

ARCHITECTURAL RECORD

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BUILDING TYPES STUDY: SCHOOLS

"A NEW REGIONAL PLAN TO ARREST MEGALOPOLIS" BY LEWIS MUMFORD

FEDERAL ARCHITECTURE

FULL CONTENTS ON PAGES 4 & 5



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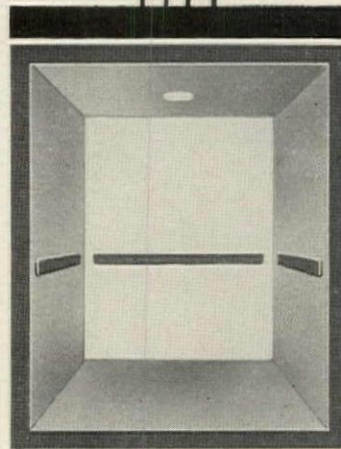
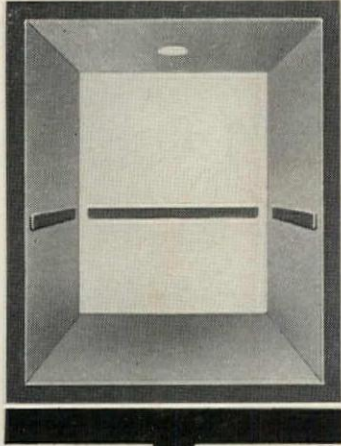


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Coming in the Record

ARCHITECTURE FOR COMMUNITY

Take a difficult functional problem, imagine it must be solved on an awkward site, suppose that the resulting building must be related to nearby buildings (nondescript but varied), and assume that this must be done within the confines of an unelastic budget—and the result can be to give architectural meaning to a whole neighborhood. Or, as in the case of Ulrich Franzen's design for the Cornell University Agronomy Building, a whole section of a campus. Next month's feature will present the design concept in model photographs and special drawings.

BUILDING TYPES STUDY: APARTMENTS

The apartment buildings to be shown in the RECORD's survey will include a wide variety of types—high-rise, low-rise and detached units located both in city and in country—and offer a high degree of amenity. They are a careful selection of examples of the best current work in the field; but an introductory essay raises the question: would deeper study produce more meaningful solutions?

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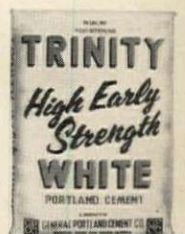
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IN MONTANA... The principal structural and design features of the First National Bank Building in Missoula are concrete "trees" which form the column-panel section. These structural units were cast in fibre-glass forms... one per day per form... using Trinity White High Early Strength Cement and white quartz aggregate. The columns support 87' prestressed beams that clear-span the building.

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To Break the Old Patterns

Another of the goals in President Johnson's annual message of special interest to architects was the improvement of urban living. (The first, mentioned here last month, was more attention to beauty in the American scene.) The city improvement program is a direct challenge to the design professions, as well as a promise of substantial Federal support.

Some quotes:

"I propose that we launch a national effort to make the American city a better and more stimulating place to live."

"An educated and healthy people require surroundings in harmony with their hopes.

"In our urban areas the central problem today is to protect and restore man's satisfaction in belonging to a community where he can find security and significance.

"The first step is to break old patterns—to begin to think, to work and plan for the development of entire metropolitan areas. We will take this step with new programs of help for basic community facilities and neighborhood centers of health and recreation.

"New and existing programs will be open to those cities which work together to develop unified long-range policies for metropolitan areas.

"We must also make important changes in our housing programs if we are to pursue these same basic goals.

"A department of housing and urban development will be needed to spearhead this effort in our cities."

"Within our cities imaginative programs are needed to landscape streets and transform open areas into places of beauty and recreation."

If this all doesn't focus as sharply as a city planner might want, it still contains a large measure of rather tangible promise. The challenges shoot off in several directions, but architects and planners would be well advised to take a long look at these offerings of the President. And to

take seriously the studies they imply.

Unfortunately it is not all as easy as a political speech seems to say. Most of our cities are charging forward with urban renewal programs, but they are encountering controversies, delays, inertia and sometimes just plain failures. It is not unusual for the best-laid of city plans to be greeted by the public with monumental indifference. The new "town houses" don't sell, the apartment rentals seem too high, the merchants don't rush in, racial strife is not unheard of, and the tax rolls don't build up as expected.

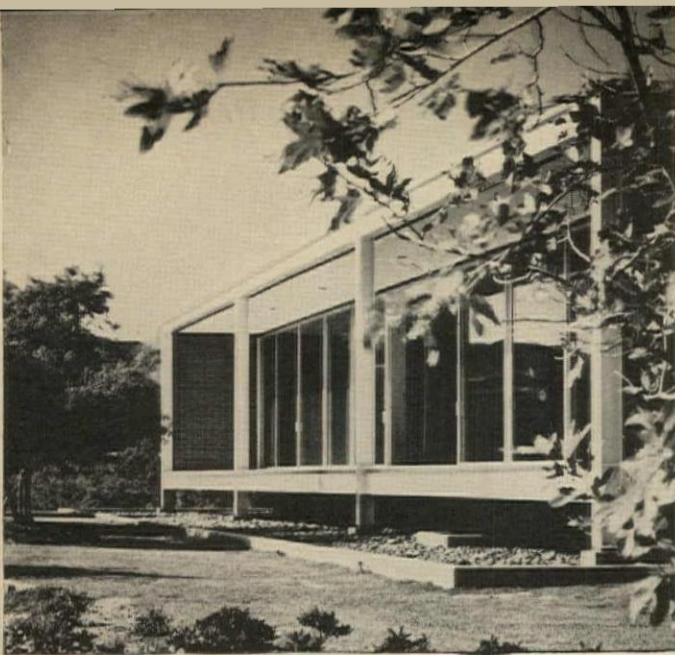
Perhaps a Federal "department of housing and urban development" would help. Perhaps more Federal dictation is just exactly what we don't need.

With no wish to be negative, this observer would offer the timid thought that so far the general level of planning has simply been inadequate. The planning, or replanning, of cities sufficiently good to appeal to an ever more prosperous people is a good stiff order, as Catherine Bauer Wurster pointed out in the December ARCHITECTURAL RECORD. One can read, almost endlessly, case histories of city rebuilding efforts. One hates to think of all of the drafting time, the colored paper and inks, the enthusiasms, the struggles, the money, the materials, which have gone into these schemes, and then sit and entertain doubts about the results.

Far be it from me to suggest that it shouldn't be done, or that we can wait for the perfect solutions. But the fact is that our efforts are not presently being crowned with notable success either in intangible or tangible results.

Society so far has not seemed equal to the task. Maybe the Great Society can spark some hope in the deteriorating areas of our cities. Maybe then architects will have a chance to make a positive contribution.

—Emerson Goble



Category: Best Design and Engineering in Residential Construction—residence for Mr. and Mrs. G. L. Rosen, West Los Angeles
 Architect: Craig Ellwood, Los Angeles
 Landscape architect: Warren Waltz
 General contractor: Gattman and Mitchell



Category: Best Design in Low-rise Commercial, Industrial or Institutional Construction—Seattle Center Coliseum
 Architect: Paul Thiry, F.A.I.A.
 Structural engineer: Peter H. Hostmark
 Mechanical engineers: James B. Notkin and Associates
 Electrical engineers: Beverly A. Travis & Associates
 General contractor: Howard S. Wright Construction Company



Category: Best Design and Engineering in Public Works Construction—Cold Spring Canyon Bridge, Bridge Department, Division of Highways, State of California
 Designer: Marvin A. Shulman
 Resident engineer: Fred H. Yoshino
 General contractor: American Bridge Division, United States Steel Corporation



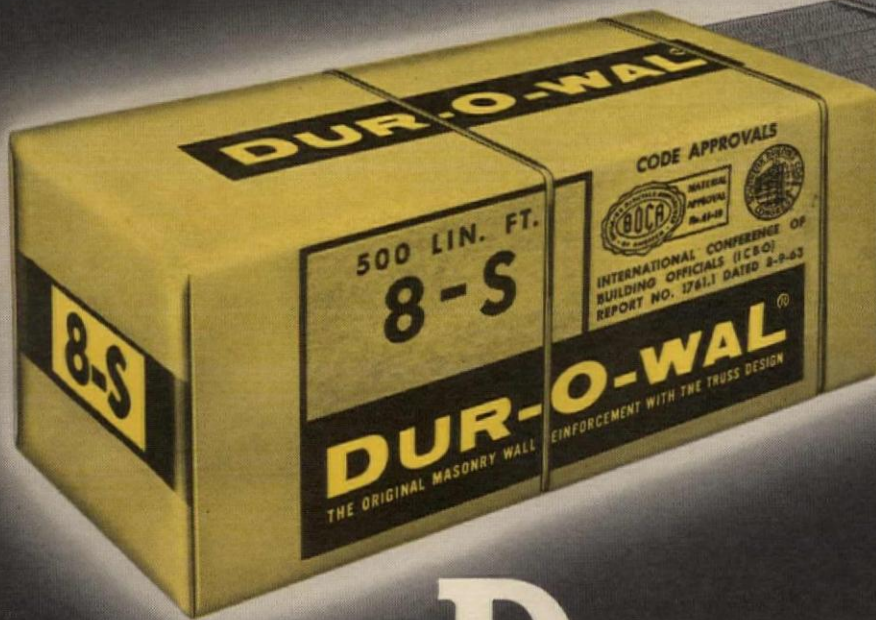
Category: Best Design and Engineering in High-rise Commercial, Industrial or Institutional Construction—IBM Office Building, Seattle, Washington
 Associated architects: Naramore, Bain, Brady & Johanson and Minoru Yamasaki and Associates
 Structural engineers: Worthington, Skilling, Helle & Jackson
 Mechanical and electrical engineers: Bouillon, Griffith, Christoffen & Schairer
 Air-conditioning consultants: Jaros, Baum & Bolles
 General contractor: Howard S. Wright Construction Company

FOUR WINNERS ARE ANNOUNCED IN STEEL AWARDS COMPETITION

Four awards for "best design and engineering," shown on this page, were presented in the 1964 Design in Steel Awards Program sponsored by the American Iron and Steel Institute. Sixteen citations of excellence for design and/or engineering were also presented in four architectural categories. Presentations were made at a dinner in New York on February 4.

The awards jury consisted of Waldo G. Bowman, president of the American Society of Civil Engineers and publisher of Engineering News-Record; J. Roy Carroll Jr., F.A.I.A.; Robert L. Durham, Northwest regional director of the American Institute of Architects; Jon W. Hauser, president of the Industrial Designers Institute; Henry L. Kamphoefner, president of the Association of Collegiate Schools of Architecture; William C. Renwick, president of the American Society of Industrial Designers; Ronald B. Smith, past president of the American Society of Mechanical Engineers; Kurt F. Wendt, president of the American Society for Engineering Education; and Edward J. Zagorski, president of the Industrial Design Education Association.

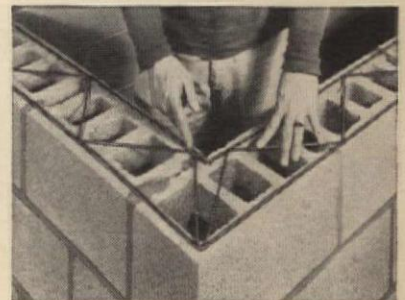
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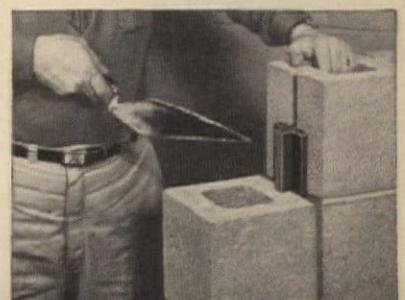
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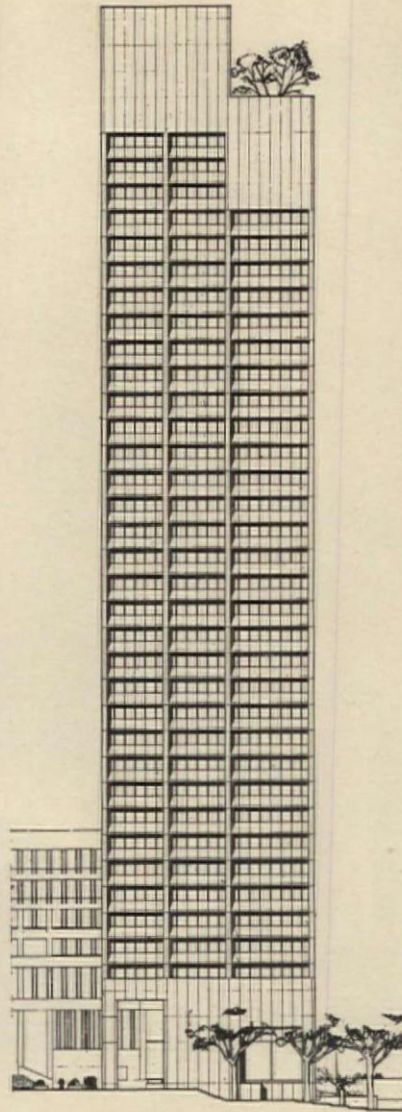
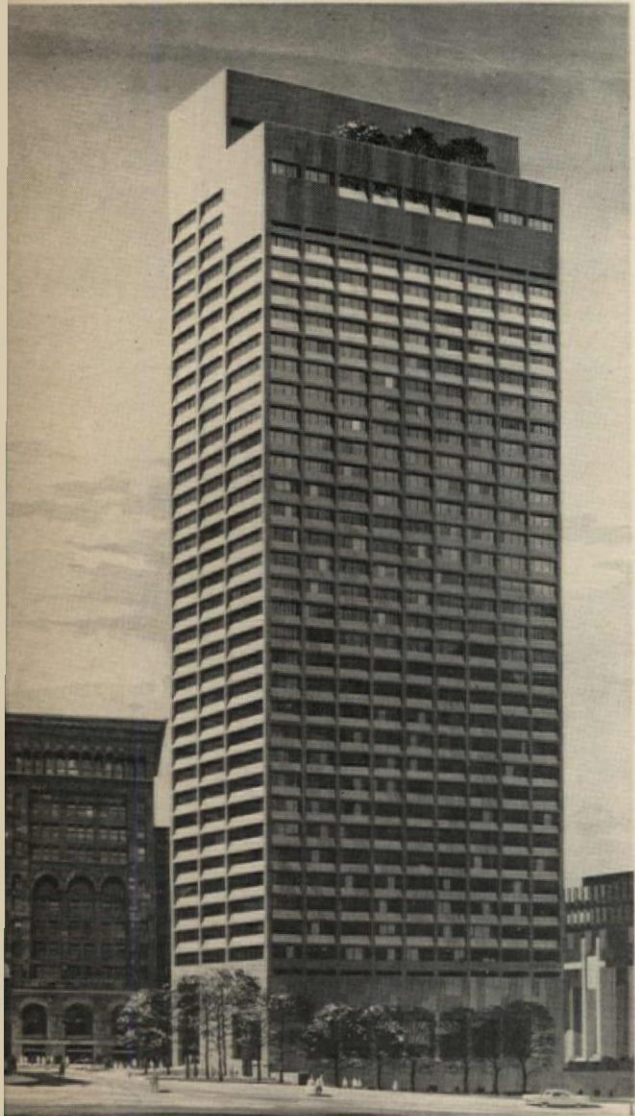
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WINNER ANNOUNCED IN BOSTON COMPETITION



South elevation

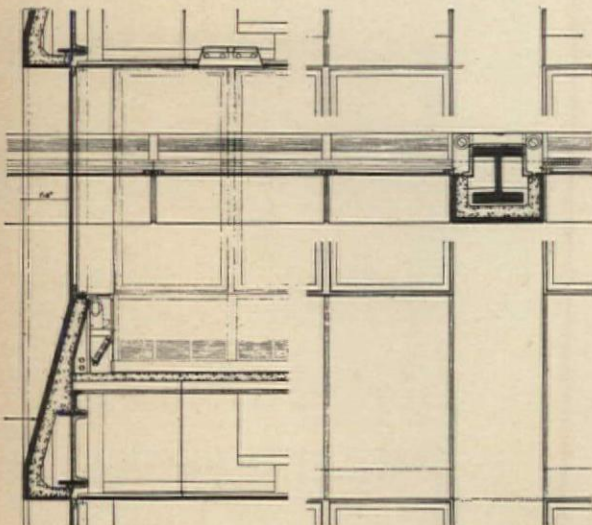
Cabot, Cabot & Forbes and Associated Architects Edward Larrabee Barnes and Emery Roth & Sons were selected on January 29 as the winners in a two-stage "developer's competition" for the design and construction of a 40-story office building as part of Boston's Government Center. The building will be situated on a site at 20 State Street which was designated as "Parcel 8" in the over-all plan.

The other finalist in the competition was the firm of State Street Redevelopers with Kelly & Gruzen, architects. Pier Luigi Nervi was design consultant for this project. A third team, consisting of State Street Tower Associates and Marcel Breuer and Samuel Glaser, associated architects for the competition, was withdrawn at the last moment for financial reasons.

Essentially, what was meant by a "developer's competition" was that financial feasibility as well as design concept would be judged.

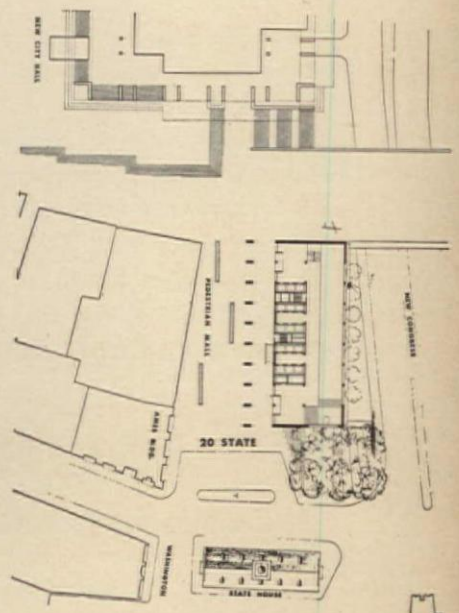
Originally, there had been a verbal agreement between Cabot, Cabot & Forbes and the Boston Redevelopment Authority to execute the tower at 20 State Street. However, in 1963 when the B.R.A. went to the City Council in Boston to have its total program, which included the Government Center, approved, a majority of the council refused to approve the entire Gov-

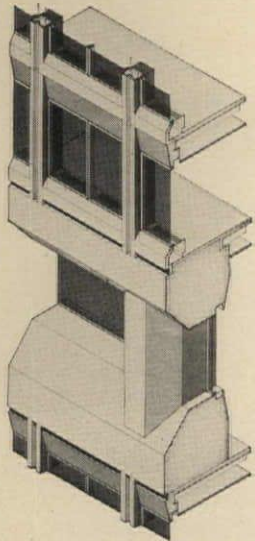
continued on page 288



Left hand side of section shows tipped spandrel of red granite laminated to precast concrete. Wall elevation is superimposed over section

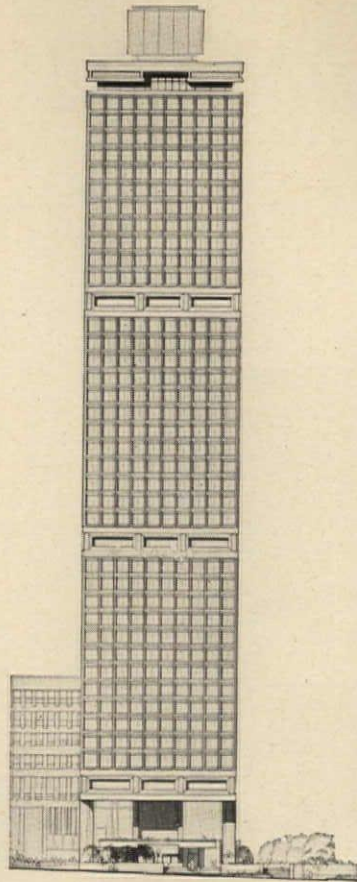
ASSOCIATED ARCHITECTS: *Edward Larrabee Barnes and Emery Roth & Sons*; STRUCTURAL ENGINEER: *James Ruderman*; MECHANICAL ENGINEERS: *Joseph Loring Associates*; CONSTRUCTION CONSULTANT: *Carl A. Morse Inc.*; GENERAL CONTRACTORS: *Aberthaw Construction Company and Turner Construction Company*; DEVELOPERS: *Cabot, Cabot & Forbes Company*



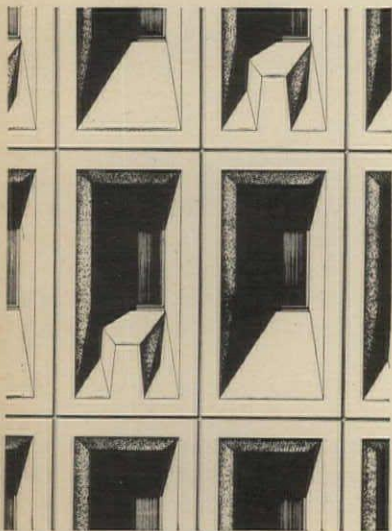


Isometric section of typical floor and truss

ARCHITECTS: *Kelly & Gruzen—Roland Thompson, associate in charge and Jordan L. Gruzen, associate in charge of design*; DESIGN CONSULTANT: *Pier Luigi Nervi*; ENGINEERS: *Seelye, Stevenson, Value & Knecht*; LANDSCAPE ARCHITECTS: *Sasaki Walker Associates*; CONSTRUCTION CONSULTANTS: *George A. Fuller Company*; DEVELOPERS: *State Street Redevelopers*

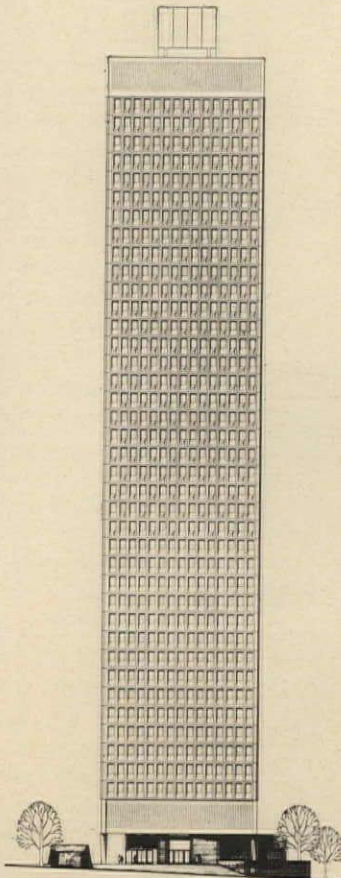


South elevation



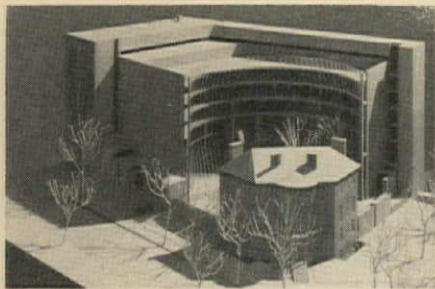
Detail elevation of wall

ASSOCIATED ARCHITECTS: *Marcel Breuer and Samuel Glaser—Herbert Beckhard, Antonio DeCastro, Clifford H. Towne, Associates*; STRUCTURAL ENGINEERS: *Severud Associates*; MECHANICAL ENGINEERS: *Jaros, Baum & Bolles*; DEVELOPERS: *State Street Tower Associates, a joint venture of Perini Land & Development Corporation, Hamel Realty Trust and Wildes Building Trust*



South elevation

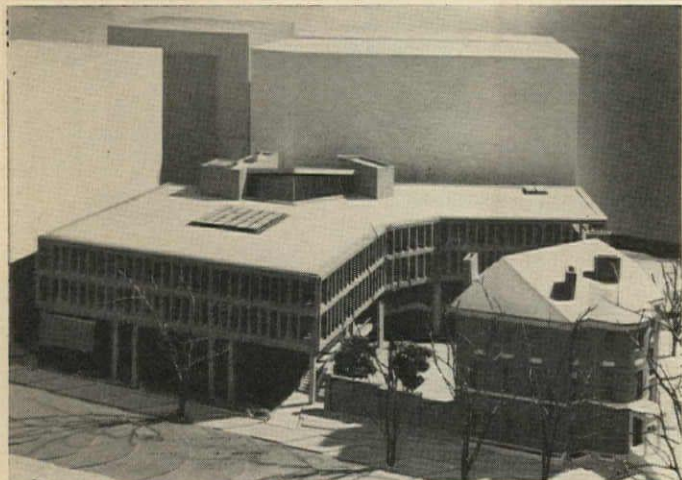




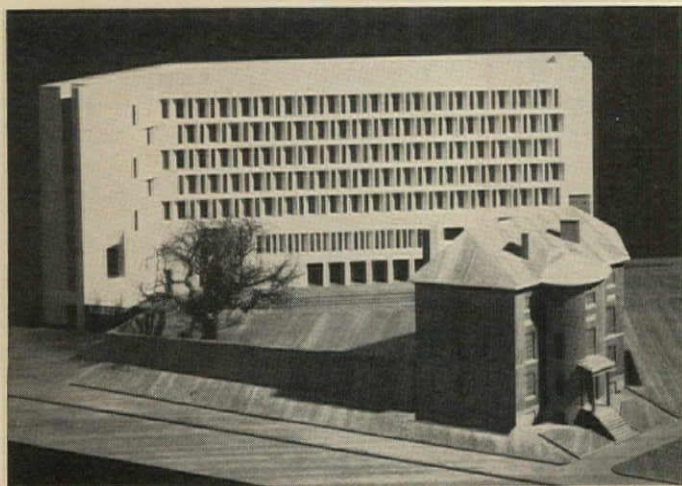
Mitchell/Giurgola Associates

A.I.A. DISCLOSES DESIGNS OF THREE RUNNERS-UP IN HEADQUARTERS COMPETITION

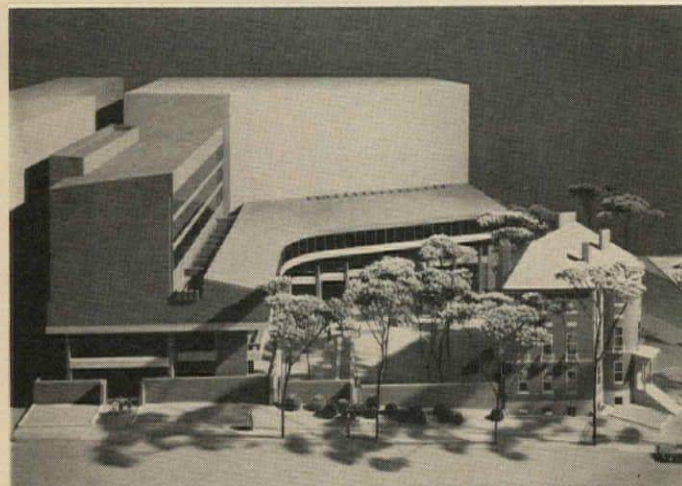
Robert C. Lautman photos



Jean Labatut and Carr Bolton Abernethy



I. M. Pei & Associates



The Perkins and Will Partnership

The American Institute of Architects has released the designs of three of the runners-up in the competition won by the Philadelphia architectural firm of Mitchell/Giurgola Associates, for the design of a headquarters building for the A.I.A. in Washington, D.C. (February, page 10). The three entries which were made public were those of Jean Labatut, F.A.I.A., and Carr Bolton Abernethy of Princeton, New Jersey; I. M. Pei & Associates of New York City; and The Perkins & Will Partnership of Chicago.

According to jury chairman Hugh Stubbins, these three entries were the ones considered by the jury to be the strongest contenders except for the winner. Other finalists in the year-long two-stage competition, which drew 221 submissions, were Donald Barthelme, F.A.I.A. of Houston; Charles B. Colbert, F.A.I.A. of New Orleans; and C. Julian Oberwarth & Associates of Frankfort, Kentucky.

In addition to Mr. Stubbins, the jury for the competition included Edward Larrabee Barnes, A.I.A.; J. Roy Carroll Jr., F.A.I.A.; O'Neil Ford, F.A.I.A.; and John Carl Warnecke, F.A.I.A. The professional adviser was A. Stanley McLaughan, A.I.A.

The A.I.A. competition called for "a building of special architectural significance, establishing a symbol of the creative genius of our time, yet complementing, protecting and preserving a cherished symbol of another time, the historic Octagon House."

The text of the Labatut-Abernethy statement on their design concept follows. "Our objective has been to produce a headquarters building which complements the Octagon House. In scale and height the buildings are similar. In color and value, the Octagon's brick will be matched by a dark, warm-hued aggregate and matrix in the cement panels of the new structure. Together, the buildings will assert their own familiarity within a neighborhood of higher office structures.

"The garden between the Octagon House and the new headquarters building is the link which binds them; i.e., the garden space flows uninterrupted into the exhibition and entry level of the headquarters building. The entrance bridge provides a protected entry into the mezzanine level from which a visitor can experience, but be apart from, the garden space and its activities. After office hours, tenant entry is accomplished through the escape stair at New York Avenue.

"The eastern side of the site cannot be depended upon for daylight, and there is a strong possibility that structures to the north will be replaced by ones which will block the light from the north. Therefore, a skylight, battered wall which will reflect direct south light has been placed on the eastern and northeastern limits of the headquarters building's primary spaces. Behind this wall are

continued on page 112



Arnott Rogers Batten Ltd.

47-Story Tower Rises in Montreal

The first of twin 47-story office buildings on Victoria Square, Montreal, Canada, designed by Pier Luigi Nervi and Luigi Moretti of Italy, is scheduled for completion in May. The second tower will be constructed after the close of Expo '67, the world's fair to be held in Montreal. The buildings were designed in conjunction with Greenspoon, Freedlander & Dunne, Montreal architects, and Jacques M. Morin, architectural consultant. The bronze-toned aluminum and concrete structure will have three partially open structural and mechanical floors at the fifth, 19th and 32nd levels, and 43 other floors, each having nearly 20,000 square feet of rentable space. Associate engineers include D'Allemagne & Barbacki, structural engineers, and James P. Keith & Associates, engineering consultants. Ediltelco Ltd. is the project manager. General contractor for the \$45 million project is the E.G.M. Cape & Co. Ltd.

Offices Surround Commercial Core

Decker Square in Bala-Cynwyd, Pennsylvania, a suburb of Philadelphia, will consist of six buildings, none higher than 100 feet, grouped around a two-block long "commercial core," topped by a roof garden. Architects for the \$55 million project are Welton Becket and Associates and Arthur Froehlich. The first stage of construction will include a seven-story curvilinear building, a nine-story square building and an eight-floor oblong building plus the covered mall in the center. All of the buildings will be interconnected through this core. The total complex will contain more than 1,300,000 square feet of office space. Underground parking will be provided for 500 cars with 4,800 additional spaces on the surrounding landscaped areas. General contractor is the Arthur A. Kober Company



Complex Designed by Gropius

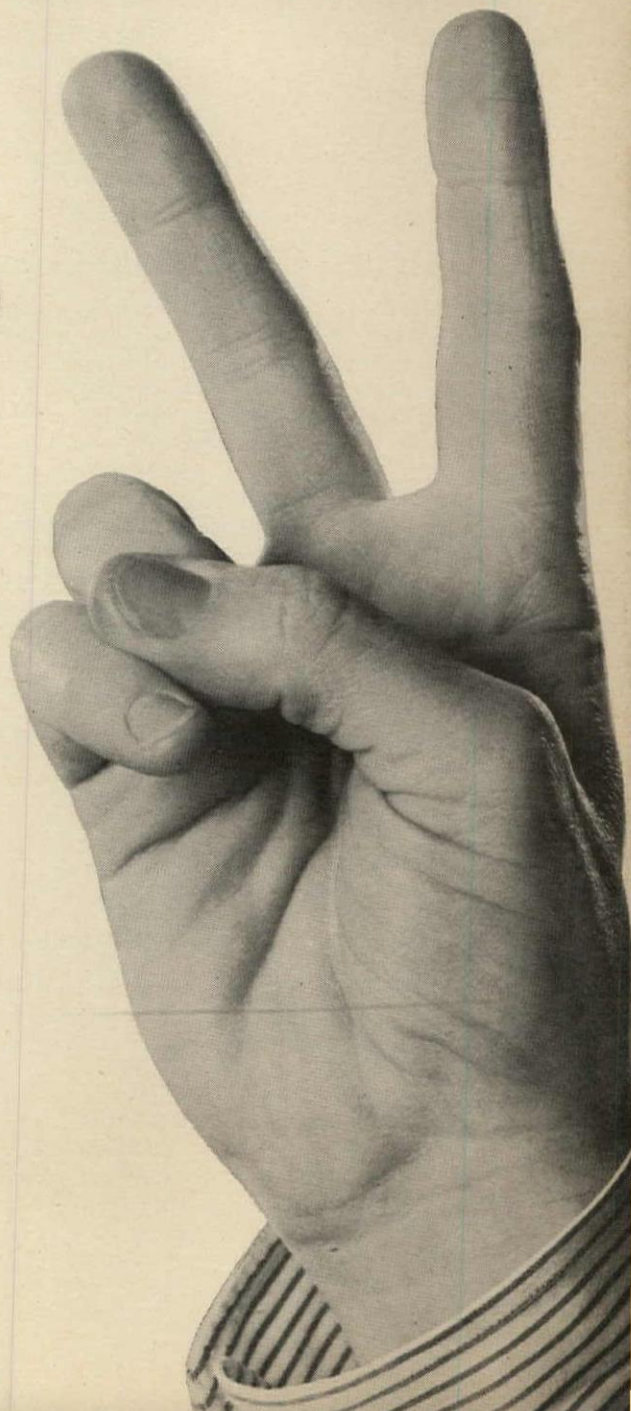
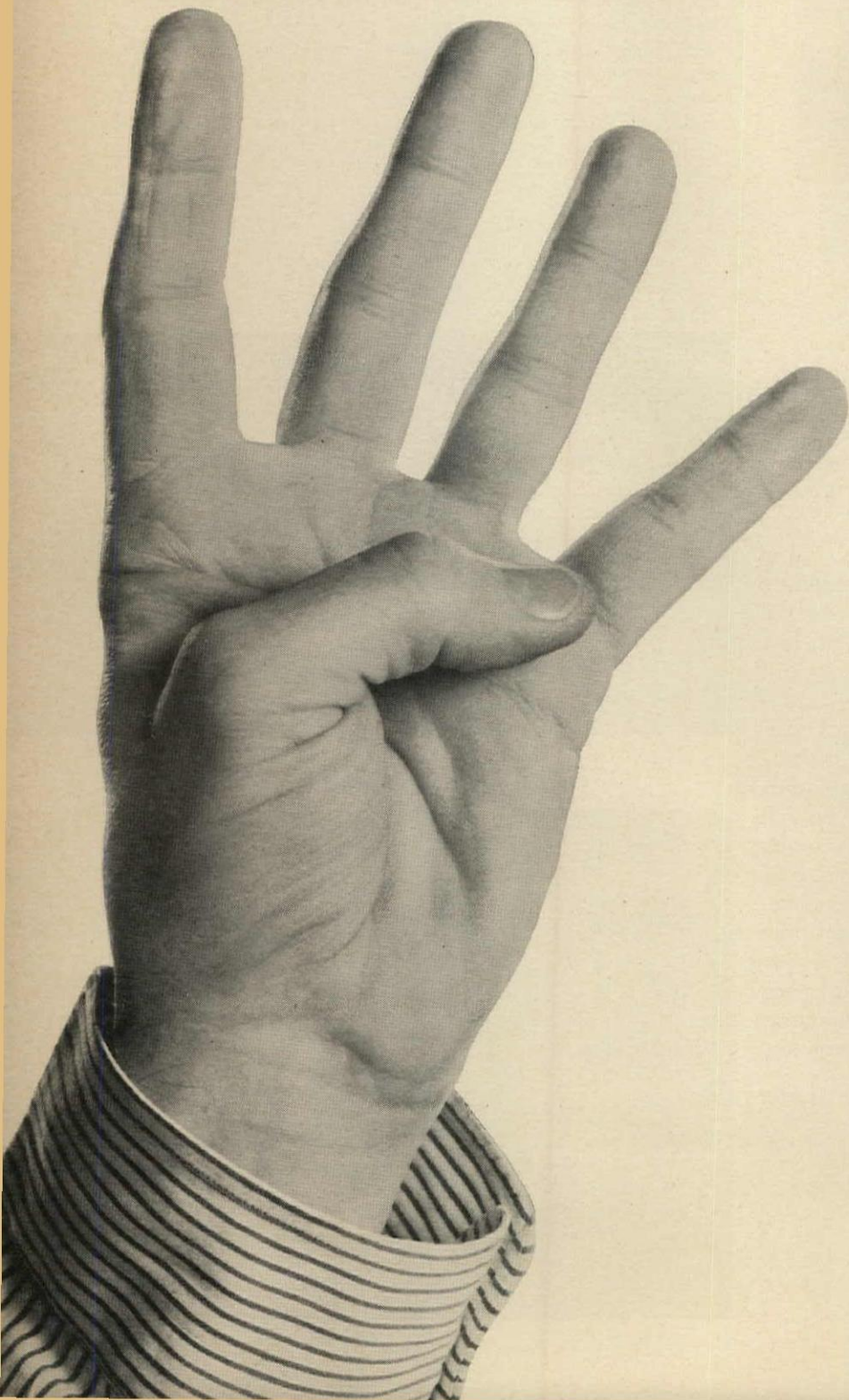
A three-building \$7 million business center consisting of 11-story and five-story shopping and office structures and a seven-story parking garage is planned for Shaker Heights, Ohio. The buildings are designed by the Architects Collaborative, Cambridge, Massachusetts, with Walter Gropius as the partner-in-charge of the project. The center, which will be called Tower East, is financed by the Prudential Investment Company. Construction, which is expected to start this year, will be in two stages with the larger office building of 192,000 square feet and the garage in the first stage. The small office structure will have 47,000 square feet. The buildings will be faced with precast white concrete with a high content of quartz aggregate



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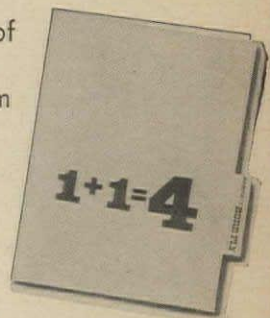
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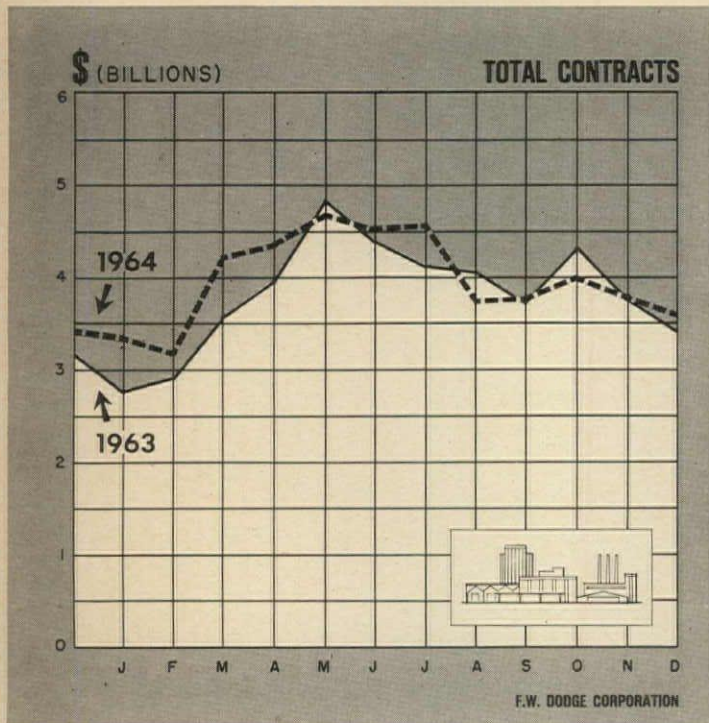
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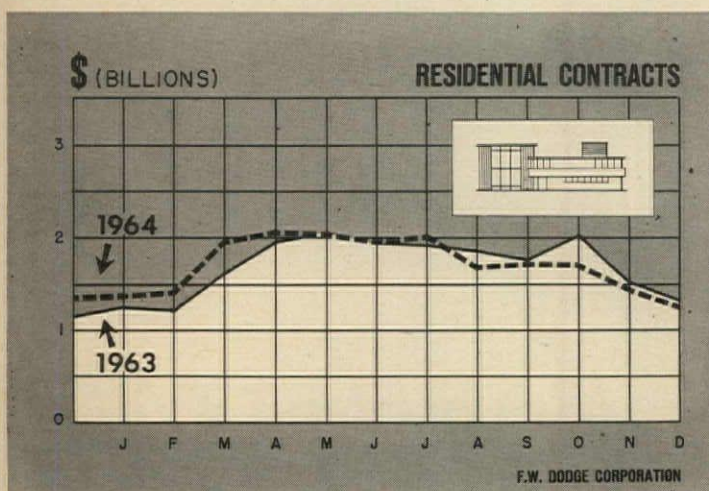
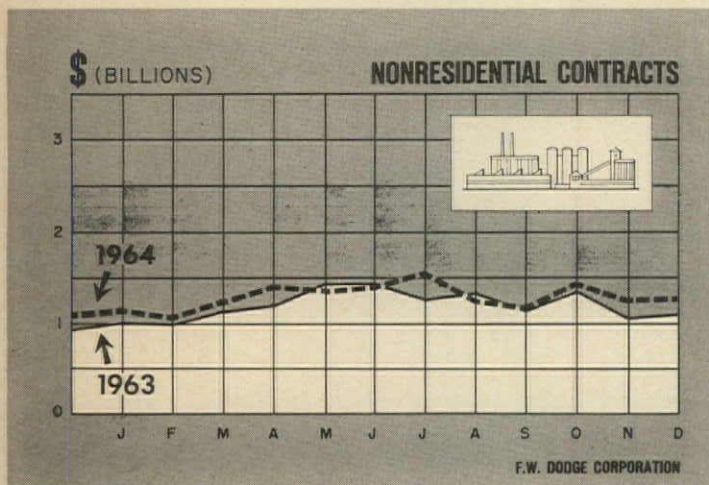


For more data, circle 5 on Inquiry Card

A VOTE OF CONFIDENCE FOR EDUCATIONAL CONSTRUCTION



Total contracts include residential, nonresidential and non-building contracts



In 1964, for the second year in a row, school and other educational building scored a healthy 7 per cent gain. This welcome spurt comes after a three-year period of virtually no change at all in the volume of new school construction, and offers the promise of at least as much additional growth in the year ahead.

But while the dollar value of new school construction (as measured by F. W. Dodge contract data) has advanced along with the vigorously expanding total of all nonresidential construction activity over the past two years, there's been little corresponding growth in the physical volume of new classroom space or other educational facilities being built. In fact, last year's educational building contracts provided slightly less aggregate square footage of floor area than was added back in 1957, a year that still stands as the peak for physical volume of new school building. Last year's *dollar* value was at an all-time high, though, at some 20 per cent above that of 1957.

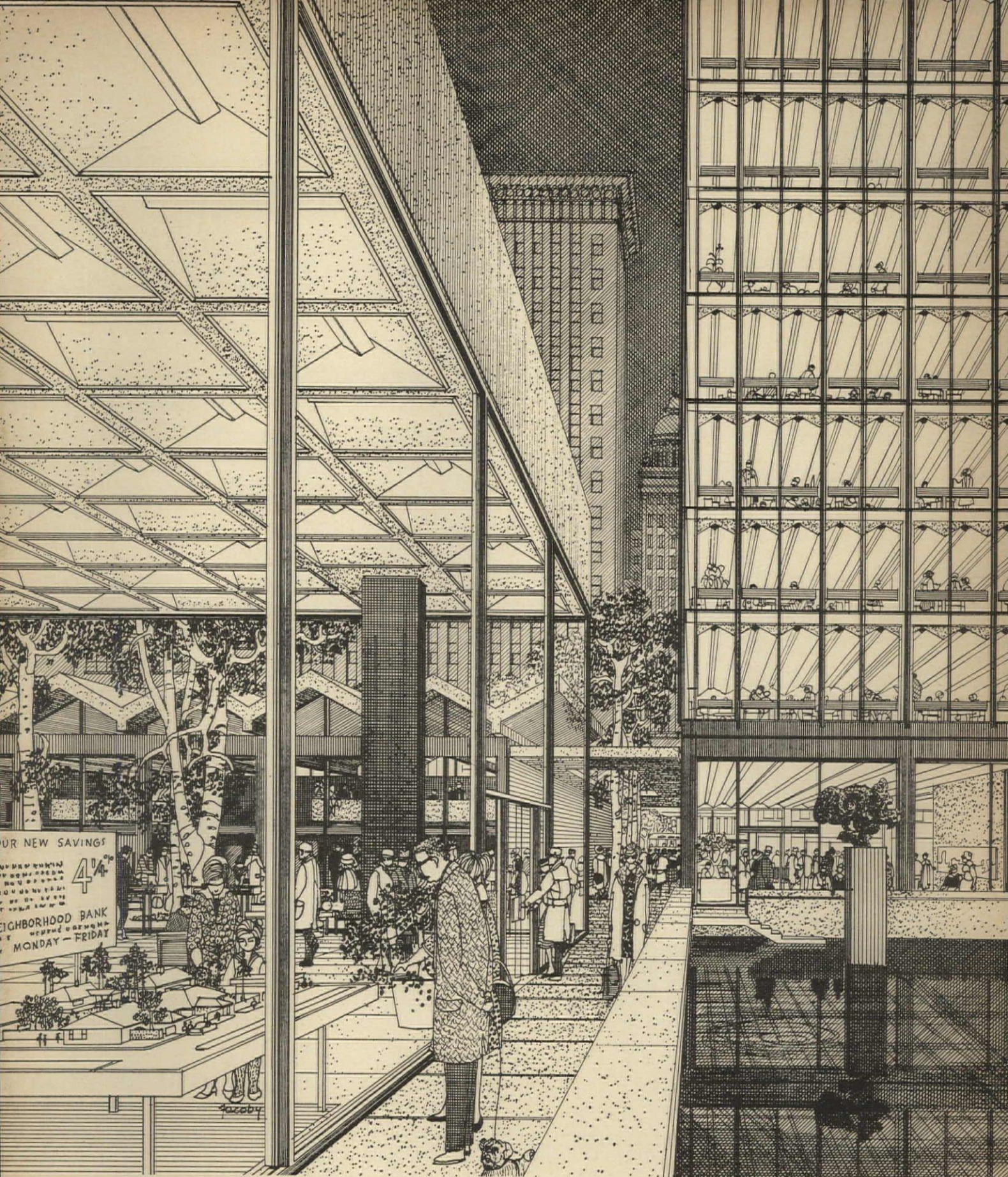
Rising costs are only part of the explanation. School construction, to be sure, has been no exception to the steadily advancing trend of average construction costs. But, in addition to the escalator effect of prices, today's huge student body, because it is growing older, needs different facilities than were required a decade ago. And this shift upward to higher educational levels means, quite apart from rising building costs, a need for generally more complex and more expensive educational construction.

Another good measure of this, as well as a portent of the high level of school construction that can be expected over the next year or so, is given in the record volume of bond approvals for public educational building during 1964. In state and local elections all over the nation, voters last year gave their consent to borrow more than two and a quarter billion dollars for elementary and high school building, and nearly another half billion for public college and university construction. This tops the previous high (1963) by some 8 per cent for the grade schools (which make up the bulk of all educational building); and for higher education it marks a giant step.

Approvals for *public* college and university bonds last year were well more than half again as large as any previous year on record, and that only represents the smaller part of the total volume of long-term borrowing to finance construction of higher educational facilities. In recent years the combined bond sales of *both* public and private colleges and universities has amounted to between two and three times the volume of public bond approvals alone. And none of this includes the as yet undetermined amount of Federal grants and direct loans, or the non-Federal matching funds earmarked for college construction (which could run as high as a billion dollars a year for the next three years) now available under the Higher Educational Facilities Act of 1963.

Altogether, there's going to be an unprecedented volume of construction money available for educational building in 1965, and a bigger proportion than ever will be funneled into the area where the need is growing fastest: colleges and universities.

George A. Christie, Chief Economist
F. W. Dodge Company
A Division of McGraw-Hill, Inc.



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"Here in this commercial center the System enlivens the ceiling configuration of the bank at the left; adds functional beauty and visual unity to the high-rise tower at right."

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Ceiling Systems by

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Building Construction Costs

By William H. Edgerton

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—JANUARY 1965

1941 Averages for each city = 100.0

Metropolitan Area	Cost Differential	Current Dow Index		Per Cent Change Year Ago Res. & Nonres.
		Residential	Nonresidential	
U.S. AVERAGE—21 Cities	8.5	266.8	284.2	+1.48
Atlanta	7.1	299.8	318.0	+1.82
Baltimore	8.0	268.6	285.7	+1.04
Birmingham	7.4	246.3	264.9	+1.08
Boston	8.4	242.4	256.6	+2.80
Chicago	8.8	296.5	311.6	+1.22
Cincinnati	8.8	257.4	273.6	+1.35
Cleveland	9.3	270.8	287.9	+1.98
Dallas	7.8	251.2	259.5	+0.71
Denver	8.3	273.5	290.7	+0.84
Detroit	8.9	267.7	281.0	+1.17
Kansas City	8.3	240.8	257.2	+0.60
Los Angeles	8.4	270.2	295.6	+1.44
Miami	8.4	265.4	278.6	+1.25
Minneapolis	8.9	269.8	286.8	+2.09
New Orleans	7.9	239.4	253.7	+0.01
New York	10.0	276.3	298.7	+1.93
Philadelphia	8.7	265.9	279.1	+0.84
Pittsburgh	9.1	251.4	267.3	+1.45
St. Louis	8.9	261.2	276.7	+2.71
San Francisco	8.5	342.8	375.0	+3.15
Seattle	8.5	245.5	274.3	+1.59

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

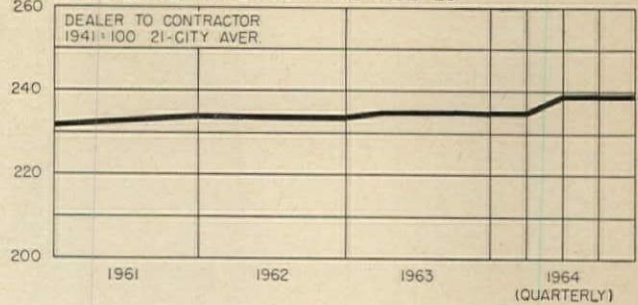
1941 average for each city = 100

Metropolitan Area	1952	1957	1958	1959	1960	1961	1962	1963 (Quarterly)				1964 (Quarterly)			
								1st	2nd	3rd	4th	1st	2nd	3rd	4th
U.S. AVERAGE 21 Cities	213.5	244.1	248.9	255.0	259.2	264.6	266.8	269.4	270.3	273.4	275.0	274.7	276.8	278.6	279.3
Atlanta	223.5	269.6	277.7	283.3	289.0	294.7	298.2	302.0	303.0	305.7	307.5	310.0	312.3	313.4	313.7
Baltimore	213.3	249.4	251.9	264.5	272.6	269.9	271.8	272.3	272.9	275.5	277.1	277.2	279.3	280.5	280.6
Birmingham	208.1	228.6	233.2	233.2	240.2	249.9	250.0	251.3	252.0	256.3	257.8	258.0	259.9	260.1	260.9
Boston	199.0	224.0	230.5	230.5	232.8	237.5	239.8	240.4	241.2	244.1	245.6	246.1	247.9	251.3	252.1
Chicago	231.2	267.8	273.2	278.6	284.2	289.9	292.0	296.4	296.4	301.0	302.8	302.2	304.5	305.1	306.6
Cincinnati	207.7	245.1	250.0	250.0	255.0	257.6	258.8	260.0	260.7	263.9	265.5	265.1	267.1	268.9	269.5
Cleveland	220.7	258.0	257.9	260.5	263.1	265.7	268.5	272.3	272.8	275.8	277.4	276.3	278.4	282.0	280.0
Dallas	221.9	228.4	230.5	237.5	239.9	244.7	246.9	251.5	252.2	253.0	254.5	253.7	255.6	255.6	256.4
Denver	211.8	245.6	252.8	257.9	257.9	270.9	274.9	275.0	275.4	282.5	284.2	282.6	284.7	287.3	287.3
Detroit	197.8	237.4	239.8	249.4	259.5	264.7	265.9	276.1	267.9	272.2	273.8	272.7	274.7	277.7	277.7
Kansas City	213.3	230.5	235.0	239.6	237.1	237.1	240.1	242.3	242.9	247.8	249.3	246.2	248.0	249.6	250.5
Los Angeles	210.3	248.4	253.4	263.5	263.6	274.3	276.3	279.1	279.7	282.5	284.2	284.0	286.1	286.1	288.2
Miami	199.4	234.6	239.3	249.0	256.5	259.1	260.3	262.4	266.7	269.3	270.9	270.1	272.1	273.1	274.4
Minneapolis	213.5	235.6	249.9	254.9	260.0	267.9	269.0	271.4	272.1	275.3	276.9	275.0	277.1	281.6	282.4
New Orleans	207.1	232.8	235.1	237.5	242.3	244.7	245.1	246.5	246.5	248.3	249.8	247.1	248.9	249.3	249.9
New York	207.4	240.4	247.6	260.2	265.4	270.8	276.0	280.9	280.9	282.3	284.0	284.8	286.9	289.7	289.4
Philadelphia	228.3	255.0	257.6	262.8	262.8	265.4	265.2	265.6	265.6	271.2	272.8	271.1	273.1	274.5	275.2
Pittsburgh	204.0	234.1	236.4	241.1	243.5	250.9	251.8	255.0	256.1	258.2	259.7	260.8	262.7	262.9	263.8
St. Louis	213.1	237.4	239.7	246.9	251.9	256.9	255.4	260.1	262.4	263.4	265.0	266.8	268.8	271.4	272.1
San Francisco	266.4	302.5	308.6	321.1	327.5	337.4	343.3	350.1	250.1	352.4	354.5	358.2	360.9	364.1	365.4
Seattle	191.8	221.4	225.8	232.7	237.4	247.0	252.5	256.5	257.8	260.6	262.2	260.1	262.0	265.7	266.6

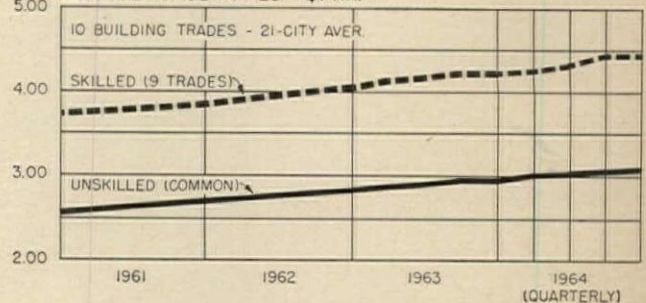
HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B; an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

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

1. BUILDING MATERIAL PRICE INDEXES



2. BASE WAGE RATES \$/HR.



3. MONEY RATE & BOND YIELDS %

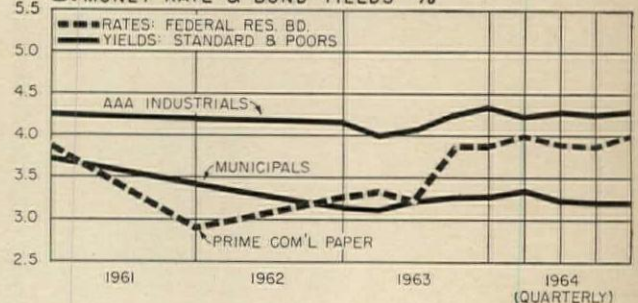
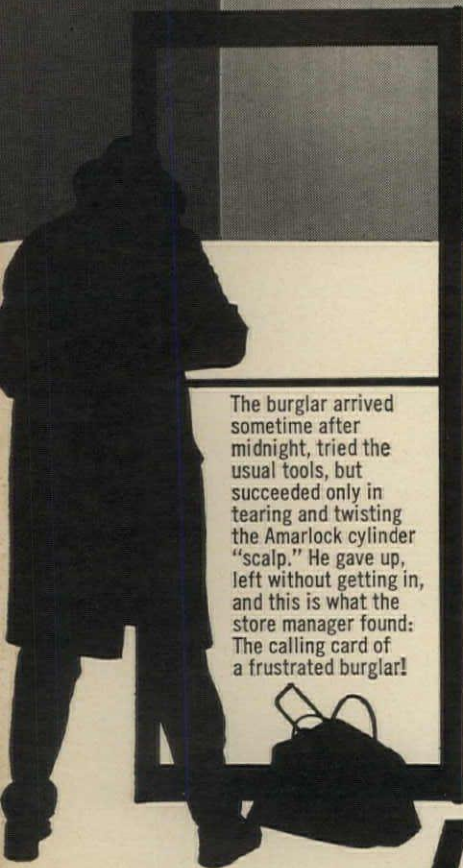
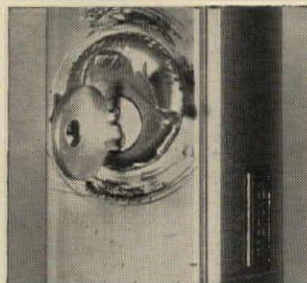


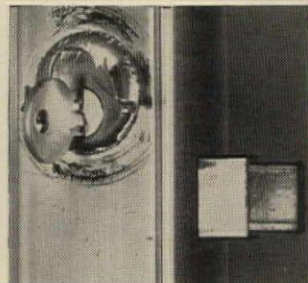
TABLE B. Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. 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



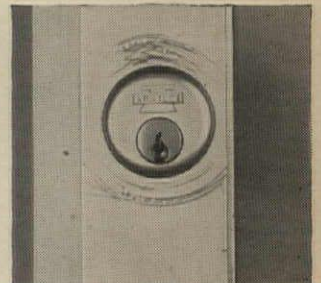
The burglar arrived sometime after midnight, tried the usual tools, but succeeded only in tearing and twisting the Amarlock cylinder "scalp." He gave up, left without getting in, and this is what the store manager found: The calling card of a frustrated burglar!



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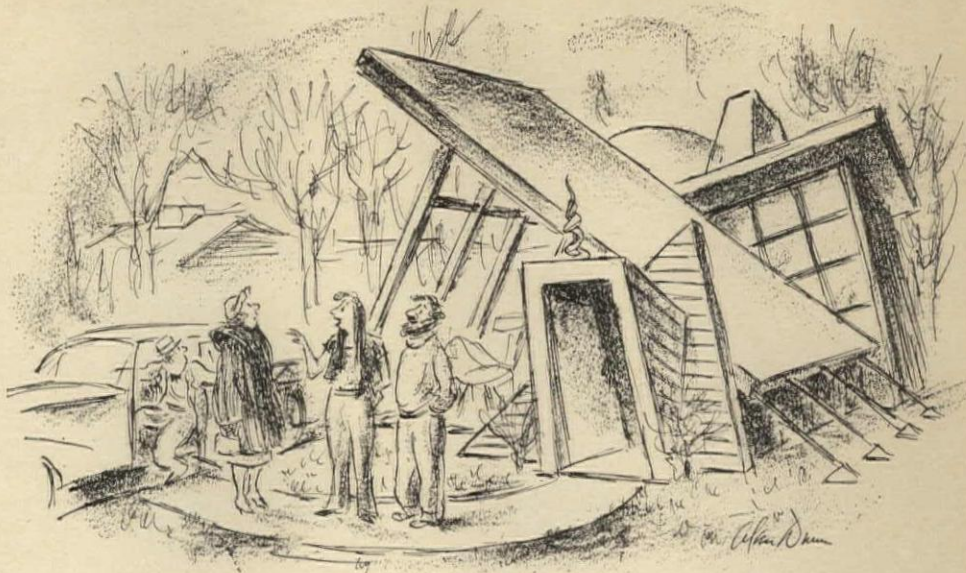
If you're an **architect**, you may admire the clean-line styling of the Amweld door . . . or you might have a healthy respect for its adaptability to an amazing variety of contract builders' hardware . . . or its maintenance-free durability . . . or its beauty. Then again, you could be one of the many who responds to Amweld's wide selection of door styles, sizes and types.

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—Drawn for the RECORD by Alan Dunn

“Architecture dates you—We live in a happening”

PRESIDENT JOHNSON OUTLINES PROGRAMS FOR REALIZATION OF THE ‘GREAT SOCIETY’

In a series of messages, letters and appropriation requests, President Johnson has started implementation of the programs for the “Great Society” outlined in his State of the Union address (February, page 23).

The Education Message, presented to Congress on January 12, was highlighted by a proposal by the President that grants be made to support extension programs by the universities in dealing with the urban problems of their communities. In this way the university can face the problems of the city “as it once faced problems of the farm.”

The President outlined a six-part program for preserving natural beauty along the nation’s highways in a letter to Secretary of Commerce John T. Connor on January 21. Also on January 21, the President submitted a \$392 million budget for the District of Columbia. The President asked Congress to make Washington a model area that would “exemplify the best” of the Great Society.

In the White House Message on Natural Beauty, delivered to Congress on February 8, President Johnson called for a new type of conservation, “not just the classic conservation of protection and development,

but a creative conservation of restoration and innovation.” Also on this date, the President called for appropriations for the construction of the Kennedy Memorial Grave.

Education Message

In the education message, the President pointed out that attendance in elementary and secondary schools will increase by four million within the next five years. Four hundred thousand new classrooms will be needed to meet this growth. But almost a half million of the nation’s existing classrooms are already more than 30 years old.

The babies born in the post-World War II boom in population have now reached college age, and that by 1970 the colleges must be prepared to add 50 per cent more enrollment to their presently overcrowded facilities.

“I propose that we declare a national goal of full educational opportunity,” the President said. President Johnson then outlined a program for pre-school, elementary and secondary schools, and higher education.

In the field of secondary and elementary schools, the President called for aid to low-income school districts

because of the imbalance of low-income families being concentrated in particular urban neighborhoods or rural areas.

A program of Federal grants for supplementary education centers and services within the community was proposed. These supplementary centers would provide such services as special courses, programs for the physically handicapped or mentally retarded, and laboratories, libraries, auditoriums and theaters.

The Federal government would also help to strengthen state educational agencies in such areas as the formulation of long-range plans.

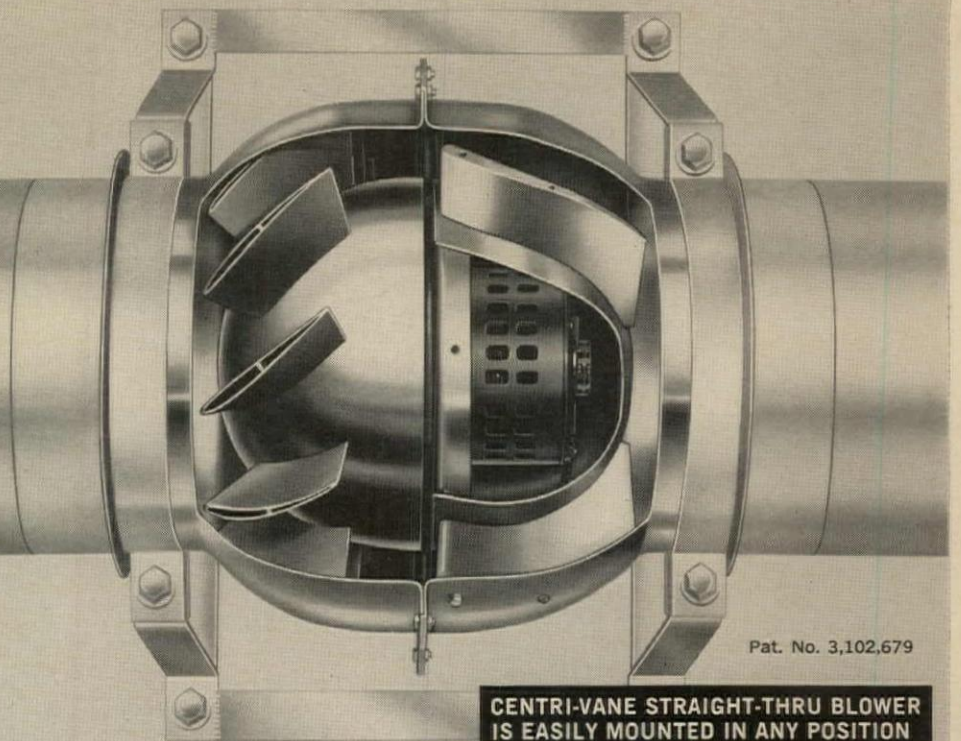
In the field of higher education, the President called for a program of grants to support university extensions concentrating on the problems of the community.

“Today 70 per cent of our people live in urban communities. They are confronted by problems of poverty, residential blight, polluted air and water, inadequate mass transportation and health services, strained human relations and overburdened municipal services.

“Our great universities have the skills and knowledge to match these

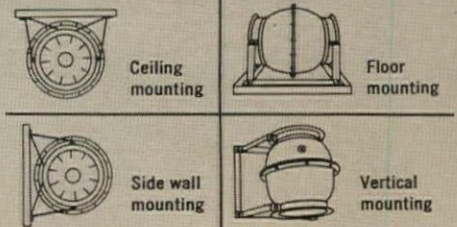
continued on page 276

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INTO DUCT...
SAVES SPACE...
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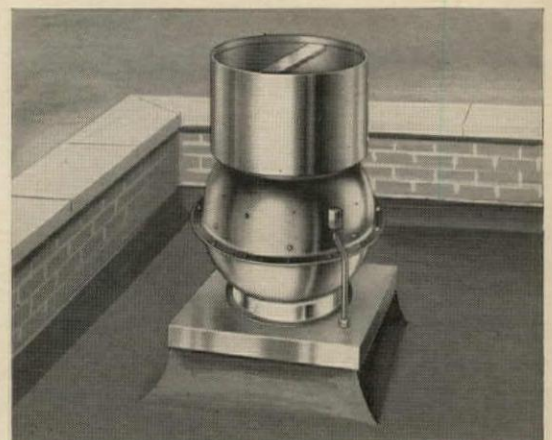
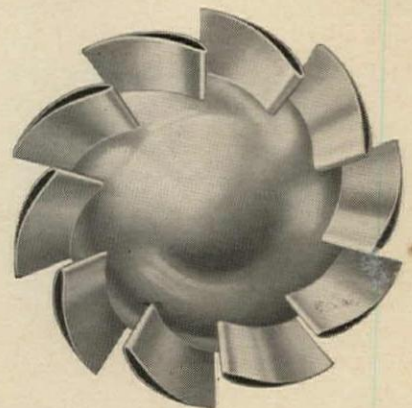
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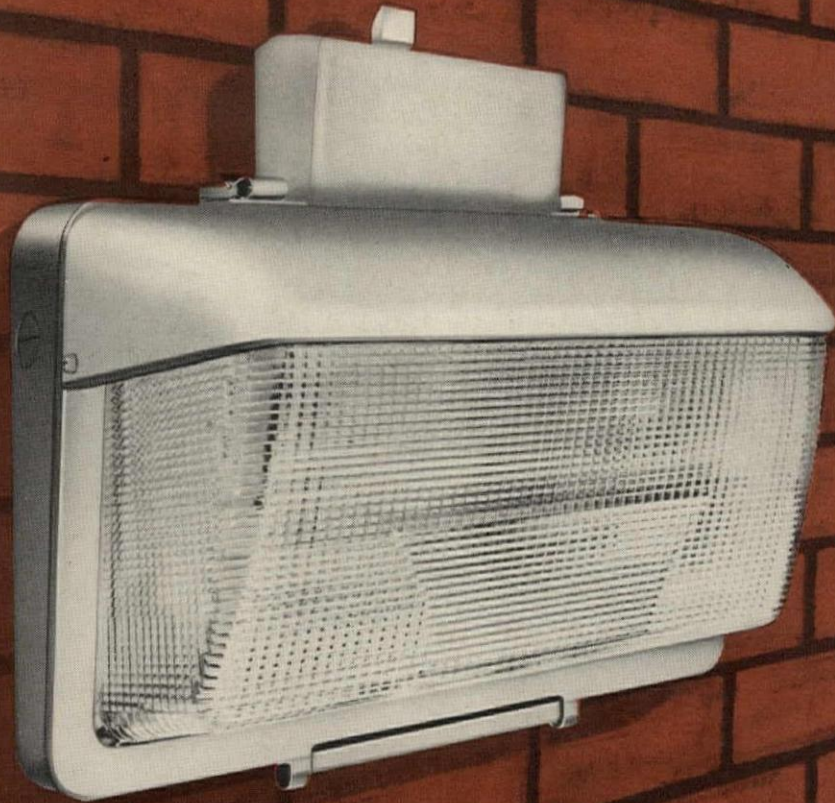
AD NO. CV-2

**FOR BOTH CV AND UCV BLOWERS, ASK FOR CATALOG 65C, OR SEE
SWEET'S ARCHITECTURAL FILE, SECTION 20C/co**

THE LOREN COOK COMPANY
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HOLOPHANE
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with InBilt Ballast
& Prismascope Control

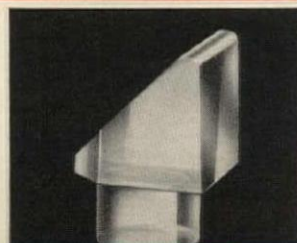
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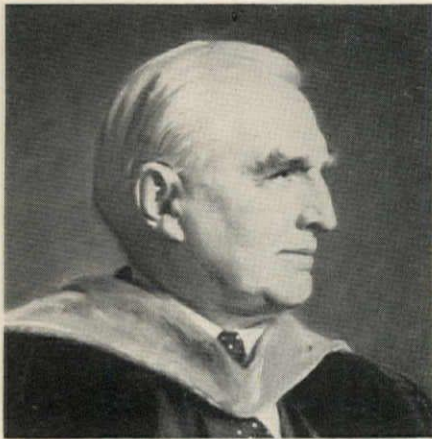
Prismascope



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on Inquiry Card



STEPHEN FRANCIS VOORHEES IS DEAD AT 86



Stephen Francis Voorhees, a past president of the American Institute of Architects, died on January 23 at the age of 86. He was consultant to the architectural firm of Smith, Smith, Haines, Lundberg & Waehler, New York City, where he was a partner for 49 years. The firm which was formerly called Voorhees, Walker, Smith, Smith & Haines, changed its name on January 1, 1964.

Educated as a civil engineer at Princeton University, from which he graduated in 1900, he worked as a

civil engineer for two years. In 1902, Mr. Voorhees joined the staff of Eidlitz & McKenzie as a civil engineer and superintendent of construction. In 1910, Cyrus L. W. Eidlitz withdrew from the partnership and Andrew C. McKenzie invited Mr. Voorhees and Paul Gmelin to become his partners. Following the death of Mr. McKenzie in 1926, Mr. Voorhees became the senior partner of the firm, holding this position until January 1959, when he became a consultant.

Mr. Voorhees was a trustee of Stevens Institute of Technology, a trustee of the Metropolitan Museum of Art, and a trustee emeritus of Princeton University. He was a director and president of Architects' Offices, Incorporated, a director of the Architects Samples Corporation, a member and past president of the Princeton Architectural Association and the Princeton Engineering Association, a member of the American Society of Civil Engineers, the Architectural League of New York, and the American Institute of Architects.

Mr. Voorhees was one of the founders and first president of the New

York Building Congress in 1921. From 1933 to 1935 he was chairman of the Construction Code Authority of the National Recovery Administration, which developed a code of ethics for the construction industry. In 1936 and 1937 Mr. Voorhees served as national president of the American Institute of Architects.

From 1936 to 1940 Mr. Voorhees was chairman of the Board of Design for the New York World's Fair. He served as supervising architect for Princeton University from 1930 to 1949.

Mr. Voorhees was elected to the College of Fellows of the American Institute of Architects in 1926 for his contribution to design, service to the profession and public service. He received the honorary degree of Doctor of Engineering from Princeton University and from Rensselaer Polytechnic Institute, and the honorary degree of Doctor of Fine Arts from New York University. Mr. Voorhees was an honorary member of the Royal Institute of British Architects, and the American Society of Landscape Architects.

GEDDES IS NAMED DEAN OF ARCHITECTURE AT PRINCETON

Robert L. Geddes has been named as dean of the School of Architecture at Princeton University, a newly created position. Mr. Geddes has been professor of architecture and civic design at the University of Pennsylvania's Graduate School of Fine Arts, where he has taught since 1952. He is a partner in the architectural firm of

Geddes, Brecher, Qualls and Cunningham of Philadelphia.

Mr. Geddes did undergraduate work at Yale and received a Bachelor of Architecture degree in 1950 from the Harvard Graduate School of Design. He traveled abroad for a year on a Harvard Appleton Fellowship.

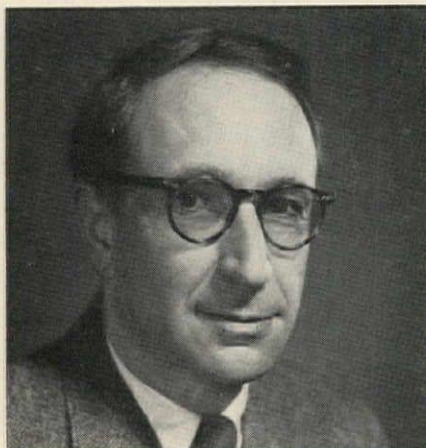
Since 1959, Mr. Geddes has served the Redevelopment Authority of the City of Philadelphia as chairman of the board of design for its center city development. He is a director of the Philadelphia Citizens Council on City Planning, and is a member of the Philadelphia Housing Association, the Committee on City Policy, and the Franklin Institute Committee on Sciences and the Arts.

Mr. Geddes received the First Honor Award of the American Institute of Architects for his design of the building for the Moore School of Electrical Engineering at the University of Pennsylvania. He has also received gold medals from the Institute's

Philadelphia chapter in 1958 and 1963, and received silver medals from the Pennsylvania Society of Architects in the same years.

Mr. Geddes is a member of the American Institute of Architects, chairman of the National Committee on Design Discipline and a member of the National Committee on Urban Design. He was a consultant on urban architecture and planning to the Rockefeller Foundation in 1962.

The appointment will become effective on July 1, with the retirement of Professor Robert William McLaughlin, who has been director of the school since he joined the faculty in 1952. At that time the title will be changed from director to dean in recognition of the increasingly important role which the 45-year-old school has assumed within the university, according to President Robert F. Goheen. Mr. McLaughlin plans to engage in private practice, consulting work and writing.



Fabian Bechrach

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the way
through!



