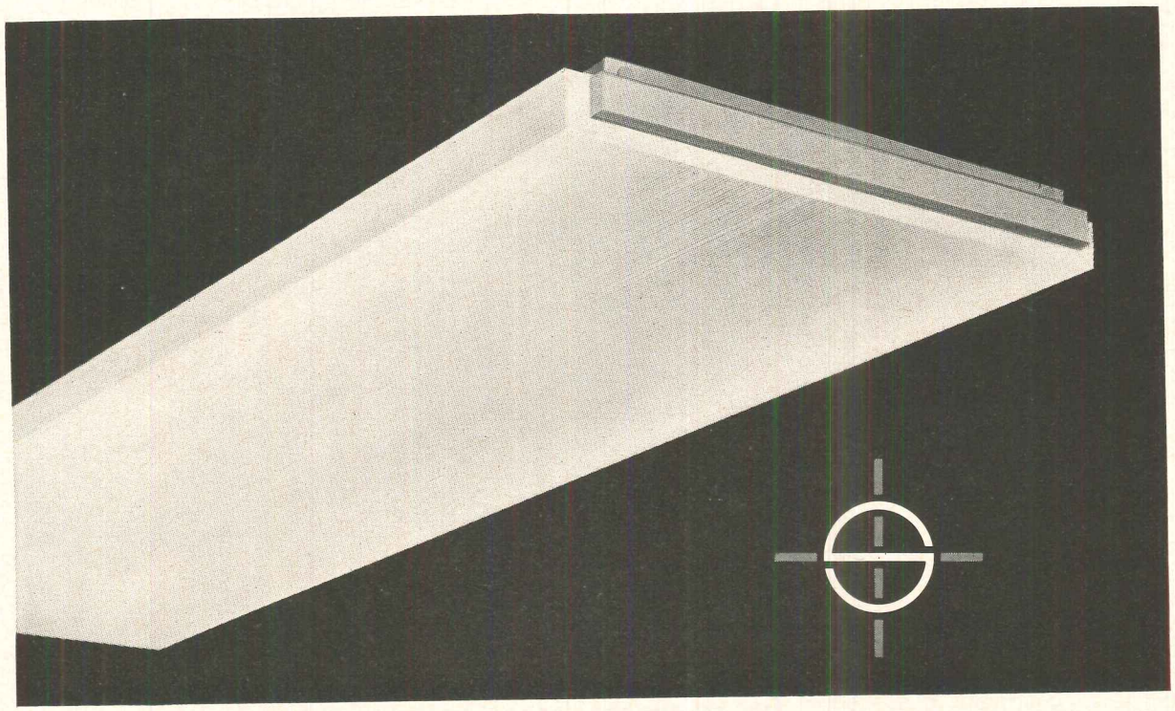
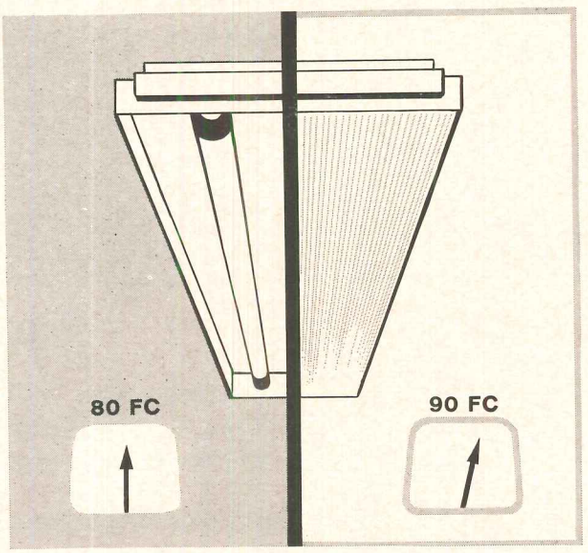


Smithcraft **Dominaire**

The secret is in the lens

Dominaire's extreme thinness with high lighting efficiency and well controlled light distribution is due to Smithcraft's carefully designed lens shielding. Light meter readings at the working plane are actually higher with the shielding in position than with the shielding removed. A high degree of uplighting minimizes contrast. Dominaire is totally lens-enclosed (apparent depth is only 1½"). Installs easily as a unit or in rows for a free-flowing unbroken line. Easy to relamp. In acrylic or styrene; 2 or 4 Rapid-Start lamps. See your Smithcraft representative, or write for details.



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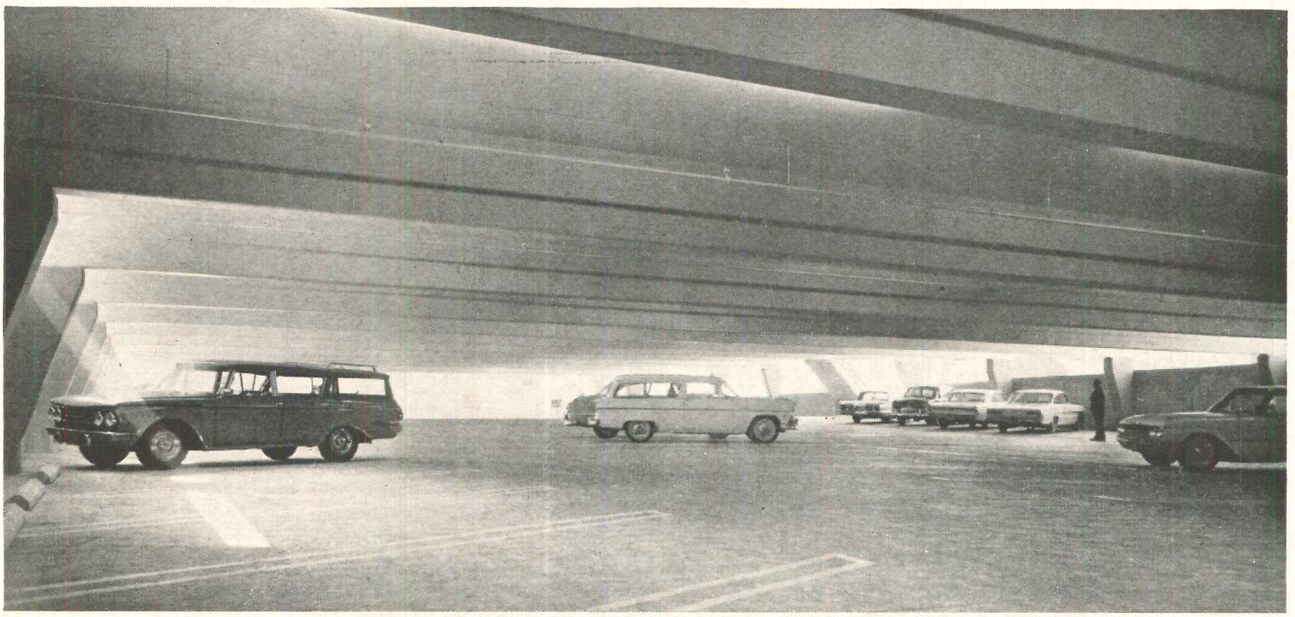


PARKING STRUCTURE AT WESTWOOD VILLAGE, CALIFORNIA • ARCHITECT: CHARLES M. BOLDON, AIA • ENGINEER: T. Y. LIN & ASSOCIATES INTERNATIONAL

LONG SPANS
in PRESTRESSED CONCRETE
—without premium cost!

Long spans in prestressed concrete increase the value of a building many times at surprisingly small increase in total building cost.

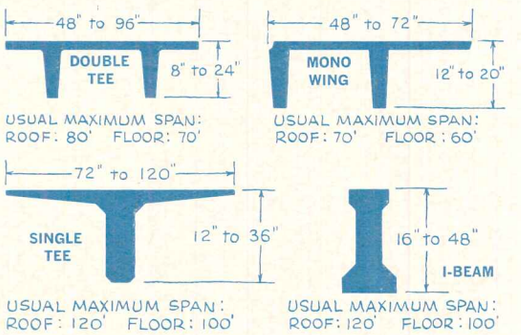
Planning for flexibility is one of the best investments that can be made in any type of building. Prestressing allows the design of well-proportioned building members of limited depth for long spans—eliminating columns and load bearing walls, providing more *usable* floor space.

The trend toward use of longer spans—to reduce operating costs and prevent obsolescence when occupancy plans change—has been a major factor in the growing popularity of prestressed concrete.

Prestressed concrete gives you the longer spans you need with only moderate increase in per square foot cost. For example, with a double tee 14 inches deep and 4 feet wide, the only real difference in per square foot cost between a 30-foot-span member and a 50-foot-span member is the cost of additional prestressing strand. The same is true for a single tee on a 60-foot-span versus 110-foot-span. The extra cost is partially offset by savings in column, footing and erection costs.

Although longer spans may slightly increase structural framing cost, it is usually found that the increase is only a small percentage of the total building cost.

Industrial plants and warehouses use long prestressed concrete spans to provide large column-free work areas for maximum operating efficiency. Long spans in office buildings permit flexibility for efficient interior arrangement. Schools with long span prestressed concrete construction are better suited to modern teaching concepts. Long spans allow multi-purpose



rooms to be quickly doubled or tripled in size through use of folding or non-bearing wall dividers.

Prestressed concrete is used to obtain faster completion, lower total cost, for virtually every type of permanent quality structure. No fireproofing, finishing or painting is needed, maintenance is eliminated and insurance rates are reduced.

***WRITE FOR** description of publications available—and for information on PCI Professional Membership.*

PRESTRESSED CONCRETE INSTITUTE
205 W. WACKER DRIVE, CHICAGO 6, ILL.

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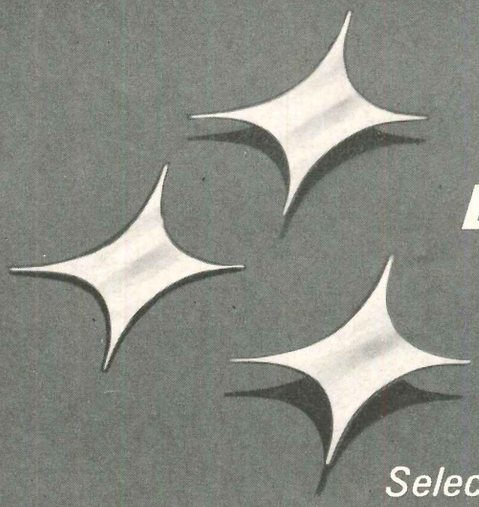

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For imaginative design of a product or structure using

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James J. Nargis and Edwin S. Darden *Architects, Fresno, California*

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Hellmuth, Obata & Kassabaum, Inc. *Architects, St. Louis, Missouri*

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International Engineering Company, Inc. *San Francisco, California*

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Hugh Acton *Designer-Manufacturer, Birmingham, Michigan*

STEEL SHEET OR STRIP
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Walter Furlani and J. W. Stringer *Designers, IBM General Products Division*
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STRUCTURAL STEEL
Smith and Williams *Architects-Engineers, South Pasadena, California*

AMERICAN IRON AND STEEL INSTITUTE
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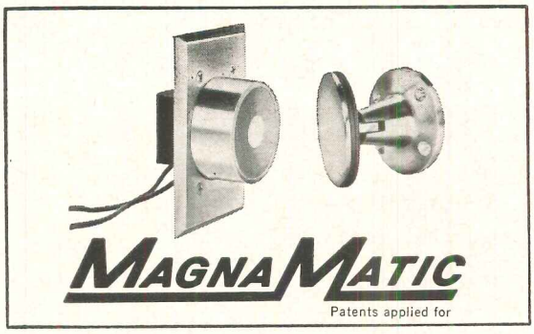

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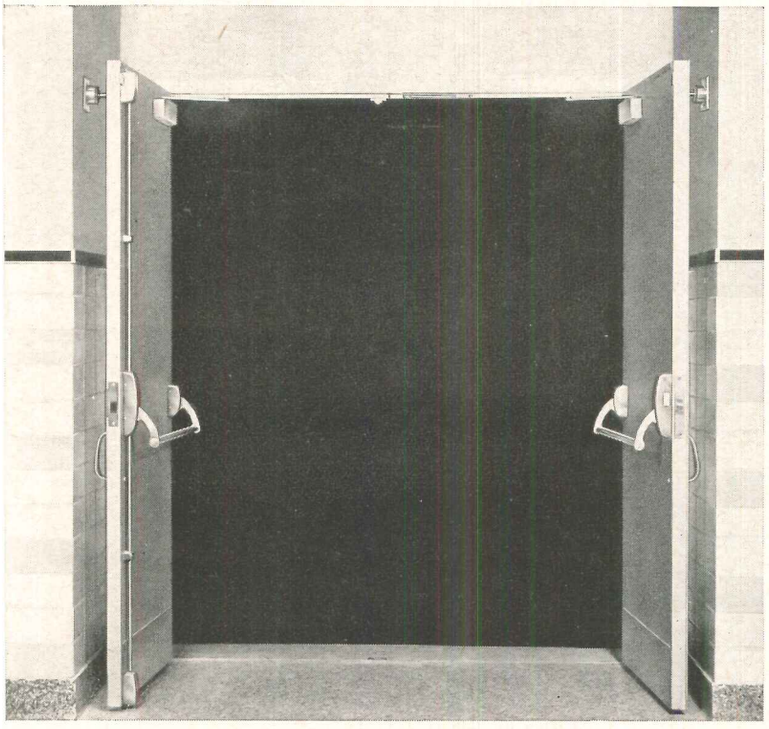
Patents applied for

electromagnetic door holder

A "fail-safe" holder for self-closing fire and smoke barrier doors. Self-contained and non-mechanical.



Automatically releases on interruption of current. Used independently or with any fire or smoke detector system.

The MagnaMatic Door Holder represents an important breakthrough in the control of the spread of fire and smoke. It releases self-closing fire and smoke barrier doors from an open position, for simultaneous closing upon signal from any fire detector system or manual switch.

The MagnaMatic Door Holder is "fool-proof" and "fail-safe." That is, any interruption of the current, whether by detector, through power failure, or manual switch, deactivates the magnet and allows the doors to close. A signal from a fire or smoke detection device in any part of the building will release all doors simultaneously. Individual doors may be closed manually with ordinary effort, or released to close by an individual detector.

Fire Marshals state that the MagnaMatic Door Holder represents a major breakthrough in the saving of lives and property, by controlling the spread of fire and smoke. The National Fire Protection Association, The Fire Underwriters, Safety Officials and Code Officials have long wanted such a device. The MagnaMatic Door Holder complies with the description of the release device in the National Fire Codes, Volume 3, Section 101, paragraph 3209 (b), which requires an approved release device on barrier doors that are permitted to be held open.

The MagnaMatic Door Holder can completely remove the temptation to use "wedges" or other hazardous means to hold doors open.

The MagnaMatic Door Holder has no moving parts, is self-contained, requires no maintenance, is easily installed, and can be used with 120 or 24 volt AC current. Twenty of these devices can be operated for the kw cost of one 60 watt light.

The MagnaMatic Door Holder is UL Listed for Label Service.

For more information contact your local Sargent Architectural Builders Hardware supplier, fire detection system supplier or write: Sargent & Company, New Haven 9, Connecticut.

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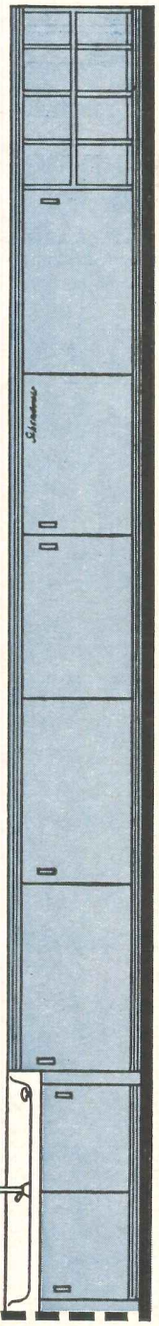

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Office Literature

continued from page 258

LIGHTING FIXTURES

New specification binder gives details on the *Focus* collection of lighting fixtures which includes squares, rectangles, ovals, circles and cube-shaped lighting fixtures with a choice of wood or metal finish. *Globe Lighting Products, Inc., 801 Second Ave., New York 17, N.Y.*

CIRCLE 424 ON INQUIRY CARD

COMMERCIAL COOLING

A new line of commercial reach-in refrigerators, freezers and food-warming cabinets has foam insulation in walls with fully insulated, vault-type door. *Victory Metal Mfg. Corp., Plymouth Meeting, Pa.**

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CONCRETE CURER

Folder gives properties of *Demicon Cure-Hard*, a liquid compound used to cure, harden and dustproof concrete. It reacts chemically with any free lime in the concrete to convert it to calcium silicate. *The Hausman Steel Co., McMillan Products, 2411 Vinewood Ave., Detroit 16, Mich.**

CIRCLE 426 ON INQUIRY CARD

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Japanese hardwood plywood for commercial and residential use is illustrated in an 18-page booklet which includes information on the Japan Plywood Manufacturers Association seal of approval. *Ray Josephs Assoc., Inc., 230 Park Ave., New York 17, N.Y.*

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Engineering information for seven types of *Fiber-Aire* glass fiber ventilators is given in 12-page catalog. *Swartwout Fabricators, Inc., 100 E. North St., Kokomo, Ind.*

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AIR DIFFUSERS, GRILLS

Booklets A-100 and EU-100 give details on decorative aluminum air diffusers with built-in mounting pans and extruded aluminum diffusing registers and grills. *Air Devices Inc., 185 Madison Ave., New York 16, N.Y.*

CIRCLE 429 ON INQUIRY CARD

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

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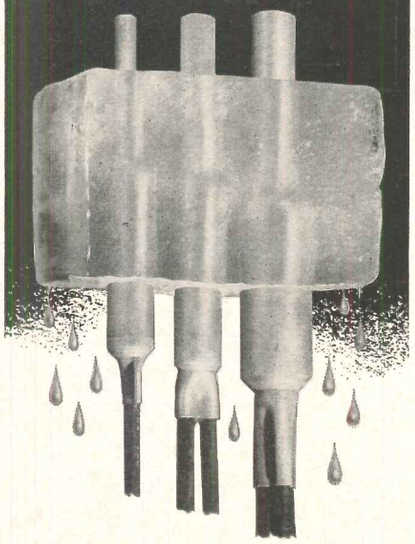

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Ice and Snow melting even easier and less expensive!

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NEW sizes and types eliminate need for special transformers, allow selection of convenient lengths for area to be covered, reduce initial installation cost.

WRITE for complete information on all sizes available and installation procedures

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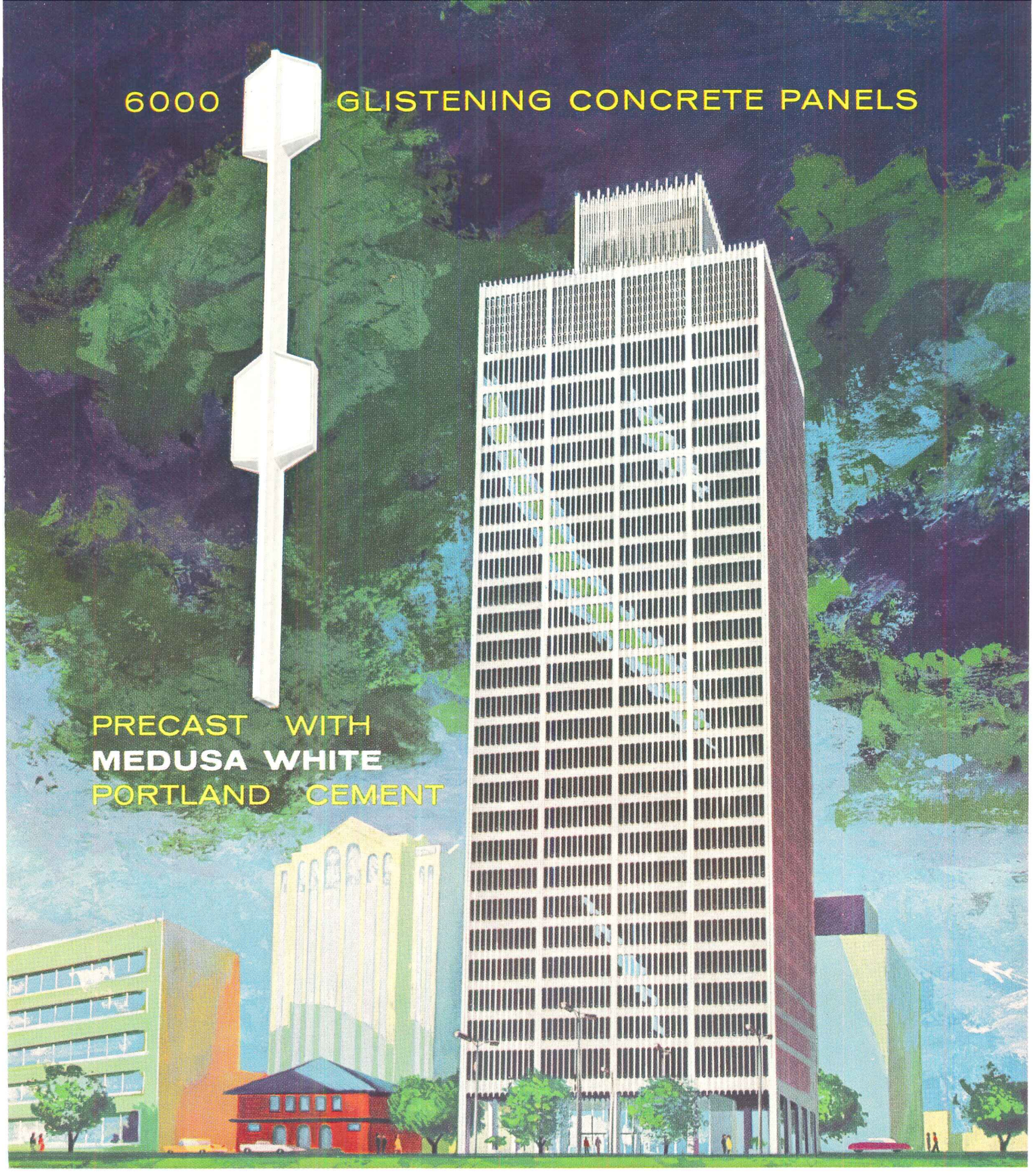

Over 6,000 glistening white prestressed, precast concrete panels encase the magnificent 32-story Michigan Consolidated Gas Company office building in Detroit. These panels, made in Salt Lake City, with Medusa White Portland Cement and white Utah quartz aggregate, were wrapped in polyethylene and trucked 1700 miles to Detroit. The majority were 24′ long and 2′4″ wide at the splayed spandrel with an 11″ deep rib running through the length. Bolted to the structural frame, the panels span two stories and form delicate elongated hexagonal windows as a distinguishing design element.

Architects find that panels of Medusa White afford an opportunity for maximum individual expression through unlimited shapes, colors and textures, with construction economy and low maintenance cost. Write for information on Medusa, the original White Portland Cement for precast panels.

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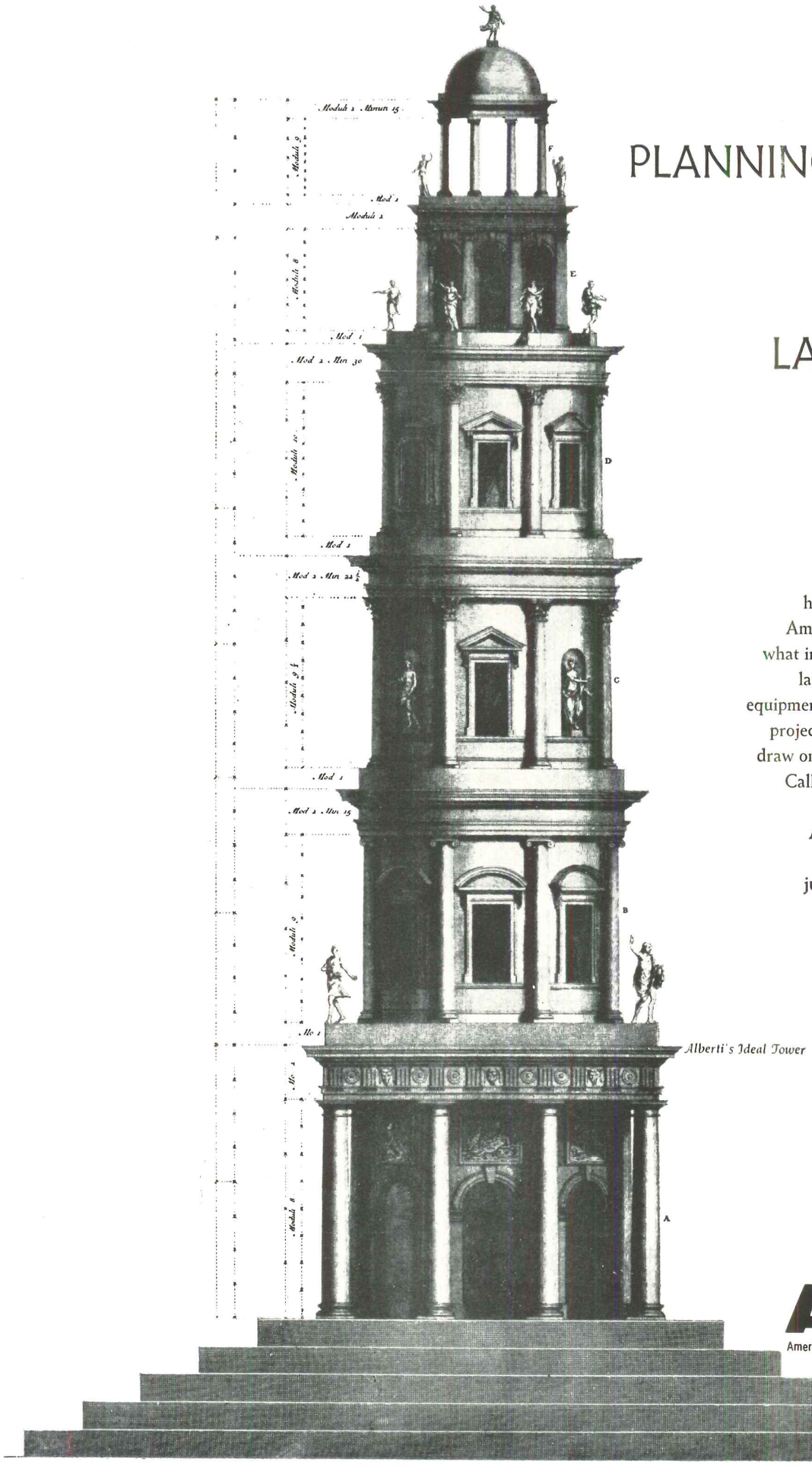
MEDUSA PORTLAND CEMENT COMPANY

P. O. Box 5668, Cleveland 1, Ohio

OFFICE BUILDING: Michigan Consolidated Gas Company, Office Building, Detroit, Michigan • **ARCHITECT**: Minoru Yamasaki-Smith Hinchman & Grylls, Associated Architects and Engineers, Detroit, Michigan
CONTRACTOR: Bryant & Detwiler, Detroit, Michigan • **PANEL MANUFACTURER**: Curtain Wall by *Otto Buehner & Company, Salt Lake City, Utah

*Member of the Mo-Sai Association



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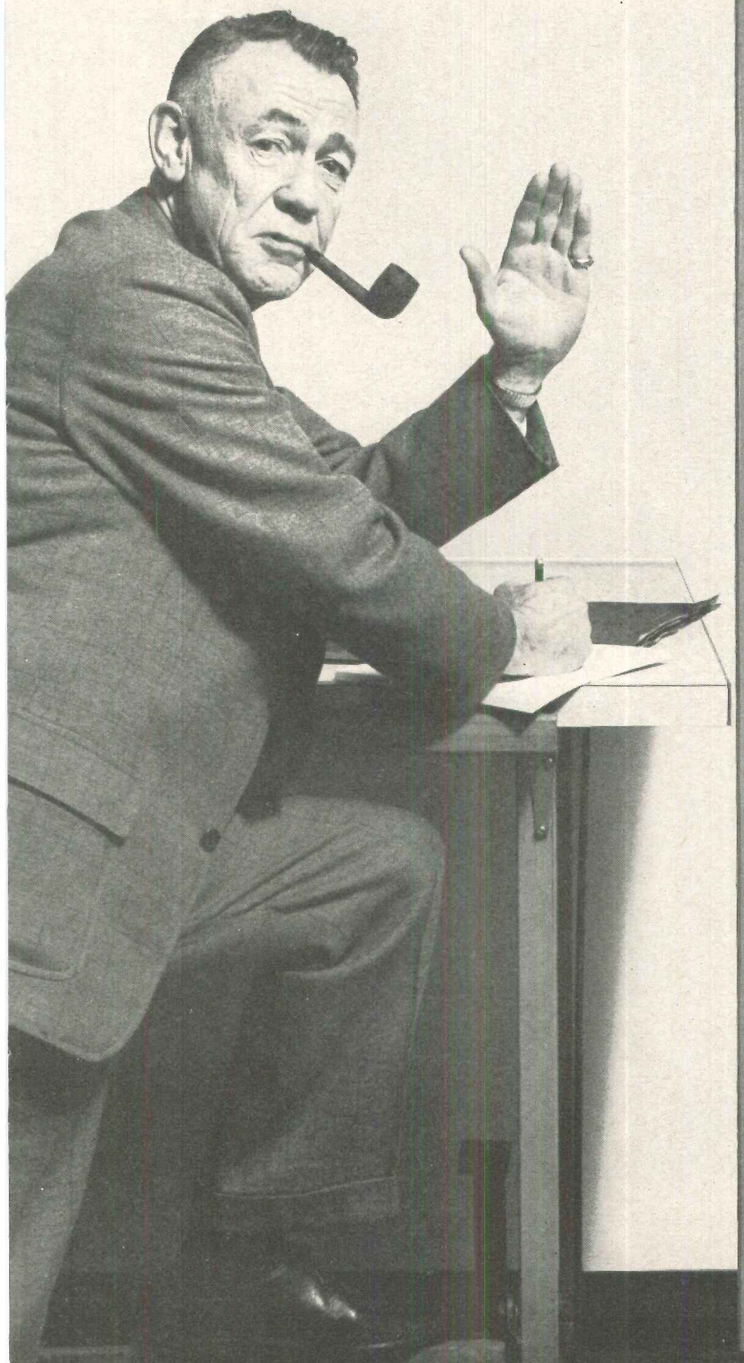

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If that's not a dozen, it's still enough to make me specify STANDARD STEEL DOORS and FRAMES for every kind of commercial, industrial and institutional project.