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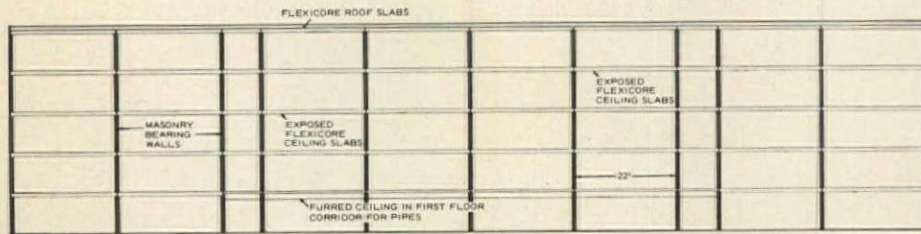
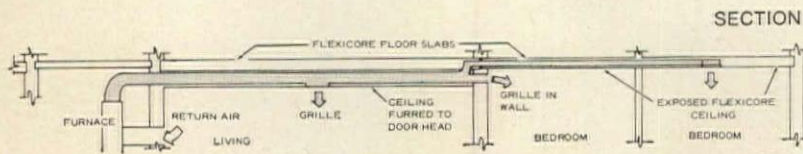
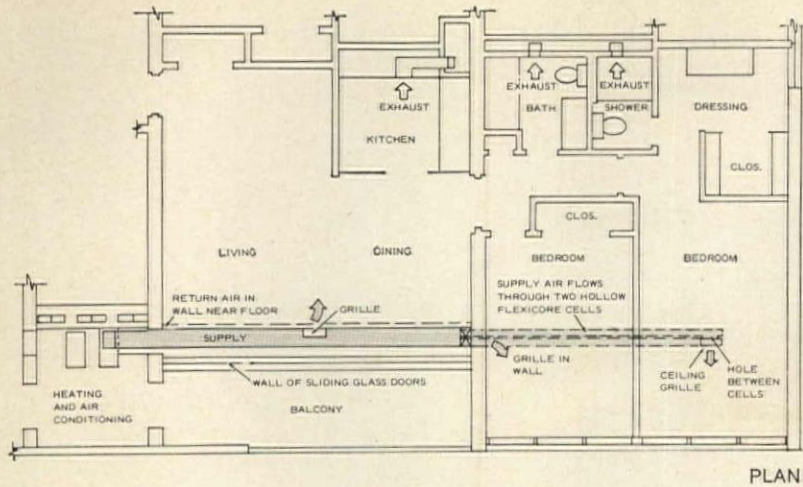


Taffy Beige 5554

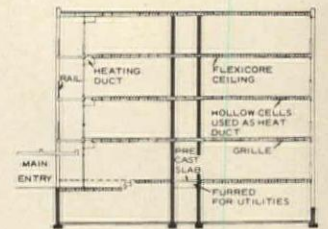


Smoky Beige 5555

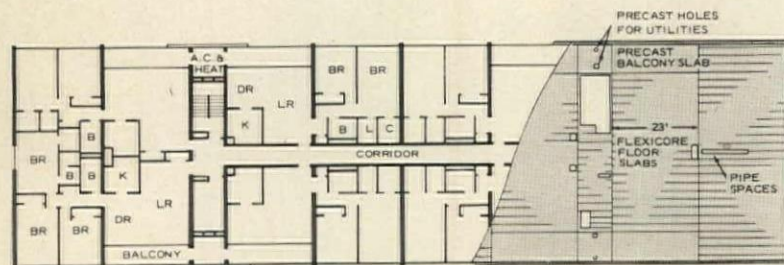
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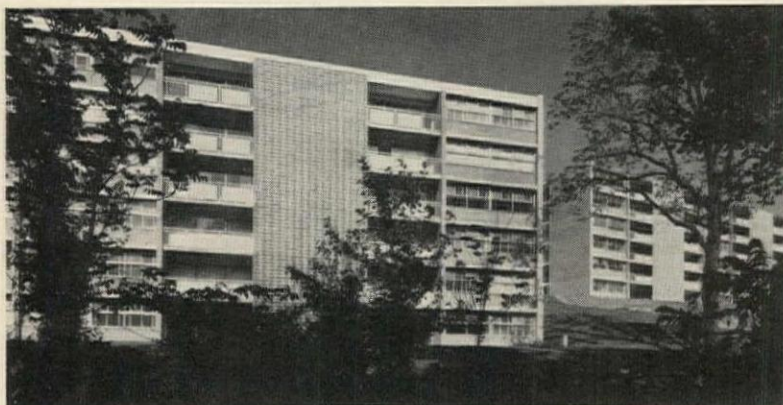
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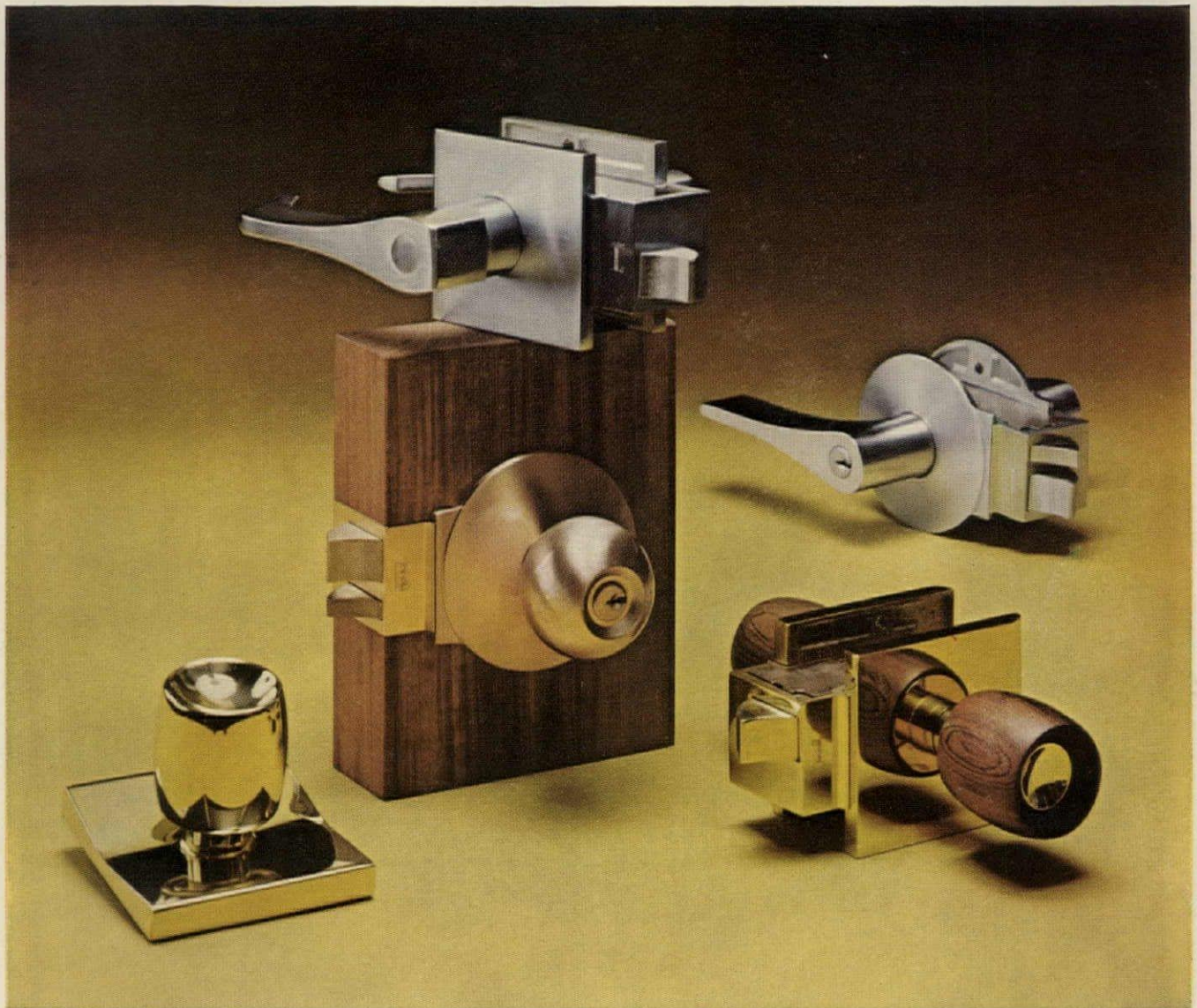
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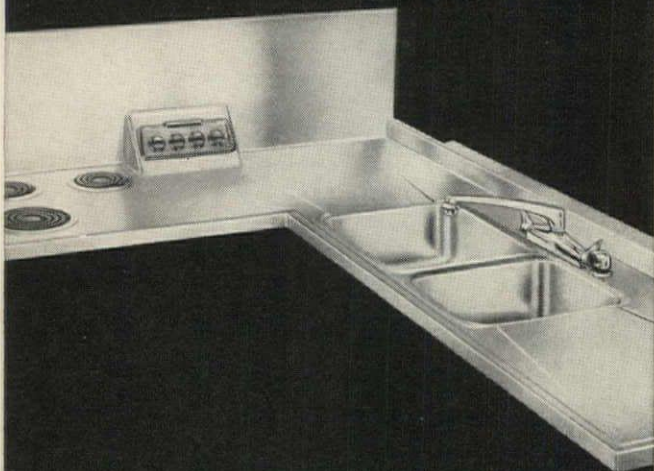


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● **WALL HUNG**

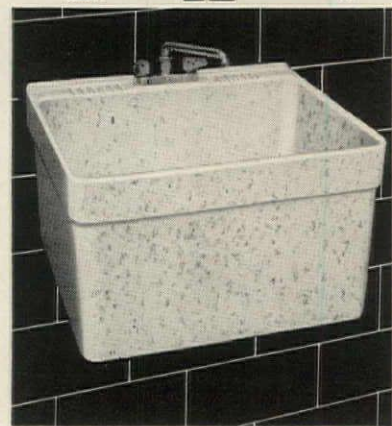
ServASink installs fast to a rigid bracket for solid installation which eliminates side to side wracking, keeps floor clean and clear.

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One man handles easily. ServASink MOLDED-STONE is 80% lighter than masonry, yet retains strength of natural stone. Will not crack, chip or split.

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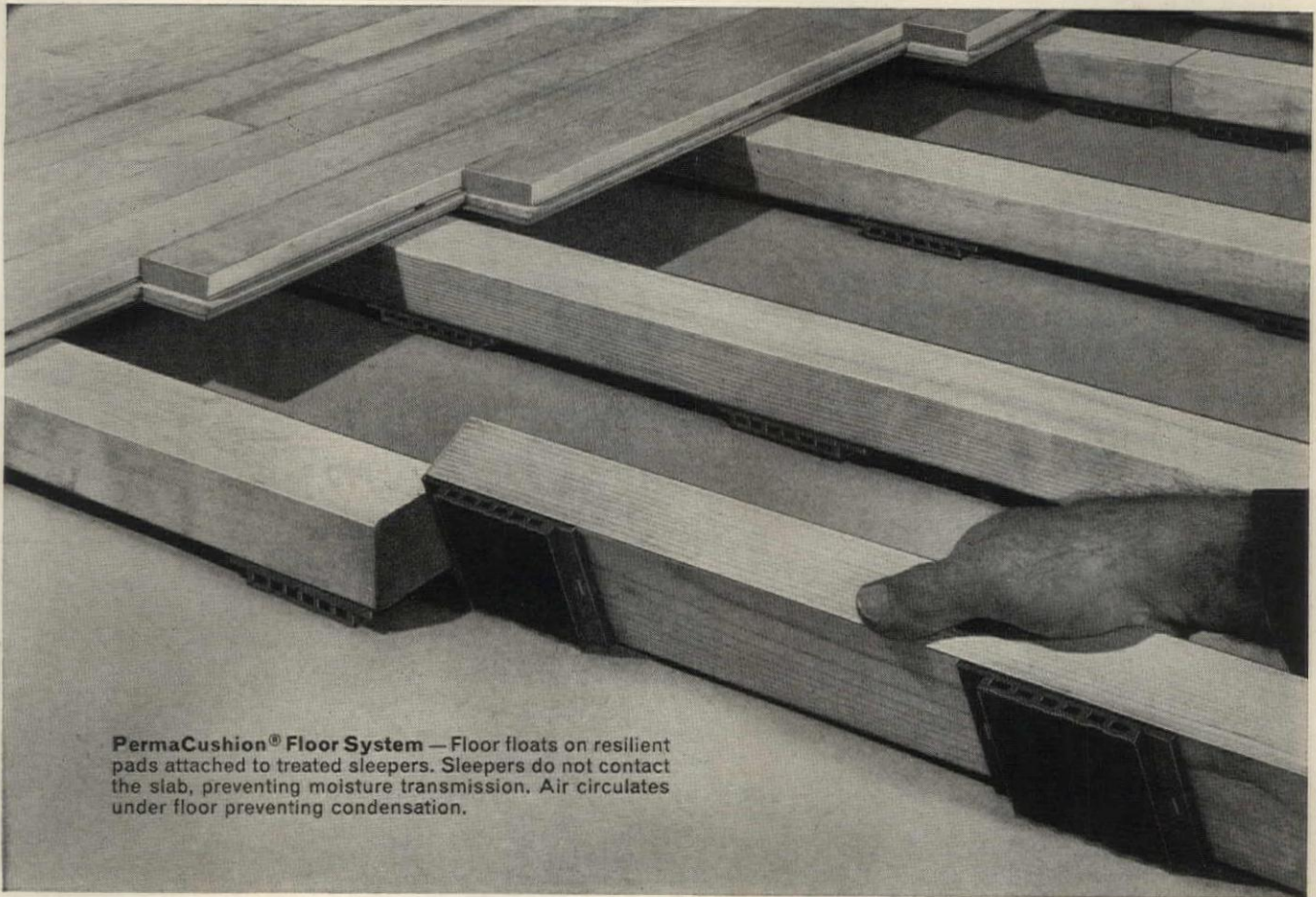
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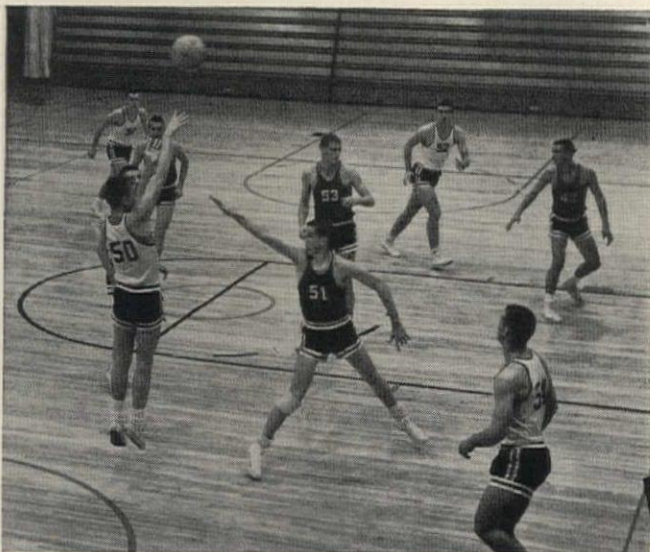
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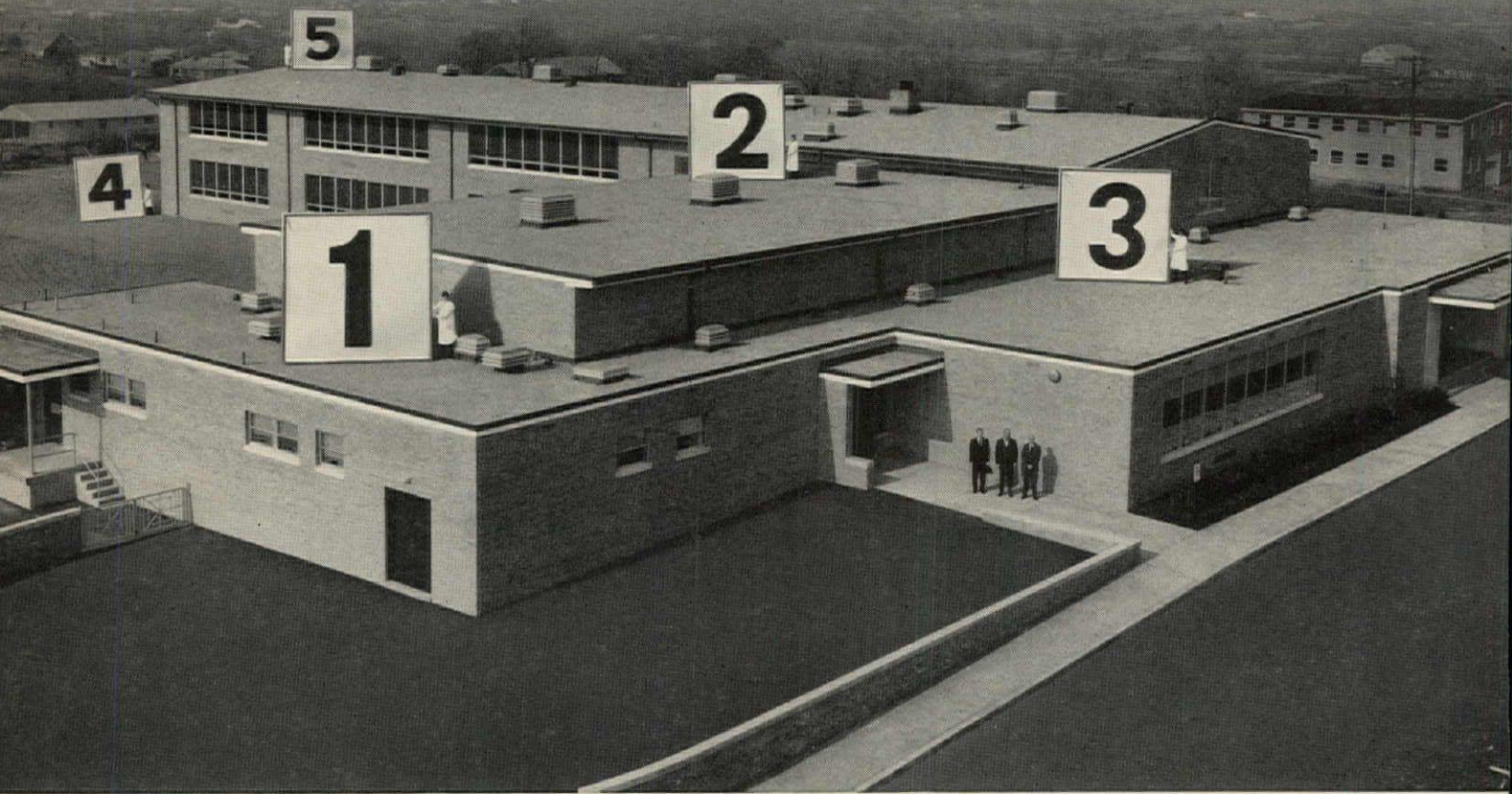
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In Lower Paxton, Pa., consulting engineers Herbert and Roy Bair and architect William L. Murray (foreground, right to left), and several intrepid friends, point out benefits of all-electric design in new Mountain View School. **1** LOWER INITIAL COST: Fully equipped kitchen paid for with just part of construction savings. **2** FREEDOM OF DESIGN: No need for conventional "box" design to make central ductwork or steam piping practical. **3** SAVINGS IN SPACE: Equivalent of extra classroom provided by elimination of boiler room. **4** NO OUTSIDE STACK: Simplified construction, contributed to first-cost savings. **5** EASY EXPANSION: If needed, wing can be added in future with no problem of adding to boiler capacity.

"Here are five of our reasons for recommending all-electric design for this new Mountain View School"



To Herbert Bair, E.E., and Roy Bair, M.E., of the Harrisburg, Pennsylvania, engineering firm, Bair Associates, using flameless electricity as a single source of energy is a great boon to modern school construction.

They report, "Since 1948, we have taken part in the planning of more than 100 schools and our constant goal has been the creation of even more efficient design.

"One new tool we are now working with regularly—the use of electricity for all heating, lighting and power needs—certainly proved its value in our new Mountain View Elementary School in Lower Paxton Township.

"For one thing, using a single energy source allowed for an extremely practical layout. It also saved enough space to provide the equivalent of a full-sized classroom. And in addition, all-electric design helped bring the per-pupil cost down to \$960, or \$340 below the \$1300 statewide average.

"Certainly the Mountain View School demonstrated to

our firm that all-electric design can contribute importantly to planning efficient and economical schools in which controlling temperatures in individual areas is no problem whatsoever."

To find out how all-electric design can help you with your institutional, industrial and commercial buildings, contact your local electric utility company. They will welcome the opportunity to work with you.

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THIS PLAQUE, now given by many electric utility companies, identifies a modern building which has met the high standards of electric heating, cooling, lighting—and other applications—set by the Edison Electric Institute. On your clients' buildings, this All-Electric Award serves as a reminder of your role in specifying clean, automatic, economical electric equipment.





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**New Kawneer UNIT WALL 1200 System
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Outside, raging gale winds and rain! Inside, bone dry! Rigorous static test results assure that you can *now* specify an aluminum wall system *with operating vents* which provides weathering performance *better* than NAAMM standards. (See *Metal Curtain Wall Manual* by NAAMM, A.I.A. No. 17-A.)

Only Kawneer has the features that make this possible . . . 1) pressure equalization slot of Sealair Vents, proven by independent tests to be leak-proof even under hurricane conditions, and 2) split mullion construction of Kawneer UNIT WALL Systems takes thermal expansion stresses away from joint sealants; preventing possible damage and subsequent leakage.

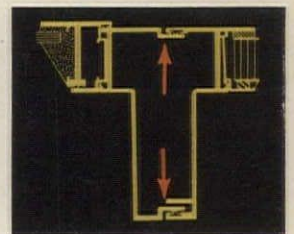
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A monthly roundup of reports on new books of special interest to architects and engineers

Practice Guide For Architects

COMPREHENSIVE ARCHITECTURAL SERVICES—GENERAL PRINCIPLES AND PRACTICE. Prepared by the American Institute of Architects; William Dudley Hunt Jr., editor. McGraw-Hill Book Company, 330 West 42nd Street, New York, New York, 10036. 241 pp., \$8.00.

This book puts together—and adds some material to—a series of articles, first published in the *Journal of the A.I.A.*, which can be fairly said to reflect a new era in A.I.A. history. When the *Journal* series began, Mr. Hunt (now the *Journal's* publisher), was a senior editor of *ARCHITECTURAL RECORD*, which had for several years been urging, through its series "The Image of the Architect," increased attention to the broadening scope of architectural practice and the new informational needs it implied for the practicing architect. During much of the same period, an A.I.A. Committee on the Profession had been attempting to define a new concept of "comprehensive services" to meet the new challenges of architectural practice in an age marked by awesomely complex changes in the scale, the technology and the pace of practice. The *Journal* articles, published during 1962, 1963 and 1964, represented a major effort by the A.I.A. to equip its membership for the responsibilities recognized in the 1960 and 1962 reports of the Committee on the Profession.

The book has been organized in six sections—The New Role of the Architect; Principles of Comprehensive Architectural Services; The Architect and His Client; Promotional Services; Project Analysis Services; Re-

lated and Supporting Services. An important addition to the material previously published is an article by Charles Luckman, "Budget Estimating and Cost Control."

Housing and the City

BEYOND THE MELTING POT. By Nathan Glazer and Daniel Patrick Moynihan Jr. The M.I.T. Press, Cambridge, Massachusetts, 02142. 360 pp., \$5.95.

The subject of this book is New York City: its Negroes, Puerto Ricans, Jews, Italians and Irish: but its commentary on "the role of ethnicity" in the life of New York, past and present, has far wider implications in an age in which many seem to consider that "integration" is the key to solution of so many urban ills.

The thesis of the authors is that the melting pot did not happen—at any event not in New York nor in other cities which have had large and distinct ethnic groups. "The notion that the intense and unpremeditated mixture of ethnic and religious groups in American life was soon to blend into a homogenous end product," they assert, "has outlived its usefulness, and also its credibility. In the meantime, the persisting facts of ethnicity demand attention, understanding and accommodation."

The crucial fact as they see it is that "the ethnic group in American society became not a survival from the age of mass immigration but a new social form." And in New York, the fact that ethnic groups are also *interest* groups they regard as perhaps the single most important fact about them.

Each of New York's five principal ethnic groups is analyzed in turn—its history, its differing levels of achievement, the cultural and social

This Month's Books

REVIEWS

Nathan Glazer and Daniel Patrick Moynihan Jr., "Beyond the Melting Pot" . . . 46

William Dudley Hunt Jr., "Comprehensive Architectural Services—General Principles and Practice" . . . 46

Jerome Liblit, "Housing—The Cooperative Way" . . . 46

Walter T. Tower Jr., "Condominium, Housing for Tomorrow" . . . 50

BOOKS RECEIVED . . . 50

values the authors consider it shares, its relation to the economic and political life of the city.

The authors are both native New Yorkers. Nathan Glazer, a sociologist who has taught at the University of California and Bennington and Smith Colleges, was for eight years associate editor of *Commentary* and has written a number of books, including "American Judaism" (1957) and "The Social Basis of American Communism" (1961). Daniel Patrick Moynihan Jr., has been active in public affairs in New York State since serving on the campaign staff of Mayor Robert Wagner in 1953. Now an Assistant Secretary of Labor, he has been in Washington since 1961.

HOUSING-THE COOPERATIVE WAY. Selected readings edited by Jerome Liblit. Twayne Publishers, Inc., 31 Union Square West, New York, New York, 10003. 300 pp., \$6.00.

This group of papers on cooperative housing covers five major subjects: cooperative principles and practices; the history and rationale of cooperative housing; organization and operation; structure for cooperative housing development; and cooperative housing in New York City. An appendix includes model by-laws, a model subscription agreement and typical financial documents (among them a model budget for estimated development costs and capital requirements).

Material is drawn from various sources—conferences, periodicals, reports, speeches, etc.—and includes some articles written especially for this volume. The editor, who is director of research of the Fund for Urban Improvement and of the Association for Middle Income Housing, has not ignored the problems.

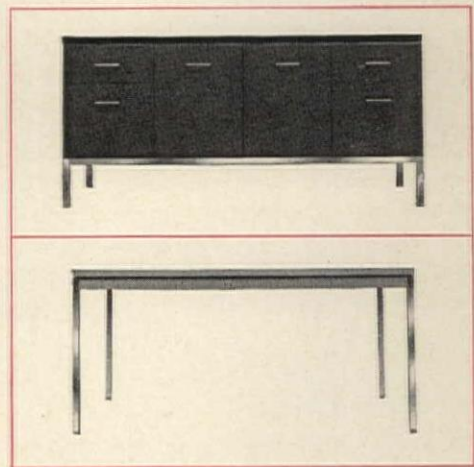
continued on page 50

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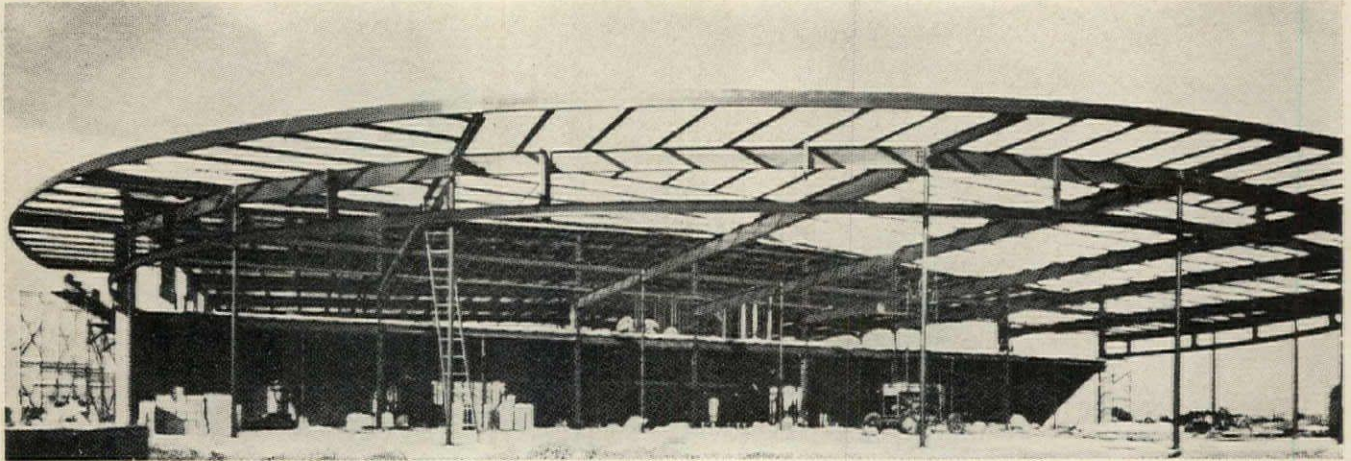


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Designer and Contractor: Shannon Boatman, Investment Builder, Houston, Texas.

This unusual semi-circular auto agency was designed with Sheffield High Strength (H-Series) Steel Joists for the roof. Each joist was supplied in a specified length, simplifying erection.



High Strength Sheffield Steel Joists used in unique semi-circular auto showroom

The new 140,000 square-foot Richardson Chevrolet Company building complex in Houston, Texas, includes a new-car showroom of an unusual semi-circular design. A special framing arrangement, within the circular shape of the roof, made it possible to use economical Sheffield High Strength (H-Series) Joists in seven rectangular areas.

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Sheffield Joists, including the J-, LA-, and LH-Series, are readily available through leading fabricators and constructors. For complete data on Sheffield Joists, write for our latest catalog, or see Sweet's Architectural File. Armco Steel Corporation, Steel Division, Department W-305A, 7000 Roberts St., Kansas City, Mo. 64125.

ARMCO STEEL



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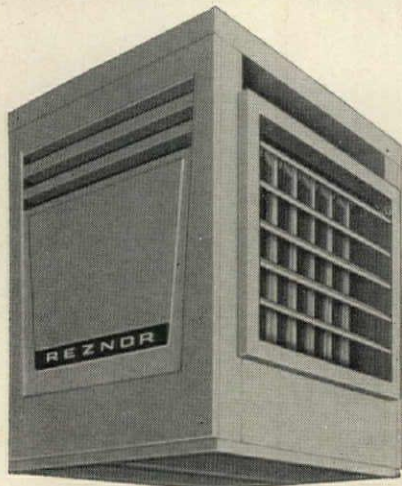




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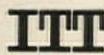
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Required Reading

continued from page 46

CONDOMINIUM, HOUSING FOR TOMORROW. A Study Prepared by Graduate Students at the Harvard Graduate School of Business Administration; Walter T. Tower Jr., editor. *MR Management Reports*, 38 Cummington Street, Boston, Massachusetts, 02215. 94 pp., \$15.00.

This is an expensive brochure, but one which should be of considerable interest to those who are involved, or may be involved, with the problem of the condominium. The report it contains was originally done by a group of second-year students at the Harvard Graduate School of Business Administration as part of a course requirement and was intended to fill a gap in the literature on condominiums, by attempting a deeper and more general analysis of experience with condominiums than had so far been done. Existing literature had focused largely on legal or financial aspects, or on experience with specific projects.

This study was not limited to published material, but relied heavily on personal interviews with people experienced with condominium, and also drew on correspondence with such people both in this country and abroad.

One conclusion of special interest to architects was that a prime factor in the success or failure of condominium is "the architect's ability to most closely provide those amenities which would normally be contained in the single house." A section on "design" does not attempt to suggest how this should be done, but it does present an interesting summary of attitudes of condominium owners based on interviews with many of them.

Books Received

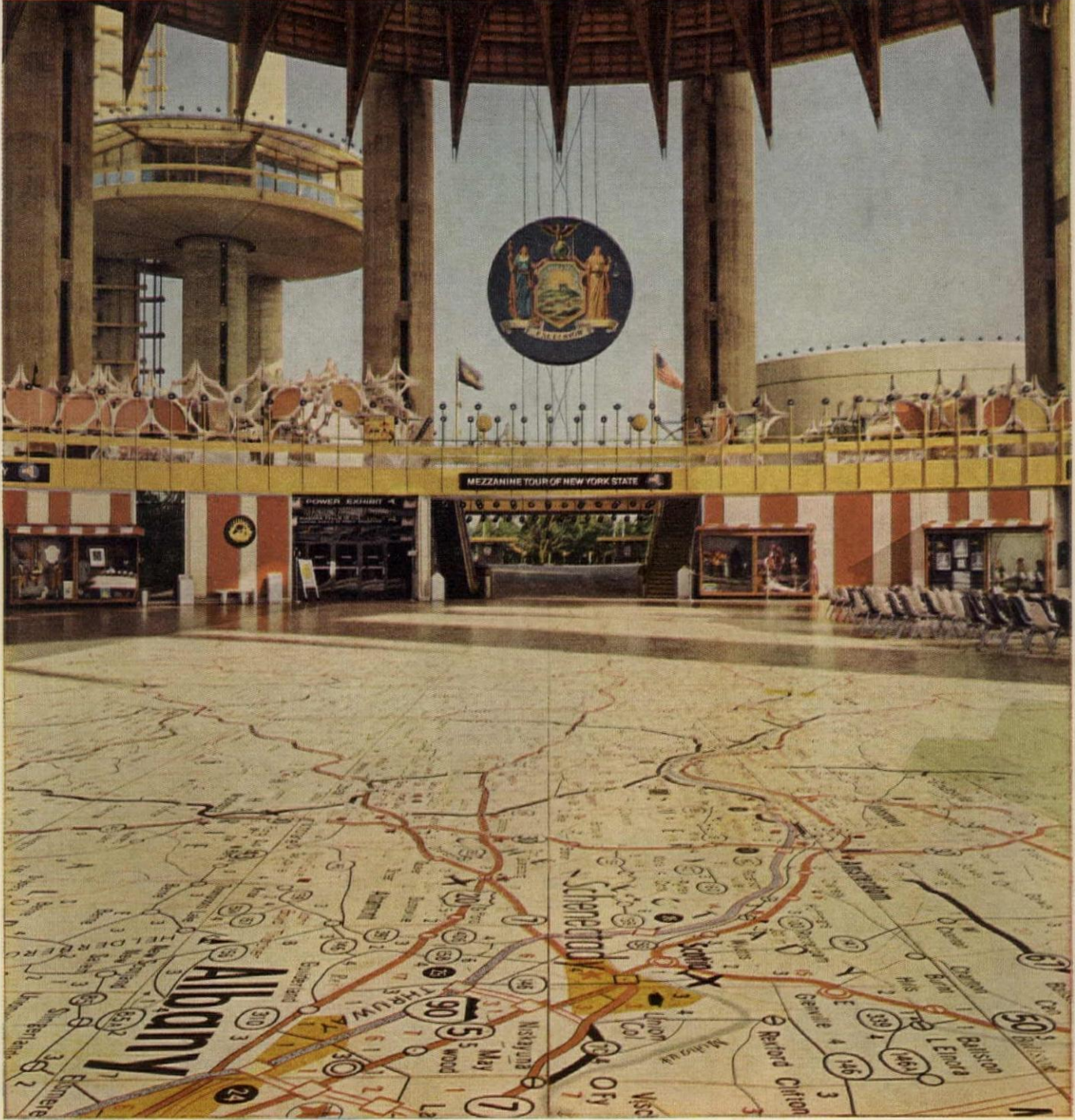
THE VIEW FROM THE ROAD. By Donald Appleyard, Kevin Lynch and John R. Myer. The M.I.T. Press, Cambridge, Mass., 02142. 64 pp., illus. \$15.00.

LETTERING TODAY. Edited by John Brinkley. Reinhold Publishing Corp., 430 Park Ave., New York, N.Y., 10022. 144 pp., illus. \$12.75.

THE BAROQUE PREVALENCE IN BRAZILIAN ART. By Leopold Castedo. Charles Frank Publications, 432 Park Ave. South, New York, N.Y. 10016. 151 pp., illus. \$12.50.

continued on page 54

Texaco's terrazzo map installation made with ATLAS WHITE portland cement. New York State Pavilion, New York World's Fair. Architect: Philip Johnson Associates. General Contractor: Thompson Starrett Construction Company. Terrazzo Contractor: Port Morris Tile & Terrazzo Corporation, New York.



This terrazzo road map is for pedestrians

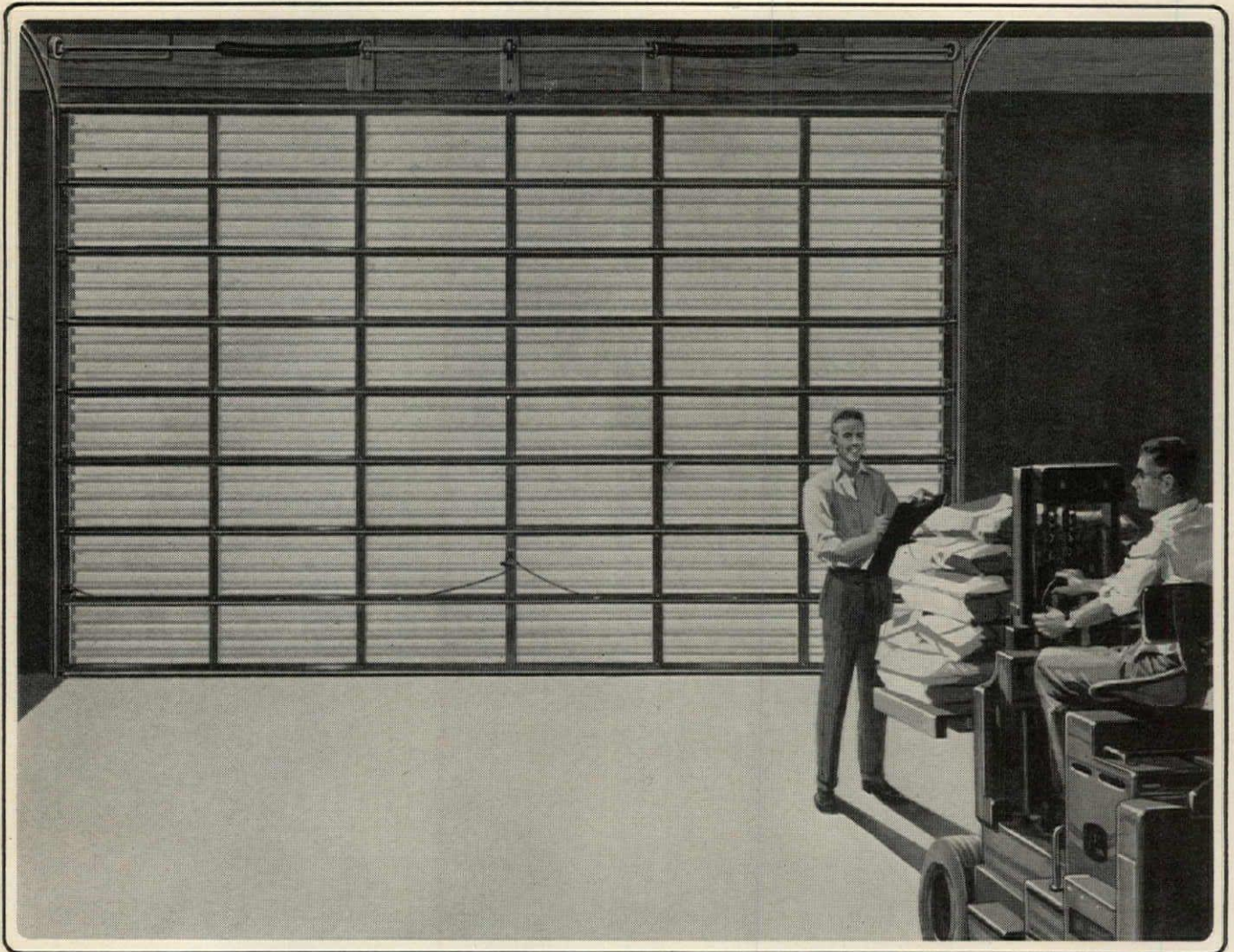
The world's largest map, and the most traveled, is this terrazzo flooring at the New York World's Fair. Half the size of a football field, it shows every major highway, community, river and lake in the Empire State. The intricate design was precast in 4' x 4' units and then assembled at the job site. It will never curl, lift or wear thin... never need waxing or buffing. ■ When you plan decorative, hard-wearing terrazzo floors, wainscots, stairs, specify a matrix of ATLAS WHITE portland cement. Its uniform whiteness brings out the true color of aggregates and pigments. Ask your local terrazzo contractor. Or write Universal Atlas Cement Division, United States Steel, 100 Park Ave., New York, N.Y. 10017.

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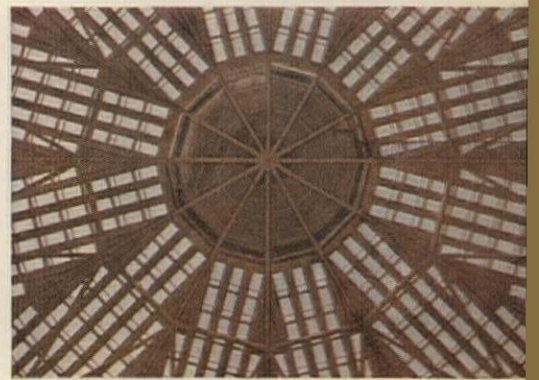
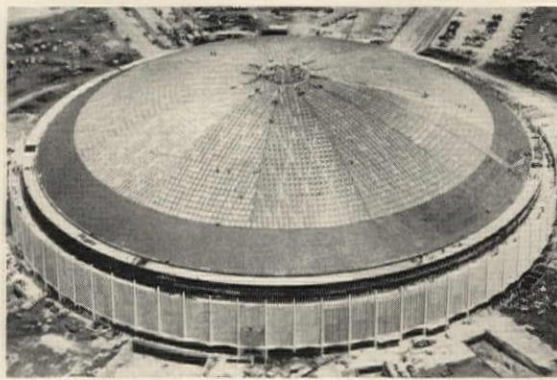
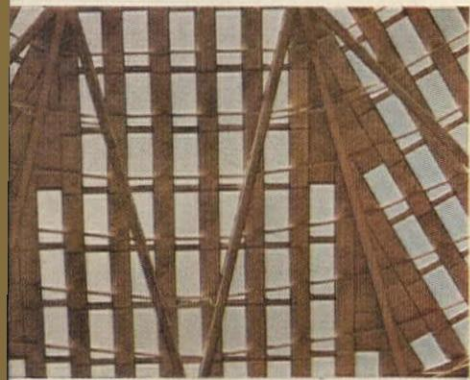
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HARRIS COUNTY DOMED STADIUM. Architects: Lloyd & Morgan; Wilson, Morris, Crain & Anderson, Houston. Dome design: Roof Structure, Inc., St. Louis. Cast acrylic sheet: Cast Optics Corp., Hackensack, N. J. Skylight fabrication: Pam Co., Portland, Oregon. General Contractors: H. A. Lott, Inc., and Johnson, Drake & Piper, Houston, Texas.



Skylights of acrylic sheet cast from Du Pont **LUCITE**[®] help Harris County Domed Stadium conquer the Texas climate

Even non-Texans have to agree that the new Harris County Domed Stadium, future home of the Houston Astros, is an extraordinary architectural achievement. It is a nine-level, luxuriously appointed stadium in which 66,000 spectators can watch sports events and shows of all types in air-conditioned comfort.

The most difficult problem facing the architects was the construction of the dome. 645' in diameter and rising 202' above the playing field, it is the largest clear-span steel-and-plastic dome ever built. For the 4,600 skylights in the steel Lamella frame, the architects chose acrylic sheet cast

from LUCITE acrylic monomer because of its unique combination of properties.

Having excellent optical clarity, LUCITE admits the light spectrum needed to grow grass on the playing field. Strong, shatter-resistant and weatherable, the sheets of LUCITE will withstand winds of 180 mph

and give many years of trouble-free service. Lightweight and easy to fabricate, LUCITE allowed the architects to design a double-layer skylight construction that aids insulation, cuts glare and eliminates harsh shadows of the structure on the playing field. Each skylight consists of a .187-inch-thick inner layer with a prismatic light-diffusing surface and a crystal-clear .250-inch-thick outer layer with a 1½-inch air space between.

For information on sources of acrylic sheet cast from LUCITE, write Du Pont Co., Dept. A, Room 2507L, Wilmington, Delaware 19898.

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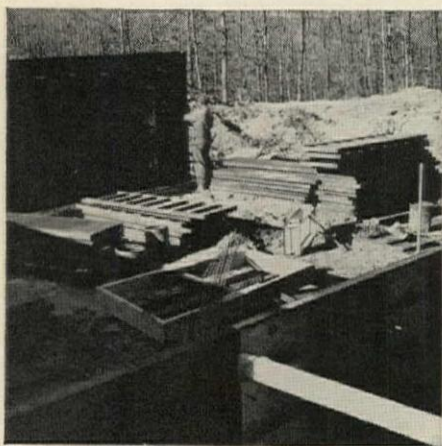
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Progress in Concrete



129 HOMES

FORMING COST AVERAGES
ONE CENT PER SQUARE FOOT



Using Symons Steel-Ply Forms, Reid Construction Co., of Randallstown, Maryland, formed foundations for a 129-home section of the new Glen Arden community in Prince George's County for an average material cost of one cent per square foot.

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On the Glen Arden project, Reid averaged one complete foundation each working day. Basements, 26 feet in width, vary in length from 24 feet 8 inches to 36 feet 8 inches. Walls are 8 inches thick, with light re-bars tied horizontally at two points to control cracking.

Walers were used only at the top of the formwork, with light bracing to the adjacent bank.

Basements cut into sidehill lots, with three walls poured-in-place on concrete footings 8 inches deep by 16 inches wide. The fourth wall was filled in with brick and block for architectural variety.

3,400 square feet of Symons Steel-Ply Forms were used on the project.

Symons Steel-Ply Forms are available for rental, purchase, or rental with purchase option. Detailed information available upon request.



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Required Reading

continued from page 50

URBAN LAND USE PLANNING. By F. Stuart Chapin Jr. University of Illinois Press, Urbana, Ill. 498 pp., illus. \$7.95.

LANDSCAPE ARCHITECTURE: AS APPLIED TO THE WANTS OF THE WEST. By H.W.S. Cleveland. Edited by Roy Lubove. The University of Pittsburgh Press, Pittsburgh, Pa., 15213. 59 pp. \$2.95.

PUBLIC REGULATION OF THE RELIGIOUS USE OF LAND. By James E. Curry. The Mitchie Company, Seventh & Market Streets, Charlottesville, Va. 429 pp., illus. \$12.50.

ENVIRONMENTAL CONTROL. Edited by Robert E. Fischer. McGraw-Hill Book Company, 330 W. 42nd St., New York, N.Y., 10036. 212 pp., illus. \$10.00.

DICTIONARY OF CIVIL ENGINEERING. By Rolt Hammond. Philosophical Library Inc., 15 E. 40th St., New York, N.Y., 10016. 253 pp. \$10.00.

MODERN GARDENS AND THE LANDSCAPE. By Elizabeth B. Kassler. Doubleday and Co., Inc., Garden City, N.Y. 96 pp., illus. Hardbound, \$5.95; paperbound, \$2.75.

THE OPEN-AIR CHURCHES OF SIXTEENTH-CENTURY MEXICO. By John McAndrew. Harvard University Press, Cambridge, Mass. 755 pp., illus. \$15.00.

PROBABILITY AND STATISTICS FOR ENGINEERS. By Irwin Miller and John E. Freund. Prentice-Hall, Inc., Englewood Cliffs, N.J., 07632. 432 pp. \$16.00.

BALTIMORE'S CHARLES CENTER, A CASE STUDY OF DOWNTOWN RENEWAL. Edited by Martin Millsbaugh. Technical Bulletin 51, Urban Land Institute, 1200 18th St., N.W., Washington, D.C., 20036. 80 pp. \$5.00.

THE SEARCH FOR MEANING IN MODERN ART. By Alfred Neumeier. Prentice-Hall, Inc., Englewood Cliffs, N.J. 144 pp., illus. Clothbound, \$4.95; paperbound, \$1.95.

THE MAKING OF URBAN AMERICA. By John W. Reps. Princeton University Press, Princeton, N.J. 574 pp., illus. \$25.00.

COLONIALS AND PATRIOTS. By Frank B. Sarles Jr. and Charles E. Shedd. Edited by John Porter Bloom and Robert M. Utley. (Volume VI, National Survey of Historic Sites and Buildings). Superintendent of Documents, United States Government Printing Office, Washington, D.C., 20402. 286 pp., illus. \$2.75.

MARKETING URBAN MASS TRANSIT. By Lewis M. Schneider. Division of Research, Graduate School of Business Administration, Harvard University, Boston, Mass. 217 pp. \$5.00.

HUMIDITY & MOISTURE, Volume I. By Arnold Wezler. Reinhold Publishing Corp., 430 Park Ave., New York, N.Y., 10022. 687 pp., illus. \$30.00.



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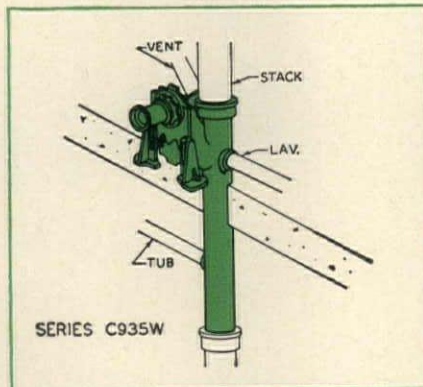


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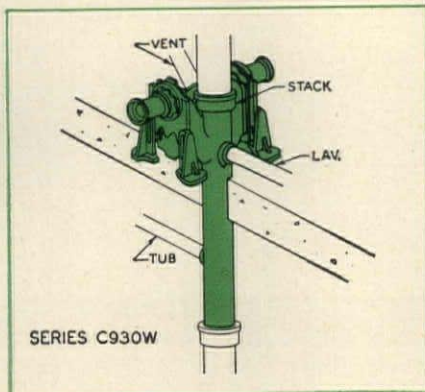
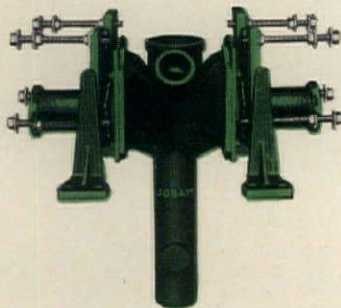
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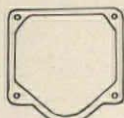


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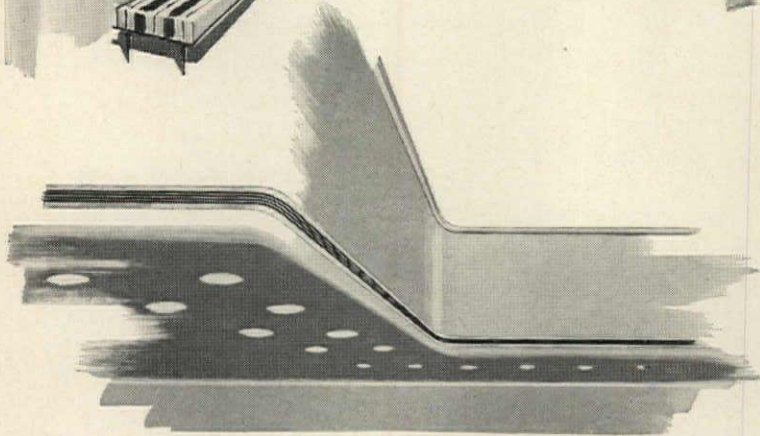
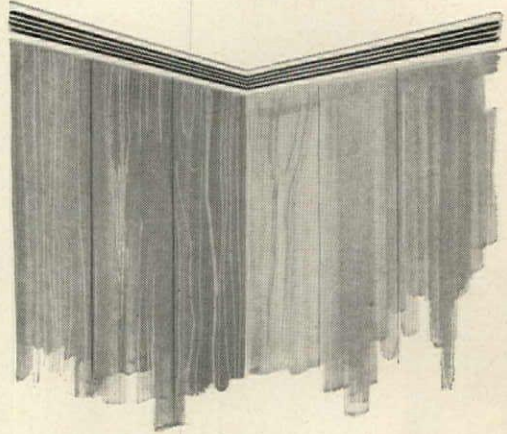
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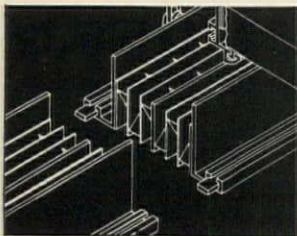
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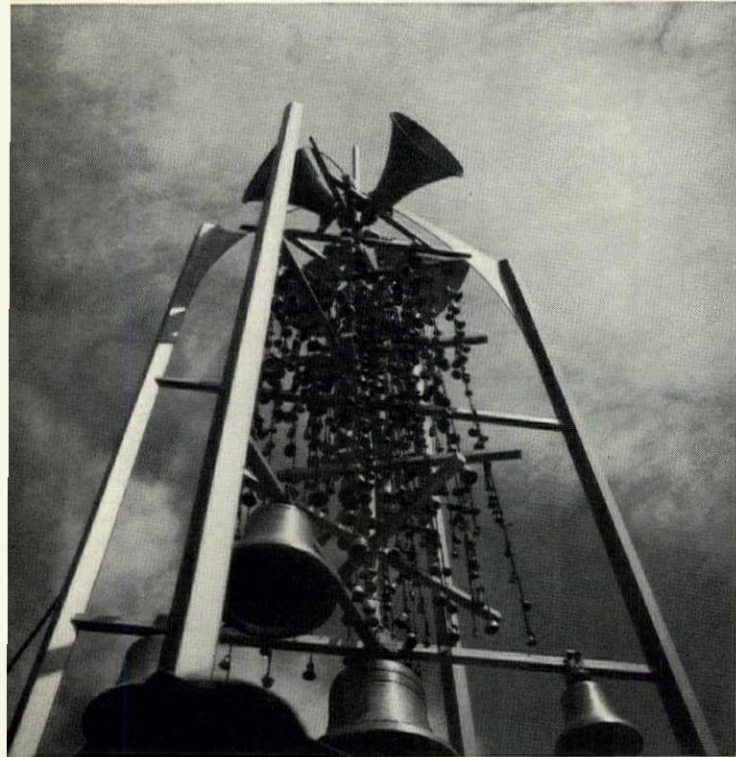
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Maas-Rowe Carillons, Los Angeles, used 4 x 4 x 3/16-in. Bethlehem Hollow Structural Sections for the legs of the "Tower of 1000 Bells" at entrance to International Plaza. Center and crossarms (from which hang heavy carillon bells and hundreds of "Bells of Sarna" from India) are 2-in. square Bethlehem hollow structurals. All connections were field welded.

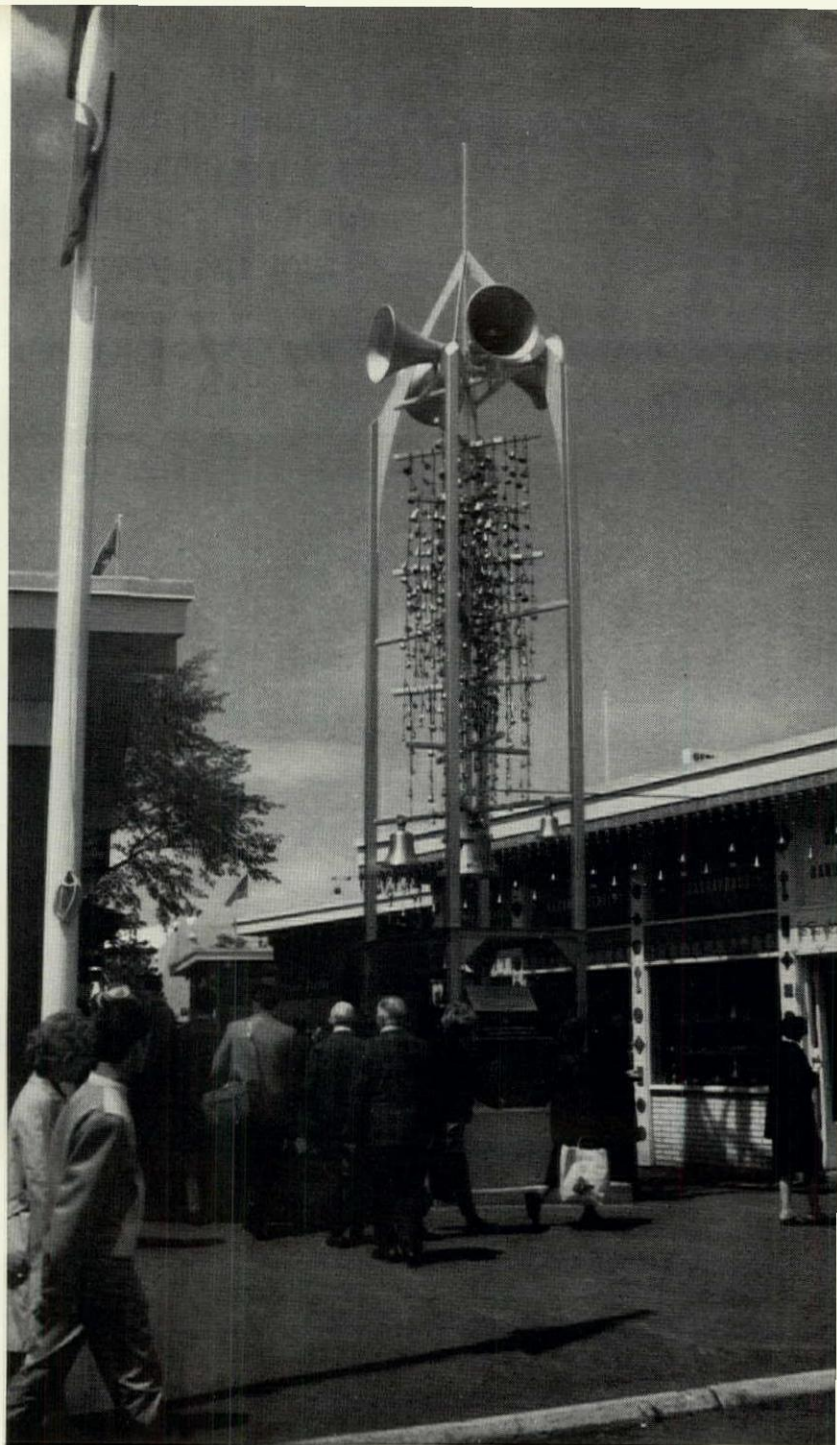


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All 146 sizes and gages of Bethlehem Hollow Structural Sections (nation's widest variety) are cold-formed from blast-cleaned steel to give you a smooth surface you'll be proud to paint and expose. Good reason to specify Bethlehem.

Plate glass, enclosing Symphonic Carillon at base of tower, is mounted direct to structural members.



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ACOUSTI-SEAL

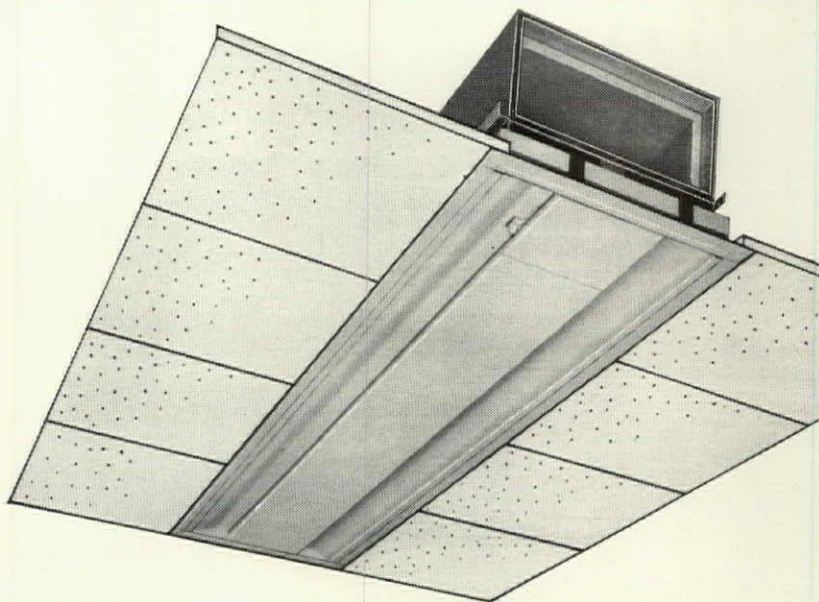
Separates the noise of people from the noise of people better than a permanent wall of eight-inch concrete block. Sound Transmission Class 51! (Test data available on request.) Panels connect in pairs. Move easily into place and are tightly locked together by a manually operated lever. Store in a neat, compact stack. Factory-applied lifetime vinyl or genuine wood veneer finishes. Optional tackboards and chalkboards. Used in audio-visual, team-teaching and choral-music classrooms; motel and hotel meeting rooms and executive conference rooms.

*For complete specifications,
see Sweet's File 22d/Ne
or consult your nearby
Modernfold distributor.*



New Castle Products, Inc., New Castle, Indiana

For more data, circle 69 on Inquiry Card



**Take a closer look
at a new look
in central air conditioning!**

It's our new Carrier Moduline Weathermaster® unit.

With clean, functional lines, it almost disappears into any type of hung ceiling—acoustical tile, exposed T-bar, concealed Z-bar or lath-and-plaster.

And integrates with lights in dozens of different ways.

But pleasing as it is to look at, there's a lot more to this new all-air ceiling terminal than meets the eye.

Moduline® has all the advantages of variable volume air distribution, with

none of its disadvantages. None? None!

To be explicit: It provides automatic room-by-room temperature control with a low-cost, space-saving single duct system.

The air pattern in each room is always right—no drafts, no stratification, no waterfall at any volume, from low to maximum.

It's quiet, too, and fully self-balancing. Each terminal compensates constantly for duct pressure changes.

Adjustable factory-installed controls

are powered by the supply air. No external wiring or pneumatic connections. Just dial the required supply air volume—the unit does the rest.

There are other advantages—too many to mention here.

You'll find the complete story, with technical details, in the Carrier Moduline Weathermaster Unit brochure. Ask your Carrier representative for a copy. Or write us at Syracuse 1, N. Y. In Canada: Carrier Air Conditioning (Canada) Ltd., Bramalea, Ontario.

Carrier Air Conditioning Company

More people put their confidence in Carrier air conditioning than in any other make

For more data, circle 70 on Inquiry Card

MODERNFOLD

the long division line



COIL-WAL

A giant partition of vertical wood members. Coils away in a unique, space-saving coil box. Opens out to fill openings up to 150' x 30'. Ideal for gymnasium and auditorium subdivision. Kiln-dried wood members of select fir are joined together with pre-stressed steel cables. Built to withstand impact and rough treatment. Wide choice of other woods and plastic laminate finishes. Installations may be curved or straight. Electrical operation makes movement of these giant wood walls simple and safe. Two models: single or double (sound retarding).

*For complete specifications,
see Sweet's File 22d/Ne
or consult your nearby
Modernfold distributor.*

modernfold

New Castle Products, Inc., New Castle, Indiana

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A
SECRETARIAL
DESK
FROM OUR
400 LINE
DESIGNED BY
KNOLL



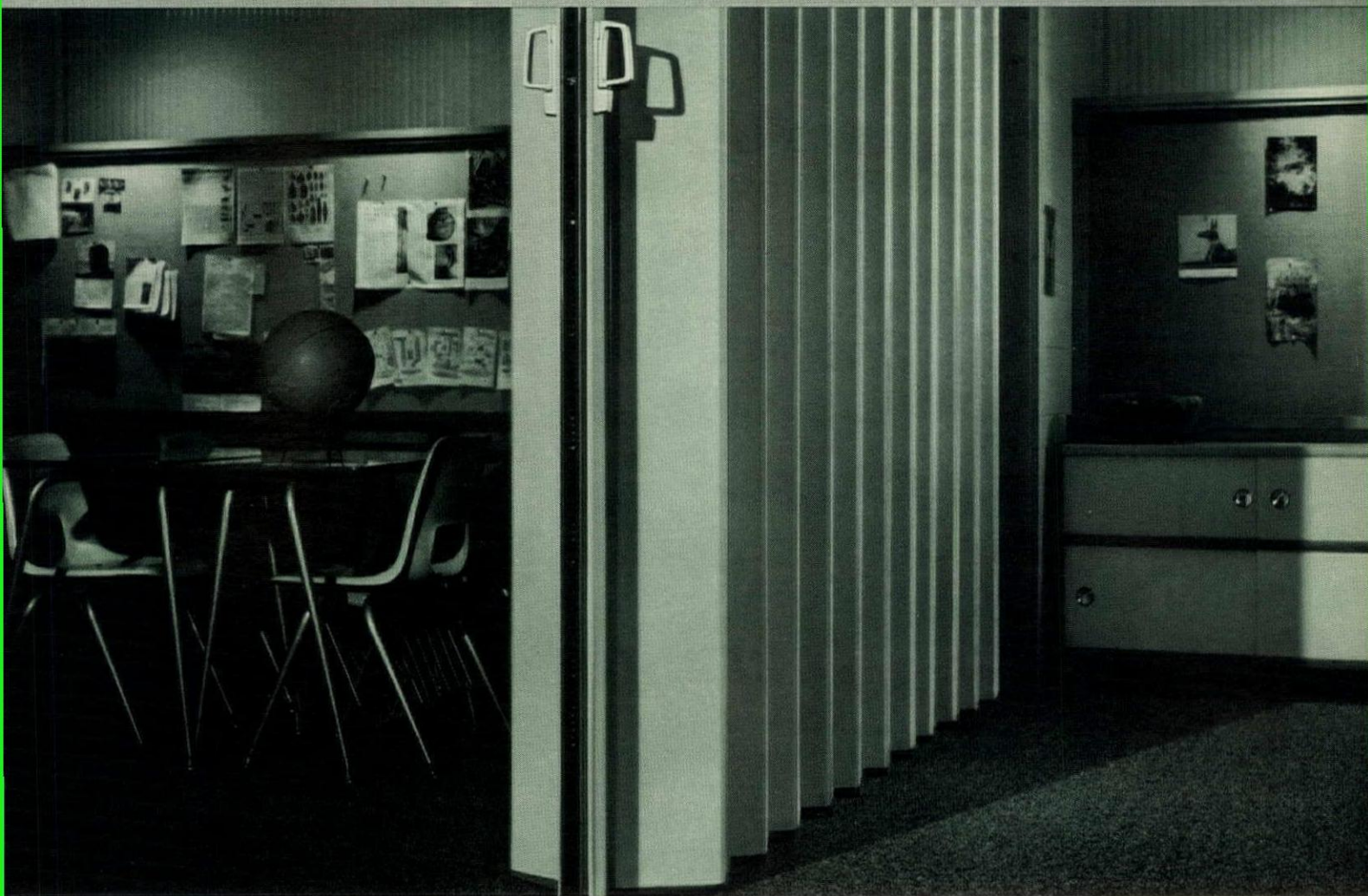
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SHOWROOMS
AND DEALERS
IN ALL
PRINCIPAL CITIES

ART METAL INC
JAMESTOWN, NEW YORK

MODERNFOLD

the long division line



AUDIO-WALL

New massive member of the Modernfold line. Provides top efficiency in sound control for a folding wall. Sound Transmission Class is rated at 44. (Test data available on request.) Its rugged steel frame is cased in hard surface, vinyl-clad steel panels. Inside, mineral fiber insulates the full length of the panels. Joined, but separate, these panels draw clean, vertical, straight lines from floor to ceiling. Vinyl cannot pucker or wrinkle. Takes high abuse. From classroom sizes to auditorium or other giant sizes. Single widths to 150'0"; heights to 30'0". Electric operation is automatic with the turn of a key.

*Write direct for
complete specifications and
descriptive literature.*

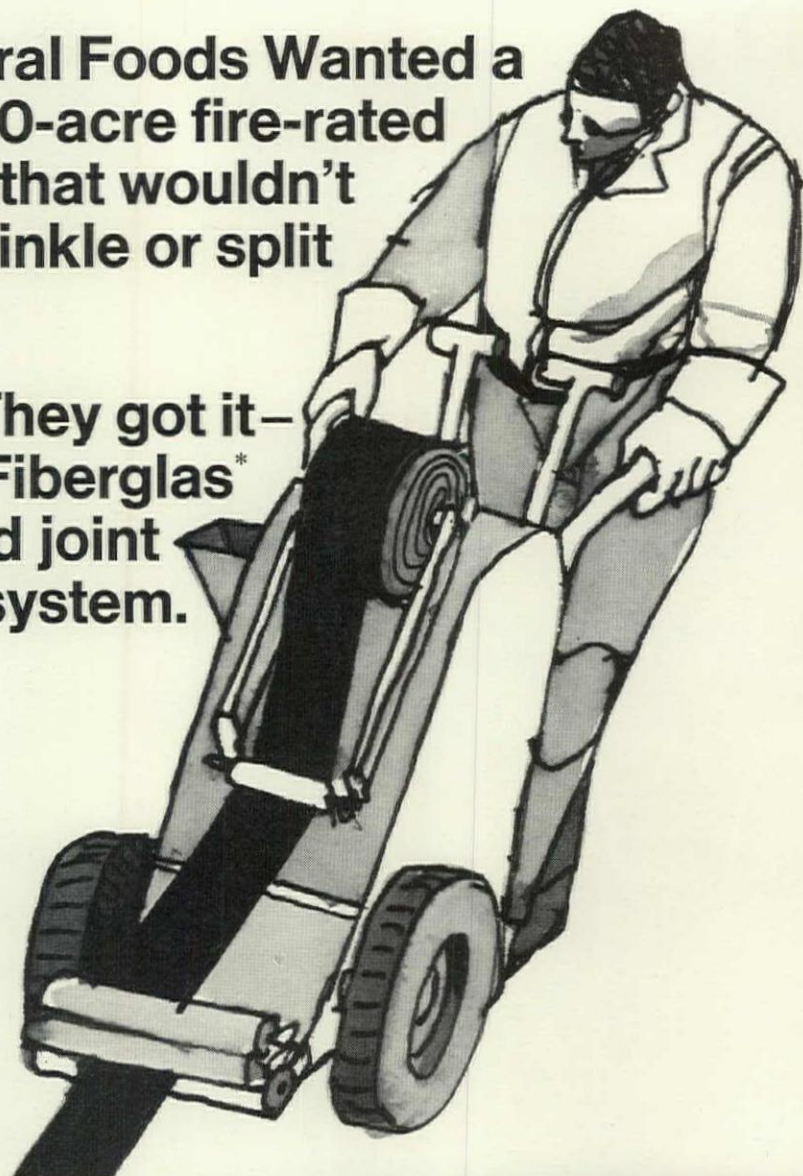


New Castle Products, Inc., New Castle, Indiana

For more data, circle 73 on Inquiry Card

General Foods Wanted a 20-acre fire-rated roof that wouldn't wrinkle or split

They got it—
via the Fiberglas*
taped joint
roofing system.



It's the roof over the Jell-O/Dover plant in Delaware. Four major food-processing plants are consolidated here...the largest construction investment General Foods has made.

One requirement was a Class A. Fire Rating at lowest in-place cost. That's one reason why Fiberglas was specified. Fiberglas Roof Insulation provides the best Fire Rating you can get on a steel deck using steep asphalt. It is, in fact, acceptable for lowest rate fire insurance under standards of performance established by both Underwriter Laboratories and Factory Mutual.

Fiberglas insulation board, 4' x 4', was used. Again, for good reason. As opposed to standard 2' x 4' insulation, it meant 4.7 fewer miles of joints. It cut down the areas at which failure occurs. And, the inorganic properties of Fiberglas eliminate warping and buckling,

System was selected because it "welds" all insulation joints firmly together with glass-fiber reinforced 6-inch tape applied with steep asphalt. The "unitized" insulation literally becomes an expansion joint between the deck and built-up roof. It absorbs shock, distributing



Engineering and Construction Management by the Bechtel Corporation

the stress from the normal deck movement throughout the insulation. Result—no splits or wrinkles.



This all-glass roofing system was topped with Fiberglas Perma Ply and Perma Cap roofing felts.

Heat leaks and ridging over joints are greatly reduced. There is no asphalt drippage between joints or absorption in the insulation to reduce the thermal performance.

So whatever your roofing problem (new roofs or old) specify the system that gives the strongest joints in roofing. That creates the best base for every built-up roof. It

has proved itself on hundreds of roofs—to the satisfaction of architects, engineers and owners. Here are some of these jobs:

University of Maine—50,000 sq. ft. / American Can Co.—151,000 sq. ft. / Ripon Junior/Senior High School—150,000 sq. ft. / French Market Shopping Center—171,000 sq. ft.

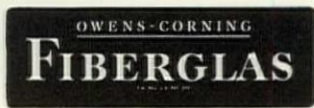
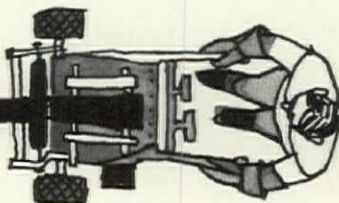
For full details on the General Foods Project, write: Owens-Corning Fiberglas Corporation, Industrial & Commercial Division, 717 Fifth Avenue, New York, N.Y. 10022.

FIBERGLAS ROOF TAPE FIBERGLAS ROOF TAPE FIBERGLAS ROOF TAPE

providing the best base for every built-up roof.

Fiberglas Taped Joint Roofing

The taped Fiberglas Roof Insulation, with 40 pounds of glass-reinforced weatherproofing asphalt provides a continuous base sheet.



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



Designed by Charles Deaton, Architect

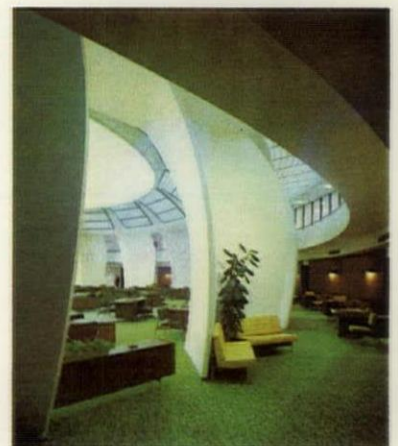
SQUIGGLE: A light baffling puzzle by Luminous

As you can see, Squiggle ripples along like a ribbon on edge, happily ignoring geometry and never seeming to take the same turn twice. The puzzle works. You see the whole thing at once. This new luminous ceiling is unbroken by pattern, unbroken by the crosshatch of dividing strips, hanging tracks or seams. Squiggle seems endless. We have purposefully created this illusion.

Write for brochure.

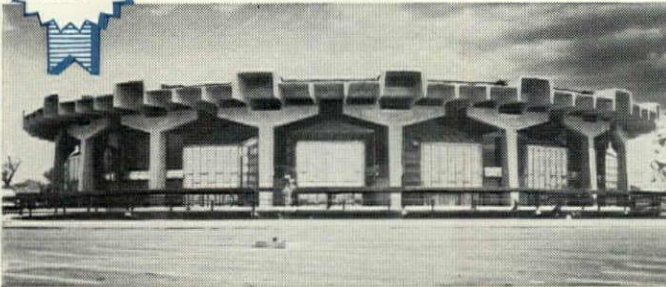
LUMINOUS CEILINGS INC., 3701 N. Ravenswood, Chicago 60613

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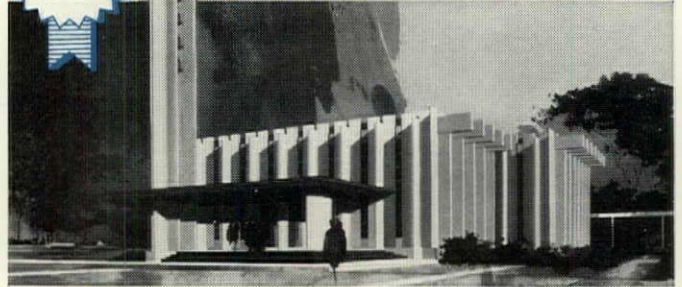
**FIRST
AWARD
WINNER
1964**

PHOENIX CONVENTION CENTER
Architect: Perry Neuschatz
Engineers: T. Y. Lin & Associates



**FIRST
AWARD
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1963**

ST. RICHARD CHURCH, CANADA
Architect: Maurice Robillard
Engineer: Jean Duchesneau



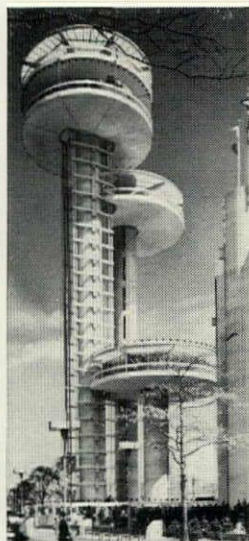
PAST PRESTRESSED CONCRETE INSTITUTE AWARDS PROGRAM WINNERS



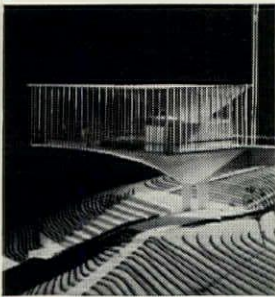
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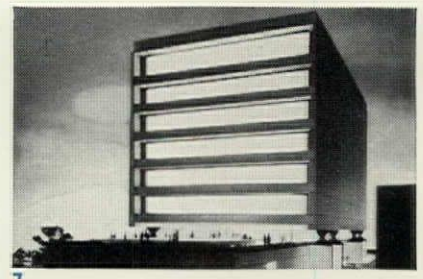
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Examples of Past AWARD OF MERIT Winners

1. Fire Station. Arch: Durham, Anderson and Freed. Eng: John H. Stevenson.
2. Parking Garage-Heliport. Arch: Van Bourg/Nakamura. Assoc. Arch: Ratcliff & Ratcliff. Structural Consultant: H. J. Brunner.
3. Observation Towers, New York World's Fair. Arch: Philip Johnson. Eng: Lev Zetlin and Associates.
4. Church. Arch: Kirk, Wallace, McKinley and Associates. Eng: Worthington, Skilling, Helle & Jackson.
5. Swimming Pool. Arch: G. R. Beatson & Associates. Eng: Haddin, Davis & Brown Co.
6. Winner of Special Bridge Award. Consulting Eng: Howard, Needles, Tammen & Bergendoff.
7. American Republic Insurance Company. Arch: Skidmore, Owings & Merrill. Eng: Paul Weidlinger.
8. United States Science Pavilion. Arch: Minoru Yamasaki & Associates. Eng: Naramore, Bain, Brady & Johanson.
9. University Classroom. Arch: Gardner A. Daily and Associates. Eng: T. Y. Lin and Associates.
10. Carrying beams over channel. State Highway Engineer of California: J. C. Womack.
11. Japanese Canadian Cultural Center. Arch: Raymond Moriyama. Eng: G. Dowdell and Associates.



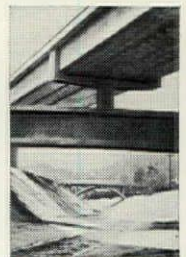
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These PCI Active Members will be glad to give you complete details on the PCI Annual Awards Program:

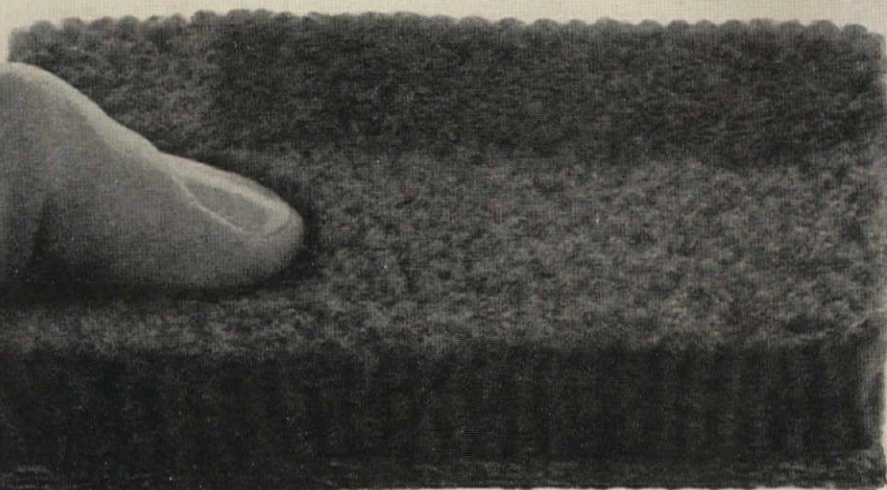
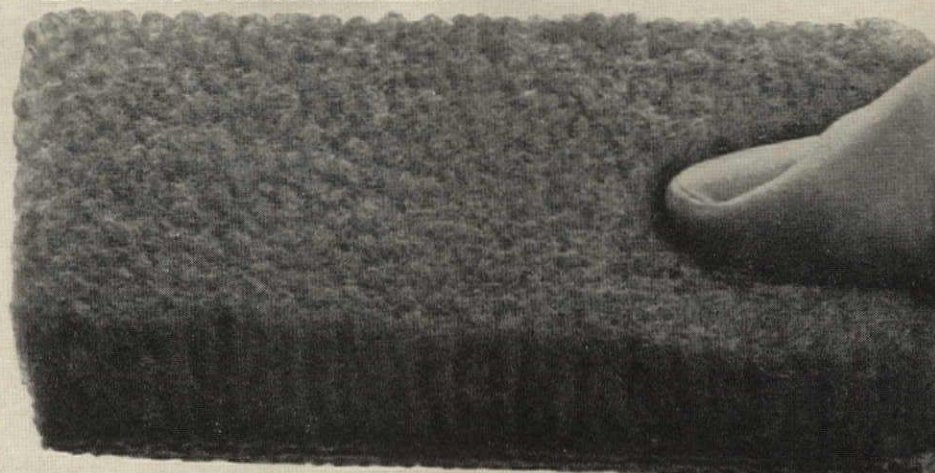
ALABAMA Southern Prestressed Concrete, Inc., Montgomery
ARIZONA Arizona Sand & Rock Co., Prestress Division, Phoenix
 • United Materials, Inc., Phoenix
CALIFORNIA Basalt Rock Co., Napa • Ben C. Gerwick, Inc., Los Angeles, San Francisco • Delta Prestressed Concrete, Inc., Sacramento • Rockwin Prestressed Concrete, Los Angeles • San Diego Prestressed Concrete, San Diego • Whites Precast Concrete Corp., Sun Valley
COLORADO Prestressed Concrete of Colorado, Denver • Rocky Mountain Prestress, Denver • Hydro Conduit Corp., Denver

CONNECTICUT C. W. Blakeslee & Sons, New Haven
FLORIDA Capitol Prestress Co., Jacksonville • Concrete Structures, Inc., North Miami • Dura-Stress, Inc., Leesburg, Holly Hill • Finrock Industries, Inc., Orlando • Juno Prestressors, Inc., West Palm Beach • Meekins-Bamman Precast Corp., Hallandale • Prestressed Concrete, Inc., Lakeland • Southern Prestressed Concrete, Pensacola • Stresscon International, Miami
GEORGIA Augusta Concrete Products Co., Inc., Augusta • Macon Prestressed Concrete Co., Macon
HAWAII Concrete Engineering, Honolulu
IDAHO Ready-to-Pour Concrete Co., Idaho Falls
ILLINOIS Crest/Schobeton Concrete, Inc., Chicago • Material Service, Chicago • Midwest Prestressed Concrete Co., Springfield, Rochelle • Precast Building Sections, Chicago

INDIANA Construction Products Corp., Lafayette • Kuert Concrete Inc., South Bend
IOWA A & M Prestress, Inc., Clear Lake • Cedar Rapids Block Co., Cedar Rapids • Prestressed Concrete of Iowa, Iowa Falls • C. W. Shirley Co., Waterloo • Wilson Concrete Co., Red Oak
KANSAS Prestressed Concrete, Inc., Newton • Sunflower Prestress, Inc., Salina • United Prestress Co., Wichita
KENTUCKY Breko Industries, Louisville • Precision Prestressed Products Co., Inc., Henderson
LOUISIANA Belden Concrete Products, Inc., New Orleans • Gifford-Hill & Co., Inc., Structural Concrete Division, Shreveport • Mid-State Prestressed Concrete, Inc., Alexandria • Prestressed Concrete Products Co., Inc., Mandeville

MAINE Structural Concrete Co., Auburn
MARYLAND Laurel Concrete Products, Inc., Laurel • Strescon Industries Inc., Baltimore
MASSACHUSETTS New England Concrete Pipe Corp., Boston • San-Vel Concrete Corp., Boston
MICHIGAN American Prestressed Concrete Inc., Centerline • Precast/Schobeton, Inc., Kalamazoo • Price Brothers Co., Livonia • Superior Products Co., Detroit
MINNESOTA Cretex Companies, Elk River • Lysne Construction, Inc., Austin • Prestressed Concrete Inc., St. Paul • Wells Concrete Products Co., Wells
MISSISSIPPI Grenada Concrete Products Co., Grenada • Jackson Ready-Mix Corp., Jackson

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It's beautiful.**



**This is Acrilan.[®]
It looks like wool.
But it stays beautiful longer.**

For many reasons. Carpeting made with Acrilan acrylic fiber in the pile is more resilient than wool. It retains its deep pile longer. Resists shedding. Colors are purer and remain that way — Acrilan resists fading; Acrilan is easier to clean than wool.