Write today for your FREE Fact File, including U.S. Dept. of Commerce standards, Steel Door and Frame nomenclature, and data on products of all member companies.

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Send me your Fact File on Standard Steel Doors and Frames.

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The Steelcraft Mfg. Company
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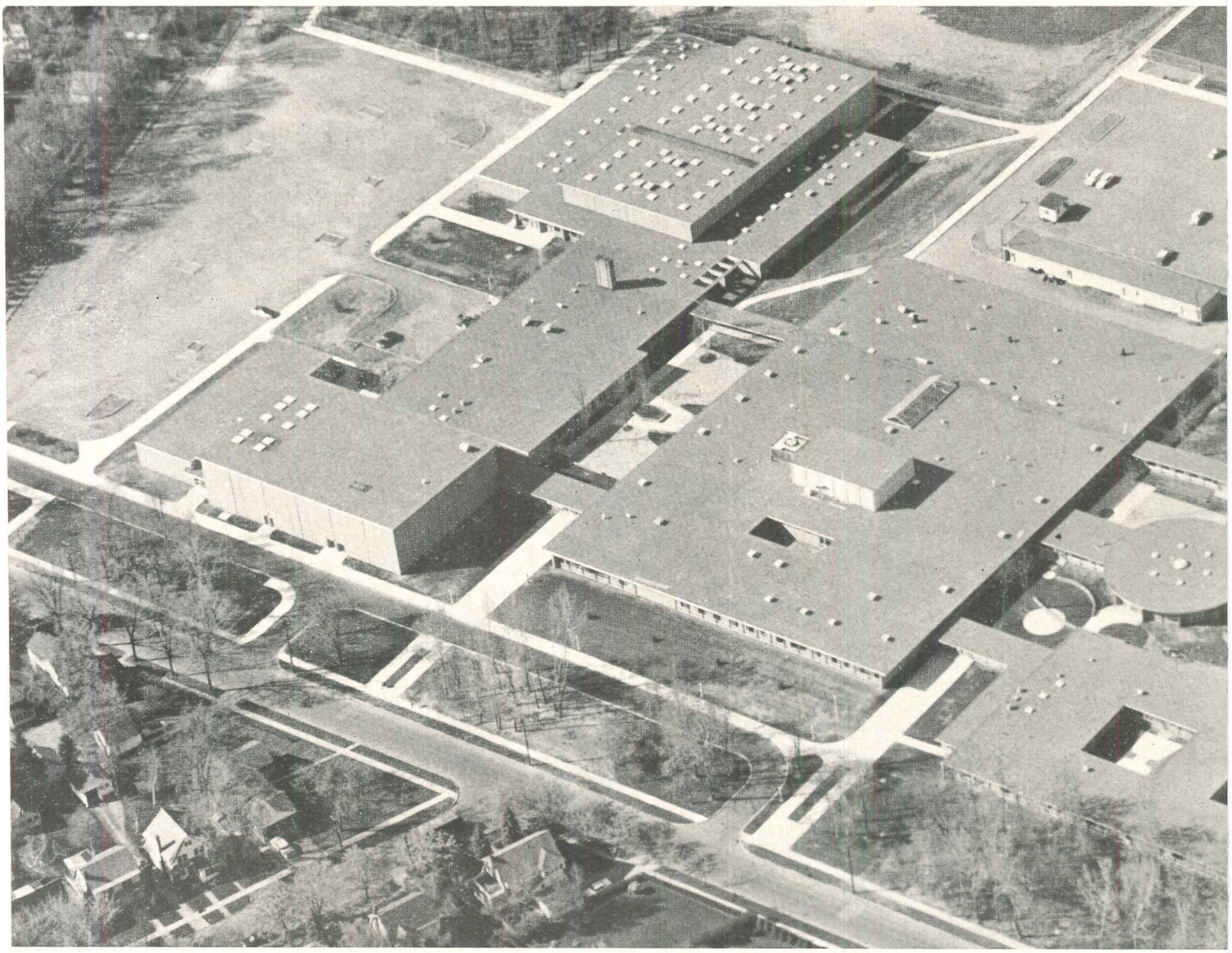
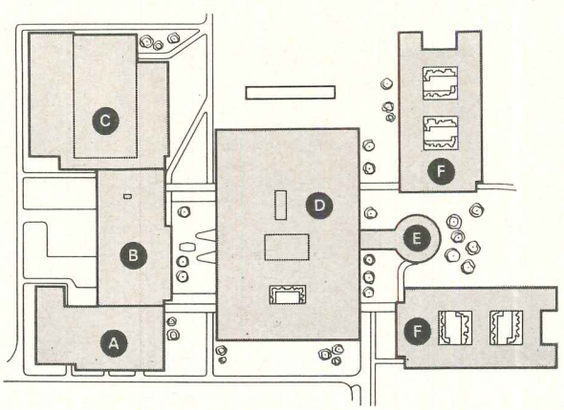
United Steel Fabricators, Inc.
Wooster, Ohio

Virginia Metal Products, Inc.
Orange, Virginia

Why architects talk to total school air



Linton High School, Schenectady, N.Y. Superintendent of Schools: Robert E. Murray.
Architect: Perkins & Will, Chicago. Consulting Engineer: E. R. Gritschke and Assoc., Inc., Chicago.



A. Auditorium
B. Cafeteria
C. Gymnasium
D. Core-Techs—shops; science and family-living laboratories
E. Library
F. Academic classrooms

How a school built for the 21st Century is air conditioned with Trane equipment

When Schenectady, N. Y. school planners began work on Linton High, they sought to create a school "that will still be functional in the year 2000." The result is a 15-acre series of one-story buildings covering over 258,000 square feet.

The school consists of six units . . . Core-Techs, Academic, Library, Auditorium, Cafeteria and Gymnasium.

Three units . . . Core-Techs, Library and Auditorium . . . are air conditioned—but not all at the same time.

Equipment capacity is ample to cool Core-Techs' interior classrooms and the Library simultaneously . . . but the system is designed so that the third unit, the Auditorium, can be cooled when classrooms are not in use.

For Schenectady, this meant a smaller investment in air conditioning equipment and greater operating economies.

Heart of the air conditioning system is a 235-ton capacity TRANE CenTraVac® hermetic centrifugal water chiller. Separate air handling systems are used in Auditorium, Library and each group of Core-Techs classrooms. Conditioned air is distributed through zone ducts to diffusers in all three units.

Trane for conditioning requirements

Providing total air conditioning for the schools you design requires specialists in the related fields of heating, cooling and ventilating. With Trane you can get all your answers from a single source. Here's why.

OUR BUSINESS IS PROVIDING CLIMATES TO ORDER

TRANE is one of the very few organizations of manufacturing engineers with depth of experience in all the related fields of total air conditioning . . . in heating, cooling and ventilating.

As specialists in this science of heat exchange, we manufacture equipment that's designed together to work together for maximum dependability and efficiency.

That's why TRANE equipment is selected for many complex air conditioning applications. For skyscrapers, jet planes and subway trains . . . homes, hotels and motels . . . ocean liners and railroad refrigerator cars . . . for schools and universities of many sizes, shapes and styles.

THERE ARE MANY WAYS TO AIR CONDITION, OR TO PROVIDE FOR FUTURE AIR CONDITIONING. ONE WAY IS BEST WITH YOUR PLANS!

Call your TRANE Sales Engineer early in the planning stages. He doesn't limit you to just one or two ways to air condition a school. For TRANE manufactures broad lines of many types of air conditioning equipment . . . to meet any requirement in any school. There's equipment that cools, heats and ventilates from the start. There's heating and ventilating equipment that lets you add cooling later . . . easily and economically . . . without classroom remodeling or additional piping.

Working with your TRANE Sales Engineer, you're free to pick-and-choose from these product lines and base your specifications entirely on *what's best with your plans!*

RESEARCH AND TESTING...KEY TO PRODUCT LEADERSHIP

Modern conditioning of air is a complex science . . . and TRANE has a multi-million-dollar laboratory devoted exclusively to the science of heat exchange.

Here constant research and testing result in new designs and new techniques to produce the kind of quality equipment you want in the schools you design.

LOCAL TRANE SERVICE FOR THE SCHOOLS YOU DESIGN

With TRANE there's the added assurance of on-the-spot service available from TRANE Offices in 113 major cities. Trained, experienced Service Engineers are on call to assure equipment performance for the life of the school.

FOR GREATER SCHOOL DESIGN FLEXIBILITY, plus the air conditioning that's best with your plans, contact your local TRANE Sales Office. Your TRANE Sales Engineer will be happy to give you specific information on the complete TRANE lines of school heating, cooling and ventilating equipment.

It's Trane for total school air conditioning requirements

CENTRAVAC® (Centrifugal water chillers)—hermetic to 1350 tons; open to 2200 tons • ABSORPTION COLD GENERATORS—hermetic design, 100 to 1000 tons • RECIPROCATING COLD GENERATORS—sizes to 150 tons • CENTRAL STATION AIR HANDLING UNITS—from 1200 to 47,000 cfm, 2 to 100 tons • PACKAGED AIR CONDITIONERS—2 to 60 tons • UNIT VENTILATORS—for steam, hot water, chilled water or electric heating, 2 heights, 28 and 32 inches • INDUCTION UNITRANE—16 models • WALL-FIN CONVECTORS • UNIT HEATERS • TORRIVENTS • FORCE-FLO HEATERS

TRANE

FOR ANY AIR CONDITION

MANUFACTURING ENGINEERS OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

The Trane Company, La Crosse, Wis. • Scranton Mfg. Plant, Scranton, Pa. Clarksville Mfg. Plant, Clarksville, Tenn. • Salt Lake Mfg. Plant, Salt Lake, Utah Trane Company of Canada, Limited, Toronto • 113 U.S. and 20 Canadian Offices.

For more data, circle 139 on Inquiry Card

JOANNA SHADES ANSWER A SCHOOL'S WINDOW COVERING NEEDS

The Need for Beauty—outside and inside—Now you can blend or match window shade colors to those of a school building's exterior for a uniform, coordinated effect.

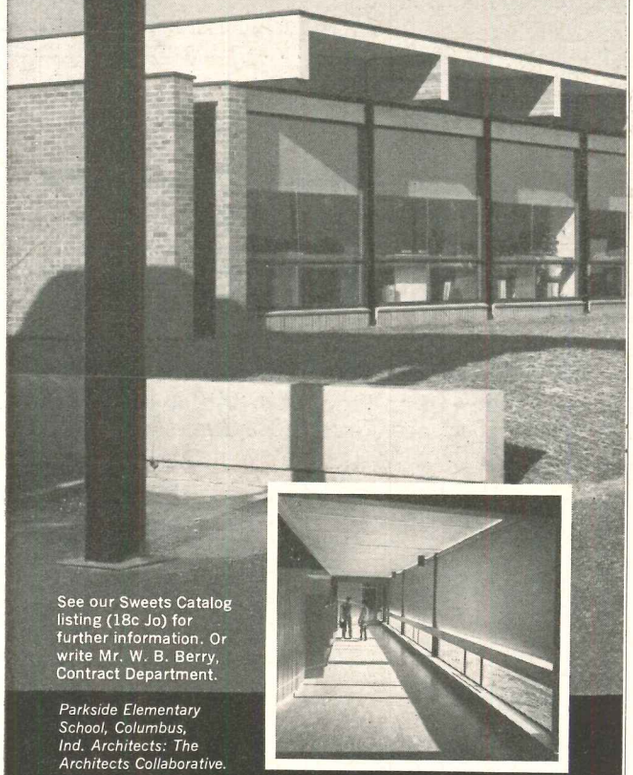
Joanna shades may be custom-painted to specifications.

Inside, Joanna shades may be left white, kept the same color as the exterior, or painted to go with each room.

No other window covering is so versatile.

The Need for Light Control — Joanna color-match shades come in room-darkening qualities which provide necessary light exclusion for audio-visual and lab work.

The Need for Economy and Service—Joanna shades cost less to buy—less to maintain than other types of window coverings. Their insulating qualities help cut heating and cooling bills. And they can be washed by regular maintenance personnel.



See our Sweets Catalog listing (18c Jo) for further information. Or write Mr. W. B. Berry, Contract Department.

Parkside Elementary School, Columbus, Ind. Architects: The Architects Collaborative.

JOANNA

JOANNA WESTERN MILLS COMPANY
22nd & Jefferson Streets • Chicago 16, Illinois

For more data, circle 140 on Inquiry Card

For "Start-to-Finish" responsibility, specify

AUTOMATIC TUBE SYSTEMS

BY

Standard Conveyor

Standard Conveyor takes full responsibility for your automatic tube system from start to finish. Standard Conveyor has over 40 years of experience in the pneumatic tube business.

Call your local Standard Conveyor representative . . . he's listed in the Yellow Pages of major cities under PNEUMATIC TUBES. Or, call our main office listed below for information.

Standard Conveyor COMPANY

311-E Second St., North St. Paul 9, Minn., Telephone: SPring 7-1355
For more data, circle 141 on Inquiry Card

Vance

The stainless steel sink architects specify with confidence

125 models to choose from in the Vance line of 302 nickel bearing #20 gauge or #18 gauge stainless steel. Single, double and triple bowl, with or without ledge back and either self rim or with frame. Hand blended and polished satin Butler finish. Truly America's top quality line of stainless steel sinks. Vance also makes a complete line of stainless steel sink frames, a new single handle drip-proof faucet, a liquid soap dispenser, a stainless steel sink strainer, and cutting boards.

WRITE FOR OUR NEW CATALOG
A.I.A. FILE NO. 29-H-6

Vance INDUSTRIES, INC.
7401 WEST WILSON AVENUE • CHICAGO 31, ILL.

AMERICA'S TOP QUALITY LINE OF SINKS, FRAMES, FAUCETS AND EQUIPMENT

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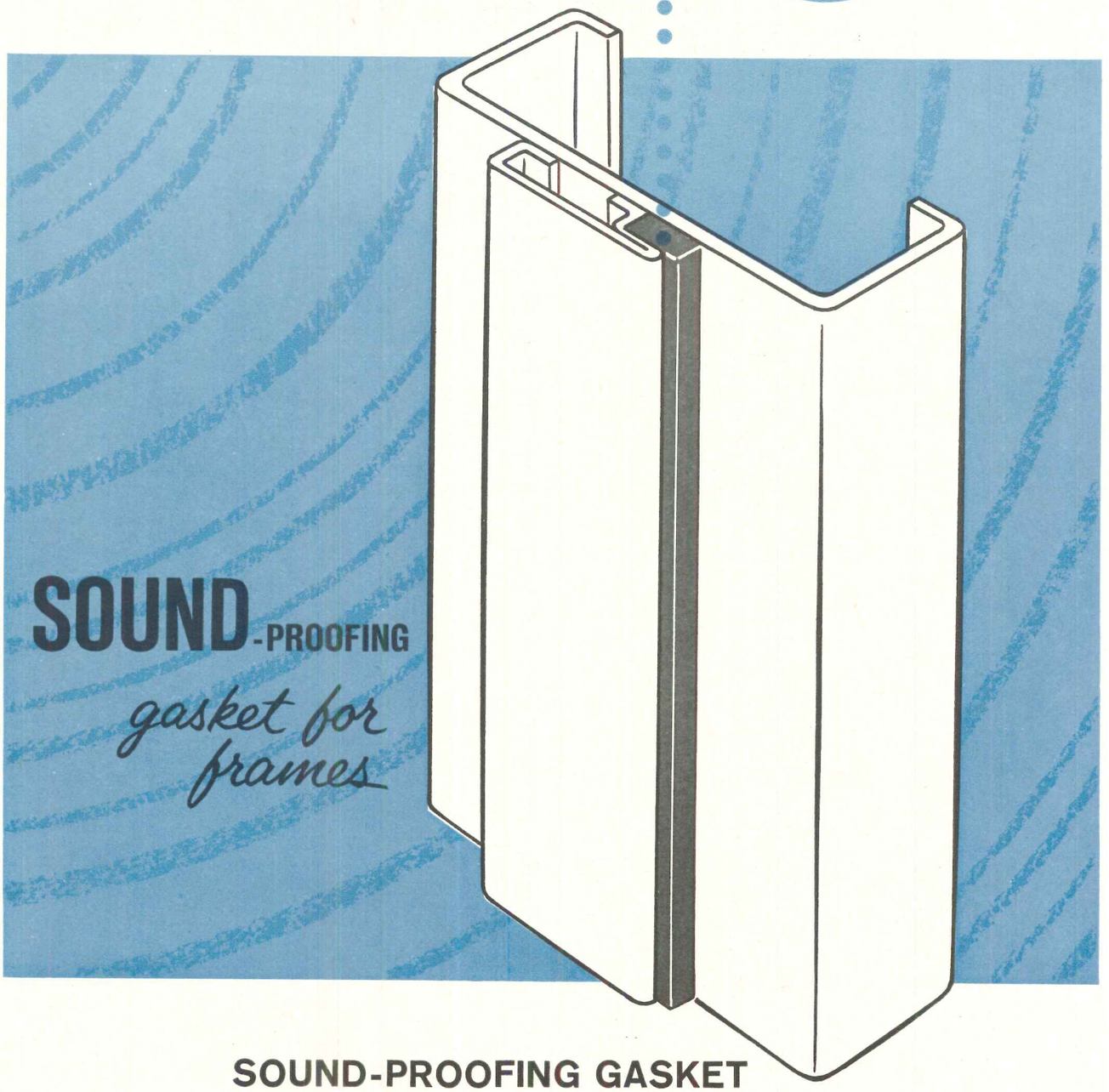
steelcraft metal door frame idea no. 3 in a series



SOUND-PROOFING GASKET

STEEL Craft®

finest name in metal doors and frames

This frame will enable you to provide sound proofing by the use of a standard type frame . . . designed to fit all types of wall conditions.

This is another of the many advantages gained from the use of Steelcraft metal doors and frames. Write for other ideas . . . and the name of your technically trained Steelcraft distributor.

The Steelcraft Manufacturing Company, 9017 Blue Ash Road, Cincinnati 42, Ohio, U.S.A.

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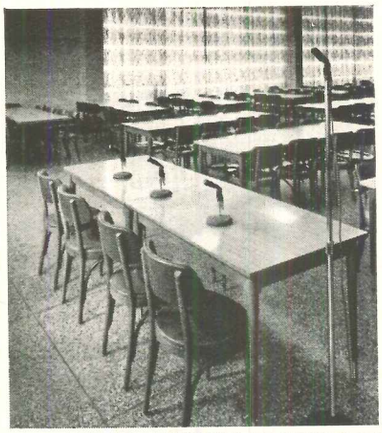
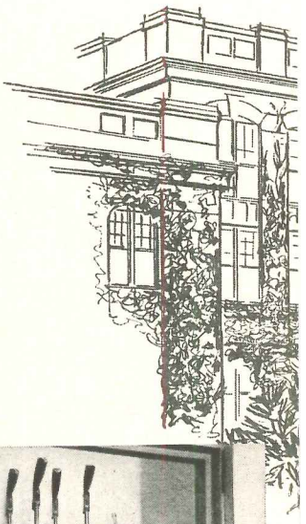
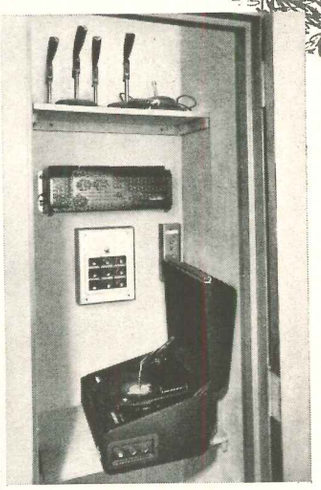
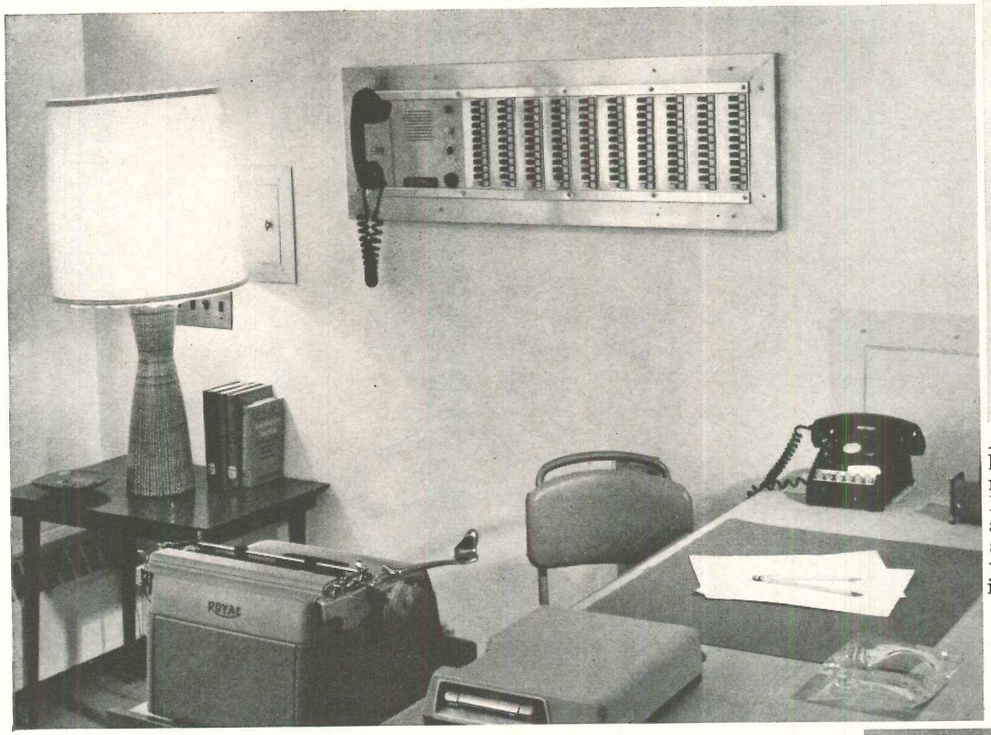
Up to five microphones can be used at once from any of three zones in the school Cafeteria-All Purpose Room. Five-way microphone connection is ideal for panel discussions or roving microphone use.



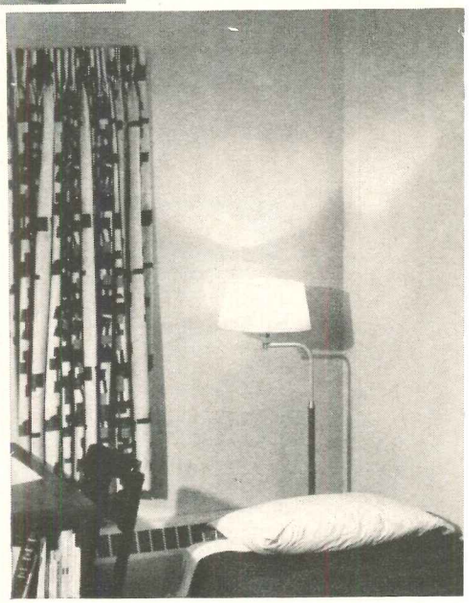




All it takes is a small closet to house the sound system equipment for the Cafeteria-All Purpose Room... Microphones and cable, amplifier, controls, and record player that provides background music during meals and social functions.



Control Station in each central office is connected to 102 room stations in building. Phone handset assures privacy of caller. Office can carry on conversations with each room or page all rooms simultaneously.



Wall-recessed room station blends perfectly with modern room decor. Light and chime announce incoming call. Privacy assured by talk button which must be depressed to complete the connection.

DORMITORIES AND DINING HALLS ERECTED BY
DORMITORY AUTHORITY OF THE STATE OF NEW YORK
ARCHITECTS
DORMITORY: HART-BENVENGA ASSOCIATES
DINING HALL: URBAHN, BRAYTON, BURROWS

STUDENTS GET THE MESSAGE FAST

at the New Paltz State University College

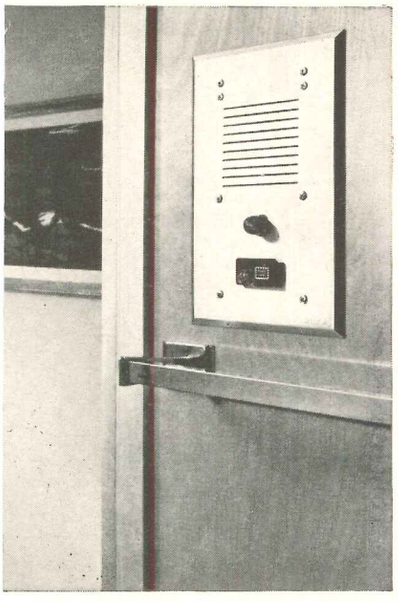
Executone intercom systems in four new buildings make 350 double rooms instantly available to central offices for messages, paging, emergency alarms and instructions.

Up-to-the-minute control and convenience in communications is an outstanding feature of the multimillion dollar building expansion at the State University College, New Paltz, N. Y. Exacting communication and sound requirements were met by two Executone systems: the dormitory intercom, and a flexible sound system for the combination Cafeteria-All Purpose Room.

Office personnel and students are saved considerable time and trouble by the Executone dormitory intercom system. No jam-up, no costly confusion at the central office. Messages are relayed immediately –simply by speaking over the system. Less chance of messages getting lost . . . for "message reminder" light in room stays on until the call is answered. Students may originate calls to the office at any time. The system can also be used to alert students and give instructions during fire, air raid alerts and other emergencies.

In the Cafeteria-All Purpose Room the sound system serves as a facility for background music as well as public address. Zone-type installation permits the use of five microphones at the same time from any or all of three separate areas in the room. This is ideal for panel discussions where several microphones are needed at once, and for meetings where "roving" microphones are desirable.

Avail yourself of Executone's wide experience in the college and university field when planning your sound and communication system. Have an Executone communications man go over your needs –recommend a system–estimate the cost–without any obligation. For full details write to Executone, Inc., Dept. C-5, Austell Place, Long Island City 1, N. Y. In Canada, 331 Bartlett Avenue, Toronto.



Executone

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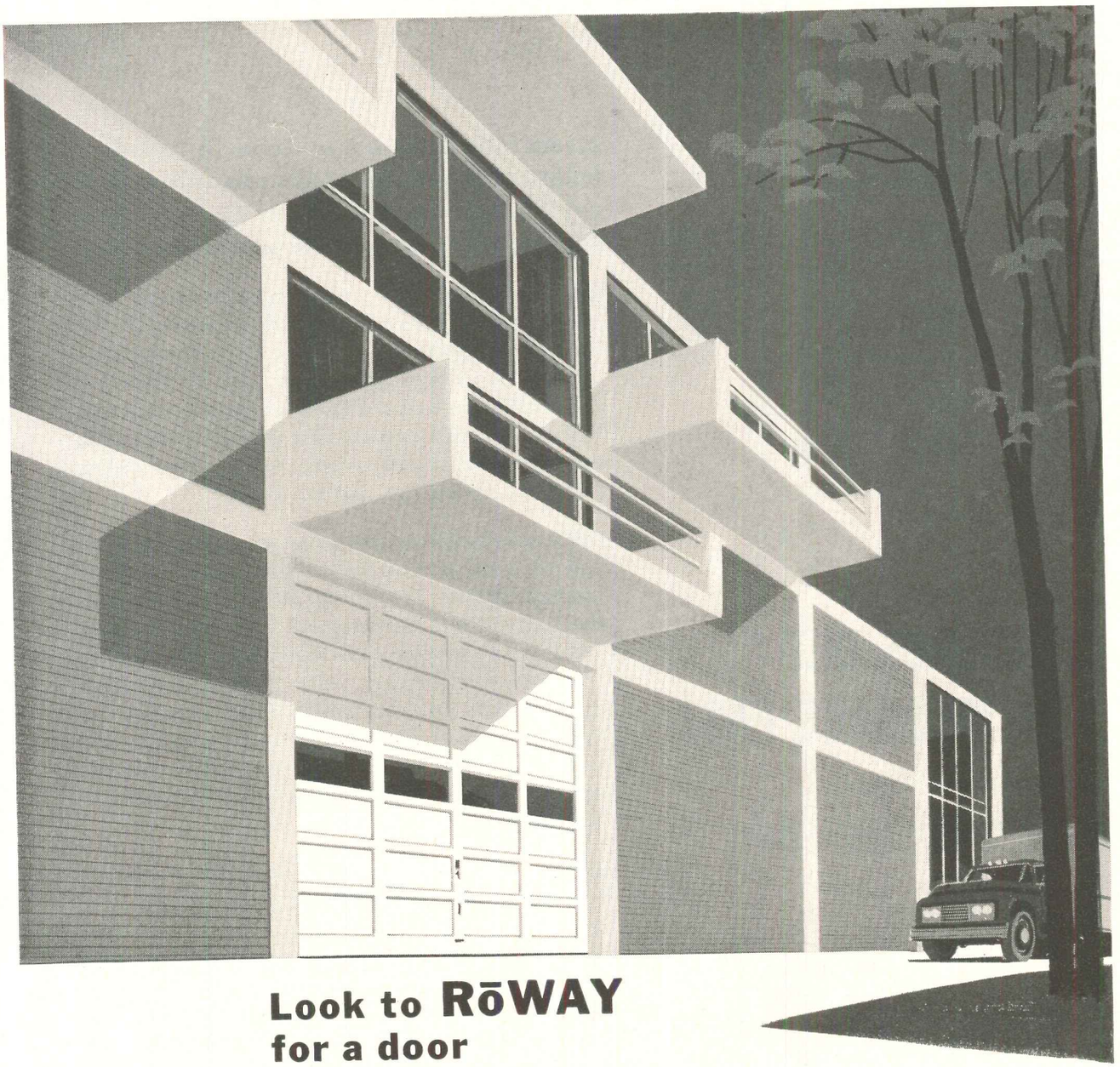

Look to RōWAY for a door to fit your plans

RōWAY Overhead Doors are designed to enhance **any** style of architecture.

No restrictions . . . no harsh contrast . . . for RōWAY Doors give an appearance of "belonging" to every plan you create.

Fit a RōWAY Door into your design . . . you'll be doing justice to your own creative talents . . . and your customers' budget. RōWAY Doors stress attractive appearance, strength, ease of operation and economy.

No other door offers more!

there's a RōWay for every Doorway!

COMMERCIAL • INDUSTRIAL • RESIDENTIAL

RōWAY OVERHEAD DOORS

ROWE MANUFACTURING COMPANY
Department AR563, Galesburg, Illinois

Find Your Nearest Distributor in the "Yellow Pages"

SEE OUR CATALOG IN SWEET'S

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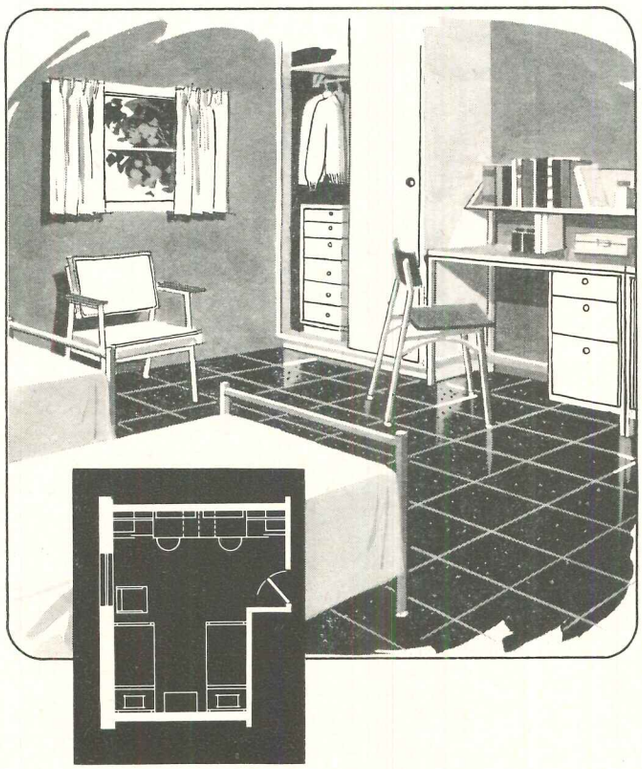
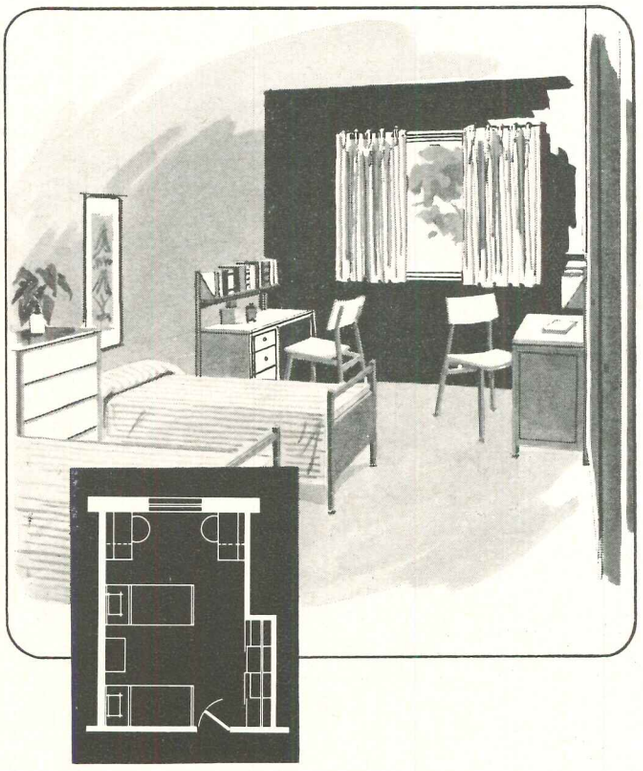
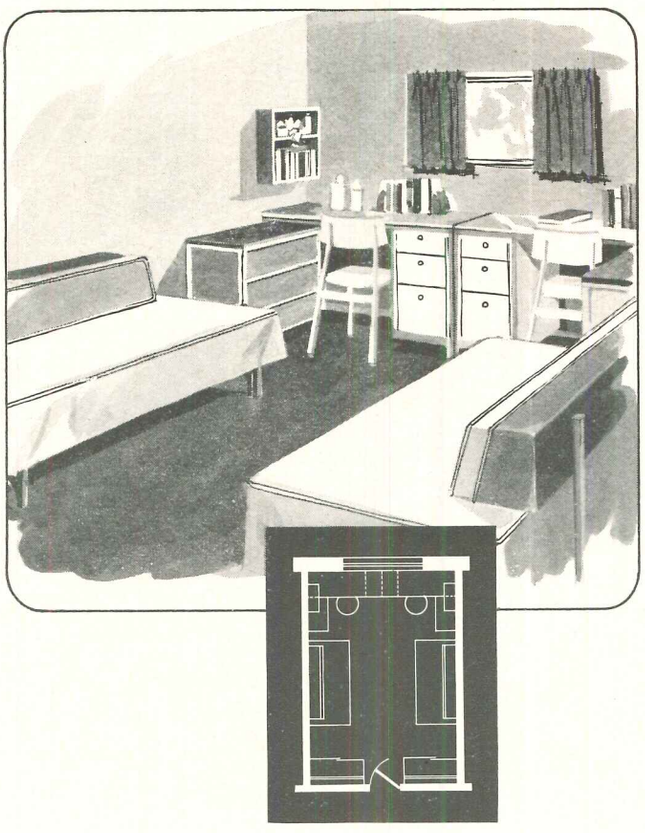




have it your way
with versatile DORM LINE by SIMMONS



Here's Dorm Line versatility in action. Three floor plans, three different arrangements—all for the same size room. Dorm Line furniture lets you start with rooms of standard shape and size, yet achieve warmth and individuality. (Even existing odd-sized rooms benefit from Dorm Line's ability to make effective use of floor and wall space.)

Consider the flexibility of Dorm Line built-in units. Use them as corner elements, wall units or wall partitions. You can recess beds, desks and dressers, place them side by side or back to back, or separate them for semiprivacy.

Now add Dorm Line colors, finishes and upholstered fabrics for the final touch of home. Result: the Dorm Line look—functional beauty that lasts.

Next time you plan, plan with Dorm Line by Simmons, your wisest investment now and for the future. Write us for literature and see Dorm Line furniture soon.

SIMMONS

CONTRACT DIVISION • MERCHANDISE MART • CHICAGO 54, ILLINOIS

Simmons Company, Contract Division, AR-5
Merchandise Mart, Chicago 54, Illinois
☐ Please send catalog
☐ We are building
☐ We are not building
Name_____ Title_____
Address_____
City_____ Zone____ State_____

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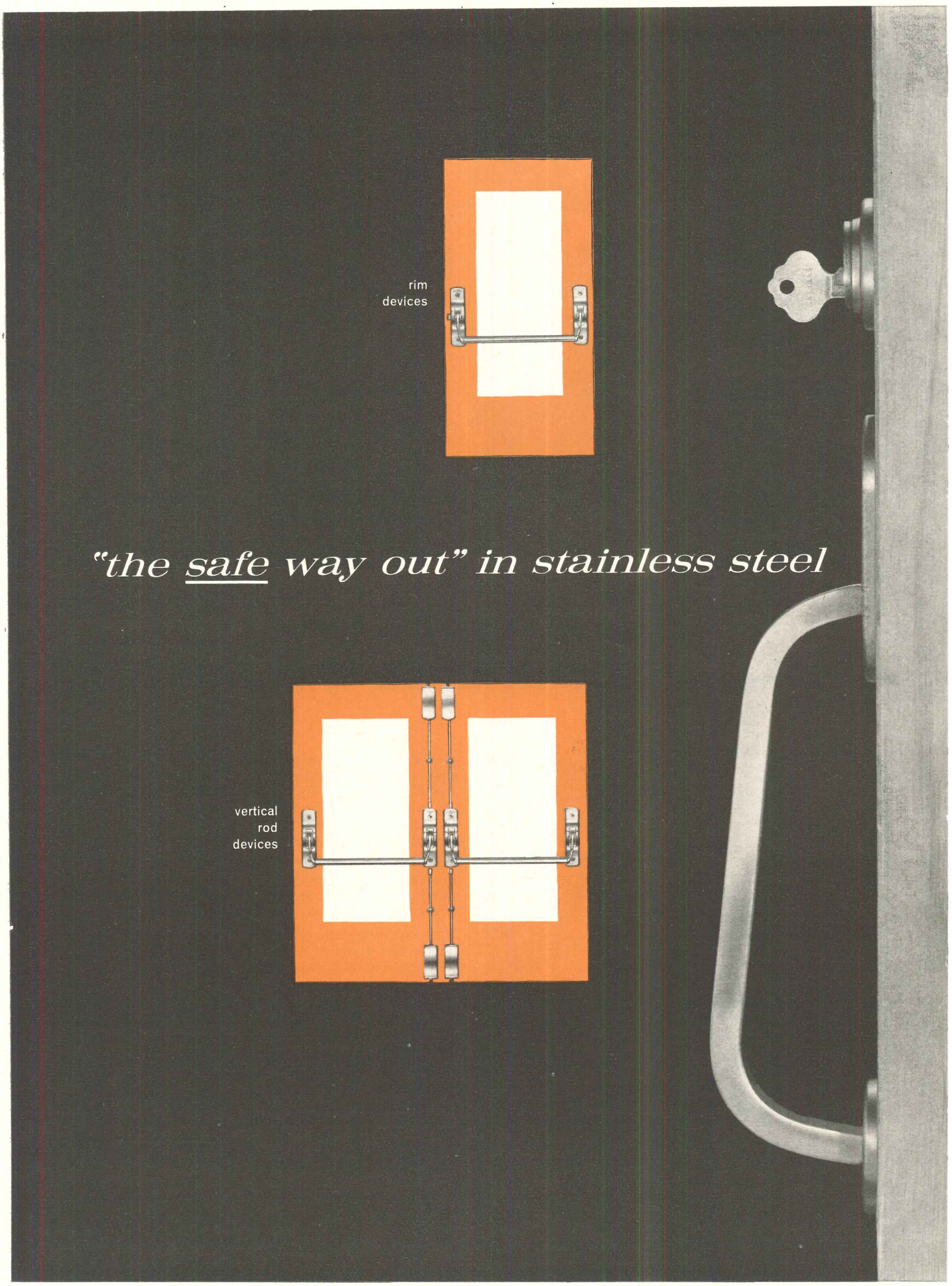
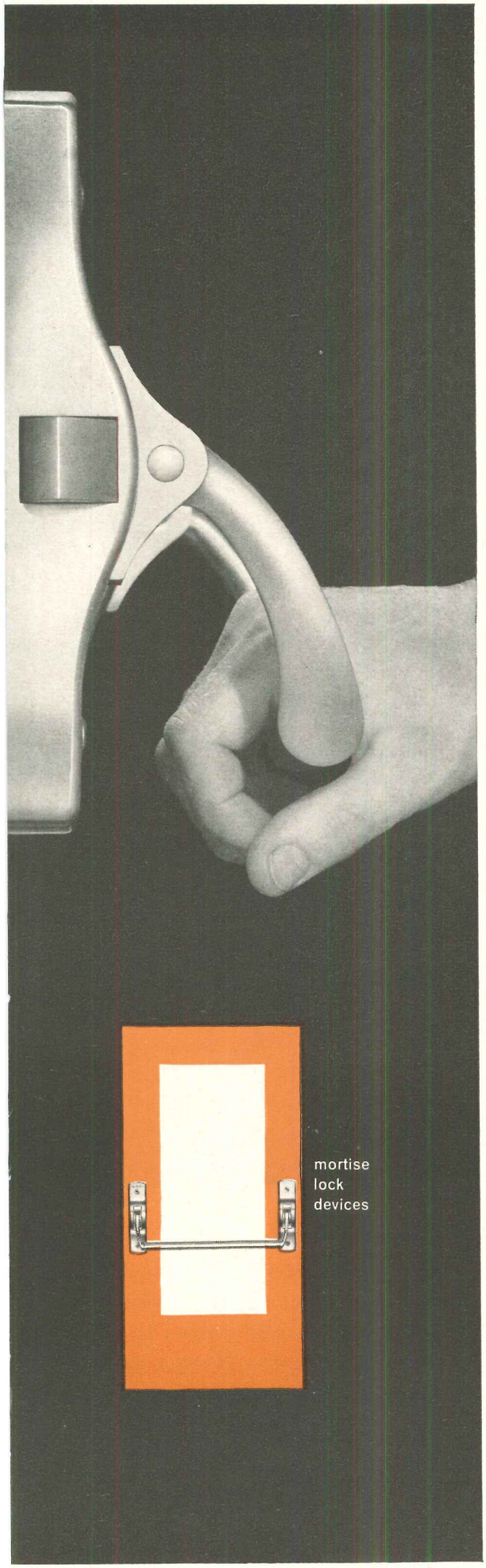
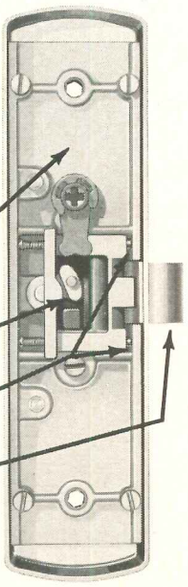

rim
devices
"the safe way out" in stainless steel
vertical
rod
devices



unmatched engineering quality

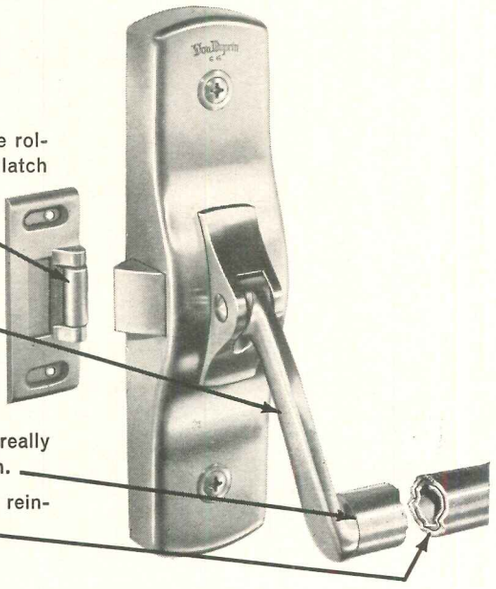
- Stainless steel housing covers are stamped and drawn from sturdy stock over 1/16" thick.
- Forged bronze chassis in lock stile case reinforces a full 75% of housing area. Minimum wall thickness of chassis is 1/8".
- Stainless steel master cam.
- Two neoprene bumpers between housing and chassis assure quiet operation.
- Stainless steel latch bolt and axles.



Von Duprin 66

unmatched design quality

- Stainless steel adjustable roller strike permits smooth latch bolt operation with minimum wear.
- Stainless steel forged lever arms with stainless steel axles.
- Hidden "wedge-tite" fittings, extending 1¼" into crossbar, exert full-circumference locking force on crossbar, and give a really smooth, uncluttered design.
- Stainless steel crossbar reinforced with steel tube.



For enduring beauty and lasting service, there is no equal to the Von Duprin 66 exit devices. Quality engineered . . . quality appearance . . . quality operation.

Write for your copy of the 66 Bulletin . . . full details on the industry's pace-setter, the Von Duprin 66.

the safe way out

VON DUPRIN DIVISION • VONNEGUT HARDWARE CO.
402 W. MARYLAND ST. • INDIANAPOLIS 25, INDIANA

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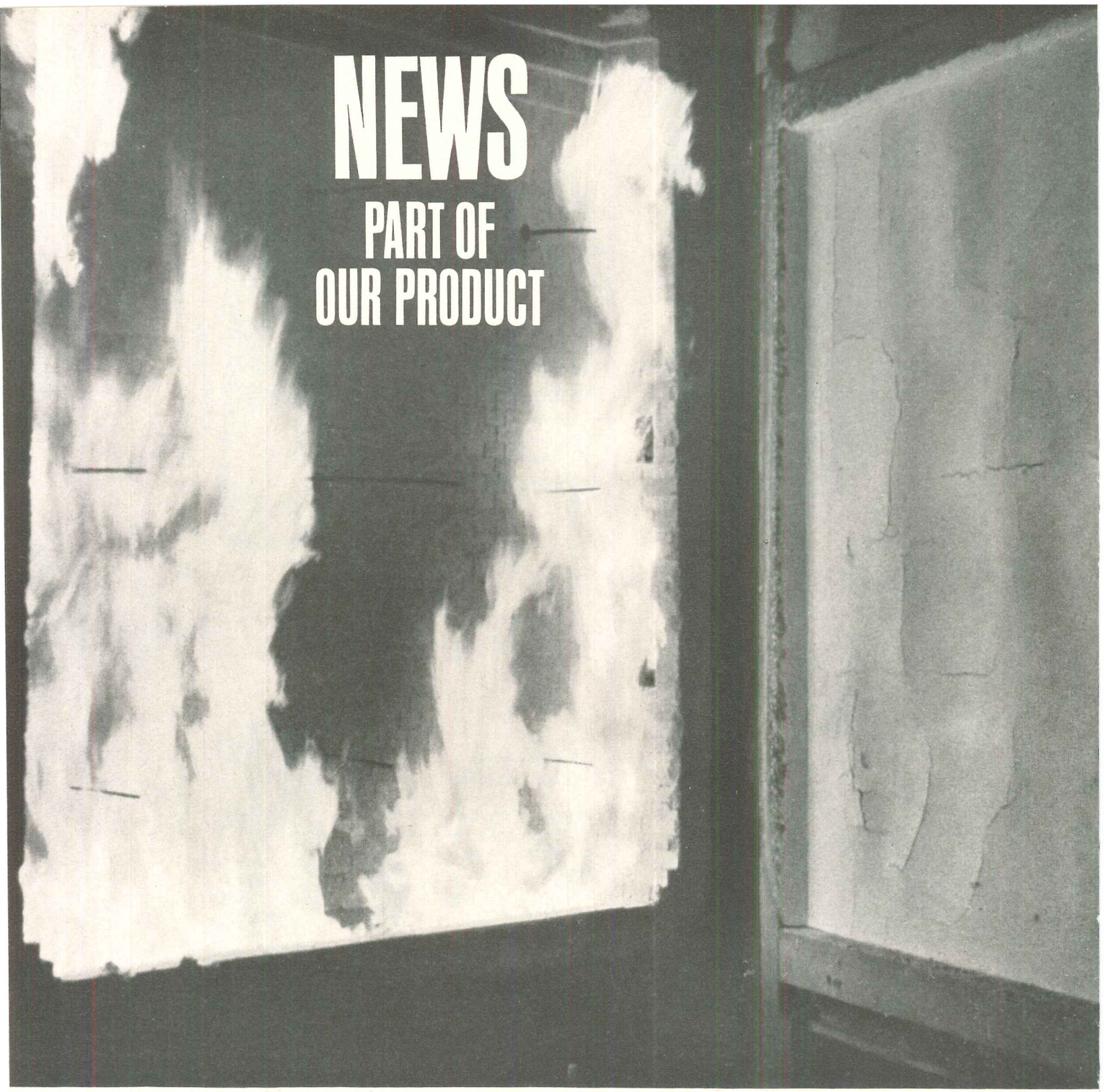

This picture of the fire in a furnace during tests under ASTM Standards shows the terrific fire load which reaches 1000°F. in 5 minutes, 1700°F. in 1 hour, 1850°F. in 2 hours

BESTWALL ANNOUNCES NEW IMPROVED FIRESTOP . . . reinforced with the highest glass fiber content of any gypsum product, achieves 2-hour fire rating in floor and ceiling assemblies. A gypsum tile, made from improved **FIRESTOP** and called **"Firestop-120"**, when used in lay-in assembly in fire-rated suspension systems, also provides 2-hour fire resistance. These constructions, one with a solid ceiling, the other a lay-in assembly, provide the lowest cost, 2-hour fire resistant, incombustible floors and ceilings available today. New, improved **FIRESTOP** is available at no increase in price. Learn of the many benefits of **FIRESTOP** and **"Firestop-120"**, and the services of our Systems Engineers, through our nearest district office or Bestwall Gypsum Company, Ardmore/Pa. Plants and offices throughout the United States.

FIREPROOF GYPSUM
BESTWALL
BUILDING PRODUCTS

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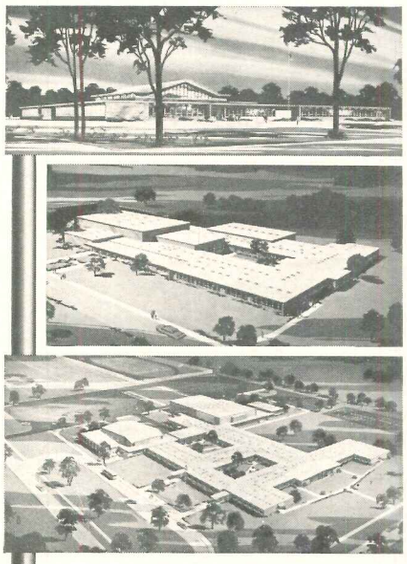

From top: Colon High School, Colon, Mich.; Augusta High School, Galesburg, Mich.; Lakeview High School, Battle Creek, Mich.
ARCHITECT: Guido A. Binda, Architect and Associates, Battle Creek, Mich.
MECHANICAL CONTRACTOR: Hunter-Prell, Battle Creek, Mich.

Vulcathene®

cuts school lab drainage costs by a third!

Engineers in the firm of architect Guido A. Binda specified Vulcathene traps, fittings and pipe for the laboratories of all three of these ultra-modern Michigan high schools. Why Vulcathene? Savings of almost 30% to 35% over acid-resistant materials previously specified. Plus the long-range economies of this completely scale-proof, clog-proof, shatter-proof drainage system. Find out more about Vulcathene.

Look for our catalog in Sweet's Files.

NPS DIVISION OF THE NALGE CO. INC.

NALGENE PIPING SYSTEMS

Nalgene Piping Systems
P.O. Box 387, Dept. 3729, Rochester 2, N. Y.

Please send me a new catalog and cut-away sample of a Vulcathene Polyfusion joint.

NAME.....

ADDRESS.....

CITY..... ZONE..... STATE.....

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On the Calendar

May

5-9 Annual meeting, American Society of Planning Officials—Olympic Hotel, Seattle

6-9 95th annual convention, American Institute of Architects; theme, "The Quest for Quality in Architecture"—Americana Hotel, Miami Beach

8-10 National convention, Consulting Engineers Council—Cherry Hill Inn, Cherry Hill, N.J.

21-24 Fourth annual National Home Fashions League conference—Hotel Plaza, New York City

22-24 Biennial national convention, American Federation of Arts; theme, "The Role of Government in Art Today"—Texas Hotel, Fort Worth and Dallas

25-30 32nd annual conference, American Society of Industrial Designers—Bellevue-Stratford, Philadelphia

26 32nd annual conference, American Institute of Decorators—Barclay Hotel, Philadelphia

29ff 14th Congress of the International Real Estate Federation; through June 2—Chicago

June

3-14 Institute of Church Design, sponsored by Carnegie Institute of Technology Department of Architecture and Pittsburgh Theological Seminary—Pittsburgh, Pa.

9-13 56th annual meeting, Air Pollution Control Association; theme, "Cleaner Air Through Understanding and Cooperation"—Sheraton-Cadillac Hotel, Detroit

9-19 Eighth annual A.I.A.—Association of Collegiate Schools of Architecture Teachers Seminar—Cranbrook Academy of Art, Bloomfield Hills, Mich.

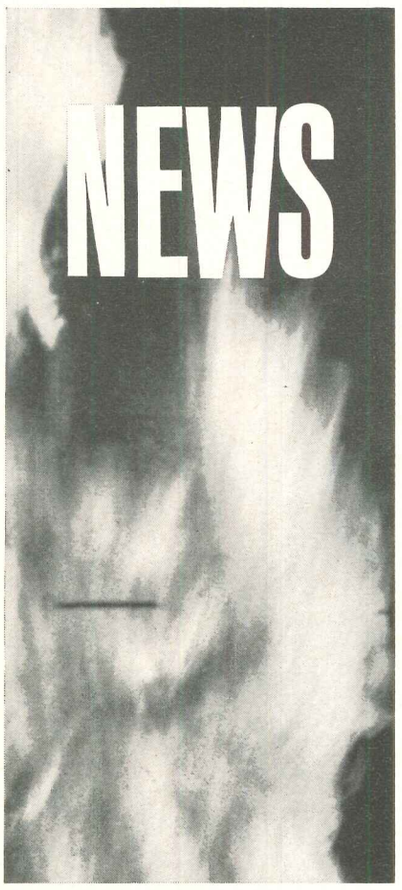
13-15 1963 convention, New Jersey Chapter, American Institute of Architects; theme, "Office Practice for the Architect"—Essex and Sussex Hotel, Spring Lake, N.J.