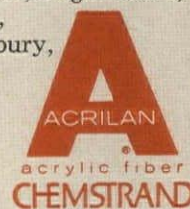
More?

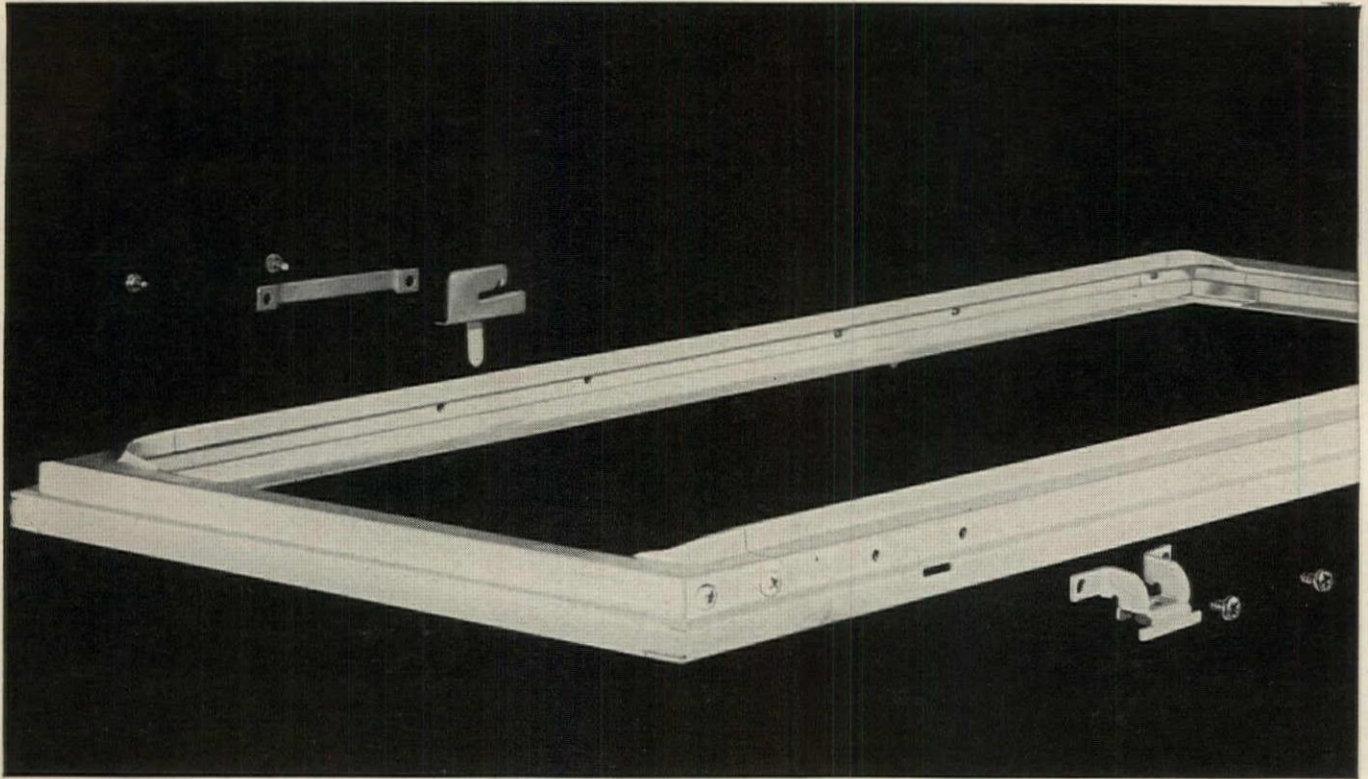
Acrilan is born moth-proof. Non-allergenic. Will never mildew. These are some of the reasons why architects all over the country are specifying Acrilan for important installations.

Let us tell you more.

Write Contract Carpet Merchandising, Chemstrand,
350 Fifth Avenue, New York 1, N.Y.

These are among the mills now licensed by Chemstrand for Acrilan: Barwick, Bigelow, Cabin Crafts, Callaway, Coronet, Crestline, Downs, Forrest, Hardwick and Magee, Hightstown, Karagheusian, James Lees, Loomweave, Magee, Masland, Monarch, Philadelphia Carpet, Roxbury, Wunda Weve. In Canada: Harding Carpets.





Why does LPI build so many features into their door frame assembly?

TO PROVIDE THE EXTRA
QUALITY YOU EXPECT
IN THEIR
FIXTURES

First, the multiple-bend 18 ga. frame provides rigidity, and mates precisely with fixture body for light-tightness. Integral corner gussets increase rigidity. Second, positive closure with the easily operated slide-action latch is ensured by a spring-steel retainer. Third, the "T" hinge permits full opening with secure hanging. These are just a few of the features indicative of the responsibility for quality and detail which LPI assumes. And, there are others which further differentiate LPI fixtures from those that are comparable in cost, but not in value. Many of these features may be important to you. To find out about them, write for details. LPI-5-212

LPI **FLUORESCENT
LIGHTING**

Lighting Products Inc., Highland Park, Illinois 60036

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BRADLEY GROUP SHOWERS

We put 2, 3, 4, 5, even 6 showerheads together on one fixture! Result: Bradleys serve more students comfortably in less space than ordinary showers. This revolutionary new concept gives you unusual layout flexibility in dormitories, gyms, field houses, employee shower rooms — wherever you want to handle large groups economically.

But there's more. Bradley Group Showers serve up to 6 students with only one set of plumbing connections. So they reduce installation costs as much as 80%.

They save water and water heating costs, keep maintenance time to a minimum. And there are four other basic styles to choose from, including multi-stall units with private dressing rooms.

Planning a shower room? It will pay you to get together with Bradley!

For details, see your Bradley representative. And write for latest literature. Bradley Washfountain Co., 9107 Fountain Drive, Menomonee Falls, Wis. 53055.



Why did we put our heads together?

TO SAVE MONEY!



PINE MANOR JUNIOR COLLEGE WILL MOVE TO NEW CAMPUS

Thirteen new buildings are expected to be completed by September when Pine Manor Junior College moves to its new 79-acre campus, the former Dane estate, in Chestnut Hill, Massachusetts. The college has been located in Wellesley, Massachusetts, for the past 54 years. Ernest J. Kump, Associates, New York and San Francisco, are architects for the project, and Edward F. Knowles, Associates, New York, are associated architects. The general contractor is the Aberthaw Construction Company.

According to Mr. Knowles, the design concept for the new campus was influenced by the small residential atmosphere of the old Wellesley campus as well as by the turn-of-the-century late Victorian buildings which make up the main house and outbuildings of the Dane estate.

Two dormitory quadrangles will house the entire enrollment of 300 students and will contain five two-unit structures and a single house at the end. The single house will contain a common lounge and apartments for administrative staff. Each of the two-unit buildings will house 30 students in 10 single rooms and 10 double rooms, and each will contain a two-level lounge. Exteriors will be of brick with slate roofing to relate to surrounding structures.

In the dining center, a flexible arrangement will permit group dining within a large area accommodating the entire student body. The plans provide for expansion of facilities when Pine Manor's enrollment is increased to 450.

The first phase of construction will also include the renovation of existing buildings. The coach house will be converted into a temporary library, art building and classroom facility. The garage will become a science building, and the main house will be transformed into administrative offices, rooms for social functions, faculty apartments and an infirmary. Later, the barn will be converted into a music and speech building.

A second phase of construction is planned after the college is established on the new campus. To be built are a library and art building, an auditorium with a theater and chapel, a third student quadrangle, a gymnasium and faculty residences.

Fay Foto Service, Inc. photos



Above: The dining center. Below: The dormitory quadrangles



Change is the one basic the architect contends with on each new project . . . striving to create beauty, function, and enduring quality within the limits of site, budget, and available components.

In the eight years since Modu-Wall created a new concept in architectural curtainwall systems, our one constant has been product quality and useful design. This, too, has led to change.

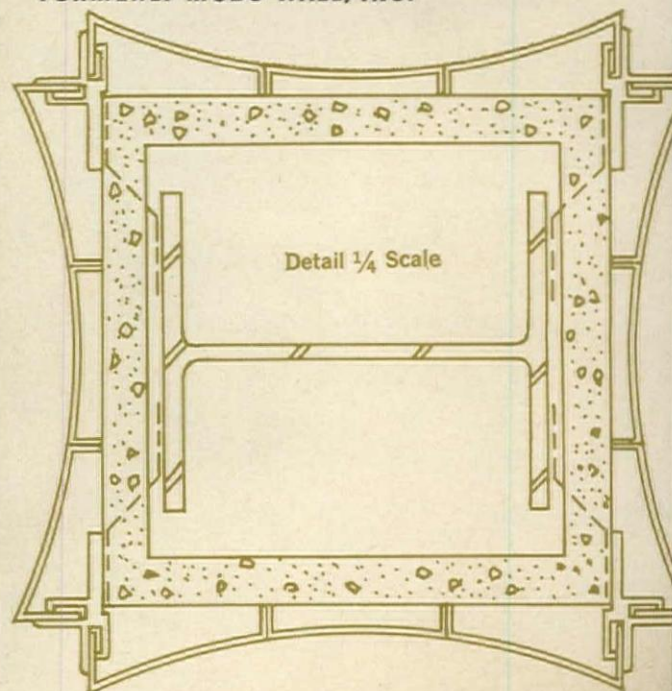
Under our new trade name, NAARCO, you'll find the same design flexibility and inherent quality in a growing number of architectural products. An example is the aluminum column cover detailed below. You can examine the full range of this expanded product line in your 1965 Sweet's Catalog, file **3A**
N.

Write for the new NAARCO file of design ideas.

NAARCO

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5569 N. RIVERVIEW DRIVE / PARCHEMENT,
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FORMERLY MODU-WALL, INC.



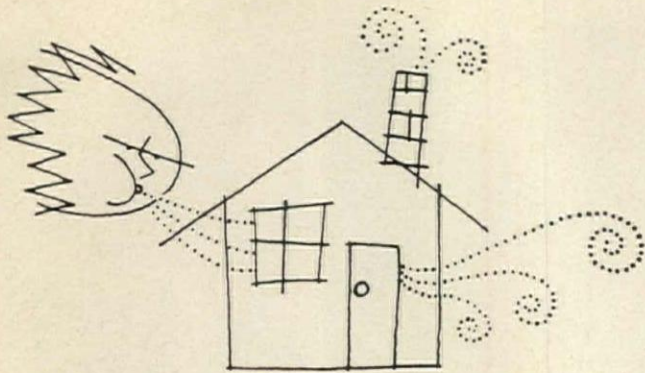
BUILDING:
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ARCHITECT:
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LANSING, MICHIGAN

*NAARCO furnished curtainwall,
windows, solar screen, column
covers, gravel steps, and interior
door frames for this building.*

Change, it's said, is the only constant

PHOTOGRAPHS: Bill Endahl, Hedrich-Blossing

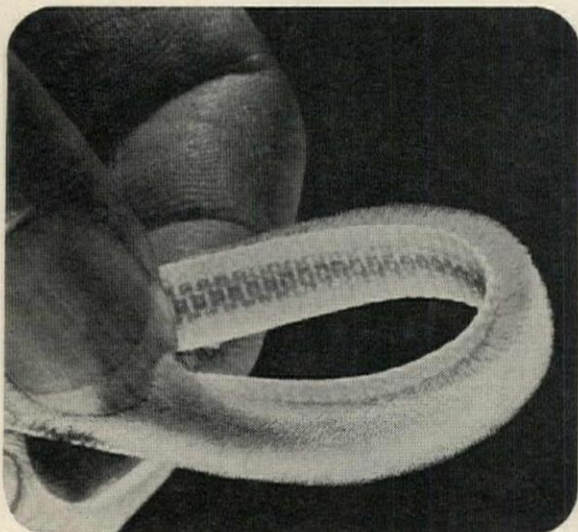


You know as well as we do...

some windows and doors don't have any weatherstripping at all
even though heat loss may average from 17% to 25%

You know as well as we do...

some windows and doors are still weatherstripped with vinyl or metal
even though Poly-Pile* is greatly superior in a dozen ways



Windows and doors don't leak, squeak, stick, scrape or cause gripes and call-backs when they have our rotproof, bugproof, mothproof, mildewproof seal. Windows and doors never suffer from vinyl-tackiness at the seal in summer, or vinyl-brittleness in winter. Poly-Pile has a million miniature springs of polypropylene that squeeze between uneven surfaces to block wind and water, and bounce back from thousands of closings. Insist on Poly-Pile, the seal that *recovers* and provides absence of shrinkage or hardening or of metal's denting and pitting from industrial fallout. Don't settle for less!

Schlegel weatherstripping gives Added Value.

*Poly-Pile is a trademark of The Schlegel Manufacturing Company

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Royalene is an EPDM rubber. It won't crack because it won't age. It won't age because it resists weathering, ozone, extreme heat and cold.

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Royalene stays flexible and easy to work with at below zero temperatures. It can be colored any color to match the color of the building.

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Please send
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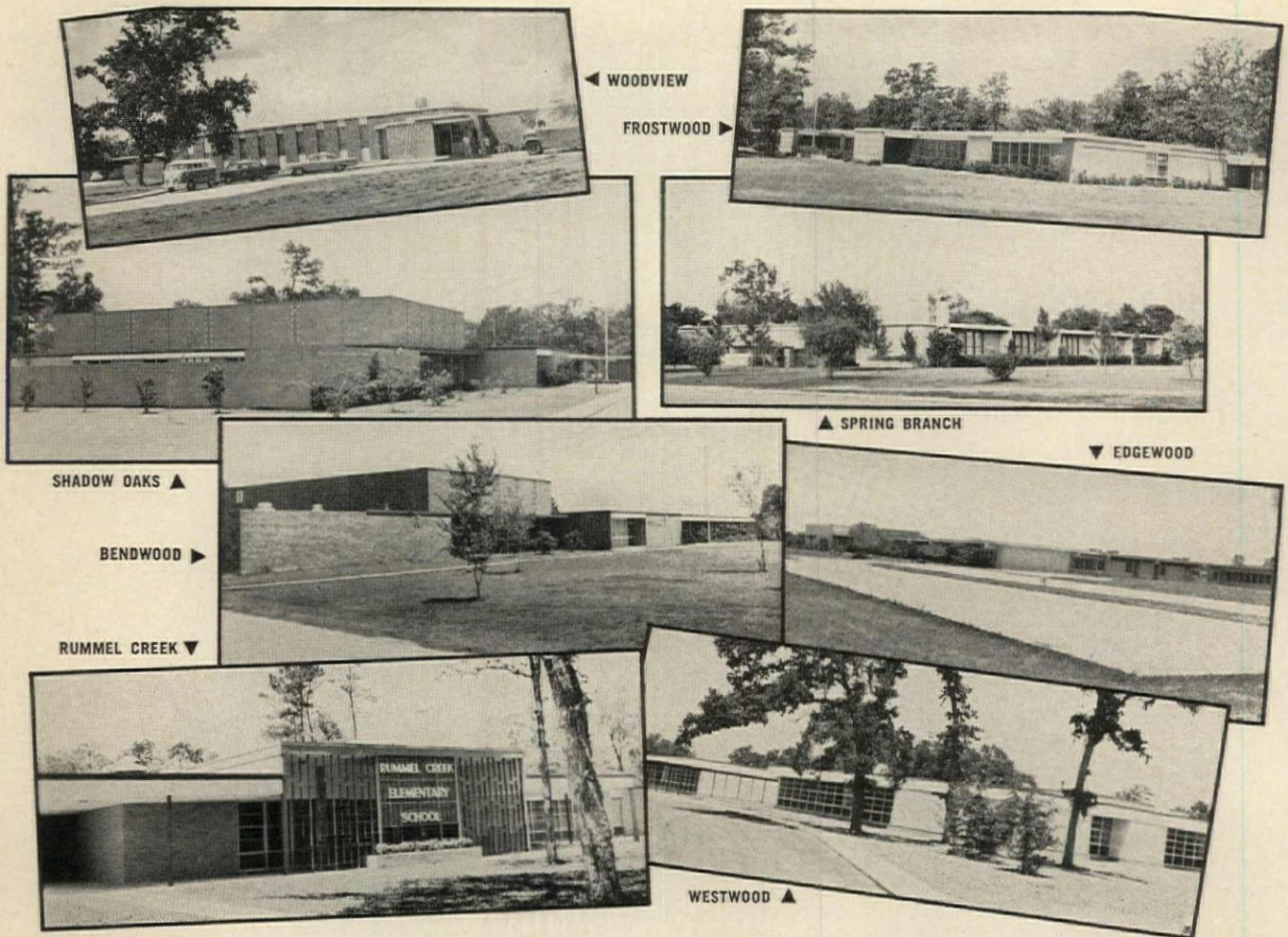
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229 THERMAL TH Units Cool 8 Spring Branch Schools

These are just some of the elementary schools of the Spring Branch (Texas) Independent School District cooled by Thermal TH air conditioners. Other Thermal installations in this District's schools have long since proved themselves in Texas weather.

Air handling equipment in the Thermal quality line includes multizone conditioners (remote and self-contained), central plant conditioners, sprayed coil units, heating and cooling coils, air-cooled condensers, air-cooled condensing units, plus heating and ventilating units. The satisfaction delivered in

all types of structures throughout the country—for years—has given engineers and contractors unquestioned confidence in Thermal.

The wide range of sizes and models in each product line, plus manufacturing flexibility, allows the engineer to specify—and obtain—system components meeting exact requirements. Write for brochure or complete technical catalogs.

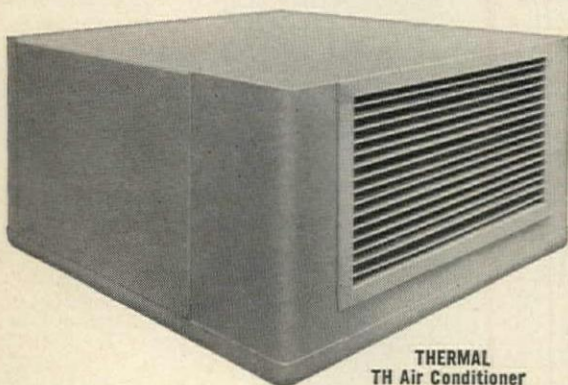
FROSTWOOD AND RUMMEL CREEK—Engr: Charles V. Chenault; Mechanical Contractor: Wood-Leppard Air Conditioning Co.

EDGEWOOD AND WESTWOOD—Engr: Charles V. Chenault; Mechanical Contractor: Harcon Engineering Inc.

SHADOW OAKS AND BENDWOOD—Engr: Arthur M. Rice; Mechanical Contractor: Gregory-Edwards, Inc.

WOODVIEW AND SPRING BRANCH—Engr: Arthur M. Rice; Mechanical Contractor: The Emde Company

Thermal Representative: McMillan Equipment Company



**THERMAL
TH Air Conditioner**

Quality Products Since 1945

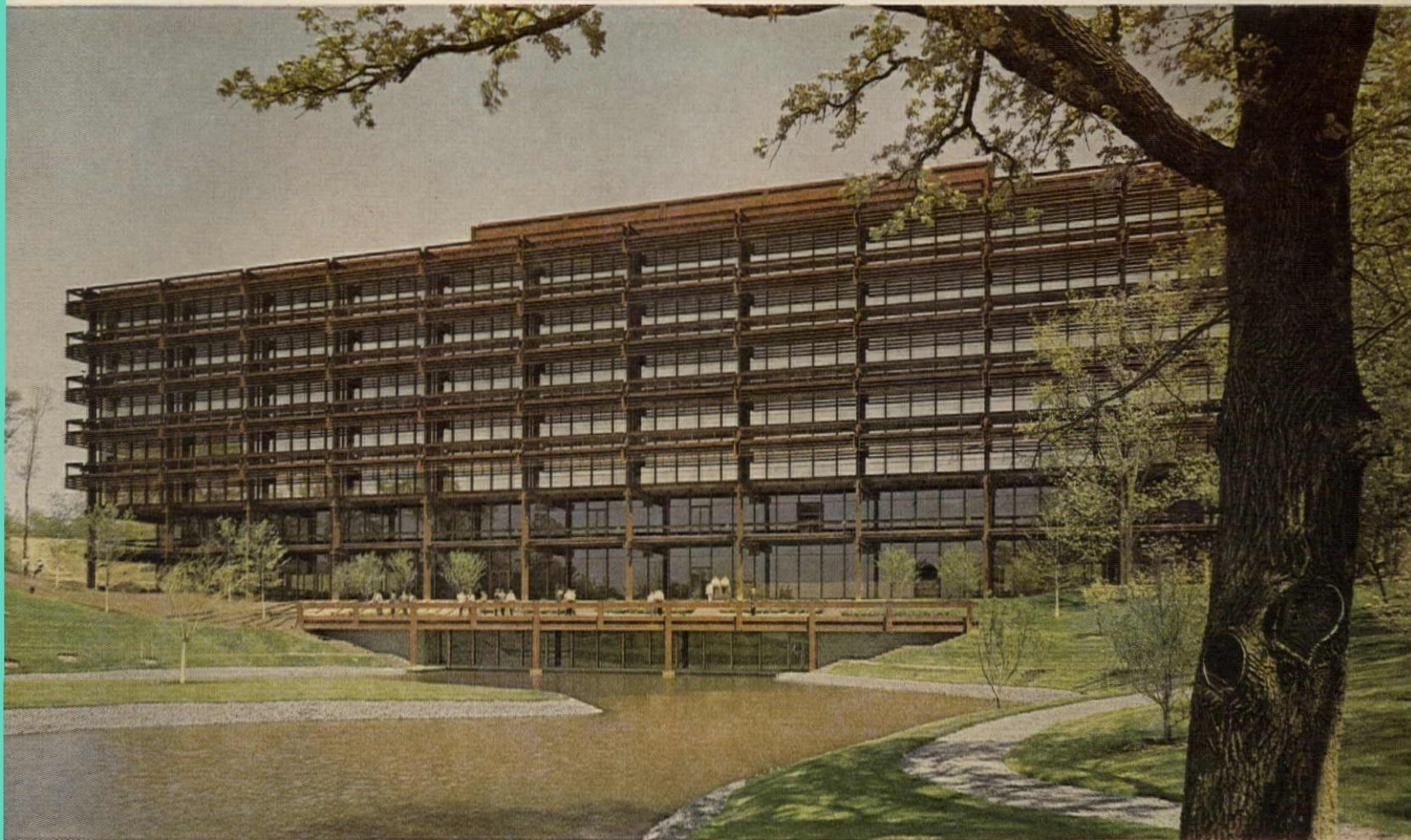
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CORPORATION**

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10522 OLD KATY ROAD • HOUSTON, TEXAS 77024

REPRESENTATIVES IN PRINCIPAL CITIES

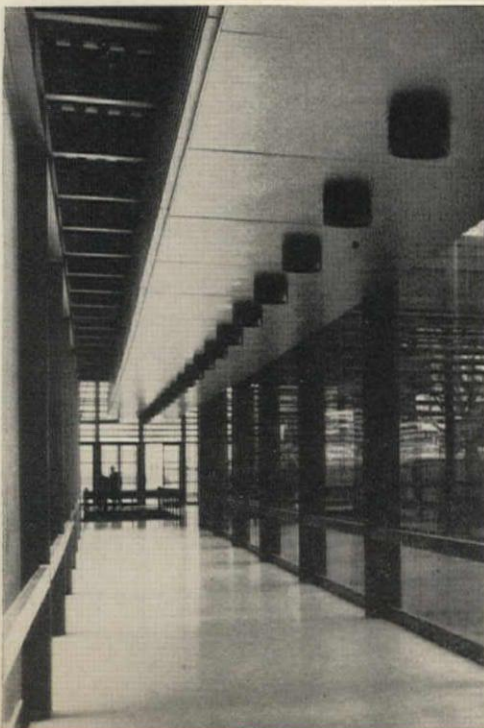
For more data, circle 65 on Inquiry Card

Once in a rare while, a building stirs up a lot of excitement.



Deere & Company Administrative Center, Moline, Ill.; Architect: Eero Saarinen & Associates, Hamden, Conn.; Painting Contractor: Irvin H. Whitehouse & Sons Co., Louisville, Ky.; Man from Devoe: K. W. Sanderson, Moline, Ill.

Devoe certainly likes being involved then.



Here's a case in point: Deere & Company's new Administrative Center has without doubt attracted attention. So conceived as to be functional and handsome—without any superfluous decoration—this unique structure uses color and material and texture, as well as the best in modern design, to achieve its plan.

DEVOE's involvement? We were called upon to match, in a number of finishes, the colors selected. And we did it, getting just what the architect wanted.

Sometimes matching color, even the most extraordinary, is all we're asked to do—but responsible corporations like Deere are reassured knowing that we'll meet the demands . . . and do the job well. Of course, the *Man from Devoe*—our local representative—can help designers in many ways, ranging from assistance with color to assistance with the most complicated and technical aspects of paint. Why not write or phone the nearest Devoe office to reach him for your next job.

DEVOE  DEVOE & RAYNOLDS COMPANY, INC.

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Your satisfied clients are important ...to the man from BARCOL, too!

*He stays on every door job
'til it's an open and shut case*

It's vitally important to us, as well as to you, that Barcol Overdoors and electric operators perform according to all architect specifications and client requirements.

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BARCOL

See Barcol insert, Sweet's Architectural File

BARCOL OVERDOOR COMPANY

Sheffield, Illinois • Subsidiary Barber-Colman Company, Rockford, Ill.

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Now you can specify glass
that excludes 67% of the sun's rays
and has a "U" value of .35



Photo taken through a sample of Solarban Twindow simulating typical building location. Camera: 4 x 5 Graphic-View, 1/25 sec. at f18 with Ektachrome daylight.

COMPARATIVE PERFORMANCE DATA	U Value	Maximum Heat Gain (BTU/hr./sq. ft.)	Visible Light Transmittance %
PLATE GLASS			
Regular Plate Glass 1/4"	1.1	200	88
Solargray® 1/4"	1.1	150	42
Solarbronze® 1/4"	1.1	150	51
Solex® 1/4"	1.1	150	73
SHEET GLASS			
Clear Sheet Glass 3/32"	1.1	205	90
Graylite™ 31 1/2"	1.1	170	31
Graylite 61 3/16"	1.1	195	61
Graylite 56 7/32"	1.1	190	56
Graylite 14 1/32"	1.1	150	14
Graylite 52 1/4"	1.1	185	52
HIGH PERFORMANCE (Insulating, Heat and Glare Reducing)			
Clear Twindow®	.60	170	78
Solarban Twindow	.35	65	20
LHR Solargray Twindow	.60	90	22
LHR Solarbronze Twindow	.60	90	25
LHR Solex Twindow	.60	90	32
Solargray Twindow	.60	115	36
Solarbronze Twindow	.60	115	45
Solex Twindow	.60	115	65

It's called PPG Solarban™ Twindow®—
the latest and most effective Glass Conditioning product.
It transmits only one third as much heat
as regular 1/4" plate glass, cutting heat loss or heat gain 66%.
And it transmits only about 20%
of the sun's visible rays, greatly reducing glare.

What gives PPG SOLARBAN TWINDOW these remarkable properties?
Actually, it's two panes of glass enclosing a dry air space. On the
air space side of the indoor pane, an exclusive coating reflects
46% of the sun's total energy.

SOLARBAN TWINDOW is the ideal environmental glass in any
climate or location. It provides the ultimate in indoor comfort.
And the savings in heating and air conditioning costs may
more than make up the difference in price.

**Chart, left, shows industry's most complete
line of environmental glasses.**

PPG makes environmental glasses to control the sun's heat and
glare on any orientation, of any building, in any environment.
For details on these modern glass products, contact your
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Catalog or write: Pittsburgh Plate Glass Company,
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the glass
that makes
the difference

another
product for

Glass Conditioning from PPG

Glass Conditioning is a service mark of the Pittsburgh Plate Glass Company.

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CHURCH IS EXPANDED, REMODELED TO NEEDS OF LITURGICAL REFORM



The St. Thomas Aquinas Center, West Lafayette, Indiana, has been expanded and remodeled to conform to the liturgical reforms instituted by the Ecumenical Council. The church, which serves Catholic students at Purdue University, has been expanded from a seating capacity of 350 to a capacity of 800.

Architect for the project was E. H. Brenner. Mechanical engineers were Fennig and Weir, liturgical consultant was Frank Kacmarcik, and contractor was the Wilhelm Construction Company.

The church was reoriented to an east-west axis by piercing the east wall and constructing a new nave and sanctuary adjacent to the existing building (*plan below*).

On the exterior (*above*) the original front and tower have been removed (*below*) making the new sanctuary the architectural climax. The exterior of brick matches the brick on the existing structure.

This church was awarded first place in a competition recently held
continued on page 104

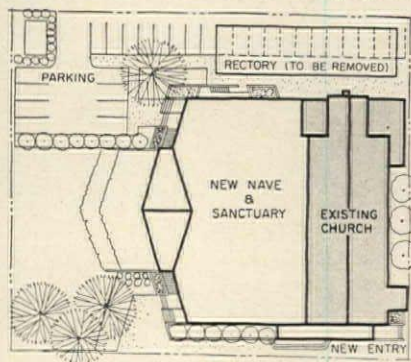


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anywhere

Malcolm Smith photograph

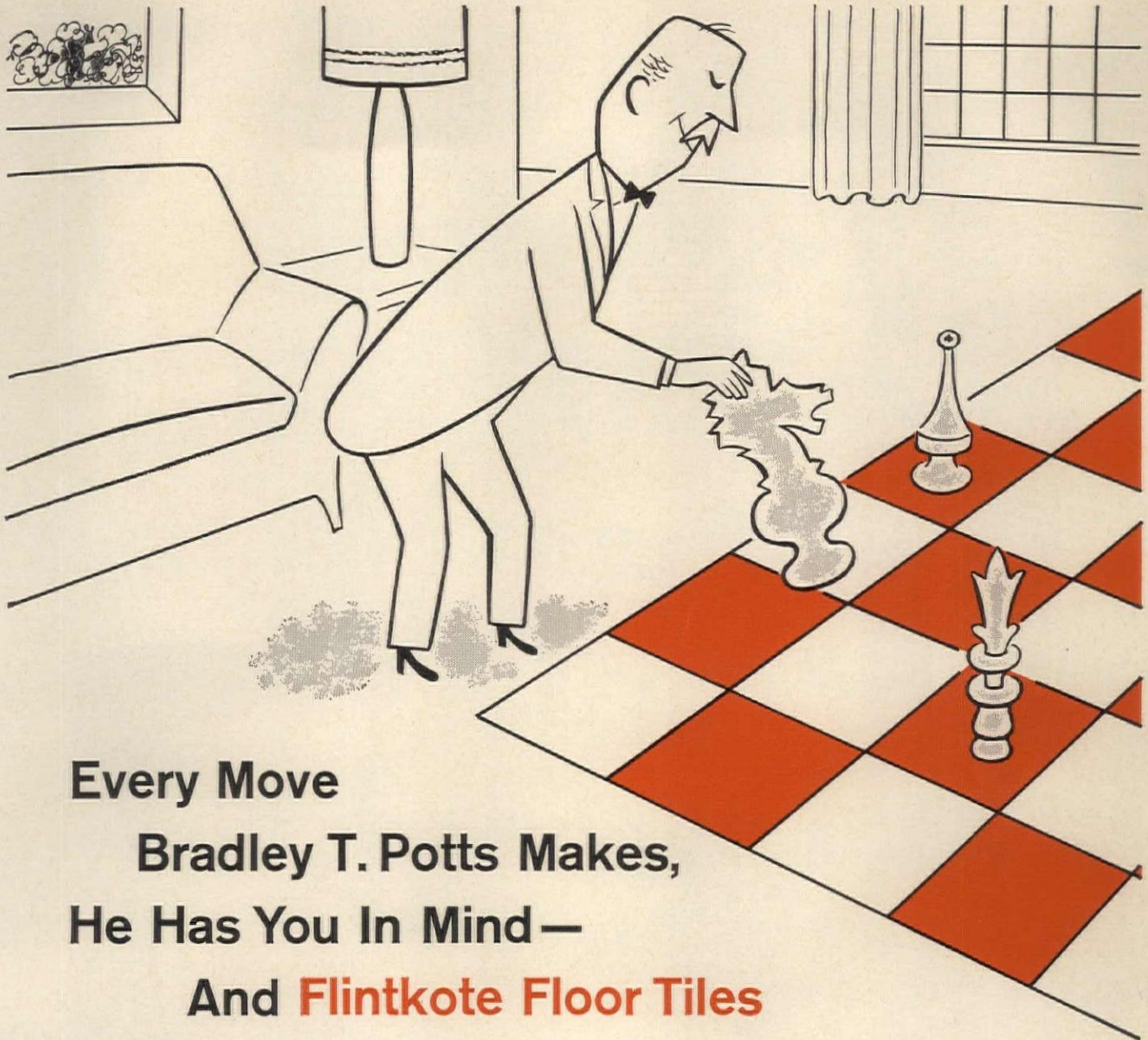
Indoors or out, Stagecraft shells make any concert site sound better . . . and look better. Each shell is completely tunable, can be adjusted to match the acoustic characteristics of the hall or amphitheater. This means greater freedom for the designer, since musical balance can be modified when the shell is installed.

Stagecraft shells are portable, are easily erected and stored, can be used anywhere. They are ideal for both existing sites and new construction. If you're interested in Stagecraft's complete service in musical acoustics, write today for our 12-page illustrated brochure.



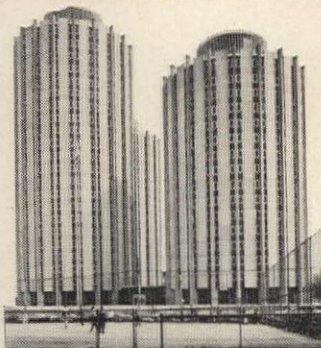
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**Every Move
Bradley T. Potts Makes,
He Has You In Mind —
And Flintkote Floor Tiles**

**Potts
Points
With
Pride**



Architect:
Deeter & Ritchey, Pittsburgh, Pa.

The University of Pittsburgh features 200,000 square feet of Classic Flexachrome vinyl asbestos floor tile in this new men's dormitory building. Designed to give modern comfort and low cost maintenance throughout, its long-wearing floors will serve beautifully for years.

Our versatile Mr. Potts is a busy man. Calculating. Impassive. Shrewd. Our *super*-salesman.

This is your first meeting with Brad. We think you'll enjoy his light-hearted antics in the months to come. He never forgets that his job is to help you while selling Flintkote Floor Tiles.

That's why Bradley keeps his eye on every move made by our production people, our designers, our quality control and research people, and our promotion staff.

His job is to give you the extra service you need. Service not only on the scene but behind the scenes. You might say Brad's a knight in shining sales.

That's why with Flintkote you, good friend, are never merely a pawn. You're the king.



THE FLINTKOTE COMPANY
30 Rockefeller Plaza, New York, N.Y.

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water coolers



Some people just can't wait!

Don't blame her for hurrying to try this new General Electric water cooler. It not only satisfies the thirst, but pleases the eye. Boosts employee morale. Compliments any decor. And will give years of carefree service.

When it's out of the box you'll see the stylish, exclusive trapezoid shape. Side access saves aisle space. Flush-to-wall installation hides unsightly plumbing.

Whatever your clients' tastes or needs, we can provide the right water cooler. There's a wide choice of pressure

or bottle types . . . floor or wall-mounted units . . . modern and compact shapes. And don't forget the popular all-in-one executive-type refreshment center with spacious refrigerator.

Specify our water coolers for your thirsty clients. (How about your own office?) For complete details call your local dealer or nearby General Electric Supply Company. Or write Section 761-33, General Electric Company, Chicago Heights, Illinois 60411.

G-E water coolers . . . a size and style for any application.

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Wall-mounted



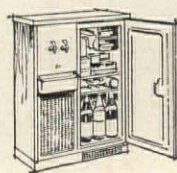
Space-saving
Floor-mounted



Standard
Floor-mounted



Refreshment
Centers



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GENERAL  ELECTRIC

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Click-**boing** and there's your wall. **New! Royalmetal Partitionette 6000**

Partitionette 6000 is an incredibly versatile new system of free-standing, movable partitioning. The key to it all is Royalmetal's unique new universal aluminum post design. It features concealed spring-loaded studs—you can attach panels left, right or straight ahead simply by snapping them into place. The whole job goes faster and easier.

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Partitionette 6000 is styled to coordinate with

Royalmetal's new 6000 Series office furniture, but it's a natural for any office. For complete details, see Partitionette 6000 at your Royalmetal dealer, or mail the coupon below.

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AR-35

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See page 255

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 ADJUSTABLE WALL MOUNTED HAT AND COAT RACKS

- Heavy duty steel construction
- Adjustable in height
- Tailored to fit any length
- Choice of colors

These beautifully styled, heavy duty, steel wall mount units are built to fit your exact length and multiple shelf requirements. Shelf brackets are held at wall in box formed channel mountings for vertical adjustment. Finish in choice of Mist Green, Desert Sand or Medium Gray, baked on enamel. They come with hanger rail or double pronged nylon hooks in Black, Red, Blue and Gray. Matching overshoe racks are also available.

Write for catalog SL-52

VOGEL-PETERSON COMPANY
 "The Coat Rack People" ELMHURST, ILLINOIS

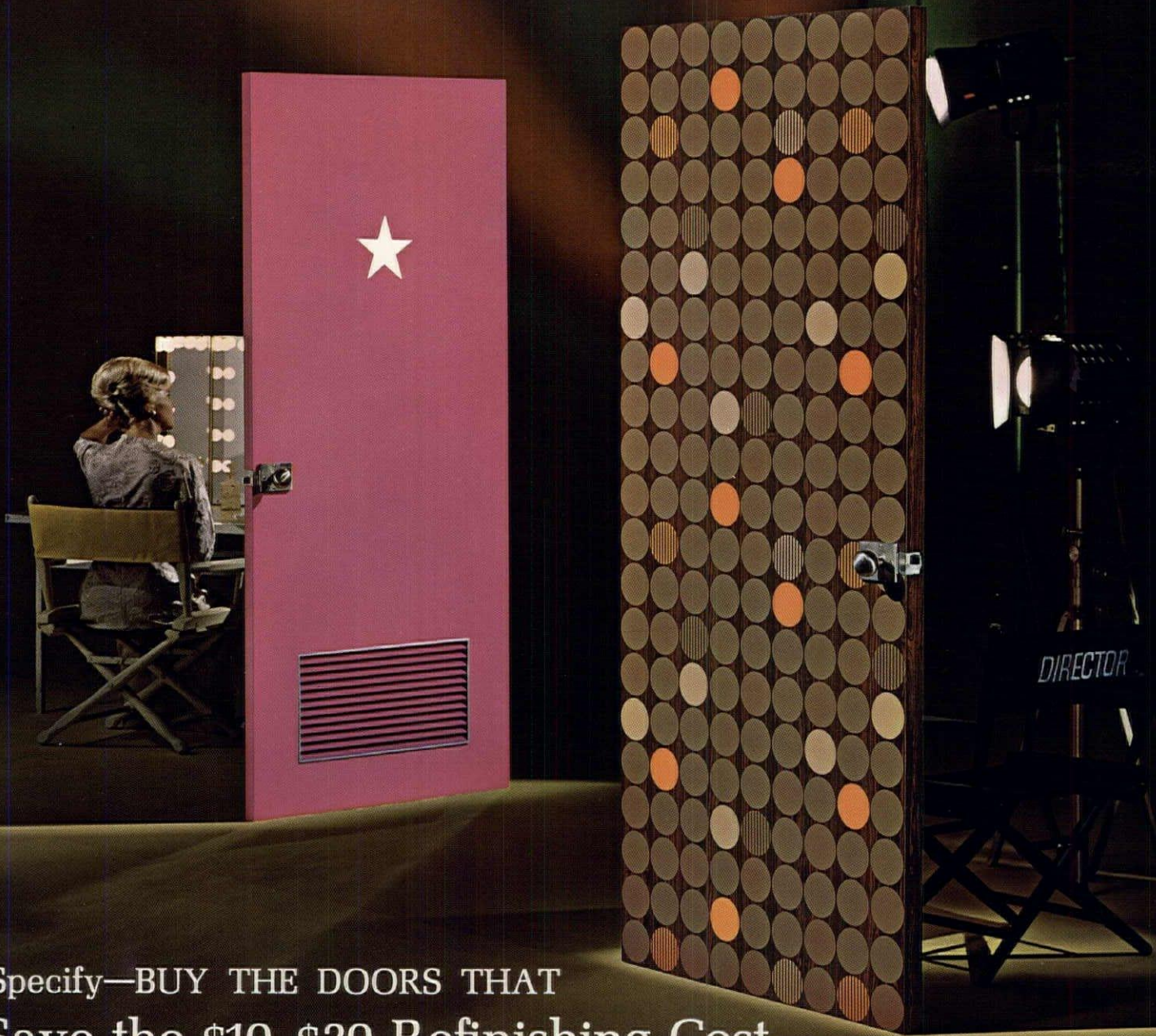
Double prong nylon hook

MODEL SL 300 U shelf with double anchor style coat hooks

General Utility Shelf SL 100 U matching all-purpose shelf

UTILITY CH HOOK STRIP

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interior doors
clad with



laminated plastic

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Authorized manufacturers of FORMICA laminate clad doors are located reasonably close to every building site. They will be pleased to serve you . . . with samples, details, estimates.

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| California | General Veneer Mfg. Co., South Gate | Minnesota . . . | Aaron Carlson Co., Minneapolis |
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| Florida . . . | Oleson Industries, Tampa | New York . . . | James A. Hagerty, White Plains |
| Georgia . . . | Murphy & Orr Co., Forest Park | | Jamestown Veneer, Jamestown |
| Iowa . . . | Van-Top, Inc., Holstein | Ohio | Pease Woodwork Co., Hamilton |
| Kentucky | Anderson Woodworking Co.,
Louisville | Pennsylvania | National Wood Products Co., Cheswick |
| | | | Oxford Plastic Products Co., Oxford |
| Louisiana | Bernard Lumber Co., Inc.,
New Orleans | Tennessee . . . | F. L. Saino Mfg. Co., Memphis |
| | | Texas | Hawn Sash & Door Co., Corpus Christi |

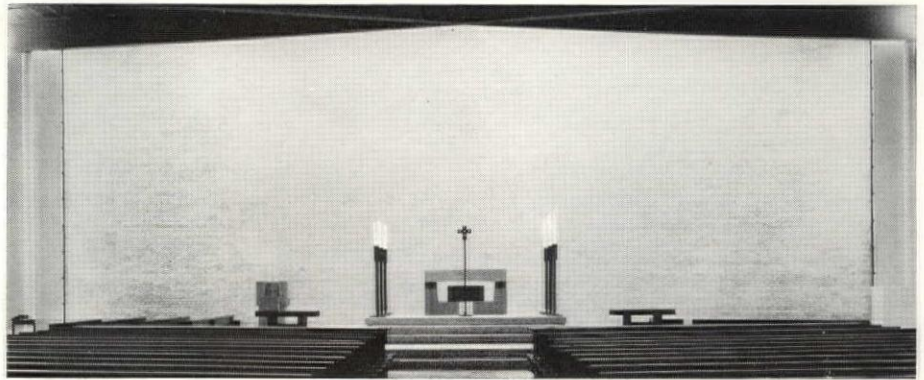
FORMICA® is our brand of laminated plastic. Insist on this identification to avoid imitations.

Remodeled Church

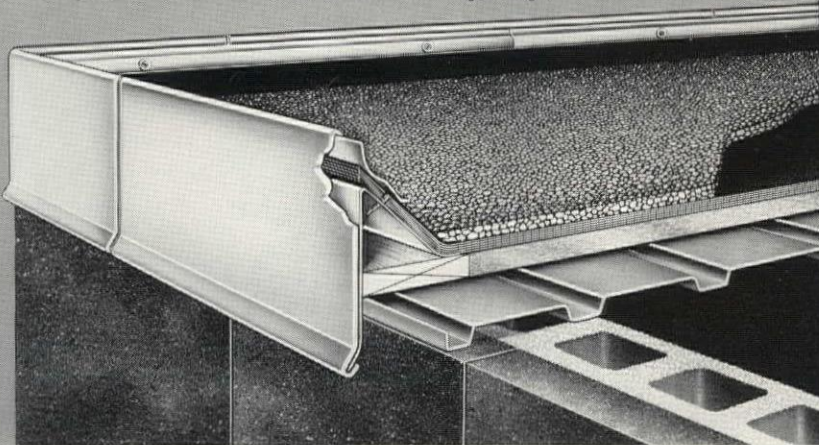
continued from page 98

by the Liturgical Conference of North America. The competition was for sanctuary design in light of the reform liturgy. The jury consisted of clergymen and architects Paul Thiry, John Rauma, Robert Jones and Edward Sövik; and Donald Canty of Architectural Forum.

According to Mr. Sövik, this church responds better than any oth-



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ROOF WATER
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*The invention of W.P. Hickman, for many years one of Michigan's largest roofing and sheet metal contractors.

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WRITE FOR ADDITIONAL SWEET'S PAGES AND FOR INFORMATION ON SPECIAL APPLICATIONS.

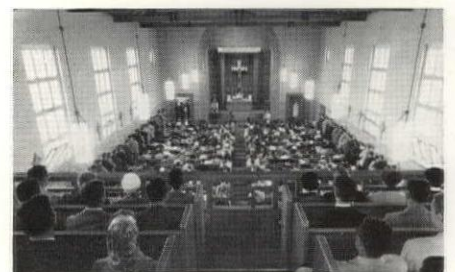
W. P. HICKMAN COMPANY, INC.

23100 DEQUINDRE • WARREN, MICHIGAN 48091 • 313-536 3512

er church that the jury looked at to the new liturgical reforms. "The altar is very clearly the center of activity, without distractions of sub-altars, and the priest faces the congregation. This gives more of a sense of family or group participation rather than individual piety."

The people are directed to the Mass and to one another giving a sense of general participation in the worship. By seating 800 people in a semi-circular fashion, all within 60 feet of the altar, leads to a new sense of general participation. A large single space in which the sense of the sanctuary and worship area are combined also unifies the congregation, according to Mr. Sövik.

"Finally there is a new emphasis on the church as the 'house of God's people' rather than the 'house of God'." By the simplicity of space and straightforward use of materials, the church is emphasized as a house on earth, rather than the exotic atmosphere of the Gothic cathedral."



Above: Original interior. Below: Altar



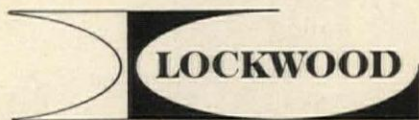
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Foresight

Foresight was the byword in the late Eero Saarinen's planning of the Dulles International Airport.

Plush mobile lounges whisk passengers effortlessly to the huge silver birds perched on the runways. A veritable forest of millions of trees were strategically planted to cushion the roaring of the jets from the ears of people who will someday populate the area around Dulles but who now don't even exist.

Foresight was used too, in the locksets chosen for this monumental terminal. Lockwood Mortise Locksets—structurally strong and mechanically perfect enough to give faithful service far into the future.



LOCKWOOD HARDWARE MFG. CO.
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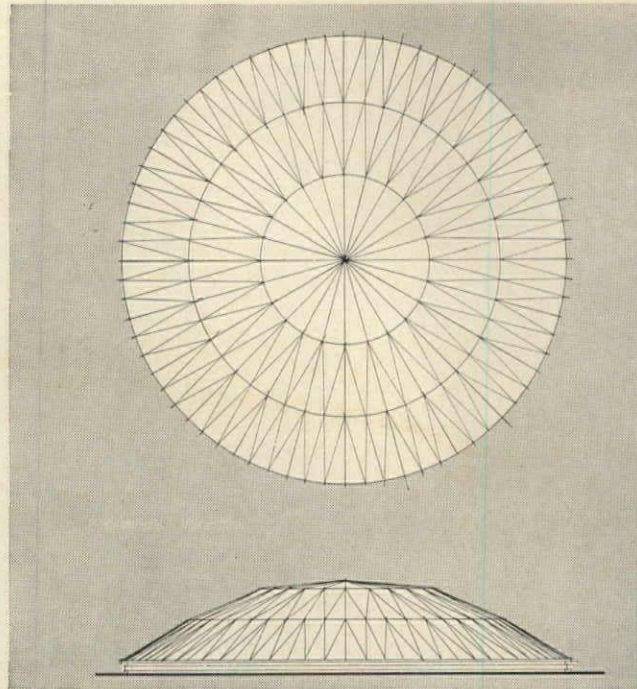


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Design roof covers

24' x 60' (16' high from base to top) Barrel Vault variation for Creighton's Garden Restaurant Winter Park, Florida. Toombs, Amisano and Wells, Architects and Engineers, Atlanta, Ga.



or skylights

75' diameter lamella Skylight for State University of New York Albany, N. Y. Architect, Edward Durrell Stone, New York, N. Y.

or any other transparent overhead structures with the... IBG

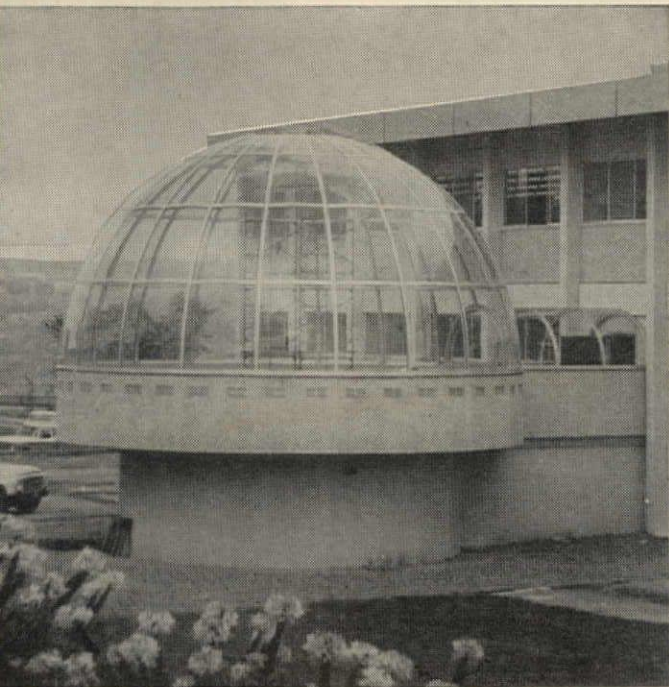
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- Architectural Facing Panels, sculptured (formed) Plexiglas*

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- Design and Engineering**—your basic ideas and concepts will be analyzed and developed by IBG. Preliminary plans will be submitted for your approval.
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or conservatories

34' diameter Conservatory dome, Ithaca College, Ithaca, N. Y.
Architect, Tallman and Tallman, Ithaca, New York.

or enclosures

56' diameter dome Pool Enclosure at
Park Place Motor Inn, Traverse City, Michigan.
Architect, Paul Hazleton, Traverse City, Michigan.

DomeSystem

This name identifies the versatile, designer-oriented system which can be used to produce such structures as those pictured above as well as a multitude of other transparent enclosures and coverings.

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DATE _____ PHONE _____

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A.I.A. Runners-up

continued from page 14

service spaces bounded by vertical mechanical distribution stacks."

Members of the design team for I. M. Pei & Associates were Ieoh Ming Pei, F.A.I.A.; Henry N. Cobb, A.I.A.; Araldo A. Cossutta, A.I.A.; James I. Freed, A.I.A.; and Theodore Musho. The Pei statement of the design concept reads: "All existing walls and structures except the Octagon itself are to be removed. New brick for garden walls and paving will be selected to harmonize with the Octagon. Exterior walls of the new building will be poured-in-place concrete, lightly sandblasted. Through careful selection of aggregate, sand and cement, a buff limestone color will be achieved.

"The garden will be regraded and replanted, with two specimen trees as the major landscape elements. A major work of sculpture is proposed as the central feature of the entrance court. Oxidized-steel gates will be installed at the New York Avenue and 18th Street entrances. An ornamental screen of the same material will separate the entrance court from the public sidewalk.

"Vertical structural members on the garden face of the building are shaped and oriented so as to respond to the major axes of the Octagon House and site, while at the same time providing protection against the summer sun."

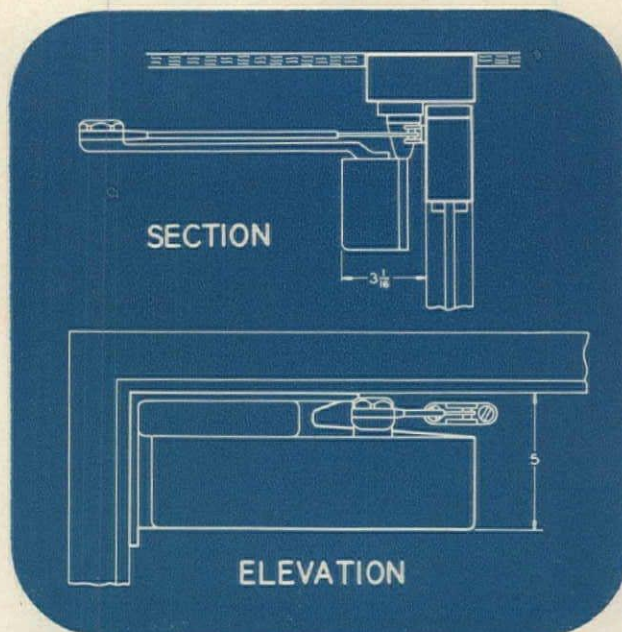
The Perkins & Will design team was composed of Saul Klibanow, Moshan Khadem, Phillip A. Kupritz and John Holton. The text of their design concept statement reads: "The Octagon should participate in the visual design of the new complex. Thus, an historic landmark may become a meaningful part of the urban composition and assume a new vitality. Since the architectural character of the Octagon House is different from the street than from the interior court, the new building should acknowledge such a difference. From the streetscape the composition should be a unified whole and the new building must enhance the historic residence. From the court the new building should have a more significant visual impression, while the intimate character of the existing garden should be preserved.

"The proposed solution is composed of three fundamental parts: (1) the lower portion of the base; (2) the upper portion of the base; (3) the office block. The lower portion of the base consists of brick piers interrupted by a horizontal band designed to maximize the dimensions of the interior court and permit the free flow of space to the lobby and exhibit areas. On this level the building assumes an active role and participates with the design treatment of the court in producing a court that is scaled to pedestrian observation.

"The upper portion of the base consists of a curved horizontal band matching the eave line of the Octagon and clad in similar material. This acts as the unifying element in the composition and focuses the new building to the Octagon.

"The office block consists of a neutral mass clad in roof metal and withdrawn to the extreme northern edge of the site. Without overwhelming the space, this provides a closure and prevents visual encroachment upon the court by any future construction adjacent to the site."

Submissions of the winner and three runners-up are being exhibited through March 31 in the Octagon House.



Application Details

for Series 4010 SMOOTHEE® door closer
shown on opposite page
(See drawings above)

Here a bracket mounting of the door closer was desired. The LCN 4010 series closer on a No. 4010-16 bracket uses only 5" in depth, of head room.

The closer is in excellent position for leverage. Spring power and back check are adjustable, as well as main swing and latching speeds. The reversible shoe gives added power at the latch where needed. Maximum door opening with regular arm closer, 125°; with H90 hold-open arm, 100°.

Viewed from the lobby with doors closed, the closers are not conspicuous.

Comprehensive brochure on request—no obligation or see Sweet's '65, Section 19e/Lc

LCN

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A Division of Schlage Lock Company

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

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Modern Door Control by

LCN

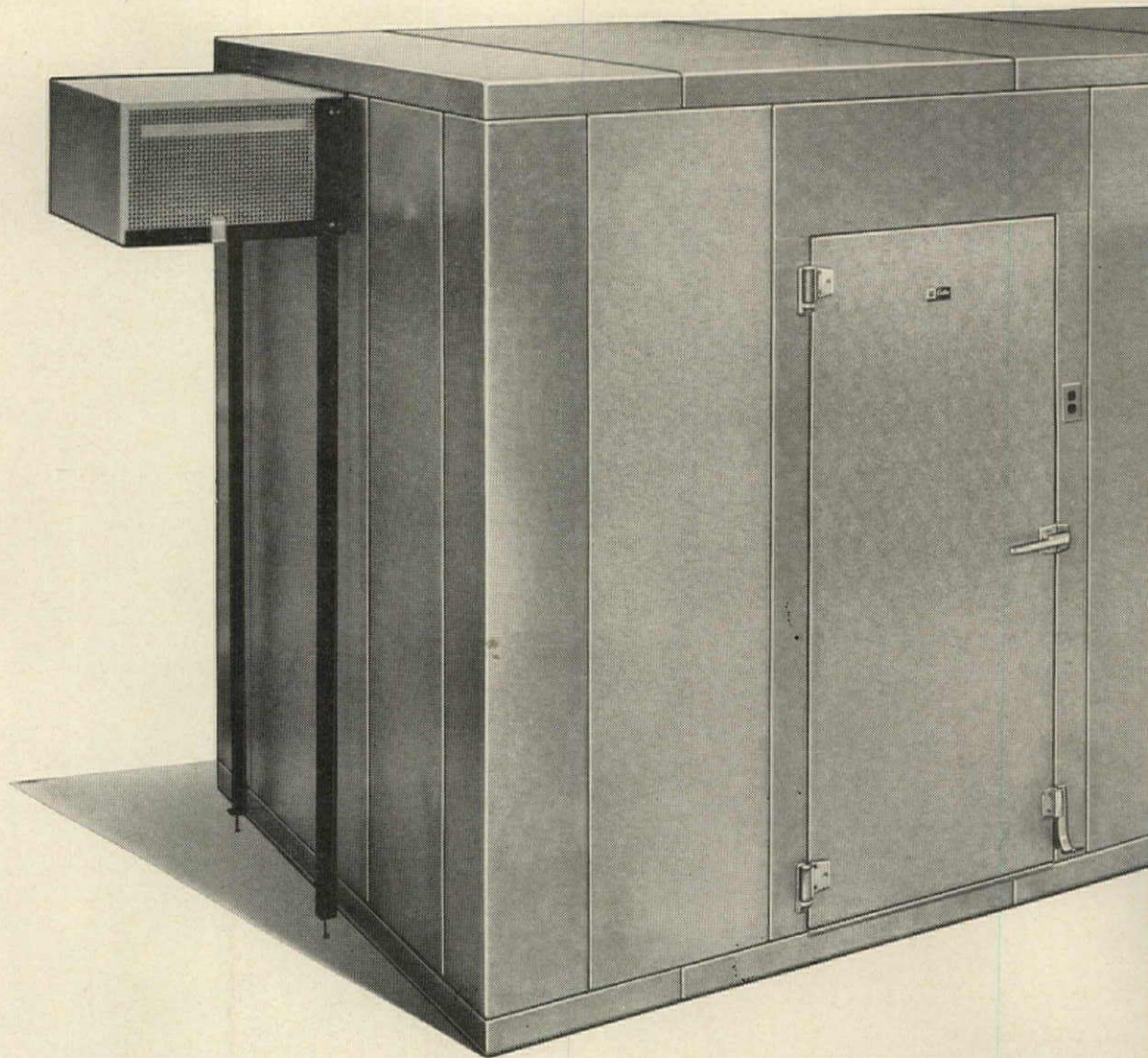
SMOOTHEE® Door Closers

University Center Building
Northern Illinois University
De Kalb, Illinois

Gilbert A. Johnson, Kile, Seehausen
& Associates, Architects

LCN CLOSERS, PRINCETON, ILLINOIS
Application Details on Opposite Page





Architects and Food Consultants insist on Bally for job after job. It is because Bally, America's largest producer of sectional Walk-In Coolers and Freezers, has introduced a new standard for Walk-In refrigeration that includes advantages never available in "built-ins".

Today, no other Walk-In has all of these important construction techniques and unusual features that eliminate the "or equal" problem in specifications.

Urethane insulation 4" thick is foamed in place (not frothed). Has efficiency of 8½" fiberglass. Suitable for minus 40° F. temperature.

Assemble any size or shape from standard modular sec-

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Superior section strength resulting from urethane foamed against metal skins eliminates need of wood structure. 100% of every section is hospital-clean insulation (no vermin or rodents).

Bally Speed-Lok fasteners join sections quickly and accurately. Unlock easily for enlargement or re-location.

Foamed lightweight door has self-closing hinges, modern hand lock (inside safety release) and convenient foot treadle. Opens and closes with feather touch. Magnetic gasket provides tight seal.



Bally walk-in
refrigerators carry
this **hallmark**
of quality

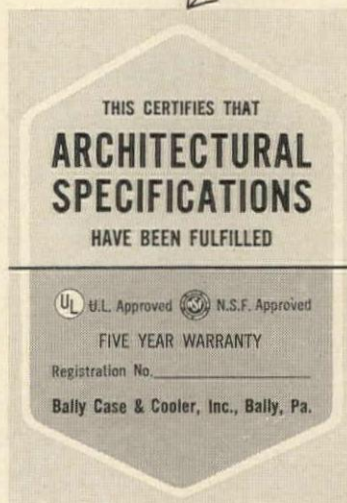
It is our registered guarantee
that specifications have been fulfilled with the
highest quality workmanship and materials.

Metal interior and exterior provides maximum sanitation. Your choice of hammered aluminum, galvanized steel or stainless steel.

Hermetically sealed refrigeration systems self-contained, available for all size normal and low-temperature Walk-Ins. Easy to install . . . reduce service problems.

Mass-produced and are lower in cost than "built-ins" constructed by building trades. Cubic-foot cost is less than half that of "reach-ins".

When you specify a Bally there is never a need to accept an "or equal" or a substitute. Bally Walk-Ins are available to all dealers everywhere at uniform prices.



See Sweet's Architect
File No. 25a/Ba

Write for Fact File including 12-page brochure, Specification Guide and Urethane sample. Learn about our on-the-spot engineering program that provides assistance in layout and specifying.



Bally Case and Cooler, Inc., Bally, Pa.

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TRACKS and GUIDES for 1/8", 3/16", 5/16", 1/2", and 3/4" sliding doors



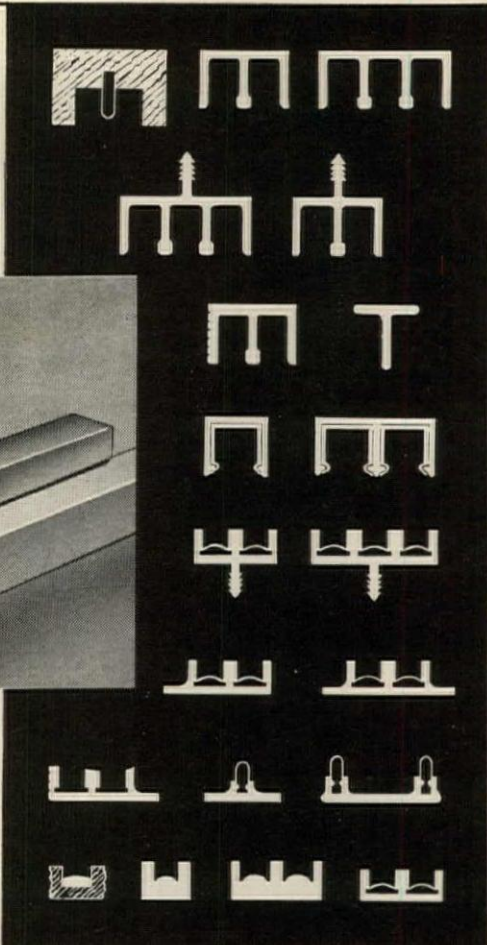
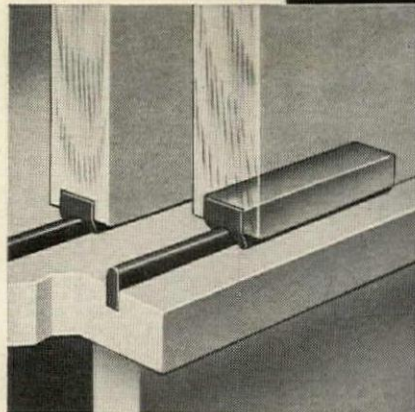
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See Sweet's Catalog under Arch. file 19g-En and Light Const. file 7b-En.

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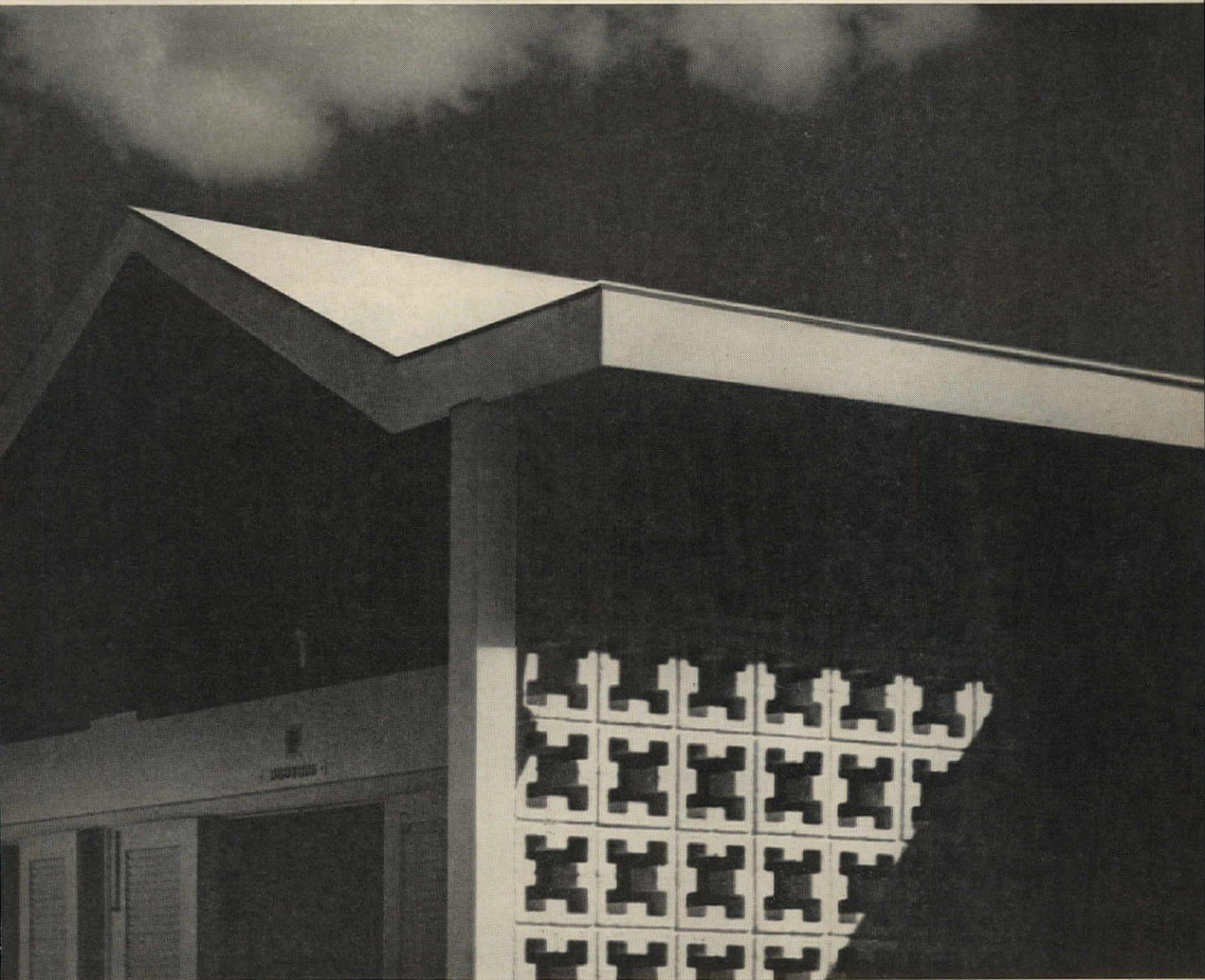
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Kenilworth Hotel Cabana, Miami Beach, Florida
Architect: Stefan Zachar, A.I.A., Miami Beach, Florida
Contractor: John C. Woodruff Co., Miami Beach, Florida

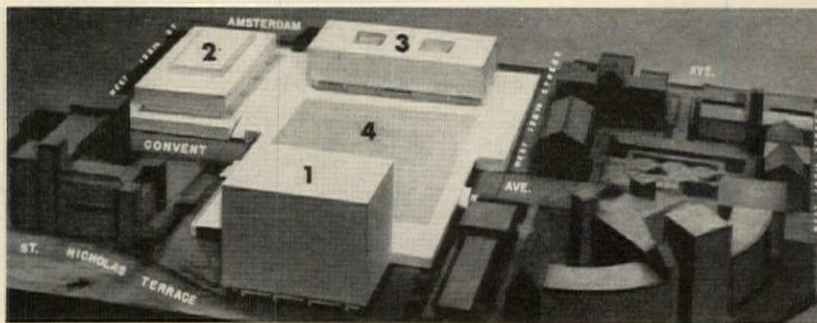
*Du Pont registered trademark
†Ruberoid's registered trademark



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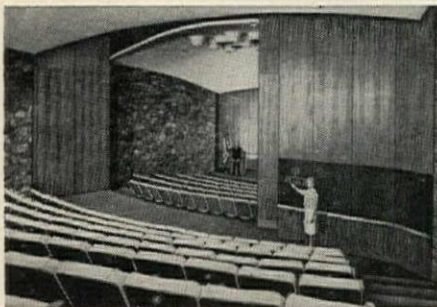


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I.B.M., Yorktown, N. Y.
Architect: Eero Saarinen & Associates



Elmont Memorial High School, Elmont, N. Y.
Architect: Frederic P. Wiedersum

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The City College of the City University of New York has announced a campus master plan for the college's uptown center. Prepared by the architectural firm of Skidmore, Owings and Merrill, the master plan will be developed over the next five years at a cost of \$40 million.

The key to the campus development plan is the replacement of Lewisohn Stadium to make possible the construction of a huge plaza, covering a five-block area.

Adjacent to the plaza will be an 11-story science building (*below*) to house the natural science departments—biology, chemistry and physics. A science library will be housed under plaza level. Also to be built are a social science and humanities building with a special component for faculty offices; a college "commons" containing cafeteria, dining room and meeting facilities as well as a fully equipped teaching theater with a seating capacity for 400; and, underneath the plaza, a physical education building, 10 large lecture rooms, a 600-car parking area, and a number of the college's service and storage facilities.

Under the master plan, available outdoor activity space obtained will be equal to that now provided by Lewisohn Stadium and the college's Jasper Oval athletic field combined. An outdoor concert stage will be constructed on the plaza for outdoor concerts and convocations. Bleachers will be provided for athletic events.



For more data, circle 107 on Inquiry Card

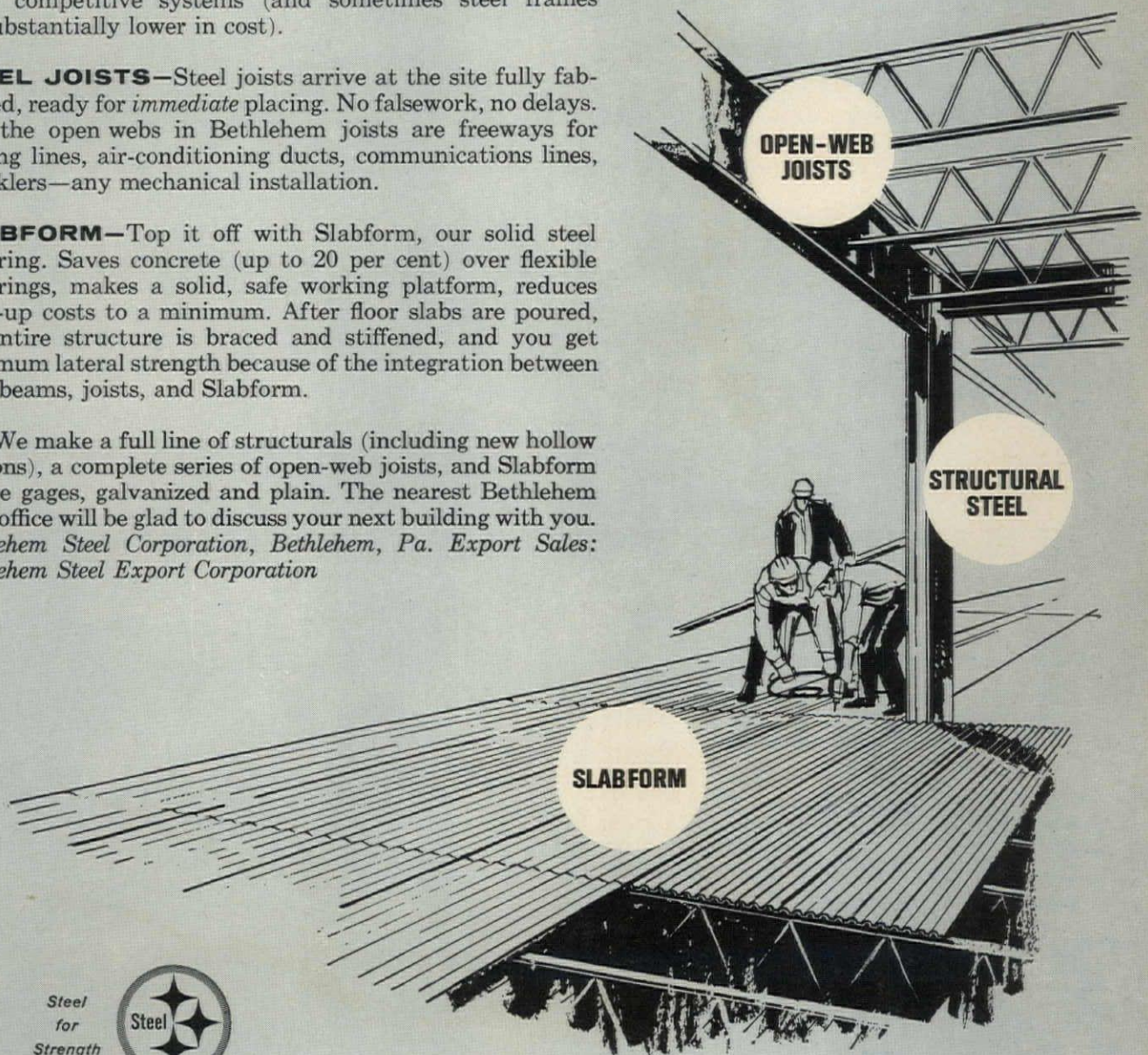
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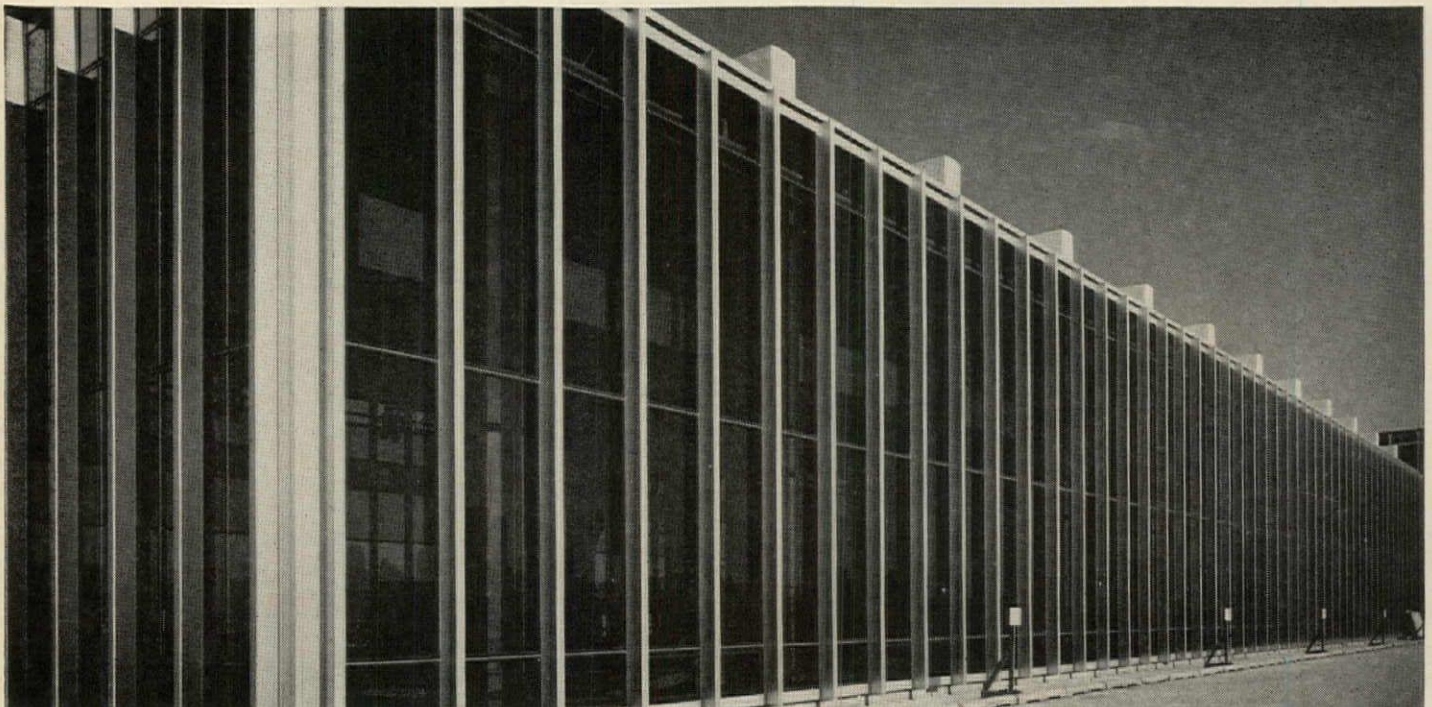


Parallel-O-Bronze is the plate glass used in this vast showroom of the Lou Bachrodt Chevrolet Shopping Center, Rockford, Ill. Designed by Cherry & Fraboni, Inc., of Beloit, Wisc. Glazed by Cadillac Glass Co., Rockford.