23-26 1963 annual meeting, American Society of Landscape Architects; theme, "The Landscape Architect and Public Parks"—Penn-Sheraton Hotel, Pittsburgh

23-28 66th annual meeting, American Society for Testing Materials—Chalfonte-Haddon Hall, Atlantic City

24-26 70th annual meeting, American Society of Heating, Refrig-

continued on page 296



FOR GREATER FIRE SAFETY

To assist you in making fullest use of the new increased fire-resistant ratings at lowest possible cost, a team of Bestwall Certain-teed Systems Engineers is available coast to coast for on-the-job guidance. These engineers are ready to work with you on quantity surveys, detailing and installation of a full range of fire rated ceiling and partition assemblies, including solid ceilings, lay-ins and assemblies using new improved Bestwall FIRESTOP.

Systems Engineers can be of assistance to architects and builders in remodeling projects as well as in new construction. Their services involve Drywall Systems, Ceiling Tile, Roofing Products, Roof Insulation, Lath and Plaster. Contact your Bestwall Certain-teed Sales Corporation office.

BESTWALL CERTAIN-TEED

For more data, circle 148 on Inquiry Card

PROBLEM

Provide year-round comfort for the world's largest apartment: THE PHILADELPHIAN in Philadelphia, Pa.

SOLUTION . . . a YORK that uses low-cost

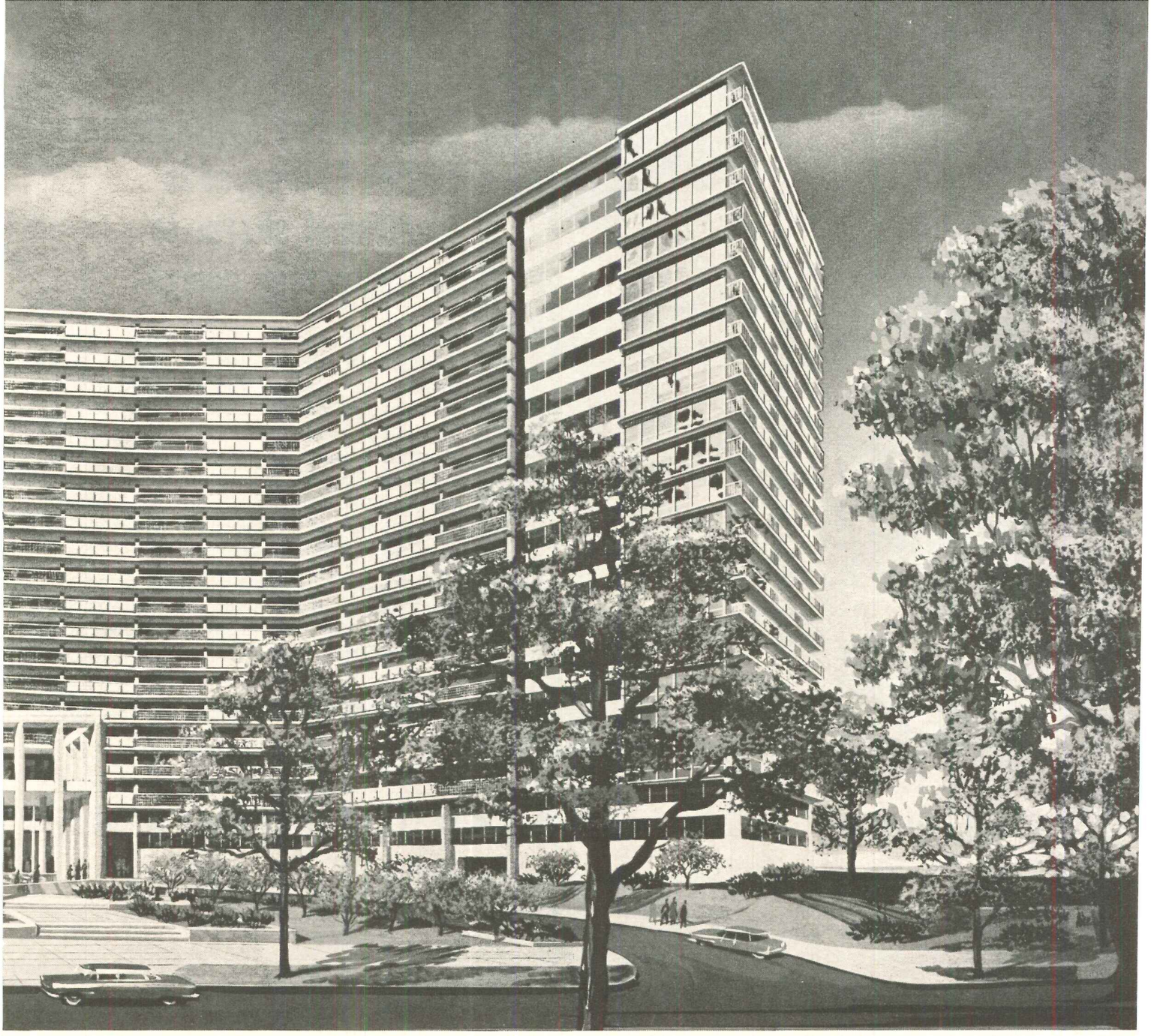
This modern apartment building was designed to complement Philadelphia's changing skyline . . . as part of a major building "renaissance" in the city.

Said to be the largest apartment building in the world, the Philadelphian consists of 776 apartments. Heating and cooling comfort are provided by 2,035 individually controlled York Fan-coil room terminal units. Most of these are York's "extra-thin" models, and will be furred into the walls. 130 new style York lowboys will also be used. These units are only 13″ high and are designed especially for installation under low windows. Water chilling for the system will be provided by 2,000 tons of York absorption equipment — using city-furnished low pressure steam.

Overlooking Philadelphia's busy Benjamin Franklin Parkway, the Philadelphian is near the well-known Philadelphia Art Museum. Architect Samuel I. Oshiver has designed this large apartment building so that it presents an appearance in keeping with the area near the museum.

Built by J. P. Lieberman and Max E. Cohen at a cost of $20 million, the Philadelphian had one of the largest FHA commitments on record. General Contractor, Gilbane Building Company; Mechanical Contractor, Daniel J. Keating, Philadelphia.

Plan ahead with York when you plan air conditioning for any type of building. For over 75 years, York has set the pace in raising comfort standards for home, business and industry . . . pioneered many of the major ad-



Architects and Engineers, Samuel I. Oshiver and Associates, Philadelphia.

AIR CONDITIONING SYSTEM

municipal steam for cooling!

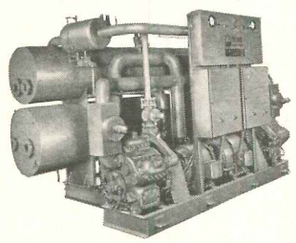
vances in air conditioning and refrigeration. For specification data on York Fan-coil and Induction units, and on York absorption machines, see your York Representative; or write York Corporation, York, Pennsylvania. In Canada, Shipley Company of Canada, Ltd., Rexdale Boulevard, Toronto, Canada. Get complete facts on the York Certified Maintenance Program, and the York Lease Plan that lets your client install air conditioning equipment now, without capital investment.

YORK CORPORATION
Subsidiary of Borg-Warner Corp.
YORK, PENNSYLVANIA

THE QUALITY NAME IN AIR CONDITIONING AND REFRIGERATION

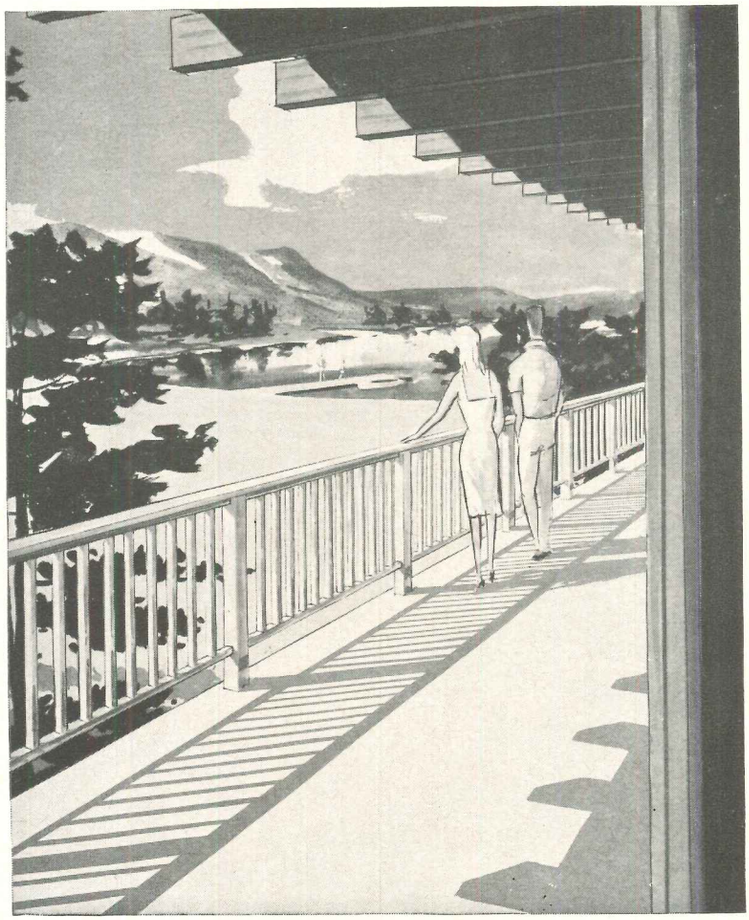
York ® BW BORG-WARNER

ANOTHER YORK SOLUTION!



A York Heat Pump uses only electricity and air to heat and cool any type of building. May be located almost anywhere, from basement to rooftop; no space-taking fuel storage.

For more data, circle 150 on Inquiry Card



New Anchor® All-Aluminum Picket Railing adds traditional charm to contemporary design

Choose new Anchor All-Aluminum Picket Railing for lasting beauty and positive protection. Its attractively-spaced pickets and posts are topped with a comfortably-formed handrail . . . all brightly finished in rust-proof, natural or anodized aluminum. The entire railing is free from maintenance worries, full of popular appeal. And Anchor's national network of skilled erectors provides quick and efficient installation.

For detailed information on our complete line of balcony railings, call your local Anchor office or write: Anchor Post Products, Inc., 6684 Eastern Ave., Baltimore 24, Maryland.

ANCHOR POST PRODUCTS, Inc.

Plants in Baltimore, Houston, Los Angeles

For more data, circle 151 on Inquiry Card

Quarry Tile of Special Shapes

The unique beauty of Ludowici special shapes shale flooring tile is now practical for your most budget minded client. Because of greatly increased demand, price reductions have been made on all special shape styles. No difference in quality or texture.

You can now afford the world's most beautiful flooring tile.

Provence, Valencia and Renaissance patterns available in brushed or smooth, in red or fire flashed colors.

For complete information and the name of your nearest distributor write:

FLOORING TILE DIVISION—Dept. R.

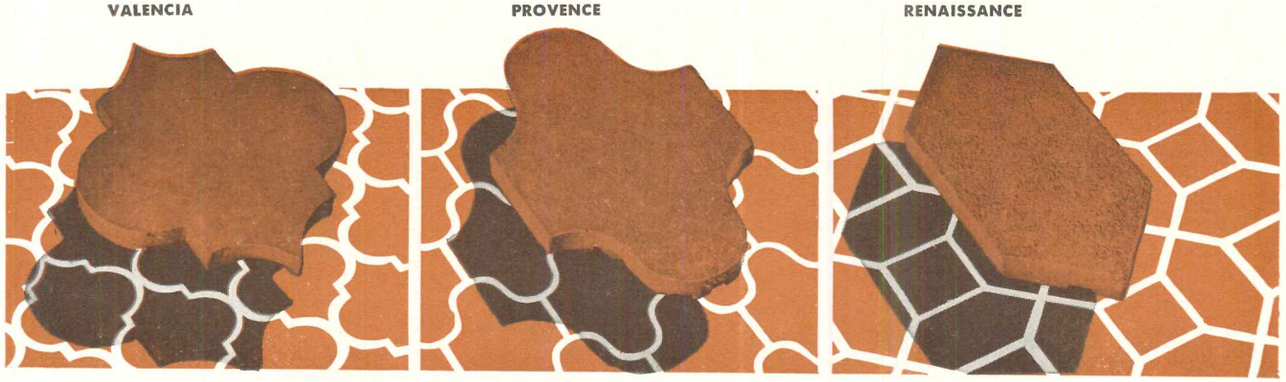
LUDOWICI-CELADON CO. • 75 East Wacker Drive, Chicago 1, Illinois

Manufacturers of quarry tile, the nation's largest producer of roofing tile and NAILON Facing Brick

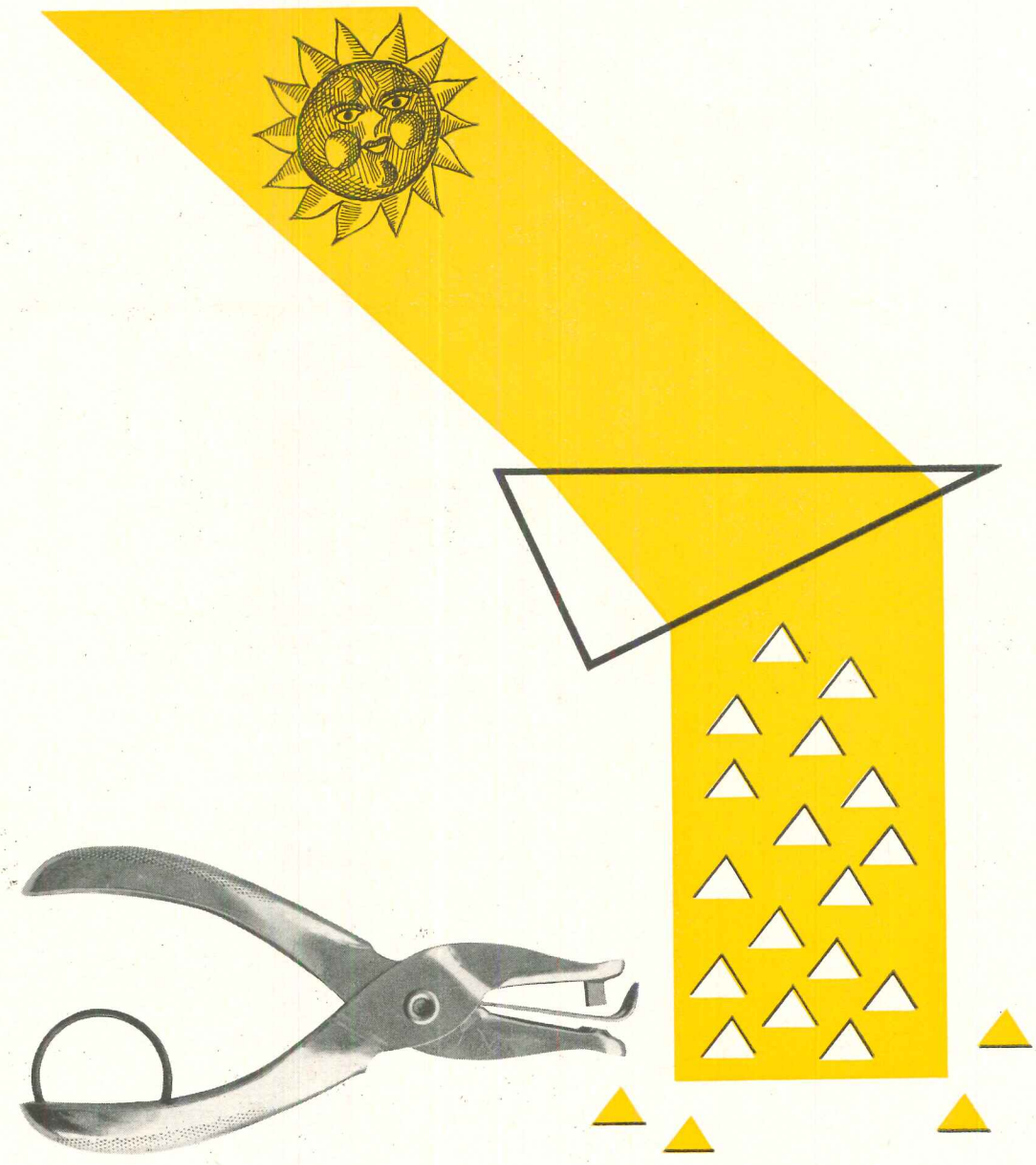
WEST COAST REPRESENTATIVES: Gladding, McBean & Co., Los Angeles, San Francisco, Portland, Seattle, Spokane, Phoenix

HAWAII REPRESENTATIVES: Lewers & Cooke, Ltd., Honolulu

VALENCIA PROVENCE RENAISSANCE



For more data, circle 152 on Inquiry Card

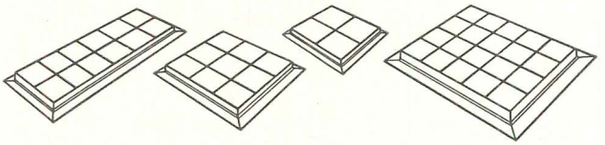


Daylight Ticket Taker

Hundreds of little prisms in Toplite Roof Panels guard the gateways for all light rays. Intense rays from the high summer sun are punched out or rejected. These prisms admit only low-angled light from the north sky and winter sun—just the ticket for soft, uniform day lighting, free from glare or shadows. Thus, Toplite's exclusive prisms also reduce heat build-up, transmitting only about one-third as much heat in summer as conventional skylights.

Toplite Roof Panels have a low profile that does not affect the appearance of the structure. They are available in a variety of sizes for easy installation on buildings of all types.

Mail the coupon for complete technical information on the only skylight offering optical control of sunlight.



SEND FOR TECHNICAL DATA

Products Research Company, Dept. AR-563
2919 Empire Ave., Burbank, Calif.

Please send me complete information about Toplite Roof Panels.

NAME_____

FIRM NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

PRC®

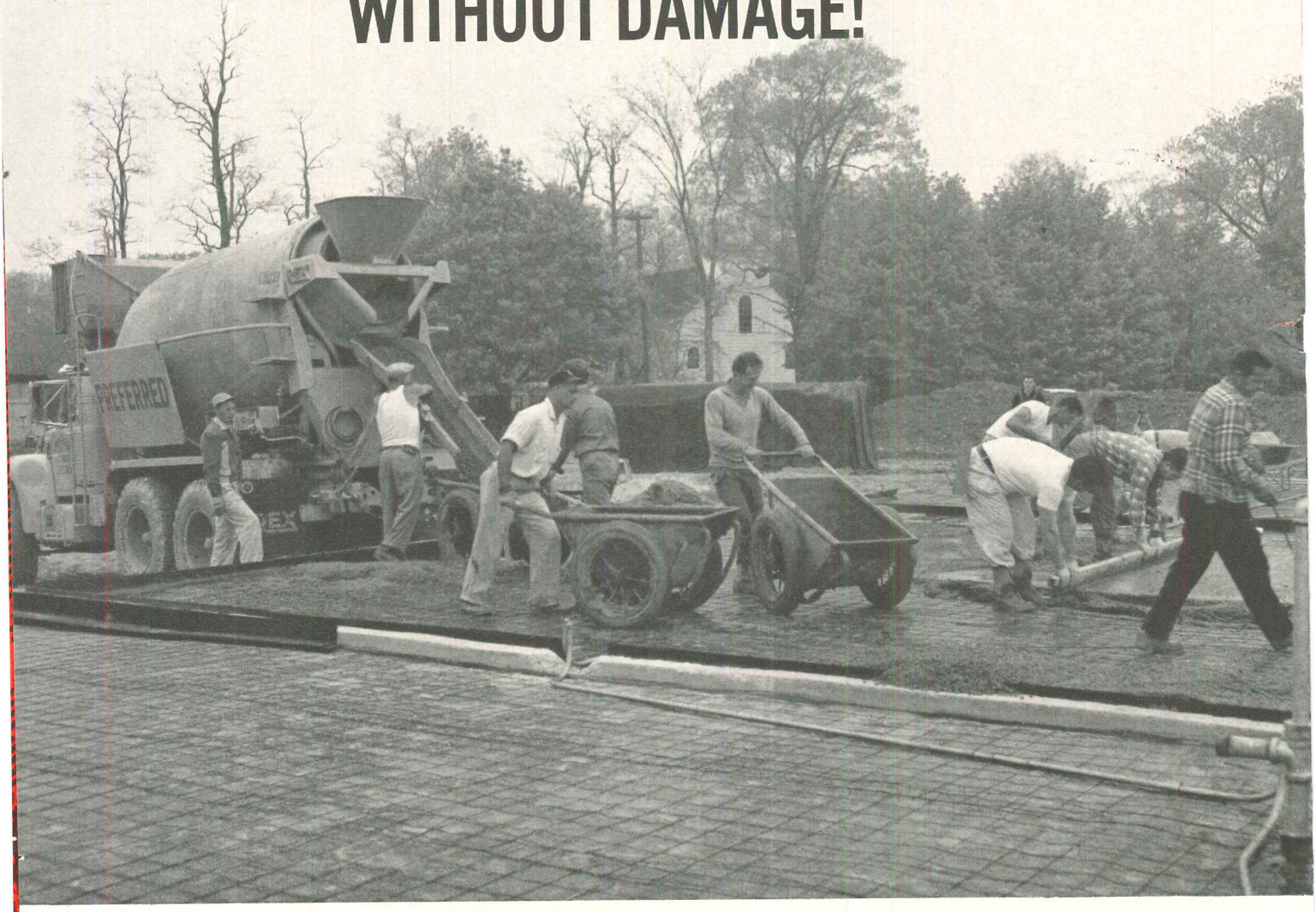
Research is our middle name

PRODUCTS RESEARCH COMPANY
2919 Empire Ave., Burbank, California
410 Jersey Ave., Gloucester City, N.J.

For more data, circle 155 on Inquiry Card

MOISTOP

MOISTURE-VAPOR BARRIER CAN TAKE A BEATING WITHOUT DAMAGE!



This is the kind of rough treatment that a lot of vapor barriers, including 6 mil polyethylene, just can't take! Rips and punctures will allow moisture to get through. But super-strength MOISTOP won't let this happen! Moistop is a combination of tough, reinforced, waterproof Sisalkraft **plus** polyethylene . . . this combination is far tougher than polyethylene by itself.

Moistop has an MVT rating of 0.15 perms, and exceeds FHA minimum property standards. Available in 1,200 sq. ft. rolls, 72″, and 96″ wide, lays down fast over areas prepared for concrete slabs or basement floors and crawl spaces in homes. Specifications in Sweet's File 8h/AM. Send for additional information and samples.

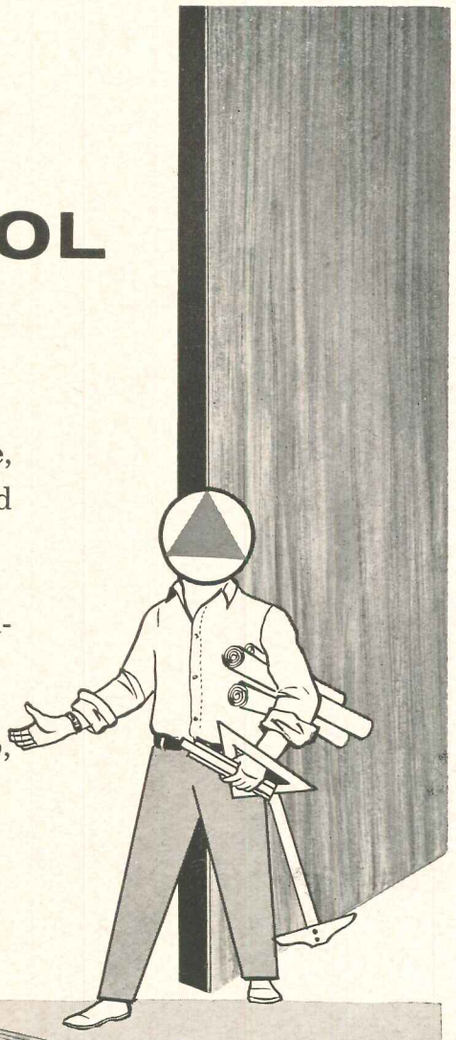
AMERICAN SISALKRAFT COMPANY
73 Starkey Avenue, Attleboro, Massachusetts • Division of St. Regis Paper Company

MOISTOP a Lamination of Reinforced Paper & Polyethylene

For more data, circle 156 on Inquiry Card

from your

GJ DOOR CONTROL SPECIALIST

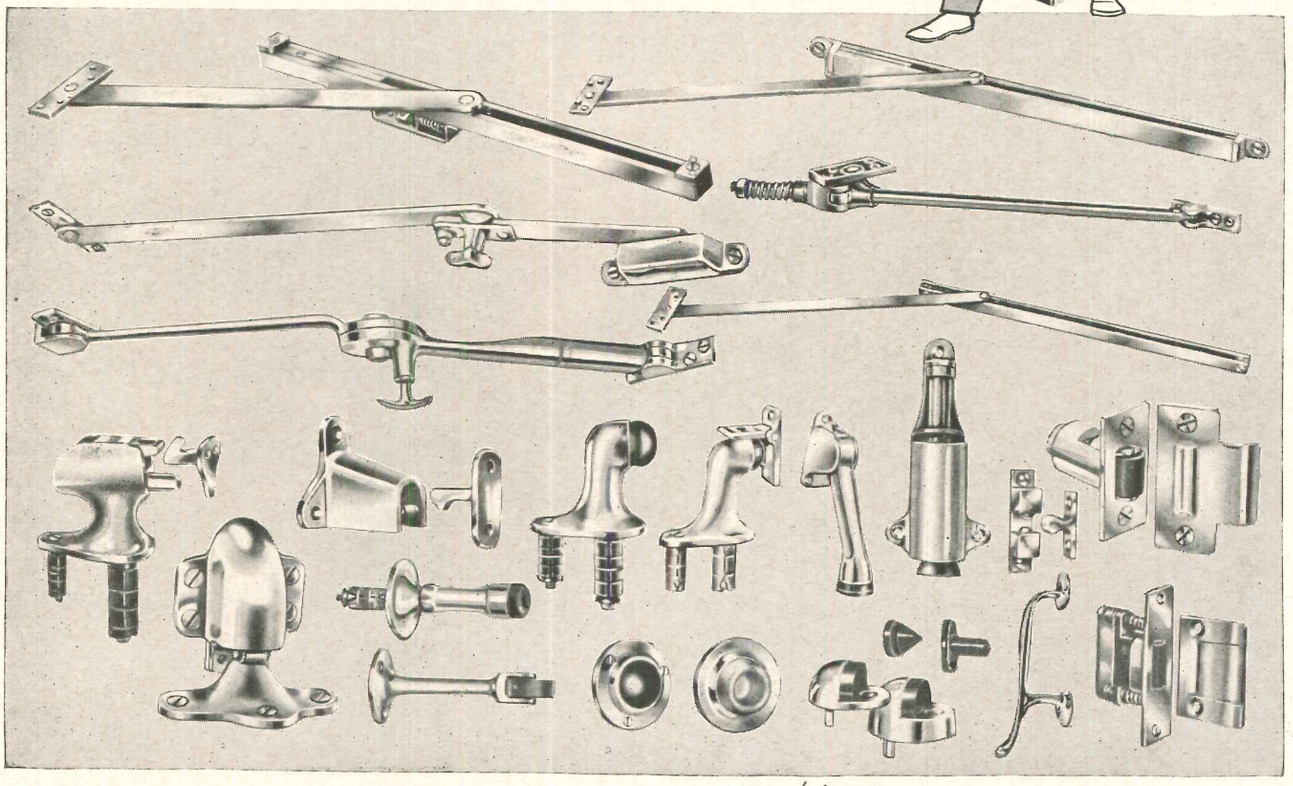


. . . the only complete line of door control hardware, enabling you to select to fit your exact functional and budget requirements.