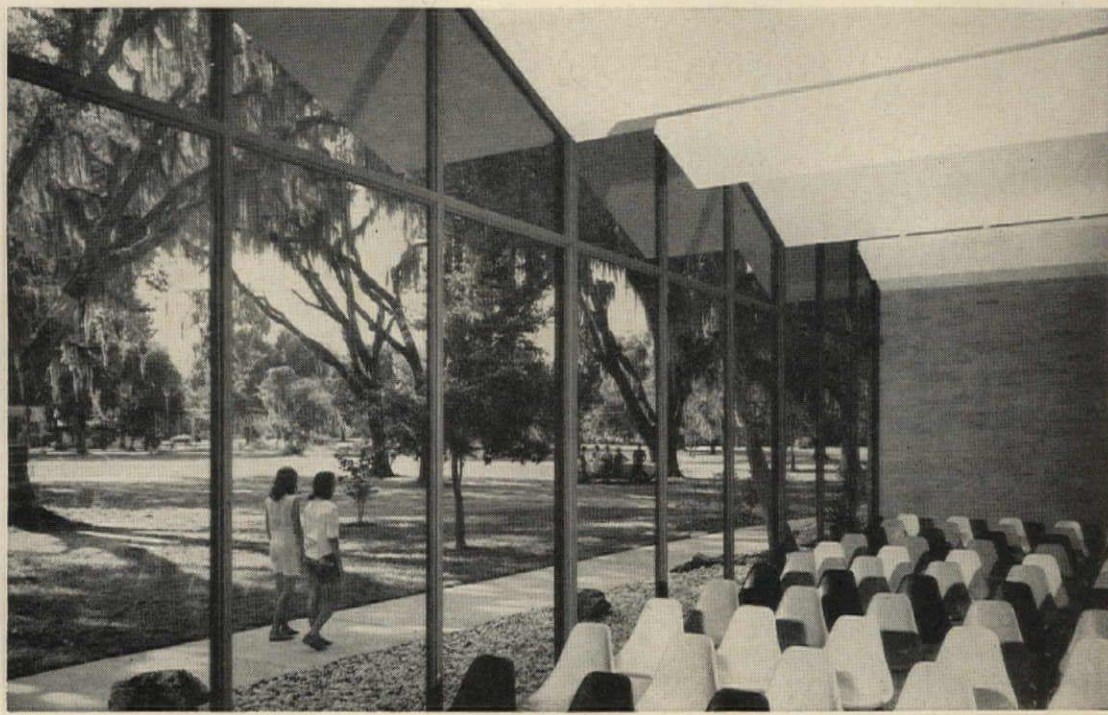
More ways to control the sun

A different sun-control glass was used in each of the four buildings shown here. L·O·F offers a range of tints and thicknesses for varying degrees of glare reduction and solar-heat exclusion. There are *Parallel-O-Grey*® and *Parallel-O-Bronze*® Plate Glass

in $\frac{3}{64}$ "", $\frac{1}{4}$ "", $\frac{3}{8}$ " and $\frac{1}{2}$ " thicknesses. Each thickness provides slightly different depth of tint. And there's blue-green Heat Absorbing Plate in $\frac{1}{4}$ " and $\frac{3}{8}$ ". All in regular or heat-tempered glass. Polished or rough plate. And as the outer pane in



Heavy-Duty Parallel-O-Grey ($\frac{3}{8}$ " thick) was used in the largest lights of these vertical sections. Others are $\frac{1}{4}$ ". This is the pump house for Chicago's central district filtration plant. Architects: Naess & Murphy, Chicago. Glazing Contractor: Hamilton Glass Co., Chicago.



Parallel-O-Grey plate glass was used in the Orange Park (Fla.) Civic Center for sun control. Architect: Allen D. Frye. Glazing Contractor: Florida Glass & Mirror of Jacksonville, Inc.

Thermopane® insulating glass units. You get design freedom with a right glass for every need.

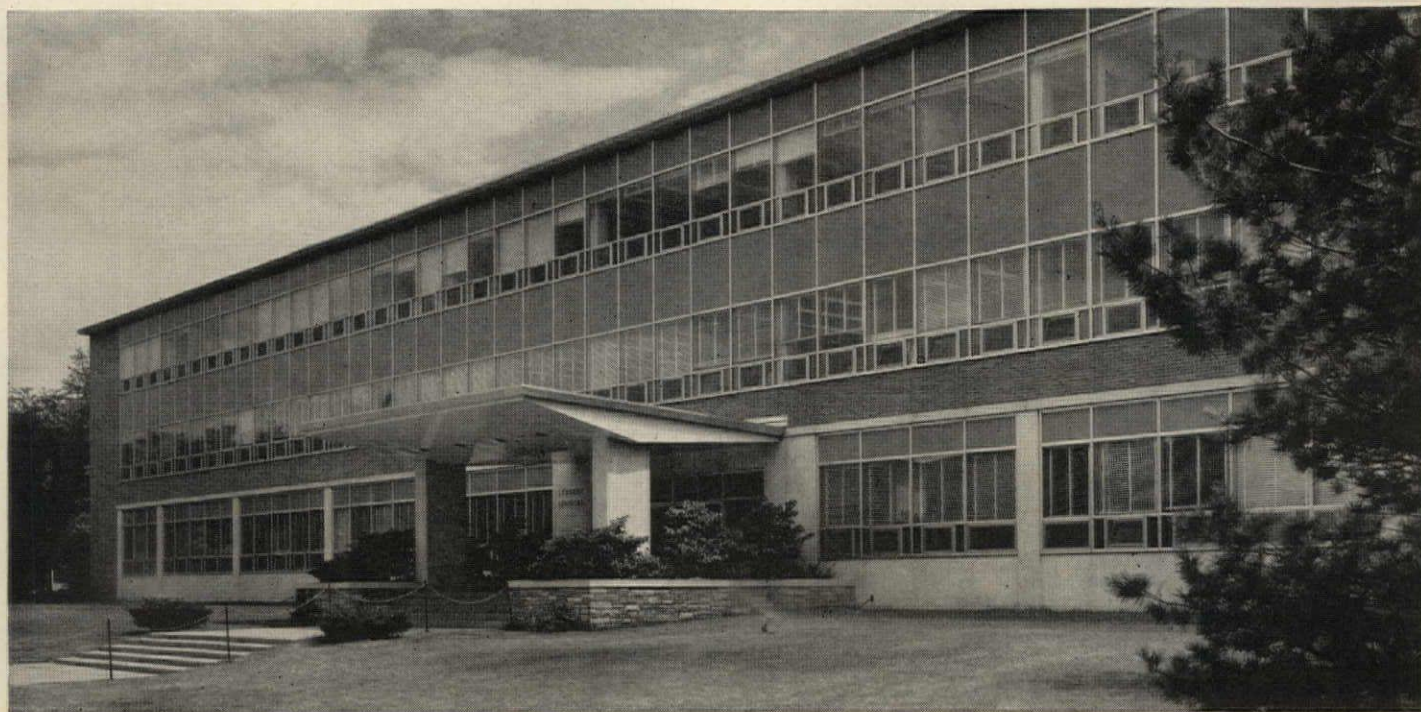
So design freely, but within glass limitations. For example: avoid heat traps that can cause thermal breakage. Drapes and venetian blinds

Libbey·Owens·Ford



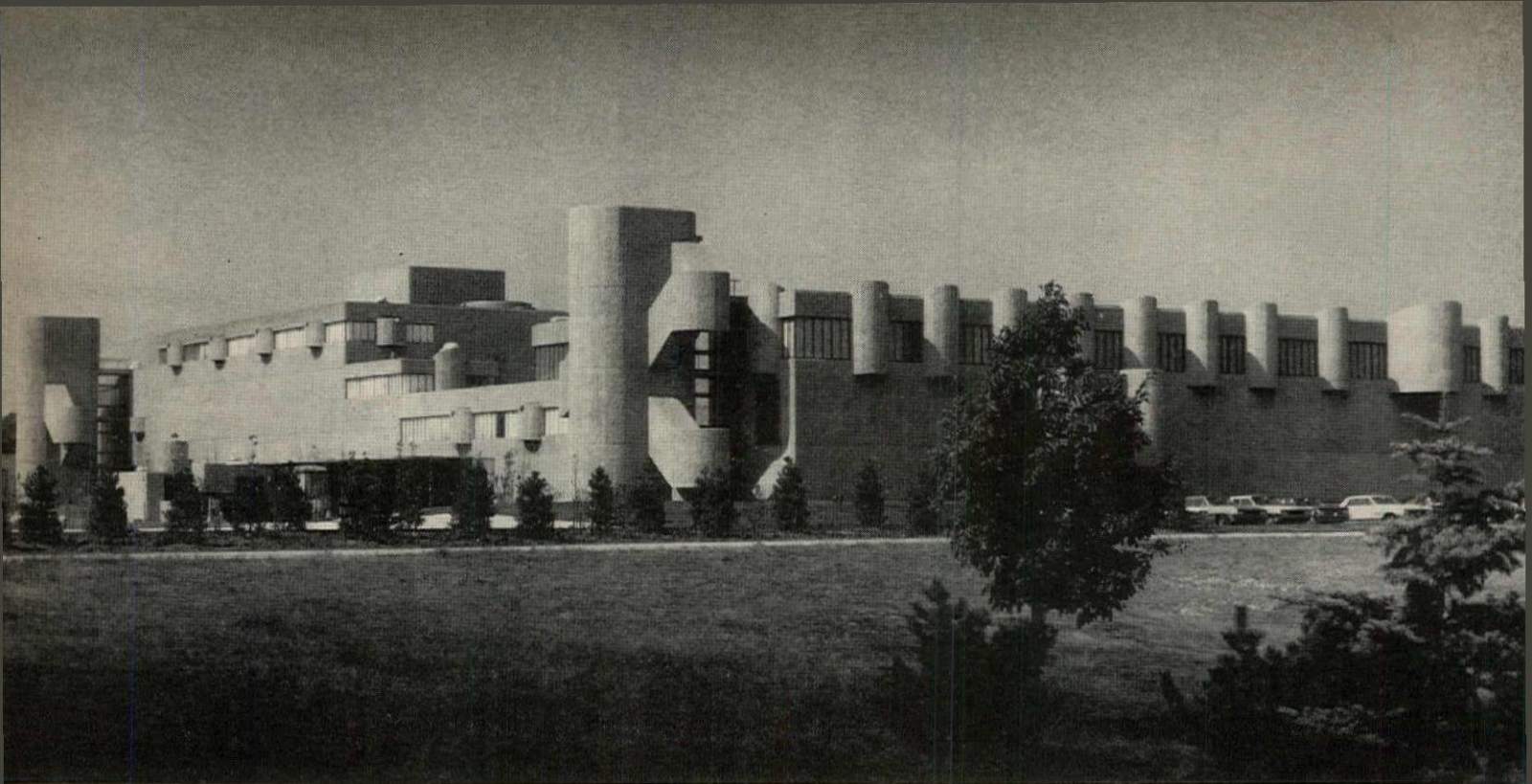
should be hung at least 6" from the glass with space at top and bottom to permit air movement. For additional information, see Sweet's Architectural File 26A, or call your L·O·F distributor or dealer listed under "Glass" in the Yellow Pages.

Toledo, Ohio 43624



Heat Absorbing Plate is the outer pane in *Thermopane* insulating glass units in the Student Services Building at Michigan State University, East Lansing. Architects: Ralph R. Calder & Associates, Detroit, Mich.

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ENDO PHARMACEUTICAL CENTER, Garden City, N. Y.; Architect: PAUL RUDOLPH, New Haven, Conn.; Structural Engineer: HENRY PFISTERER, New Haven, Conn.; General Contractor: WALTER KIDDE CONSTRUCTORS, INC., New York; Concrete Sub-contractor: CENTRAL CEMENT FINISHING CO., INC., New York; Ready-Mixed Concrete: COLONIAL SAND & STONE CO., INC., New York.

Rudolph's award-winning concrete "castle"

This remarkable new concrete structure in Garden City, N. Y. is the \$4-million administrative, research and production center of Endo Laboratories, Inc. Blending function and form in a creative environment both inside and out, it was named "Concrete Building of the Year" by New York's Concrete Industry Board.

Designed by architect Paul Rudolph, the fortress-like structure has turret projections on the outside which serve as skylit alcoves for offices and laboratories on the inside. Staircases and animal exercise runs are separate elements. Curved entrance ramps and win-

dowless facades add to the striking castle effect.

Vertically ribbed, exposed-aggregate concrete dominates 90,000 square feet of interior and exterior finish—a sparkling new surface texture for an age-old material. Close color control, strength, and durability of the concrete were essential to produce this unusual surface texture.

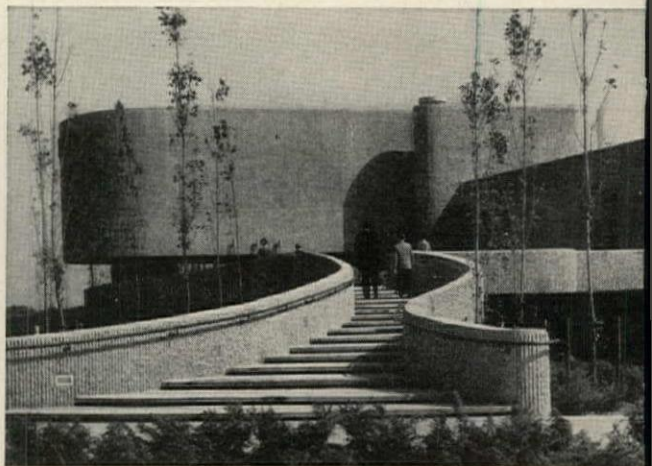
Lone Star Portland Cement was selected after careful research by the architect and builders, and was used exclusively throughout the project.

Corduroy-like texture was achieved by casting a stiff concrete mix in special forms built at the site. The 1½" fins were knocked off ½" to ⅔" by hand bush hammering, alternating left and right blows, to leave ridges of exposed aggregate. For uniform color, separate bin storage was provided for the Lone Star Portland Cement and selected aggregates.



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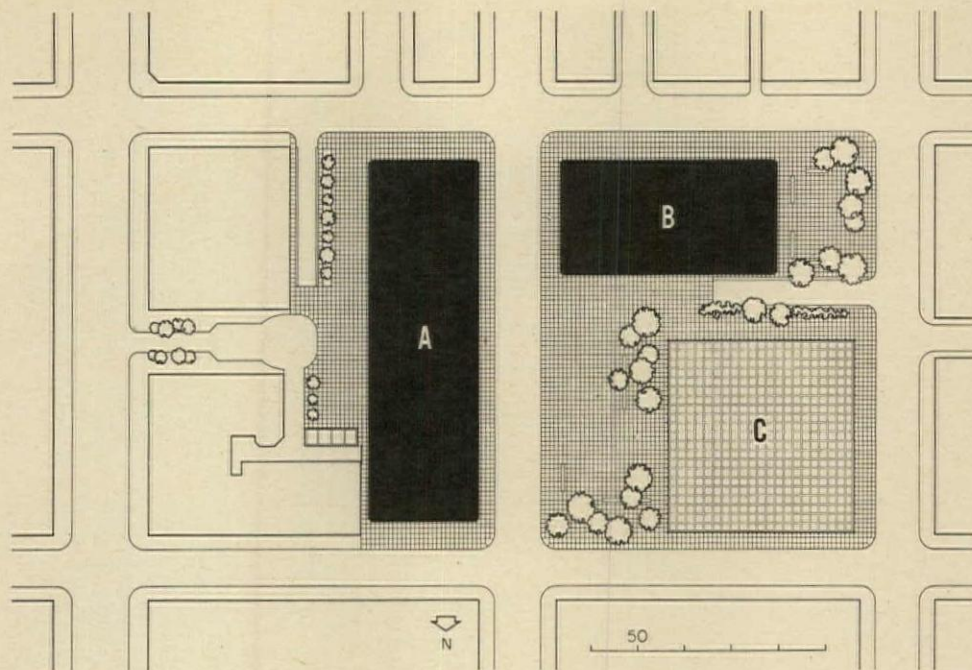
New York, New York 10017





MIES DESIGNS FEDERAL CENTER

Designing the new Federal Center in Chicago gave the architects—four associated firms with Mies as design lead—a rare opportunity to plan some open space in the heart of the Loop



A. 30-story courthouse and office building. B. 43-story office building. C. Post office

OPEN SPACE IN CHICAGO'S LOOP

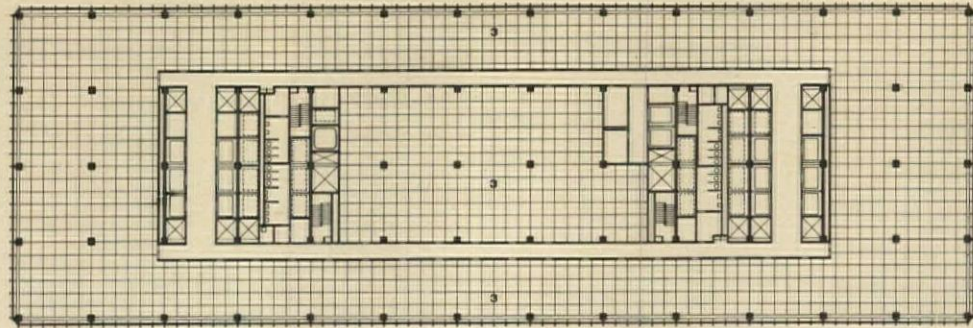
With less than 50 per cent of its block-and-one-half plot covered by buildings, the Federal Center in Chicago will provide some badly needed open space in the heart of that city's tightly-packed Loop area. The amenity of the carefully planned and landscaped plazas will be enhanced by the calm sparseness of Miesian architecture. The plan above and model photographs at right show the disposition of the three buildings comprising the center. The 30-story courthouse and office building, A in the plan and at left in the photo, was recently completed and is shown on the seven pages that follow. The 43-story office building, B in the plan, and the single-story post office, C in the plan, are now under construction. The entire complex is scheduled for completion in January 1968.

Mies has made the most of the open spaces, and the buildings play a key role in the concept. The courthouse and office building houses a glass-enclosed "great hall," 100 feet wide and 25 feet high, at mid-point (see plan, page 128). This sizeable space will serve as a gateway connecting the center to a cul-de-sac street (Quincy) which leads east to State Street. The net result will be a straight visual shot from State Street through the aforementioned lobby and on across Dearborn Street to the heart of the large plaza in front of the low post office. It is interesting to note—in the plan above—that each building will have its own plaza; and that the largest plaza will be centrally located and at the point of maximum pedestrian traffic.

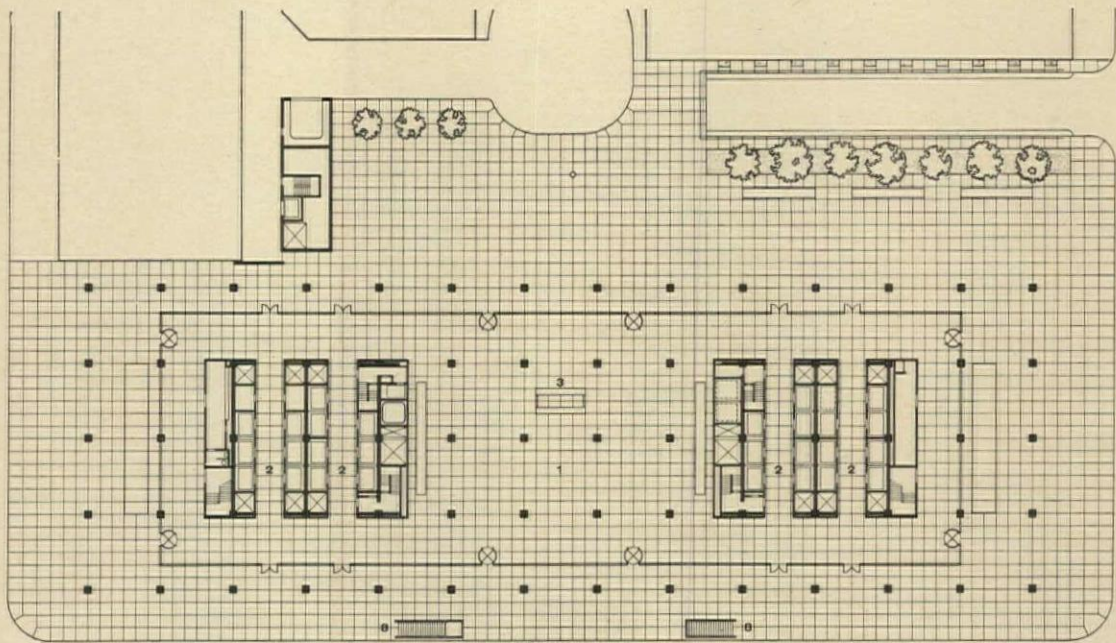
The two towers will be disposed much as the Lake Shore Drive Apartments, an arrangement that will offer the observer an interestingly changing visuality from various angles. In the more practical sense, occupants will benefit from minimum obstruction of outlook. The post office is shown in the model photographs as a clear span building with an overhead plate girder and a peripheral bearing wall composed of structural mullion-columns. It has been redesigned—and will be built—as a more conventional steel cage of three bays on a side.



Hedrick-Blessing photos



TYPICAL OFFICE FLOOR



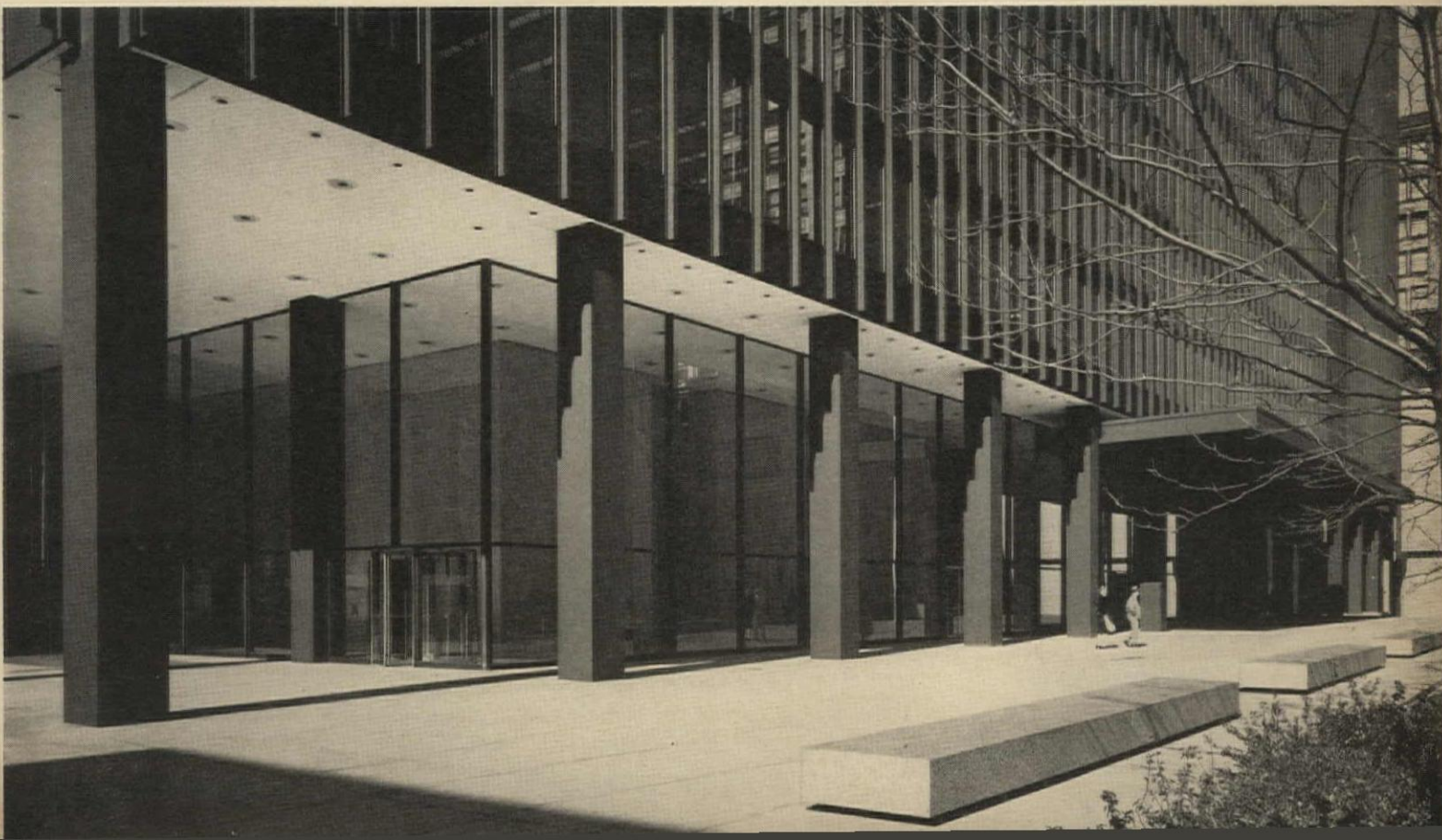
GROUND FLOOR

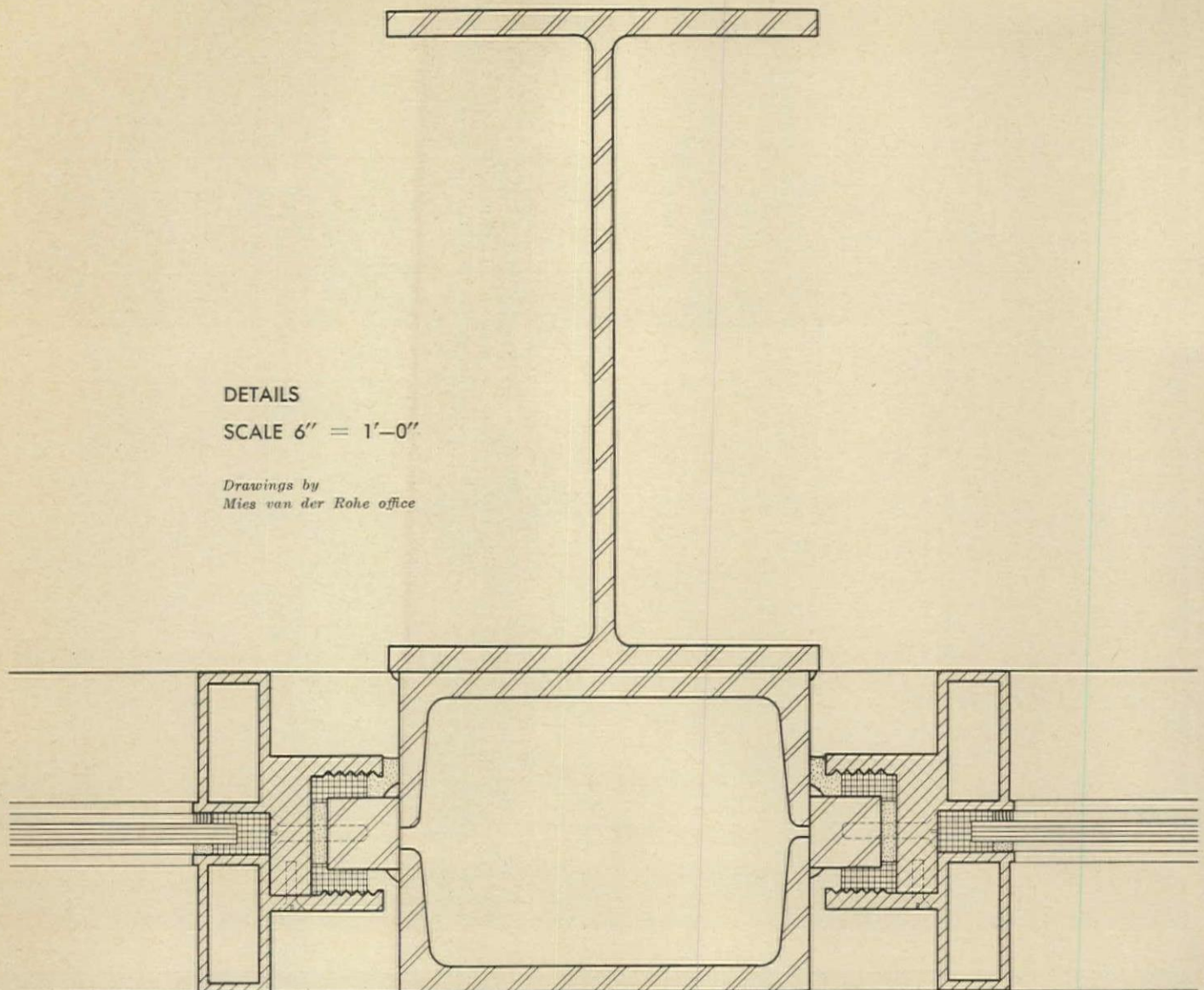
COMPLETED COURTHOUSE AND OFFICE BUILDING

The serene face and lean elegance of Miesian architecture have great merit in a dense urban situation. The pleasing shapes and sizes, artful proportions, and meticulous detailing—already on view in the courthouse building—will add a large measure of visual delight to the Federal Center.

The courthouse building's unusual plan and double core are due in large part to the arrangement of those upper floors housing the actual courtrooms; refer to plan, page 132. The scheme does clear the way for the central "great hall" at ground level. The building is framed in 28-foot-square bays; is 4-bays wide and 13-bays long; mullions divide each bay into 6 modules of 4 feet 8 inches each. Movable partitions, acoustical ceilings, and units for lighting and air conditioning are all keyed to the basic building module, providing great flexibility of division and use.

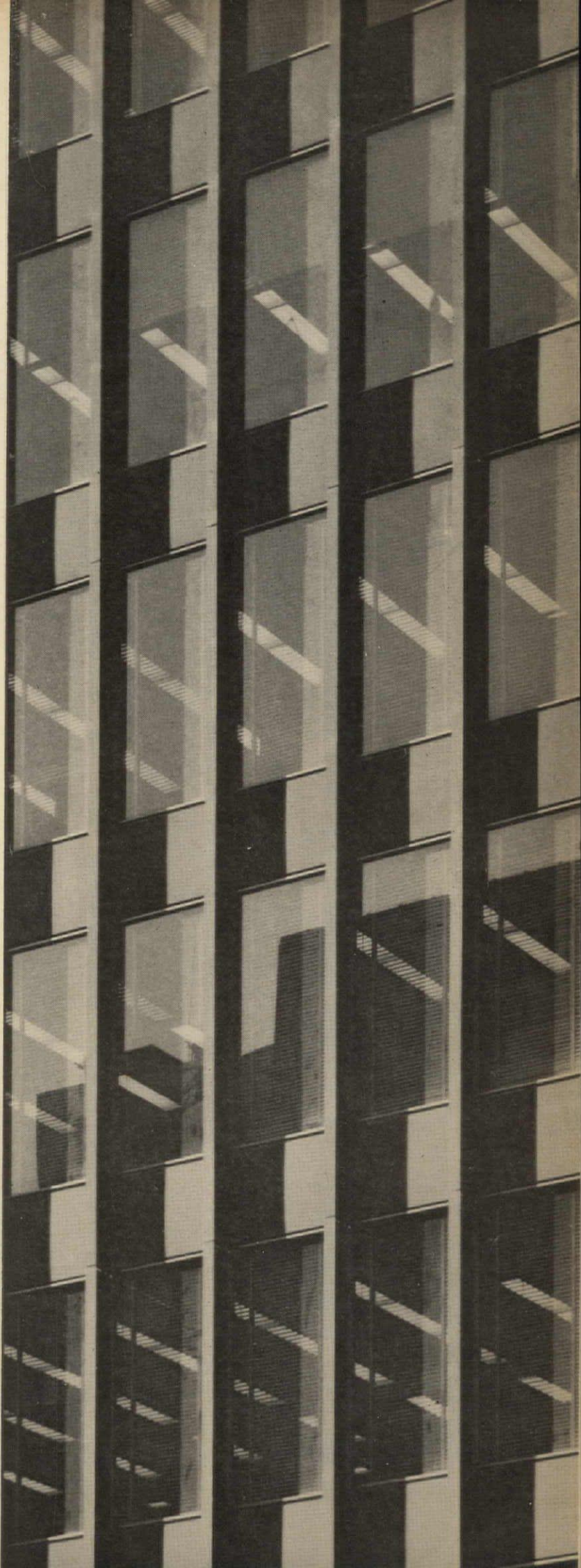
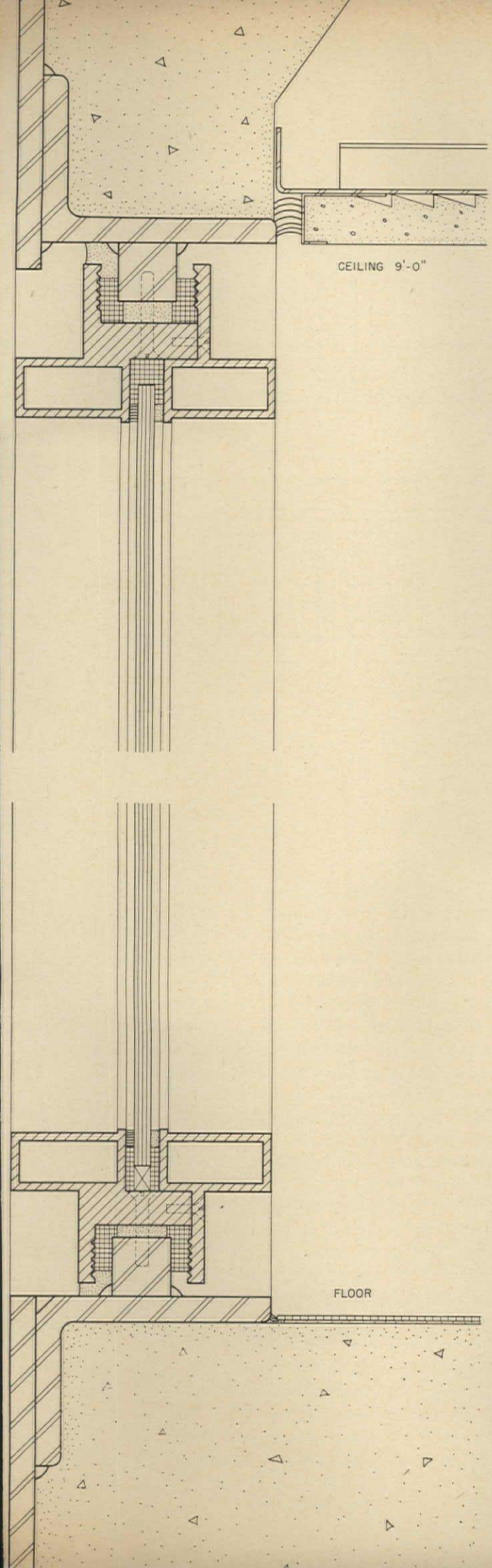
Architect Karel Yasko, assistant commissioner for design and construction, GSA, in discussing his experience with Mies in the construction of the courthouse says: "It was an exciting experience. The Mies philosophy—that construction is design; is, in fact everything—came clear as the intricate parts began to fit together with ease. Everything worked; there was no head scratching. This clarity, plus CPM scheduling, enabled us to make beneficial occupancy six months ahead of the original completion date, thereby saving the government \$400,000 in rent."

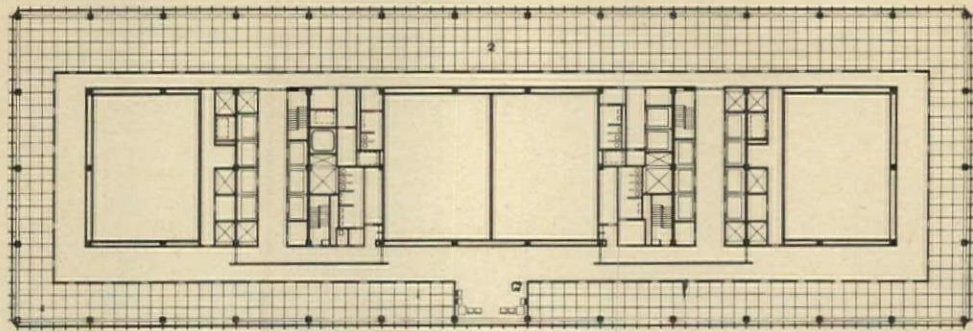




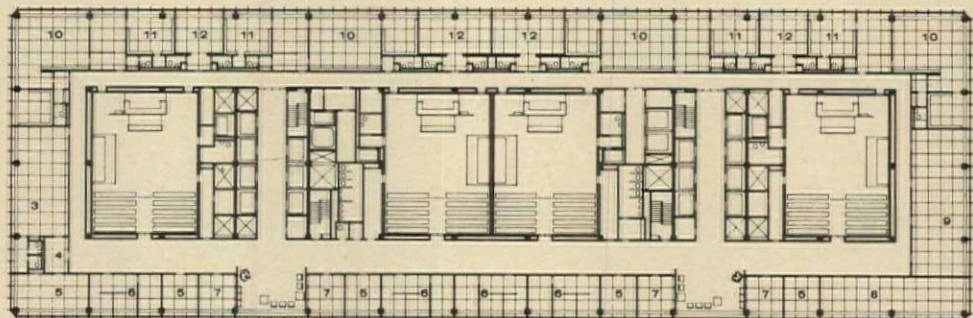
CURTAIN WALL DETAILS

One-half size details of the curtain wall—the mullion above and vertical sections at ceiling and floor on the right page—reveal the familiar Miesian refinements in even more sophisticated terms. The $\frac{7}{8}$ -inch-square lugs facilitate installation of the aluminum window frames, which are shop constructed with corner reinforcement for weather-tightness. Note how aluminum windows are insulated from steel mullions and spandrel assemblies to prevent electrolysis; note inside glazing for ease in handling glass. The plaster ceiling is aligned with the under side of the head angle; the asphalt tile floor comes against the outstanding toe of the sill angle. Concrete fireproofing for the spandrel beam is poured directly against the $\frac{3}{8}$ -inch steel spandrel fascia and the reinforcing angles at top and bottom; a procedure that eliminates spandrel flashing and makes for a more weather-tight construction. All exposed steel is finish-painted with a graphite paint that produces a velvety black surface; the aluminum frames add precise, bright pencil lines to the facade pattern and enliven it; the glass is bronze in color, and absorbs a measure of the sun's heat.





COURT ROOM FLOOR - UPPER LEVEL



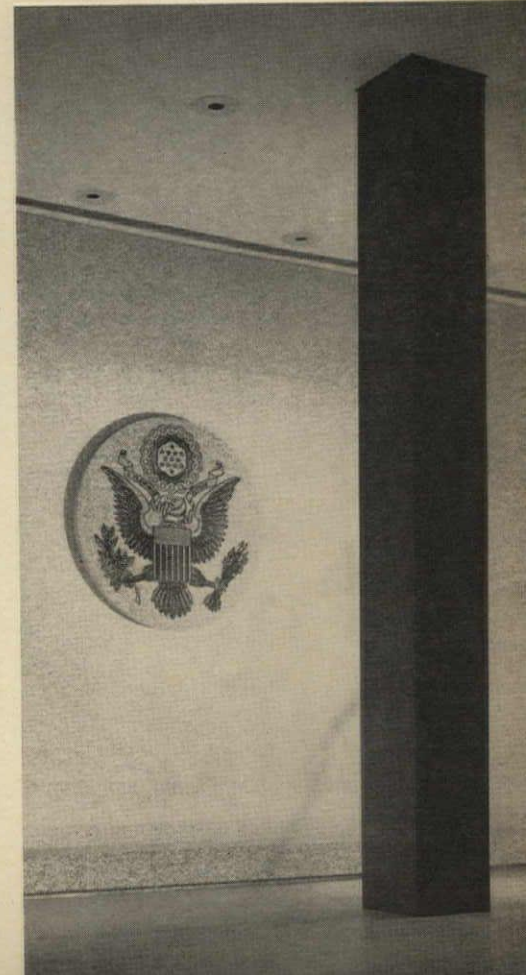
COURTROOM FLOOR - LOWER LEVEL

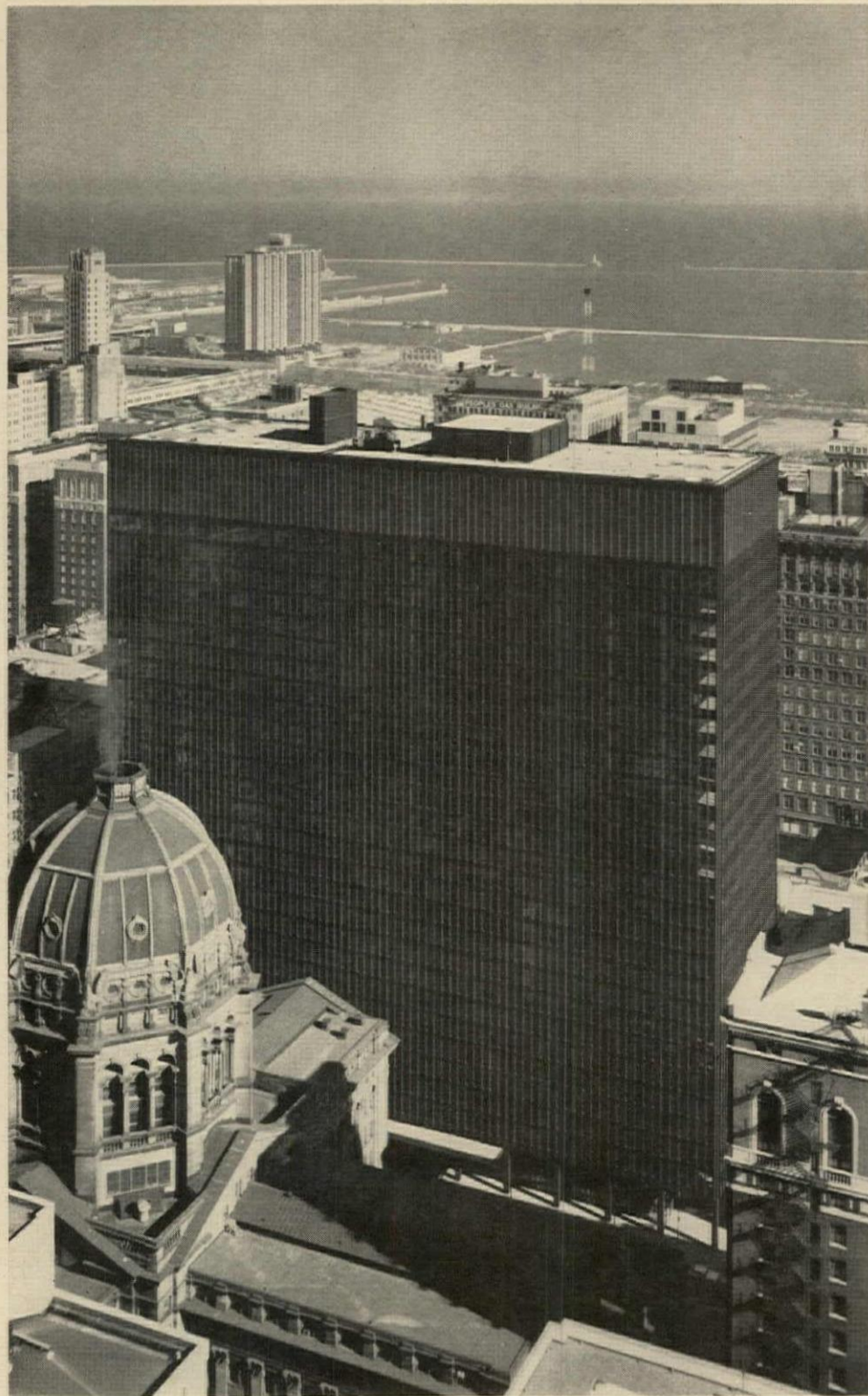
INTERIORS: COURTROOM AND LOBBY

The major function of the building is the provision of 15 courtrooms, each two-stories high, in the upper part of the tower; floors 17 to 27. There are built-in arrangements for expansion, so that 20 courtrooms can be furnished without revising structural or mechanical systems. As the plan above shows, each courtroom is inside-located for sound isolation and elimination of visual distraction, and is served by a private elevator system. Peripheral offices at courtroom level, and on the alternate floors between, are occupied by individuals and agencies that comprise or support the court system. Circulation is carefully worked out: the judge's private elevators connect to underground parking; four special elevators carry prisoners to cells adjoining the courtrooms; jurors use the private corridor (towards top of plan), as do judges, lawyers and staff; the public is restricted to the wide corridor (towards bottom of plan) serving the courtrooms.

The upper photo at right shows a typical courtroom, approximately 42 by 56 feet in area and with an 18-foot ceiling, designed by the architects. All woodwork—including wall paneling, low partitions, judge's bench, attorney's tables, and molded plywood spectator benches—are of matched black walnut. The panels of vertical strips are designed for sound control. The luminous ceiling is composed of cast aluminum egg-crates supported by aluminum T's forming 17-inch squares. The wool carpeting is gray-brown in color; all chairs are upholstered in black leather.

The two lower pictures at right are of the lobby, which has a white plaster ceiling and floor of Rockville granite with a honed finish. The steel-clad columns are painted flat black, as is the glass wall framework. Core walls are of Rockville granite with a flame finish; the revolving doors are stainless steel.



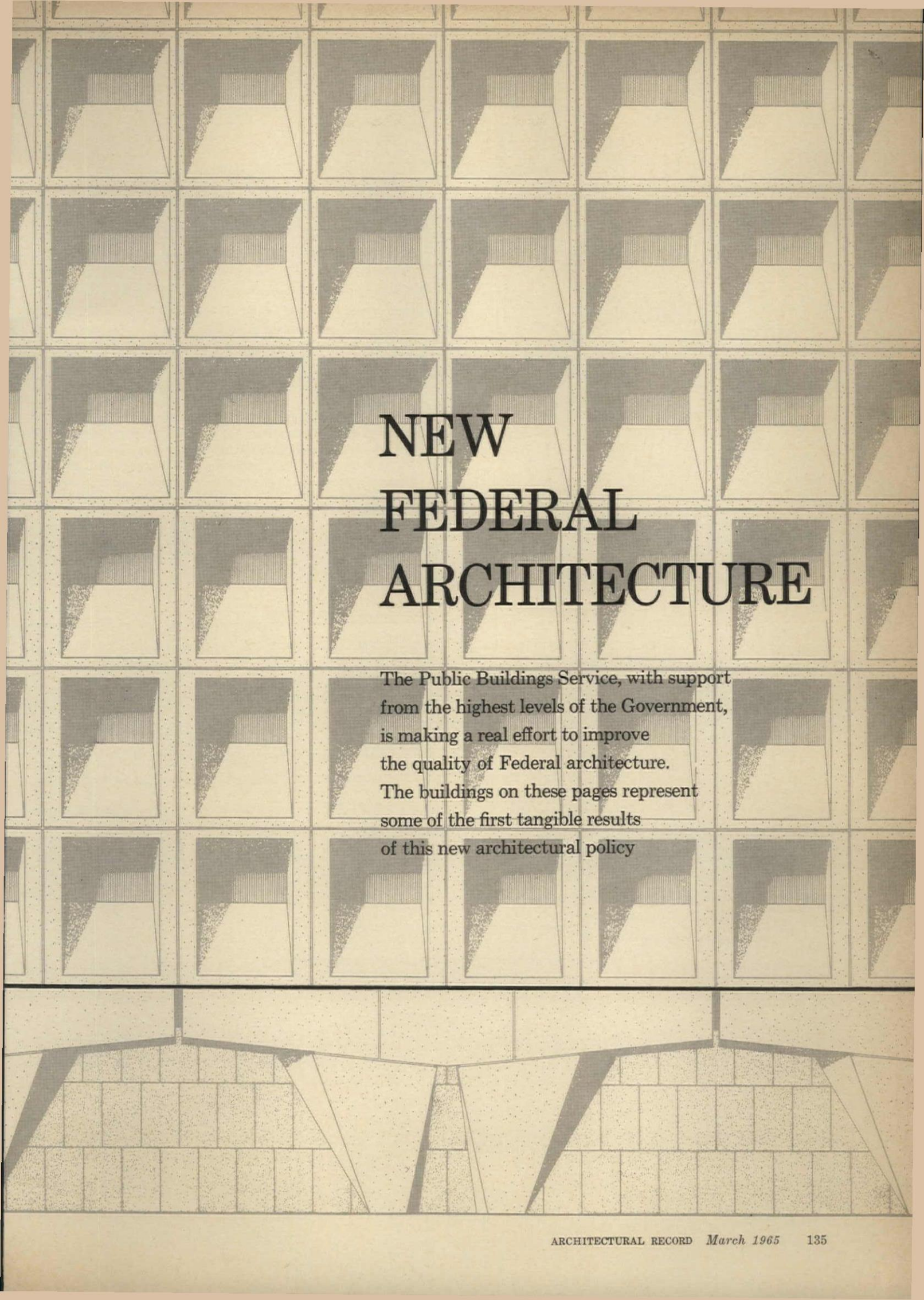


*United States Courthouse and Office Building
The Federal Center, Chicago, Illinois*

CLIENT: General Services Administration

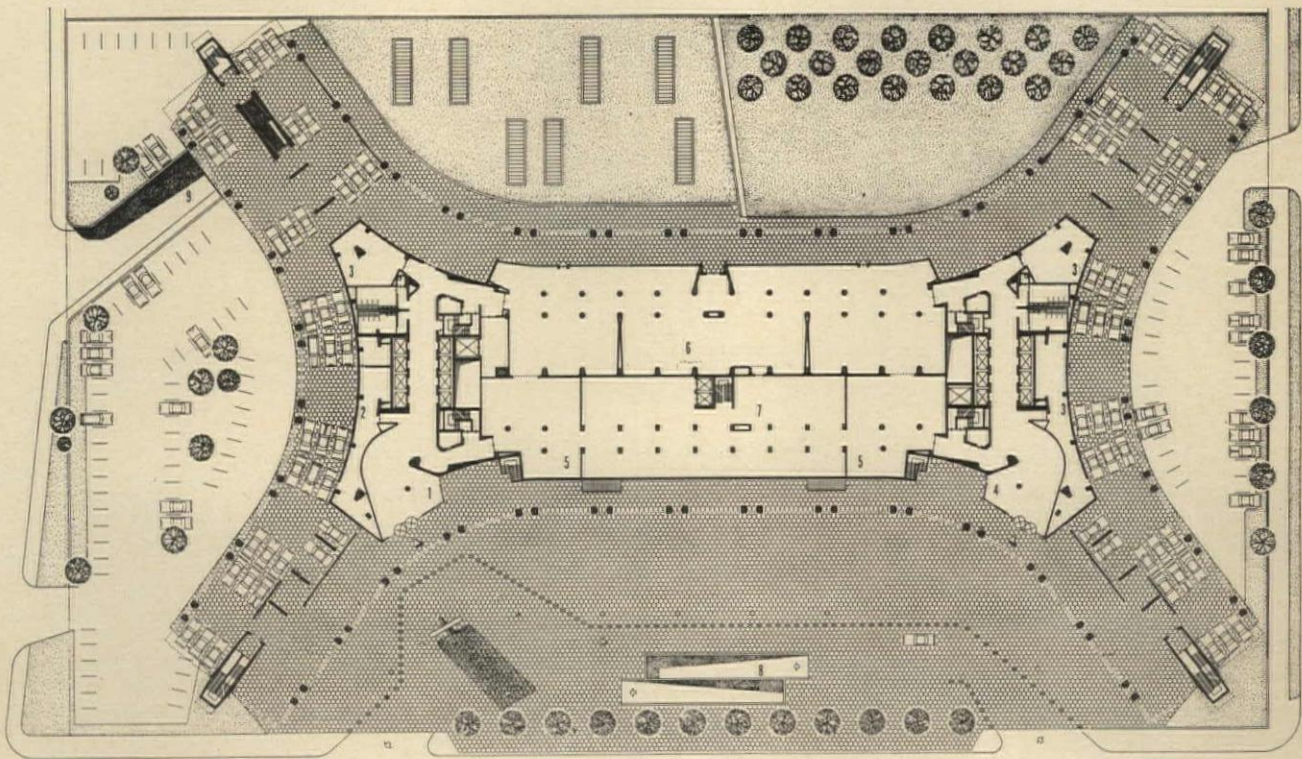
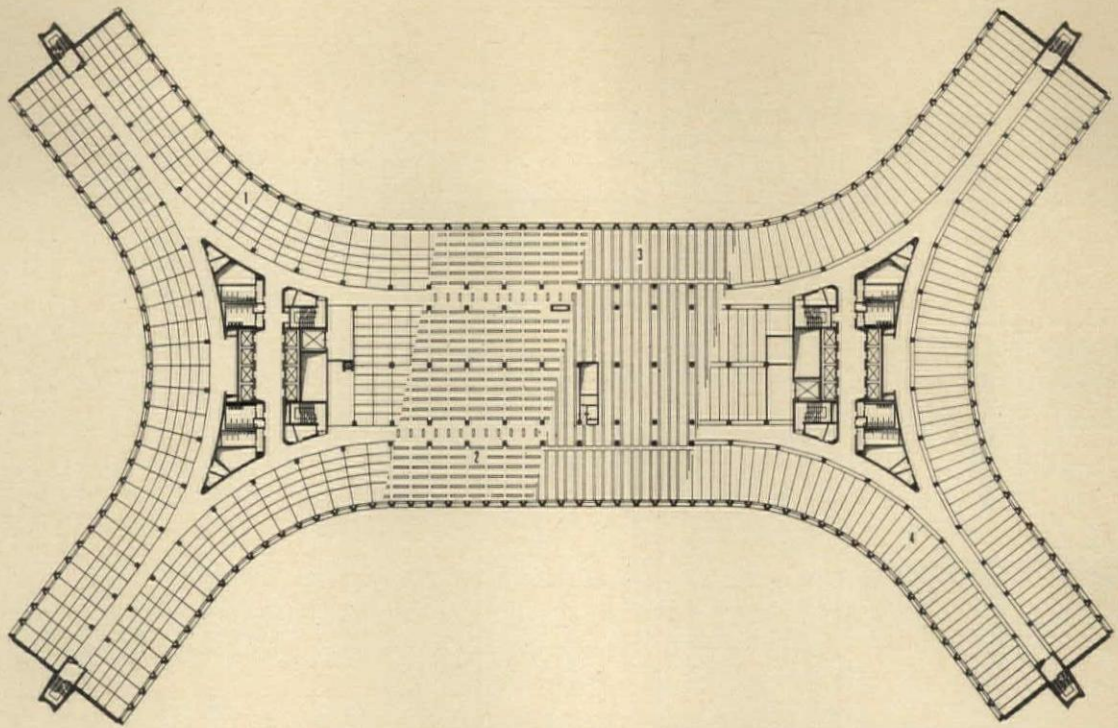
*ARCHITECTS: Chicago Federal Center Architects
a joint venture of Schmidt Garden & Erikson, Ludwig Mies van der Rohe,
C. F. Murphy Associates and A. Epstein & Son*

*CONTRACTORS: A. L. Jackson Company, substructure
Paschen Contractors, Inc. and Peter Kiewit Sons Company, superstructure*



NEW FEDERAL ARCHITECTURE

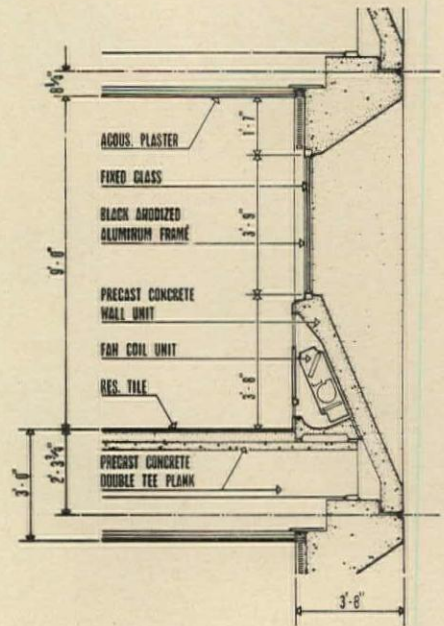
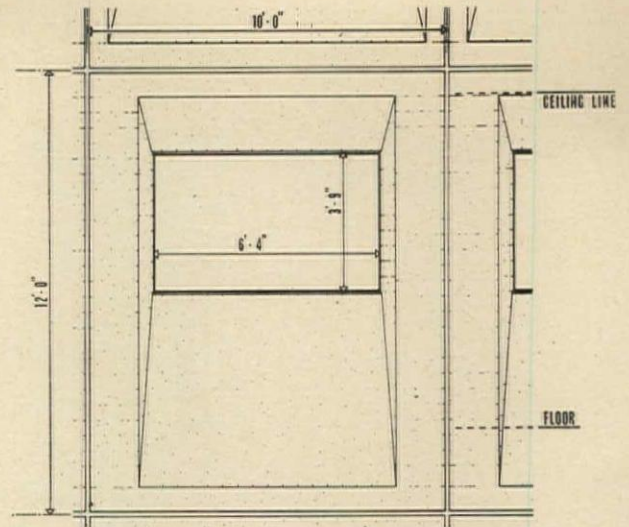
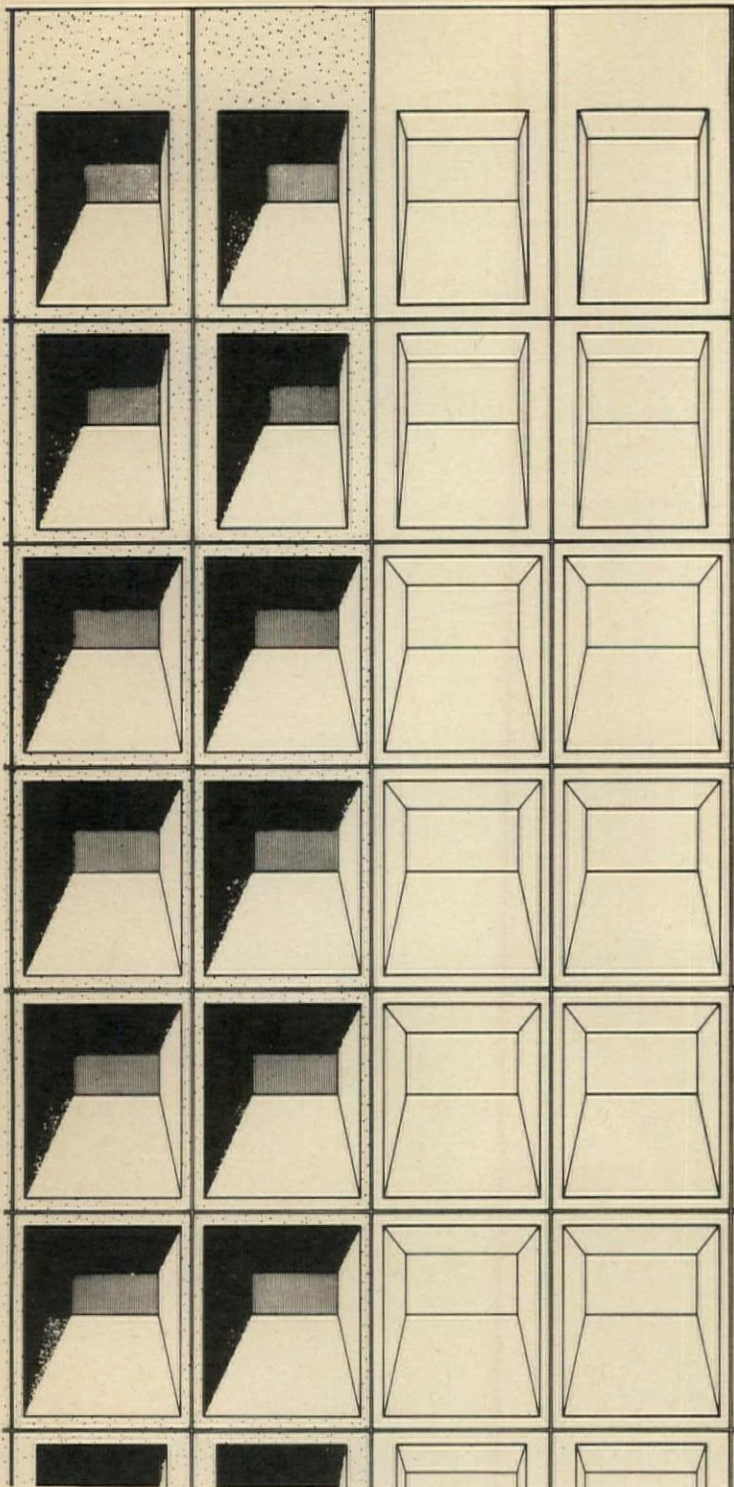
The Public Buildings Service, with support from the highest levels of the Government, is making a real effort to improve the quality of Federal architecture. The buildings on these pages represent some of the first tangible results of this new architectural policy



for all Government buildings within the United States, except for military installations, post offices and the Capitol itself. Changes set in motion when Leonard Hunter was assistant commissioner for Design and Construction (the chief architectural post at the GSA), and the full support of good design objectives from high levels of the administration, have given Hunter's energetic successor, Karl Yasko, far more freedom of action than any of his predecessors. The effects of Yasko's direction are visible in the

HHFA Building, and in the three other new buildings shown on the following pages.

The form of the HHFA office building was closely determined by the restricted nature of the site and the program requirements of the client. The building will ultimately need to accommodate 6,000 people, and the HHFA wished to house as many of them as possible in peripheral office space. The site is not only small, and bounded on all sides by streets, but also adjoins the proposed L'Enfant Plaza redevelopment,



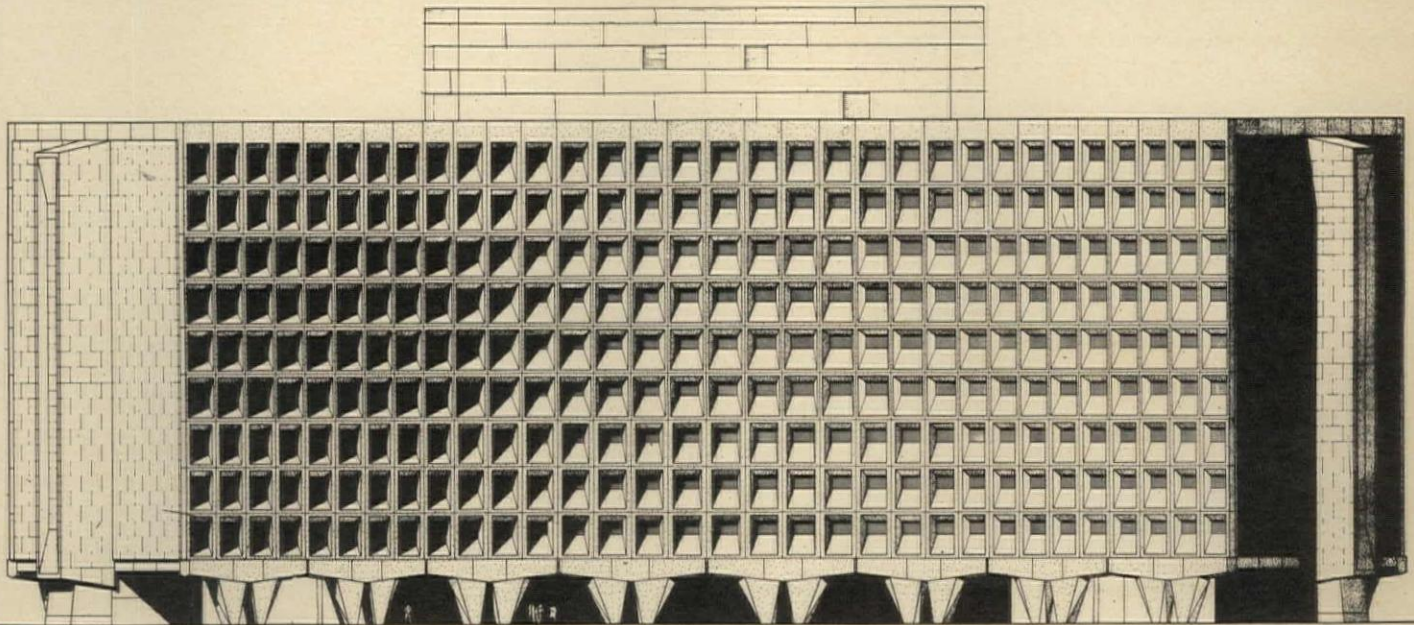
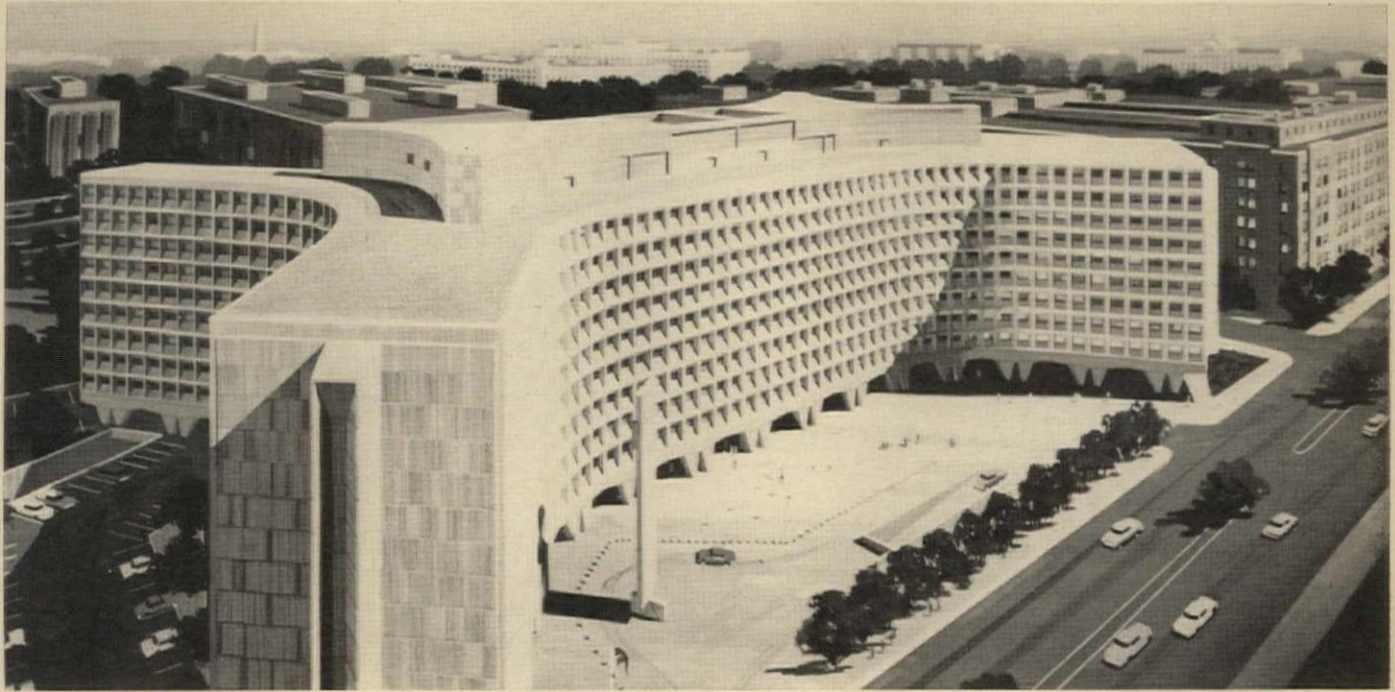
The building's 10-foot module is expressed by the structural wall units. The loads are carried down to supports which are not so much double columns as a large single column from which an inessential central portion has been omitted

which contains a building that bridges Ninth Street and comes right up to the lot line.

The building form that evolved, and which is related to Breuer buildings for UNESCO and for IBM in Nice, France, solves both problems neatly. It draws back from the lot lines, except at the corners, and most of the office space is only 30 feet deep.

The building is approached from a large vehicular courtyard paved in hexagonal concrete blocks. A tall sculpture, which the architects refer to as a "banner,"

marks the main motor entrance. The ground floor, set back behind the pilotis that carry the structural wall, contains the lobbies and a cafeteria that looks out on a landscaped court on the opposite side of the building. There is a parking garage in the basement, and additional cars are accommodated at grade. These have been made as inconspicuous as possible, with some parking places actually under the building itself. The nine office floors are all similar, with the mechanical equipment being fed from the penthouse.



The basic 10-foot module is expressed by the structural window units, which transmit their loads to pilotis that are not so much double columns as large single columns from which an inessential central portion has been omitted. Pre-cast concrete double tees span 30 feet from the outer face to a poured-in-place continuous beam, supported by columns on 30-foot centers. The frame of the interior portion of the building is poured-in-place concrete, as are the elevator cores, which provide lateral stability.

Fan-coil units in the window wall serve the peripheral area, with an otherwise conventional duct system serving the rest. The suspended ceiling acts as the return plenum. Diffusers, lighting and under-floor wiring are arranged to provide the greatest possible flexibility.

The GSA was impressed with the speed and directness with which the architects answered a difficult problem. The architects in their turn have found the GSA a client for whom they can do their best work.



The National Air and Space Museum, Washington, D.C.

ARCHITECTS: *Hellmuth, Obata & Kassabaum
Mills, Petticord & Mills*

DESIGNER AND PRINCIPAL IN CHARGE: *Gyo Obata*

STRUCTURAL CONSULTANTS: *The Engineers Collaborative*

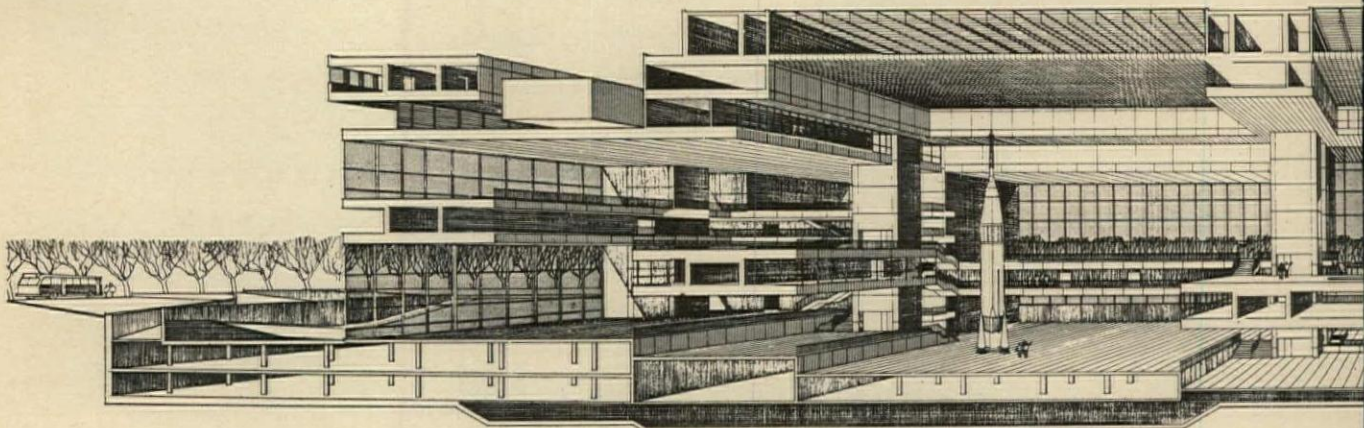
MECHANICAL ENGINEER: *Harold P. Brehm*

LIGHTING CONSULTANTS: *Seymour Evans Associates*

FOOD SERVICE CONSULTANTS: *Flambert & Flambert*

ACOUSTICAL CONSULTANTS: *Bolt, Beranek & Newman, Inc.*

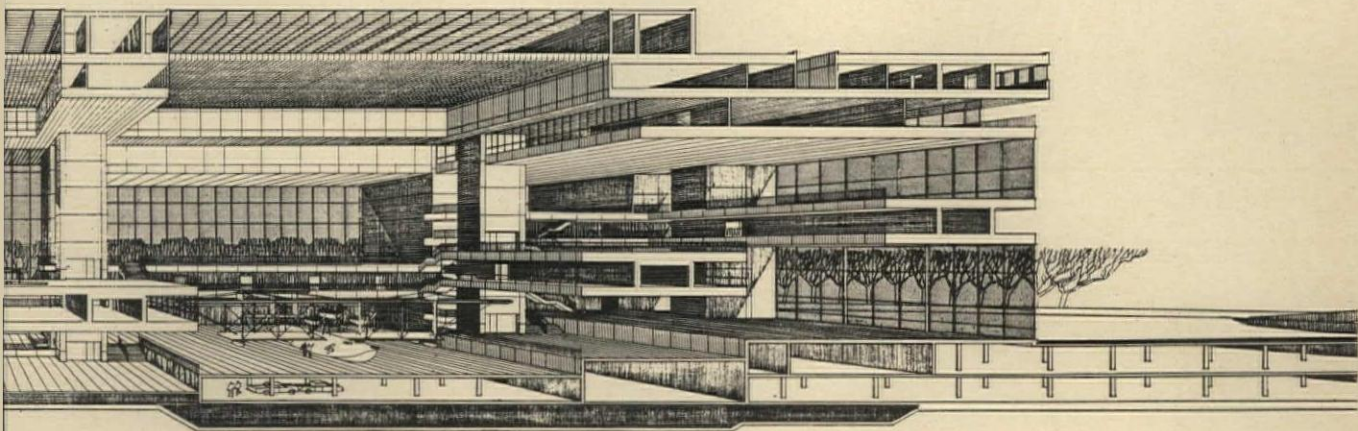
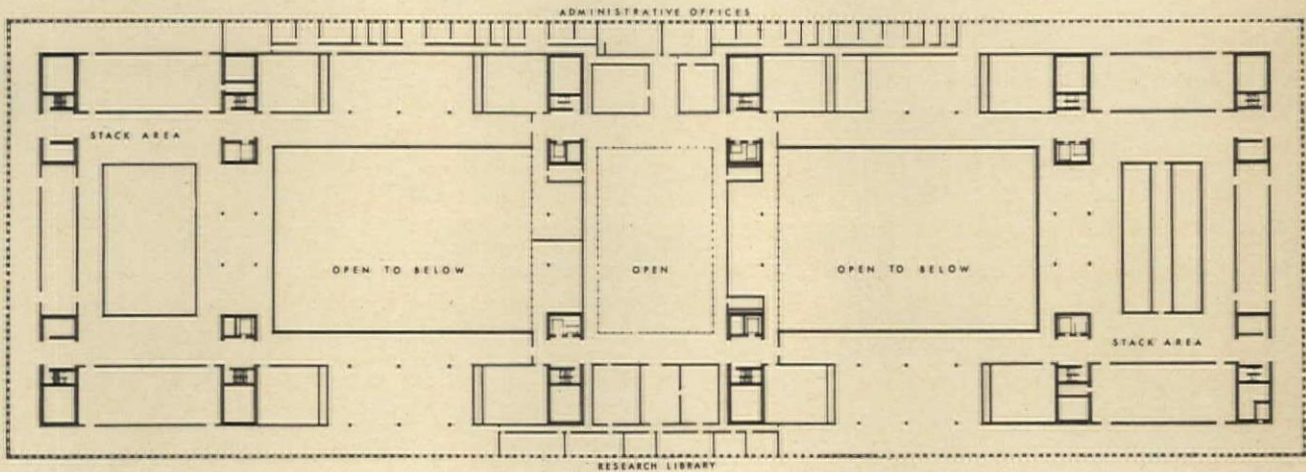
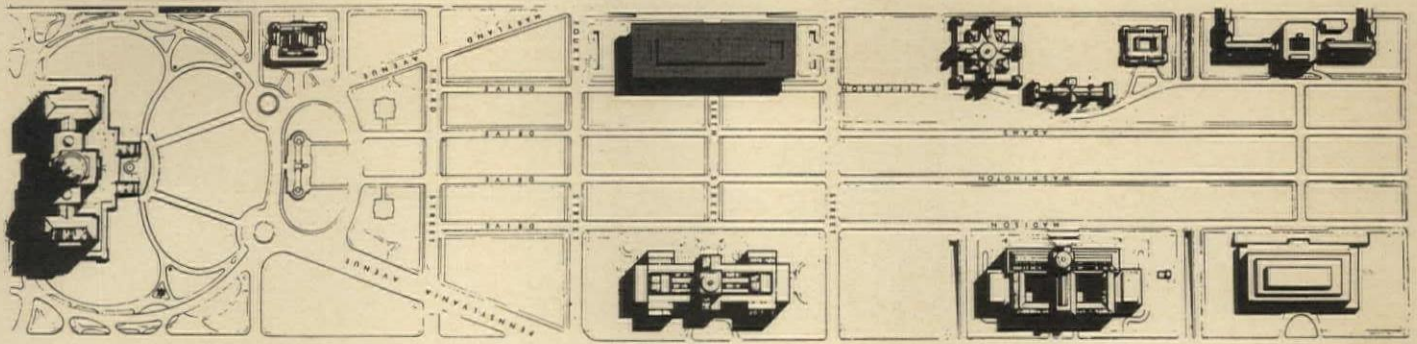
Above: View of the National Air and Space Museum from the Mall. Below: Section perspective looking towards the Mall from the Independence Avenue side of the building. Above right: Site plan showing the relation of the new museum to the Mall and the Capitol. The building will be the same length as the National Gallery across the Mall, and the proportions of the bay sizes have been arranged to reflect the projections of the neo-classical gallery. Right: Plan of the office and library floor, which forms a cornice at the top of the building



A MUSEUM FOR THE SPACE AGE

The National Air and Space Museum will occupy a prominent site in Washington right on the Mall, opposite the National Gallery and only a few blocks from the Capitol itself. The new museum will house the Smithsonian Institution's collection of historic airplanes, missiles and other relics of the air and space age.