. . . experienced analysis of every order with engineering aid when required.

. . . quality, the finest in materials and workmanship, consistent for over 35 years.

Your specification means more when you write in ***" . . . shall be GJ."***



GLYNN·JOHNSON CORPORATION

4422 n. ravenswood avenue
chicago 40, illinois

For more data, circle 157 on Inquiry Card

Adaptable PITTCO® 82-X Curtain Wall Framing System specified for New Orleans Post Office

The design flexibility of the PITTCO 82-X Curtain Wall Framing System is handsomely demonstrated in the recently completed New Orleans Post Office. Specified for both the high-rise section and the low-rise wing, the 82-X System easily accommodated the design requirements of each. PITTCO 82-X permits the framing of variously textured materials ranging in thickness from 3/16" to 1". In this new post office 1/4" SOLARGRAY® Heat-absorbing Plate Glass was used in the vision areas and 1/4" Stipple Finish SPANDRELITE® Glass in the spandrel areas. Moreover, the horizontal ribbon of mosaic spandrel material relating the two wings was accepted by 82-X without modification.

In addition to the four standard PITTCO Framing Systems available (see details on opposite page), PPG offers custom fabrication service to meet any special curtain wall design requirement. A PPG Architectural Representative will be pleased to consult with you regarding application of any PPG curtain wall components—framing, spandrel and vision-area glass, doors and entranceways. If you wish, PPG will accept full responsibility for installation of a PPG curtain wall system. PPG's nationwide organization provides local supervision of complete curtain wall erection and glazing.

For detailed curtain wall information, see Sweet's Architectural File, Section 3a. For data on complementary Pittsburgh Plate Glass product lines for entrances, spandrels, insulation and glazing, see Sections 16e, 19e, 7a, 21, 3e, 16d.

U.S. Post Office and Federal Building, New Orleans, Louisiana • Architects: Freret & Wolf; August Perez & Associates; Mathes, Bergman & Associates; Associated Architects • PPG Products: PITTCO 82-X Framing; SOLARGRAY Glare- and Heat-reducing Plate Glass; Opaque Charcoal Stipple Finish SPANDRELITE Glass Spandrels; TUBELITE® Glass Doors.

Detail photograph of PITTCO 82-X Curtain Wall. Clean, crisp members show no visible fasteners—accept glass and mosaic spandrel panels without modification. Note distinctive reflective quality of PPG SOLARGRAY Plate Glass.

Pittco Design-Oriented, Weather-Defying Curtain Wall Framing Systems

PITTCO Framing Systems are engineered to withstand extremes of temperature, humidity and precipitation. All metal-to-metal joints are permanently gasketed with PPG DURIBBON® 1072 sealant. Integral weep and vent provisions handle condensate problems and permit breathing of spandrel pockets.

PITTCO 82-X features exterior dry setting of 3/16" to 1" glazing. Exterior stainless steel glazing retainers and snap-on cover moldings for both vertical and horizontal members are patented PPG designs.

The 2" or 2½" wide steel tube members may be specified in depths from 1" to 6" to meet any wind and shear load requirement. Cover moldings, available in depths from ¾" to 5", offer wide flexibility in sightlines and reveals. Face members and tube covers can be supplied in various colors, aluminum, bronze or stainless steel.

PITTCO 25-X, for 1" insulating glass, is a variation of the 82-X system. It employs 2½" wide mullions for use with 1" PPG TWINDOW® Insulating Glass.

PITTCO 900 Series is an all-aluminum system suitable for either single- or multi-story application. Three primary vertical mullion extrusions with varying load-bearing characteristics and four major horizontal extrusions are all fully interchangeable to meet any framing requirement. ⅛" to ⅜" glass for vision and spandrel areas is dry set in vinyl glazing inserts. PITTCO 900 Series is most practical where grids are stacked horizontally during installation.

PITTCO 670 Series is an easy-to-erect, low-cost system for single or multi-story construction. A basic 2⅛" x 2 1/16" aluminum extrusion is used for both vertical and horizontal members. ¾", 1½" and 2" compression-batten face members provide for variations in sightlines and reveals. The PITTCO 670 Series permits exterior dry glazing of 7/32" and ¼" vision and spandrel materials; a special body extrusion permits use of 1" TWINDOW Insulating Glass.

Pittco Architectural Metals from . . .

Pittsburgh Plate Glass Company

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

For more data, circle 158 on Inquiry Card

Announcing

the RONAN & KUNZL

Electro-Hydraulic

HYDRA-SLIDE® DOOR OPERATOR

On new construction or remodeling, Hydra-Slide enables the architect to carry out an entrance design entirely compatible with the building concept he has in mind.

Proved by actual use in public buildings for over 3 years, this compact electro-hydraulically actuated operator is quiet ...fast-acting...and dependable.

It's ideal for interior use as well as entrances; in stores, restaurants, airports, hospitals, schools, office buildings, banks, drive-ins, hotels and motels.

Hydra-Slide saves floor space. Opens and closes faster than swinging doors. It provides safe, rapid traffic flow, and is not affected by wind or stack action.

Available nationally from your nearest Pittsburgh Plate Glass Company branch.

See our catalog in SWEETS or write for literature and specifications.

"Dependable Door Controls Since 1947"

RONAN & KUNZL, INC.

1240 S. KALAMAZOO AVE., MARSHALL 10, MICHIGAN

On the Calendar

continued from page 285

erating and Air-Conditioning Engineers—Hotel Schroeder, Milwaukee

24-30 International Design Conference; theme, "Design and the American Image Abroad"—Aspen, Colo.

26-29 Annual meeting, National Society of Professional Engineers—Sheraton-Cleveland Hotel, Cleveland

Office Notes

Offices Opened

James A. Ham has opened an office for the practice of architecture at 4 Beverly Place, St. Louis 12, Mo.

David H. Wilson and Associates announce the opening of an office for the general practice of architecture. The firm, David H. Wilson, Architect, originally organized in 1949, became Wilson and Christie, Associated Architects in 1950. Reorganized under the present name in February, 1963, the firm continues to practice from the location of 403 Washington Ave., Towson, Md.

The Engineers Collaborative, consulting structural engineers, at 8 South Michigan Ave., Chicago, have opened an office in Rockford, Ill. with Mr. Norman Meyer as associate in charge.

New Firms, Firm Changes

Walter W. Case, architect and designer, has been named director of design for Hagman & Meyer of Los Angeles and Menlo Park, Calif.

Alanson C. Eberhart, professional civil engineer, has joined Huberth & Huberth, Inc. as director of the firm's industrial leasing department.

Five associates have been appointed to the staff of Kivett and Myers, Kansas City, Mo. They are: **James E. Arnold, Wesley J. Dolginoff, William Love, R. Bruce Patty and J. M. Totta.**

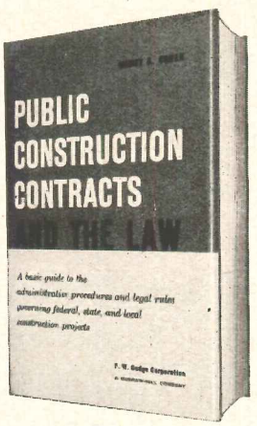
Addendum

In the Office of the Year Awards news story, December, page 78, the design of the American Cement Building, Los Angeles, was wrongly credited to Paul Bennett & Associates, the interior designers. Architects for the building were Daniel, Mann, Johnson & Mendenhall. We sincerely regret the error.

← For more data, circle 159 on Inquiry Card

A basic guide to the administrative procedures and legal rules governing federal, state, and local construction projects . . .

PUBLIC CONSTRUCTION CONTRACTS AND THE LAW



by Henry A. Cohen, Director
Bureau of Contracts
Department of Public Works
State of New York

A clear understanding of the procedures and rules surrounding public construction contracts is vital to architects, engineers, and suppliers — as well as contractors and government officials.

Public Construction Contracts and the Law provides the first practical approach to this increasingly-complex subject. It examines and explains *every* important aspect of administration at *every* stage of a project and at *every* level of government.

Anyone concerned — directly or indirectly — with the public construction contract will find this new book a most useful reference.

400 pages, $12.85

Mail this coupon for free examination copy

McGraw Hill Book Co., Inc., Dept. FARR-5
327 West 41st Street, New York 36, N.Y.

Send me COHEN'S PUBLIC CONSTRUCTION CONTRACTS AND THE LAW, for 10 days examination on approval. In 10 days I will remit $12.85, plus few cents for delivery costs, or return book postpaid. (We pay delivery costs if you remit with this coupon. Same return privilege.)

Name .....

Address .....

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

Company .....

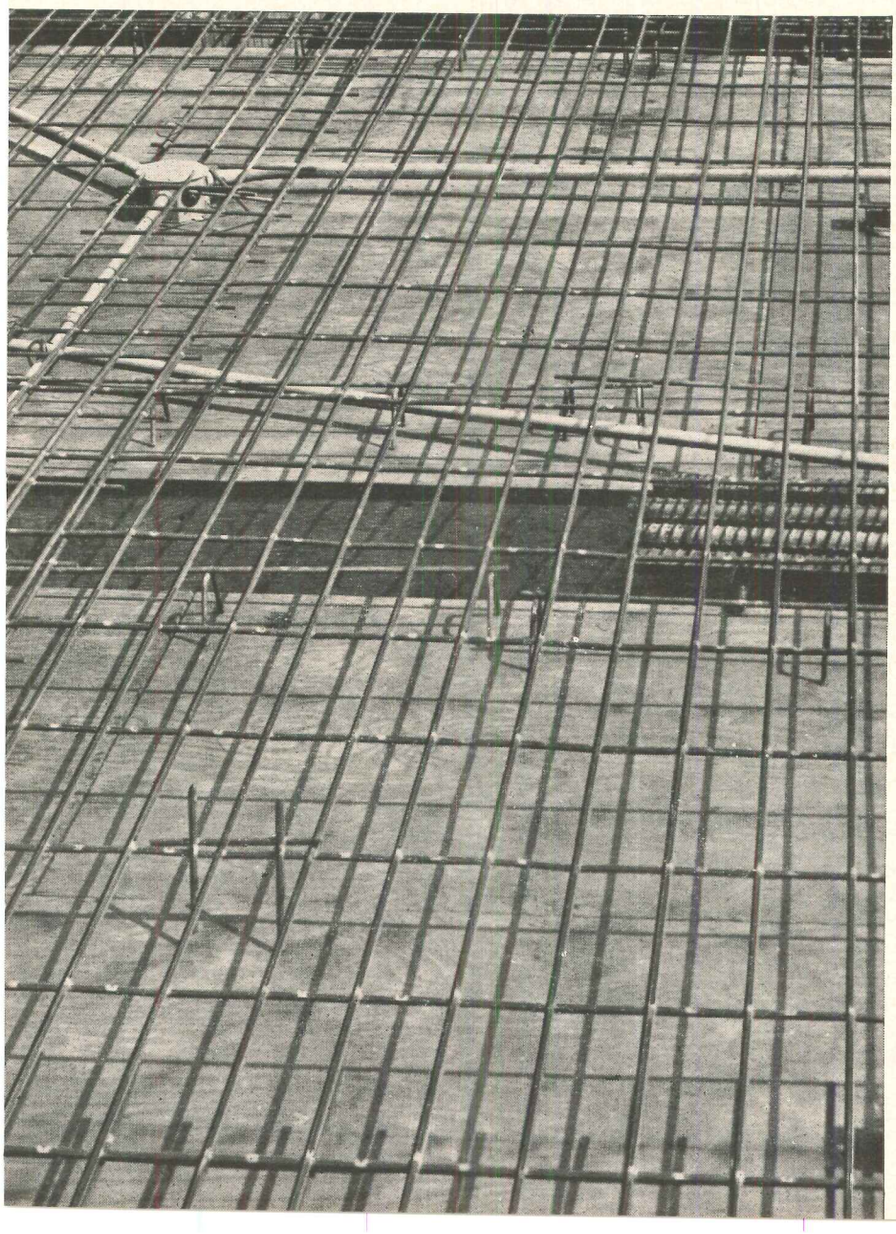
Position .....

FARR-5

8th and Wabash Corporation Parking Garage, Chicago. Designed by Miller Engineering Company; built by Stuparitz Construction Company; both of Chicago. Area: 65,000 sq. ft.

Sheets of welded wire fabric save 42% on placement costs

Completed 63 days ahead of schedule with the help of USS American Structural Welded Wire Fabric Sheets.



Here's a contractor who saved money in *four ways* by using sheets of USS American Structural Welded Wire Fabric. Mr. Charles Stuparitz, President of the Stuparitz Construction Company, Chicago, put it this way:

1. "We saved 42% on placement costs by using sheets of fabric rather than rebars."

2. "We saved an additional 30-32% on accessories using Welded Wire Fabric."

3. "We also saved on finishing labor. We found booster chairs were necessary only around the beams. The use of fabric also results in less scrap plywood after stripping."

4. "Using fabric you obtain the exact steel placement required. It can't spread during vibration of concrete."

On this 8th and Wabash Corporation Parking Garage job in Chicago, USS American Structural Welded Wire Fabric, Style 3x8-3/3, was furnished through Jos. T. Ryerson & Son, Inc. Fabric sheets went in faster, the building was completed in four months, and started making money 63 days ahead of schedule.

Write to American Steel and Wire, Rockefeller Building, Cleveland 13, Ohio, for complete information on the use of American Structural Welded Wire Fabric. USS and American are registered trademarks.

American Steel and Wire Division of United States Steel

USS

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal & Iron Division, Fairfield, Alabama, Southern Distributors
United States Steel Export Company, New York, Distributors Abroad

For more data, circle 160 on Inquiry Card

Recovery room special purpose units and panels.

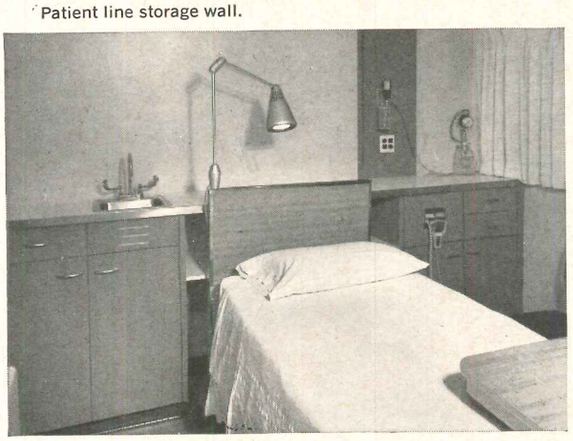
Casework for Progressive Patient Care

Installations throughout Lutheran Hospital and Medical Center, Wheat Ridge, Colorado, show clearly how casework by St. Charles can help to provide the utmost in "progressive patient care." To learn more about the many advantages of custom-created casework systems, write on your letterhead to:

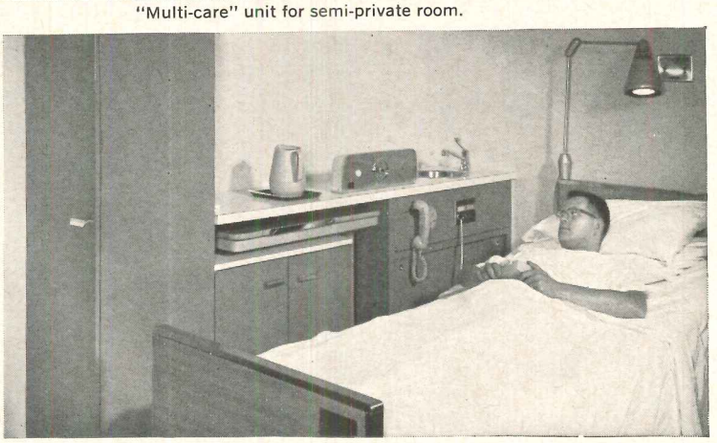
St. Charles
Hospital Casework Systems
St. Charles Manufacturing Company
Dept. AR-10, St. Charles, Illinois

Patient line storage wall.

"Multi-care" unit for semi-private room.



"Intensive-care" units and panel.

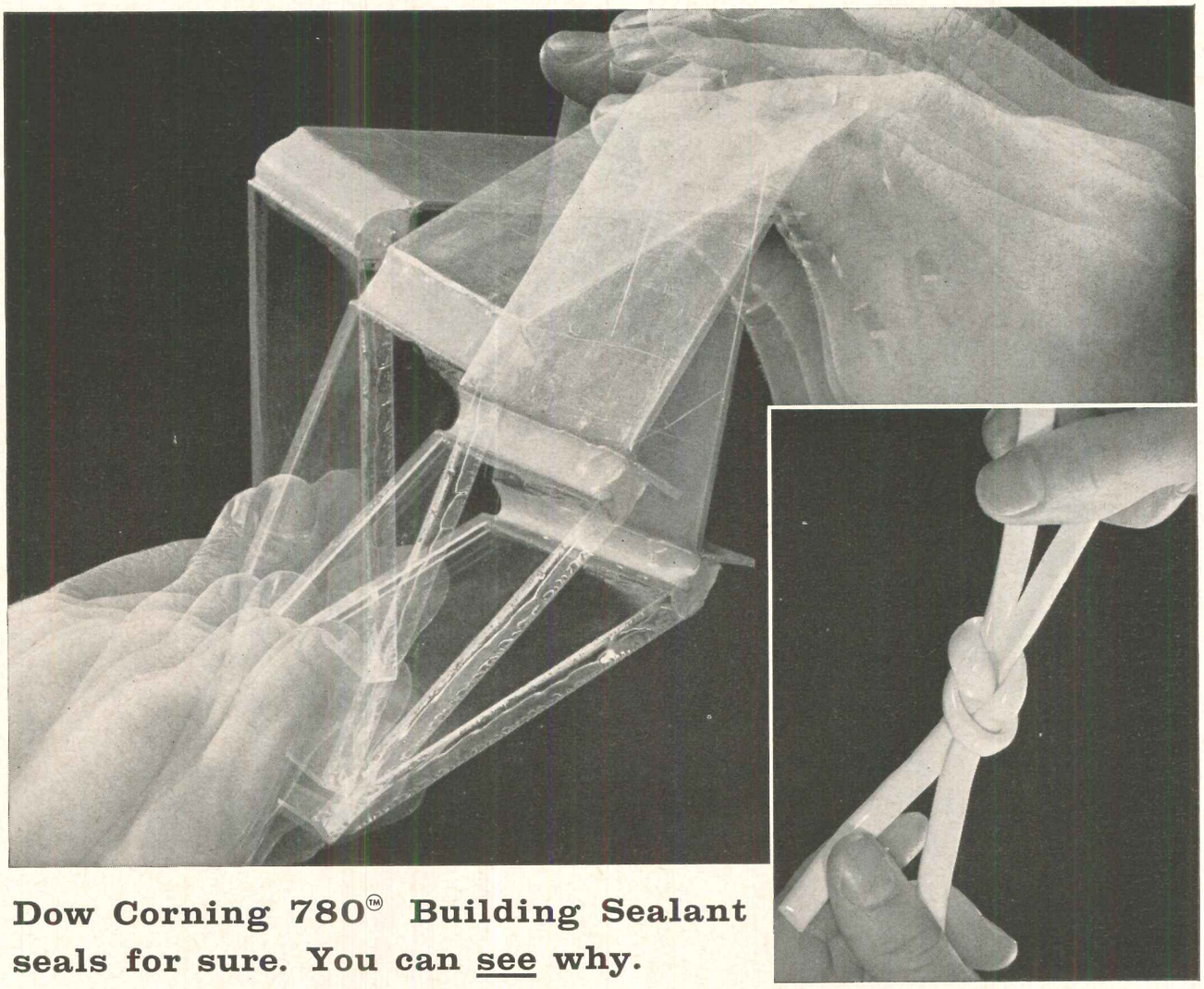


"Multi-care" unit for private room.

For more data, circle 161 on Inquiry Card

BUILDING PRODUCTS NEWS from Dow Corning

Stays flexible, bonds better!



Dow Corning 780™ Building Sealant seals for sure. You can see why.

No other building sealant approaches *silicone rubber* for retention of *flexibility and adhesion.* That's the basic reason 780 Building Sealant *permanently seals* any combination of structural materials under temperature conditions ranging from —80 to 350 F. Note glass to aluminum bond above.

This one-part, premium performance silicone rubber sealant cures rapidly, stays permanently flexible. It can be applied, without pre-heating or refrigerating, from 0 to 120 F. There is no need for job-site mixing, with attendant labor costs and risk of error; 780 Sealant is supplied in ready-to-use polyethylene cartridges to fit standard air or hand operated guns.

Need more convincing? Send for our special prove-it-yourself kit offered in coupon at right.

DOW CORNING CORPORATION
Dept. C429, Chemical Products Division
Midland, Michigan

I'd like to test the flexibility you claim.
Send me further data on 780 Building Sealant, and a cured extrusion like that shown in the picture above.

Name _____

Title _____

Firm _____

Street Address _____

City _____ Zone ___ State _____

780 Building Sealant is manufactured and packaged only by Dow Corning Corporation.

first in silicones

Dow Corning

For more data, circle 162 on Inquiry Card

NO. 10 long barrel shells

a.i.a. file: 4-a

Prepared as a service to architects by Portland Cement Association

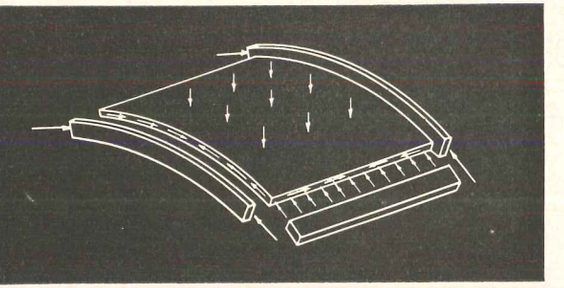
Clip along dotted line

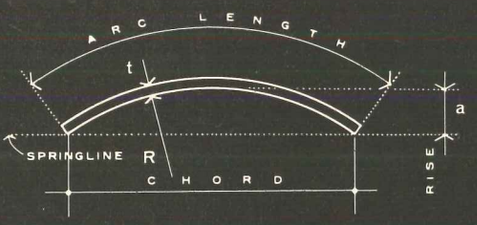
Milwaukee Gas Light Company, Milwaukee, Wisconsin. Architects: von Grossmann, Inc., Milwaukee. Engineers: Ford, Bacon & Davis, Inc., New York City.

Intriguing designs and long spans are readily achieved with concrete barrel shells. Long barrel shells are those which have a small chord compared to span. (Short barrels have large chords compared to span.)

To achieve full shell action (a membrane free of bending moments), support is required along the two curved edges as well as along the straight edges, as shown in the diagram below. In practice, however, the straight edges are never fully restrained so that some small bending moments in the shell must be considered in the design.

The stiffeners along the curved edges usually consist of arch-type ribs or diaphragms spanning between the supporting columns. Cantilevers are easily achieved; thus the visible shell edge can be as thin as the basic shell. Write for further free information. (U.S. and Canada only.)

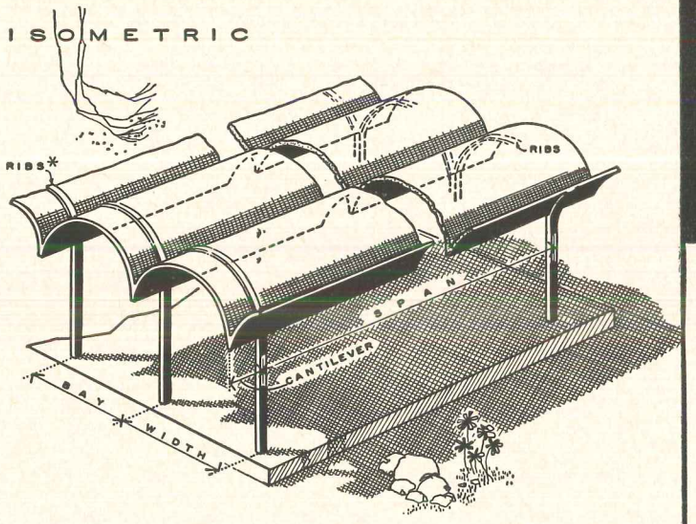




BARREL SHELLS / SPAN DATA (1)

SPAN	BAY WIDTH	a	R	t	reinforcing (2)
80′	30′	8′	25′	3″	3.5
100′	30′	10′	30′	3″	4.0
120′	35′	12′	30′	3″	4.5
140′	40′	14′	35′	3″	5.0
160′	45′	16′	35′	3½″	6.5

(1) for long-span multiple barrels, the usual span-to-depth ratio varies from 1:10 to 1:15
(2) pounds per square foot of projected area

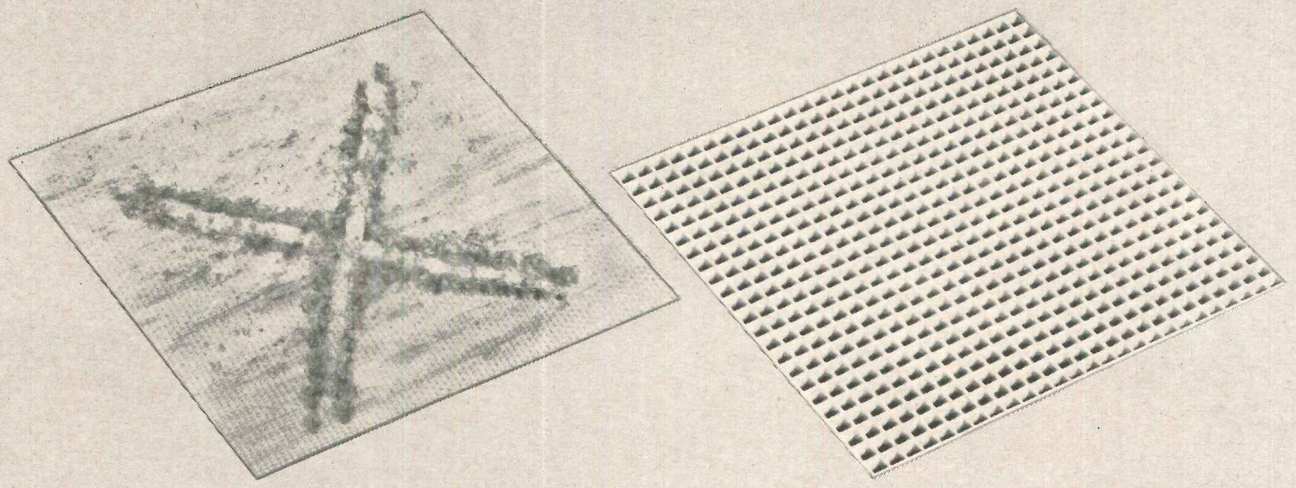


*RIBS, NECESSARY TO STIFFEN THE SHELL AT THE SUPPORTS, MAY BE INCORPORATED ABOVE OR BELOW THE CURVED PLANE. DRAWING ABOVE SHOWS BOTH TYPES.

PORTLAND CEMENT ASSOCIATION Dept. A5-8, 33 West Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of concrete

For more data, circle 163 on Inquiry Card ➔



GET THE POINT?

Sure . . .

Louvers can't collect dust; it falls through. Light goes THROUGH and illuminates the work surface —not the panel. Why lose light? You're paying for it.