This type of exhibit involves two seemingly contradictory requirements. The planes and missiles need a great deal of space around them, otherwise

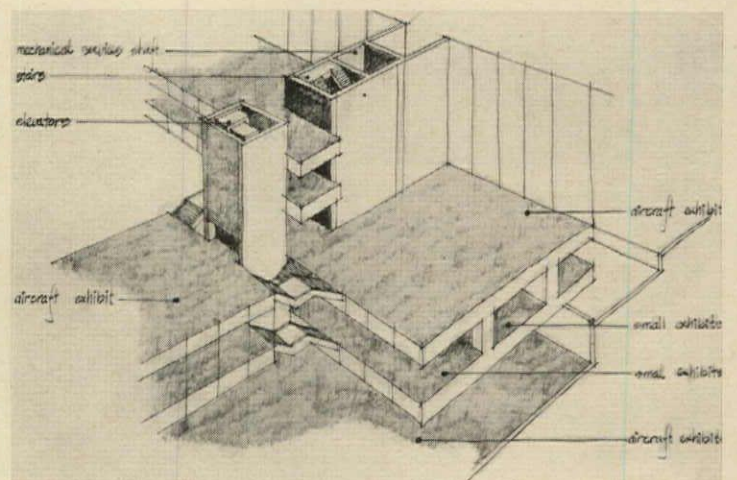
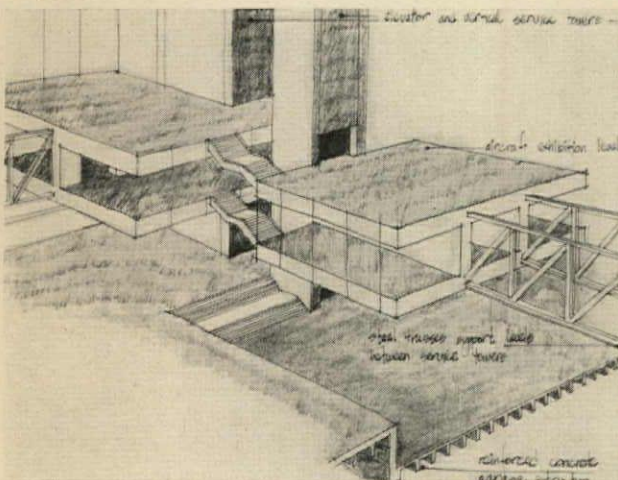
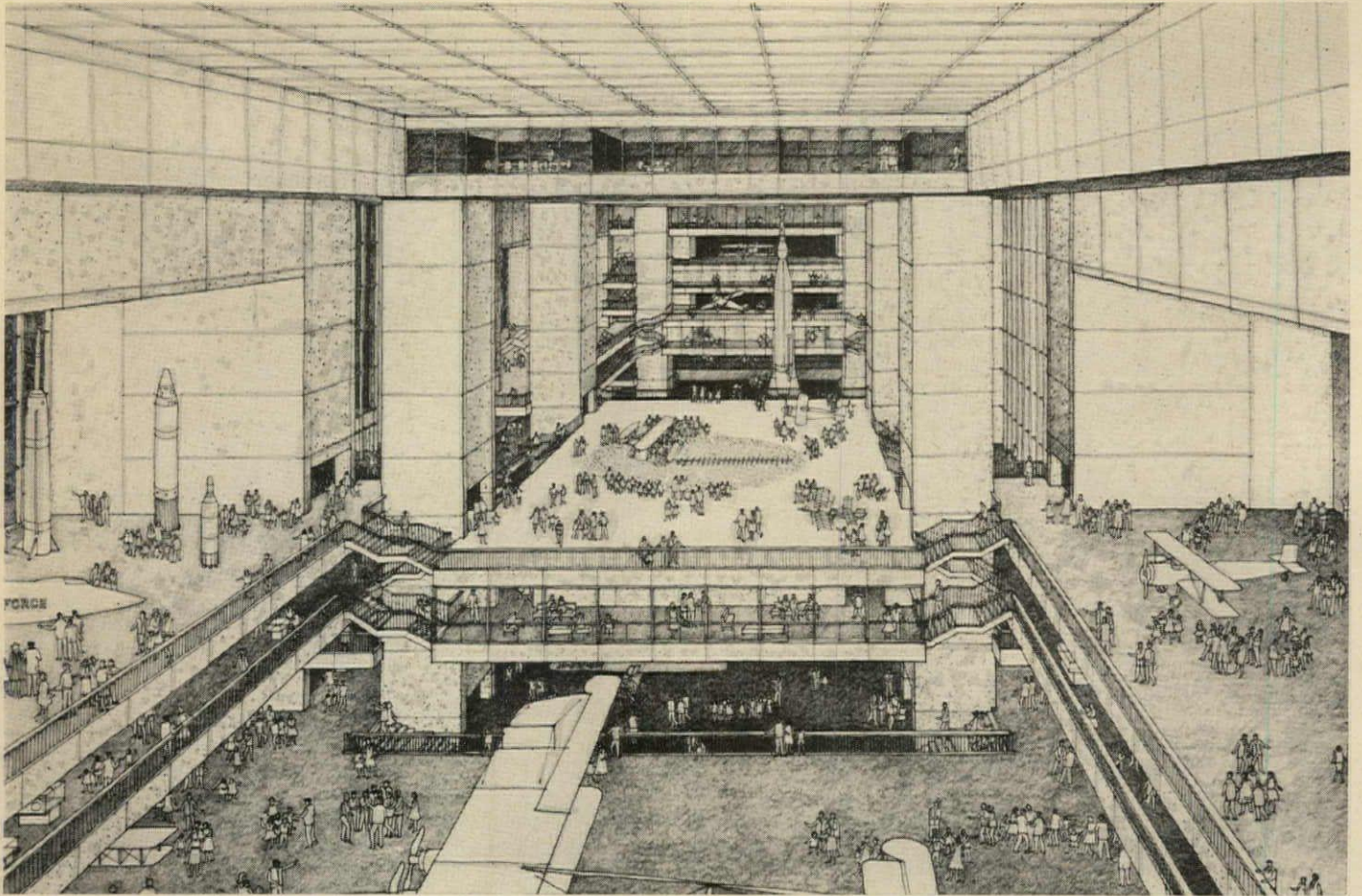


their scale is lost. At the same time, it is necessary for the public to get close enough to the exhibits that it can see them clearly.

Gyo Obata's solution was to organize the plan around 12 towers, which form the supporting portion of the structure and house all vertical circulation and mechanical equipment. Deep steel trusses span between these towers and support large areas for the display of missiles and planes. The trusses house within themselves smaller, special exhibit spaces,

and provide galleries from which to view the large halls. The result is a series of inter-penetrating large and small spaces which permit the public to view the exhibits from many different levels and angles.

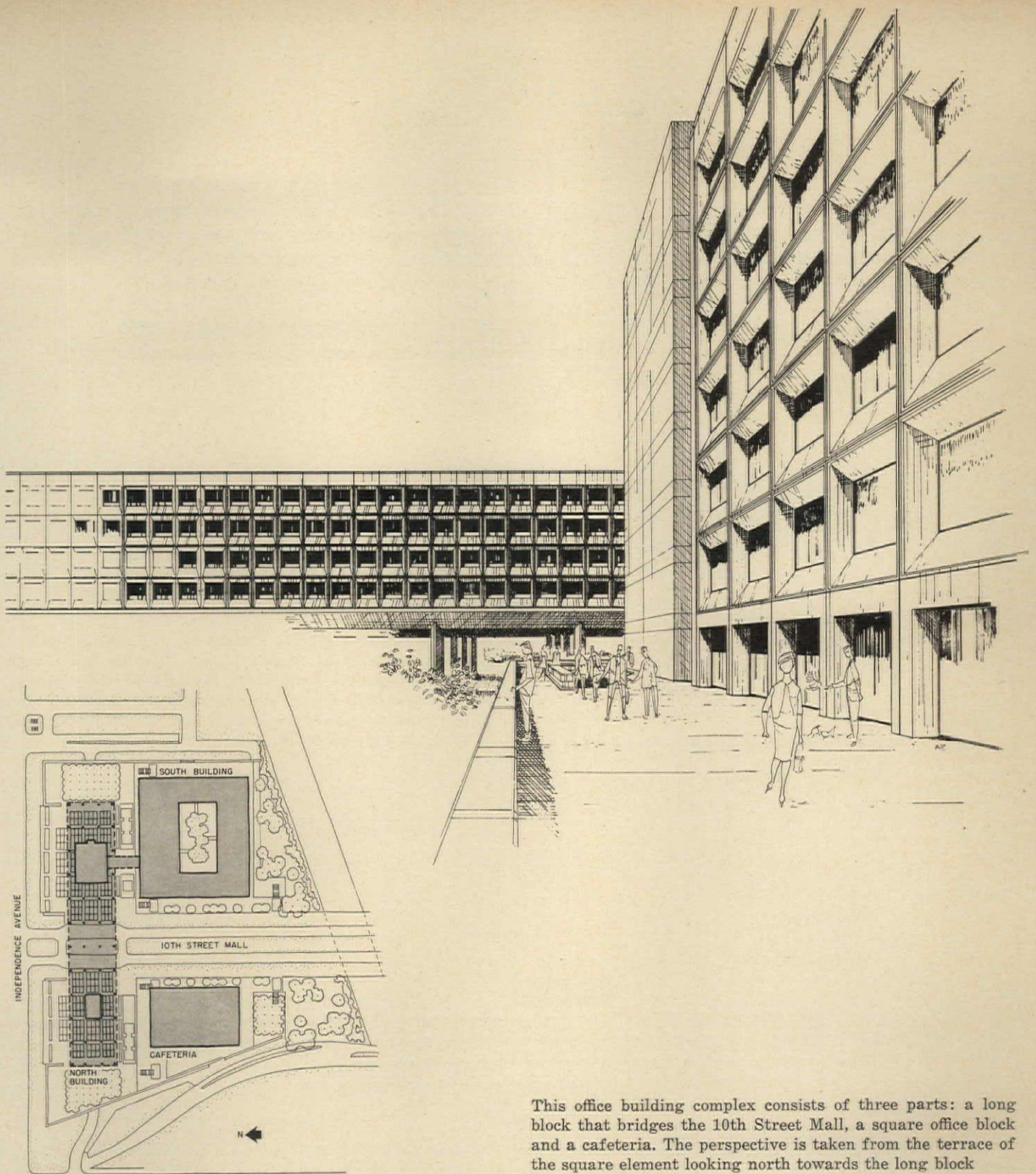
The Air and Space Museum is about the same length as the National Gallery across the Mall, and the building's 12 towers have been arranged to reflect, in some respects, the modeling of its neo-classical counterpart. The main entrance hall is accessible from both the Mall and the Independence Avenue



sides. The north elevation, facing the mall, has large projecting areas of glass, expressing the pattern of trusses and towers. The south facade has been left without windows, except at the entrance hall. The building will contain a garage for 1,200 cars in two basement levels, five levels of exhibition space that move through, and around, the skylit entrance hall and two skylit interior courts, a mechanical floor with space for a restaurant looking out towards the Capitol, and then, forming a cornice at the top of the build-

ing, the administrative offices and research library.

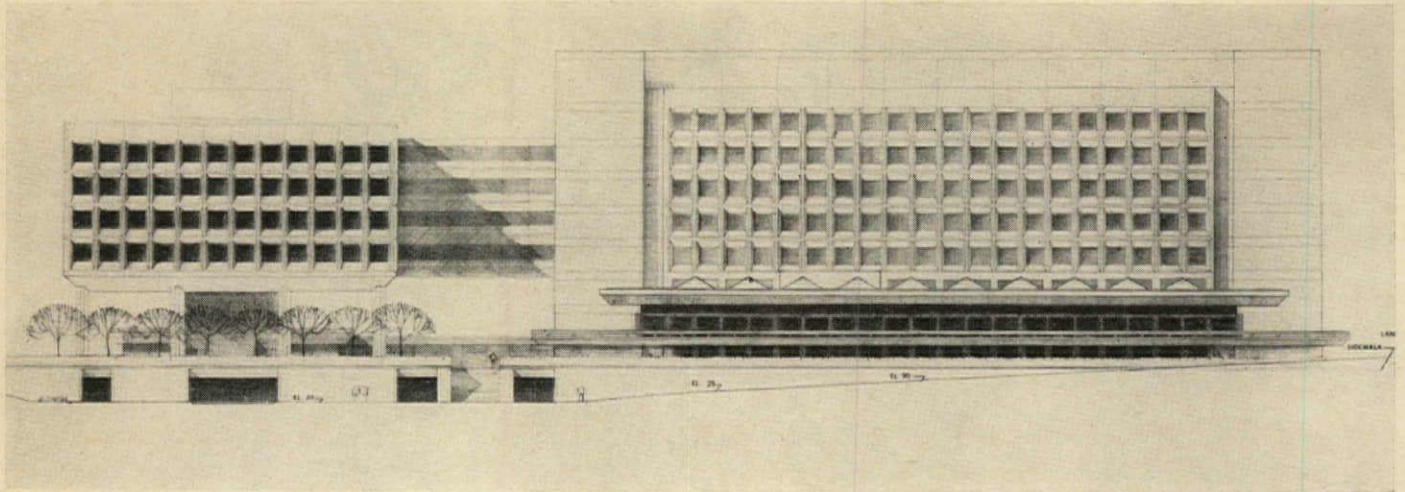
The architectural expression is forthright, and a strong continuity is maintained from interior to exterior. The concrete will be left exposed and not veneered with the marble surface that is usually considered synonymous with an important government building. The architect feels, and the client and the Fine Arts Commission agree, that a veneer of stone blocks would be false to the monolithic nature of the construction.



This office building complex consists of three parts: a long block that bridges the 10th Street Mall, a square office block and a cafeteria. The perspective is taken from the terrace of the square element looking north towards the long block

OFFICE COMPLEX BRIDGES NEW MALL

This unusually large building, almost 2,000,000 square feet of gross area, occupies an irregular site, bounded by two super highways and a railroad, and divided by the Tenth Street Mall. The architects decided that the only way to produce a unified design would be to bridge Tenth Street, an idea which required Congressional approval. The south block, which is 660 feet long, is raised 30 feet off the ground, with the object of permitting the space of the mall to flow under the building without interruption. Pedes-

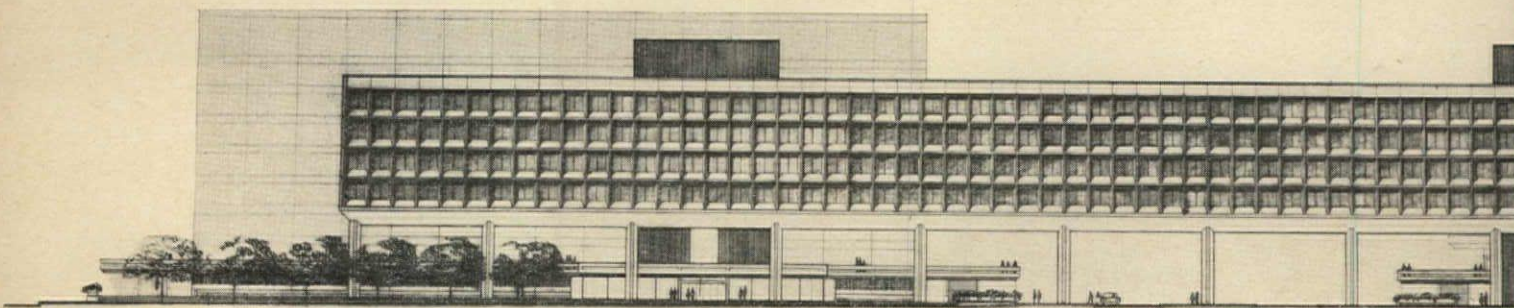


Federal Office Building No. 5, Washington, D.C.

ARCHITECTS AND ENGINEERS: *Curtis and Davis*
Fordyce & Hamby Associates
Frank Grad & Sons

LANDSCAPE ARCHITECTS: *Robert Zion and Harold Breen*

Above: Elevation from the 12th Street Expressway. Below: Elevation from Independence Avenue showing how North Building bridges the Tenth Street Mall. Above right: Section through both office blocks showing design of interior court. Right: Plan of typical south block office floor and partial plan of north block typical floor

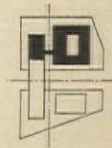
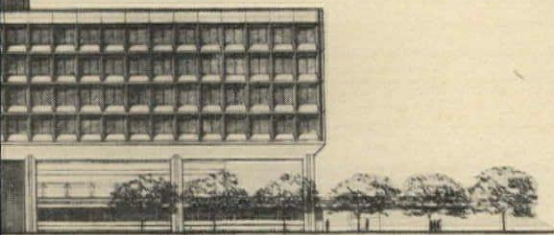
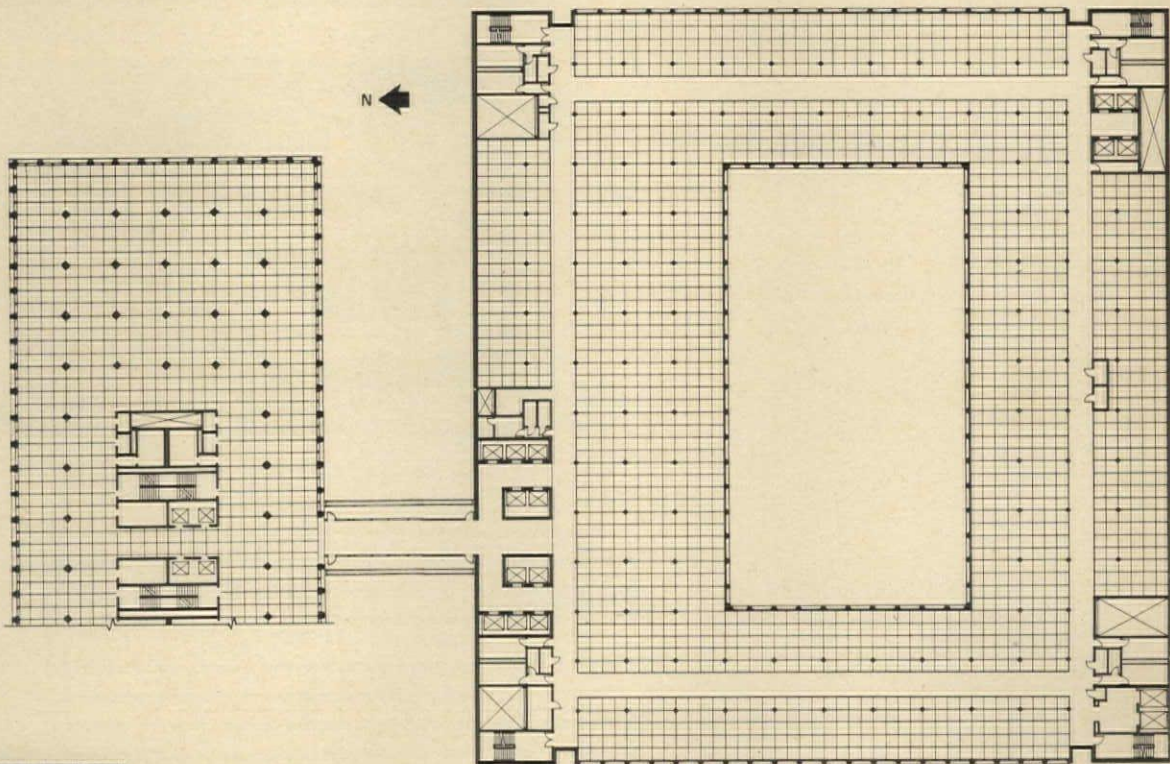
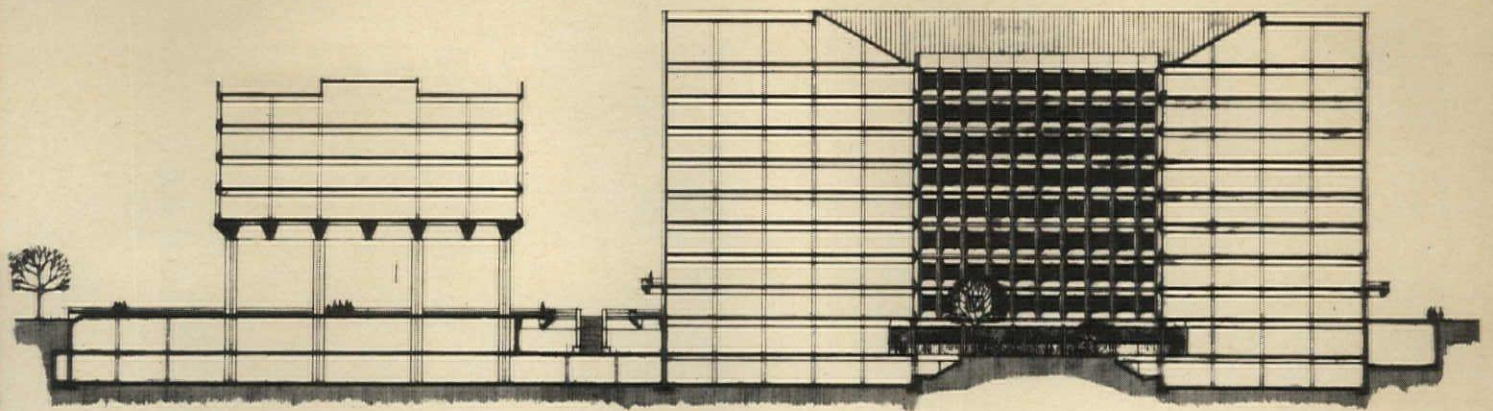


trian traffic across the site follows a lower level passage, lighted by open courtyards, that runs under Tenth Street, thus separating communication within the complex from traffic running through the site. Automobile and bus entrances are located at both ends of the pedestrian passage, where it gives on to the highways that form the boundaries of the site.

The original plan called for two symmetrical wings to project from the long block on opposite sides of Tenth Street; but in later stages of the design this

space was consolidated into a single large block, in the form of a hollow square, which is connected to the long block by a bridge. The third element in the composition is a cafeteria building which is open on all sides itself, and which is low enough to open out the whole composition.

The basic architectural problem of the complex is obviously the relationship between the two large blocks, and the design went through innumerable facade studies in an attempt to find the answer. If



the architects had accepted the division of the site, they would have had two buildings, but bridging the street does not seem to have completely solved the problem. At one stage the outer walls of the square block were to have been left completely without windows, thereby making the expression of the two office buildings totally different from each other. In the end, this solution did not prove practicable, but two walls are still left blank, to provide a visual foil for the lighter form of the long block.

Whatever the difficulties of the problem, however, the architects have succeeded in providing a sympathetic environment for the 7,500 people who will eventually work in these buildings. Careful attention has been paid to landscaping, which fills in the irregularities of the site, humanizes the mall, and forms a counterpoint to the building masses. The courtyards, terraces, and unified circulation pattern provide amenities which have just not been present in other Washington buildings of a similar type.

A NEW REGIONAL PLAN TO ARREST MEGALOPOLIS

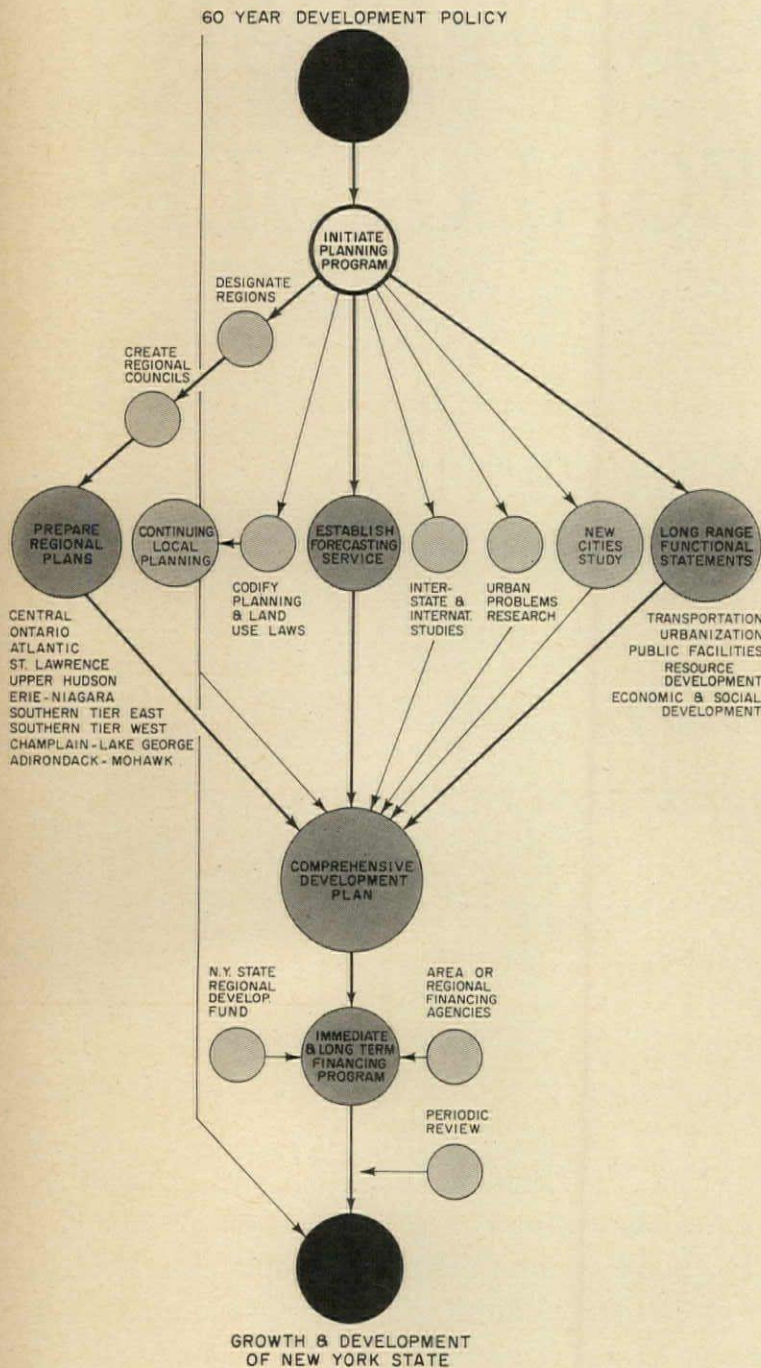
*An appraisal by LEWIS MUMFORD
of New York State's new development program.*

*The noted author and critic considers it a
milestone in public policy, but
warns of weaknesses that need repair*

Under the title, "Change: Challenge: Response," New York State has come out with a basic plan and policy for the future development of its cities, agricultural areas, and recreation and forest reserves, over a period of the next 60 years. The publication of this report should clear the air of the largely meaningless noises that have grown in volume during the last decade on the subject of metropolitan planning and urban renewal: noises that reach a pitch of confused emptiness in the term "megapolis," treated as if it were a new kind of city, instead of the urbanoid mish-mash that it actually is.

Nothing of similar consequence to the arts of improving the environment has been published since the announcement of the Tennessee Valley Authority. While the computers are busily turning out more sophisticated traffic counts, population predictions and mobility estimates, proving that nothing can be done except to "go with" and accelerate the forces that are already in motion, the Office of Regional Development has introduced a hitherto unused factor not embraced by computers or by computer-directed intelligences: the human imagination.

“... this report challenges the false premises



1. The New Departure

The special quality of this report appears in the very first section, which shows the present situation of New York State in the perspective of the whole world community and of the great changes in population growth, technology and urbanization which underlie all plans for improvement. The very existence of New York and its great port depended, as the planners of the Erie Canal first saw, upon forces and movements that have never been entirely under local control.

Planners who lack this perspective remain as bewildered as Mr. Robert Moses over the fact that his traffic remedies have increased the conditions they sought to alleviate. They are baffled by the insight of Benton MacKaye, who in "The New Exploration" observed that in order to overcome the traffic congestion of Times Square it might be necessary to re-route the shipment of wheat through the Atlantic ports. So, too, the Federal Housing Administration's mistaken loan policy, which favored suburban builders, has done as much as Detroit to turn our cities into gaping parking lots.

The quality of imaginative insight lifts much of this planning report—but alas! not all—from the level of the dimly probable to that of the hopefully possible. Instead of accepting wholly the current tendency to allow short-sighted highway engineers, motor car manufacturers, and realty developers to create conditions that no public authority is able to remedy except by beginning all over again, they show, rather, the necessity for a policy of land planning and urban development on a regional scale, carried out under the authority of the state executive. They seek to control disorderly metropolitan growth in already congested areas by spreading urban and industrial development over the entire state.

In getting down to regional bedrock, this report re-establishes the vital contribution made by the first "Report on a Plan for the State of New York," issued by the New York State Housing and Regional Planning Commission in 1926. The new proposals do not merely build upon the work that was so well done almost 40 years ago, but go further in the direction of regional integration. In certain basic assumptions, it is true, the new report has accepted without challenge the belief that intensified mechanization and ever-accelerating locomotion will remain the one constant in an otherwise changing world. In overlooking the human reactions to this

"For the present planners emphasize that any large coordinated effort at planning . . . rests on bringing together . . . a multitude of municipal, county, state and even Federal agencies, and in persuading individual property owners and private corporations to work within the general pattern."

of... (the) statistical nonentity, 'Megalopolis' ..."

process, already visible, they unnecessarily weaken both their historic analyses and their constructive proposals.

But even in its present form, this portfolio is an important public document. Let no one be put off by its deplorable Madison Avenue "presentation" in seven colors of type and four of paper: a format that might make one unfairly suspect that a piddling idea has been inflated into a staggering sales prospectus to lure an unwary investor or flatter the ego of some corporation executive. If, however, the essential ideas that are embodied in this report are understood and carried into action, they should have a widespread effect upon the whole pattern of urbanization. And if some of its serious weaknesses are corrected, it might serve as a model program for urban and regional development everywhere.

2. The Regional Setting

What gives this new development policy special authority is the fact that it reunites two aspects of planning that should never have been separated, even in the mind: cities and their regional matrix. As the geographer, Mark Jefferson, observed long ago, city and country are one thing, not two things; and if one is more fundamental than the other, it is the natural environment, not the man-made overlay.

The biggest metropolis cannot expand beyond the limits of its water supply; and even when it wipes out the valuable reserves of countryside close at hand, instead of zealously preserving them, its inhabitants are still dependent for recreation and change of scene on some more distant area. Unfortunately, the more distant the area, the less open to daily common use, the more tedious to reach by motor car, the more costly to get to by plane, and the more empty it will ultimately be of recreation value, since crowds of people from other areas will likewise be drawn to it—thus turning the most striking natural landscape into a kind of recreation slum, like Yosemite in midsummer.

By recognizing that the conservation of the countryside is an essential part of any sound policy of urbanization, this report challenges the false premises of Jean Gottmann's statistical nonentity, "Megalopolis," with his picture of cities dissolving into an interminable mass of low-grade, increasingly undifferentiated, urban tissue, stretching from Maine to Georgia, and from Buffalo to Chicago. No

city, however big, can hold its own against this mode of dissolution and disintegration, and no policy of highway building or urban renewal will prove otherwise than destructive until a regional framework can be established which will give form to all our diversified economic and cultural activities.

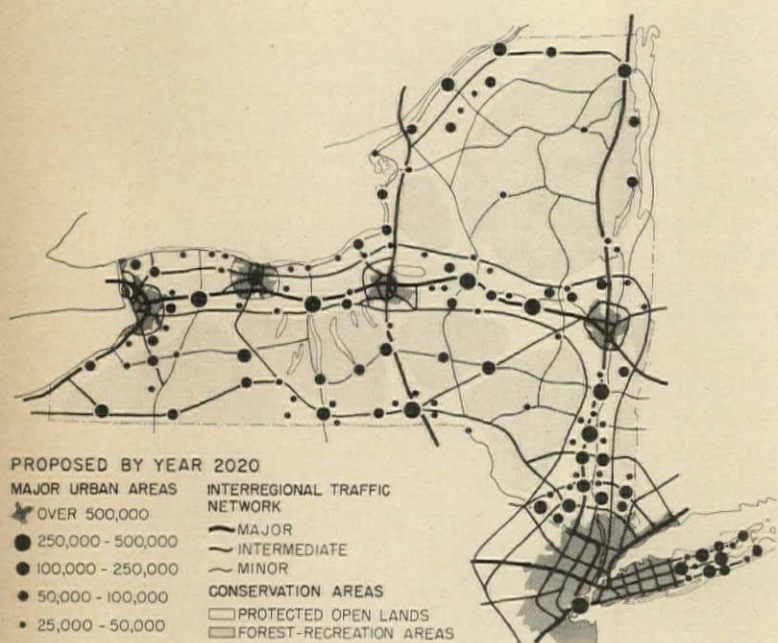
The outlining of this new framework is the first step toward a balanced urban development. The framers of this New York State report have taken this decisive step. What the clotted metropolis did in the past, the region will have to do in the future.

But in still another respect, the report breaks fresh ground; or rather, it comes back to the classic report of 1926, which in turn was based on an earlier analysis of the present planning situation, published in May 1925 as the Regional Planning number of the Survey Graphic. For the present planners emphasize that any large coordinated effort at planning lies beyond the scope of municipal action in any one city, however large: it rests on bringing together in a working partnership a multitude of municipal, county, state and even Federal agencies, and in persuading individual property owners and private corporations to work within the general pattern. Unfortunately the regrouping of urban units within the regional setting cannot take place automatically through the unregulated operation of private interests—for it must halt or reverse many present tendencies that work against a sound urban development.

Not a little of the large-scale planning and construction being done today, by highway departments, municipalities and housing agencies, comes to nothing, or worse than nothing, for lack of any agreed social purposes: many radical changes are made, such as that which is now turning Long Island, New York City's last nearby seashore recreation area, into a mere expressway bypass, merely to provide fat jobs and profits to construction companies and speculative builders, while many essentials of conservation are neglected just because they contribute nothing to the insensate dynamism of our affluent society.

Too often our most active planning agencies, for lack of any clearly defined social ends, cancel each other out. Thus, in New York City one municipal department has been commissioned to reduce the amount of air pollution. Meanwhile, the traffic commissioner and the Port of New York Authority, abetted by the State Highway Department, have been zealously working to bring an ever greater number of motor vehicles into the city. But not

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Up to now planners, with only a few exceptions, have assumed that cities, or at least big metropolises, could be treated as if they were self-contained units. If they lacked the space needed to improve conditions in the existing municipal area, then the remedy was to widen the periphery and take in such independent towns, suburbs or swathes of open land as were accessible. Metropolitan government has been put forward as if it were a cure-all for our present confusion: but the city of Philadelphia has had metropolitan government for more than a century without showing the least benefit from it.

The process of metropolitan extension and aggrandizement has gone on steadily in New York, London, Paris, Rome and Tokyo without producing anything except congestion, blight and urban decay; and the fact that the same processes are now at work in some 41 other metropolitan areas in the United States does not improve the prospects for urban living or architecture: quite the contrary. This situation was analyzed clearly for the first time in the 1926 “Report on a Plan for the State of New York” already referred to; and to understand what the new development policy has added to that report, one may profitably take a look at that classic original document, and the background thinking that made it possible.

3. The Background of Regional Planning

The extraordinarily rapid growth of both New York State and New York City during the 19th century increased the magnitude of their problems and the enormity of their mistakes. But likewise, it brought about an early series of efforts to correct them. Thus New York City introduced the first pure water supply from distant sources in the Croton system, 1842; mass transportation, first by elevated railway, 1869; improved tenement house designs (Al-

neglected just because they contribute of our affluent society”

fred T. White), 1877; housing by neighborhood communities, Forest Hills, 1909; and public housing for the lower income groups, 1927.

Some of these remedies, like mass transportation and public housing, turned sour, because their effect was to add to the already formidable congestion; other efforts, like Forest Hills, did not catch on, for what was meant originally to be an experiment in workers' housing proved so expensive that the new housing estate was turned into a superior suburb for the well-to-do. But in the early 1920's a fresh start was made, in two radically different directions, by two different groups, both using the term "regional" in an entirely different context.

The first group was that created to produce a "Regional Plan for New York." This organization was under the directorship of an experienced planner, Thomas Adams, backed by the financial resources of the Russell Sage Foundation. With a freedom no single municipal agency possessed, this group focused attention upon the metropolitan area of New York, an area then covered by a circle with a 40-mile radius. With little difficulty, their economists showed that, since this was a highly concentrated market, the intensive urbanization of the entire area was inevitable: indeed, the more people here, the bigger the market and the greater the commercial prosperity. On those terms, there was no reason to look beyond the metropolitan area for a solution of New York's problems.

The other group, the Regional Planning Association of America, challenged both the premises and the conclusions of the Russell Sage group. This association was founded in 1923; it consisted of a handful of architects, planners, economists, "geotects" and writers who believe that the new forces that were already visible—giant power, the telephone, the radio, the motor car—had made metropolitan congestion obsolete, and necessitated a large-scale regional coordination of the institutions that were almost automatically producing the wrong type of urban development in the wrong place for the wrong purpose.

One of the members of this little group, Clarence Stein, persuaded Governor Alfred E. Smith to create the New York State Housing and Regional Planning Commission; and another member, Henry Wright (senior) became its planning consultant. In 1926 this commission brought out its final report on

the regional development of New York State, past, present, and possible.

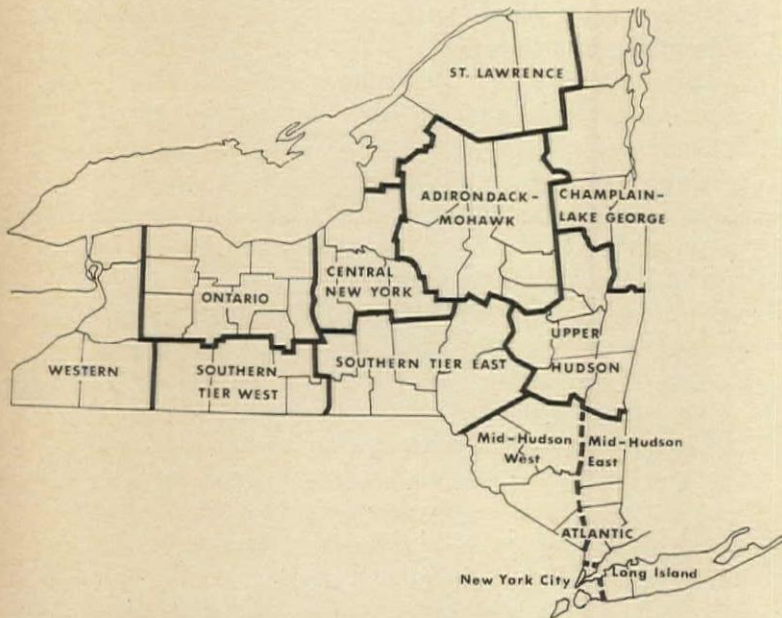
This report shifted the focus of interest and political authority from a single metropolis to the whole state, with its highly diversified regional components. Viewing the state as a whole, it traced the early development of the state through two periods, the first that of water power, canals and highroads, with a fine balance of industry and population, the second, that of the railroad and the steam engine, with an over-concentration of population in the principal port terminuses, Buffalo and New York.

Instead of carrying metropolitan concentration further, Wright showed that if new technical facilities were utilized, and old human values were respected, a better development of the whole state would be possible, with a diffusion of power and the building of many new urban centers that would form part of a larger regional complex. This would not merely restore the balance between town and country, but make it possible for the whole population everywhere to have the advantages of genuine city life, without the dreary drill of long subway rides, crowded tenement quarters, insufficient play space and a constant expenditure of municipal funds upon repairing conditions that would, in a better-ordered environment, never have come into existence.

This was the first time any public body had taken a broad historic and geographic view of urban development. In its method of approach, it broke with all one-sided specialist attempts to deal only with piecemeal problems and patchwork solutions. Instead of wiping out urban variety by taking for granted that a single model, Megalopolis, would take its place, Henry Wright's contribution was to demonstrate that a multi-centered approach would not only give fresh life to every part of the state but would relieve the population pressures upon the Empire City itself and so, for the first time, give it opportunity to catch up with its human arrears.

Despite its apparent failure and its long neglect, this report remains the basic American document in regional planning; and nothing that covers a smaller area of life deserves to be called regional planning. Though the many planning and housing agencies created under President Franklin D. Roosevelt failed to understand the new approach made by Wright, Stein and their colleagues, the ideas behind

*"... if new technical facilities were utilized,
a better development of the*



The report recommends the division of New York State into 10 great regions

"In the last half century, we have had enough experience with advisory commissions in city planning to learn how little influence they exercise. If regional development is to fare better the state will have to set up competent regional authorities, with powers of planning, capital investment and corporate action similar to these exercised by, say, the Port of New York Authority . . ."

it were too sound to be indefinitely buried. If Wright's report now comes back, through the Office of Regional Development, with renewed authority, it is perhaps because the purely metropolitan or anti-regional approach of all the specialized planning agencies has done nothing to counteract the cataclysmic economic forces that are now producing something close to total urban chaos, in which purposeless violence and bare-faced criminality and meaningless "happenings" contradict all the professed boasts of an advancing civilization. Art and architecture have both begun to tell the same story, embracing accident and chance, belittling purposeful order and humane design. Behind the smooth bureaucratic and technological facade, chaos continues to widen, for only machines can prosper in the environment we are now mechanically creating.

4. *The New Regional Front*

The analysis on which the new development policy is based begins, in effect, at the point where the report of 1926 left off. Henry Wright had shown that the valleys of the Hudson and the Mohawk were necessarily the backbone of any surface transportation system; but the zone of settlement was not confined to the strip immediately served by the railroad, since now the motor car, the telephone, the radio and the electric grid gave equal advantages to a much wider zone, where a network of new communities, and revived older towns, would have, if properly organized, all the advantages of a metropolitan community without the disadvantages of congestion. The building of new towns to attract industries and population was the first means of coping with metropolitan overgrowth.

The new report points out that three patterns of growth can now be detected. First: the expansion of the hitherto minor metropolitan areas of Rochester, Syracuse, Utica, Rome and the tri-city complex of Schenectady, Albany and Troy. The second process, largely a result of highway development, is the inter-linking not only of the cities but of the major valley areas, which opens up an even larger area of settlement. This in turn leads to a possible further expansion of both smaller communities and remoter areas of the state, in order to take care of the current increase of population.

*and old human values were respected,
whole state would be possible . . .”*

To handle these three kinds of change, the report has made a major advance by dividing the state into ten great regions, each with its own metropolitan center. In de-limiting these areas, the planners have given weight to both geographic and historic realities, adroitly retaining the existing counties and combining them in such a fashion as to balance environmental resources and make fuller use both of natural opportunities and the existing pattern of urban settlements. There was a beginning of such regional differentiation back in the 1920's, when the Niagara Frontier Council, the Capital District Regional Planning Association and the Central Hudson Association were formed; but now the planners propose to make these regional divisions part of the political structure of the state.

By this one stroke the Office of Regional Development has clarified and given concrete expression to the term "regional city"; it shows that it is actually a congeries of cities, big and small, including hamlets, villages, and townships, and that in this new pattern the maintenance of open spaces and rural resources is as important as the presence of economic and cultural opportunity. Unfortunately, though the writers have grasped the main factors in regional development, they are still under the spell of metropolitan expansion, with its tendency to establish centralized control. As a result, among the 15 proposals they make for carrying out a regional policy, they fail to emphasize the three that are essential to any sufficient transformation: Regional Councils, Land Control and New Towns. On these three matters, the nearly 40 years that separate the first and the second reports seem to have taught the policy-makers all too little.

5. Planning versus Inertia

Let me speak more specifically about these weaknesses, for unless they are remedied this report will be so much elegantly printed waste paper.

In the last half century, we have had enough experience with advisory commissions in city planning to learn how little influence they exercise. If regional development is to fare better, the state will have to set up competent regional authorities, with powers of planning, capital investment and corporate action similar to those exercised by, say, the Port of

New York Authority: perhaps regional legislatures will be necessary to see that such authorities do not get out of hand. Advisory regional councils are certainly not enough.

All the report's proposals for rehabilitating the existing metropolitan areas and planning new cities rest upon control of the land. To propose only a "codification and classification" of existing laws on land use control, as the report does, is to evade the issue: for if the existing laws were sufficient, land planning and land utilization would be done by the state and regional governments for the benefit of the whole community. New Jersey's admirable "Green Acre" program to acquire 300,000 acres for conservation and outdoor recreation is already handicapped not only by speculative land-grabbing and price-raising but by local authorities seeking to retain taxable properties.

There is no use talking about the preservation of recreation areas and other open spaces when the mere announcement of such a purpose is sufficient to push up speculative land values beyond the reach of the state's budget. What we need are regional authorities with the power to put an embargo on uses of land that do not conform to public policy. Even in heavily settled areas like the Ruhr district of West Germany, such an embargo has proved effective. Since 1920, the authorities there have been able to keep that highly congested area from clotting into a single industrial mass: they have not merely kept 40 per cent of the area in forests and farms, but have even added to the open area.

Finally, the changeover from metropolitan congestion to regional distribution cannot be achieved without building new towns—balanced communities, not residential suburbs—on a large scale. This was the policy put forward by Clarence Stein and his associates in the early 1920's and embodied in Wright's sketches for the further development of the state. But at that time, only two new towns of limited size had yet been built on Ebenezer Howard's principles in England. Forty years ago, the present report's suggestion of "a major study of the 'new cities' concept" would have been in order; but now that 20 towns are already being built in England under government auspices, and private developers have undertaken others recently in California and Virginia, the sort of study advocated should have been an integral part of the present report. The

“... the mistake ... of this report ... is the tendency to treat the technological forces and institutional practices now in operation ... as if ... immortal ...”

next “basic step to action” is not to study the concept but to begin, experimentally, to build the towns.

Strangely, the graphic emphasis of this report falls on what should *not* be done, treated as if it were something that could not possibly be avoided. The report accordingly wastes four huge pages to show the kind of urban development that its writers weakly believe is going to continue: the monotonous mass housing of the suburbs and the equally monotonous and even more inhumane mass housing in high-rise apartments, done under the comic name of urban renewal. Instead of saying at this point, “This is what we must prevent,” the report says confidently that 500,000 more people will be housed in the same dismal way. This is a betrayal of the basic regional concept. In the whole elaborate presentation, indeed, there is not a single picture of a well-planned town, or even of part of such a town. What the pictures unfortunately show could be summed up in Patrick Geddes’s savage phrase: “More and more of worse and worse.”

In a report whose main outlines are so sound, such weaknesses and contradictions as I have touched on cannot be treated lightly; for this report is nothing if it is not an educational document, and half the value of it is destroyed because the writers did not realize that the dominant tendencies in present-day urban development do not need encouragement, and that the main use of such a fresh conspectus is to point out the many desirable alternatives that actually exist. One of the best uses of statistical predictions is to call attention to undesirable consequences that may, with further thinking and planning, be avoided.

6. *The Need for Feedback*

Behind the specific failures of this report stands a more central one which is all too common in most predictive statistical analyses: it treats statistical predictions as if they were commands. The report takes for granted, on the basis of the recent curve of population growth, that the number of people in New York State will rise from 16 million in 1960 to some 30 million in 2020: this then becomes auto-

matically a directive to prepare for such an expansion. To regard such statistics as final is only an excuse for succumbing to the inevitable, instead of taking action to produce what is humanely desirable.

Actually, there are many unpredictable factors, from nuclear extermination to birth control, that may nullify this prediction: not the least important factor would be an intelligent reaction, by any large part of the population, to the prediction itself, if once its consequences were spelled out. The report, instead of cheerfully preparing for the expected 30 million, might at least have pointed out that such a population could not be accommodated without a drastic shortage of recreation space and general elbow room. Thus a more realistic canvass of the possibilities of life under such conditions might lead once more to the practice of family limitation that prevailed before 1940. Even while the report was being prepared, in fact, the number of births per thousand in New York State dipped from 25.3 in 1957 to 21.7 in 1963. Given another 10 years, the population graph might be as different from the present one as those made in 1940 turned out to be.

Because it pays too much attention to statistical trends and probabilities, and not enough to fresh ideas and possibilities, except in the way of new mechanical inventions, this report lacks some of the virtues of the 1926 report. But the mistake that the framers of this report make is one that is common to a whole generation: it is the tendency to treat the technological forces and institutional practices now in operation as if they were immortal. When they plan on this assumption, they tend to make their most unwelcome predictions come true. But where they depart from this practice, as in the proposal for setting urban and rural growth within 10 newly constituted regions, the Office of Regional Development opens up a new prospect for controlling the forces that are defeating and strangling sound urban development. For this reason, the report should have the widest possible circulation and promote the most extensive critical discussion. I know no other proposed innovation in public policy since the T.V.A. that more deserves earnest attention, not merely in New York, but in every other state of the Union: indeed all over the world.



Joseph W. Molitor photos

TWO CHURCHES THAT RESPECT TRADITION:

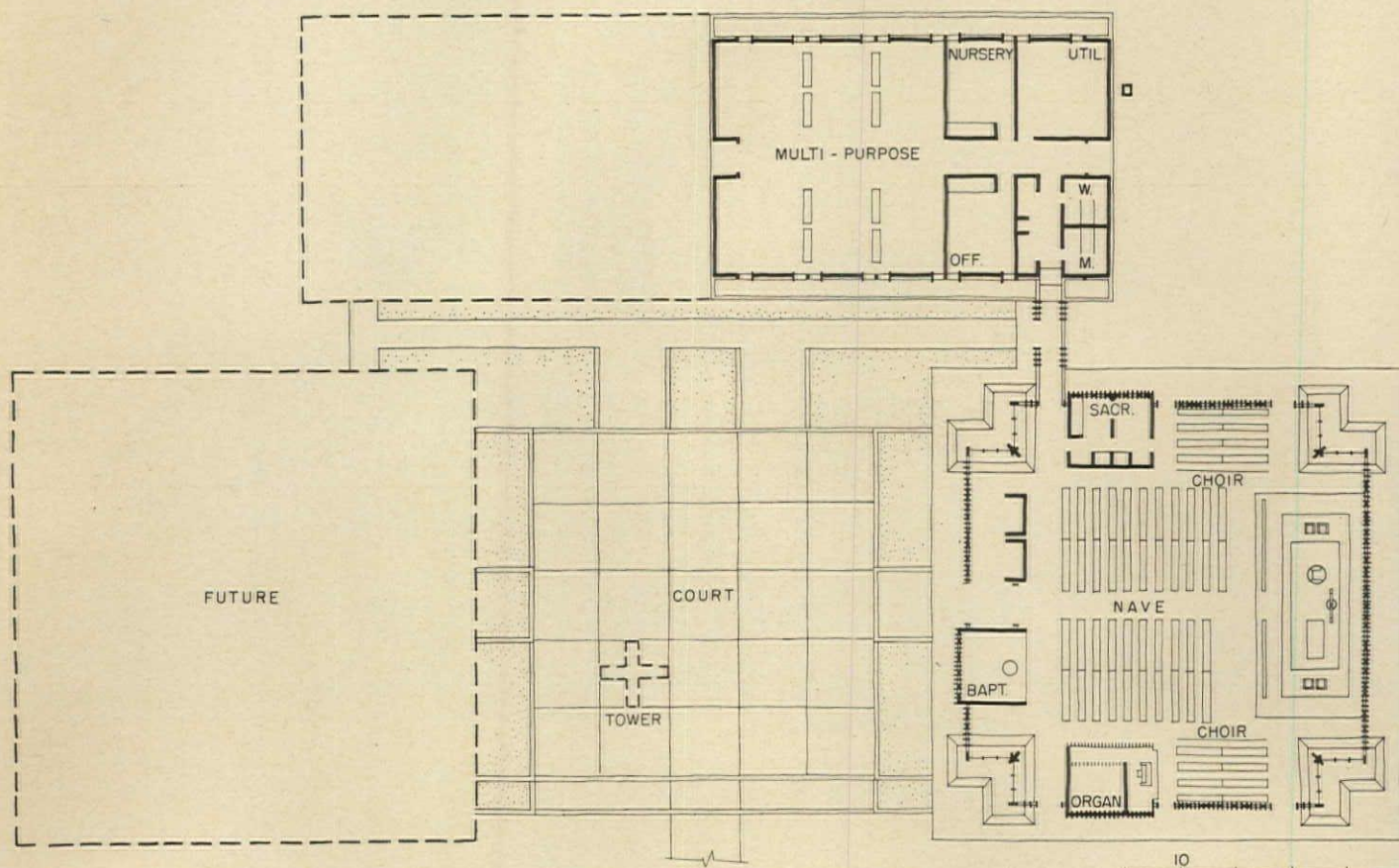
1. Trinity Lutheran Church, Chelmsford, Massachusetts

ARCHITECT: *Joseph J. Schiffer*

STRUCTURAL ENGINEERS: *LeMessurier Associates, Inc.*

MECHANICAL ENGINEER: *E. Shooshanian*

GENERAL CONTRACTOR: *H. Tobiason & Sons, Inc.*

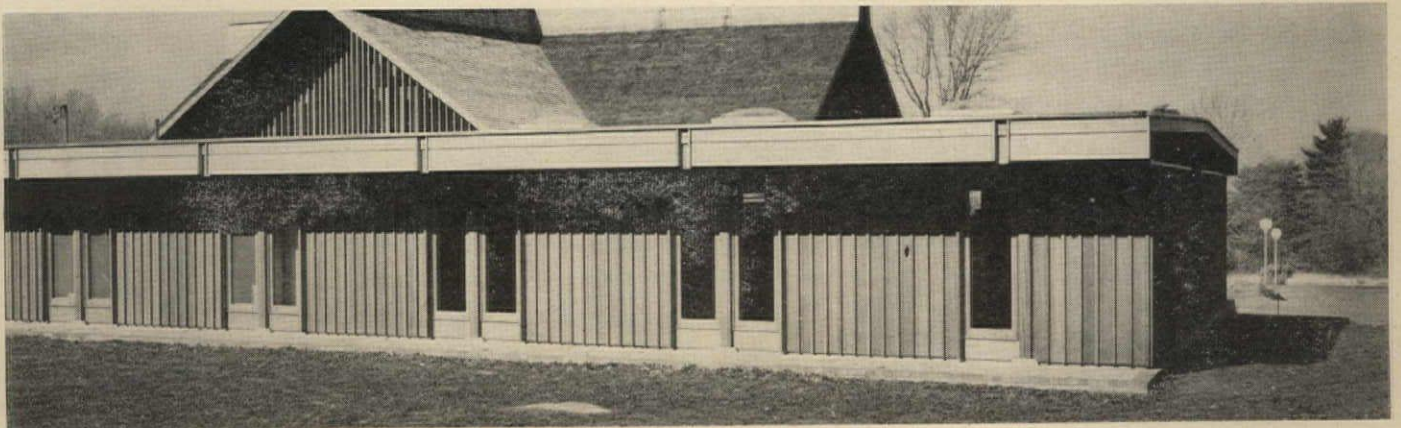


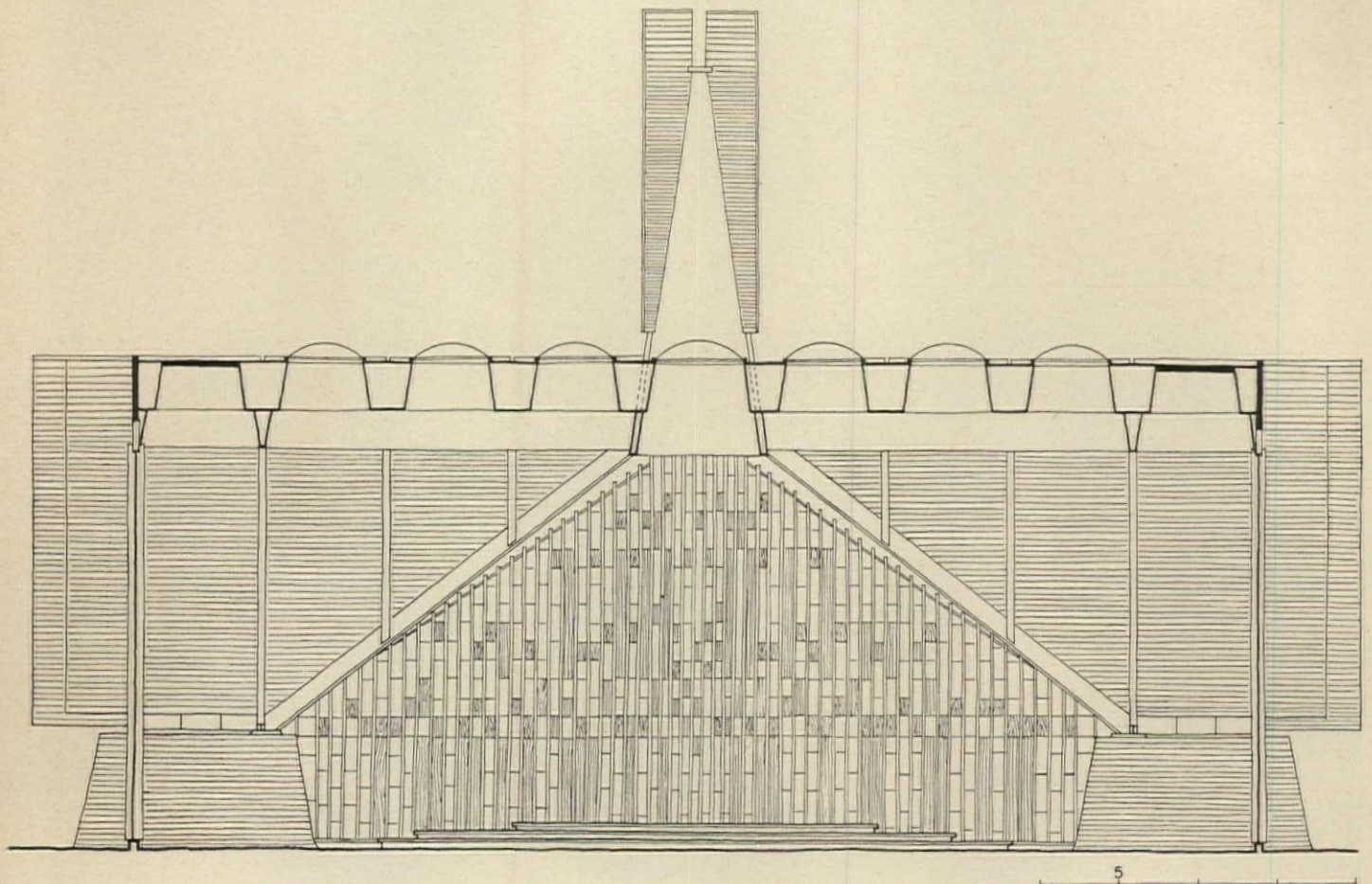
In church architecture the debate lies between those who wish to create a whole new set of architectural forms to symbolize the church, and those who seek to translate traditional means of organization into the language of modern methods and materials. Many successful churches, like those of Pietro Belluschi, are essentially translations of traditional architectural forms; and, as long as churches continue to use traditional symbols and ritual, this course would seem to have every intellectual justification.

This church at Chelmsford, Massachusetts, by Joseph Schiffer aims to create the shadowy interior and the arching forms of the Gothic revival. At the same

time, the manner in which the church is carried out is not at all a literal one. It is completely free of the apparatus of historical detail; the structure is all of straight pieces of wood, with no arches or curving shapes except in the form of the skylights. These skylights, which accentuate the cross-shaped plan, also serve as an intellectual comment on the structural system. They separate the roof into its constituent planes, creating an effect that would not have been possible if the architect had simply followed precedent.

Another departure was the use of the baptistry, sacristy and organ loft to, in the architect's words,



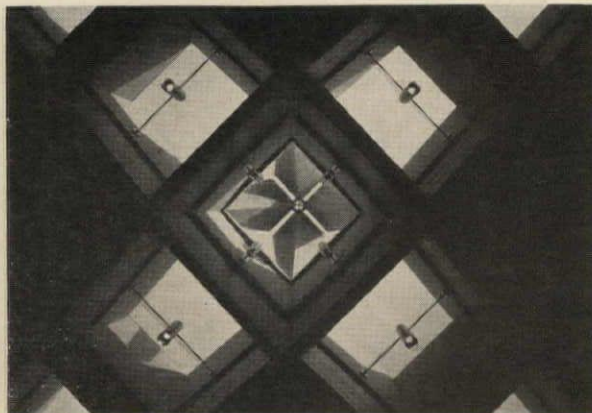
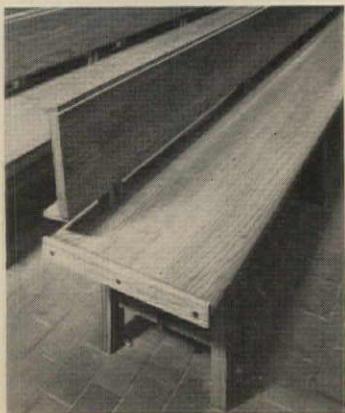
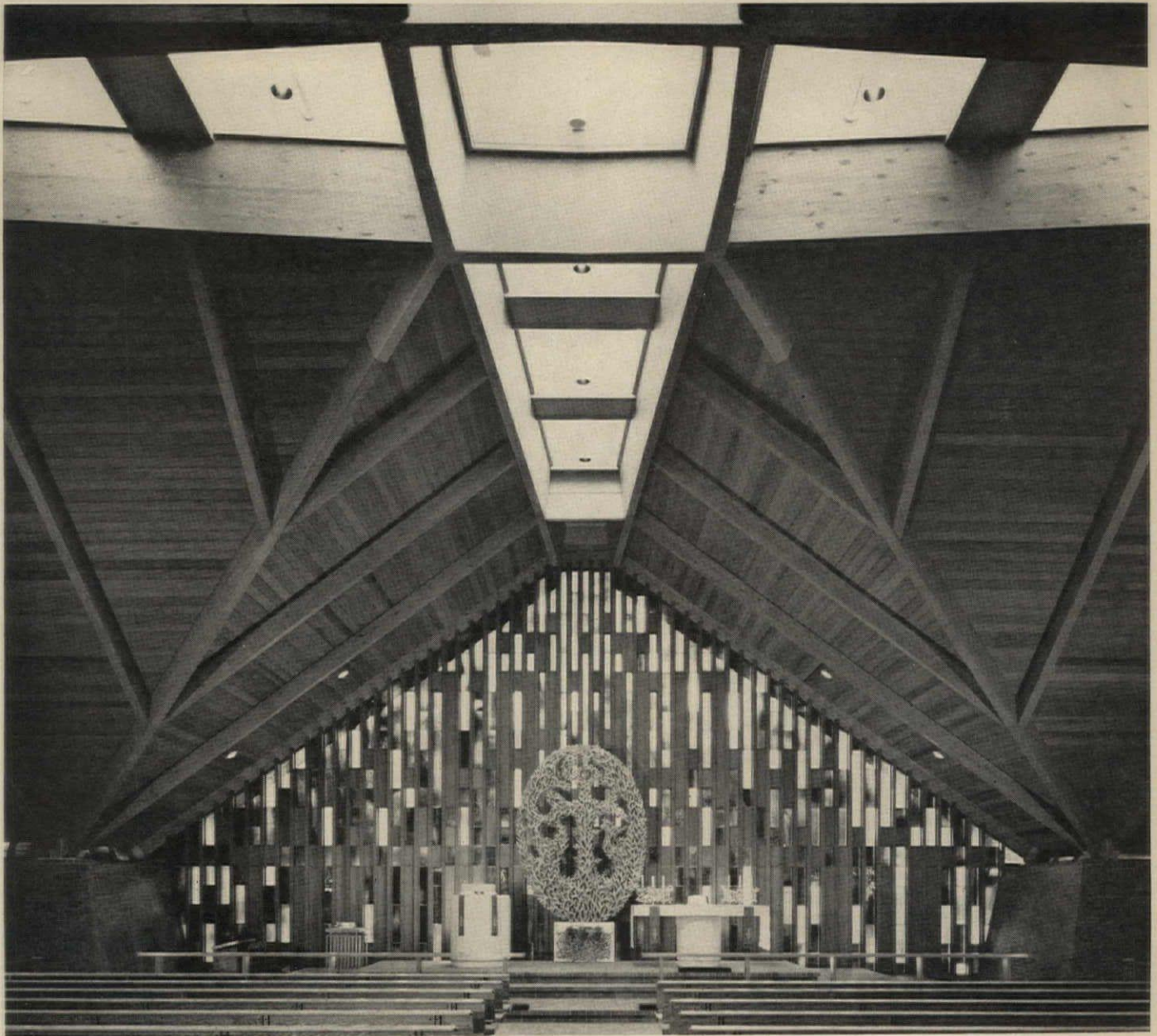


“modulate” the space. Their placement effects a transition between the centralized, symmetrical form of the church and the directional arrangement of the plan, which places the altar at the east end, rather than under the crossing as one might otherwise have been led to expect. The asymmetrical placement of sacristy, baptistry and organ loft is also expressed on the exterior, where each of these elements appears to break through the facade, producing the same opposition of forms that takes place in plan.

The basic colors of the interior are warm tones of wood and brick. The stained glass pattern progresses from blue-white glass in the baptistry and narthex

areas, to blue-purple and then to red in the sanctuary. The chancel cross of hammered bronze and silver is by Richard Filipowski of the department of art at M.I.T. The altar, pulpit and font are of the local gray granite.

The nave is designed to seat 210, with an additional 70 places in the choir. With over-flow seating, the sanctuary can accommodate 380. The church and education building comprise 8,000 square feet, and were built at a cost of \$185,600, exclusive of furnishings, land and fees. Future additions will double the size of the education building and add a social hall and a bell tower, forming a three-sided court.





Lens-Art photos

TWO CHURCHES THAT RESPECT TRADITION:

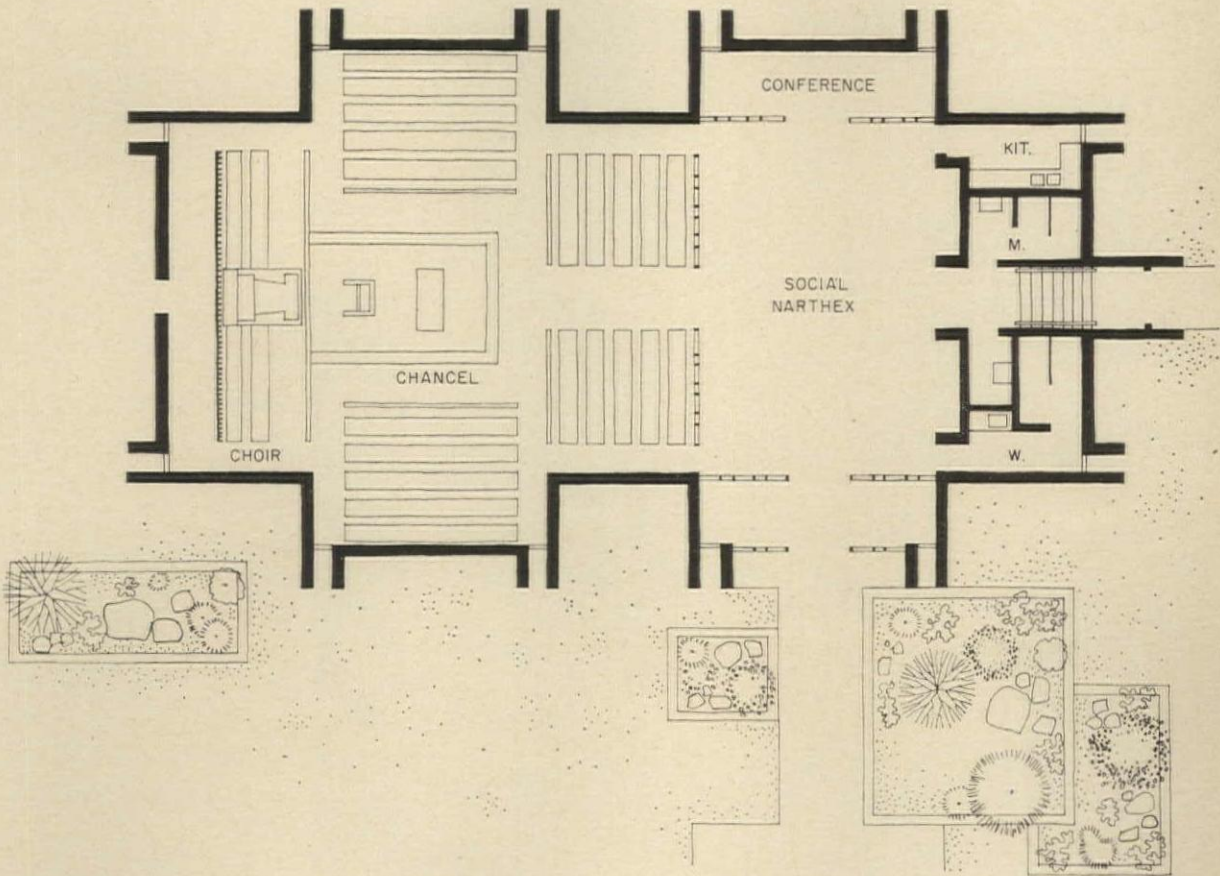
2. Chapel for the University Presbyterian Church, Rochester, Michigan

ARCHITECTS: *Linn Smith Associates, Inc.*

STRUCTURAL ENGINEERS: *McClurg, McClurg, Paxton & Mickle, Inc.*

MECHANICAL AND ELECTRICAL ENGINEER: *Gordon E. Hoyem*

GENERAL CONTRACTOR: *Sund Construction Company*



The separation of the roof from the brick walls of this chapel serves as a comment on the structural system, in much the same way, and for much the same reason, as the skylights in the church at Chelmsford that is shown on the preceding pages. The separation indicates that, although the form of the roof is traditional, the structure is not; and this simple chapel draws on history as a source for quotation and re-interpretation, without using any overt stylistic detail.

The University Presbyterian Church occupies the grounds of an estate across a valley from the site

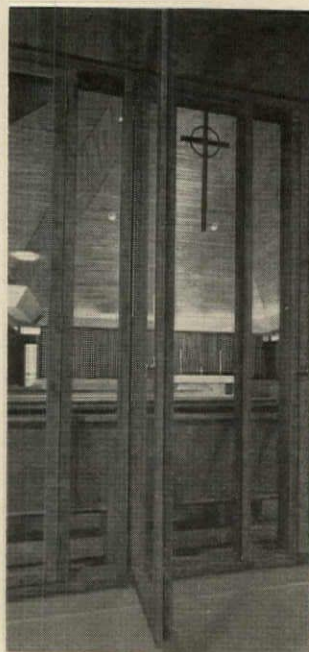
of Oakland University, a new campus of Michigan State, in Rochester, Michigan. Rochester, a rapidly developing community about 45 minutes driving time from Detroit, is also the site of new campuses for Oakland Community College and Michigan Christian College.

The chapel, which is designed to seat 180, is the first unit of a master plan which will ultimately include a sanctuary, an education building and an administrative unit. The social narthex is designed to be a gathering place for the congregation after the service. The glass panels between narthex and



nave can be opened, and the narthex can then seat an additional 80 people. Exterior walls are a warm-colored brick, interiors primarily brick and wood.

This chapel won the only First Honor Award given by the Detroit Chapter of the A.I.A. last year. The jury, whose members were J. Roy Carroll Jr., Vincent Kling and Robert L. Geddes, commented: "This building is appropriate in every way. It is coherent, has repose and great dignity, shows good over-all consistency in detail and use of materials. It looks like a church—one you'd like to enter."

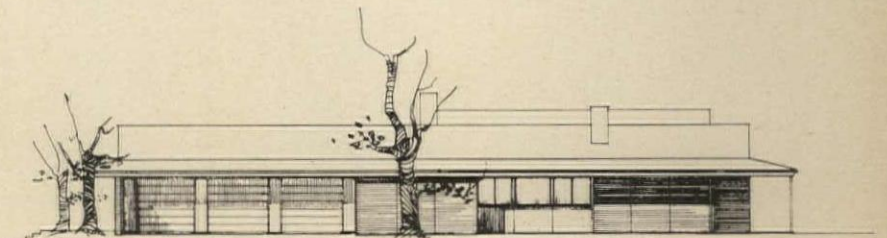
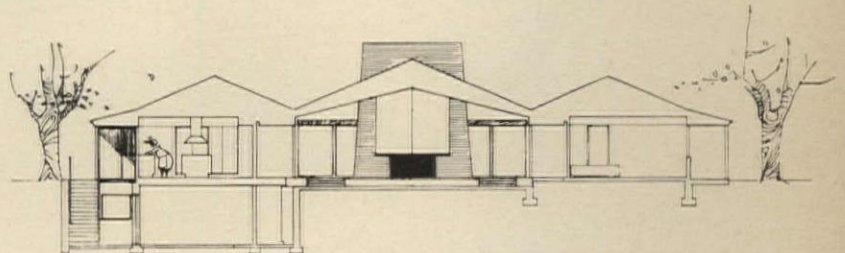


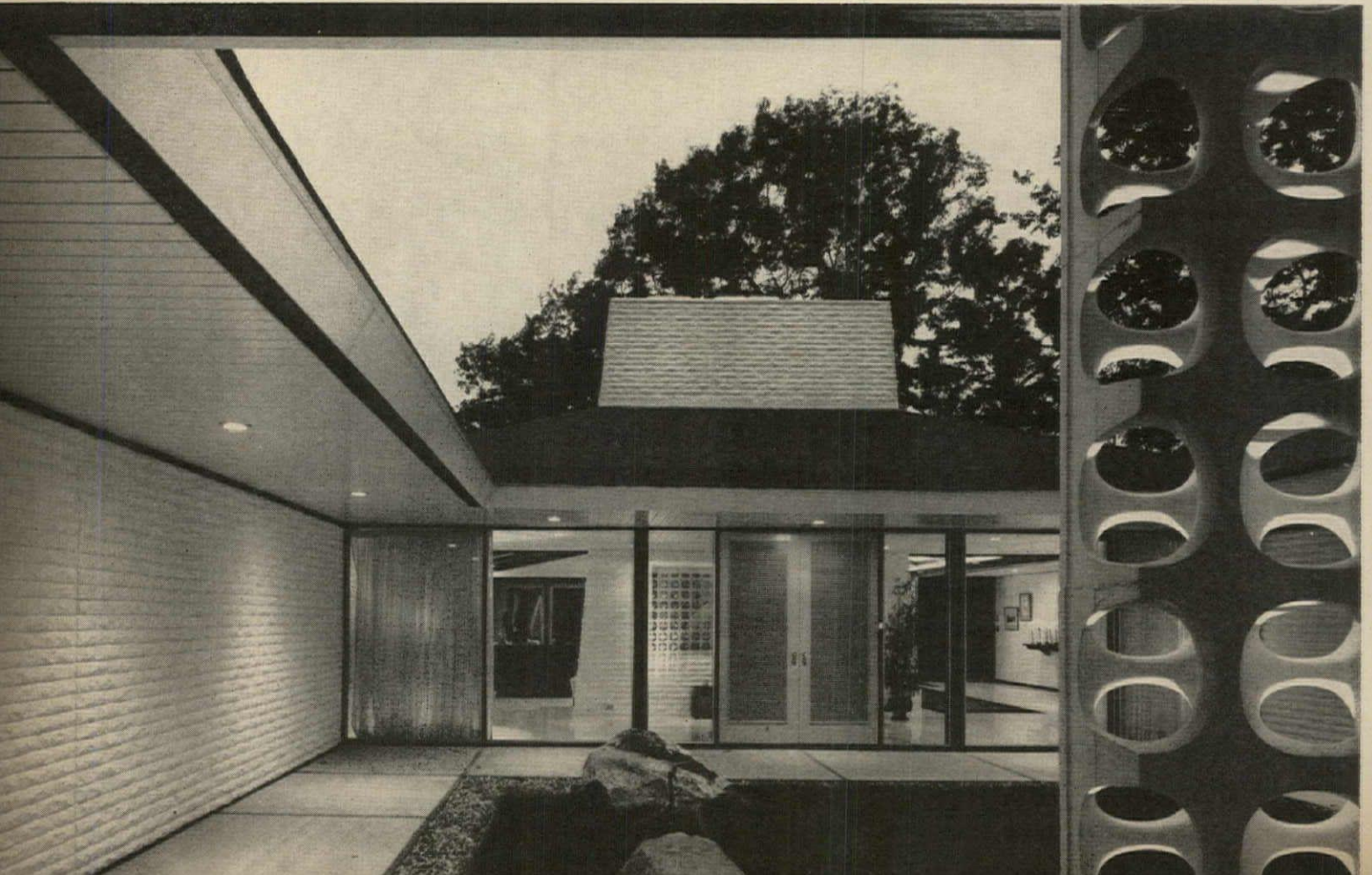
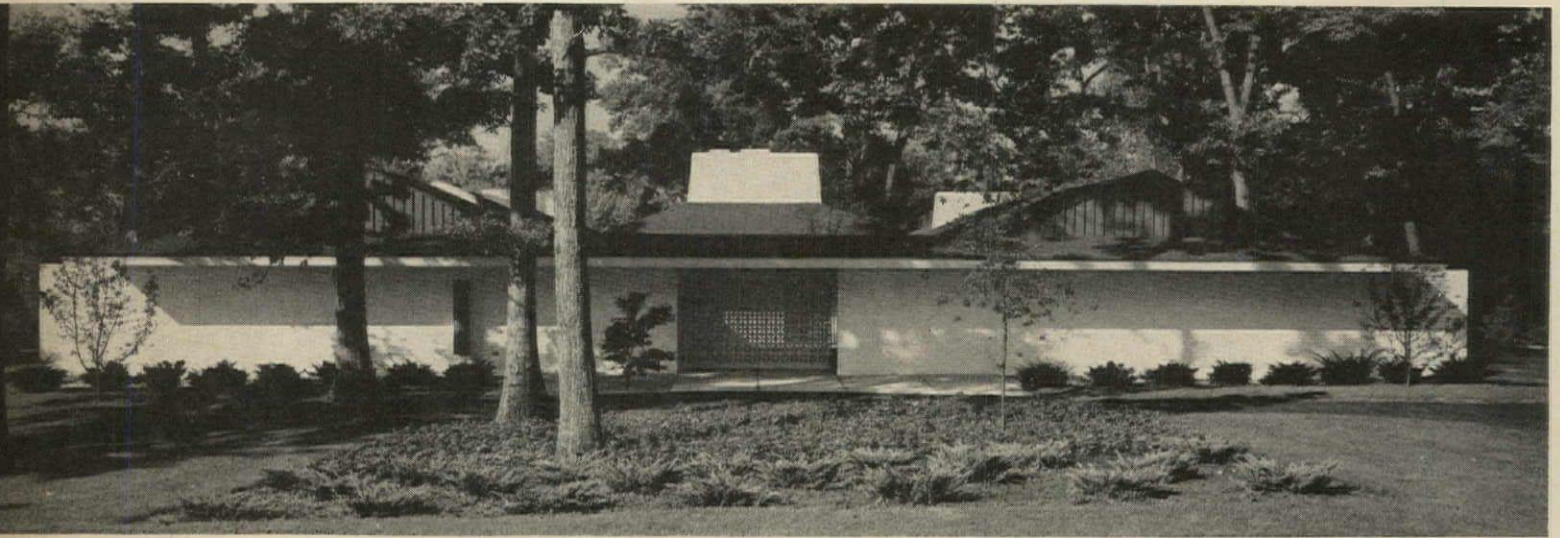
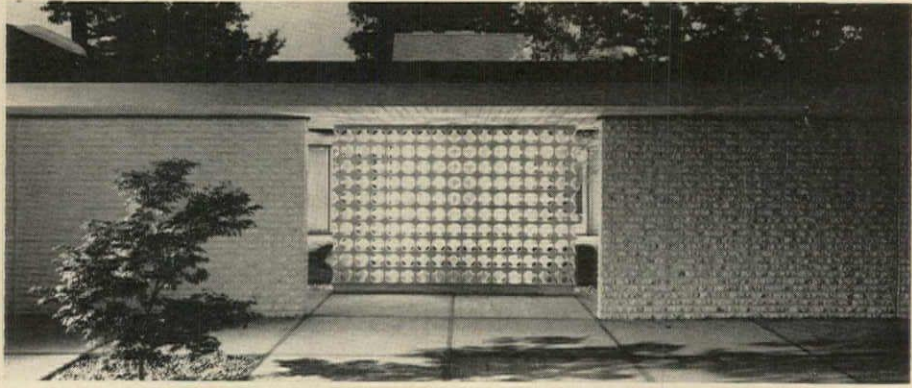
WELL-ZONED HOUSE HAS BOLD SPACES

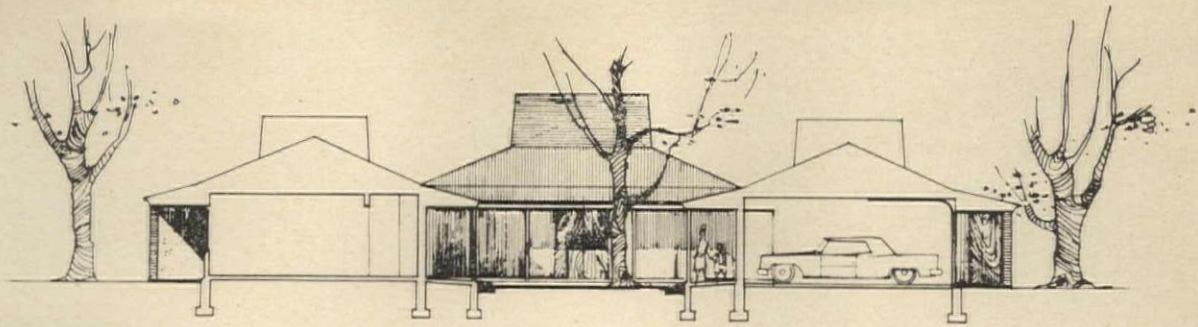
Separation of family, service and entertaining areas into three parallel but connected wings has enabled Tarapata-MacMahon Associates to create dramatic and flexible living spaces



Baltazar Korab photos







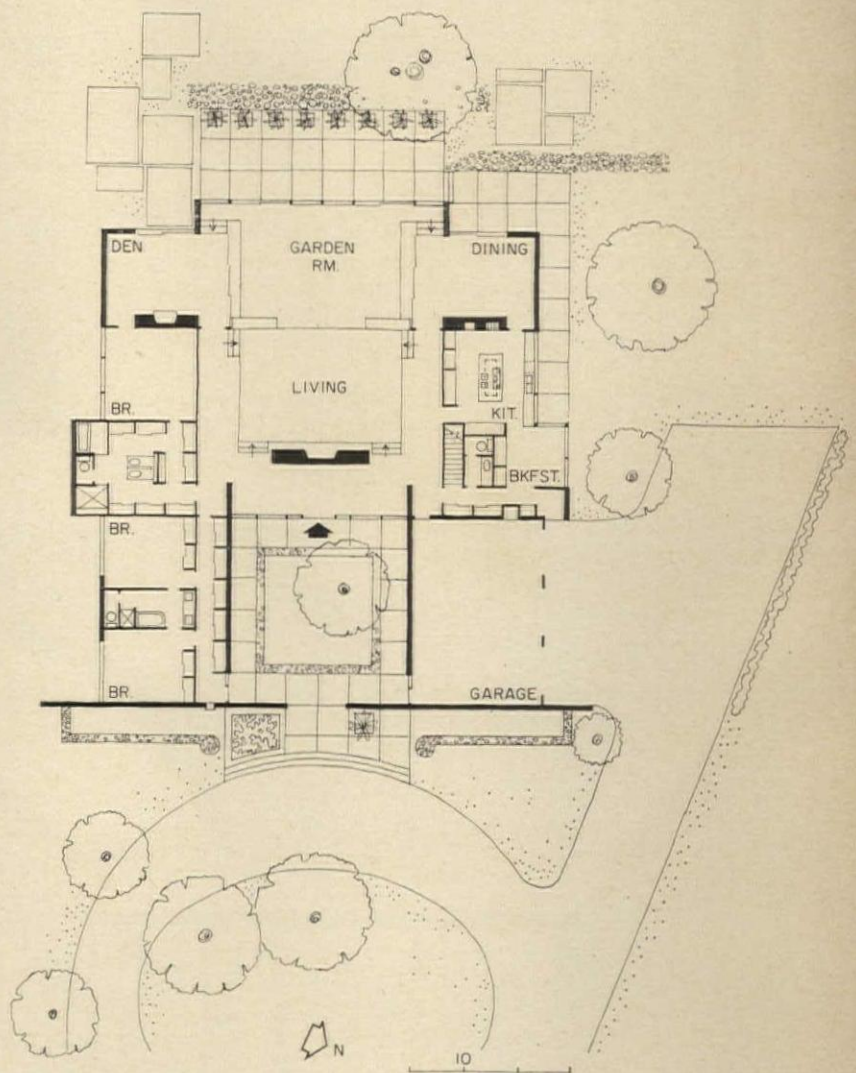
This rather formal elegant house was designed to give ample scope for entertaining on a large scale. Mr. and Mrs. Bachman felt that it was important for there to be some separation between family living and party areas, although spaces should be capable of being combined to handle large groups of people when required.

The solution divides the plan into three parallel wings, each of which is expressed by a roof ridge. Family living space is in the south wing, garage and service areas in the north wing, with the entertaining rooms between the two. The two teenage sons' bedrooms in the south wing have their own entrance direct from the entry court.

The house is placed on the high point of a three- and a half-acre wooded site overlooking a small lake and island. Describing the way in which the scheme was worked out, the architects said: "Care was taken not to reveal at once the entire sequence of spaces and beauty of the site and view, through the use of a series of visual baffles."

The sculptured concrete screen at the opening to the entry court forms the first baffle, and the second is provided by the 16-foot-wide fireplace which separates the living room from the main entrance. Sliding shoji screens within the living area make it possible to close off the dining room and family den when privacy is needed. When these screens are thrown back the center of the house is in effect one enormous room, which can accommodate a very large party of guests. A glass wall leads from the garden room to a terrace, and ledge rock garden walls of varying lengths and heights form the last visual baffle.

The house is constructed of nailed and glued wood trusses on a light steel frame. Foundations are grade beam, except the basement area which is concrete block. Exterior walls are textured, split-block veneer painted white; the roof is dark brown asphalt shingle.

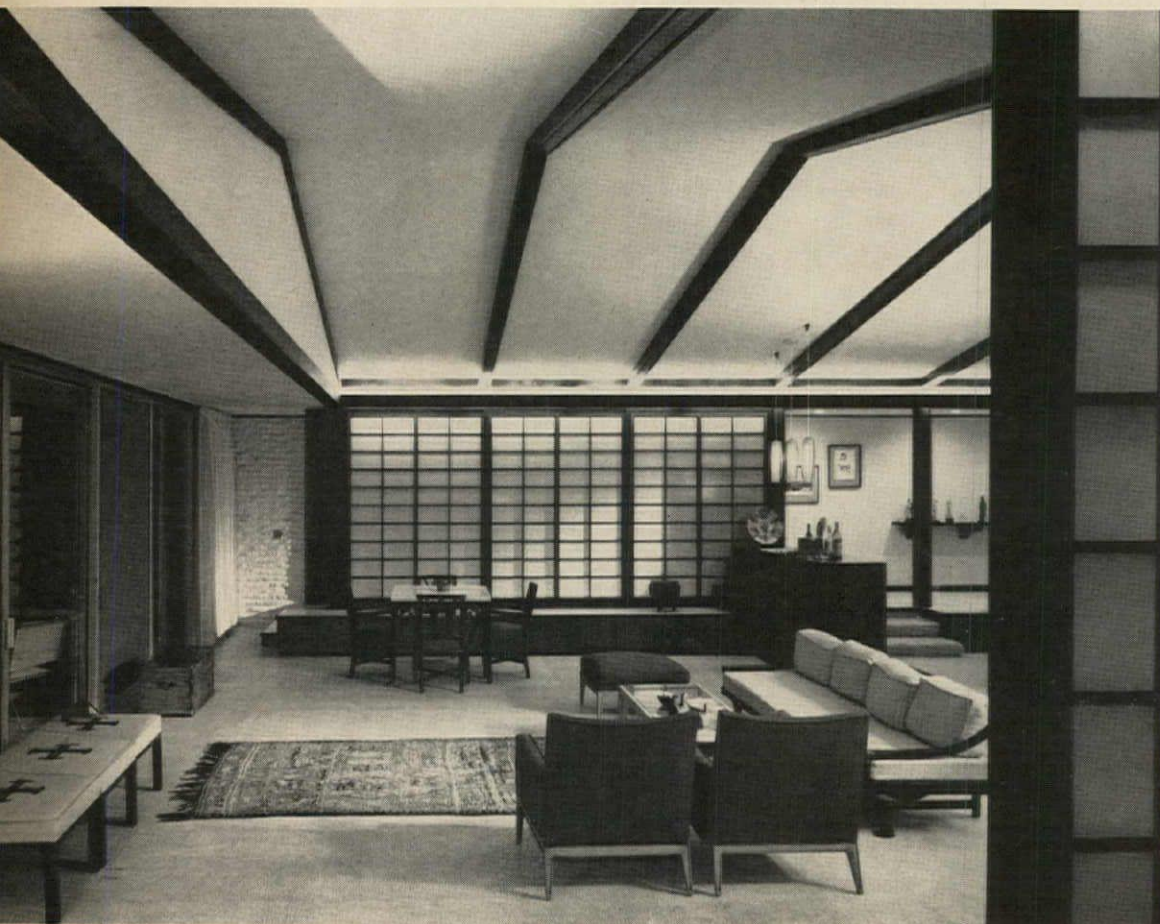


Residence for Mr. and Mrs. William B. Bachman Jr.
Bloomfield Hills, Michigan

ARCHITECTS: Tarapata-MacMahon Associates, Inc.,
PARTNER IN CHARGE AND DESIGNER: Mark T. Jaroszewicz
CONTRACTOR: Sebald & Kage, Inc.
LANDSCAPE ARCHITECTS: Johnson, Johnson & Roy, Inc.
INTERIOR DESIGNER: William Denler



The floor of the living and garden rooms is 16 inches lower than the rest of the house, so that a comfortable sitting ledge is formed around the main living area. Special lighting in the low passages at both sides of this room creates a suitable display area for the owners' art collection. This contrast of low and high ceilings serves to emphasize the magnificent feeling of space. The house is heated by a forced-air perimeter heating system. Air conditioning is provided in five zones

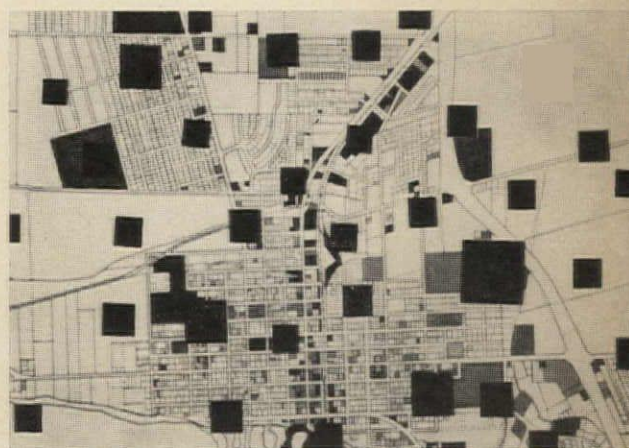
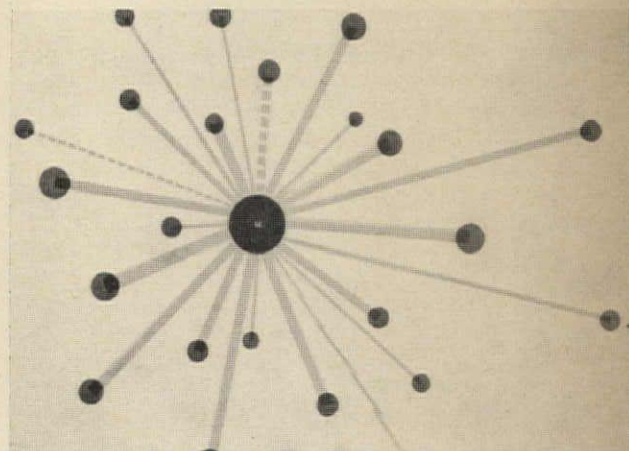


SCHOOLS

An upsurge in new concepts and the promise of new funds indicate a busy future for public school planning

New vitality is clearly apparent in the construction and renovation of public school facilities. Instead of a post "baby boom" lag, which seemed a strong probability a short while ago, more funds and initiative are being pumped into the area of public education at all levels. Scanning over the scene, from the President's national program to activities in local communities, one is recurrently faced with news leads about new plans and ideas: Chicago's long-term \$1.1 billion program for "quality education"; Shreveport's plan for a big new high school for all the new teaching aids and methods; the school renovation study (under a grant from Educational Facilities Laboratories, Inc.) for the Great Cities Research Council—which include the 15 largest United States cities.

Nor is there any lack of exploration of new ideas. In addition to the continued study of ways to cope with the newer teaching methods via flexibility in classroom spaces and variations in their shapes, concepts of a larger scope are being planned: dispersion of resources into educational "service centers"; putting a school district on a single campus; using "air rights" in urban areas. On the following pages, we have shown a series of schools which incorporate many of these newer concepts.



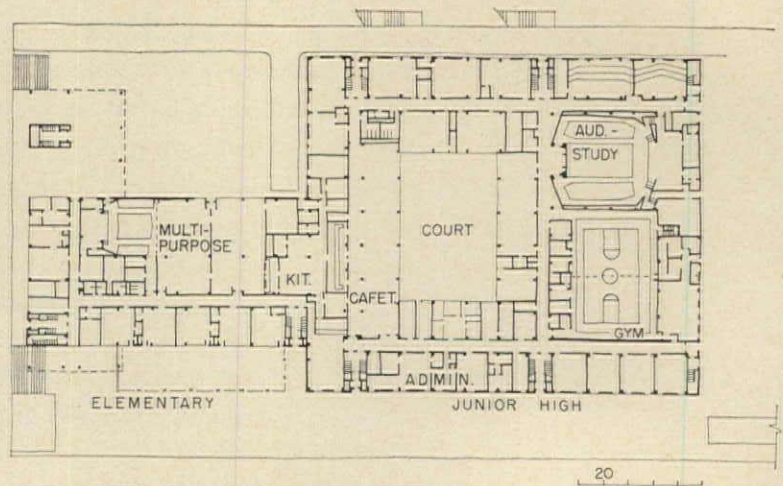
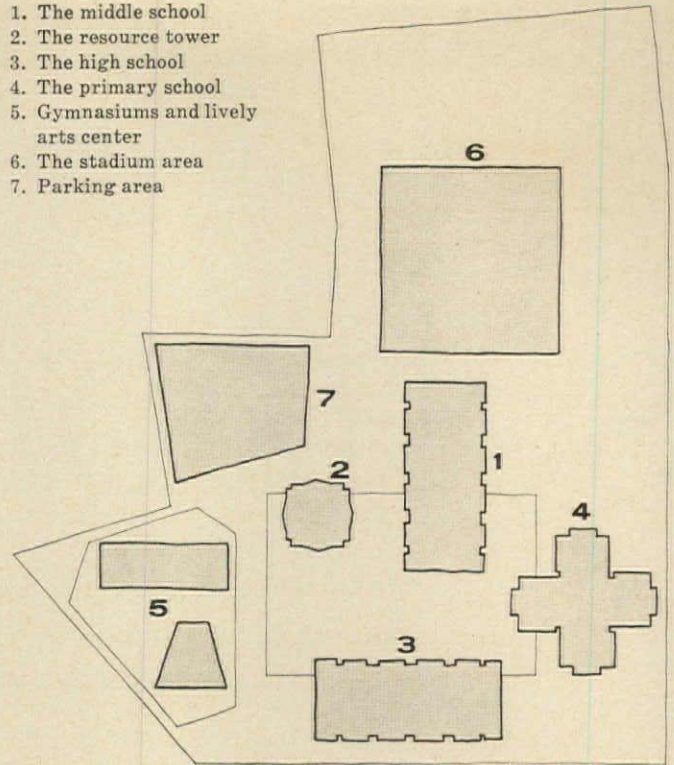
"In 19xx, EDUCATIONAL NODES—places to learn—will be everywhere; where people are," predicts William Caudill. Bearing a strong resemblance to the President's concept of educational service centers, Caudill's nodes would "be available like filling stations, all over the city." They would radiate out from a single service center, controlled and operated by the superintendent, for distribution of teaching materials



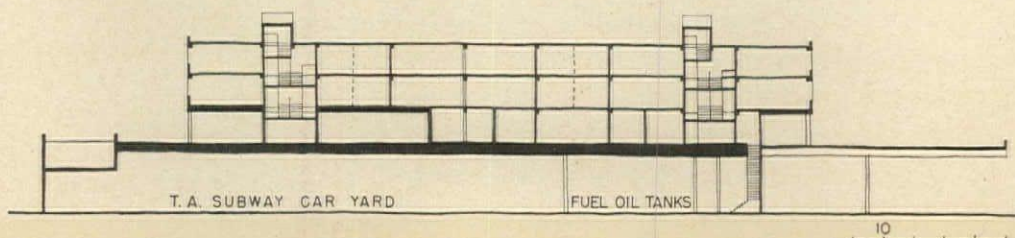
A CONSOLIDATED CAMPUS for an entire city school system is being planned for East Orange, New Jersey. Conceived as a seven-stage construction program, the preliminary scheme shown here of the entire complex has been prepared by architect Emil A. Schmidlin. The program is a long range one, covering 15 years. The first stage would be the building of a new middle school, initiating a 4-4-4 system—which would also be a step toward an envisioned ungraded curriculum.

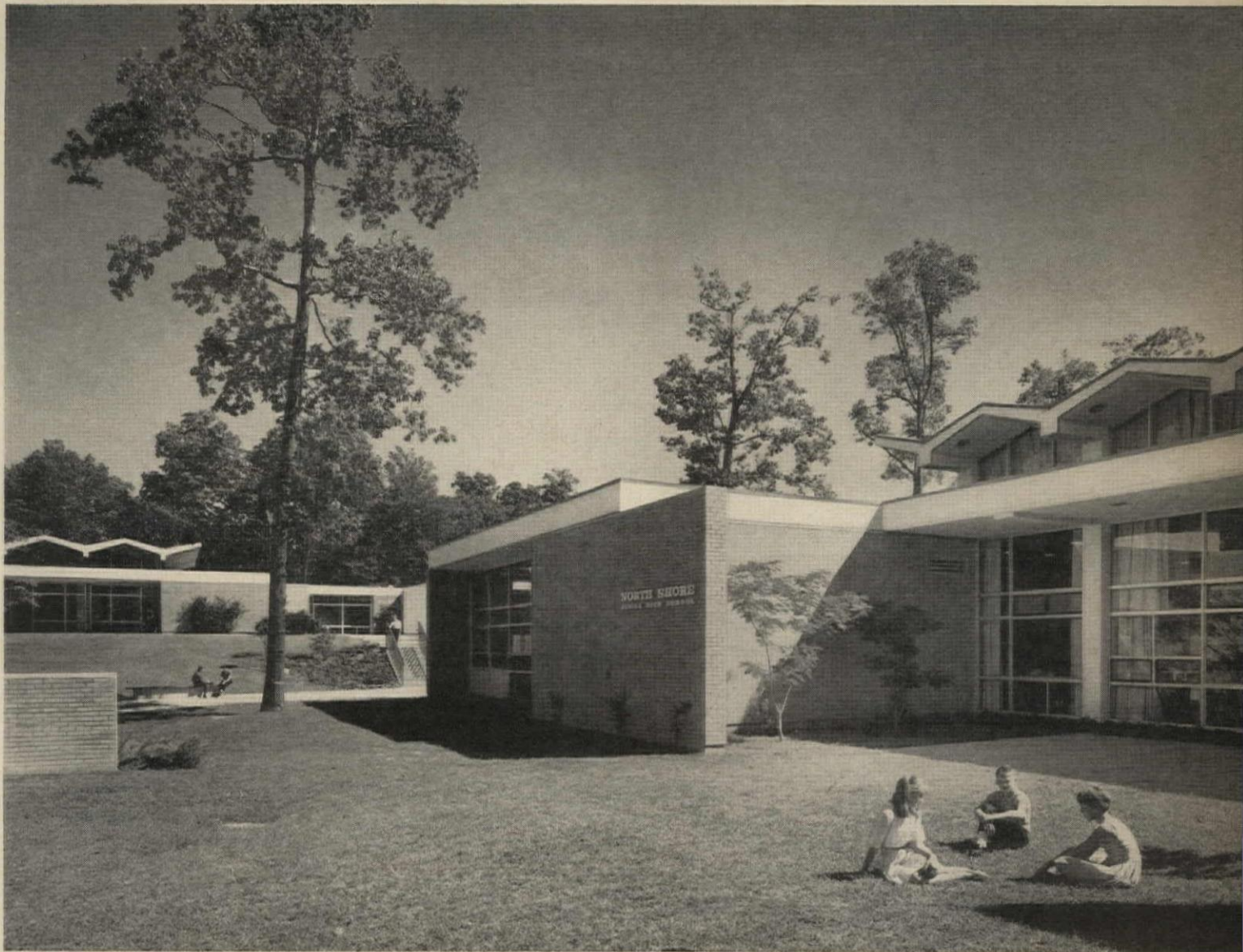
East Orange is a compact city of 3.9 square miles on the edge of the metropolitan New York area, with some 80,000 inhabitants and 9,800 children enrolled in 13 schools: 10 elementary, one junior high and two high schools. These would all be replaced by facilities on the single, new 16-acre central campus or "educational plaza"

1. The middle school
2. The resource tower
3. The high school
4. The primary school
5. Gymnasiums and lively arts center
6. The stadium area
7. Parking area



AIR RIGHTS over subway yards are used for the site of this new combined elementary and junior high school in New York City. Designed by Francis X. Gina & Associates, Architects, and with Severud Associates as structural engineers, the school is to be constructed on a 300- by 600-foot platform, 15 feet above the yards of the IRT subway system. In explaining the selection of the site, the architects state that, "due to the number of housing developments and the deterioration of existing school facilities in Mantattan's East Harlem section . . . a new site was required which would not require the relocation of a large number of families and the condemnation of a great deal of real estate which would be taken off the tax rolls."





Joseph W. Molitor photos

UNIT ADDITIONS CONVERT AN ELEMENTARY SCHOOL INTO A JUNIOR HIGH

*North Shore Junior High School
Glen Head, New York*

ARCHITECTS: *The Perkins & Will Partnership*

STRUCTURAL ENGINEERS: *Seelye, Stevenson, Value & Knecht*

MECHANICAL ENGINEERS: *Segner & Dalton*

CONTRACTOR: *Angelo J. Martone & Son, Inc.*

EDUCATIONAL CONSULTANTS: *Engelhardt, Engelhardt & Leggett*



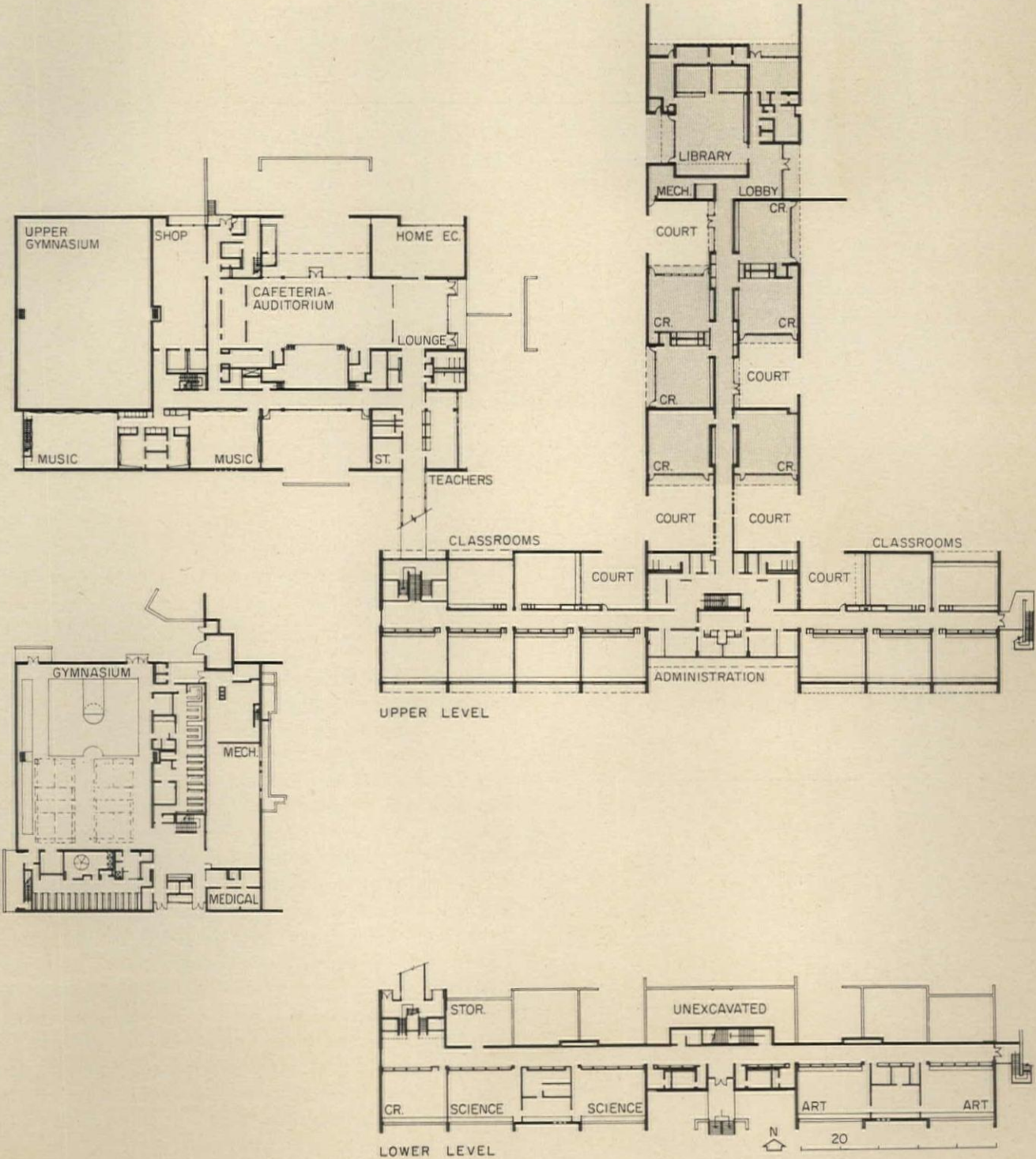


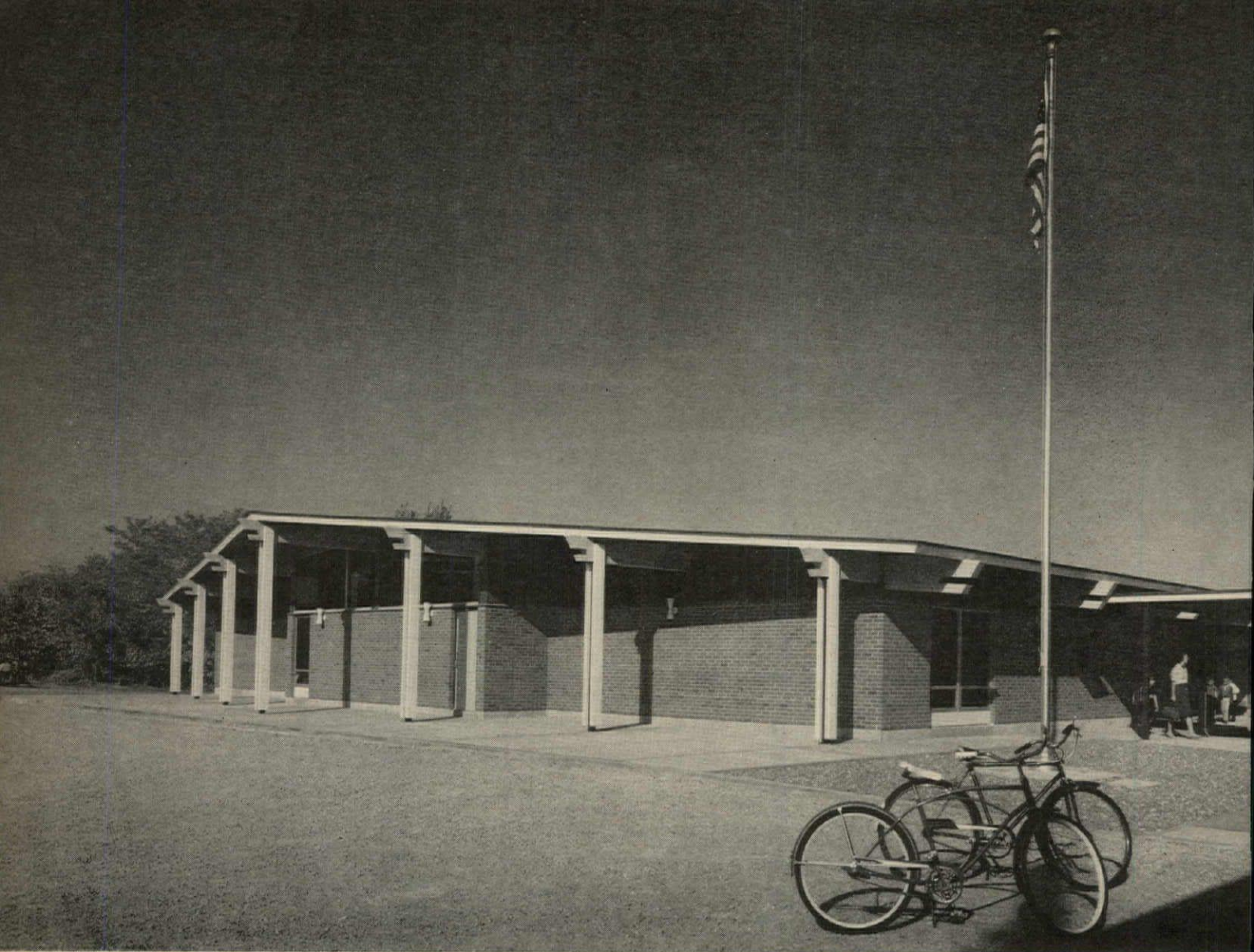
Big additions to North Shore School use sloping site to preserve scale



One of the major problems in the conversion of this small elementary school into a junior high was to preserve the character of the original building, and to keep the additions from overpowering it. The extra facilities required were four times as large as the existing unit. This question of scale was neatly answered by separating the addition into two elements, and placing the units on the site to take advantage of the irregular topography to match roof heights. A new two-story academic unit was constructed adjacent to the original school on a slope. The massive lively arts unit, with gymnasium and cafeteria, was placed on a much lower portion of the site (at left in the photo above, seen from the edge of the original building). The architects used the same materials and detailing in the additions as were in the existing school. In the older building itself, a multi-purpose room was remodeled and enlarged to provide proper library facilities for the junior high program.

The addition provides 12 new classrooms, shops, music, science and art rooms, a two-station gymnasium and a cafeteria with stage. To give the school added flexibility, the cafeteria was designed with two sets of folding doors, which permits a limited team teaching program in the school. At various points in the room are audio-visual screens.





Bill Engdahl, Hedrich-Blessing photos

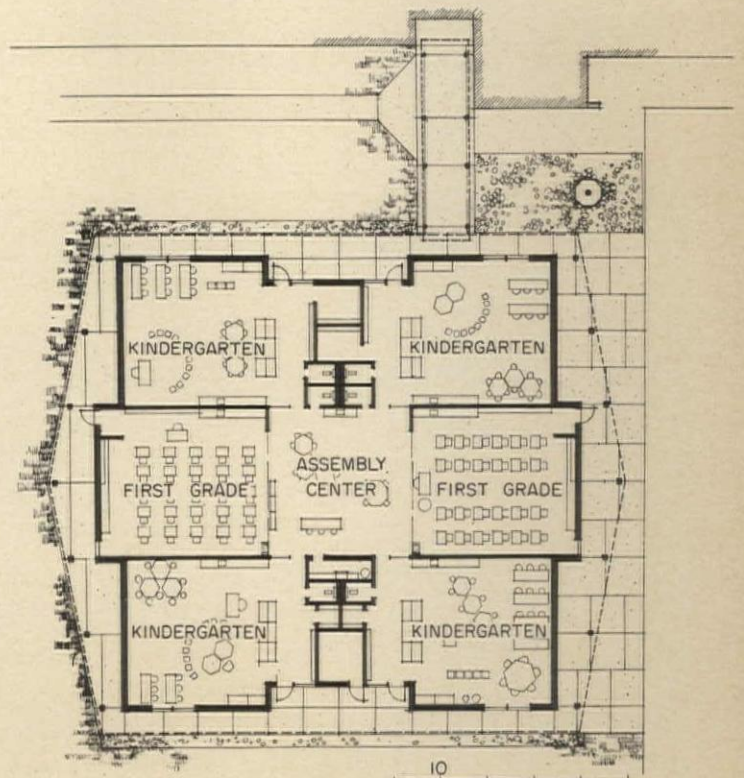
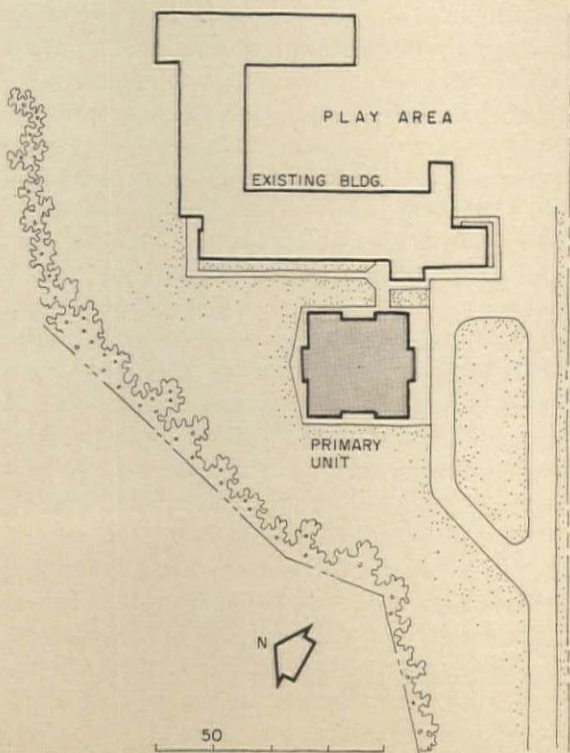
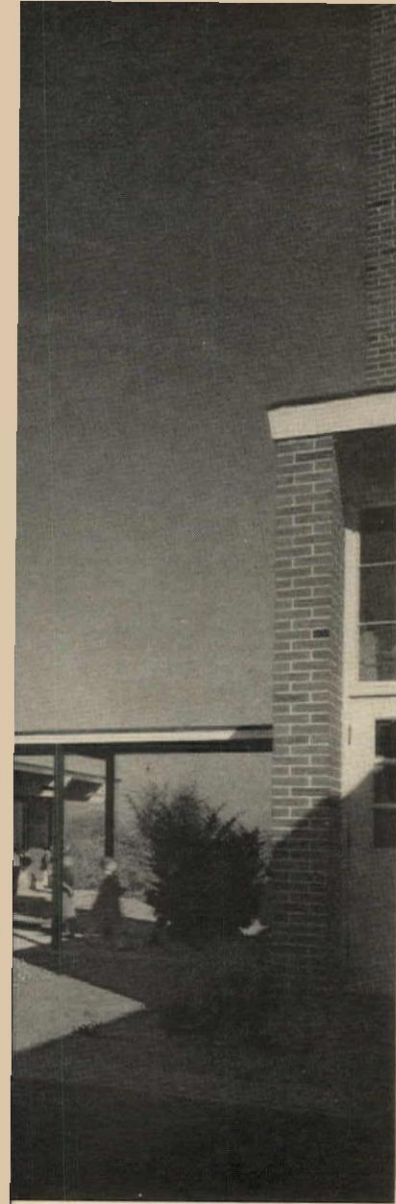
COMPACT K-1 ADDITION FEATURES CARPETS AND FLEXIBLE PLAN

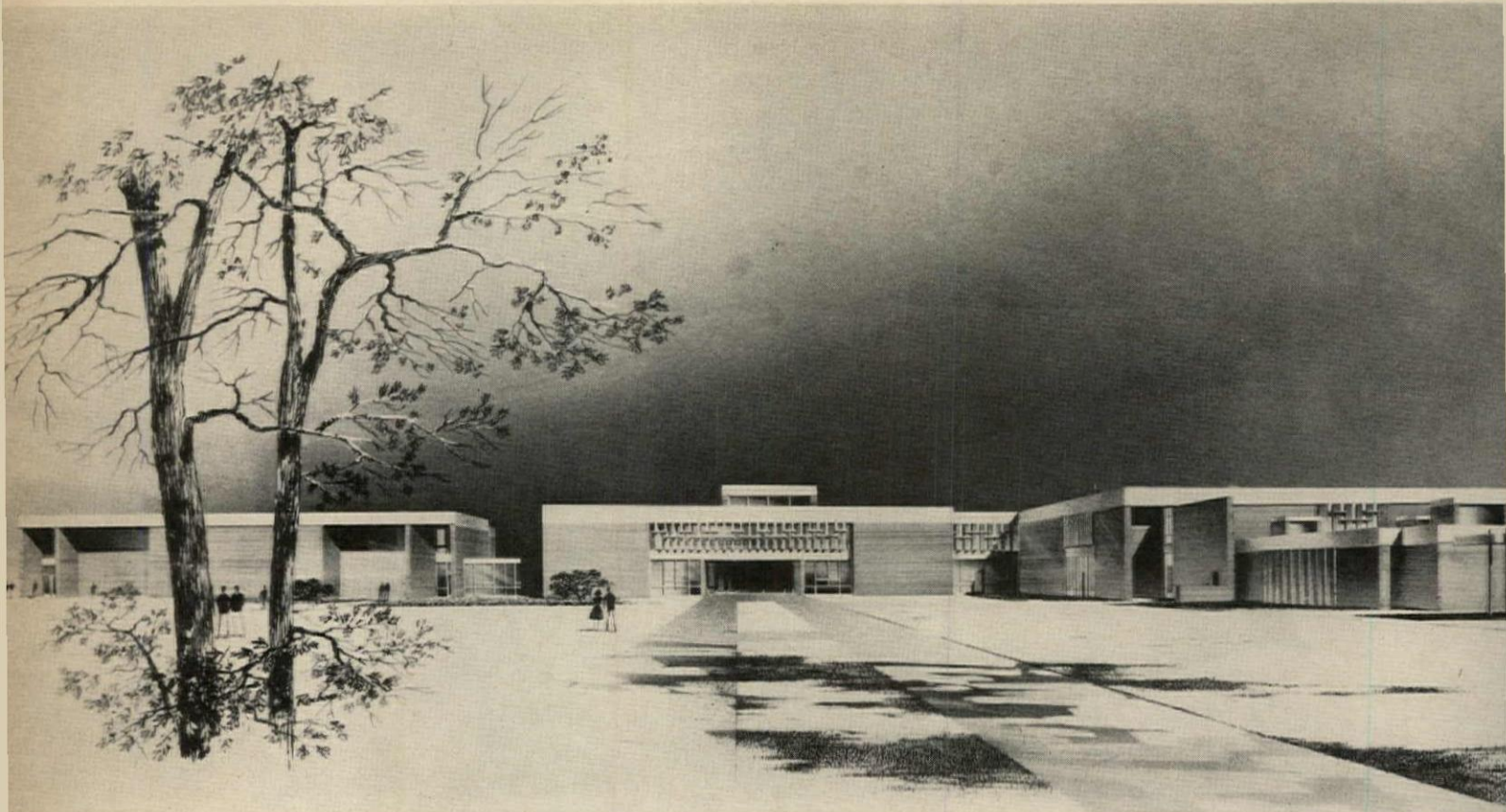
*Primary Unit
Penn Junction School
Pattonville, Missouri*

ARCHITECTS:
Pearce & Pearce, Inc.

The friendly and familiar atmosphere of this little addition was conceived as an individual space completely devoted to the beginning student and his special needs. The space was also geared to give sufficient internal flexibility to allow a complete range of participation—from individual to large group—with minimum preparation and interference. To create a larger room, the center part of the building can be opened into a continuous space; at other times, it can be closed to form two classroom areas and a teacher work center. Each room has access to the outside under wide overhangs.

The building is constructed of steel columns supporting laminated wood beams decked with wood. Exterior walls are brick, exposed on the inside. Classrooms have cellular floors, surfaced with carpet, which conduct hot air from a central furnace to grills at the exterior wall. The resulting warm, comfortable floor is frequently used by the children as a sitting surface. Pattonville's school board president, Milton G. Henselmeier, states that the carpeting's "effect on student morale is excellent," and that it "subtracts from maintenance costs."





HIGH SCHOOL CLUSTERS "LITTLE SCHOOLS" IN AN EXPANDABLE PLAN

A two-phase land acquisition and construction program, coupled with the need for facilities for new teaching methods, resulted in this extremely interesting scheme for a high school. It is a campus plan of linked buildings, but compactly organized in two stories. Zoning of activities is applied by building and level, with the plan organized into two clusters of interrelated facilities. First, academic classrooms grouped (on the second level) in houses around an instructional materials center and audio-visual lecture hall. Second, science and manual arts facilities grouped (on the first level) around an audio-visual lecture hall. Each academic house or "little school" contains regular and specialized classrooms, study areas, counseling and teacher offices, conference space, and dining-social area for about 650 students. Two houses will be completed in the first stage, two added later. Each is clearly articulated to give it identity and reduce the scale of the over-all project. The compact grouping shortens circulation paths and uses a minimum of the original tight urban site: in the first stage, 11 acres are available under an Urban Renewal Project; 17.1 acres will be provided later. The structure has reinforced concrete columns and beams, concrete pan joists. Walls are face brick, backed by lightweight block. Provision is made for future air conditioning. Estimated cost is \$2,490,000 or \$16.27 per square foot.

*Eastern Senior High School
Detroit, Michigan*

ARCHITECTS:

Linn Smith Associates, Inc.

STRUCTURAL ENGINEERS:

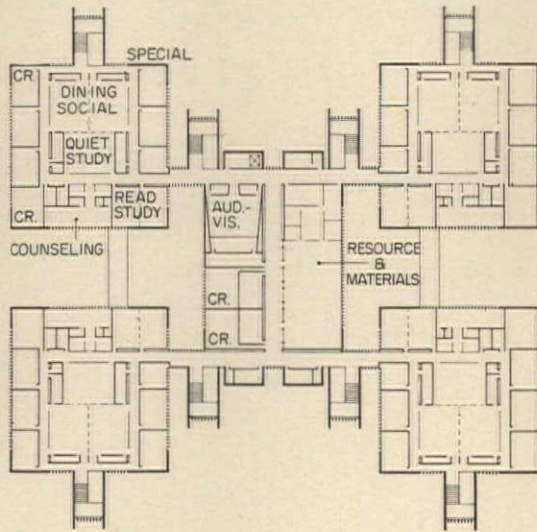
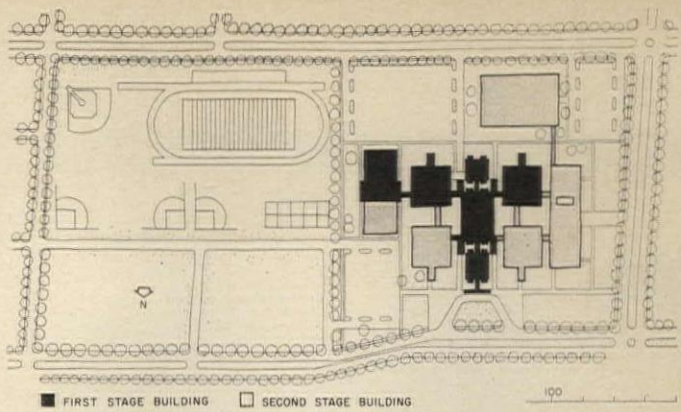
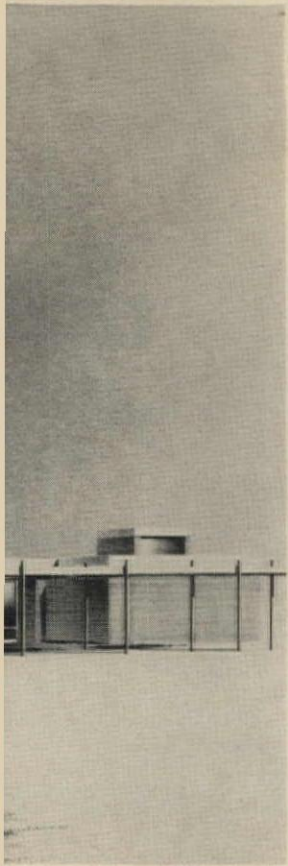
McClurg, McClurg, Paxton & Mikle

MECHANICAL & ELECTRICAL ENGINEERS:

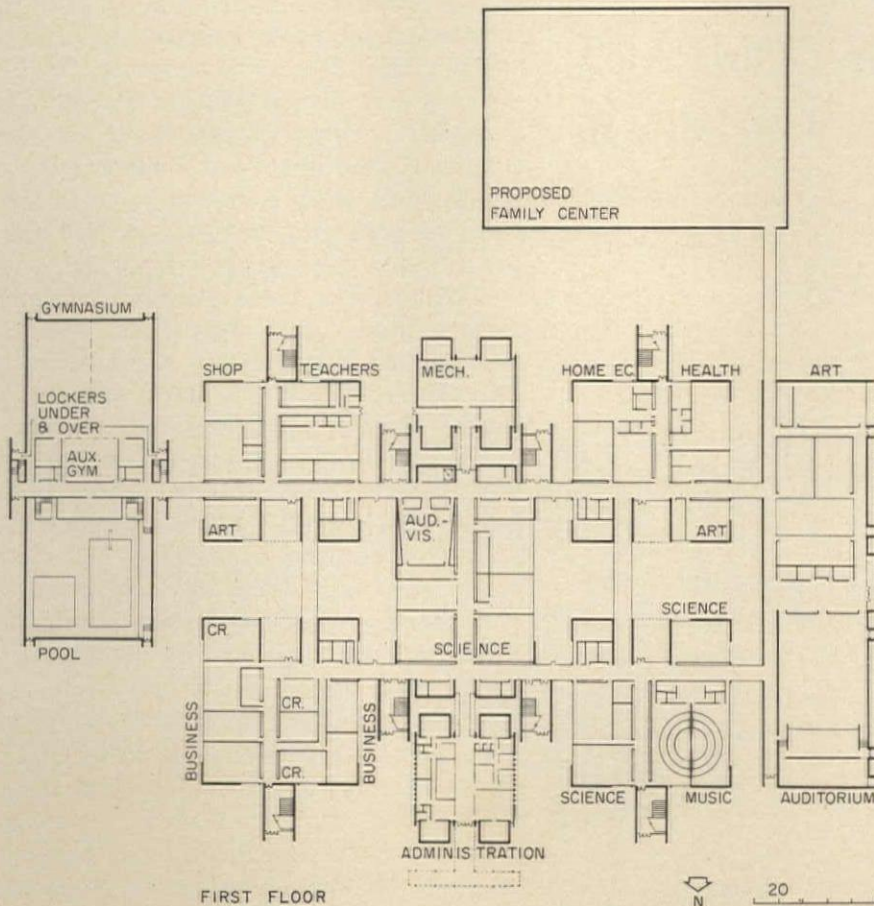
Gordon E. Hoyem, P.E.

CONTRACTOR:

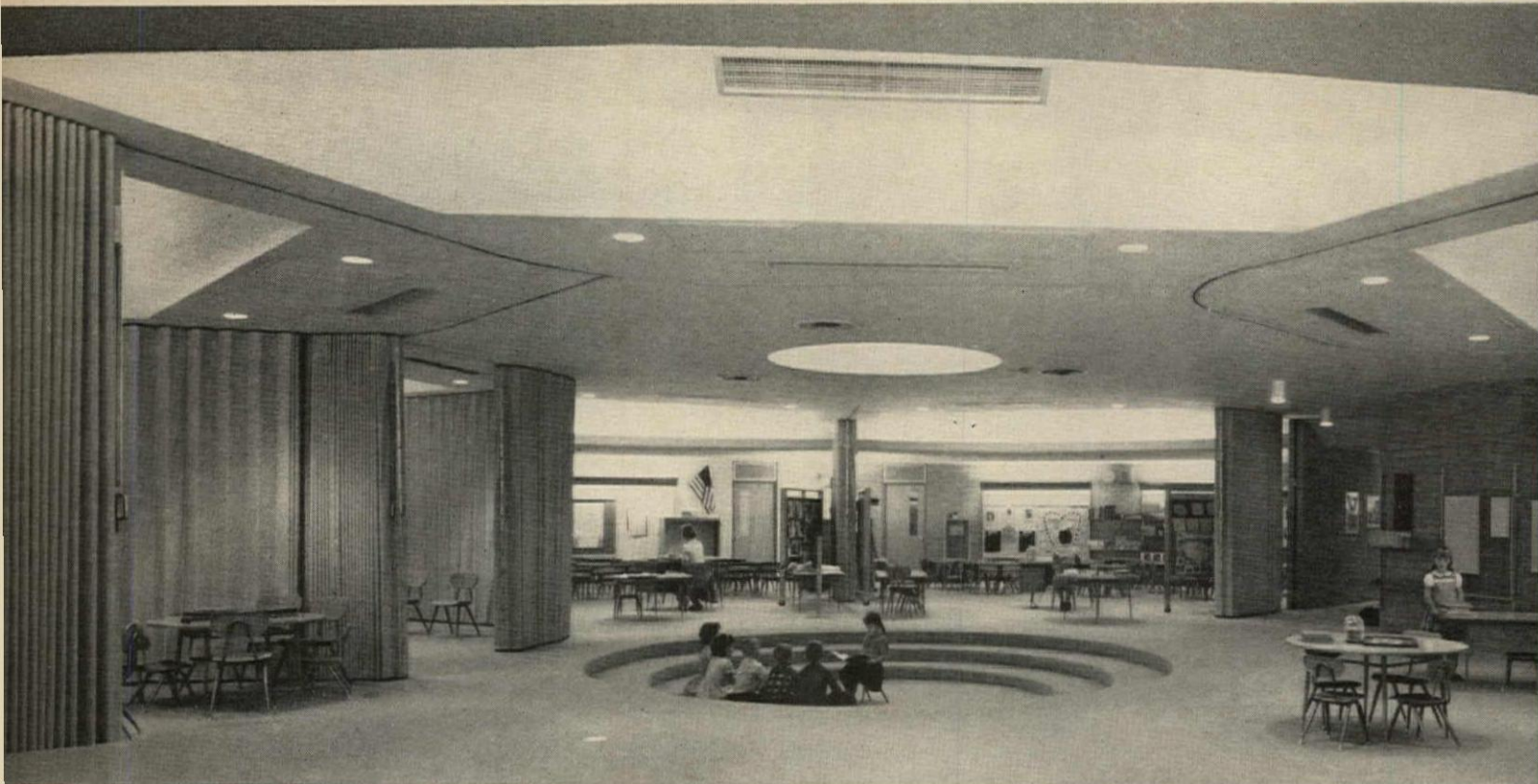
Practical Construction Company



SECOND FLOOR



FIRST FLOOR



R. H. Hayes photos

DIVISIBLE CLUSTER PLAN FOR A COMPACT ELEMENTARY SCHOOL

*Sherwood Elementary School
Greeley, Colorado*

ARCHITECTS:
Shaver and Company

STRUCTURAL ENGINEERS:
Bob D. Campbell and Company

MECHANICAL ENGINEERS:
Paul H. Koch and Associates

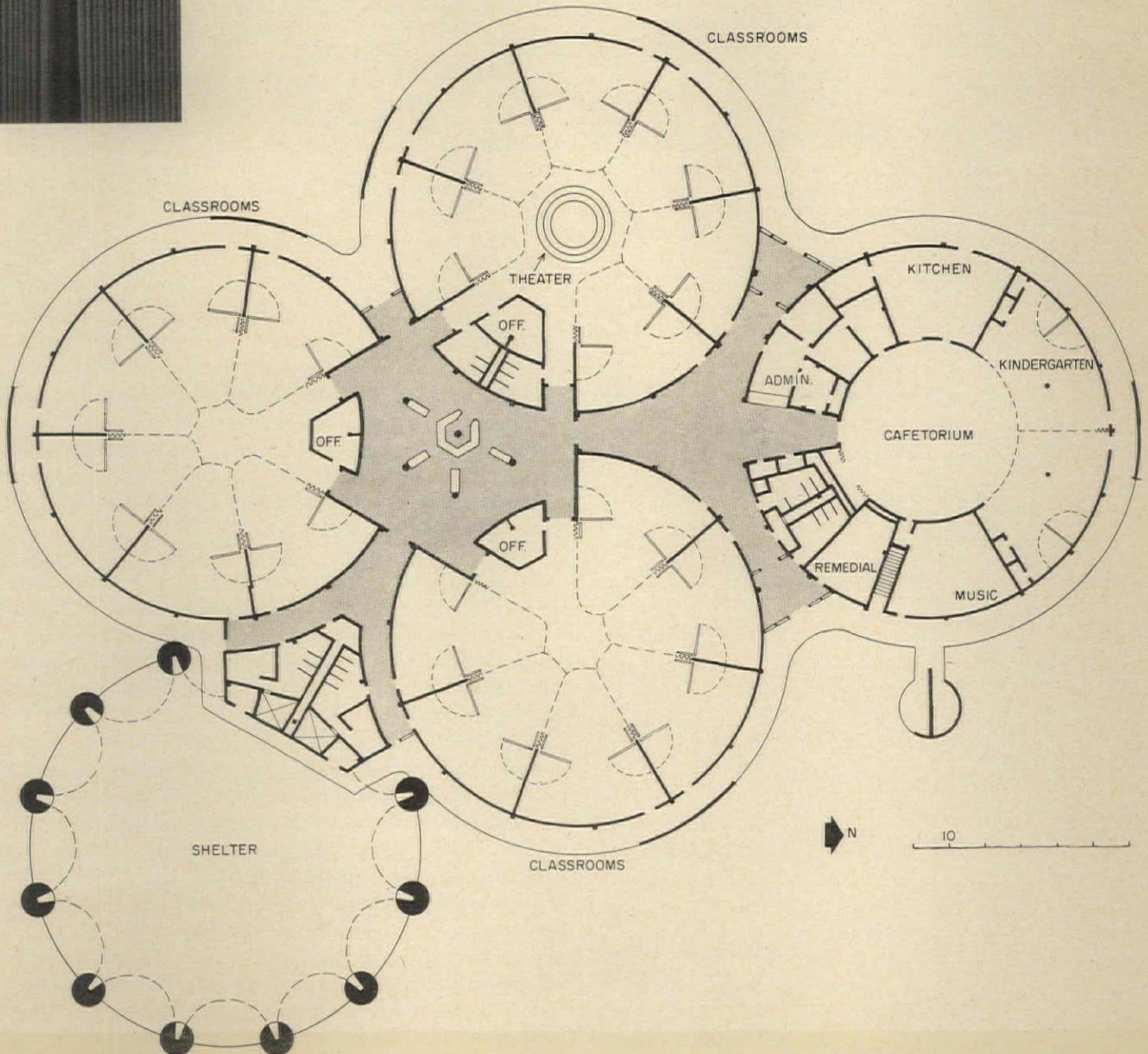
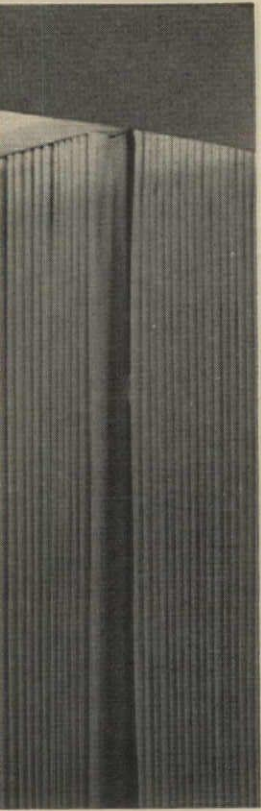
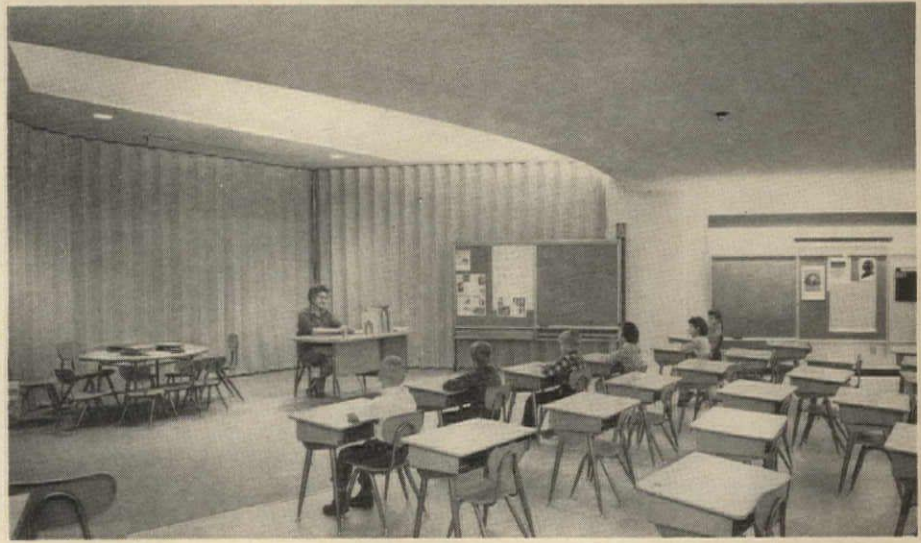
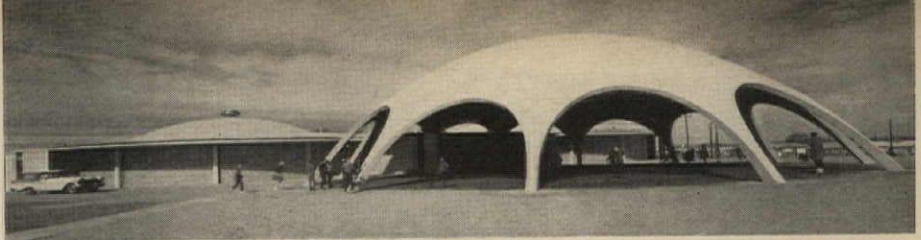
ELECTRICAL ENGINEERS:
Howard W. Bridges and Associates

EDUCATIONAL CONSULTANTS:
Educational Planning Service

In December 1962, the town of Greeley, Colorado, launched a highly innovative program to construct six new schools: four elementary, a junior high and a senior high. Due to be completed during this year, all were designed by John A. Shaver, and represent a variety of plan shapes, room arrangements and structure. The Sherwood Elementary School is the fourth, and final, elementary school of the series, and incorporates a synthesis of the ideas used in the preceding three. In a sort of three dimensional "bubble chart" scheme, a series of circular areas are tightly linked into functional groups. Eighteen classrooms for grades one through six are grouped into three clusters, six rooms and two grades to a cluster. Folding partitions open each of these areas into a single large space. At the hub of the classroom clusters are teachers' offices and a resource center. Each cluster has a domed roof, with unit ventilators at the apex. The entire school is air-conditioned and cost \$13.85 a square foot, equipped.

A fourth cluster centers on a multi-purpose cafeteria, which doubles (via folding partitions) as added play space for the two kindergarten rooms. Administration and special rooms are also included in this cluster. The school is flanked by a play shelter to extend the season for outdoor activities.

The structure is supported by a ring of concrete piers around each cluster, and has brick exterior walls. Roofs are concrete over plywood forms.





Frank Lotz Miller photos

AN UP-TO-THE-MINUTE MIDDLE SCHOOL FOR VERY LOW COST

Full facilities for a very advanced intermediate school program were incorporated in this tidy building at the cost of \$8.88 per square foot. The price includes kitchen and all built-in equipment, and air conditioning for 12-month use, but excludes land value, movable equipment and professional fees. Research and planning for the school were materially assisted by a grant from Educational Facilities Laboratories, Inc.

The four-year middle school is physically divided into an "upper" and "lower" school of two grades each. Facilities, including a resources center, used by both sections are placed in the center of the plan. Each section has a multi-purpose room which serves, among other purposes, as the dining room, served by hot and cold floor service carts during lunch.

The architects state that: "The school was planned to accommodate two teaching techniques: (a) the conventional system of a teacher with a class group of some 30 students . . . and (b) the more advanced systems accommodating teaching teams, specialists, all teaching aids that offer promise, group endeavors, and student participation in the teaching process. It is expected that the teaching techniques which will finally be employed must be evolved over a number of years . . ." The structural frame is steel, with brick exterior walls. Total cost was \$413,500.40.

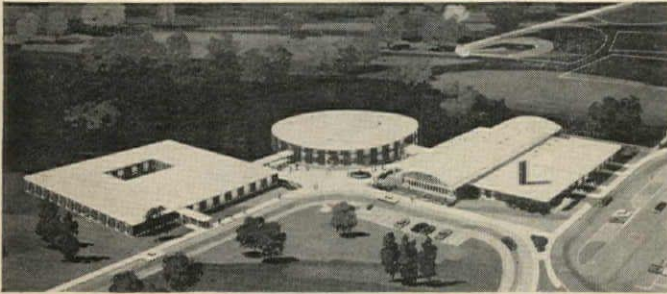
*Amory Middle School
Amory, Mississippi*

ARCHITECTS:
Biggs, Weir, Neal & Chastain

STRUCTURAL ENGINEERS:
Post & Witty

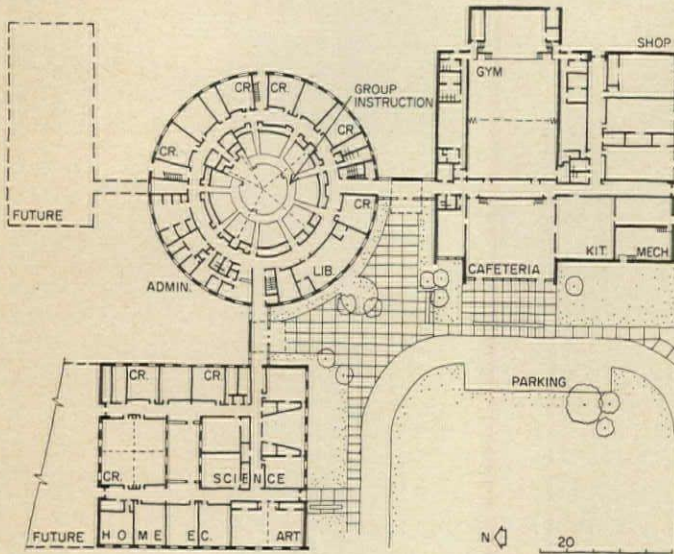
MECHANICAL AND ELECTRICAL ENGINEERS:
Lomax, North & Beasley

CIRCULAR AUDITORIUM SUBDIVIDES INTO FOUR

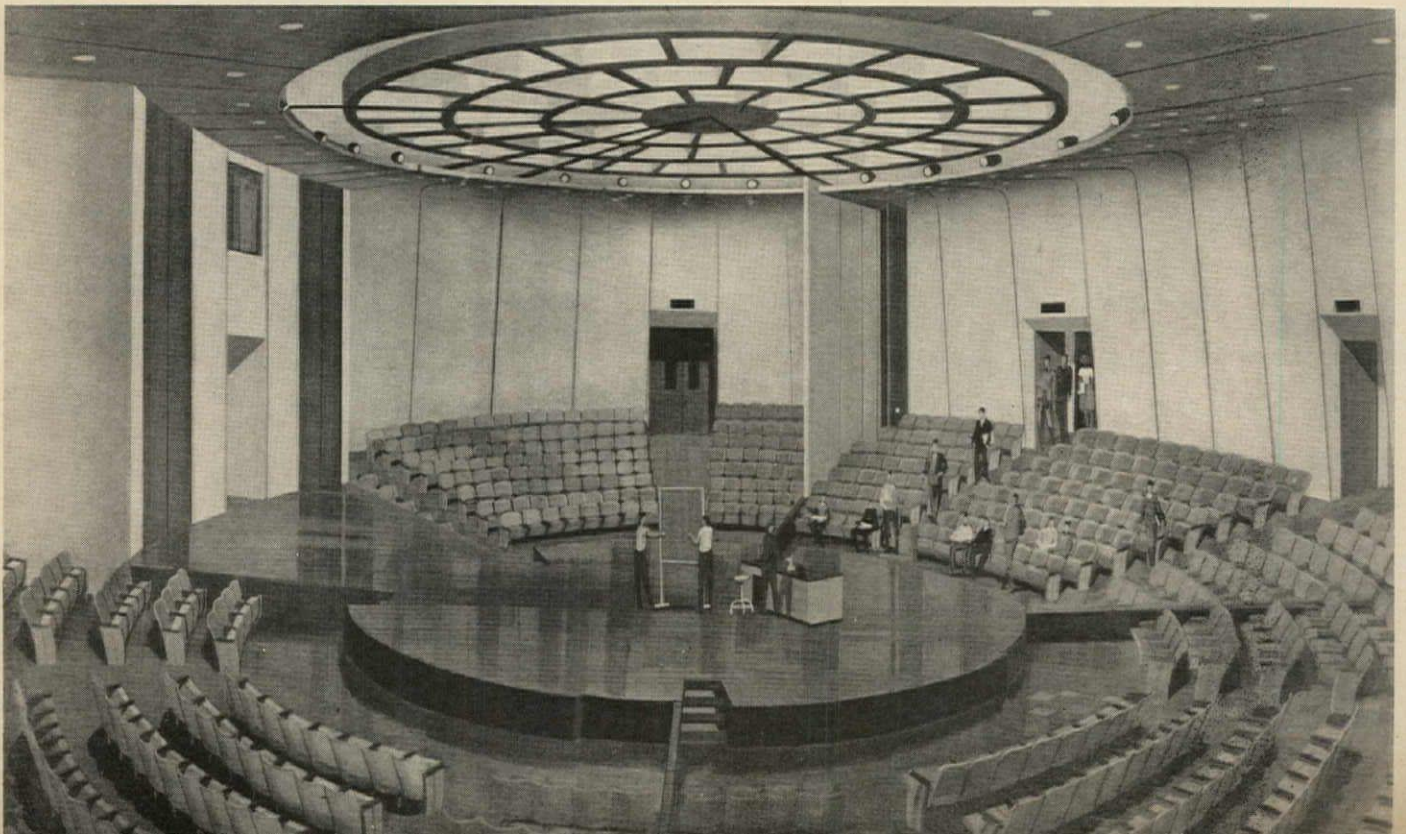


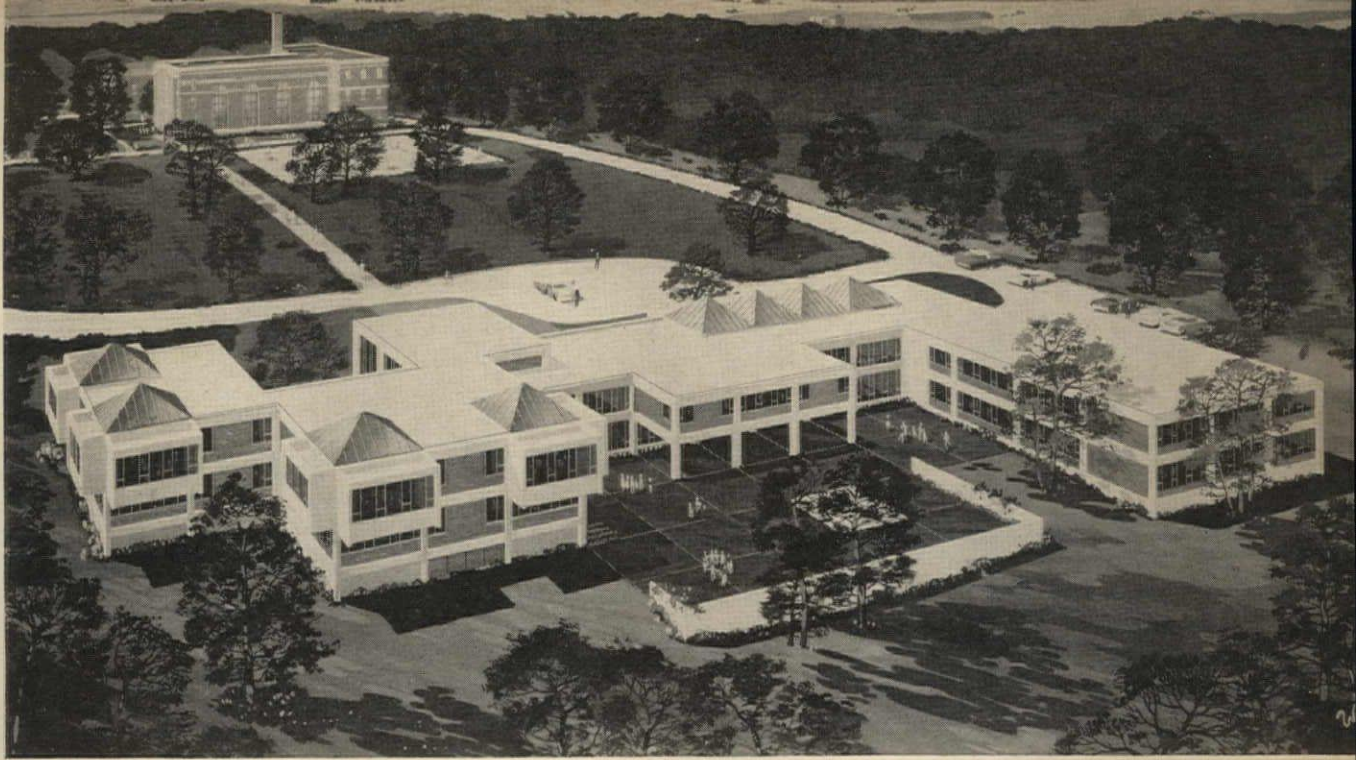
*Candlewood Junior High School
Half Hollow Hills, New York*

ARCHITECTS: *Frederic P. Wiedersum Associates*
SITE CONSULTING ENGINEERS: *Eberlin & Eberlin*
MECHANICAL ENGINEER: *Clyde M. Alston*
CONTRACTOR: *D. Fortunato, Inc.*



The hub of this new school is a two-story circular building containing an auditorium with 764 seats, which may be subdivided into two, three or four smaller sections by means of folding partitions. The area has fixed seating and a central stage (which may also be subdivided) for theater-in-the-round, music, meetings or lectures. The folding partitions are electrically operated, and supported by ceiling tracks and dwarf partitions to maintain a constant horizontal surface at the bottom. Major lighting is provided in a coffered ceiling. The master control booth for all lighting and sound systems is in a booth at second floor level. Each segment of the room has its individual heating and ventilating system. Other divisible group instruction areas, language labs and vocational training facilities are also included in the school. The exterior walls of the school are load-bearing, with concrete lintels bearing on piers of face brick and concrete block. Interior framing is steel; floor slabs are concrete.





Joseph W. Molitor photos

SCHOOL FOR THE DEAF ADDS FACILITIES FOR PRE-PRIMARY TRAINING

*Pre-Primary School
New York School for the Deaf
White Plains, New York*

ARCHITECTS:

Frederick G. Frost Jr. & Associates

Architect-In-Charge: A. Corwin Frost

Job Captain: Rachelle Bennett

STRUCTURAL ENGINEER: *Wayman C. Wing*

MECHANICAL & ELECTRICAL ENGINEERS:

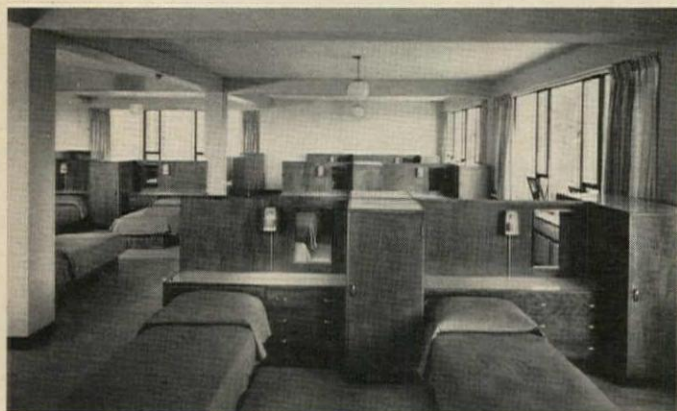
Segner & Dalton

LANDSCAPE ARCHITECT: *Vincent Cerasi*

CONTRACTOR: *Bair & Bair, Inc.*



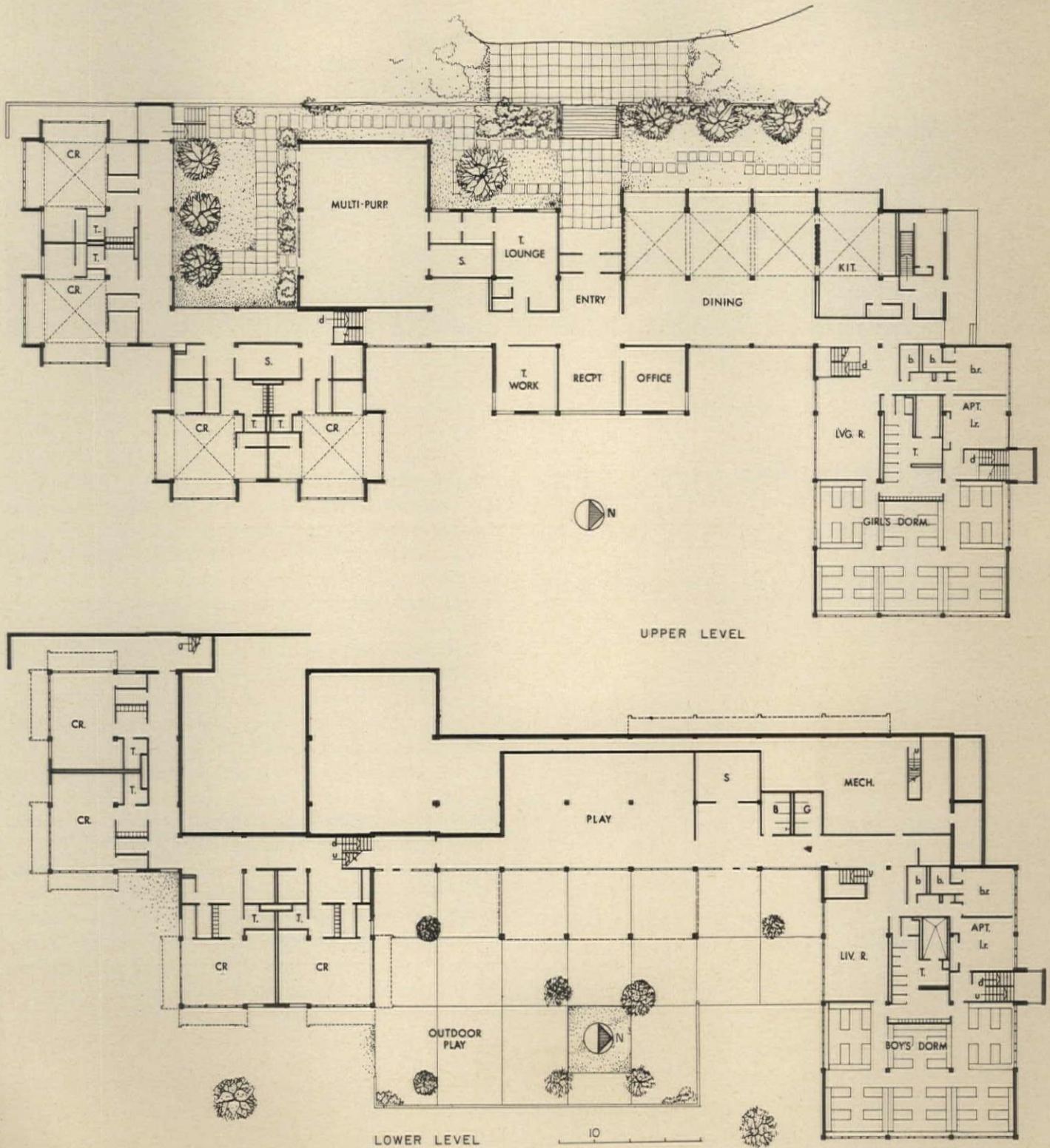
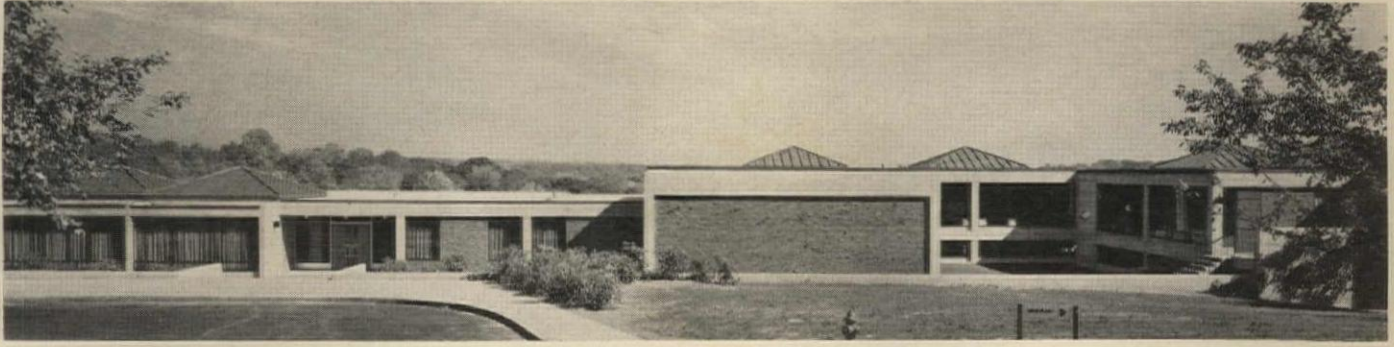
Pleasant design and appropriate scale gear facilities to the very young deaf

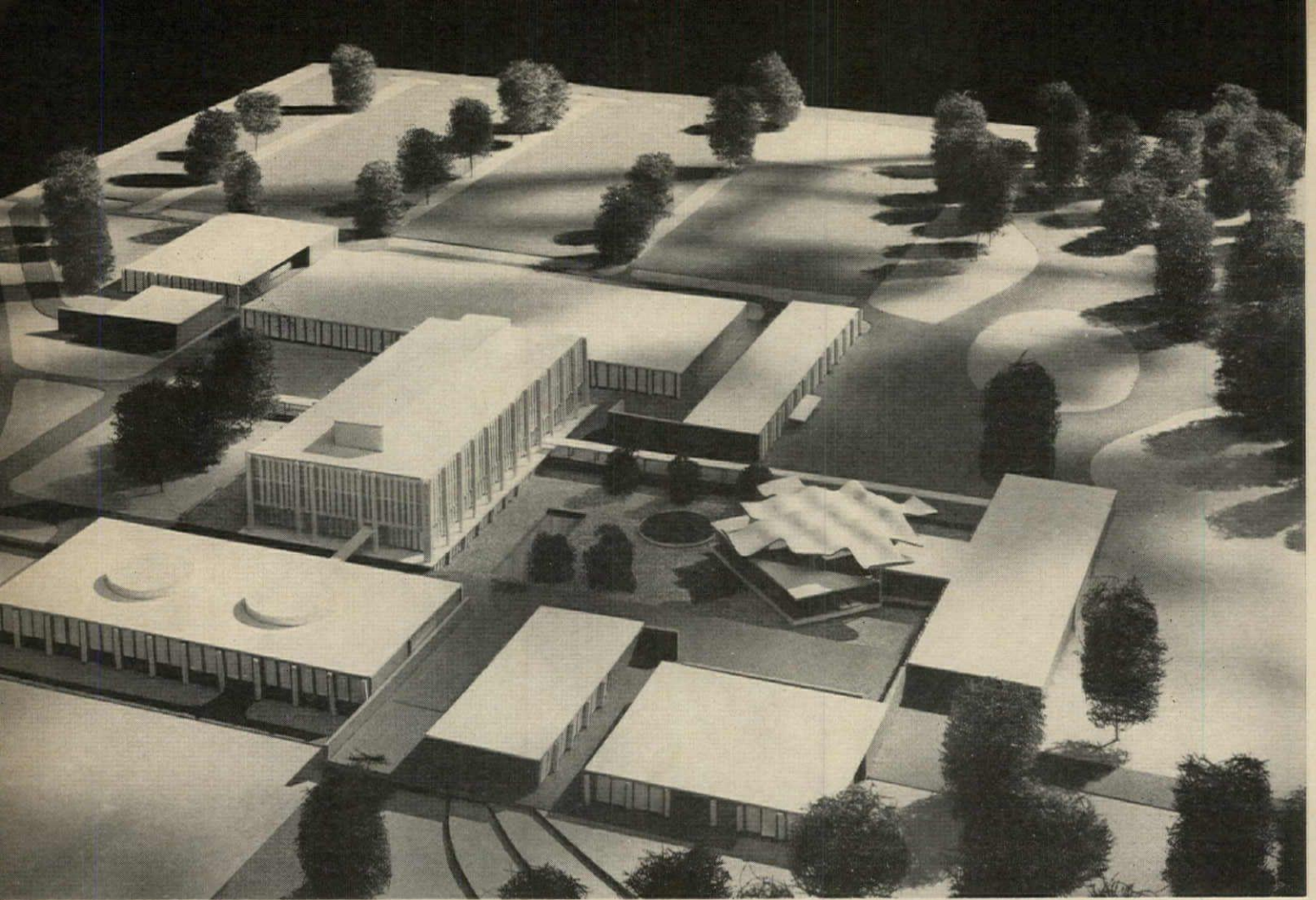


This new pre-primary building at the New York School for the Deaf is specifically planned to teach three- to six-year-old children basic speech and language, and prepare them for entering the primary grades at the usual age. The building contains classrooms for 64 children, dormitory facilities for 48, meeting and play rooms, dining room and kitchen, apartments for house parents and administration.