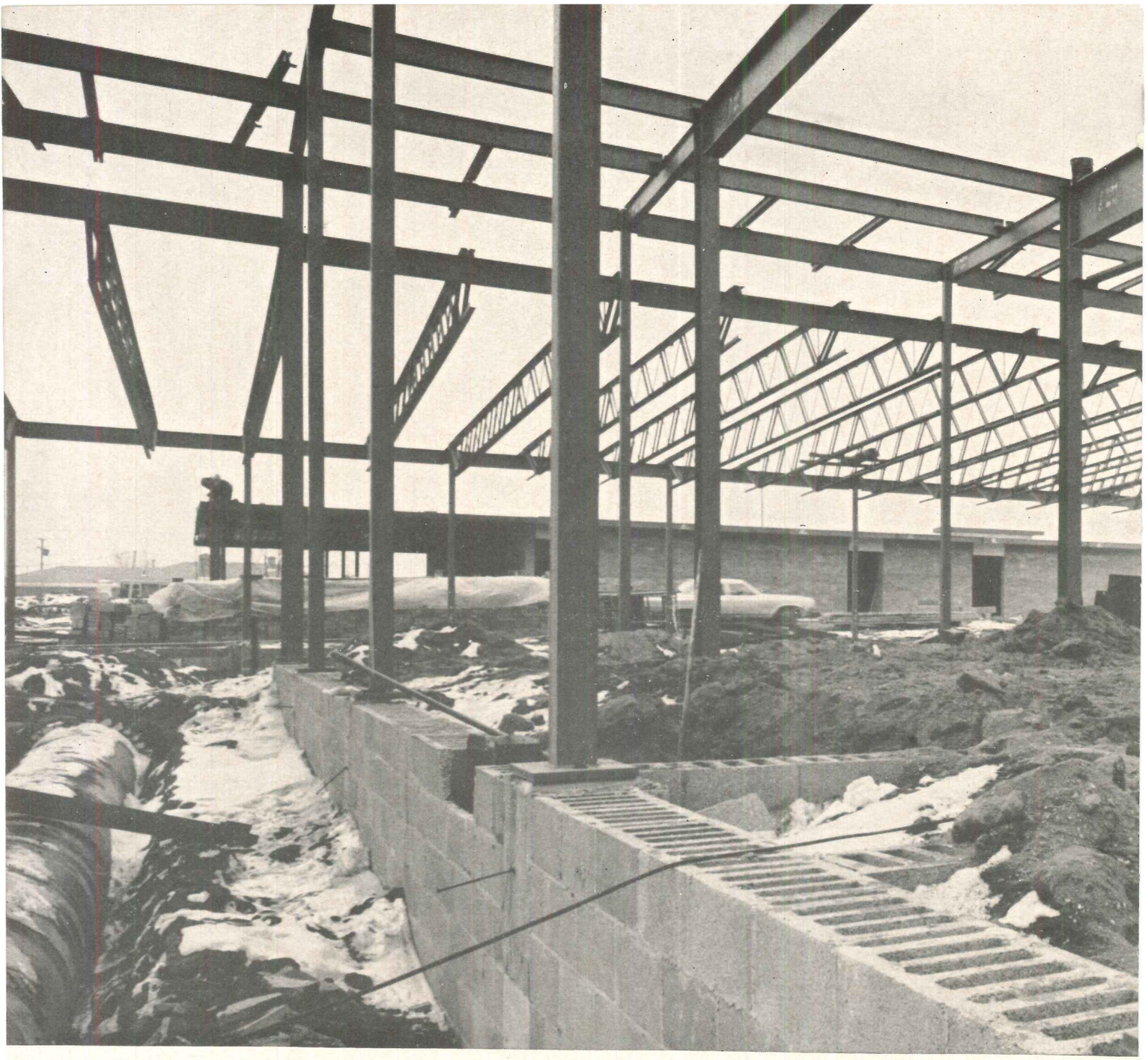
Louvers MAINTAIN high foot-candle, shadowless illumination. Over 70% of the panel is open. High efficiency. Ballests operate cooler. Lamps too. Like more specifics and a sample kit?

Write . . .

american louver company

5308 NORTH ELSTON AVENUE • CHICAGO 30, ILLINOIS

HEAD OFFICE	CANADA 3019 DUFFERIN ST.	TORONTO
Branch Warehouse	5780 PARE ST.	MONTREAL
Branch Warehouse	946 ERIN ST.	WINNIPEG



36% stronger tube cuts the cost of bearing the load

Without increasing cost, Republic has increased guaranteed minimum yield strength of square and rectangular structural steel tubing by 36% over ASTM Specifications A-7 or A-36.

Detailed in the chart at right and in Republic's new ST-101 Specification, the higher strengths can bring about significant savings in overall costs. You'll *spend less money* to get needed bearing strength in columns, posts, lintels, spandrels, and other structurals. But that's only the beginning.

ELECTRUNITE® Structural Steel Tubing combines the efficiency of hollow, thin-wall sections with trimness of line that integrates with other elements and materials. Use of tubing cuts weight of structures, permits lower-cost footings and foundations.

You will find that structural steel tubing is ideally suited to off-site fabrication. It is quickly and easily joined by any of the conventional welding processes.

Republic ELECTRUNITE Structural Steel Tubing is available in rounds to six inches O. D., squares and rectangulars in peripheries to 20 inches and wall thicknesses including .250-inch.

REPUBLIC STEEL
Cleveland 1, Ohio

NEW REPUBLIC SPECIFICATION ST-101

		Grade A	Grade B	Grade C
Rounds	Tensile Strength, Min., psi.	45,000	52,000	60,000
	Yield Strength (.2% offset), Min., psi.	33,000	42,000	50,000
	Elongation in 2", Min., per cent	25	25	20
Shapes	Tensile Strength, Min., psi.	60,000	60,000	70,000
	Yield Strength (.2% offset), Min., psi.	**33,000**	**46,000**	**60,000**
	Elongation in 2", Min., per cent	25	25	10

ASTM A-7		ASTM A-36	
Tensile strength, psi. for shapes of all thicknesses	60,000 to 75,000	Tensile strength, psi.	60,000 to 80,000
Yield point, min. psi.	**33,000**	**Yield point, min. psi.**	**36,000**
Elongation in 2 in., min. per cent	24	Elongation in 2 in., min. per cent	23

Stronger, ¼-inch wall ELECTRUNITE Structural Steel Tubing replaced conventional, 5/16-inch wall tubing originally specified for Shelby Township's new High School in Utica, Michigan. *Smith & Smith/Associates,* Architects. *Gilbert and Kerner,* General Contractors. *W. Williams,* Mechanical Contractors. *T. E. Letsche,* Structural Engineer. *DeCroupet Iron Works,* Steel Fabricator.

This new, 52-page booklet contains complete information including elements of sections for structural steel tubing. Just mail the coupon at right for your free copy of *Republic* ELECTRUNITE *Tubing for Structural Use as Columns and Beams.*

For more data, circle 164 on Inquiry Card

REPUBLIC STEEL CORPORATION
DEPT. AR-4604-C
1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

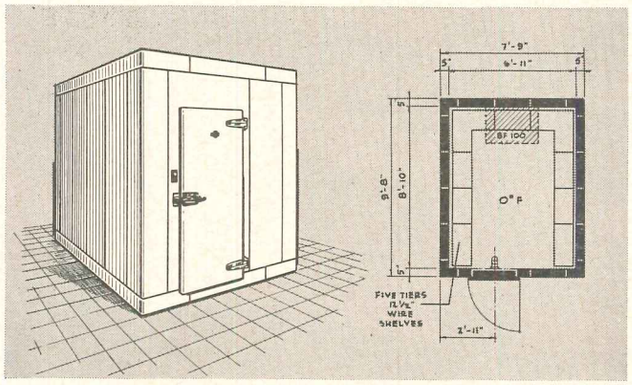
Please send a copy of the booklet, *Republic* ELECTRUNITE *Steel Tubing for Structural Use as Columns and Beams.*

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____



Low temperature Walk-In with white acid-resistant porcelain on all exterior sides installed at **Washington and Lee University,** Lexington, Virginia.

Specifications prepared by **Clark, Nexson and Owen, Architects,** Krise Building, Lynchburg, Va.

Bally pre-fab walk-ins

all-metal coolers and freezers

World's most advanced design. New materials and construction techniques offer architects an opportunity to provide tremendous refrigeration advantages to their clients.

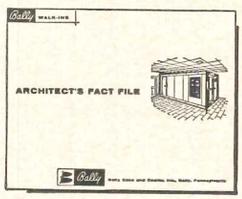
Urethane 4" thick (foamed-in-place) has insulating value equal to 8½" fibreglass. Standard models can be used as freezers with temperatures as low as minus 40° F. Urethane has 97% closed cells . . . cannot absorb moisture . . . ideal for outdoor use.

Speed-Lok Fastener designed and patented by Bally for exclusive use on Bally Walk-Ins. Makes assembly accurate and fast . . . easy to add sections any time to increase size . . . equally easy to disassemble for relocation.

New foamed door, so light in weight it ends forever the "hard pull" . . . the "big push". Door is equipped with new type hand lock (with inside safety release) and convenient foot treadle for easy opening. Also has special hinges that close door automatically. Magnetic gasket guarantees tight seal.

Self-contained refrigeration systems combine balanced capacity condensing units and refrigeration coils. Mounted and hermetically sealed with necessary controls on small wall panel. Simplifies installation. Four-hour factory test assures quiet, efficient, trouble-free operation.

Write for Free Architect's Fact File which includes 12-page brochure . . . Specification Guide . . . and sample of urethane wall construction.

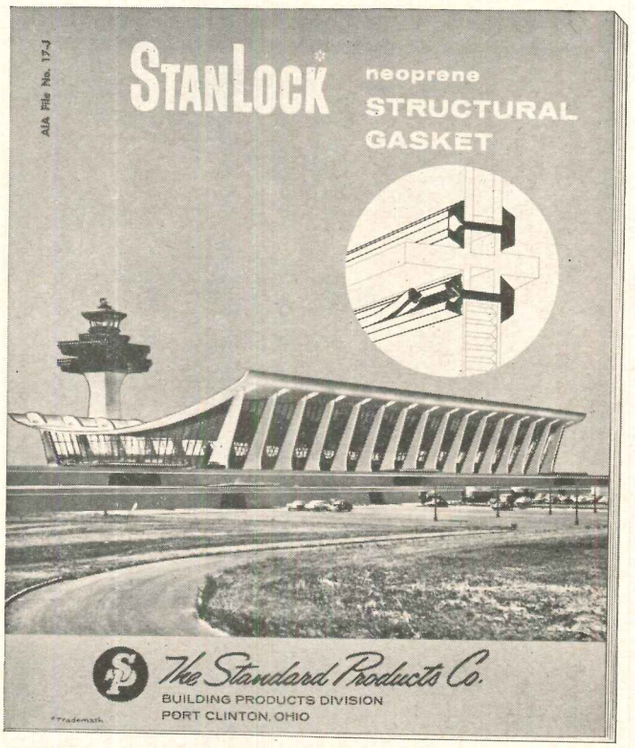


See Sweet's File, Section 25a/Ba

Bally

Bally Case and Cooler, Inc.
Bally, Pennsylvania

For more data, circle 165 on Inquiry Card



New booklet for the Architect

This is a 20-page engineering report on the most effective structural gasket ever developed for curtainwall construction. For your copy, simply send letter or post card to The Standard Products Company at the address shown above.

For more data, circle 166 on Inquiry Card

SCHOOLS AND GYM FLOORS OUR SPECIALTY!

Up to 50% Less Expansion in the Use of Edge Grain

(ACCORDING TO FOREST PRODUCTS LABORATORIES)

●

Available in REZILL-CUSH* System — "Continuous Strip" — Regular Strip

●

Avoid Buckling and Warping of Maple Flooring with —

★ EDGE GRAIN ★

CONNOR'S "LAYTITE"®

SEE SWEET'S FILE Specs. #13J/CO

CONNOR LUMBER AND LAND COMPANY

PHONE VI 2-2091

P. O. BOX B-810- • WAUSAU, WIS.

® U. S. PAT. OFF. *TRADEMARK

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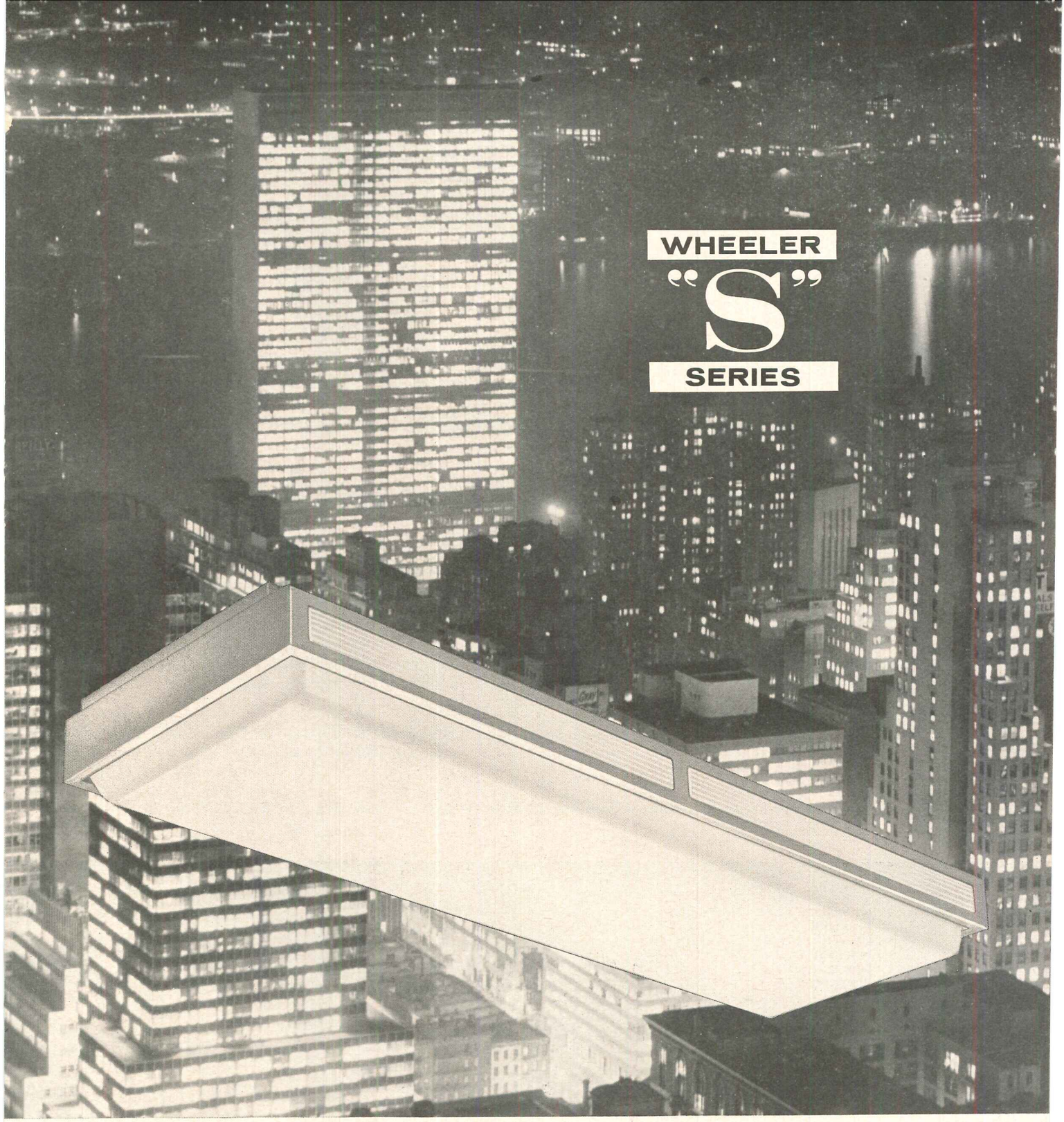
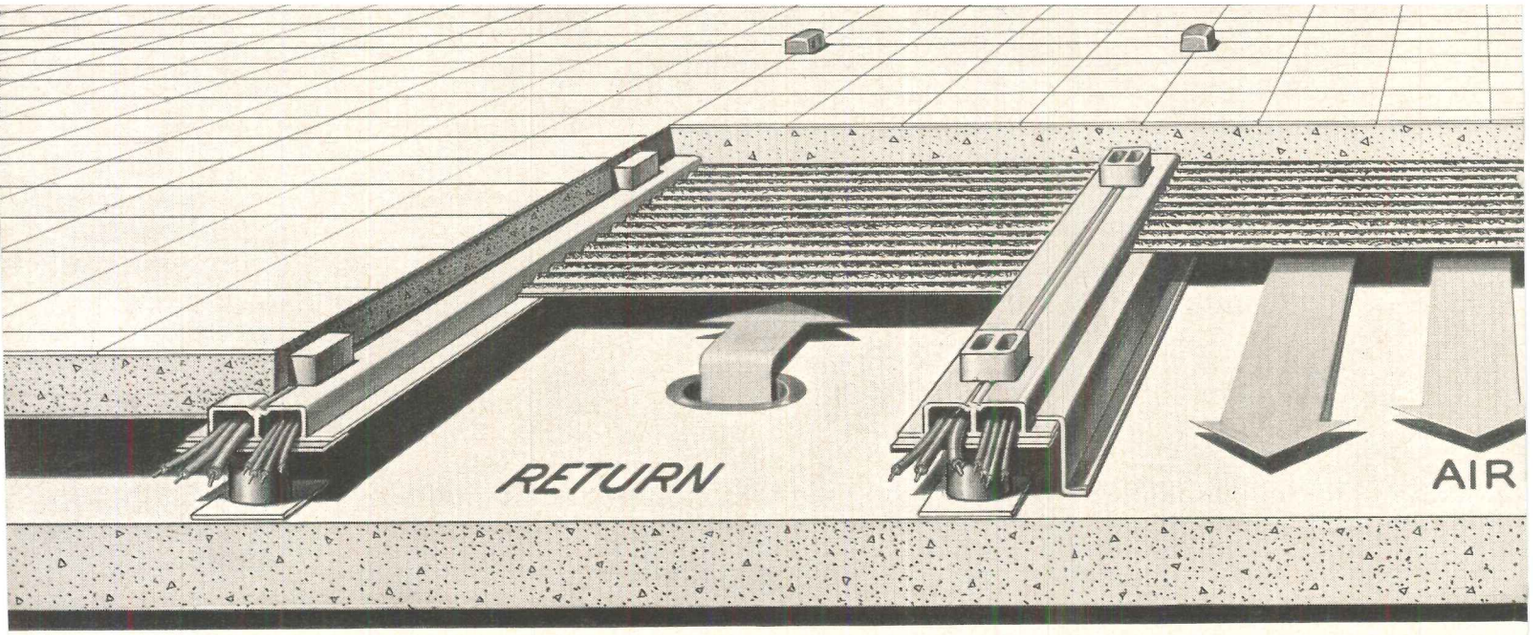


Wheeler's way of shedding new light on the business world • Commercially speaking, Wheeler's new "S" Series of fluorescent lighting fixtures is the answer for any business installation • And little wonder: They're handsome. The "S" Series surface mounts in minutes. Wiring, hanging, and lamping — the whole shooting match — is done on the open fixture. Then the basket hinges on in a matter of seconds. Easiest fixtures to maintain and relamp since the candlestick • Choice of shieldings for optimum brightness controls: plastic cube louvers, acrylic drop-dish, or prismatic lens type; others on special order • Sizes: 4′ and 8′ lengths for either 2-light or 4-light fixtures • Other advantages, too. Quality, for example. And grace. And cost • If you have a building, and things like lighting are important to you, give your wholesaler a call or write to E. Quintiliani, General Sales Manager, Wheeler Reflector Co., Inc., Hanson, Massachusetts.

For more data, circle 168 on Inquiry Card



A-E Floor puts mechanical and electrical services

Granco A-E (Air-Electric) Floor combines air and electrical distribution in one compact in-floor system —coordinates the design objectives of the architect with the needs of the electrical, mechanical, and structural engineer.

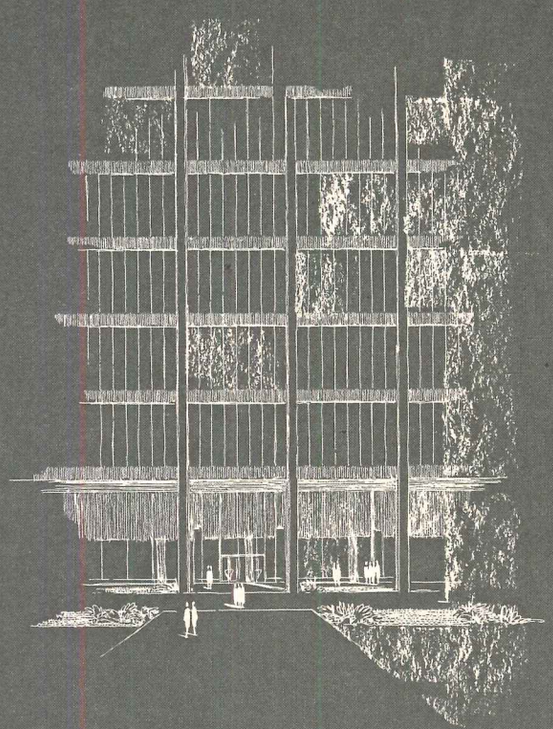
Architectural Design Flexibility. A-E Floor is an architectural tool for the functional and esthetic design of space. The illustrations below are but a few examples of how this versatile floor system can help satisfy the many interrelated factors of building design, location, and usage.

Mechanical, Electrical, Structural Flexibility. Electrical cells are blended with the A-E forming system above the plenum and provide complete flexibility. This also means that air and electric distribution designs do not conflict. A-E Floor is independent of the building structural system; can be used with any type construction.

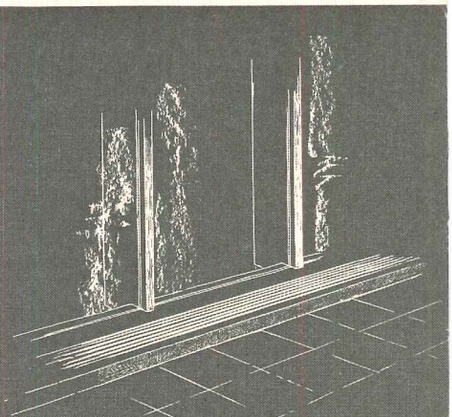
Building Use Flexibility. Granco A-E Floor offers complete flexibility to economically provide for the

Steel

DISTRICT OFFICES: Atlanta • Chicago • Cincinnati • Dallas • Detroit • Houston • Kansas City • Los Angeles • Minneapolis • New York • St. Lou

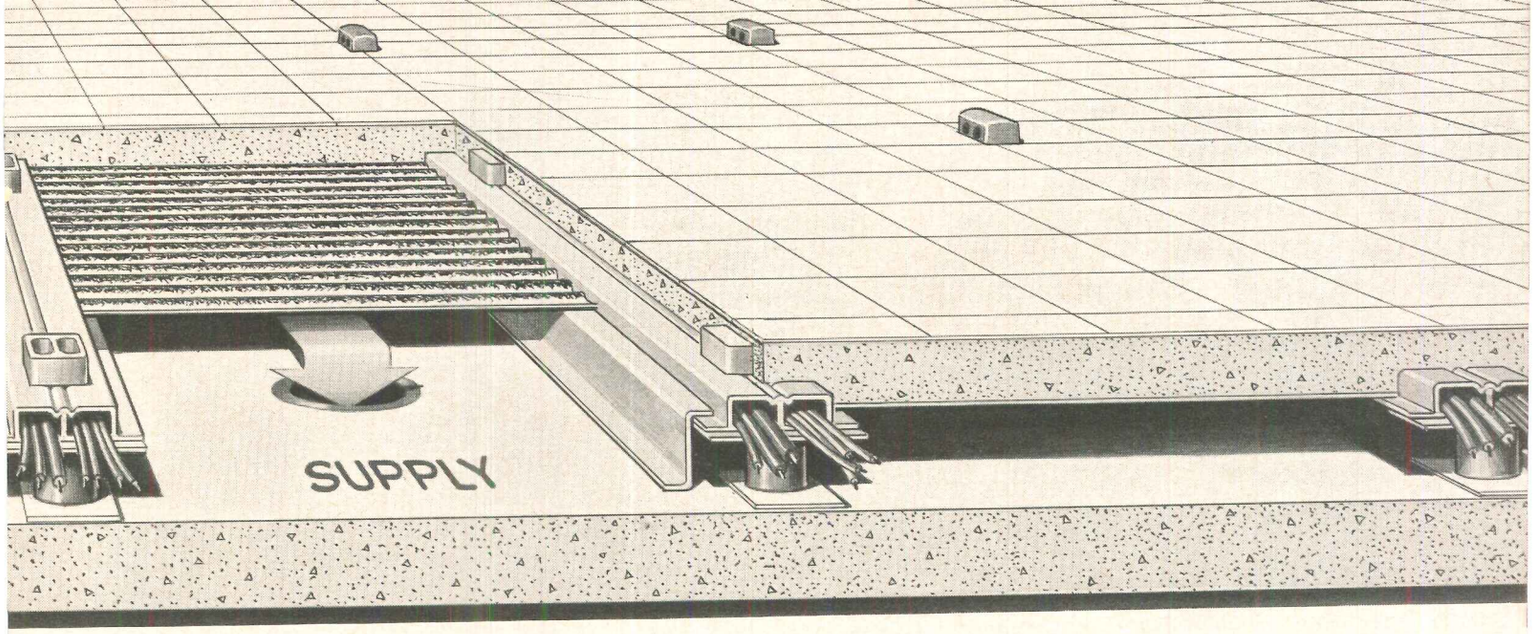


Benefits of the compact A-E system extend to complete freedom of functional design and esthetic expression in building exteriors.



Air distribution within the structure permits low sills and continuous grilles to serve large window areas.

Coordination of air distribution, lighting, and partitions is not a factor. Air and electric facilities can be readily expanded.



where they can't interfere with design flexibility

ever-increasing comfort and service needs of tenants. The plenum provides for present and future air distribution needs. It also satisfies the requirements of extra space that modern telephone and communications systems demand.

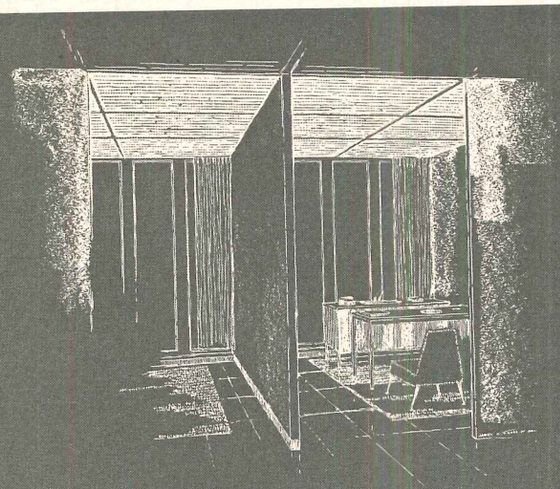
For more information, see our catalog in Sweet's or write for new A-E Floor product manual. GRANCO STEEL PRODUCTS CO., 6506 N. Broadway, St. Louis 15, Missouri. A Subsidiary of Granite City Steel Company.

A-E FLOOR

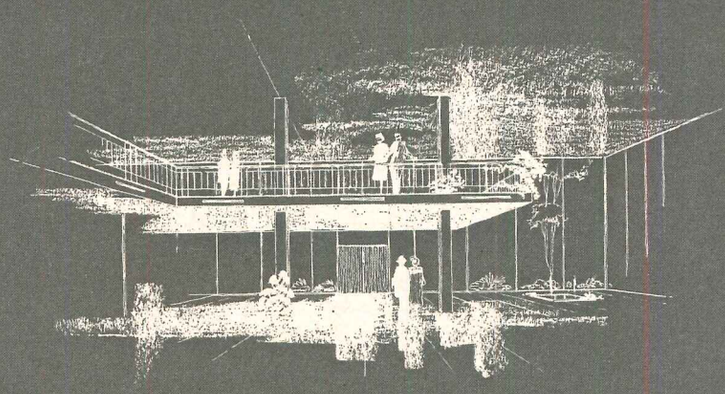
a floor system providing air and electrical distribution

GRANCO

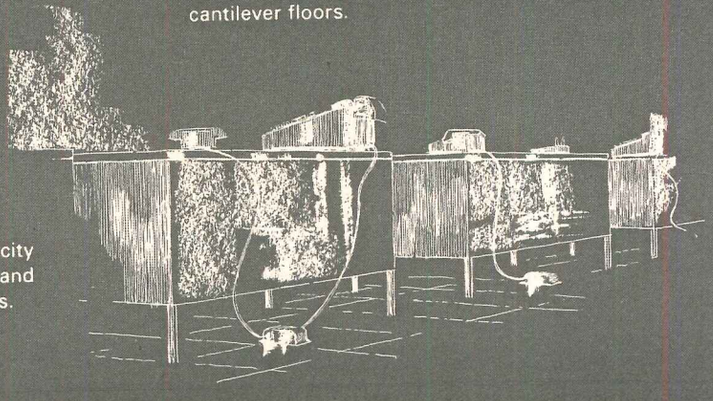
an Francisco • Tampa • **DISTRICT REPRESENTATIVES:** Greenville, S.C. • Little Rock • Washington, D.C. GRANCO For more data, circle 169 on Inquiry Card



The A-E concept of designed space permits immediate occupancy; provides for luminous or exposed ceilings, large glass areas, movable partitions.