As the very young deaf children are taught in very small groups, a special type of classroom was developed for the second level to permit the teacher to concentrate on two or three, while the others carry on individual activities. Alcoves and bays permit various groupings within each classroom space, and are supplemented by such auxiliary services as a tutoring room, toilet and a viewing room with one-way glass. More standard classrooms are on the lower level, and serve as a transition to primary grades which are housed in another building.

The dormitories group bed, dresser and closet units to separate the children into groups of four, while keeping them in two large rooms for control purposes. Low storage walls give separation for privacy, yet do not cut off views of any part of the room. The building has an exposed concrete frame and exterior walls of red brick. Garden courts are provided for outdoor instruction and play.





Lens-Art photos

A COMMUNITY COLLEGE PROVIDES CAMPUS PLAN FOR TWO-YEAR PROGRAM

A burgeoning building type in the school field, plans for community colleges are in at least the discussion stage in every sector of the United States. This new campus, on the site of the old Ford estate in Dearborn, Michigan, is planned to accommodate a two year, liberal arts, technical-terminal college for 2,625 full time and 9,200 part time students.

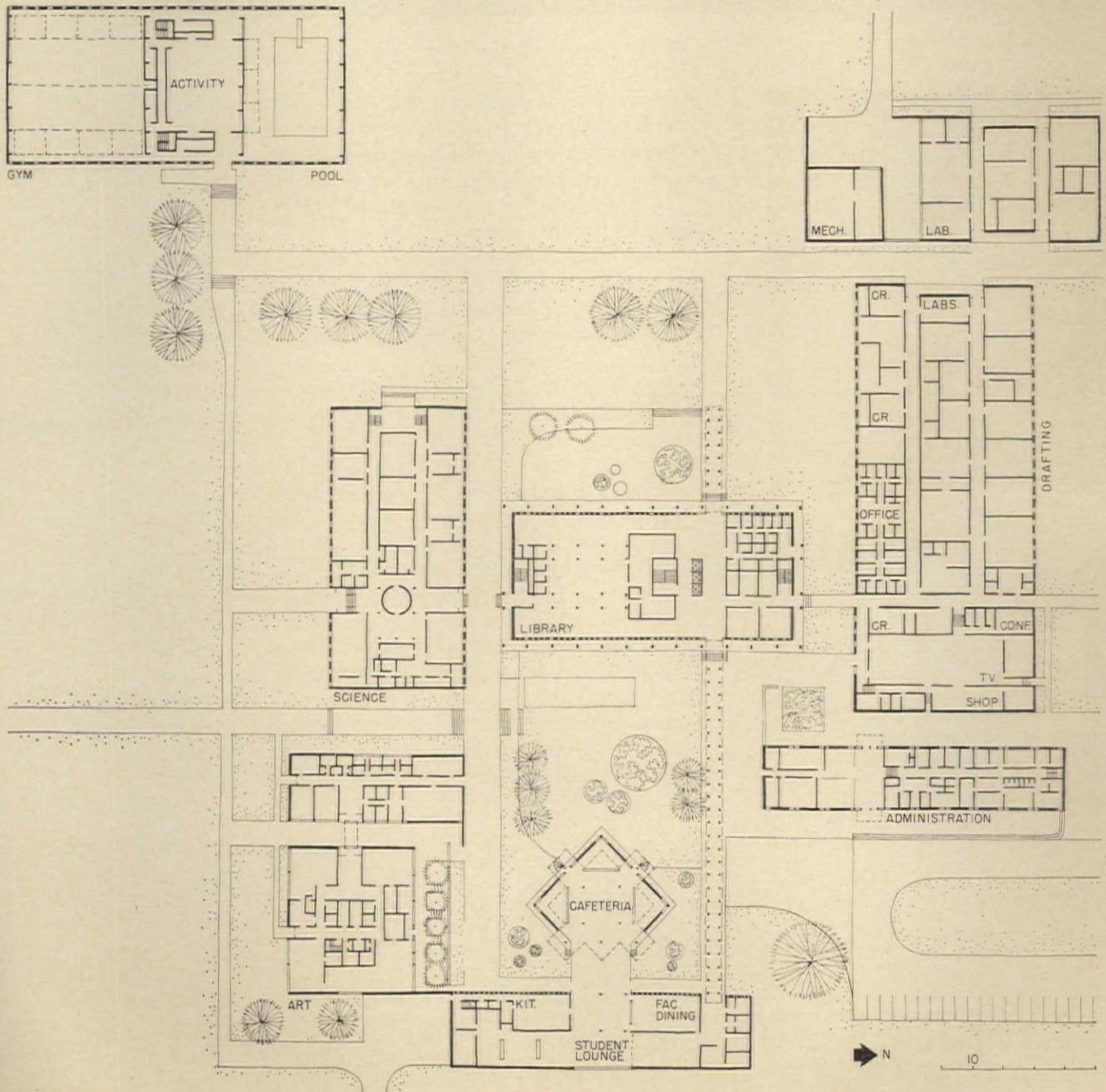
Eberle Smith comments that "the community college is a relative newcomer to the American scene. In the simplest terms, it is an institution of higher learning offering programs beyond the high school level less than four years in length (and) bridges a difficult gap between high school and university, or high school and employment . . . it is within commuting range of the area it serves; so that, in general, students incur no expense for board and room."

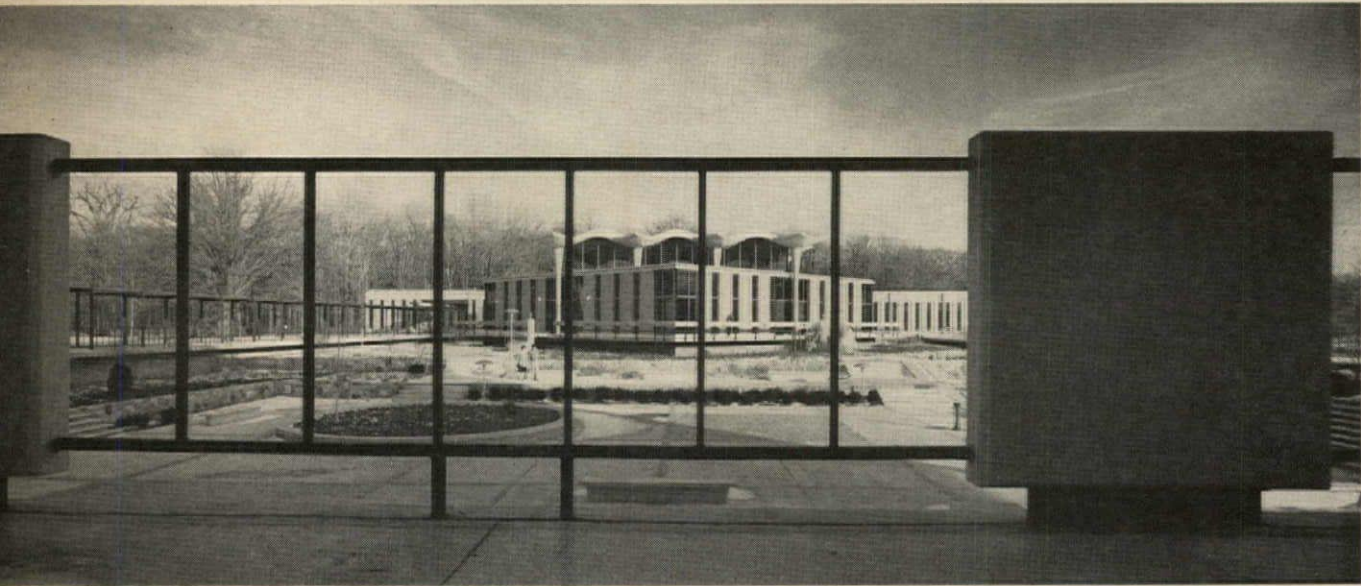
In this example, the individual buildings are closely grouped around a center square to provide a completely pedestrian inner campus. All vehicular traffic—drives, parking, service areas—is limited to the periphery of the complex. The 75-acre site adjoins the University of Michigan Dearborn Center, and it was planned for the two institutions to be complimentary and to share such facilities as auditorium, library and physical education plant.

The structures of most of the buildings have concrete frames, pan joist floors, precast wall panels and brick trim. The cafeteria building in the center of

*Henry Ford Community College
Dearborn, Michigan*

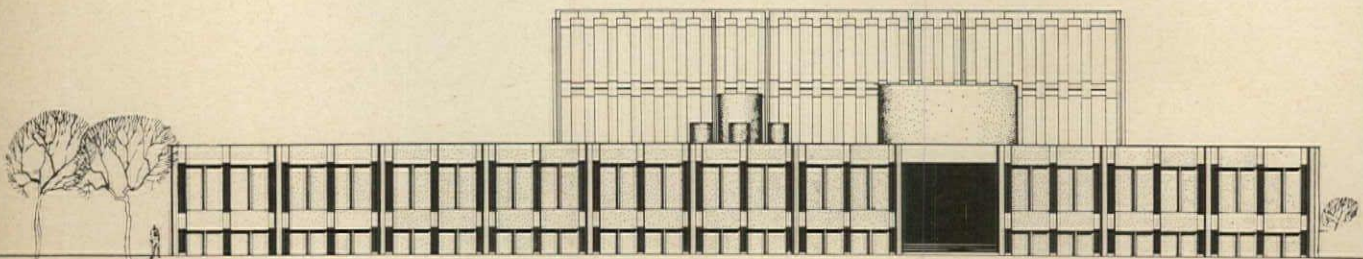
ARCHITECTS AND ENGINEERS:
Eberle M. Smith Associates Inc.





the middle court has a shell concrete roof, and serves as a focal point. Most of the buildings are connected by covered walkways, and most of the courtyards are paved and landscaped for outdoor activity use.

Generalizing on an approach to this type of facility, Eberle Smith comments: "The size of the college community may be established according to three major considerations. First, of course, there must exist a socially and geographically integrated group which needs and wants a community college. Second, the area to be served must conform to the requirements of the enabling act of the state. Third, the area must have an adequate tax base to carry its share of the support of the community college. . . . Among the possible sources of support are individual donors, local tax revenue, fees for tuition, state aid to education and Federal funds. Part of the architect's service is to develop a master plan and a construction schedule which will take the best advantage of each of these sources. Usually, construction must take place in several stages as funds become available, year by year. Periodically, some units may be added and others may be expanded or converted to new uses as required by increases in enrollment and enlargement of the curriculum. . . . Community colleges are infants by comparison to the public elementary school, and their pattern is not set; each is a challenge and an opportunity. . . ."



Architectural Engineering

Fire Safety in Schools

An architectural firm which has designed many Long Island schools makes a special point of maintaining close contact with the fire rating bureau and with insurance agents for local school boards during the initial planning stages of school design to obtain maximum fire safety while keeping premiums as low as possible. In addition, the firm, Frederic P. Wiedersum Associates, Architects-Engineers, recently conducted a meeting with the Nassau County fire marshal to exchange information on new techniques for fire safety. The fire marshal, Peter Lynch, stated that he favors single-story structures which do not have exceptionally long unbroken corridors, preferring cut-offs dividing them into smaller areas to minimize threat of rapid spread of smoke and fumes. He also called attention to a new regulation of the New York Department of Education which requires that at least one window in each classroom be suitable as a means of egress.

The Weidersum firm has developed a number of standard practices relating to fire safety. One of these specifies that all partitions must be built up to the floor slab above to isolate individual classrooms. If a partition happens to be located directly under an open web joist, the partition is built up tight to the bottom of the joist, and the slab or deck above is sealed off with a chemically treated, fire-retardant fiberboard. In science laboratories, fire hazard is reduced by providing the instructor's desk with a safety cut-off switch which automatically disconnects gas and electricity on student's desks in case any of the individual valves or switches have been inadvertently left open.

A New Publication on Fire Safety

While scissor stairs save floor space and are cheaper to build than two stairways in separate enclosures, the question might be raised as to whether scissor stairs meet code requirements for exits. Some of the pros and cons which could influence the answer are discussed in a short article on the subject in the January 1965 issue of the new publication, *Fire Journal*, issued by the National Fire Protection Association. Provision of alternate routes for escape, fire resistance of the enclosure and exit to the outdoors are some of the aspects considered. The bi-monthly *Fire Journal* is sent to members of N.F.P.A. as part of their membership service.

The Problem of Storm Drainage

In the next 35 years, between 30 and 150 billion dollars will be spent on urban storm drainage, reports the Engineering Foundation. Because many large gaps exist in current storm drainage knowledge, the Engineering Foundation is sponsoring a conference on Urban Hydrology Research to be held at Proctor Academy in Andover, New Hampshire, August 9-13, which will present papers from university and government authorities in the field. In addition to technical discussions on such parameters as rainfall rates and related run-off rates, the economic, political and organizational aspects will be investigated.

Instant Structures of Plastic

Research on instant buildings of plastic for military purposes in remote areas has been described by Professor Z. S. Makowski recently in *Interbuild* magazine. The research has been conducted on a flexible foamed-epoxy sheeting which has a built-in heat source, which, when ignited, foams the plastic and expands it into a rigid wall more than 3 in. thick. Professor Makowski also cites research in the United States on plastics for expandable, rigidizing honeycomb space structures. Such configurations as a sphere and a torus have been tried out. The structures, once placed in orbit, are expanded by air pressure.

This Month's AE Section

THREE ECONOMICAL SOLUTIONS IN LIGHTWEIGHT STEEL FRAMING, page 188. *DETAILING A PRECAST PANEL FACADE*, page 191. *ALUMINUM AND PLASTIC DOME FOR A PLANT ROOM*, page 194. *BUILDING COMPONENTS: A Designation System for Aluminum Finishes*, page 199. *Products*, page 201. *Literature*, page 203.

THREE SOLUTIONS IN STEEL FRAMING FOR LIGHTWEIGHT, ECONOMICAL CONSTRUCTION

Engineer William J. Mouton Jr. applies imagination and strict economy to structural designs using space-frames for a glass dome, latticed box frames for a high-rise, folded trusses for a gymnasium



Studio Arms, University Lake, Baton Rouge, Louisiana. Architects: Paul J. Mouton; Max C. Cannon

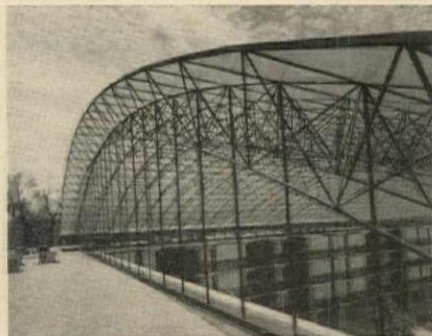
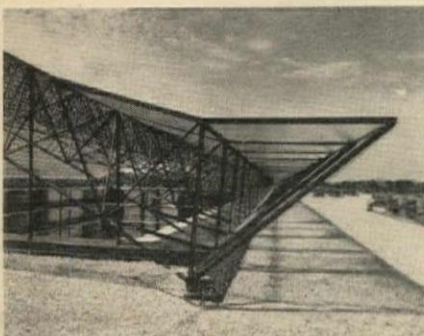
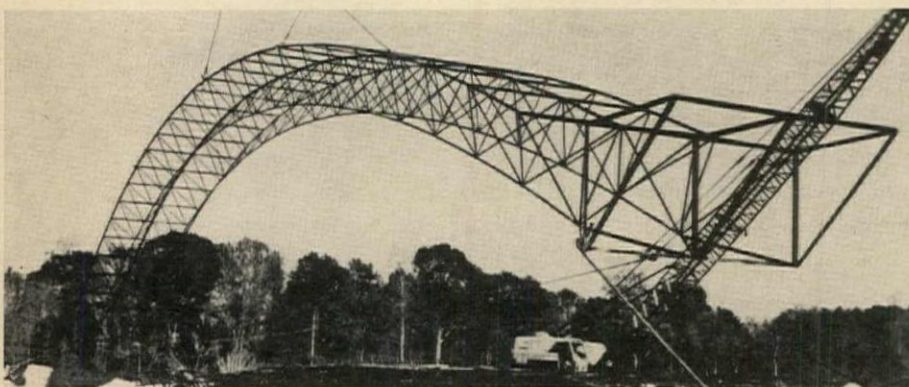
"Every structure is something special, not just an isolated gem but a unique problem with its own solution." So says William J. Mouton Jr. in describing the three structures shown here. "For instance, the glass-covered space frame can be constructed for the cost of a steel frame and built-up roof; the trussed box frame high-rise allows conventional windows with 40 per cent less tonnage and 300 per cent increase in stiffness. It is necessary only to approach each problem as a new one."

While a few space frames have been built in this country, their use has been limited due to their higher cost in comparison with more conventional structures. The main cause of the poor economy is the large number of small identical parts and joints.

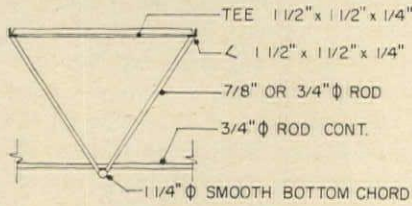
This particular glass-covered steel space frame employs none of the construction or joint techniques common to most space frames. It was erected in large pieces to effect economies in construction. Welded assembly was used because mechanical joints allow a small amount of movement at each joint and reduce strength at the joint since connections are punched or threaded.

With the advantages of welding and almost complete shop prefabrication, it was possible to execute the space frame for a cost no higher than constructing a conventional longspan steel structure with a built-up roof. This structure was built, with glass in place, for less than \$4.50 per sq ft.

A basic module of 4 ft square was chosen in plan and it was erected to have all members also 4 ft in length. With this configuration, depth was 3 ft, with diagonals and all other members having an unsupported length of 4 ft.



In the shop the main trusses were prefabricated as triangular half arches 50 ft long. Half trusses were set up on a special jig and joined in a "V" shape by 3/4-in. round steel bars



having each leg of the "V" 4 ft in length.

At the top chord, a steel "T" section 1 1/2 by 1 1/2 by 1/4 in. was used at the perpendicular connection member which, together with the horizontal legs of the angles, served as framing to receive the 3-ft 1 1/4-in.-square panes of tempered glass. Due to the simplicity of the jig, two men were able to turn out one half-truss each day.

On the job, an assembly area was

set up away from the building and the two half-trusses were welded together at the center and a temporary tie cable was attached and tensioned between supports. Another pair of half trusses was similarly joined at the end of the first pair. These two complete arches were then tacked together and hoisted up to the roof by crane and rolled into position with small dollies. This procedure was repeated until all trusses were erected. Next time, a 3/4-in. round steel rod was passed through the bottom of each "V" formed by diagonal bars to make the construction a homogenous space frame. In appearance, the largely pre-assembled roof seemed to have been fully welded piece by piece in the air.

Finally the adjacent top chords were tacked together and the glass panes were installed with polysulfide placed below the glass and caulk above it. The steel "T" sections had been previously cut away for proper drainage.

This type of system gives several

advantages: only two kinds of pieces are brought to the job (the triangular half trusses and the straight rods); the steel structure serves as the support for the glazing; any combination of angles, rods, tubes, and pipe of any type of weldable steel can be used; corrosion resisting steels are feasible.

According to the structural engineer, the structural analysis for such a roof is quite simple; any arch analysis will suffice but graphical analysis is best suited. Spans of up to 1,000 ft are easily possible in a single curvature and much greater spans (possibly up to 5,000 ft), may be feasible with double curvature.

By simply decreasing the distance between the bottom chord members of the triangular arches during erection, double curvature construction is possible.

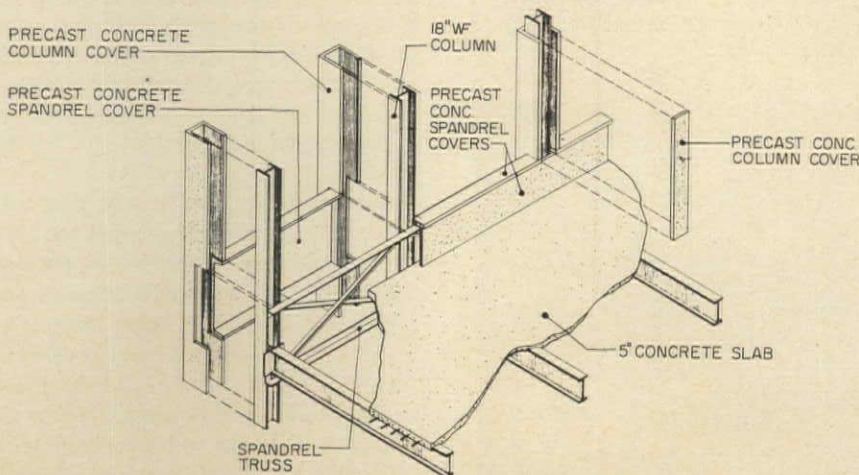
The space frame described weighed 4.5 lb per sq ft, and a 1,000 ft span could be accomplished, the engineer believes, for under 10 lb per sq ft using high-tensile steels.

This 45-story Plaza Tower of latticed steel box frame design, now being built in New Orleans uses less steel than conventional construction and has considerable stiffness to resist wind loads.

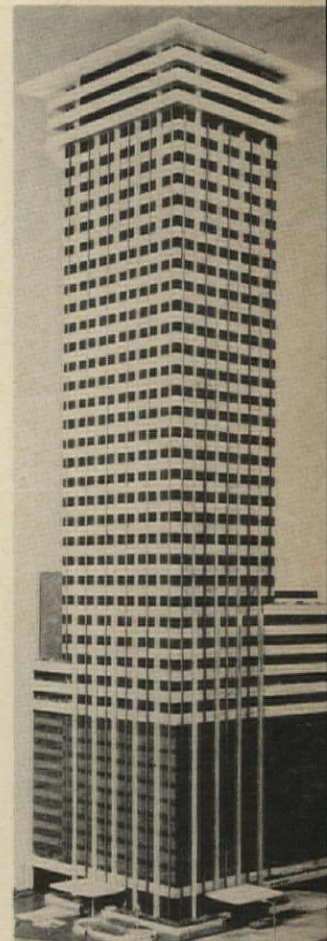
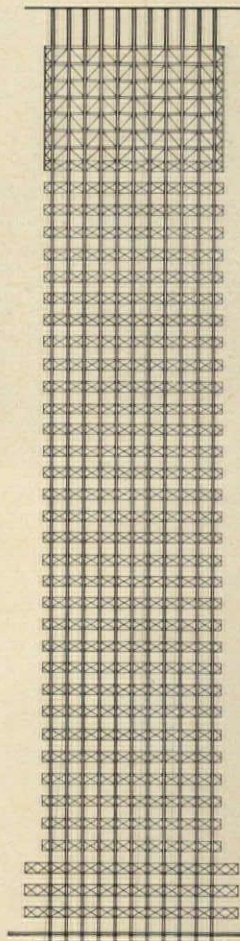
The key component of the latticed steel box frame is the spandrel truss. It looks somewhat like a ladder lying on its side with cross-bracing in the form of "x's" between the steps. Lattice truss framing of a building structure is not new; perhaps the best known application is in the Eiffel Tower.

The depth of the criss-crossed truss is about half the height of a floor. The truss is bolted directly to the perimeter columns of the structure, with the mid-section of the truss at floor level. Large rectangular window openings are possible and the building had the strength of a cross-braced tower.

The same structural principles and techniques employed in the new office building will also be embodied in the proposed 72-story New Orleans Place Vendome Hotel, which will be 750 ft high.



Method of joining box-lattice steel frame to floor



Plaza Tower, New Orleans, Louisiana. Architect: Leonard Reese Spangenberg

These structures have no interior columns between the elevator core and the exterior walls. Floors are bolted directly to the spandrel trusses in the exterior walls and to the service core in the center of the structure. The floors are of composite concrete and steel construction and add to the structure's rigidity. The service core is of conventional column-and-beam construction and houses elevator shafts, stairways and provides space for all utilities. Only 17 pounds of steel per sq ft are required for the 45-story Plaza Tower, and 17½ pounds for the 72-story Place Vendome Hotel. In both, large precast exposed aggregate channel sections serve as truss and column

covers providing waterproofing, insulation and architectural finish of the building exterior.

One of the most substantial savings in steel is made by reducing the floor height from 12 ft to 9 ft 6 in. This is possible, the engineer states, because the structural members between floors need not be heavy and deep. A conventional ceiling height of 9 ft is still possible with 5-in. composite floor slab serving as floor above and ceiling below. Of course it is not possible to have ductwork runs above suspended ceilings with this system. Air-conditioning and electrical facilities are carried in an area surrounding the service-elevator core.

Long-span Folded Trusses

The Hammond Junior High School gymnasium's economical structural system is based on folded lattice-type steel trusses designed on the folded-plate principle as developed by the late Felix Samuely. To the best of structural engineer Mouton's knowledge, this is the longest span of any structure of this type in the United States. Span is 83 ft 4 in. between columns erected 16 ft on centers, with 10-ft cantilevers at each end.

The top and bottom chords of the trusses are respectively 7-in. and 6-in. steel channels. Web members consist of small-diameter pipe that varies in size according to stress. The total weight of the steel structure including columns is 4.5 lb per sq ft.

The trusses were shop fabricated and then assembled at the site. For erection, the top chords of each pair of adjacent trusses were welded together on the ground, and pairs of trusses were lifted to the roof and secured to their columns as single units. This method allowed installation of a roof area measuring 16 by 103 ft with a single operation.

The roof system provides a structure that is extremely rigid in all directions without bracing of any kind except for tie-rod corner bracing of the steel columns. Inherent rigidity is further increased by the 2 by 6 wood decking that is secured directly to the truss members.

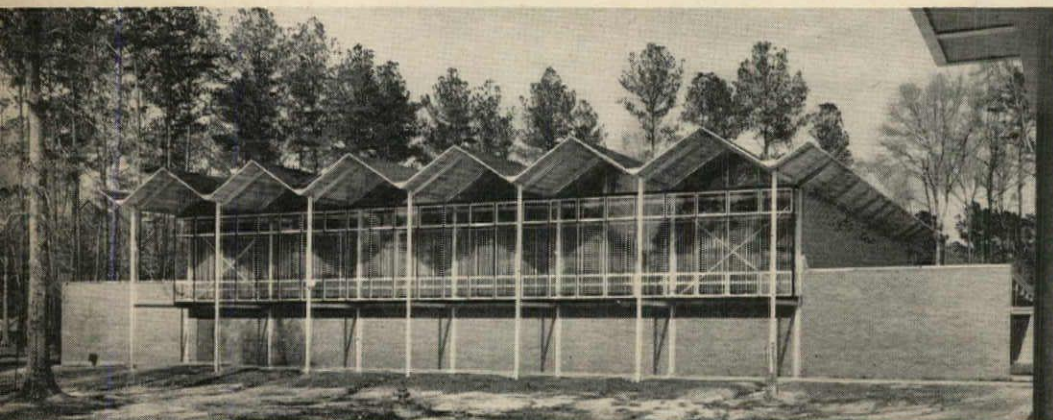
Though the roof area is somewhat larger than a comparable flat-roof system would be, cost of roofing was minimized by use of asphalt shingles.

This building design was chosen primarily because of its cost—due to less weight and simplicity of erection. Cost of structure was less than \$1.00 per sq ft. Other considerations in its favor were the clear definition of space and the handsome appearance it provided, particularly in the interior.

Architectural details are few and extremely simple. The glass on the north and south walls is set outside the column line in steel "T" mullions fabricated from flat steel bars. The wood screen in the column line serves the dual purpose of reducing glare and protecting the glass. Water is removed from the roof through galvanized steel tubes installed at each of the valley ends.



Gymnasium for Hammond Junior High School, Hammond, Louisiana. Architects: Desmond & Miremont & Associates, Ralph Clampitt; General Contractor: Ragusa Brothers; Steel fabrication and erection: Morris Iron Works



DETAILING A PRECAST PANEL FACADE

Demonstration of the rational approach required by new construction methods and materials

By Maurice Wolff

In the current surge of new design concepts, new structural techniques and new building products, the architect now finds his construction details becoming more inventive and experimental. He is developing construction techniques never before attempted. It might be of value for future texts on detailing to concentrate less on specific reference details (as they may soon be obsolete), and more on the thought process behind them.

A recent building using a modern material may serve to demonstrate some of the step-by-step considerations made before detailing lines were drawn.

The facade of the Massachusetts State Office Building (Figure 1) now under construction in Boston, has precast concrete panels with quartz aggregate added to provide color and texture. Tinted plate glass windows are set in neoprene "zippered" gasket frames surrounded by shadowbox framing integral with the panels.

Shape

The first question the detailing architect asks himself is: "What shape or shapes shall the component parts of the facade take?" Two schemes come to mind. The first is a series of horizontal members with cut-outs to receive the vertical and mullion members (Figure 2). The second scheme envisions complete four-sided frames which can be placed on the structural skeleton like a child's set of building blocks (Figure 3). The second scheme is naturally selected for its ease in construction and for the reason that a "zippered" gasket window is less likely to leak if it fits over a monolithic framed opening. Joints would interrupt its continuous weather seal.

Size

The next question is: "What size shall the frame be?" Of course the

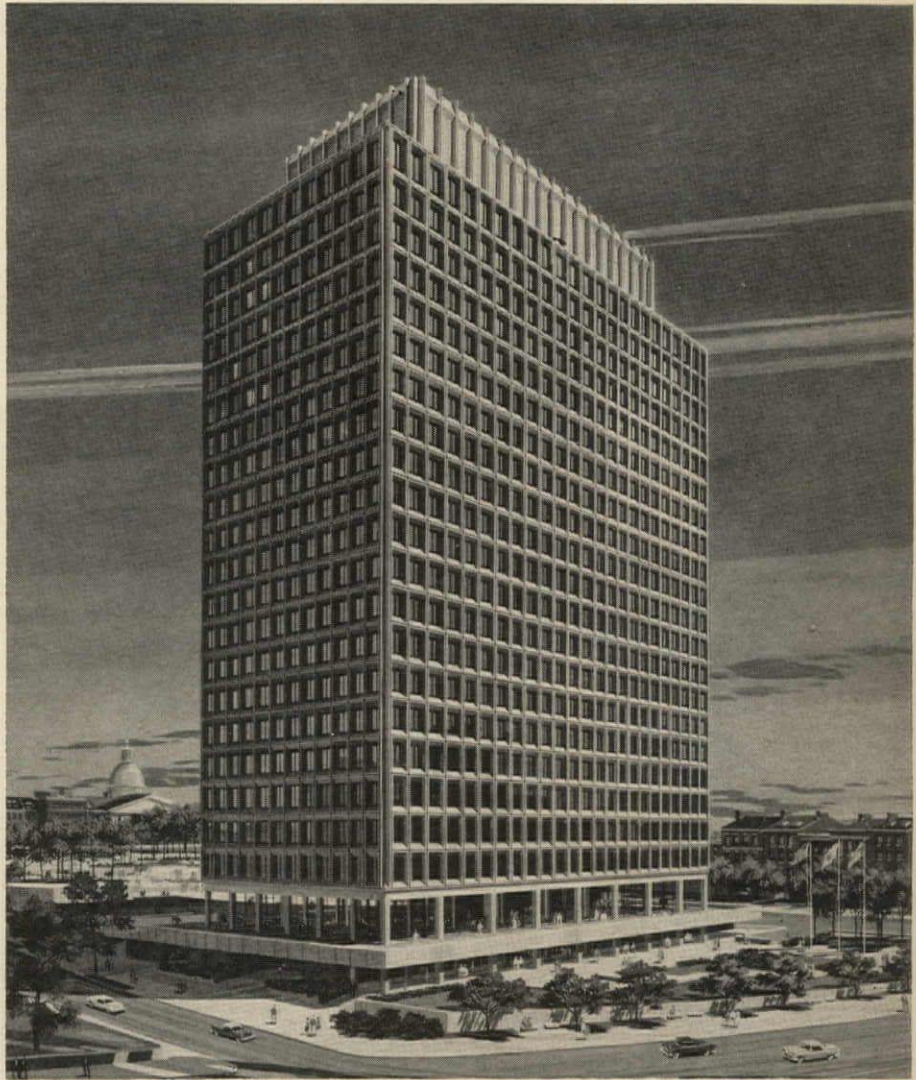


Figure 1. Massachusetts State Office Building. Architect: Emery Roth & Sons

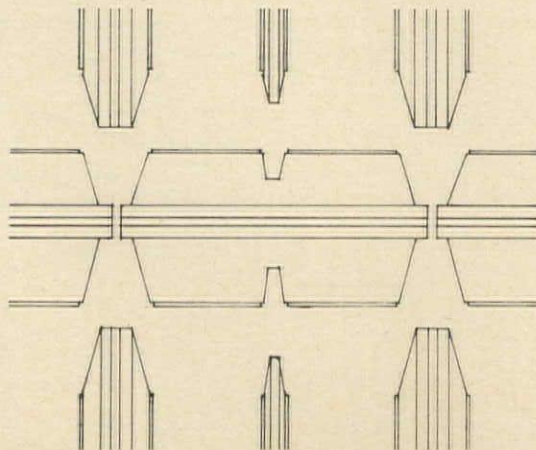


Figure 2. A possible method of concrete framing for windows

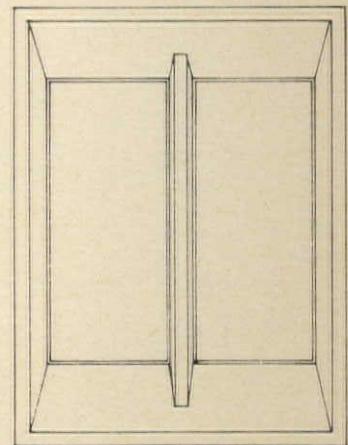


Figure 3. Selected scheme of one-piece precast framing

Maurice Wolff, architect, was formerly chief detailer for Emery Roth & Sons

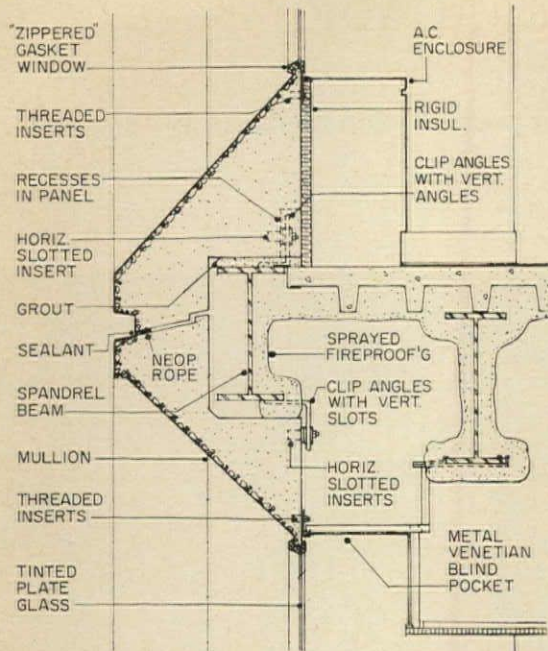


Figure 4. Method of notching top and bottom members of panels for support by spandrel beam

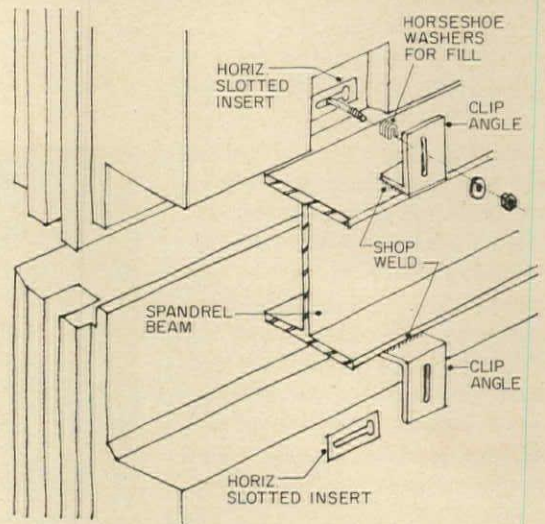


Figure 5. Method of fastening for vertical and horizontal positioning

larger the frame, the fewer the parts to install and the fewer the joints for possible leakage. At this point, a call to a manufacturer would reveal that trucks can transport panels up to 10 ft in width and 35 ft in length with no great difficulty. The planning module of this building is 4 ft 10 in., so a panel width of 9 ft 8 in. is selected. Since the panel will be fairly heavy due to its depth, it should be supported at every floor. Therefore the floor height of 12 ft 6 in. will be used as the panel height. An attempt to form two- or three-story lengths, although possible, might lead to breakage in handling.

Now comes the meaty question: "How shall the panel be supported?" The structural engineer will advise

that structural support should be near the center of gravity of the panel. After considering various methods of support such as outriggers, lintels and hanging devices, the scheme shown in Figure 4 is found to be acceptable. Continuous notches are cast into the top and bottom, lightening the panel and forming shoulders such that the panel may seat directly over and under the spandrel beams and be supported in static equilibrium by the beams. The clip angles fastening the panel to the beam at the top and bottom are then merely locking devices. The bottom of the panel has recesses for the clip angle so that the rigid insulation glued to the back of the panel may be uninterrupted. The supporting steel

is left exposed on top, bottom, and front since the concrete panel itself will act as fireproofing. The top of the steel is flush with the floor slab, enabling the panels to be installed before or after the slab is poured. This feature gives the general contractor greater flexibility in his scheduling of work.

Alignment

Alignment is a problem. To compensate for imperfect alignment of the structural skeleton, warpage of the panels, etc., reasonable dimensional tolerances must be made. The panel will be positioned 1 in. above the beam to allow wedges to raise or lower the panel to the exact height of the adjacent panels, after which

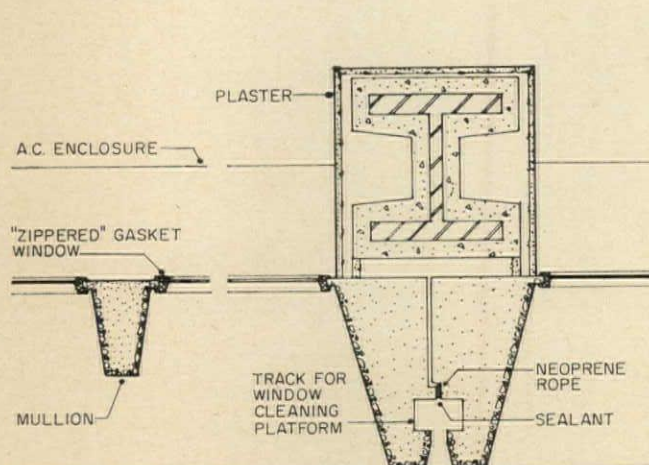


Figure 6. Cast-in-place track for window cleaning platform

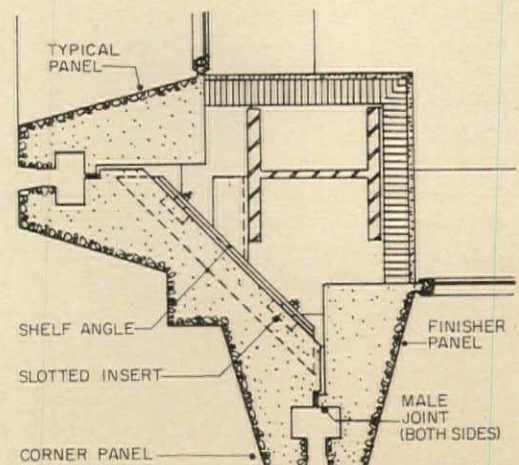


Figure 7. Corner panel

grout will be forced into the opening to distribute the load uniformly on the beam. A 1/2-in. clearance between the back of the panel and the vertical leg of the clip angle allows the panel to move either forward or backward. Washers fill the space after the panel is positioned. Horizontally slotted inserts cast into the panel allow it to slide sideways (Figure 5). The bolt protruding from the slotted insert engages a vertical slot in the clip angle allowing the angle to be shop-welded to the spandrel beam. The horizontal and vertical slots form a plus sign. The bolting occurs at the intersection. If the horizontal slot of the panel slides within its tolerance, and the vertical slot of the clip angle remains in a fixed position, the plus sign becomes asymmetrical, but the intersection remains for the bolt insertion. Note that the panel can move in any direction before final bolting takes place.

Window Cleaning

Since fixed windows have been selected, cleaning must be done from the outside. Provisions have been made on the roof for a window cleaning machine to travel around the perimeter of the building. This apparatus requires tracks in the wall to guide the cleaning platform up and down the building. The depth of the panel affords an opportunity to contour the joint in order to form such a track (Figure 6).

The back surface of the track will be the sealed joint between panels. Neoprene rope will be inserted into the joints with a special tool placing it exactly 3/8 in. from the exposed surface. This acts as a back-up for the polysulphide sealant which will next be applied with a caulking gun. An additional precaution is taken in the shaping of the panel to form a ship-lap joint.

Corner Panels

The corner panels, unlike the typical wall units, are not easily accessible from inside the building because of the structural column behind (Figure 7). Because of the ship-lap joint, the ideal sequence of erection would seem to be to start from one corner and work around in a clockwise direction until one story of the building is completely enclosed. The last frame would be a special finisher panel with male joints at both sides. However, this sequence is not possi-

ble as the second, third and fourth corners would be open at only one side and thus lack accessibility.

It is necessary, then, to erect all four corners before the typical panels are placed. Working from corner to corner necessitates one finisher panel for each wall instead of one for each floor.

Obviously, there is not enough depth in the corner panel for it to be hollowed out and supported in the same way as the typical panel. Like a flat slab of limestone, this corner slab can be placed on a shelf angle support at every floor. This is one of the many instances when the older, established methods apply. Anchorage and alignment can be attained in much the same manner as described for the typical panels.

Order of Work

One might think that, since buildings are built from the bottom up, they are detailed in the same order. This is not so. The bottom and top of the facade are detailed after detailing of the typical floor panels is completed. Like the corner panel, the base, parapet, and coping panels are not frames but are continuous members. The base panel (Figure 8) is sandwiched between a lower granite band and the first tier of typical panels. It is comparatively light in weight. Attempting to place it in equilibrium would prove impractical because of its awkward diagonal position. It is far simpler to partially hang it on top from the web of the spandrel beam, and to partially rest it on the bottom over an intermediate beam (which is also utilized for the granite and its masonry back-up). At the roof, the parapet panel (Figure 9) can be poised above the spandrel beam in the same manner as the typical panel, therefore can be supported similarly. The upper portion of the panel is a facing for the actual brick parapet behind. Above, lapped over the panel and anchored into the brick, is the final precast concrete coping panel.

Such is the line of reasoning used in the development of details of this particular building. It will be recognized that certain factors have been over-simplified and others glossed over. The important lesson is that experience gained and the principles learned may be applied to future projects, but by no means should standard details be evolved.

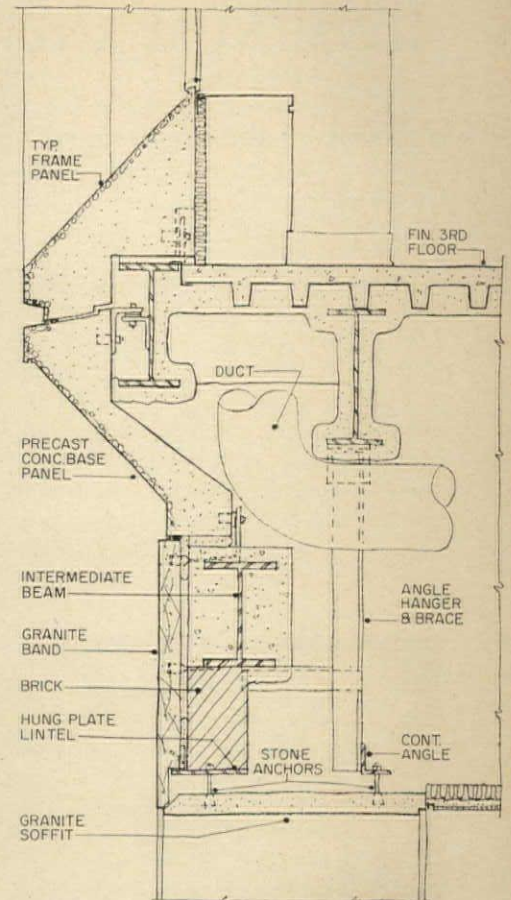


Figure 8. Base panel

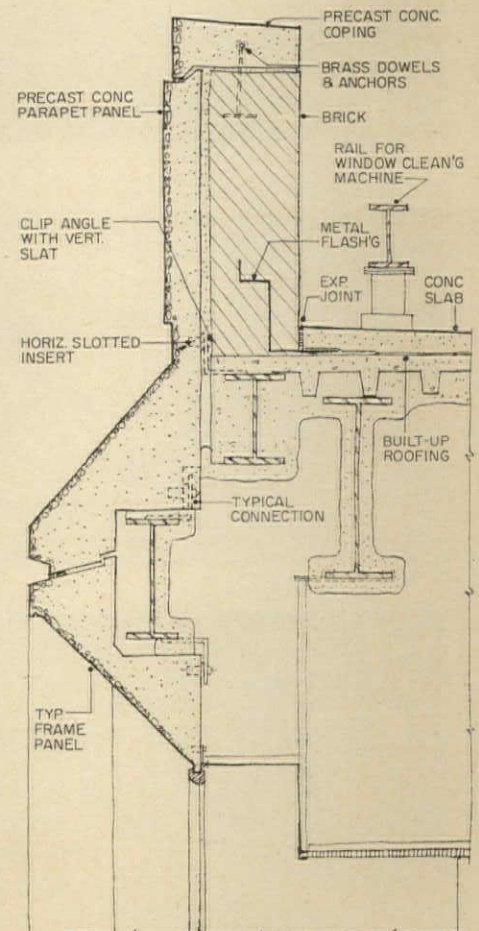


Figure 9. Parapet panel

ALUMINUM AND PLASTIC DOME FOR A PLANT ROOM

Framing of aluminum tube supports acrylic panels in lightweight dome atop Michigan exhibit

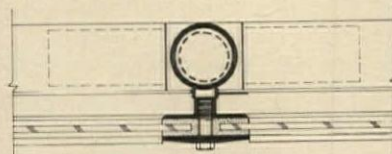
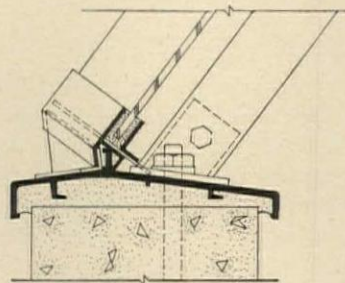
A lightweight 56-ft diameter transparent acrylic plastic dome atop the Interpretive Center Building at the Kalamazoo Nature Center, Kalamazoo, Mich., lets daylight into a two-and-a-half-story room housing tropical plants and glacial boulders. The boulders and tropical plants represent the Michigan landscape during prehistoric times. High humidity for the

tropical plants is provided by artificial rainfall, waterfalls and a large pool, while daylight is admitted by the transparent dome. The gray-tinted acrylic plastic panels reduce heat gain and glare.

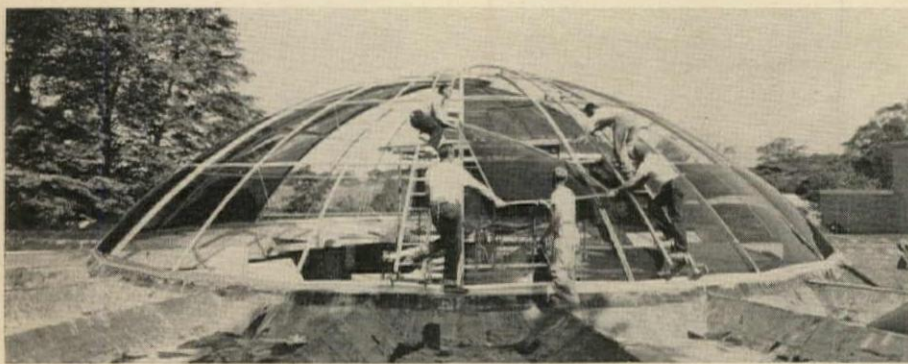
The modular structural system consists of extruded aluminum tubular structural members and connectors. The connectors are four-pronged

units of malleable cast aluminum which insert flush into the tubular members. Additional custom extrusions are secured to the tubes to hold the plastic panels and to drain off any condensate accumulations. The plastic panels are engaged within neoprene channels between clamping plates or bars.

The compressive stress is transferred from one vertical meridian member to the one below without creating eccentric bending moments. The horizontal members act as tension rings. The *Plexiglas* acrylic plastic panels are formed to bubble-like contours which increase the strength of the panels and help accommodate thermal expansion and contraction. This type of structural system is intended to be used for domes up to 250-ft base diameter.



Section at ring member



Forming a Plastic Bubble

Since the Kalamazoo dome has a 35-ft radius, it was necessary to hold edges of each of the bubble-like plastic sections of the enclosure to this curve. The required radius was obtained by means of the plywood clamping ring in the thermoforming operation. Cast acrylic sheet $\frac{1}{4}$ in. thick was heated to softening temperature and clamped in position under the ring. Air pressure was then used to blow the desired bubble contour in the softened sheet.

Fourteen ft in height, the Kalamazoo Dome has a diameter of 56 ft at its base and has the form of a 70-ft diameter sphere cut off 21 ft above the equator. There are 84 acrylic panels in the dome and a ventilating unit at the apex.

The use of acrylic plastic in this dome offered the advantages of lightweight, transparency, heat and glare reduction, breakage resistance and safety, ease of formability and proven outdoor durability.

Alden B. Dow Associates, Inc., Midland, Mich., were architects for the Kalamazoo Interpretive Center. The dome was designed, manufactured and erected by Ickes-Braun Glasshouses, Inc., Chicago, Ill.



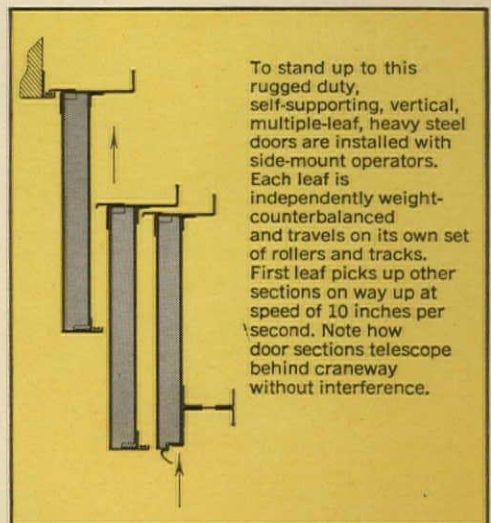
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To stand up to this rugged duty, self-supporting, vertical, multiple-leaf, heavy steel doors are installed with side-mount operators. Each leaf is independently weight-counterbalanced and travels on its own set of rollers and tracks. First leaf picks up other sections on way up at speed of 10 inches per second. Note how door sections telescope behind craneway without interference.

For more data, circle 110 on Inquiry Card

AN ARCHITECT LOOKS AT TERNE: Percival Goodman, one of the foremost living designers of ecclesiastical buildings, has this to say of the eighty thousand square feet of Terne metal roofing recently installed on Shaarey Zedek, the world's largest synagogue: "To be entirely frank, we had originally wanted to use a considerably more expensive material than Follansbee Terne. Now that the latter is in place, however, we are satisfied that no better choice could have been made. Terne not only afforded the widest possible latitude in form and color along with time-tested functional integrity, but it did all this at a figure well below preliminary estimates for a metal roof."



Congregation of Shaarey Zedek, Southfield (Detroit), Michigan
Architects & Engineers: Albert Kahn Associated Architects & Engineers, Inc., Detroit, Michigan
Associated Architect: Percival Goodman, F.A.I.A., New York, New York
Roofing Contractor: Firebaugh & Reynolds Roofing Company, Detroit, Michigan

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For more data, circle 113 on Inquiry Card

Industry Study Produces

A DESIGNATION SYSTEM FOR ALUMINUM FINISHES

Until recently, the architect and fabricator concerned with aluminum finish specifications has had to cope with a confusing assortment of designations for aluminum finishes and the processes used to achieve them.

Because of the obvious need for a clear understanding of terminology on the part of the architect, metal supplier, fabricator and finisher, The Aluminum Association, through its technical committee, directed a four-year study toward establishment of a system* broad enough to cover presently used finishes and sufficiently flexible to accommodate processes that may be developed in the future.

The system classifies finishes as shown in the accompanying Listing of Designations, the various finishes in each classification are identified by an initial letter and two-digit numeral. Letters indicate categories, and numerals reflect finishing process and character. The use of the letter X in place of the second digit, provides for the designation of non-assigned finishes. When the letter X is used by the specifier in the designation, the non-assigned finish should be described in words.

The following discussion of finishes is based on the Finishes Manual of the National Association of Architectural Metal Manufacturers.

Mechanical Finishes

Mechanical finishes are those that do not require the use of chemical or electro-chemical treatment or additives. These finishes differ widely, ranging from "natural" surfaces resulting from many production processes to highly reflective surfaces produced by successive grinding, polishing and buffing operations.

"As fabricated" does not refer to

the fabrication or manufacture of a product, but to the production of the metal itself. Typical variations of the "as fabricated" finish include:

M10. Unspecified—a natural finish from extrusion, casting, hot rolling or cold rolling with unpolished rolls. On rolled products, the finish may

vary from dull to bright and may have stains or films from rolling oils. **M11. Specular as fabricated**—a mirror-like rolled finish on one or both sides of a sheet produced from final passing through highly polished rolls. It does not apply to extrusions, forgings or castings.

LISTING OF DESIGNATIONS

MECHANICAL FINISHES (M)

As Fabricated

M10—Unspecified
M11—Specular as fabricated
M12—Nonspecular as fabricated
M1X—Other (to be specified)

Buffed

M20—Unspecified
M21—Smooth specular
M22—Specular
M2X—Other (to be specified)

Directional Textured

M30—Unspecified
M31—Fine satin
M32—Medium satin
M33—Coarse satin
M34—Hand rubbed
M35—Brushed
M3X—Other (to be specified)

Nondirectional Textured

M40—Unspecified
M41—Extra fine matte
M42—Fine matte
M43—Medium matte
M44—Coarse matte
M45—Fine shot blast
M46—Medium shot blast
M47—Coarse shot blast
M4X—Other (to be specified)

CHEMICAL FINISHES (C)*

Nonetched Cleaned

C10—Unspecified
C11—Degreased
C12—Inhibited chemical cleaned
C1X—Other (to be specified)

Etched

C20—Unspecified
C21—Fine matte
C22—Medium matte
C23—Coarse matte
C2X—Other (to be specified)

Brightened

C30—Unspecified
C31—Highly specular
C32—Diffuse bright
C3X—Other (to be specified)

Chemical Conversion Coatings

C40—Unspecified
C41—Acid chromate-fluoride
C42—Acid chromate-fluoride-phosphate
C43—Alkaline chromate
C4X—Other (to be specified)

*Includes chemical conversion coatings, electro-chemical brightening and cleaning treatments

All designations are preceded by the letters AA to identify them as Aluminum Association designations

COATINGS (A, R, V, E, L)

Anodic Coatings (A)

General

A10—Unspecified
A11—Preparation for other applied coatings
A12—Chromic acid anodic coatings
A13—Hard, wear and abrasion resistant coatings
A1X—Other (to be specified)

Protective and Decorative

(Coatings less than 0.4 mil thick)

A21—Clear (natural)
A22—Integral color
A23—Impregnated color
A2X—Other (to be specified)

Architectural Class II**

(0.4-0.7 mil coating)

A31—Clear (natural)
A32—Integral color
A33—Impregnated color
A3X—Other (to be specified)

Architectural Class I**

(0.7 mil and thicker anodic coatings)

A41—Clear (natural)
A42—Integral color
A43—Impregnated color
A4X—Other (to be specified)

**Aluminum Association Standards for Anodically Coated Aluminum Alloys for Architectural Applications, January 1962

Resinous and Other Organic Coatings (R)***

R10—Unspecified
R1X—Other (to be specified)

Vitreous Coatings (Porcelain and Ceramic Types) (V)***

V10—Unspecified
V1X—Other (to be specified)

Electroplated and Other Metal Coatings (E)***

E10—Unspecified
E1X—Other (to be specified)

Laminated Coatings (L)***

(Includes veneers, plastic coatings and films bonded to aluminum)
L10—Unspecified
L1X—Other (to be specified)

***These designations may be used until more complete series of designations are developed for these coatings

*Published in a brochure entitled "Designation System for Aluminum Finishes," available from The Aluminum Association, 420 Lexington Avenue, New York, N.Y., 10017

M12. Nonspecular as fabricated—refers to a more uniform finish than that of the “unspecified” finish, but one that lacks the specularity of the “specular as fabricated” finish.

Buffed finishes are generally produced by successive processes of grinding, polishing and buffing—or by buffing alone if the “as fabricated finish” is acceptably smooth. In this classification are the smooth specular (mirror-like M21) finish and the specular (M22) finish. The first is the brightest mechanical finish obtainable. The specular finish is accomplished by buffing only and may show some evidences of scratches or irregularities.

Directional textured finishes have a smooth satiny sheen of limited reflectivity. Tiny, nearly parallel scratches in the metal surface, made by wheel or belt polishing with fine abrasives, by hand rubbing with stainless steel wool or by brushing with abrasive wheels, provide the characteristic soft texture.

Non-directional textured finishes are matte finishes of varying degrees of roughness. They are produced by blasting sand, glass beads, or metal shot against the metal under controlled conditions. The principal application in architectural work is on cast metal. The surface texture is determined by the size and type of abrasive used, the air pressure, and the position and movement of the nozzle. Shot blasting provides peened finishes and variations are produced by varying the size of the steel shot.

Chemical Finishes

There are numerous methods of providing intermediate process finishes by washing or dipping the fabricated product in chemical solutions. Many of these are proprietary.

Non-etch cleaning refers to various chemical treatments widely used for cleaning prior to application of other finishes. As there is no physical effect on the surface, they are not classified as true finishes, but such preparatory cleaning is essential for successful application of any type of additive coating.

Etched finishes provide various grades of matte surfaces. The so-called “frosted” finishes are obtained by this means, and the etching process is often used also to prepare surfaces for anodizing.

Bright finishes, a variety of which range from mirror-bright to diffuse

bright, are produced either by immersion in certain acid solutions, or by electrolytic brightening. Similar results are obtained by both methods, but each finds limited application in architectural work.

Conversion coatings, although generally used on aluminum to prepare the surface for painting, may be also used for a final finish. Since the natural oxide film on aluminum surfaces does not always provide a good bond for paints and other organic coatings, its chemical nature is often converted to improve adhesion. These conversion films are generally applied by use of proprietary processes using phosphate or chromate solutions.

Anodic Coatings

The anodizing process provides probably the most important of all the aluminum finishes. Several anodizing processes are commonly used, but they vary according to the type of electrolyte used, the voltage and current density, and the temperature of the bath. Anodic coatings vary considerably in thickness, hardness and porosity.

The sulfuric acid process is the most widely used because of its relatively low cost and is employed for all “conventional” architectural anodizing. Comparatively thick, transparent, and absorptive coatings result that are suitable for certain types of coloring dyes and pigments. Thin films are also produced, which are excellent pre-treatment for paint, enamel or laquer coatings.

The chromic acid process, seldom used for architectural products, produces greenish-gray or gray coatings somewhat less porous than sulfuric acid coatings but with outstanding corrosion resistance. Higher voltage requirements and a more expensive electrolyte, however, make it more costly than the sulfuric acid process. An advantage is that it is suitable for anodizing assemblies because the electrolyte has no harmful effects should it be trapped in joints.

The phosphoric acid process yields rather porous anodic coatings sometimes used as a base for electroplated coatings. It is not used for architectural work.

The boric acid process, used mainly for highly specialized electrical applications and not for architectural work, provides a hard, impervious, non-absorptive film with high electrical resistance.

The oxalic acid process provides a hard, impervious coating that has a slight gold tinge in its “plain” state. It is more expensive than the sulfuric acid process.

Colored anodic coatings are obtainable either by impregnating the absorptive anodic coating (usually produced by the sulphuric acid process) with certain organic dyes or mineral pigments, or by using alloys or processes that produce integral color in the anodic coating.

Integral colors in the bronze-gray-black range are provided by certain anodizing processes and by the characteristics of certain aluminum alloys themselves. They have extreme light-fastness and excellent durability, making them highly suitable for exterior applications.

Proprietary hardcoat color processes have also been developed to provide integral anodic colors. These range from light gold to dark bronze and from gray to black, depending upon both the process and the alloy. Alloys which develop only clear coatings in the sulfuric acid process readily develop colors when treated with these processes. Such coatings are heavier, denser, and more abrasion-resistant than any of those provided by conventional anodizing processes.

Architectural Class I coatings are appropriate for interior architectural items subject to normal wear, and for exterior items which receive no maintenance care regularly and are subject to weathering.

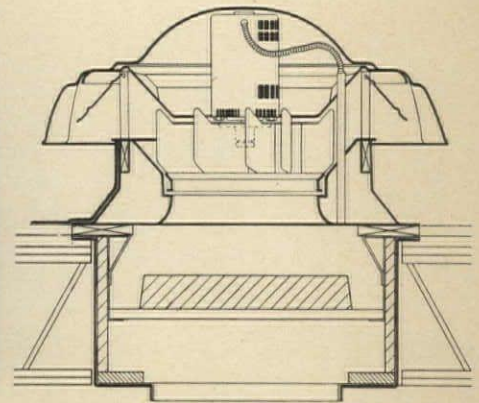
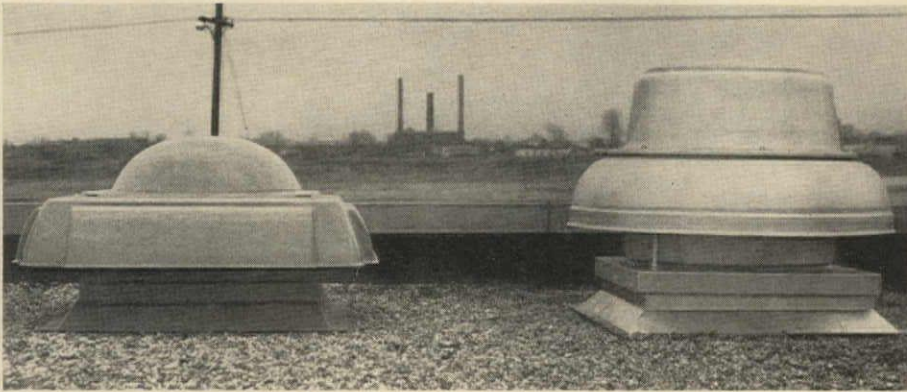
Architectural Class II coatings are appropriate for interior items not subject to excessive wear or abrasion, and for exterior items, such as store fronts and entrances that are regularly cleaned and maintained.

Example

Under the designation system, an architect seeking a matte anodized finish could specify AA-M32C12A31. This combination calls for a medium satin finish (M32), chemical cleaning (C12) and a clear anodic coating (A31). The finish for chromium-plated aluminum panel, achieved by a specular mechanical finish (M21), a non-etch chemical cleaning (C12), a thin anodic coating (A1X) and direct chrome plating (E1X) would be designated as AA-M21C12A1XE1X. Similarly, any desired finish or sequence of processes can be clearly designated and readily understood by anyone in the aluminum industry.

For more information circle selected item numbers on Readers Service Inquiry Card, Pages 269-270

VINYL ROOF EXHAUSTERS HAVE LOW SILHOUETTE



The substantial reduction in the height of Jenn-Air's new vinyl roof exhausters has been made possible by the introduction of the J-45 centrifugal wheel, which has been designed to deliver air at an oblique angle rather than in a radial direction, by means of pitched blades. Because of this, the wheel can be nested into the curb area—considerably reducing over-all fan height—while still delivering maximum air volume. Further reduction in height is achieved by moving the back draft dampers out

of the curb area and mounting them on each side of the square shaped wheel housing. This has the added advantages of reducing the sound of damper flutter from inside the building, offering a guard against snow and rain, eliminating the need for bird guards and allowing louvers to be inspected and adjusted from the roof without removal of the fan. In addition, noise caused by high inlet air velocity is reduced by a 25 per cent increase in the inlet area.

These new Unitary Roof Exhaust-

ers, which combine curb, fan and damper in single pre-assembled units are available in centrifugal direct and belt drive models with capacities up to 35,000 cfm. Curbs and covers are formed of a non-flammable structural vinyl, which has high impact strength, and is said to be resistant to rust and corrosion and impervious to nearly all acids and alkalis. *Jenn-Air Products Company, Inc., 1102 Stadium Drive, Indianapolis, Ind., 46207*

CIRCLE 300 ON INQUIRY CARD

CERAMIC WALL SURFACING WITH MANY VARIATIONS

Ceramic Design Palettes have been developed by Design Technics as a means of producing large scale sculptured and textured wall surfaces at comparatively low cost. Each design palette consists of a group of related ceramic units which represent a number of variations of a central theme, and can be combined in an almost infinite number of ways.

Although each wall is designed and produced to meet the specific requirements of individual clients, the built in pre-designing and tooling in the system contributes to its relatively low cost. Architects can choose from a wide variety of designs, finishes and colors. *Design Technics, 7 East 53rd St., New York, N.Y., 10022*

CIRCLE 301 ON INQUIRY CARD

more products on page 208





Architect: Walton & Madden, Riverdale, Md.
Screen erected by: Acme Iron Works, Inc., Washington, D.C.

BORDEN DECOR PANEL AS BUILDING FACADES

Shown above is Deca-Grid style Borden Decor Panel used as a facade for the Pargas, Inc. building in Waldorf, Maryland. Set off by piers of white precast stone, the sturdy aluminum Deca-Grid panels are finished in blue HINAC, Pennsalt's new finish for metals.

This Deca-Grid installation has tilted spacers, a feature called the Slant-Tab variation wherein spacers may be mounted at angles of 30°, 45°, 60° or 90° as desired.

The Slant-Tabs may be further altered by use of non-standard angles, or lengthened tabs.

All the Borden Decor Panel styles, including Deca-Grid, Deca-Grid, Deca-Ring and Decor-Plank, are highly versatile in design specification and in application as facades, dividers, grilles, fencing and the refacing of existing buildings. In standard or custom designs, Borden Decor Panels provide a handsome, flexible, maintenance-free building component.

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For more data, circle 114 on Inquiry Card

For more information circle selected item numbers on Reader Service Inquiry Card, pages 269-270

COOLING AND HEATING COILS

Booklet No. 96-385A presents in quick reference form complete technical data covering the company's chilled water cooling and hot water heating coils, direct expansion cooling coils, standard steam heating coils and distributing tube steam heating coils. Each type is briefly described, its operational principle explained, and its chief design features and construction advantages pointed out. Dimensional data and quick selection procedures are given for each type of coil. Total heat tables, air mixture curves, air friction data and M.E.T.D. tables are also given. The text is supplemented by a number of schematic drawings and cross sectional diagrams. *Acme Industries Inc., 600 North Mechanic St., Jackson, Mich., 49202*

CIRCLE 400 ON INQUIRY CARD

POST TENSIONING FOR APARTMENTS AND DORMITORIES

A new, two-color brochure describes the techniques of post-tensioning concrete slabs for apartment buildings and dormitories ranging from four-level structures to high-tower buildings. Illustrations are given of various structures, forming for anchors, cable laying, finished slab edges, etc. Structural plans and apartment layouts are also included. Specifications are given in the brochure and laboratory tests and step by step illustrations can also be obtained free on request. *Atlas Prestressing Corp., 14809 Calvert St., Van Nuys, Calif.*

CIRCLE 401 ON INQUIRY CARD

DOOR CATALOG

A new, 12-page illustrated catalog contains descriptions, specifications, illustrations and diagrams of a wide variety of industrial and special doors. Industrial and cold storage doors described include power-operated and manual, single and double horizontal sliding, bifold, half-bifold, bifold slide, horizontal telescope, vertical slide, and double swinging doors. *Clark Door Company Inc., 69 Myrtle St., Cranford, N.J., 07016**

CIRCLE 402 ON INQUIRY CARD

PERFORATED MATERIALS

The Diamond Manufacturing Company has issued a 36-page catalog giving details of the many different perforation patterns designed for a wide range of uses. Photographs of typical applications are given as well as illustrations of perforation details. Step by step instructions for ordering perforated metal and other materials are included. *The Diamond Manufacturing Company, Wyoming, Pa.*

CIRCLE 403 ON INQUIRY CARD

USES OF HARDBOARD

"Masonite Contemporary Studies" consists of a collection of 20 architectural renderings which illustrate interior and exterior uses of hardboard in residential, institutional, commercial and office installations. Suspended canopy treatments, fence designs, vaulted arches, small shop decor, office wall designs, acoustical applications, and shopping center planning are among the subjects treated. *Masonite Corp., 29 N. Wacker Drive, Chicago, Ill.**

CIRCLE 404 ON INQUIRY CARD

SANITARY APPLIANCES

An extensive range of sanitary appliances and plumbing fixtures are described and illustrated in a new loose-leaf catalog. Items are presented in tabular form with drawings of each model alongside description, dimensions, catalog number, price and other relevant data. Some of the items are treated more fully on separate pages as well. *Mansfield Sanitary, Inc., Perrysville, Ohio*

CIRCLE 405 ON INQUIRY CARD

METAL PRODUCTS

Four new brochures have recently been issued by Overly Manufacturing Company describing some of their product lines. These brochures deal respectively with acoustical, blast and shielding doors; metal batten roofing and coping; swinging and revolving entrance doors; and church spires and crosses. Specifications are included in all brochures, which are illustrated by detail drawings and photographs. *Overly Mfg. Co., 574 W. Otterman St., Greensburg, Pa.**

CIRCLE 406 ON INQUIRY CARD

FIRE AND SMOKE PROTECTION FOR SCHOOLS

A 12-page brochure discusses the causes of the increasing number of school fires, and illustrates ways in which protection may be afforded by the use of the *Pyr-A-Larm* fire, and smoke detection and warning system. *Pyrotronics, 2343 Morris Ave., Union, N.J.*

CIRCLE 407 ON INQUIRY CARD

ALUMINUM PAINT MANUAL

This new publication provides a comprehensive discussion of the selection and use of aluminum paints. Illustrated in color, the booklet gives details of the uses of aluminum paint for different types of surface, including metal, masonry, wood, high-temperature and decorative materials. Prepaint preparation is also outlined. Application guides are given in chart form, and there is also a paint coverage table for appropriate brush and spray application of the three types of aluminum paint on 15 different surfaces. *Aluminum Company of America, 797 Alcoa Building, Pittsburgh, Pa.**

CIRCLE 408 ON INQUIRY CARD

OUTDOOR LIGHTING

A large selection of lighting fixtures for all kinds of outdoor lighting are displayed in the company's recent catalog, Bulletin No. 175. Photos are included of each model and electrical data is given. A section is included on boxes, wiring troughs, covers and other lighting accessories. *Swivelier Company Inc., Nanuet, New York, 10003*

CIRCLE 409 ON INQUIRY CARD

CEMENT BONDED WAFFLE CEILING UNITS

Cement-bonded wood fibre ceiling waffle units, which are believed to be the first units of this type to make use of cement-bonded fibre, are described in a new illustrated folder. *Concrete Products, Inc., P.O. Box 130, Brunswick, Ga., 31521**

CIRCLE 410 ON INQUIRY CARD

*Additional product information in Sweet's Architectural File

more literature on page 246



This trim beauty





stops 'em cold

Steel vs. Steal . . . and the challenger lost. This is the door to a restaurant in one of New York's most successful chains—Chock Full O'Nuts. You'd never know that would-be burglars tried to jimmy it a few days before these pictures were taken. The door is stainless steel. The burglars didn't get through because of the toughness of this fine architectural metal. The minor damage was repaired the next

day without removing the door. Today it's as good as new.

The problem of good design and maximum safety has always been a challenge to owners and designers of entrances for commercial and monumental buildings. This restaurant found the practical answer in low-cost stainless steel doors and frames, manufactured by The Alumiline Corporation, Pawtucket, R. I.,

from stainless steel provided by Jones & Laughlin Steel Corporation.

If you have a design idea that involves stainless doors and entrances, contact The Alumiline Corporation. For further information concerning stainless steel, let us refer you to our Architectural Services.



**Jones & Laughlin
Steel Corporation**

STAINLESS Stainless and Strip Division • Detroit 48234

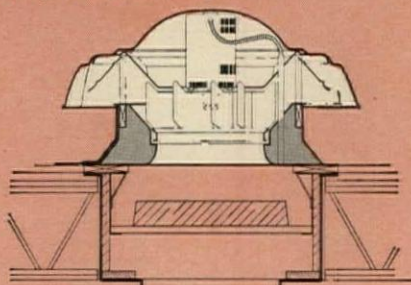
For more data, circle 115 on Inquiry Card

New **VINYL** Leads to Roof

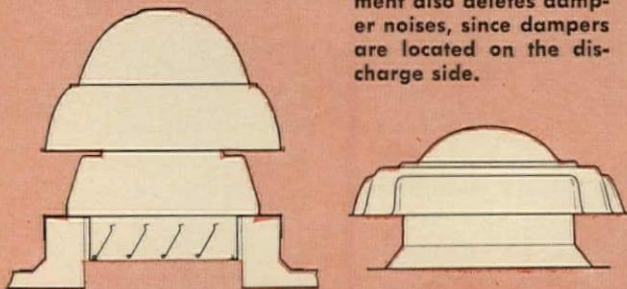
The **UNITARY**

A new HI-TEMP VINYL by the B. F. Goodrich Chemical Company has paved the way to Jenn-Air's breakthrough in exhauster design. Hi-temp Geon® polyvinyl dichloride (PVDC), the most stable of vinyls, retains high impact strength from a low of -40° to a high of $+225^{\circ}$ F. This new material will not craze, rust, corrode, or lose color—provides excellent resistance to corrosive applications and is self-extinguishing because it will not support combustion. The properties and characteristics of HI-TEMP VINYL made possible the development of the Unitary Centrifugal Exhauster line, and all these features:

- 1** The new Unitary design incorporates curb, fan, back-draft dampers, and bird guard protection into a single, easily installed unit. Always the right curb and damper size for the job.



- 2** An optional in-the-roof sound attenuator—recessed to maintain unit's low profile—offers maximum quietness for sensitive areas of the building. This arrangement also deletes damper noises, since dampers are located on the discharge side.



- 3** Lower fan height comes from nesting the wheel into the curb and re-locating the back-draft dampers outboard of the wheel housing . . . prevents entry of snow and moisture into fan compartment, eliminates need for bird guards, permits damper servicing without removing the fan.



- 4** The new, high performance J-45 centrifugal wheel nests into the vinyl curb and discharges the air at a 45° angle from radial. Its new 25% larger inlet produces much lower inlet velocity and lower noise level, accordingly.
- 5** The inconspicuous slate grey color of the HI-TEMP VINYL is homogenous and permanent—retaining its color for life.
- 6** To match premium HI-TEMP VINYL housing durability, all metal hardware in the airstream is vinyl coated. This adds years of life; for inside and out, the exhauster is protected from salt spray and corrosive conditions.
- 7** Seamless curb of HI-TEMP VINYL (filled with foamed-in-place insulation) and wood nailing strip on curb provide faster installation.



- 8** Fan melts clear even when submerged by snow.
- 9** Available in centrifugal belt and direct drive, 72 models in capacities up to 35,000 cfm . . . belt drive, direct drive and relief vents are identical in basic profile and contour.
- WHEN YOU SPECIFY THE UNITARY LINE, ALL THE UNITS ON THE ROOF WILL HAVE AN UNOBTRUSIVE LOOK.

Exhauster Breakthrough

Exhauster *by*

JENN-AIR

Patents Pending



JENN-AIR PRODUCTS CO., INC.

Department 28, 1102 Stadium Drive
Indianapolis, Indiana 46207

Please send Bulletin No. 5-UV describing the complete line of
Centrifugal Vinyl Roof Exhausters.

Name _____

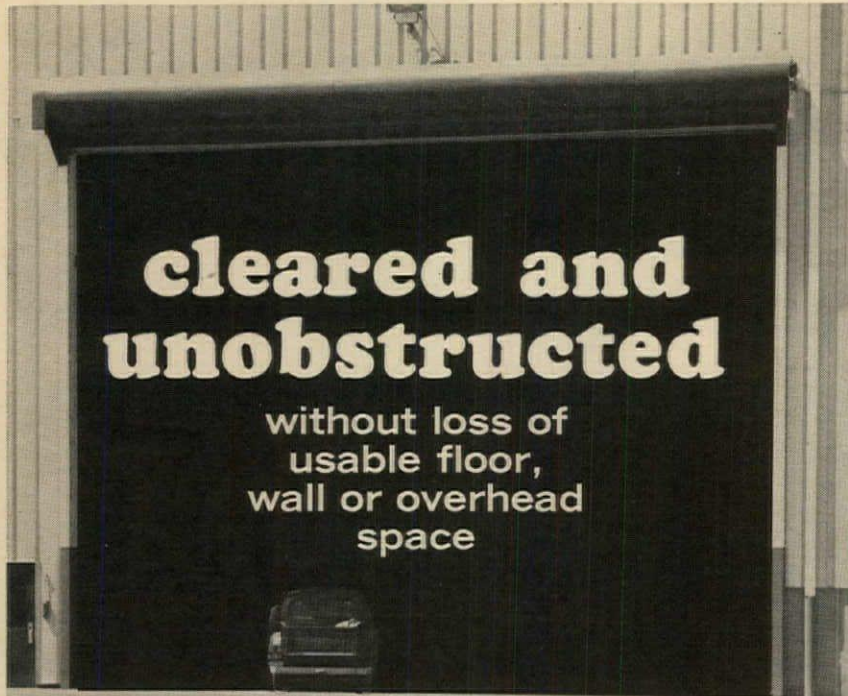
Title _____

Address _____

City _____ State _____ Zip Code _____

**World's Largest
Producer of Power Roof and Wall Exhausters**

For more data, circle 116 on Inquiry Card



cleared and unobstructed

without loss of usable floor, wall or overhead space

Kinnear Rolling Doors

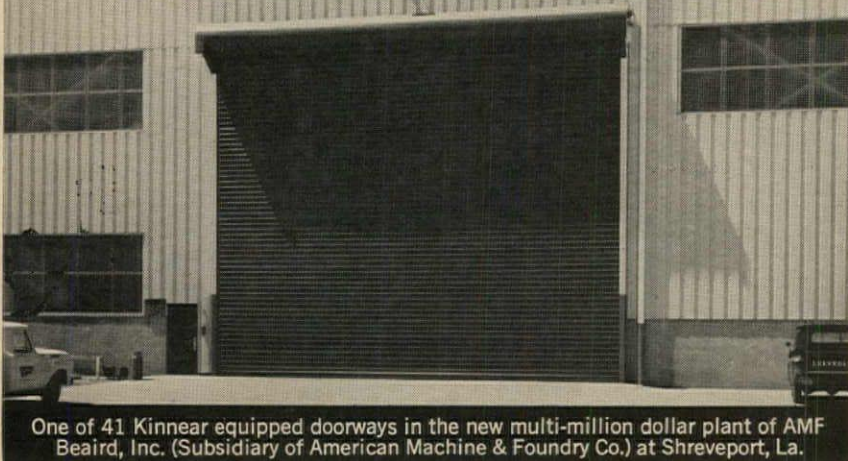
... roll straight upward clearing the entire entry way. When closed, their interlocking all-metal slat curtain provides extra protection against weather, fire, vandals and intruders.