Compact A-E Floor is ideally suited to providing full services in mezzanine and cantilever floors.

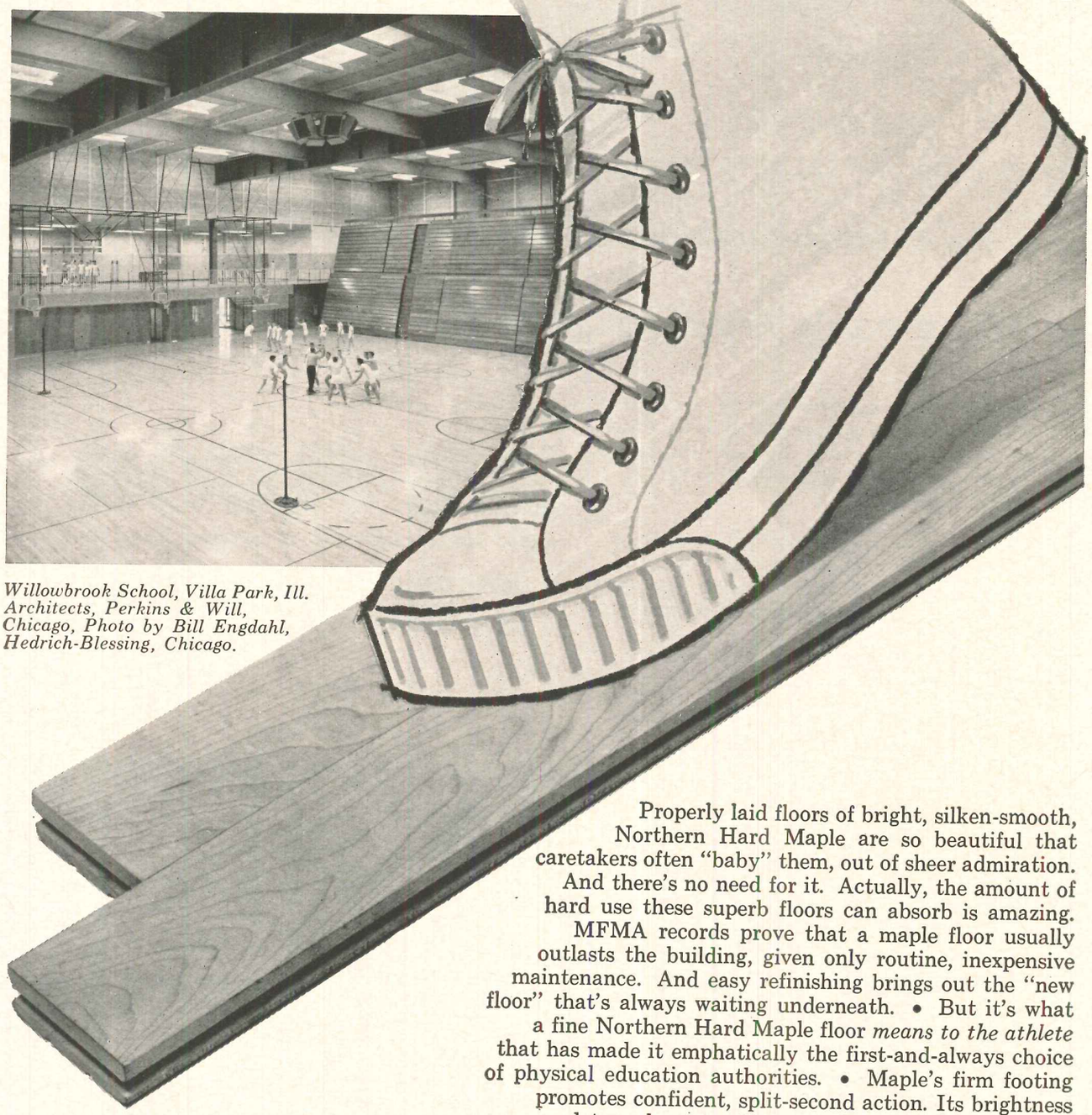


Choice of cell spacing and cell capacity assures built-in flexibility for present and future power and phone requirements.

ENDURANCE CHAMPIONS!

At least fifty years of thrifty service,
with never a split or splinter, is simply "par" for

NORTHERN HARD MAPLE FLOORS



Willowbrook School, Villa Park, Ill. Architects, Perkins & Will, Chicago, Photo by Bill Engdahl, Hedrich-Blessing, Chicago.

Properly laid floors of bright, silken-smooth, Northern Hard Maple are so beautiful that caretakers often "baby" them, out of sheer admiration. And there's no need for it. Actually, the amount of hard use these superb floors can absorb is amazing. MFMA records prove that a maple floor usually outlasts the building, given only routine, inexpensive maintenance. And easy refinishing brings out the "new floor" that's always waiting underneath. • But it's what a fine Northern Hard Maple floor *means to the athlete* that has made it emphatically the first-and-always choice of physical education authorities. • Maple's firm footing promotes confident, split-second action. Its brightness lets a player see the court lines "without looking." Its smooth, tight grain is a blessing to bare knees and elbows. • Write for the new MFMA Specification Manual, with full-color Maple Flooring panels and detailed floor-laying techniques—also list of tested, MFMA-approved floor finishing products. See Sweet's (Arch.) 13J MA. • MAPLE FLOORING MANUFACTURERS ASS'N, 35 E. Wacker Drive, Chicago 1, Ill. Suite 550

NORTHERN HARD MAPLE

THE *finest* FLOOR THAT GROWS

IN STRIP, BLOCK OR PATTERNED TYPES, NAILED, CLAMPED OR LAID IN MASTIC

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IT'S A COMFORTABLE FEELING...

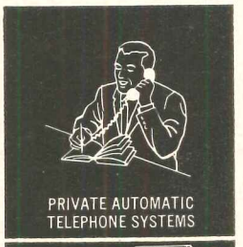
to know that your DuKane Franchised Distributor can provide you with a total communications system designed to meet your specific needs

Everyone relies on experience . . . so why belabor yourself with designing or planning a communications system . . . eliminate the costly design time frustrations. Your burden is our specialty. Your local, factory-trained DuKane Franchised Distributor is a communications specialist. Depth of line . . . depth of experience and depth of service support this claim.

He can point with pride to literally thousands of Dukane Communications installations second to none in performance, flexibility, low maintenance, rugged dependability, and quality.

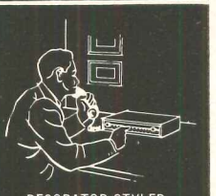
His proven "know-how" has established him as a communications expert in schools, hospitals, business offices, industrial plants, institutions, churches, hotels, motels, recreation centers, shopping centers, sports areas, etc. Service-wise, he's "Johnny-on-the-spot" for planning, installation, and follow-up service. To him, service and satisfaction are synonymous. It's *a comfortable feeling* to rely on his DuKane credentials. Call your local DuKane Distributor for an evaluation of your communications systems needs.

To the right are a few of the many DuKane communications systems.



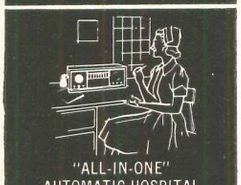
PRIVATE AUTOMATIC TELEPHONE SYSTEMS

MULTI-PURPOSE INDUSTRIAL COMMUNICATIONS SYSTEMS

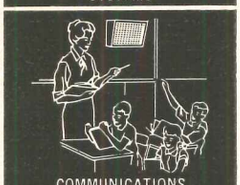


DECORATOR-STYLED INTERCOM SYSTEMS

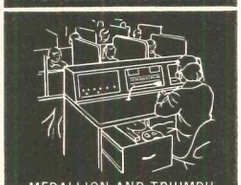
DUKANE TELEPHONE PAGING SYSTEMS *(CALLS YOU BY NAME)*



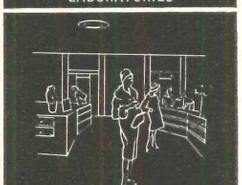
"ALL-IN-ONE" AUTOMATIC HOSPITAL COMMUNICATIONS SYSTEMS



COMMUNICATIONS SYSTEMS FOR SCHOOL AND CHURCH



MEDALLION AND TRIUMPH AUDIO LEARNING LABORATORIES



MUSIC/PROGRAM DISTRIBUTION SYSTEM

DUKANE

COMMUNICATIONS SYSTEMS DIVISION
DUKANE CORPORATION
DEPARTMENT AR-53 • ST. CHARLES, ILLINOIS

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Now—in minutes—estimate the cost of any building accurately

Try the Dow Building Cost Calculator FREE for 10 days

See for yourself how easy it can be to get the cost estimates you must have to tell a client how much space his budget will buy. Also invaluable for planning bond issues; temporary and permanent financing; determining amount of federal or state aid, fire insurance, appraised value; counselling client on most economical plant location; checking contractors' bids; reactivating postponed projects.

Two easy steps — the easiest, most reliable method you ever used:

First, select the building in the Dow Calculator most similar to the one you're planning (Figure 1). The Dow Calculator contains cost factors and descriptions for more than 750 buildings of all types . . . most with photos. Then, just jot down the base cost factor.

Second, turn to the Local Cost Multiplier section (Figure 2) and adjust the base cost to local labor and material prices. The Dow Calculator covers most metropolitan areas in the U.S. and Canada. Result: a current, locally accurate cost figure, ready to apply to your projected building.

Fig. 1

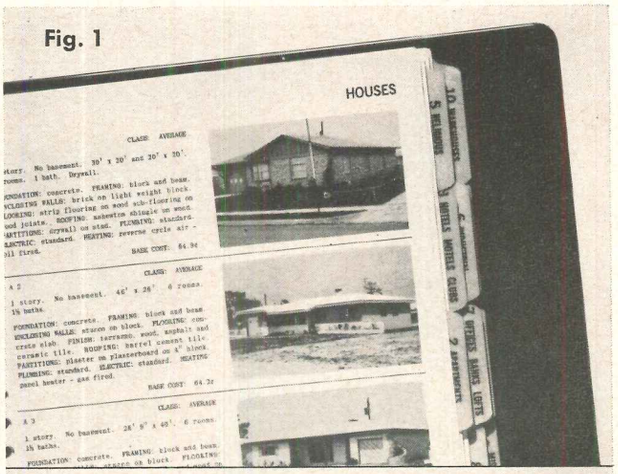
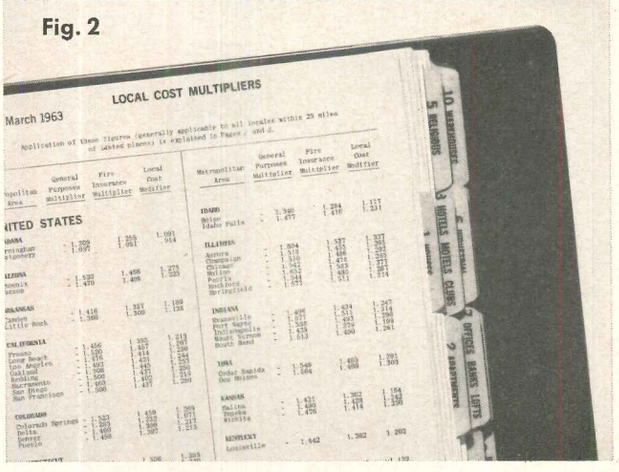


Fig. 2



The Dow Calculator is always up to date. Cost changes are constantly researched, and results are sent quarterly to Dow Calculator subscribers. Sharply erratic markets are covered by special bulletins issued as often as necessary.

The Dow Calculator covers major building types. There are sections covering houses, apartments, hotels, motels, clubs, hospitals, religious buildings, factories, offices, banks, lofts, stores, schools, warehouses, garages, service stations, theaters — and there's a "Miscellaneous" section, too.

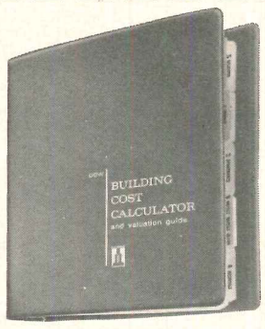
The Dow Calculator is realistic. Dow figures are based on buildings actually built, not theoretical structures. Each section includes a representative number of buildings with varying shapes, sizes and specifications.

Fill in the coupon and try the Dow Calculator free, for ten days, without obligation.

F. W. DODGE CORPORATION

DOW BUILDING COST CALCULATOR

Send me the new Dow Building Cost Calculator. I understand that I may use it for ten days, return it and be under no obligation. If I keep it, I will accept your bill for $36* to cover the current Calculator and the quarterly revisions and/or supplements for an entire year.



Dow Building Cost Calculator
F. W. Dodge Corporation
119 West 40th St., New York 18, N. Y.

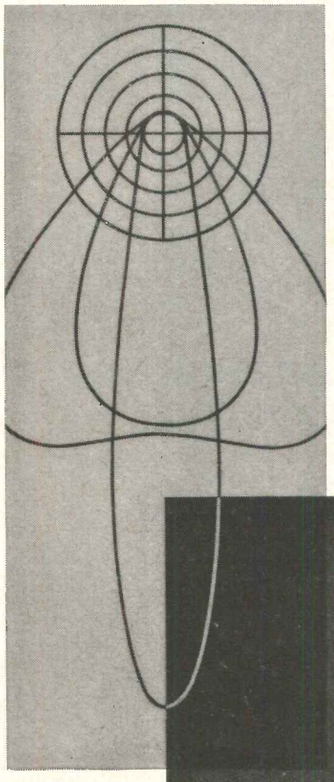
Name_____

Firm_____

Street and Number_____

City_____

**Plus 3% sales tax in New York City, Florida, South Carolina, California and Washington, D. C. Renewal rate for uninterrupted subscriptions $28. All rates subject to change without notice.*



exploring the characteristics of light

Light waves have certain basic characteristics . . . they travel at a speed of 186,000 miles per second . . . they travel in a straight line from their source. Light reflects from a smooth surface at the same angle at which it strikes it. Light can be measured.

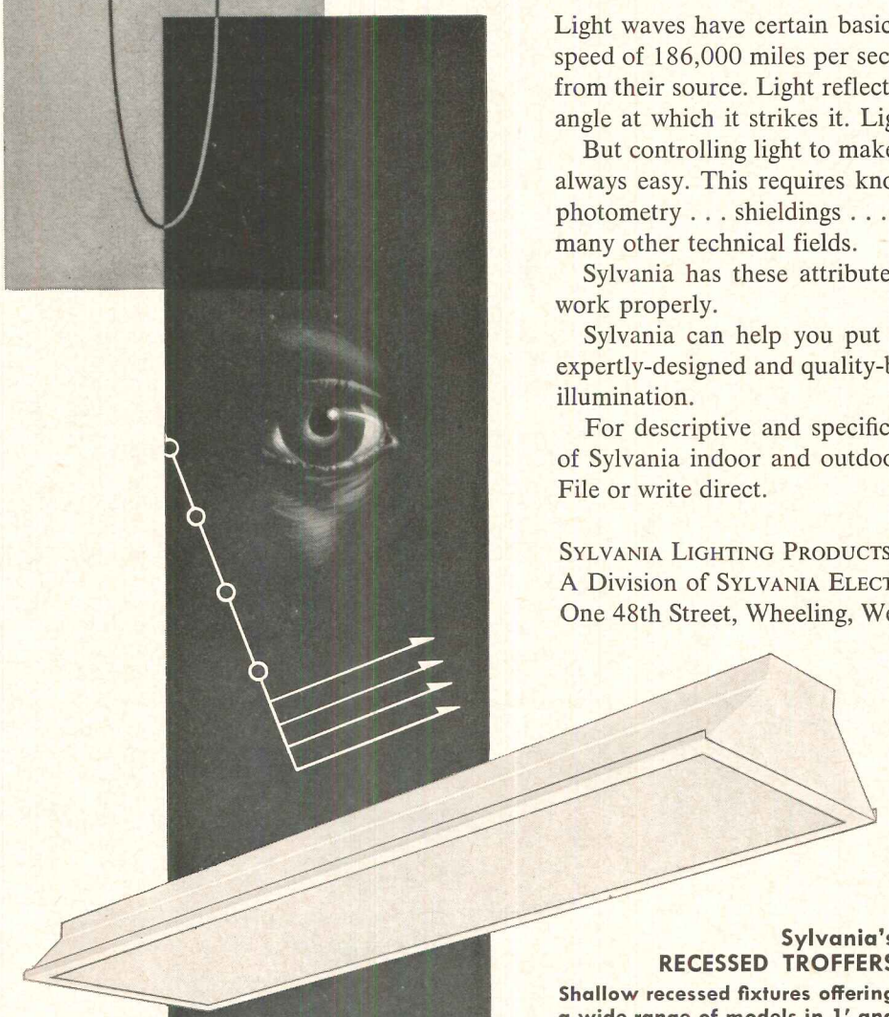
But controlling light to make it produce the desired results is not always easy. This requires knowledge, research and experience in photometry . . . shieldings . . . plastics . . . metals . . . finishes and many other technical fields.

Sylvania has these attributes and the ability to put lighting to work properly.

Sylvania can help you put light to work for your clients with expertly-designed and quality-built fixtures for interior and exterior illumination.

For descriptive and specification information on the broad line of Sylvania indoor and outdoor fixtures, see Sweet's Architectural File or write direct.

SYLVANIA LIGHTING PRODUCTS
A Division of SYLVANIA ELECTRIC PRODUCTS INC.
One 48th Street, Wheeling, West Virginia



POLRIZED* PANELS

You can improve Visual Effectiveness through the use of Sylvania Lighting Fixtures with multi-layer POLRIZED Panels. This development reduces 'veiling glare', sharpens contrast and improves vision.

*TM — POLRIZED PANEL CORP.

Sylvania's RECESSED TROFFERS

Shallow recessed fixtures offering a wide range of models in 1′ and 2′ widths, 2′, 4′ and 8′ lengths and 4′ x 4′ units. Many shieldings to select from. Easily installed in all popular ceilings.

Sylvania's VNB LUMINAIRE

Sylvania's VNB—Very Narrow Beam—luminaire is designed to meet requirements for high intensity concentrated light beams as narrow as 7° x 4.5°. Ideal for architectural lighting of buildings, monuments and towers.

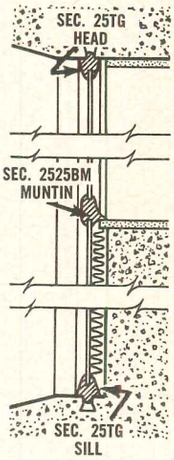
LIGHTING FIXTURES BY

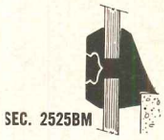
SYLVANIA

SUBSIDIARY OF
GENERAL TELEPHONE & ELECTRONICS

For more data, circle 172 on Inquiry Card

823 Window Openings Tightly Sealed With Maloney Structural Gaskets





Concerned with sealing 823 window openings in the U. S. Borax Building, Los Angeles, Welton Becket and Associates chose Maloney Structural Gaskets, Sec. 25-TG. Each opening includes a glass and an enamel panel. The weather tightness and strength of these gaskets have been proven in outstanding buildings across the country.

To form the groove for the gasket, metal reglets were attached to the concrete forms. When the forms were removed the reglets remained in the wall—ready to receive the gasket. Installation of the glass window and black porcelain panels into the gasket was quickly and easily done.

Maloney Structural Gaskets are available in numerous shapes for any design. The Maloney patented tongue and groove design is being widely used in many structures including: 500 Jefferson Building, Houston; Phillips Petroleum Office Building, Bartlesville; AEC Laboratory, Notre Dame University; Pierre LaClede Building, Saint Louis; and Upper 600 Building, Corpus Christi.

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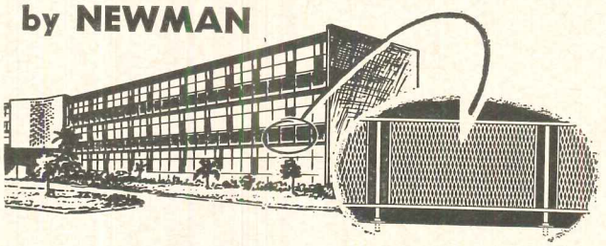

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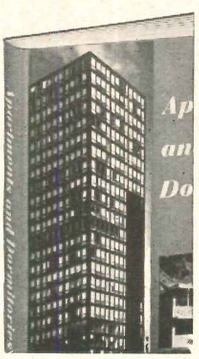

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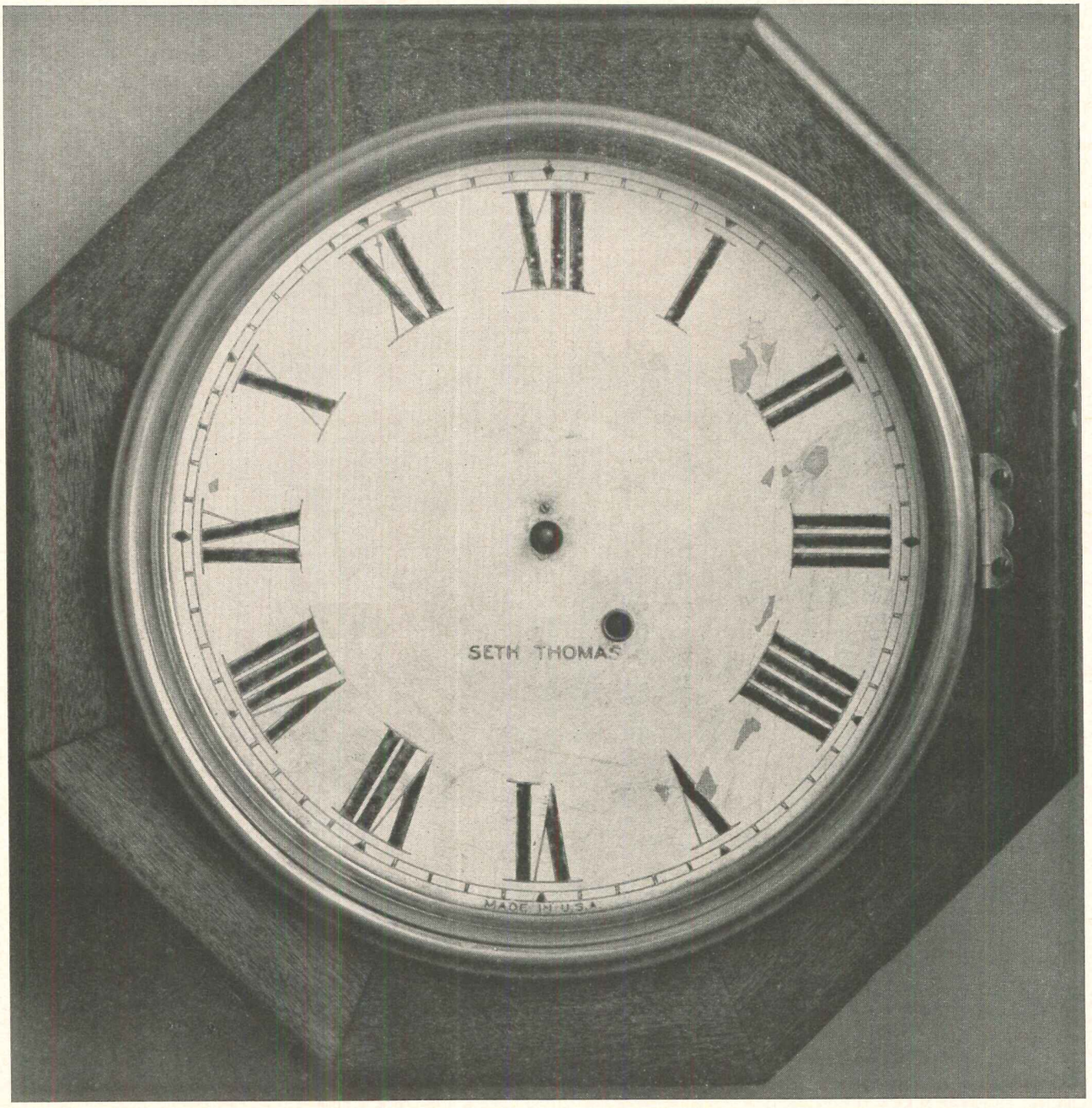

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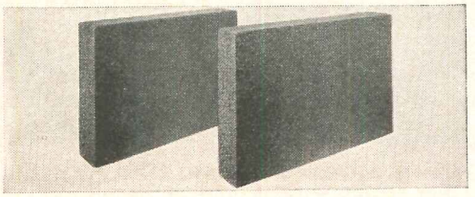

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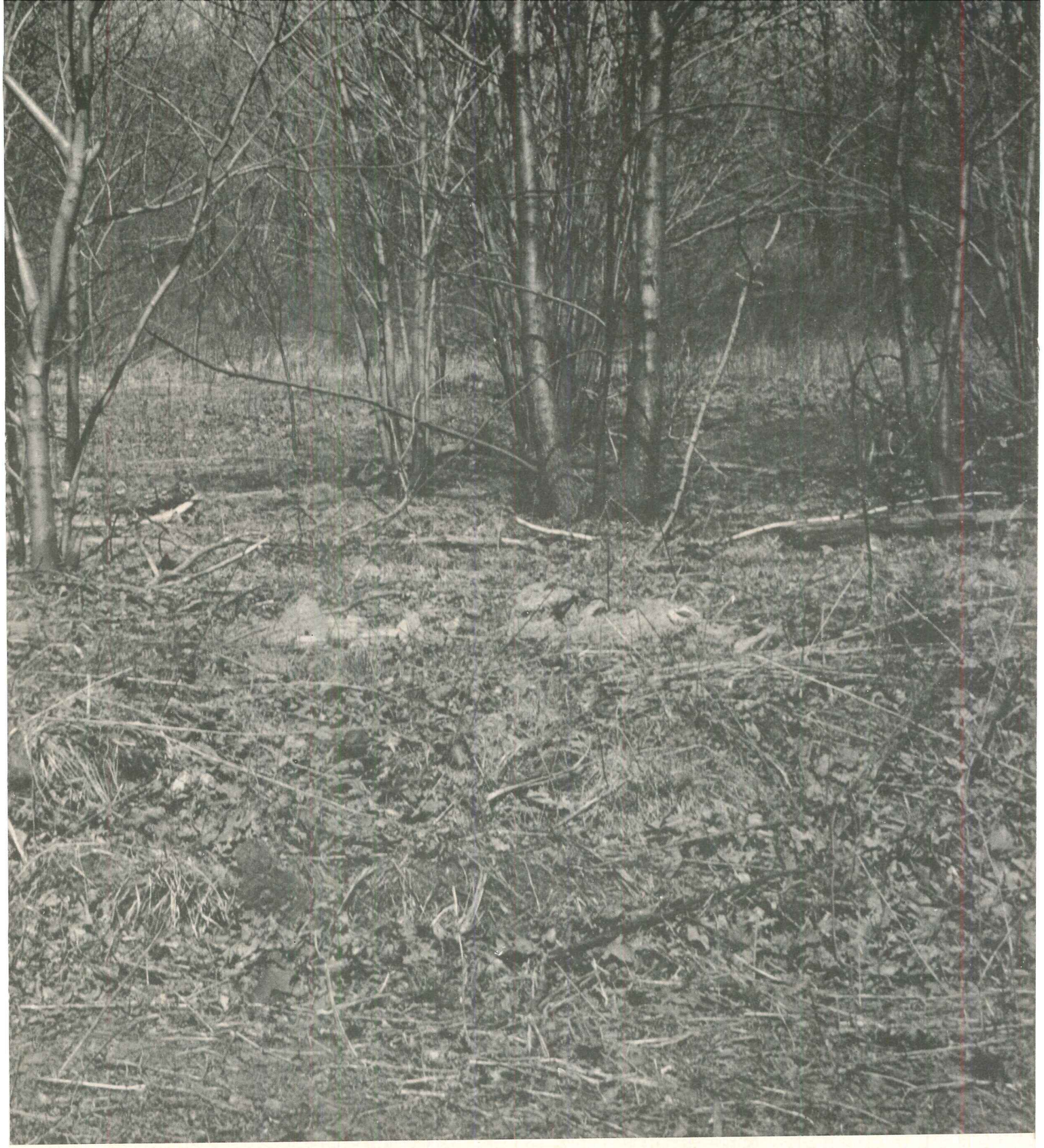

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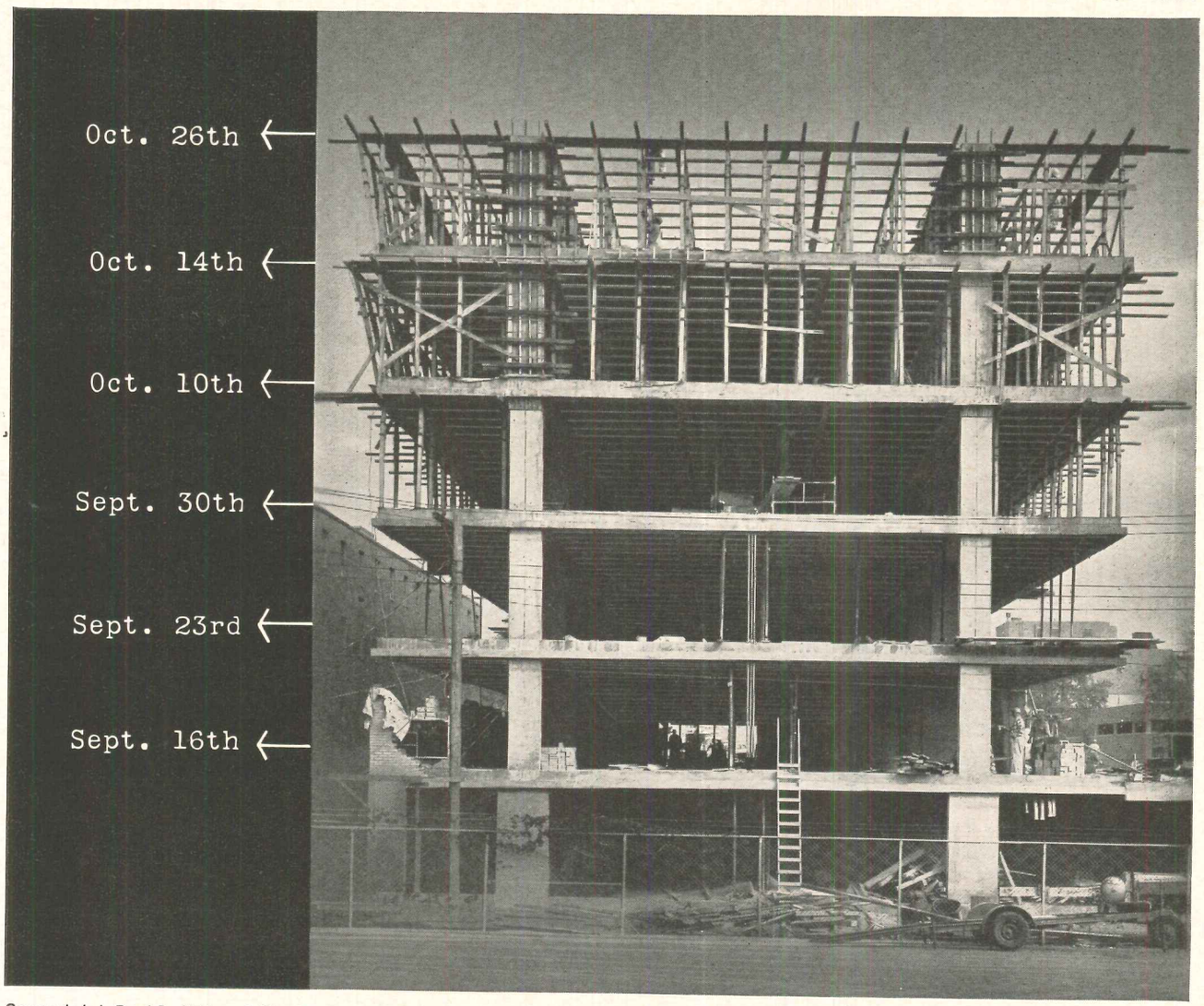

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Meyer Loomstein & Associates, architects / Frank Simpson, engineer
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What do most women prefer in buildings? It's a fact. Most women prefer modern, spacious washrooms equipped with vending machines for Kotex feminine napkins. It's a fact—because most women prefer Kotex to all other brands! When you make provision for vending machines for Kotex, you add a greatly appreciated thoughtfulness—and help to eliminate unnecessary embarrassment and absenteeism.

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More women choose Kotex feminine napkins than all others combined

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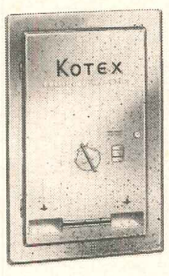

2

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Kotex is a trademark of Kimberly-Clark Corporation, Neenah, Wisconsin

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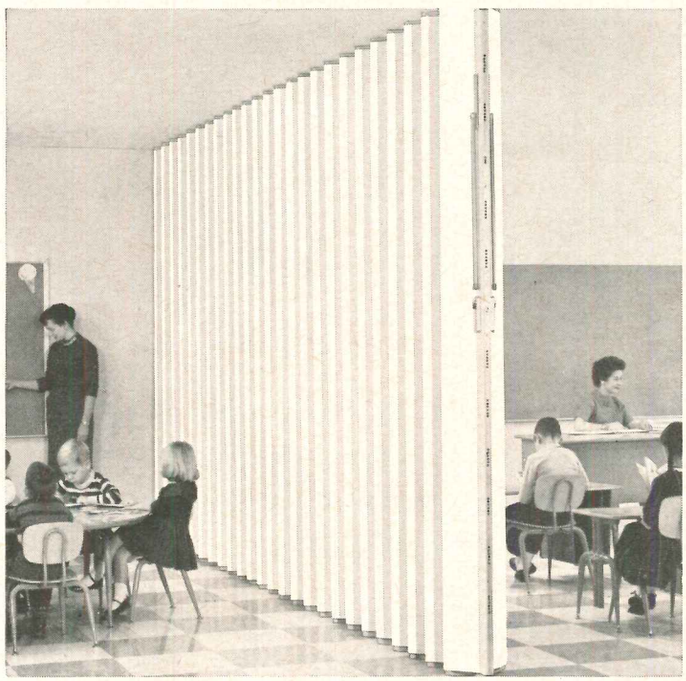

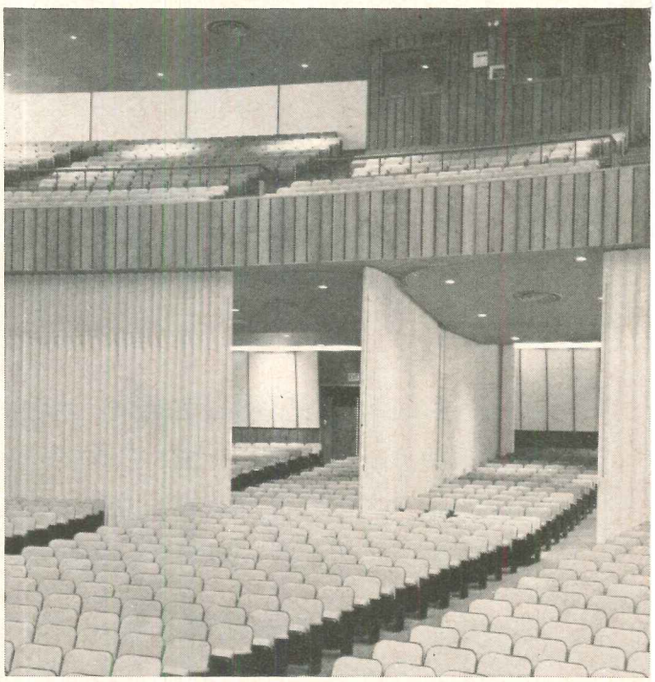

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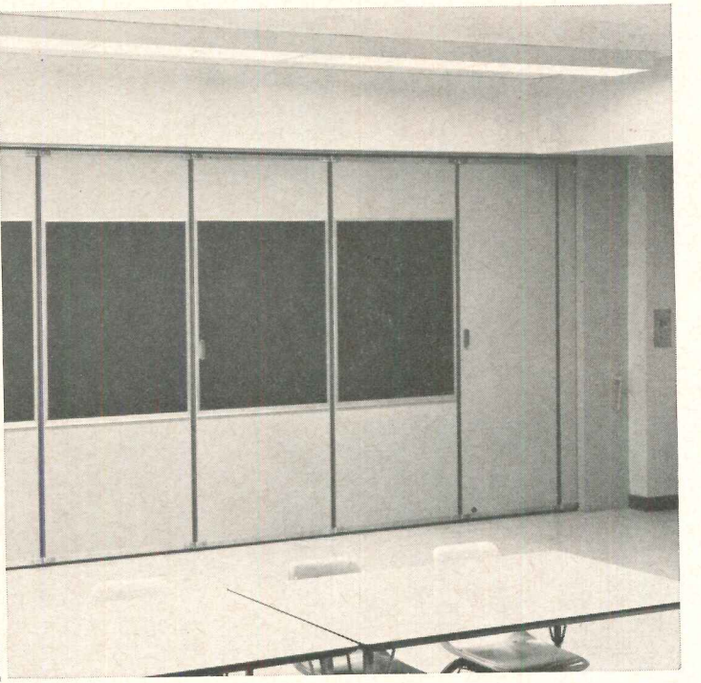

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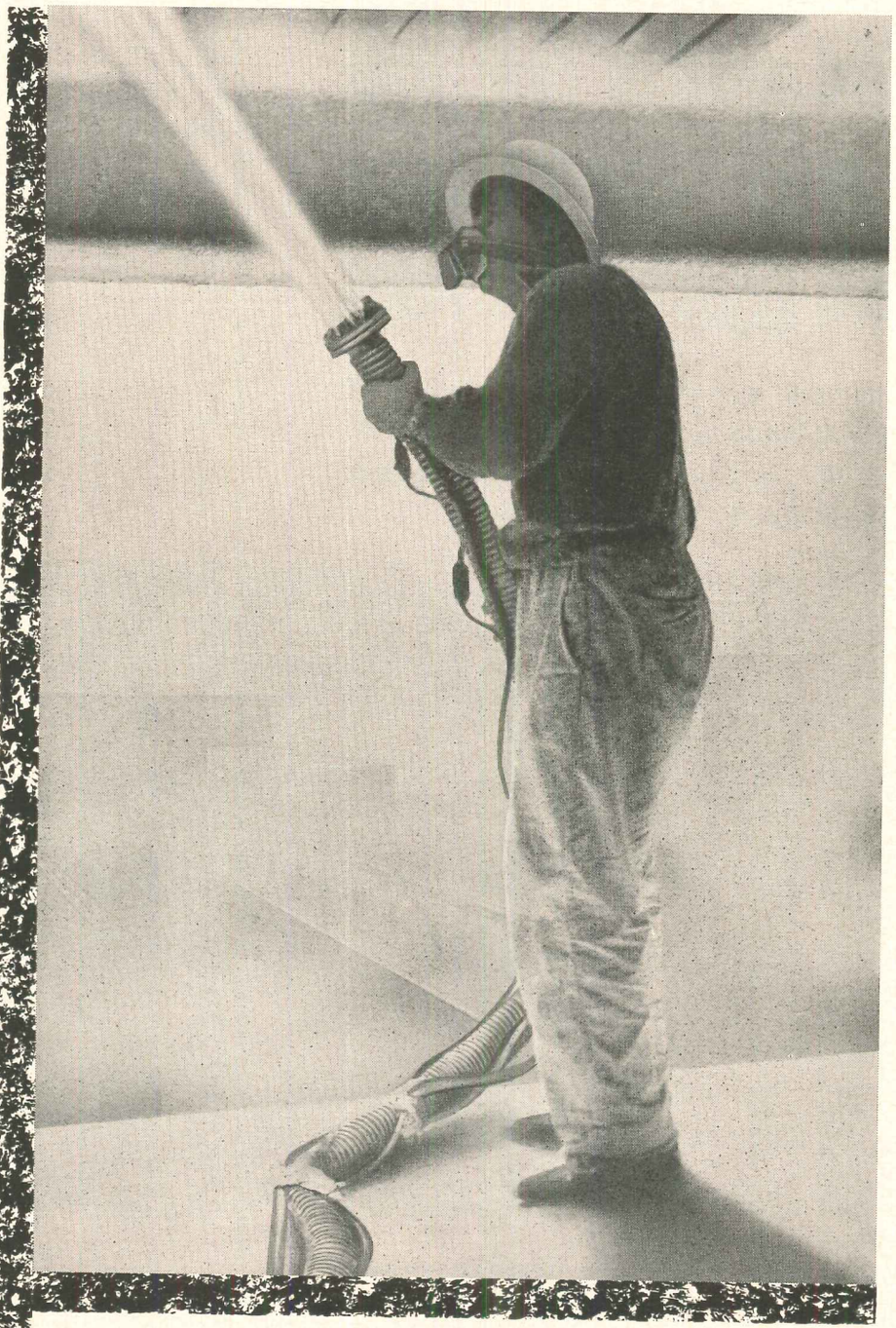

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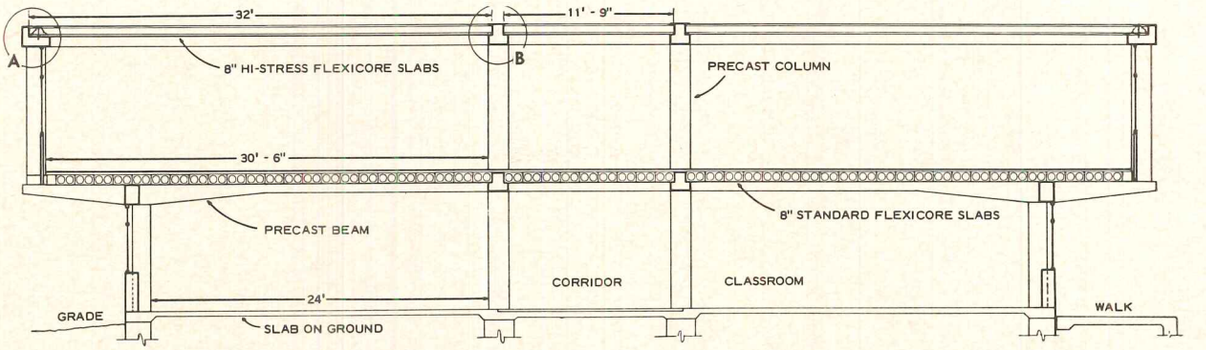
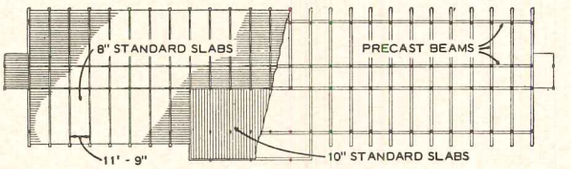
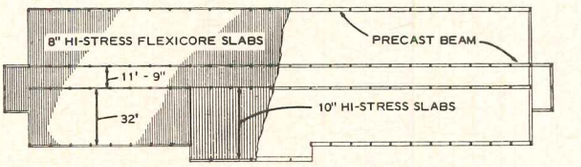


LATERAL SECTION. Hi-Stress Flexicore slabs, 32' in length, are used for long-span ceilings on second floor of classroom wing of Rutherford B. Hayes High School, Delaware, Ohio. The entire frame is precast concrete columns and beams.

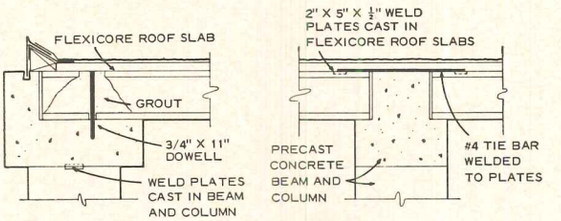
New Hi-Stress Flexicore Slabs Give Improved Performance On 32-Foot Roof Span



SECOND FLOOR FRAMING, CLASSROOM WING. Lateral precast beams serve as bearing for standard Flexicore slabs. Both 8" and 10" slabs used.



ROOF FRAMING, CLASSROOM WING. Longitudinal precast beams support Hi-Stress roof slabs which are tied to beams to provide lateral bracing.



DETAIL A **DETAIL B**

New Hi-Stress Flexicore slabs use high-tensile 7-wire stress-relieved strands to produce fully prestressed units. These slabs provide long, clear spans, high load carrying capacity and give improved performance.

The steel strands are accurately pretensioned, before the slabs are cast, and introduce a controlled camber into the units.

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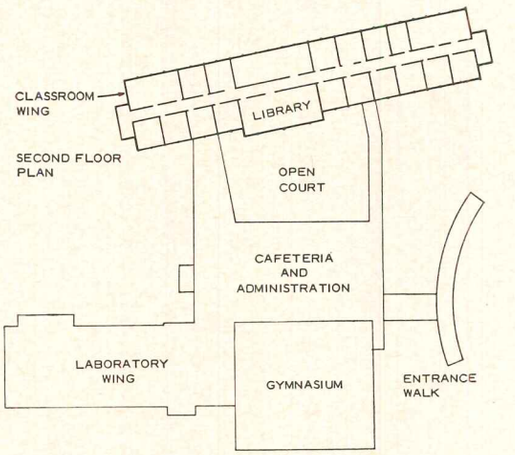
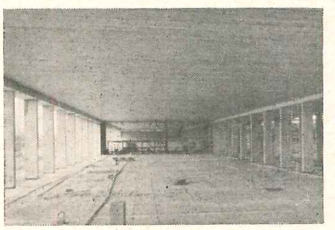
Ask for "Flexicore Facts 96" on this project and "Hi-Stress Flexicore" Bulletins. Write The Flexicore Co., Inc., Dayton 1, Ohio, the Flexicore Manufacturers Association, 297 South High Street, Columbus 15, Ohio, or look under "Flexicore" in the white pages of your telephone book.



RUTHERFORD B. HAYES HIGH SCHOOL, Delaware, Ohio has frame of precast concrete columns and beams, and floors and roofs of Flexicore precast decks. Kline & Swartz of Chillicothe, Ohio are the architects.



Long span Hi-Stress ceiling before partitions installed.

Lateral beams at second floor cantilever 7'-3".

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PRECAST CONCRETE DECKS

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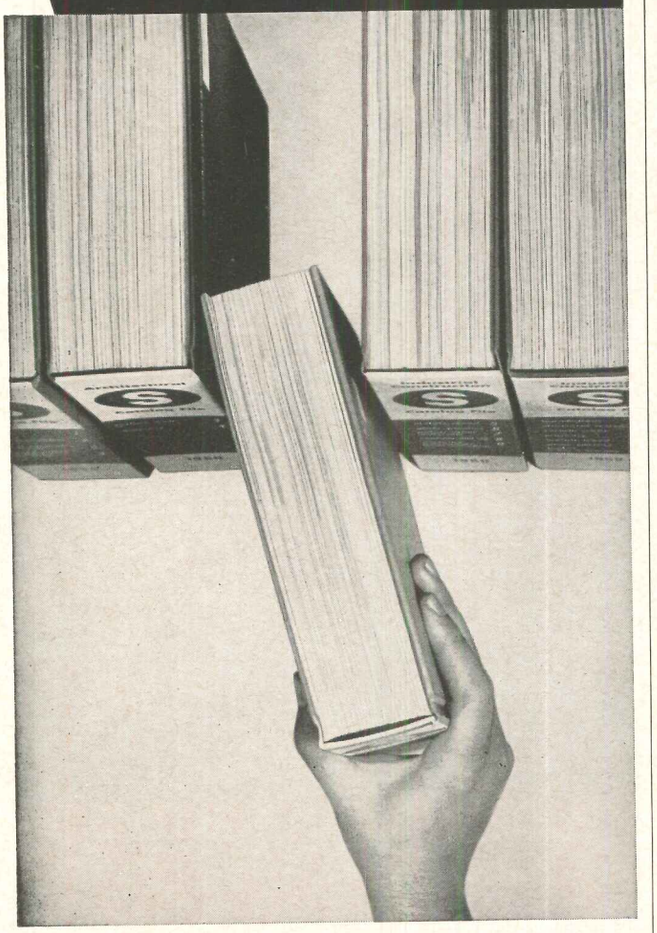

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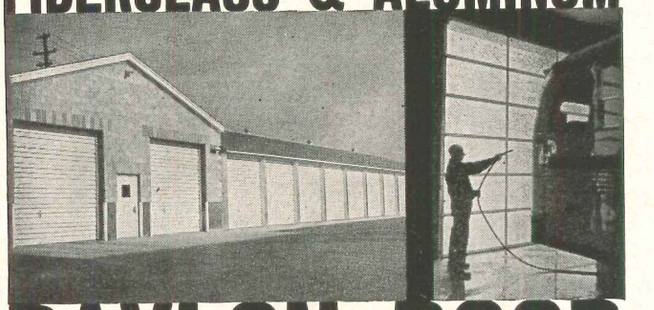

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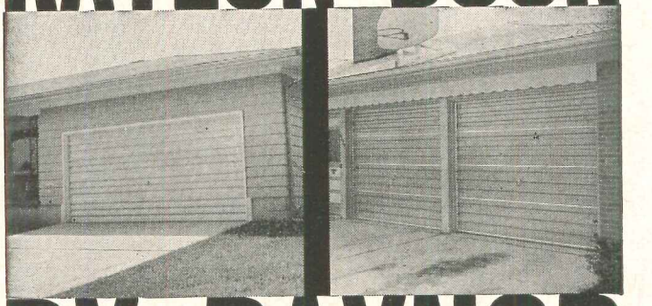

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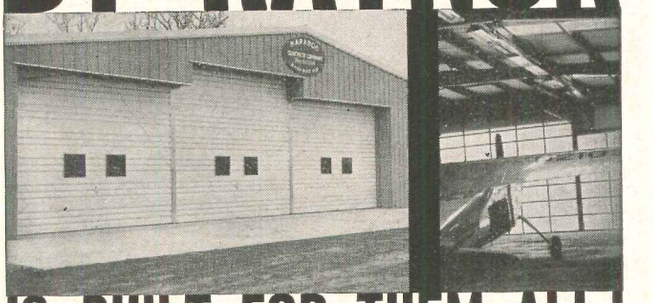

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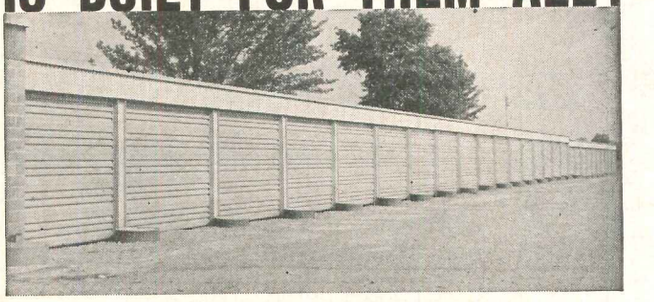

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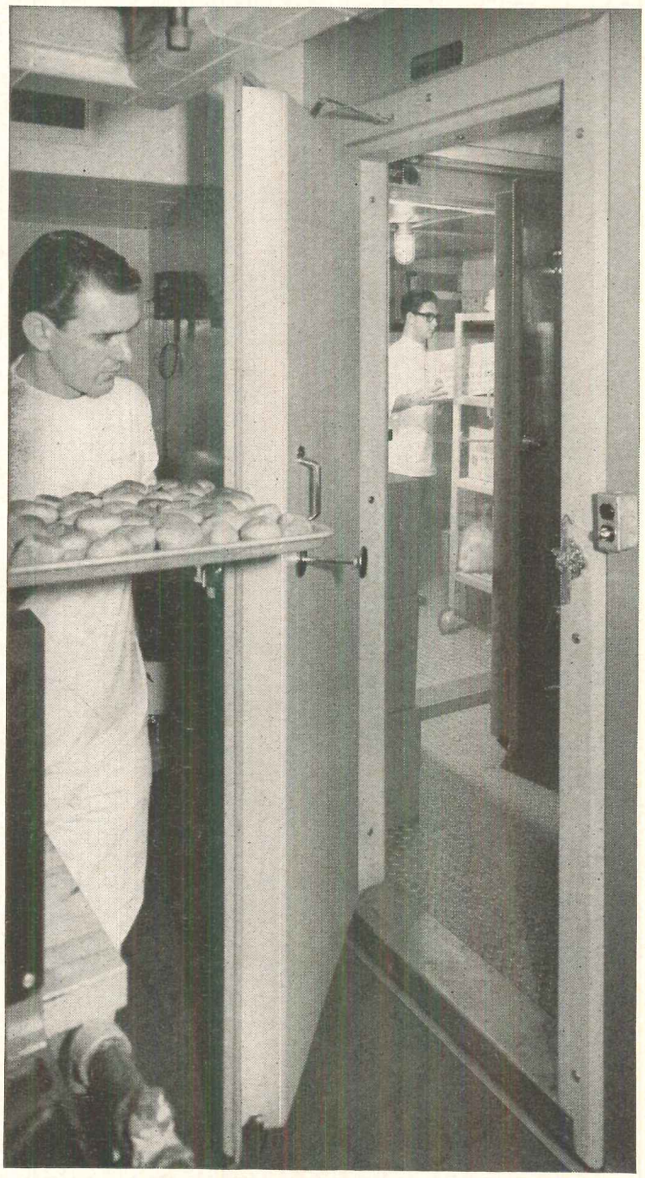
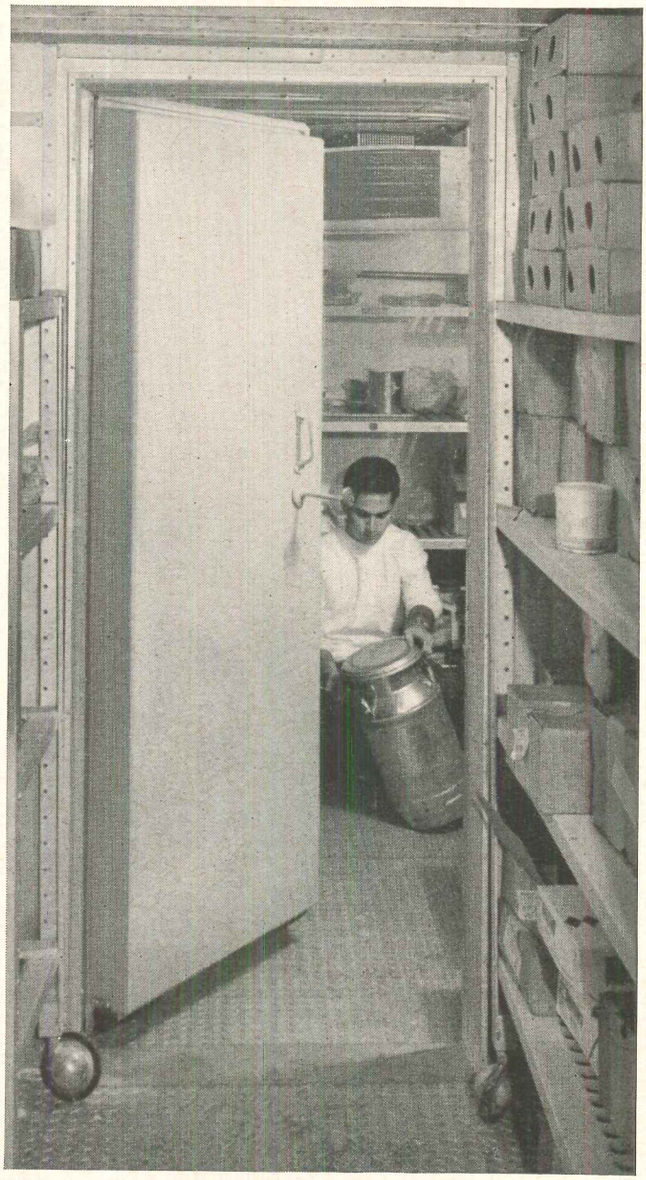


EASY OPENING Jamolite plastic doors facilitate rapid movement between kitchen area and cold room.



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