Extra heavy galvanizing and Kinnear's special paint bond add many extra years of care-free service life and lower maintenance costs. Also, every Kinnear door is REGISTERED to insure availability of genuine Kinnear service and door replacement parts over the life of the building.

When motor operated, Kinnear Doors offer automated efficiency, permitting push-button control from any number of remote convenient locations. Write today for full details!

The KINNEAR Manufacturing Co. and Subsidiaries

FACTORIES: 1860-80 Fields Avenue, Columbus, Ohio 43216
1742 Yosemite Ave., San Francisco, Calif. 94124 — 3603 Dundas St. West, Toronto, Ont., Canada
Offices and Representatives in All Principal Cities



For more data, circle 117 on Inquiry Card

Product Reports

continued from page 201

URETHANE FOAM PIPE INSULATION

The CPR Division of the Upjohn Company is now producing a new, extremely lightweight, precast rigid urethane foam pipe insulation, designed to give high efficiency and ease of application at competitive cost. Designed for either cryogenic or elevated temperature applications



(-425 deg F to +200 deg F continuous, and +450 deg F for short periods), the units are manufactured in lengths up to 20 ft to fit all standard pipe diameters. Covering is supplied in various types of paper or aluminum. *CPR Division, The Upjohn Company, 555 Alaska Ave., Torrance, Calif.*

CIRCLE 302 ON INQUIRY CARD

FIBERGLASS CHAIRS

Krueger's 3000 and 6000 series fiberglass side, stack and pedestal side chairs are now available in upholstered models, featuring 3/4-in. foam cushion padding, molded and sealed to the fiberglass shells. The chairs are



provided in a choice of six colors with a selection of leg finishes mounted on stacking, side chair or swivel/pedestal bases. *Krueger Metal Products Company, Green Bay, Wis.*

CIRCLE 303 ON INQUIRY CARD
more products on page 212



HOW ART METAL HID THE BALLAST...

And Exposed the True Beauty of Outdoor Mercury Vapor Lighting

Clean, functional, attractive . . . that's the look Art Metal has given their new Mercury Vapor Wall Bracket. Many mercury vapor units of this type feature an ugly extension housing the ballast, but not Art Metal's. Using a smaller ballast which is enclosed within the housing itself, Art Metal has enhanced the fixture's beauty and made it far more compact.

With this streamlined styling, you can mix and match these mercury vapor fixtures with Art Metal incandescent units, because they look exactly the same. But for lighting value, they're unmatched. The 100W color-corrected mercury vapor lamp gives approximately the same lumen output as the 200W incandescent; a life of 10,000 hours compared to 750 for incandescent.

This trim, sturdy unit is available with either the Asymmetric Arealens, an extremely efficient lens

which directs 90% of the light away from the wall; or the Widespread Amcolens, which provides high level widespread downlight.

Construction is of the best: die cast aluminum housing and trim ring give strength and durability; silicone rubber gasket keeps out dust and moisture; universal metallic or brushed natural aluminum finish blends with any building exterior; release ring lets ring and lens hinge down for quick maintenance. And you'll like the price—always competitive, often lower than comparable models.

Want to surface wire the unit? This is easily accomplished with an optional aluminum housing extension. Wattage . . . 100W; Extension from wall . . . 9 $\frac{1}{4}$ " ; Over-all height . . . 8" ; Overall width . . . 8 $\frac{5}{16}$ " .

Write for Bulletin giving complete details on these beautiful new mercury vapor lighting fixtures.

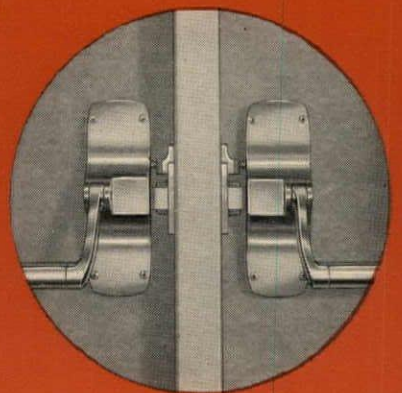
ART METAL[®] WAKEFIELD
LIGHTING DIVISION 
1814 E. 40th St., Cleveland 3, Ohio

For more data, circle 118 on Inquiry Card

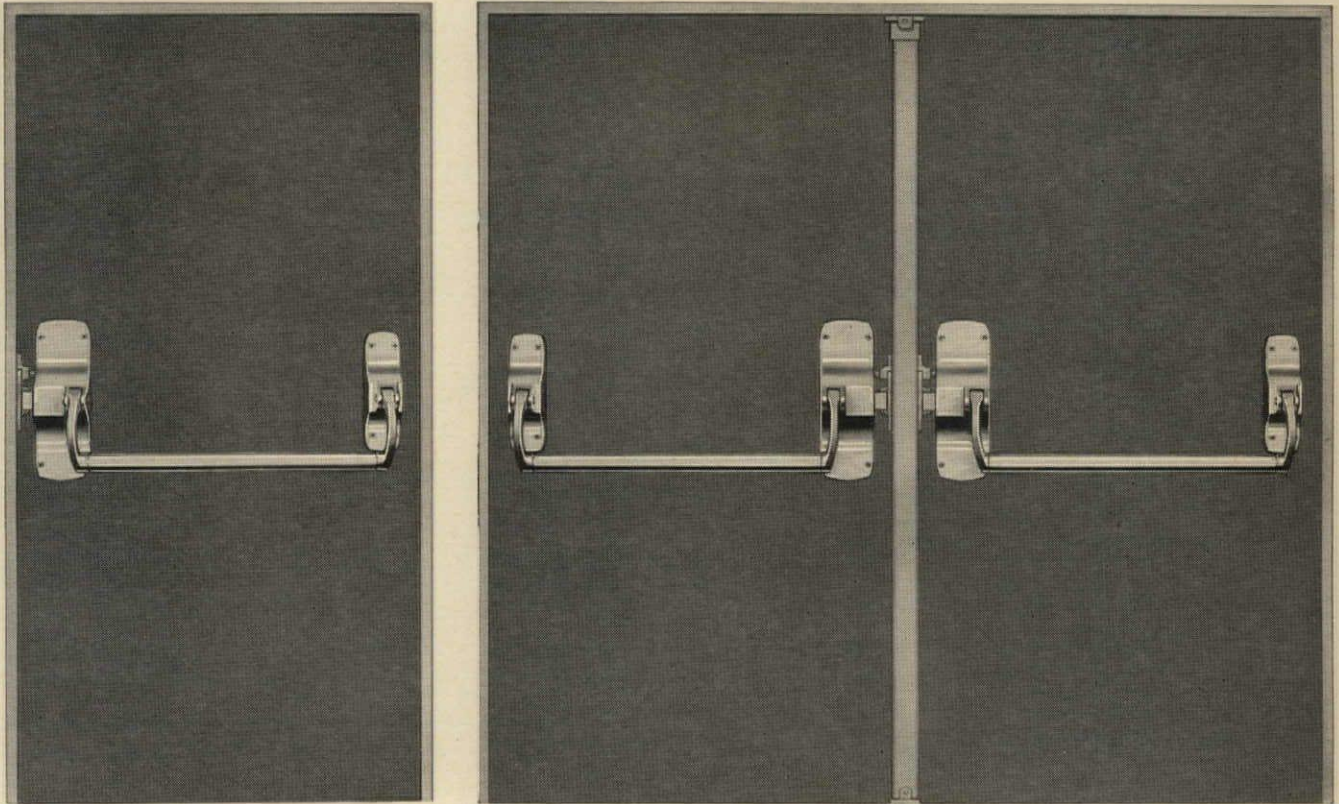
***New...from
Von Duprin!***

***Rim-type
Fire Exit
Hardware!***

***FOR A, B, C, D, E
LABELED DOORS***



For Single Doors . . . Or Double Doors With Removable Mullion



Removable mullion eliminates need for overlapping astragal and coordinator!

Here's another major engineering breakthrough by Von Duprin! We call it our 88 Rim Fire Exit Hardware. You'll call it a boon to building . . . because now, for the first time, you can recommend double-door Fire Exit Hardware with a removable mullion that eliminates the overlapping astragal and the coordinator.

Four types of operation are available: thumb-piece, knob, exit only, and nightlatch.

Available in stainless steel, bronze or aluminum. All lock stile cases are stainless steel, plated or finished to match crossbar and hinge stile case in bronze or aluminum.

Von Duprin 88 Rim Fire Exit Hardware also incorporates other outstanding features, such as a pick-proof auxiliary dead-locking latch bolt.

For complete details on the new Von Duprin 88 Rim Fire Exit Hardware, write today for your copy of catalog Bulletin 652, or contact your Von Duprin representative.

Von Duprin®



For Openings Up To	RATINGS				
	"A"	"B"	"C"	"D"	"E"
DBL. 7' wide x 7'2" high (HM)	3 hr.	1½ hr.	¾ hr.	1½ hr.	¾ hr.
SGL. 3'6" wide x 7'2" high (HM)	3 hr.	1½ hr.	¾ hr.	1½ hr.	¾ hr.

VON DUPRIN DIVISION • VONNEGUT HARDWARE CO., INC. • 402 WEST MARYLAND STREET • INDIANAPOLIS, INDIANA 46225
 IN CANADA: VON DUPRIN LTD. • 903 SIMARD STREET • CHAMBLY, QUEBEC

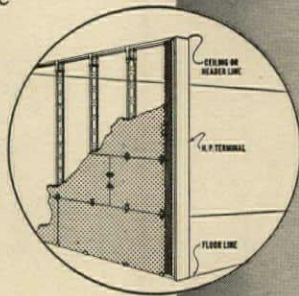
For more data, circle 119 on Inquiry Card

New Bostwick H. P. Terminal*

GIVES A "FINISHED FACE" TO PARTITIONS- HEADERS-JAMBS

Bostwick Hollow Partition Terminal provides a ready-made steel face to headers and jambs of openings in hollow steel stud partitions and gives a finished, neater look to plastering jobs. When used with Bostwick Chan-L-Form® Steel Studs, you can finish off partitions 3 3/8", 3 3/4" and 4 1/4" thick. Easy and faster to install. No corner bead needed! Save money! Save time! Save plaster! Custom-made to job sizes and lengths with face of bonderized electrolytic galvanized steel welded to galvanized perforated and expanded double wings. Better investigate Bostwick H. P. Terminal today. Phone or write for details.

*Patent Pending

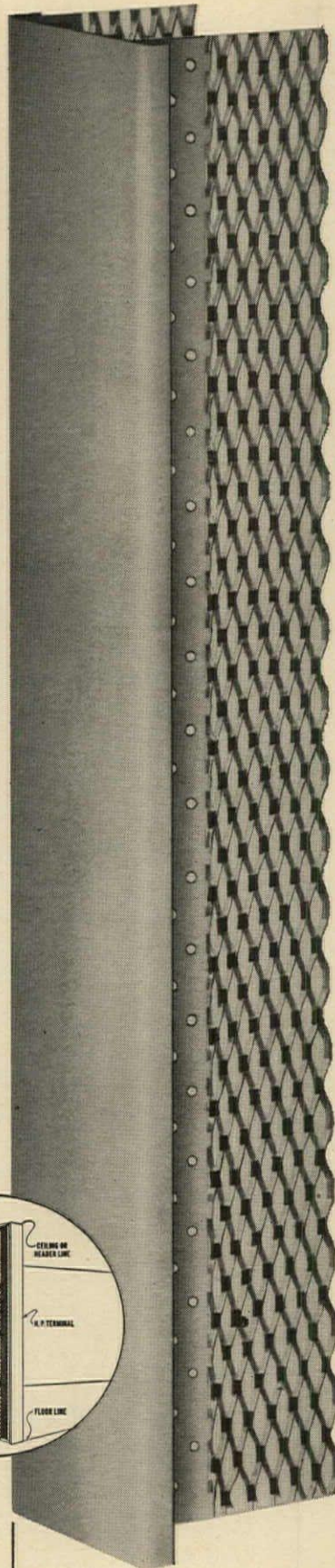


THE *Bostwick*®

STEEL LATH COMPANY
WEST FEDERAL STREET • NILES, OHIO
AREA CODE: 216 652-2547



← VARIABLE →
For use with
Metal Lath or
Gypsum Lath



Product Reports

continued from page 208

NEW ASBESTOS TILE DESIGN

Cortina is a new diffused swirl pattern in the Azrock range of vinyl asbestos floor tiles. The patterning is distributed through the full thickness of each tile, so that the floor pattern is not impaired by heavy traffic



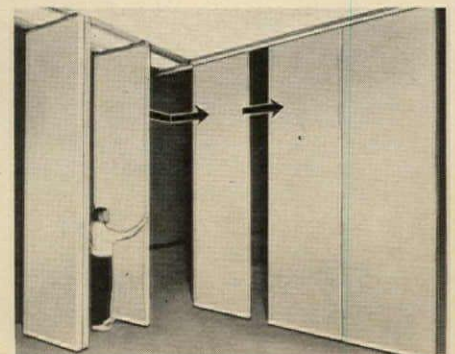
in commercial and institutional areas. The new tile is said to be grease proof, stain and alkali resistant and is available in a range of 13 colors. *Azrock Floor Products, P.O. Box 315, San Antonio, Tex., 78206*

CIRCLE 304 ON INQUIRY CARD

REMOTE STORAGE FOR PARTITIONS

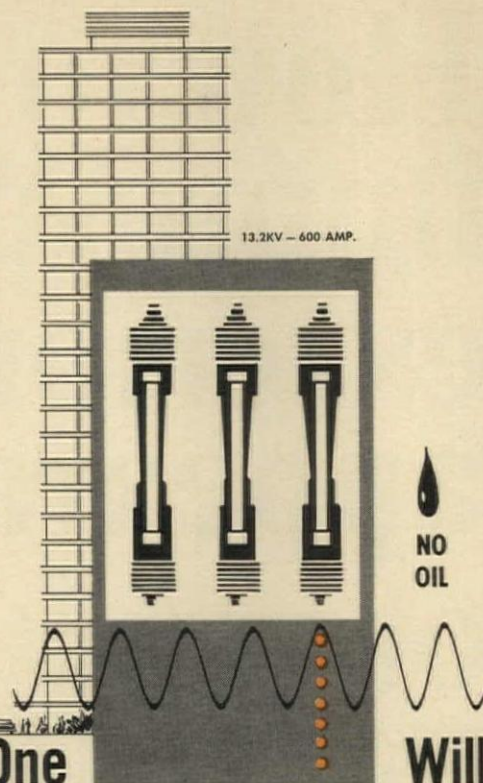
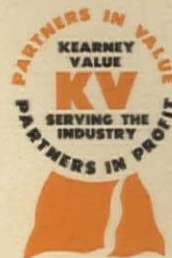
Robert Haws Company has designed a simplified switching track to meet the difficulties of accommodating folding retractable walls in buildings where wall recesses are not provided. In the new system, panels of the partition are not hinged together, but operate independently on the track. A switch at the end of the track permits changing the direction of travel and side tracking the panels to a remote location where they can be stored out of sight. *Robert Haws Co., 19400 Allen Road, Melvindale, Mich., 48122*

CIRCLE 305 ON INQUIRY CARD



more products on page 216

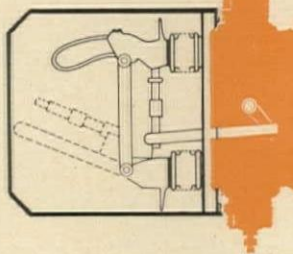
For more data, circle 120 on Inquiry Card



No One Will Ever Know

how many high-rise buildings might have been "All-Electric" had the designers known about the ISO-QUENSUR®

SAVES A SURPRISING AMOUNT OF SPACE OVER CONVENTIONAL TYPES



KEARNEY CL FUSES EXTEND RANGE OF SHORT CIRCUIT CURRENT PROTECTION



The new Kearney clip-mounted CL Fuse — in ratings to 100A-15KV — features dependable fault clearing with current limitation and negligible transient over-voltage at time of interruption. Arc voltage is limited to 2.2 x rated circuit peak voltage.

YOU TOO SHOULD LEARN MORE ABOUT THE ISO-QUENSUR. WRITE FOR DATA MATERIAL TODAY!

A New Concept in Metal Enclosed Switchgear

Kearney has engineered Service Value into the Iso-Quensur. Brings high voltage into your building safely, dependably and at less cost. Saves space, too!

Value through Reliability — The Iso-Quensur is the most durable Interrupter-Disconnect Switch on the market today. By test, it provides 90 full load operations at rated voltage — has close-in and latch ratings equal to short circuit duty available on modern distribution circuits. Means longer life, less maintenance.

Value through Design — The Iso-Quensur saves 50% of the space required for conventional oil fused or draw-out, metal enclosed switch gear. A cabinet measuring only 2½' x 3' x 5½' houses Kearney's unique Group Operated Switchgear and Current Limiting Fuse.

Value through Economy — The Iso-Quensur provides a cost-saving way to go all-electric in high-rise buildings, institutions and industrial plants. It will save up to 50% of initial equipment costs because it interrupts and visibly disconnects in one operation.

Value through Safety — Cabinetry and switch have been engineered for maximum safety, with a three-position latch on the upper door, a clear protective dead front viewing panel and a visual gap in the switch-open position.



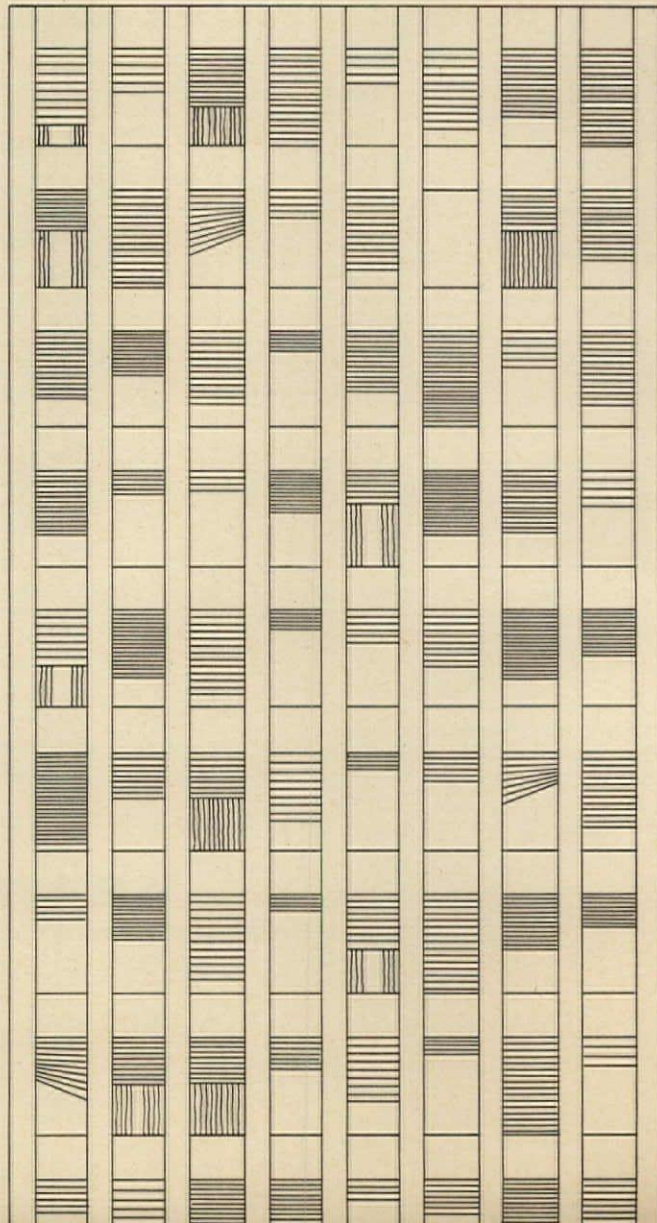
5KC-1A

JAMES R. KEARNEY CORPORATION
MANUFACTURING TRANSMISSION AND DISTRIBUTION EQUIPMENT FOR ELECTRIC UTILITIES
SINCE 1926

4236 CLAYTON AVENUE • SAINT LOUIS, MISSOURI 63110

For more data, circle 121 on Inquiry Card

How to improve the exterior appearance of your building:



Your architectural rendering looked superb. The finished structure's exterior appearance was all you hoped it would be. But how will this building look two years after completion?

Exterior design of a building is most vulnerable at fenestration areas. Unless you take positive steps to assure correct window treatment, your building's exterior appearance can quickly become a hodge-podge of various shading devices.

Your best opportunity to keep your building a faithful reproduction of its original concept is through specification of Feneshield fabrics, made of PPG Feneshield® fiber glass yarns.

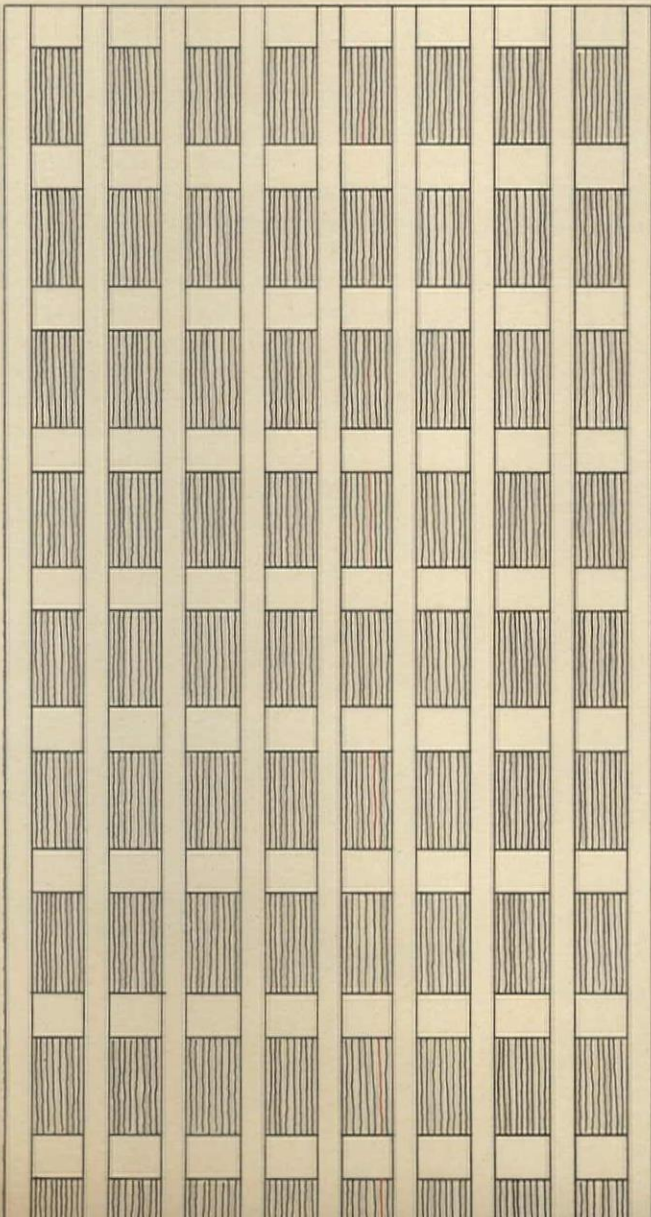
Feneshield fabrics provide a pleasing appearance at every window, permit a flow of bold line street to top of building, and eliminate random vertical settings so common with mechanical shading devices.

A wide range of Feneshield colors, patterns, and weaves are available to complement any building design, including even the most advanced designs of spandrel treatment. The fabric becomes a part of the overall design to help you maintain aesthetic control.

CHOOSE FENESHIELD FABRICS SCIENTIFICALLY.

In addition to control of exterior appearance, Feneshield

Feneshield[®] fabrics.



fabrics offer many advantages for interior use. Research by PPG has produced a new system, based on fabric characteristics, which provides a scientific method of selecting fiber glass draperies to meet environmental control needs.

Through this system, Feneshield fabrics can be chosen to subdue radiant heat, control glare, improve sound control, enhance a pleasing view, or modify a bad view.

Important, too, Feneshield fabrics offer substantial savings in maintenance costs over other types of shading devices.

COMPLETE INFORMATION AVAILABLE.

Participating fabric resources have authorized Feneshield presentations which show the wide range of fabric weaves and colors available. They can help you select fabrics for specific installations through the use of PPG technical data. Write PPG for names of jobbers near you.

You can obtain complete technical information, including means of selection of Feneshield fabrics for any type of building installation. Just mail the coupon.

Pittsburgh Plate Glass Company, Fiber Glass Division
Dept. 101, One Gateway Center, Pittsburgh, Pa. 15222

- Please send me technical information on Feneshield fabrics.
- Please send me names of authorized Feneshield converters.

Name _____

Title _____

Company _____

Address _____

City _____ State _____ Zip Code _____

PPG[®] fiber glass
...the fiber glass for finer fabrics

*PPG makes the Feneshield fiber glass
yarns only, not the fabric.*

For more data, circle 122 on Inquiry Card

for just
a few
pennies
more
per
opening
you
can have
THIS



... instead
of
THIS



McKINNEY MODERNE HINGES

bring you
so much more

...IN MODERN
APPEARANCE
...IN QUALITY

- Fewer horizontal lines to break the clean, modern lines of this beautiful hinge.
- Flush Plugs at both ends of the barrel to prevent rising pins and to provide a smooth clean barrel with more modern appearance.
- Stainless Steel Pins to absorb unusual lateral strain and to prevent corrosion.
- Stainless Steel Oil-Impregnated Bearings to carry the vertical load, to provide lifetime lubrication at points of greatest wear, to resist corrosion for the life of the door.
- Annealed Zytel nylon bushings in the door leaf to provide a perfect bearing surface. Long sleeve minimizes lateral wear. Needs no lubrication.

This is the hinge design architects say they want ... and it costs so little more—only pennies more. Wouldn't it be smart to specify them on your next building.

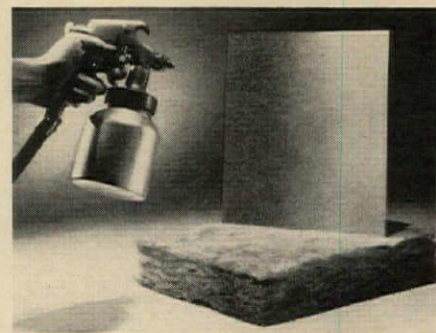
McKinney Moderne Hinges . . . choice of quality-conscious consultants.

McKINNEY

SCRANTON, PENNSYLVANIA 18505 / IN CANADA:
McKINNEY-SKILLCRAFT LTD., TORONTO 3, ONT.

Product Reports

continued from page 212



SPRAY-ON ADHESIVE

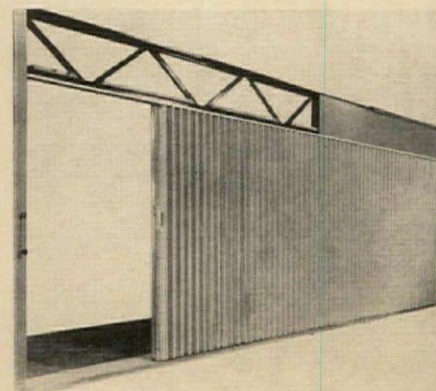
A new adhesive called *G-318* has been developed by Armstrong Cork Company for bonding lightweight porous insulating materials to themselves or to metal surfaces. This new synthetic rubber resin adhesive allows spraying at very low atomizing pressures which minimizes overspray. The company says that bonds of 2-in.-thick, 3.25-lb density insulation will withstand exposure to temperature as high as 250 deg F. *Armstrong Cork Company, Lancaster, Pa.*

CIRCLE 306 ON INQUIRY CARD

SELF-SUPPORTING PARTITION

Unispan is an integrated self-supporting wall system which is said to offer the combined versatility of a folding partition and the flexibility of a relocatable partition wall. The system consists of a single module made up of three basic components—a steel truss, two end posts and a *Hufcor* folding partition. The introduction of the *Unilift* lifting device consisting of a lever within the post system which raises the entire partition from the floor enables the partition to be opened and closed easily. *Hough Manufacturing Corps., Janesville, Wis.*

CIRCLE 307 ON INQUIRY CARD



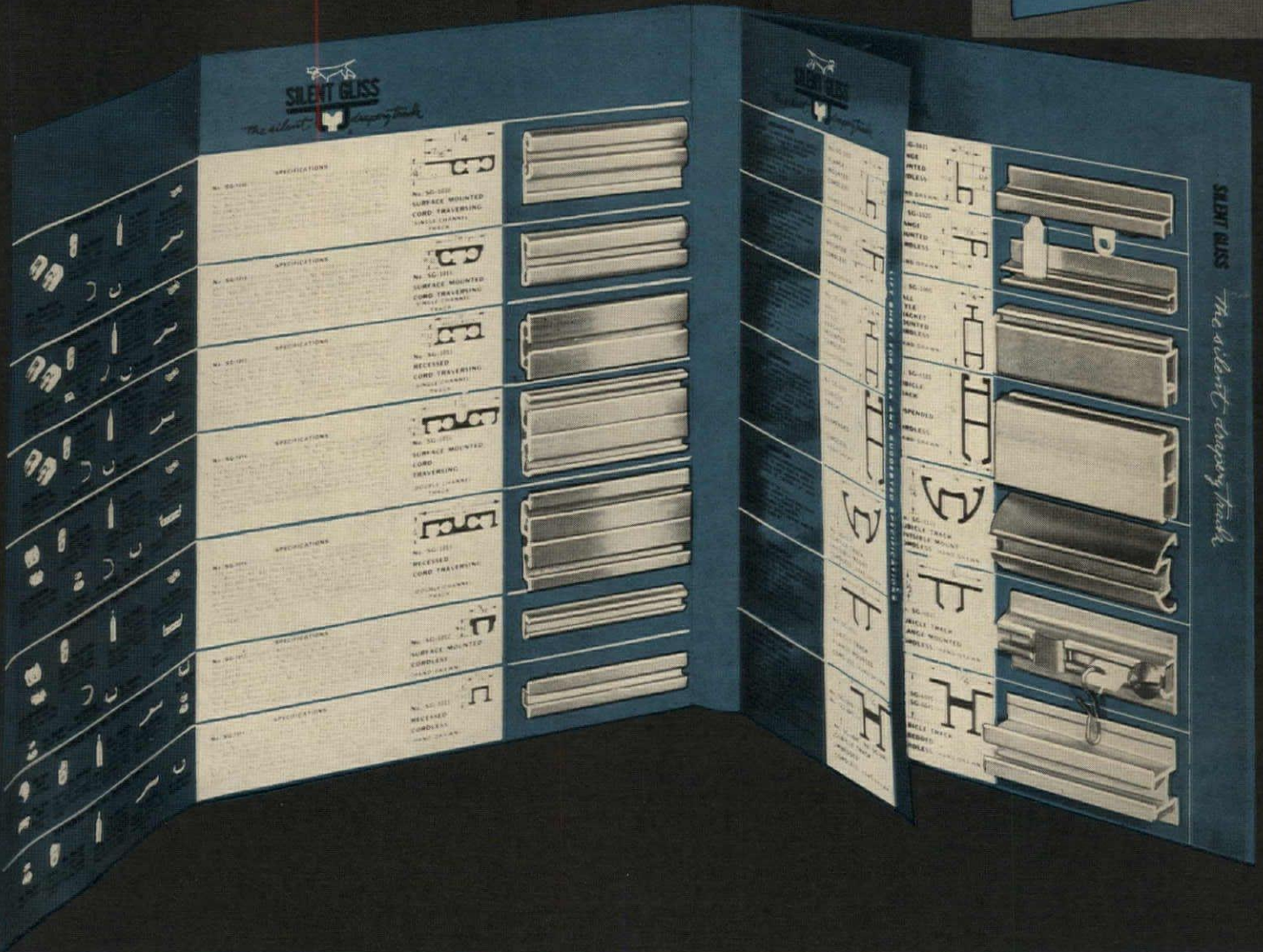
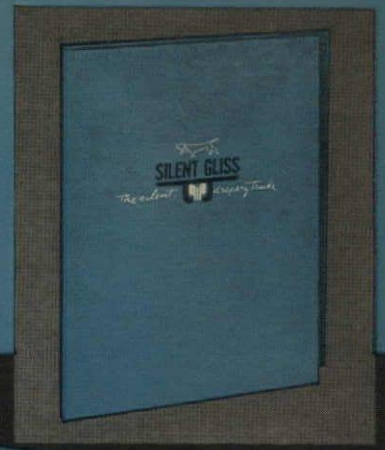
more products on page 220

For more data, circle 123 on Inquiry Card

New! Here is almost everything you might want to know about...


SILENT GLISS

the silent  *drapery tracks*



Help for You in Specifying the World's Finest Drapery Track

- Description of every track
- Suggested specifications
- Vital statistics like bending radii, maximum fabric weights, stock track lengths, and support spacing
- Illustration and identification of fittings for each track
- All this, plus actual-size cross-section drawings of each track (with dimensions) ready for tracing — and 3" samples of every track in the line, with samples of carriers and other small fittings, for easy examination.

This complete "gold mine" of information on Silent Gliss is combined in the new Silent Gliss Track Sample

Binder ready to help you specify the World's Finest Drapery Track. **Sorry, the binder is not available by mail; a Silent Gliss sales representative will bring one in person when you ask him to call.** (A similar folder, in simplified form without track samples, is available by written request on your letterhead.) You owe it to yourself and your clients to get the facts about this revolutionary track development — unlike any other on the market today. Please address your inquiries to Dept. AR-3.

SILENT GLISS, INC.

Distributing Companies:

Angevine Co., Freeport, Illinois • Drapery Hardware Mfg. Co., Monrovia, California

THREE OF THE NEWELL COMPANIES... *first family* IN DRAPERY HARDWARE SINCE 1903

For more data, circle 124 on Inquiry Card

Leading designers, fabricators and erectors of structural steel

■ Haven-Busch offers a full service program that assures you of the finest in structural steel design and value. Our program begins with the services of trained engineers able to help you plan any project from the smallest structures to large building complexes. Modern Haven-Busch equipment and efficient fabrication methods handle structural steel assignments of most any type and size to your exact specifications. In addition to conventional structural steel framework, Haven-Busch also fabricates the internationally-known longspan joists which permit clearspans up to 175'. Skilled supervisors and iron worker crews, equipped with modern tools and machinery, follow through and erect projects to completion. Our new facilities brochure and longspan joist catalog tells the complete story. May we send you copies?

Haven-Busch Co., 3443 Chicago Dr., S.W., Grandville, Mich.

**HAVEN
BUSCH
COMPANY**

ESTABLISHED 1888

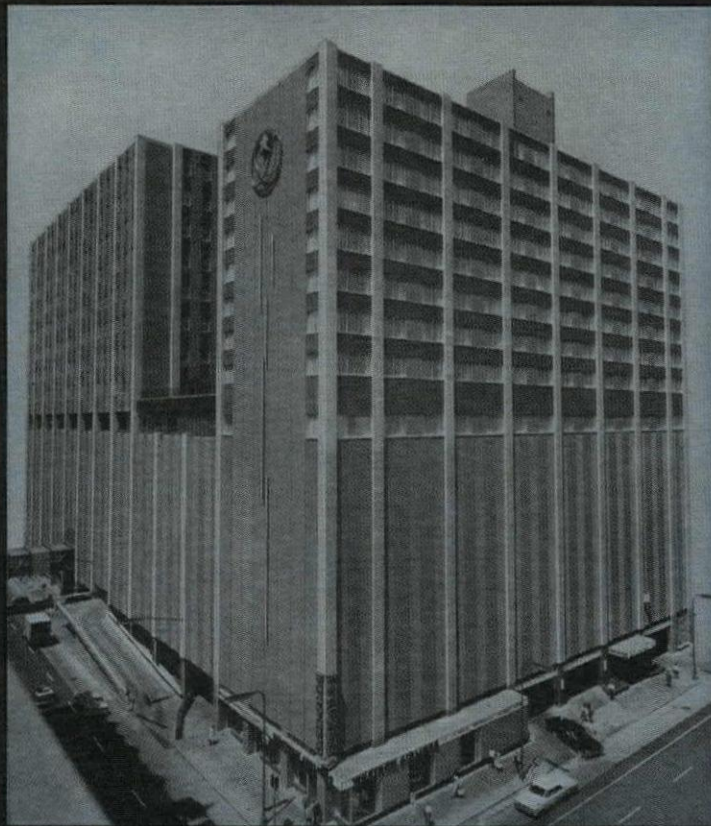


MICHIGAN: 3443 Chicago Dr., S.W., Grandville 616—LE 2-3641 ILLINOIS: 228 N. LaSalle St., Chicago 312—FI 6-7863 NEW YORK: P.O. Box 96, Murray Hill Station, New York 212—OR 9-5979

For more data, circle 125 on Inquiry Card

For more data, circle 126 on Inquiry Card ➤

MUZAK at Northstar Center



NORTHSTAR CENTER, \$25-million city-within-a-city, located in the heart of Minneapolis, combines a 180-room luxury hotel, three fine restaurants, shopping arcade, post office and full service facilities connected by weather-conditioned "skyways" and tunnels.

Music by Muzak plays an important role at Northstar Center, bringing a pleasant environment to many public and office areas of this unusual complex.


Scientifically arranged and recorded to provide just the right mood for customers and personnel, Music by Muzak has a unique ability

to mask noise, replace cold silence and enhance smart architectural design and decor.

More than a motivational device, the Muzak sound system may serve as a versatile communications tool for paging, public address, signalling and other uses. Save time, effort and expense; specify a Muzak system in the early planning stages.

A.I.A. File No. 31-1-7. Sweets Catalog File 33a/Mu. For full details, write Muzak headquarters or contact your local Muzak franchised distributor today.

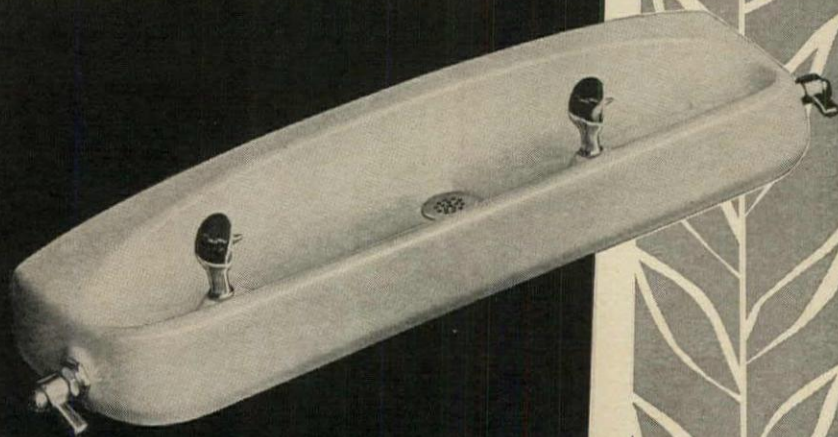


MUZAK  A Division of Wrather Corporation, 229 Park Avenue South, New York, N. Y. 10003.

Argentina, Australia, Belgium, Brazil, Canada, Colombia, Denmark, Finland, Germany, Great Britain, Israel, Japan, Mexico, Peru, The Philippines, Switzerland, United States, Uruguay

Honor Roll:

MODEL 10F



HAWS DRINKING FOUNTAIN

Model 10F—specializing in colorful eye appeal. Smooth receptor vacuum molded in reinforced fiberglass; choice of six colors at no extra cost. A leader in service with two fountain heads and two smooth-action lever valves with automatic flow regulation. Top of the class for refreshing design. Popular: succeeds remarkably well in pleasing nearly everyone.

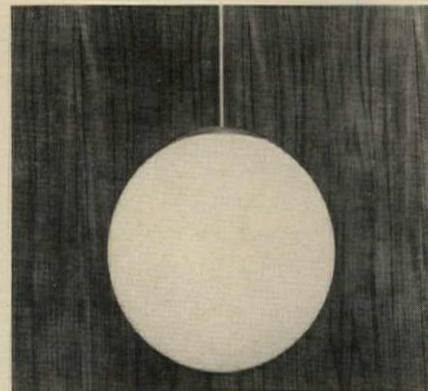


For full, immediate details see Sweet's 29d/Ha; refer to your Haws Yellow Binder; call your Haws Representative; or write for spec sheet or complete catalog to HAWS DRINKING FAUCET CO., 1441 Fourth Street, Berkeley, California 94710.

For more data, circle 127 on Inquiry Card

Product Reports

continued from page 216



ONE-PIECE PLASTIC GLOBES

Habitat has introduced an extensive line of seamless plastic globes ranging in size from 6 to 36 in. in diameter. Globes are designed for indoor and outdoor use and the line incorporates three different ceiling suspension methods. *Habitat Inc., 336 Third Avenue, New York, N.Y., 10010*

CIRCLE 308 ON INQUIRY CARD

SCALE BUILDING MODELS

Exact scale models of individual buildings and redevelopment projects can be supplied to scales of $\frac{1}{8}$ in., $\frac{1}{32}$ in., or $\frac{1}{16}$ in. as required. These three-dimensional models are available as *Study* models, prepared from architects' rough sketches to give an over-all impression of a scheme before details are completed, and as *Presentation* models prepared from architect's final drawings for client presentation. *Dimensional Arts Inc., Cleveland 5, Ohio*

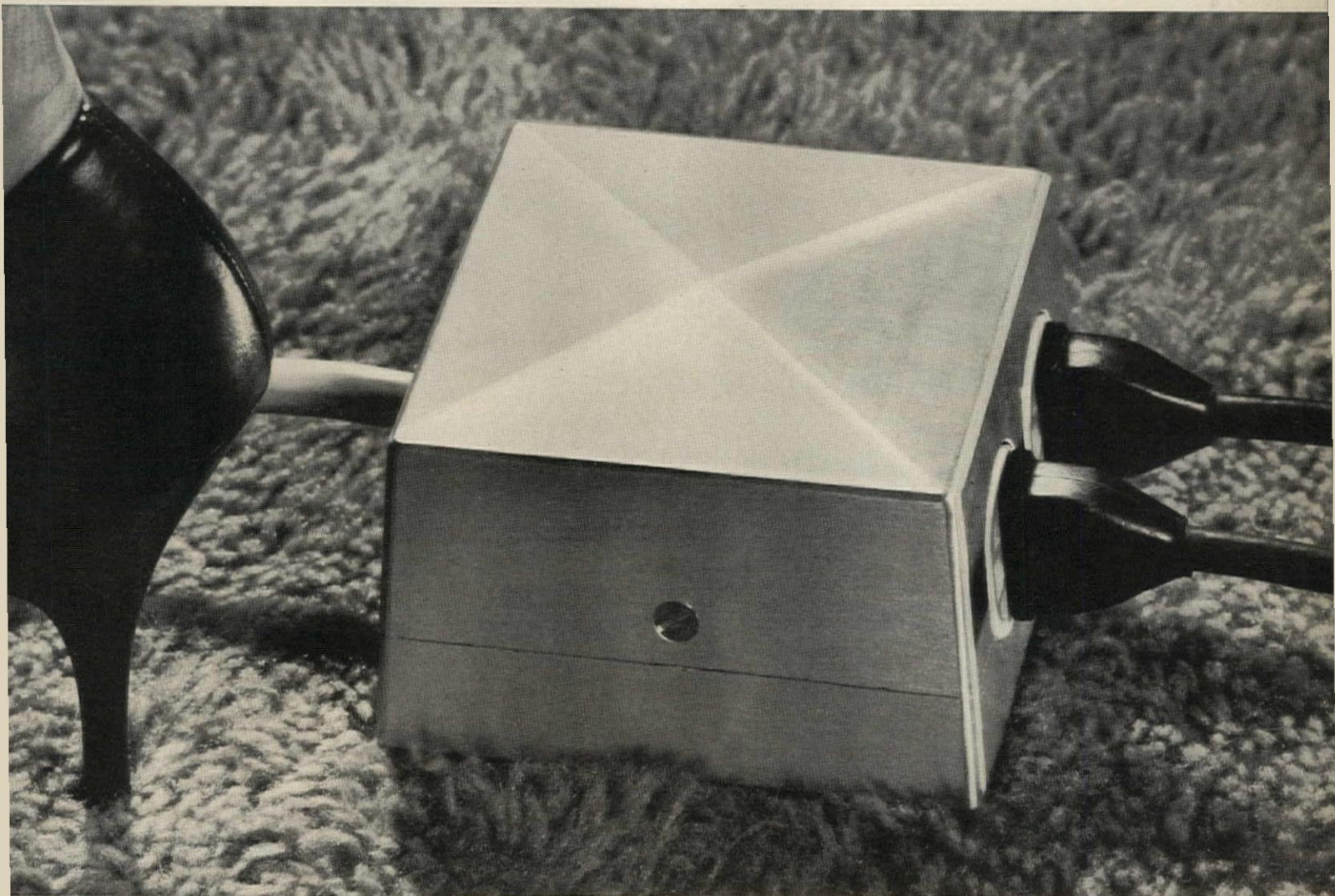
CIRCLE 309 ON INQUIRY CARD



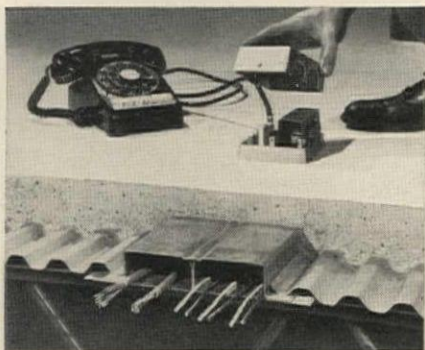
more products on page 226

For more data, circle 128 on Inquiry Card →

NEW DUAL-SERVICE INSERT AND FLOOR FITTING FOR **CEL-WAY**



Telephone and power outlets in one fixture!



NEW ECONOMY FOR THIN FLOOR SLABS!
Cel-Way System provides full in-floor electrification . . . and saves concrete in steel joist floor construction.

Why one fixture is better than two. Granco's new Cel-Way In-Floor Electrification System puts electrical and telephone outlets in one compact floor fitting. Result: you've just eliminated 50% of the floor fixtures. Imagine a finished floor like the one above, with these new, single, low-profile, satin-finish fittings. All the double-fixture, dust-traps are gone. Floors are *now* attractive, uncluttered, easy to wax and clean.

But that's just the beginning. With Cel-Way, your installation costs are substantially reduced too. Compact, dual-service insert easily accommodates 100-pair cable; is roomy

enough to house two amphenol jacks. The die-cast, contoured fitting and insert also make it easy to pull thick cables through cells to fitting. Marker screws pinpoint insert location for future use.

These are just a few of the reasons why you'll find Cel-Way practical for your next in-floor electrification system. Write today for more information on the exclusive features and benefits of this promising new floor system. Granco Steel Products Company, 6506 N. Broadway, St. Louis, Missouri 63147.



GRANCO

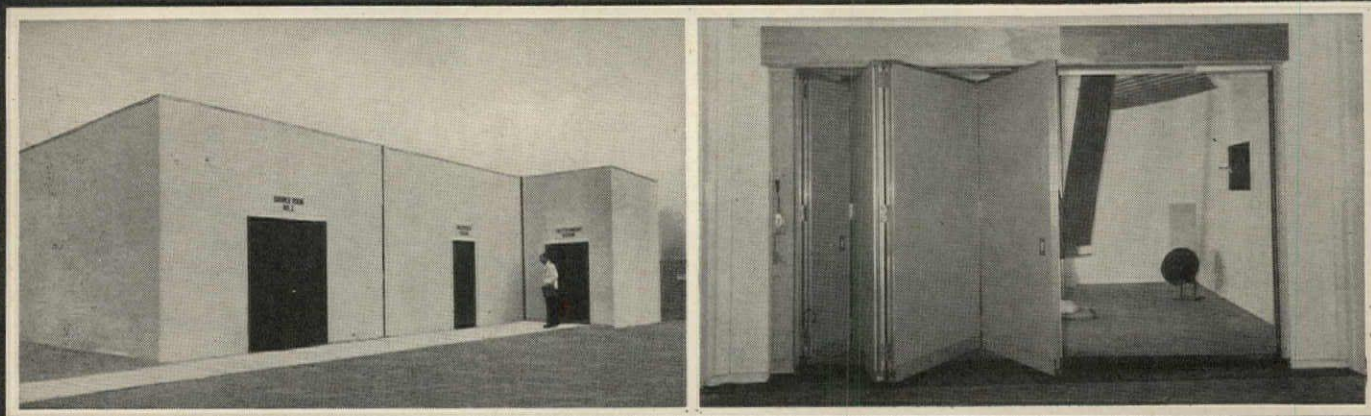
IMAGINATION IN STEEL



FOR THE NEEDS OF TODAY'S ARCHITECTURE

For more data, circle 135 on Inquiry Card

We invested our dollars here...



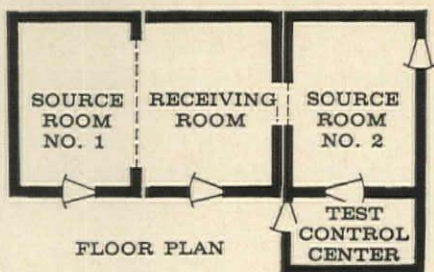
to protect dollars you invest here!



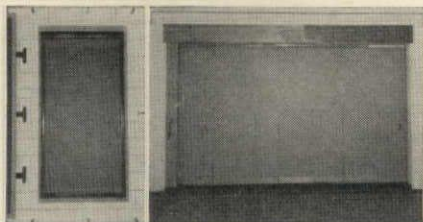
Typical installations of Richards-Wilcox Folding Partitions

New sound laboratory permits a continuous research program to improve sound retarding techniques

The photos, left, illustrate an important new Richards-Wilcox customer-service facility—a Sound Testing Laboratory constructed to meet ASTM requirements. It was built under the consulting guidance of the Riverbank Acoustical Laboratories of the Illinois Institute of Technology, Research Institute. After completion the laboratory was calibrated for sound tests by Bolt, Beranek and Newman Inc.



This floorplan illustrates how the laboratory is actually three individual buildings separated by insulating air spaces to eliminate sound transference from chamber to chamber. The major purpose of this modern up to date facility is to, by development-testing, improve the sound retarding qualities of the individual panels used in the construction of Folding Walls . . . and



the complete Folding Wall installed as it would be on-the-job to meet sound barrier requirements.

Another R-W First . . .

To our knowledge, this Sound Testing Laboratory is the only one ever built by a manufacturer of folding partitions to assure customer satisfaction in the sound retarding qualities of his product . . . and is one of only three test labs in the United States where tests of this magnitude can be conducted.

ASTM Test Standards . . .

Without exception, sound tests for product evaluation are conducted to conform with ASTM testing procedures. All sound tests for product certification will be conducted and certified by recognized independent testing organizations such as those previously mentioned.

Why a sound laboratory . . .

The constant availability of a test facility such as this enables R-W Engineers to conduct immediate, scientific tests on individual panels and prototypes of assembled walls to determine their true sound retarding qualities. In addition it provides a laboratory large enough so that an independent testing organization can move in and make tests for certification of complete R-W Folding Walls and their very important perimeter seals to evaluate the on-the-job sound retarding quality.

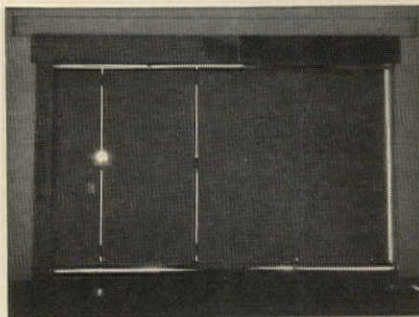
Sound Test evaluations permit the design and construction of R-W Folding Partitions that are custom-engineered to provide the sound retarding quality desired and compatible with the surrounding construction for each specific installation.

Documentary Film Available . . .

A full color, 10 minute documentary film showing how sound tests are conducted has been produced and is available for your viewing. Test sequences and sounds were filmed and recorded just as they were generated for the tests.

The short time required to view this film should prove to be of definite value to anyone involved in the specification and purchase of a Folding Partition or Movable Wall.

One very interesting sequence was filmed with the front or receiving chamber in complete darkness and the adjoining source chamber brightly lighted. As the mechanically actuated perimeter seals are released you can almost see as well as hear the sound coming through the resulting cracks.



This exciting sequence offers graphic evidence that over and above sound-retarding panels the complete Folding Wall must be equipped with a positive perimeter seal to effectively retard sound transmission.

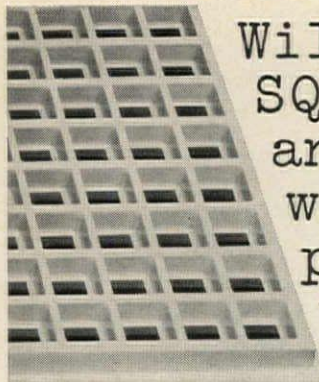
We would appreciate the opportunity of showing you this film at your earliest convenience—just contact us indicating your interest. In addition, we would be happy to send you a copy of our latest Folding Partition Catalog for your file.

HUPP
CORPORATION

RICHARDS-WILCOX DIVISION

116 THIRD STREET • AURORA, ILLINOIS 60507

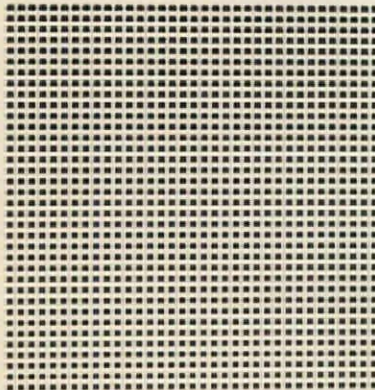
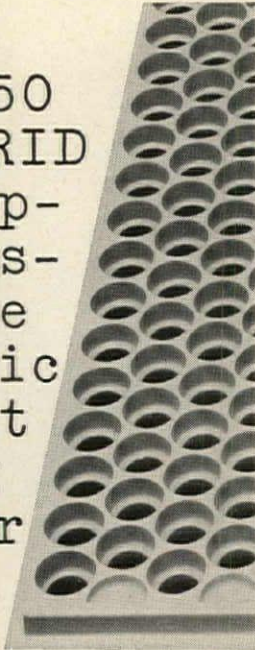
For more data, circle 136 on Inquiry Card



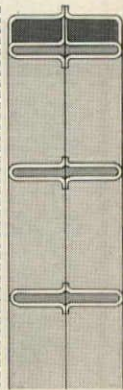
Wilson
SQUARGRID-50
and CIRCLGRID

will not support combustion...the

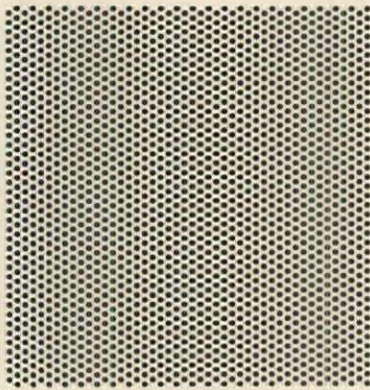
ONE plastic lighting louver that meets more building codes than any other plastic lighting louver available!
(And it's good looking, too!)



SQUARGRID-50 U.S. Patent No. 2996609



Cross-section of SQUARGRID & CIRCLGRID construction



CIRCLGRID U. S. Patent No. 2996609

Wilson adds flexibility to ceiling design. You can specify either SQUARGRID or CIRCLGRID in building code areas where other plastic illuminated ceiling panels cannot qualify. These vinyl louvers combine the ease of installation and maintenance of plastic with a UL Tunnel Test rating of 20... and they are fully approved for use with automatic sprinklers.

Open or closed panels give freedom of design to meet installation requirements.

New, larger size available in SQUARGRID... 2½' x 5'. Both CIRCLGRID and SQUARGRID are also available in 2' x 2' and 2' x 4' sizes.

Choice of two translucencies lets designer achieve maximum visual comfort with all lighting levels while minimizing glare.

Unique round or square cellular section provides structural strength and rigidity, eliminates brittleness, and affords on-the-job cutting to fit irregularities precisely.

See Sweet's or write for new brochures on CIRCLGRID and SQUARGRID: Wilson Research Corp., 2001 Peninsula Drive, Erie, Pa. Phone (814)-838-1981.

WILSON



For more data, circle 137 on Inquiry Card

Product Reports

continued from page 226

NEW CHAIRS

Two new chairs have recently been introduced by JG Furniture Company. The cantilever side chair has a steel frame with demountable upholstered seat and back and special steel rubber cushioned removable glides. The *D 17* chair series has been designed specifically to make use of expanded vinyls. The chair is available



in a range of 64 colors and with a choice of six base versions including aluminum pedestal bases and walnut legs. *JG Furniture Company, 160 East 56th St., New York, N.Y.*

CIRCLE 312 ON INQUIRY CARD

COLD LIGHT CYLINDERS

The new *C.50* spotlight for all surface-mounted interior accent lighting applications makes use of an efficient convection venting system in conjunction with the new *PAR-38* lamp, to decrease the radiant heat content of the light beam and thus reduce heat damage, fading and personal discomfort. Incident glare and spill light are said to be eliminated by an integral 45-deg cellular louver. Color toning is achieved with a range of color filters. *Lighting Services Inc., 77 Park Ave., New York, N.Y., 10016*

CIRCLE 313 ON INQUIRY CARD



more products on page 242

specify MAHOGANY... if he's big enough for this chair!

When you want the subtlety of success, design his office with the finest wood in the world. You'll build good taste and good sense around him and he'll have it easier with both customers and board members. You'll have a friend and client forever—thanks to Genuine Mahogany.

As the world's largest importer and manufacturer of Genuine Mahogany, Weis-Fricker produces only *Swietenia Macrophylla* from Central and South America. It's yours quickly in any quantity at prices that will please you, and at lengths up to 20 feet, widths to 24 inches, and thicknesses to 4 inches!

From Weis-Fricker you'll get the same magnificent material that tests by the U. S. Forest Products Laboratory and Cornell University show superior over all other popular hardwoods in nearly all properties for mortising, boring, planing, warping, shrinking, shaping and turning. You'll have the same wonderful wood that remains

unchanged, uncracked, unwarped in the Cathedral of Ciudad Trujillo after 450 years of tropical climate with hurricanes, earthquakes, and insects. And you'll join America's top architects who chose Genuine Mahogany recently for the interior of the luxurious Hotel Sheraton in San Juan, the Professional Golf Association's (PGA) clubhouse in Palm Beach, and the Library at the University of Chicago. In fact, watch for *House Beautiful's* 1965 Pace Setter Home. It's full of Genuine Mahogany from Weis-Fricker!

For the name of your nearest dealer, write today. Free mahogany kit on request. Contains samples with finishes in red, yellow, green, blue, brown, and violet, plus mahogany fact book with mechanical stresses and other information. Circle number 10 on the readers service card or write Weis-Fricker Mahogany Company, P. O. Box 391, Pensacola, Florida.

PHOTOGRAPH BY EZRA STOLLER ASSOCIATES



QUALITY GENUINE

WEIS-FRICKER MAHOGANY

PENSACOLA, FLORIDA

ZONOLITE® ROOF DECK SYSTEMS

WITH ZONOLITE INSULATING CONCRETE

ZONOLITE INSULATING CONCRETE consists of a mixture of Stabilized Zonolite Vermiculite® Concrete Aggregate, portland cement and water.

FEATURES

LIGHTWEIGHT—As little as 1/6th the weight of ordinary concrete. Cuts framing costs on many buildings.

SPECIFIED INSULATION VALUE—Obtainable by varying thickness of insulating concrete.

PERMANENCE—Will not rot or decompose. Chemically stable.

MONOLITHIC—Continuous surface. Forms ideal surface for the application of built-up roofing.

SLOPES, CRICKETS, SADDLES—Are easily formed to meet drainage requirements.

FLEXIBILITY OF DESIGN—Follows any contour.

INCOMBUSTIBLE—All mineral, Zonolite concrete will not burn.

ECONOMICAL—Low in original cost. Maintenance cost is virtually non-existent, and most important . . .

CERTIFIED APPLICATION—Installation of roof deck systems is made by approved applicators trained in the proper placement of Zonolite roof deck systems, according to specifications, using the most advanced techniques to insure highest standards of quality.

1. OVER STRUCTURAL CONCRETE 2. OVER PRECAST CONCRETE 3. OVER CURVILINEAR SHAPES

TECHNICAL DATA: Mix—1:6 . . . Oven Dry Density—25-30 lbs./ft.³ . . .
Compressive Strength—125-225 lbs./in.² . . .
Indentation Resistance—165-270 lbs./in.² . . .

"U" FACTOR TABLE (INCLUDES BUILT-UP ROOFING) Zonolite Cast-In-Place Insulation Thickness and Weight

Thickness of Structural Concrete Roof Deck	2"—4.34 lbs/sq ft				3"—6.50 lbs/sq ft				4"—8.67 lbs/sq ft			
	No Ceiling		Ceiling		No Ceiling		Ceiling		No Ceiling		Ceiling	
	Heat Flow		Heat Flow		Heat Flow		Heat Flow		Heat Flow		Heat Flow	
	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down
2" Double Tees	0.25	0.23	0.12	0.11	0.19	0.17	0.10	0.10	0.15	0.14	0.09	0.08
4" Concrete	0.24	0.22	0.12	0.11	0.18	0.17	0.10	0.10	0.15	0.14	0.09	0.08
6" Concrete	0.24	0.22	0.11	0.11	0.18	0.16	0.10	0.09	0.14	0.13	0.09	0.08
4" Concrete	0.24	0.22	0.20	0.19	0.18	0.17	0.16	0.15	0.15	0.14	0.13	0.12
6" Concrete	0.24	0.22	0.20	0.18	0.18	0.17	0.16	0.15	0.14	0.13	0.13	0.12

NOTES:

- (1) Add 6 lbs/sq ft for built-up roofing.
- (2) Ceiling used in "U" value calculation is 1/2" Zonolite Acoustical Plastic, applied directly to underside on concrete slab.
- (3) "U" Value may be reduced when other than 140 lb density concrete is used.
- (4) Zonolite Insulating Concrete does not require expansion joints except where required in the structural framing.
- (5) Zonolite Insulating Concrete does not require mesh reinforcement.
- (6) Authority for "U" values based on ASHRAE Guide and Test Data by recognized laboratories.

OVER SHREDDED WOOD FIBER FORMBOARD

TECHNICAL DATA: Mix—1:6 . . . Oven Dry Density—25-30 lbs./ft.³ . . .
Compressive Strength—125-225 lbs./in.² . . .
Indentation Resistance—165-270 lbs./in.² . . .

"U" FACTOR TABLE (INCLUDES BUILT-UP ROOFING)

ZONOLITE INSULATING CONCRETE OVER SHREDDED WOOD FIBER FORMBOARD

Zonolite Concrete Thickness Over Formboard	Weight of Concrete and Formboard	1" Thick Formboard			
		No Ceiling		Ceiling	
		Heat Flow		Heat Flow	
		Up	Down	Up	Down
2"	7.32	0.17	0.16	0.10	0.10
2 1/2"	8.40	0.15	0.14	0.09	0.09
3"	9.48	0.14	0.13	0.08	0.08

NOTES:

- (1) Add 6 lbs sq ft for Built Up Roofing.
- (2) Ceiling used in "U" Value Calculations is 3/4" Fiberglass lay in panel.
- (3) Zonolite Insulating Concrete does not require expansion joints except where required in the structural framing.
- (4) Weight of concrete and Formboard does not include weight of Sub-Purlins or mesh.
- (5) Sound absorption coefficient of the Shredded Wood Fiber Formboard is N.R.C. = .50 to .60 db.
- (6) Authority for "U" Values based on ASHRAE Guide and Test Data by recognized laboratories.
- (7) Design load 50 lb sq ft with safety factor of 4.
- (8) UL, Inc. Flame Spread Rating 10
Fuel Contributed 15
Smoke Developed Negligible

OVER FIBERGLAS FORMBOARD

TECHNICAL DATA: Mix—1:4 . . . Oven Dry Density—35-40 lbs./ft.³ . . .
Compressive Strength—350-500 lbs./in.² . . .
Indentation Resistance—410-515 lbs./in.² . . .

"U" FACTOR TABLE (INCLUDES BUILT-UP ROOFING)

ZONOLITE INSULATING CONCRETE ROOF DECK OVER FIBERGLAS FORMBOARD

Zonolite Concrete Thickness Over Formboard	Weight of Concrete and Formboard	1" Thick Formboard				1 1/2" Thick Formboard				
		No Ceiling		Ceiling		No Ceiling		Ceiling		
		Heat Flow		Heat Flow		Heat Flow		Heat Flow		
		Up	Down	Up	Down	Up	Down	Up	Down	
2"	6.84	0.14	0.13	0.09	0.08	7.34	0.11	0.10	0.07	0.07
2 1/2"	8.30	0.13	0.12	0.08	0.08	8.80	0.10	0.09	0.07	0.07

NOTES:

- (1) Add 6 lbs sq ft for Built Up Roofing.
- (2) Ceiling used in "U" Value Calculations is 3/4" Fiberglass lay in panel.
- (3) Zonolite Insulating Concrete does not require expansion joints except where required in the structural framing.
- (4) Weight of concrete and Formboard does not include weight of Sub-Purlins or mesh.
- (5) Sound absorption coefficient of the Fiberglass Formboard is NRC = .75 db.
- (6) Authority for "U" Values based on ASHRAE Guide and Test Data by recognized laboratories.
- (7) Design load 50 lb sq ft with safety factor of 4.
- (8) UL, Inc. Flame Spread Rating 10-20
Fuel Contributed 10-15
Smoke Developed Negligible

ZONOLITE ROOF DECK CERTIFICATION PROGRAM

... and what it means to the architect

APPROVED APPLICATORS—A national network of skilled applicators is available to install versatile Zonolite Roof Decks. They are bound by contract with the Zonolite processor to place these systems in strict accordance with the Standard Specifications of the Vermiculite Institute.

JOB CONTROL OF MATERIALS AND WORKMANSHIP—To insure quality standards on each roof deck project, the Zonolite processor requires that the approved applicator maintain job records which include a continuous log of mix proportions, water content, densities and weather conditions.

LABORATORY CHECKS—Test specimens are periodically taken during placement on the project and shipped to the Zonolite Building Products Laboratory to assure conformance to published technical data. Specimens are tested for proper dry density and compressive strength.

JOINTLY CERTIFIED BY MANUFACTURER AND APPLICATOR—On completion of the Zonolite Concrete Roof Deck, a certificate jointly signed by the Zonolite processor and the approved applicator, is issued to the architect. It states that the Zonolite concrete roof deck was applied in accordance with the standard Specifications of the Vermiculite Institute.

You will be assured of a certified application of your Zonolite roof deck if your specification states:

“Upon completion of the roof deck installation, a certificate from the aggregate manufacturer shall be furnished to the architect, stating that the applicator is approved, and that the Zonolite Concrete was prepared and applied in accordance with specifications of the Vermiculite Institute in effect at the time said installation was made.”

OVER VENTED, GALVANIZED STEEL DECKS

TECHNICAL DATA: Mix—1:6... Oven Dry Density—25-30 lbs./ft.³...
Compressive Strength—125-225 lbs./in.²...
Indentation Resistance—165-270 lbs./in.²...

“U” FACTOR TABLE (INCLUDES BUILT-UP ROOFING) ZONOLITE CAST IN PLACE INSULATION OVER VENTED GALVANIZED STEEL DECKS

Thickness of Concrete Over Top of Deck	Deck Depth 1/2" - 28 Gauge					Deck Depth 3/4" - 26 Gauge					Deck Depth 1 1/8" - 24 Gauge				
	WT LBS/FT ²	No Ceiling Heat Flow		Ceiling Heat Flow		WT LBS/FT ²	No Ceiling Heat Flow		Ceiling Heat Flow		WT LBS/FT ²	No Ceiling Heat Flow		Ceiling Heat Flow	
		Up	Down	Up	Down		Up	Down	Up	Down		Up	Down		
2"	5.73	0.24	0.22	0.12	0.11	6.54	0.22	0.20	0.11	0.11	7.19	0.22	0.20	0.11	0.10
2 1/2"	6.84	0.21	0.20	0.11	0.10	7.63	0.19	0.18	0.10	0.10	8.29	0.19	0.17	0.10	0.10
3"	7.93	0.18	0.17	0.10	0.10	8.72	0.17	0.16	0.10	0.09	9.37	0.17	0.15	0.10	0.09
3 1/2"	9.03	0.16	0.15	0.10	0.09	9.80	0.16	0.14	0.09	0.09	10.44	0.15	0.14	0.09	0.09
4"	10.05	0.15	0.14	0.09	0.08	10.88	0.14	0.13	0.08	0.08	11.99	0.13	0.13	0.08	0.08

NOTES:

- (1) Add 6 lbs. sq. ft. for Built Up Roofing.
- (2) Ceiling used in "U" Value calculation is 3/4" Fiberglass Lay in Panel.
- (3) Zonolite Insulating Concrete does not require expansion joints except where required in the structural framing.
- (4) Zonolite Insulating Concrete does not require mesh reinforcement.

- (5) Authority for "U" Values based on ASHRAE Guide and Test Data by recognized laboratories.
- (6) When composite action is considered in design this system carries a safety factor of 13.5, based on a 30 lb. live load.
- (7) CAUTION: When pouring Zonolite over Galvanized Metal Sheets DO NOT use Calcium Chloride or any Admix containing Chloride Salts.

SAFE UNIFORM LOAD IN POUNDS PER SQ. FT.—TWO SPAN CONDITION

Type of Manufacturer	Gauge	Weight of Inertia	Section Modulus	Weight p.s.f.	3'0"	3'6"	4'0"	4'6"	5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"
Standard Corruform by Granco Steel Products Co.		0.010	0.036	0.88	80	58	45	35								
Standard Ribform by Inland Steel Products Co.		0.012	0.035	0.84	78	57	44	35								
Standard Slabform by Bethlehem Steel Co.	28	0.011	0.035	0.87	78	57	43									
#50 Wheeling Tensiform by Wheeling Corrugating Co.	28	0.011	0.034	0.863	75	55	42	34								
Form Deck -R- by Airtherm Mfg. Co.	28	0.010	0.036	0.87	80	59	45	36								
Tufcor by Granco Steel Products Co.	26	0.032	0.073	1.13		120	92	73	59	49	41	35				
Heavy Duty Ribform by Inland Steel Products Co.		0.044	0.081	1.10		132	101	80	65	54	45	38				
Heavy Duty Slabform by Bethlehem Steel Co.	26	0.036	0.075	1.20		123	95	74	61	50	42	35				
#75 Wheeling Tensiform by Wheeling Corrugating Co.	25	0.038	0.078	1.152		126	96	76	62	51	43	36				
Form Deck -X- by Airtherm Mfg. Co.	26	0.033	0.074	1.15		121	93	73	60	49	41					
Tufcor by Granco Steel Products Co.	24	0.089	0.136	1.49			134	109	90	76	64	56	48	43	38	
Super Duty Ribform by Inland Steel Products Co.	24	0.104	0.136	1.40			134	109	90	76	64	55	48	42		
Extra Heavy Duty Slabform by Bethlehem Steel Co.	24	0.101	0.139	1.50			137	111	92	77	65	56	49	43	38	
#125 Wheeling Tensiform by Wheeling Corrugating Co.	24	0.094	0.138	1.464			135	110	91	76	65	56	50	43	38	
Form Deck -T- by Airtherm Mfg. Co.	24	0.089	0.136	1.40			134	109	90	76	—	—	—	48	43	38

SAFE UNIFORM LOAD IN POUNDS PER SQ. FT.—THREE SPAN CONDITION

Type of Manufacturer	Gauge	Weight of Inertia	Section Modulus	Weight p.s.f.	3'0"	3'6"	4'0"	4'6"	5'0"	5'6"	6'0"	6'6"	7'0"	7'6"	8'0"	8'6"
Standard Corruform by Granco Steel Products Co.		0.010	0.036	0.88	99	73	56	44								
Standard Ribform by Inland Steel Products Co.		0.012	0.035	0.84	97	71	55	43								
Standard Slabform by Bethlehem Steel Co.	28	0.011	0.035	0.87	97	70	55	43								
#50 Wheeling Tensiform by Wheeling Corrugating Co.	28	0.011	0.034	0.863	94	69	53	43								
Form Deck -R- by Airtherm Mfg. Co.	28	0.010	0.036	0.87	96	70	54	43								
Tufcor by Granco Steel Products Co.	26	0.032	0.073	1.13			115	91	74	61	51	43	37			Maximum Sheet Length 21'6"
Heavy Duty Ribform by Inland Steel Products Co.		0.044	0.081	1.10			127	100	81	68	56	45				Maximum Sheet Length 16'3"
Heavy Duty Slabform by Bethlehem Steel Co.	26	0.036	0.075	1.20			117	92	75	61	52	45				Maximum Sheet Length 30'0"
#75 Wheeling Tensiform by Wheeling Corrugating Co.	25	0.038	0.078	1.152			120	95	78	64	54	45				Maximum Sheet Length 40'0"
Form Deck -X- by Airtherm Mfg. Co.	26	0.033	0.074	1.15			111	87	72	58	49	41				Maximum Sheet Length 40'0"
Tufcor by Granco Steel Products Co.	24	0.089	0.136	1.49			168	136	112	95	81	69				Maximum Length Length 21'6"
Super Duty Ribform by Inland Steel Products Co.	24	0.104	0.136	1.40			105	85	70	56	45	37				Maximum Sheet Length 16'3"
Extra Heavy Duty Slabform by Bethlehem Steel Co.	24	0.101	0.139	1.50			171	138	113	96	82	70				Maximum Sheet Length 16'3"
#125 Wheeling Tensiform by Wheeling Corrugating Co.	24	0.094	0.138	1.464			169	137	112	95	81	70				Maximum Sheet Length 22'6"
Form Deck -T- by Airtherm Mfg. Co.	24	0.089	0.136	1.40			160	130	108	91						Maximum Sheet Length 22'6"

For more details, please consult your Zonolite Certified Roof Deck Applicator or write for his name

ZONOLITE

GRACE ZONOLITE DIVISION
W. R. GRACE & CO.

135 S. LaSalle Street, Chicago, Illinois 60603

ZONOLITE is a registered trademark of Zonolite Division, W. R. Grace & Co.

For more data, circle 139 on Inquiry Card

*for the special
convenience
of the
younger set*

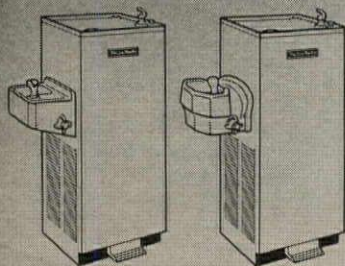


BI-LEVEL FOUNTAINS & COOLERS

The convenient, practical way to serve refrigerated water to both adults and children. Ideal for supermarkets, department stores, and public buildings frequented by different age groups. Bi-Level installation consists of factory-adapted, wall-mounted cooler with low-level accessory fountain. Insulated cold water line connects through adjacent panels — only single waste line is required to serve dual units.

Stainless steel receptacles; cabinets are available in Bonderized steel with choice of colors, stainless steel, or vinyl-laminated steel in silver, spice, or mocha brown.

For complete information about the Halsey Taylor Bi-Level wall-mount assembly or other Halsey Taylor coolers and fountains, write for NEW CATALOG. Also advertised in SWEET'S ARCHITECTURAL FILE and the YELLOW PAGES.



SIDE-MOUNTED FOUNTAINS

Most Halsey Taylor free-standing water coolers can be adapted for bi-level use by adding a side-mounted drinking fountain. Ideal for elementary schools where adults and children use same fountain. Separate valve and automatic stream regulator — available in stainless steel or vitreous china.

Halsey Taylor®

THE HALSEY W. TAYLOR CO. • 1554 THOMAS RD. • WARREN, O.

Product Reports

continued from page 238



TABLE DESK WITH STORAGE SPACE

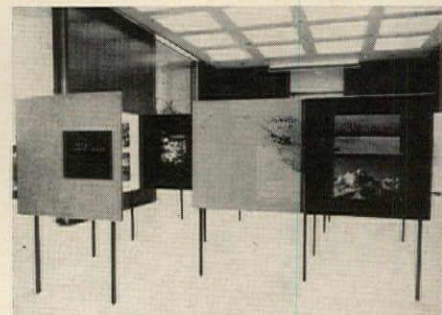
Florence Knoll's new "box-top" desk has four shallow drawers, two on the executive's side for pencils and papers and the other two on the opposite side, equipped with removable slides for taking notes during conferences. Paper and pencils can be stored underneath the slides. The desk, including the drawers, is only 2½ in. in depth. The desk in the photo is rosewood, but teak and walnut veneers are also available. The solid steel base may be finished in either brushed or polished chrome. *Knoll Associates Inc., 320 Park Ave., New York, N. Y., 10022*

CIRCLE 314 ON INQUIRY CARD

MODULAR EXHIBIT SYSTEM

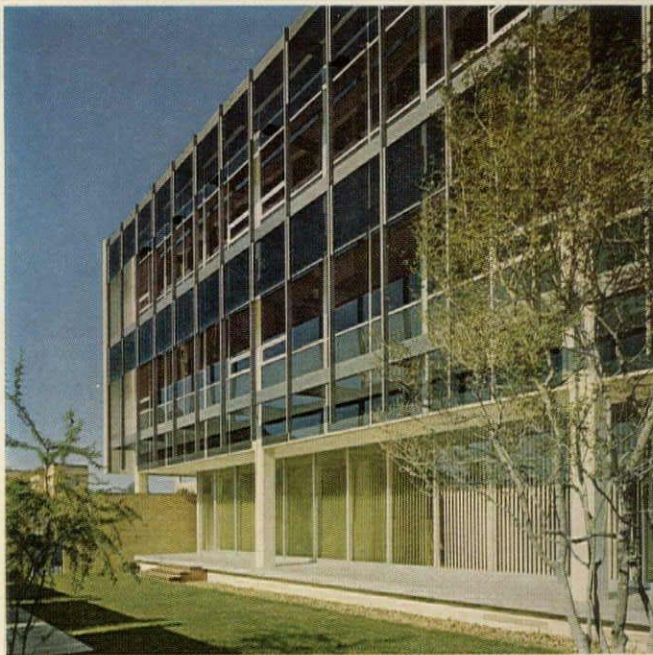
The advantages of the *X-Blok* exhibit system are said to be freedom of design, strength and durability, and integral lighting. Parts can be locked together by means of a simple ¼-turn locking device, which can be operated by a standard hex wrench. An average set of *X-Blok* components consists of 20 4- by 4-ft panels covered on both sides with matte formica. Sufficient legs and connectors are supplied to allow the system to be assembled in a great variety of ways. *X Blok, 409 East 60th St., New York, N.Y., 10022*

CIRCLE 315 ON INQUIRY CARD



← For more data, circle 140 on Inquiry Card

For solar
control...
sun screens
of
PLEXIGLAS



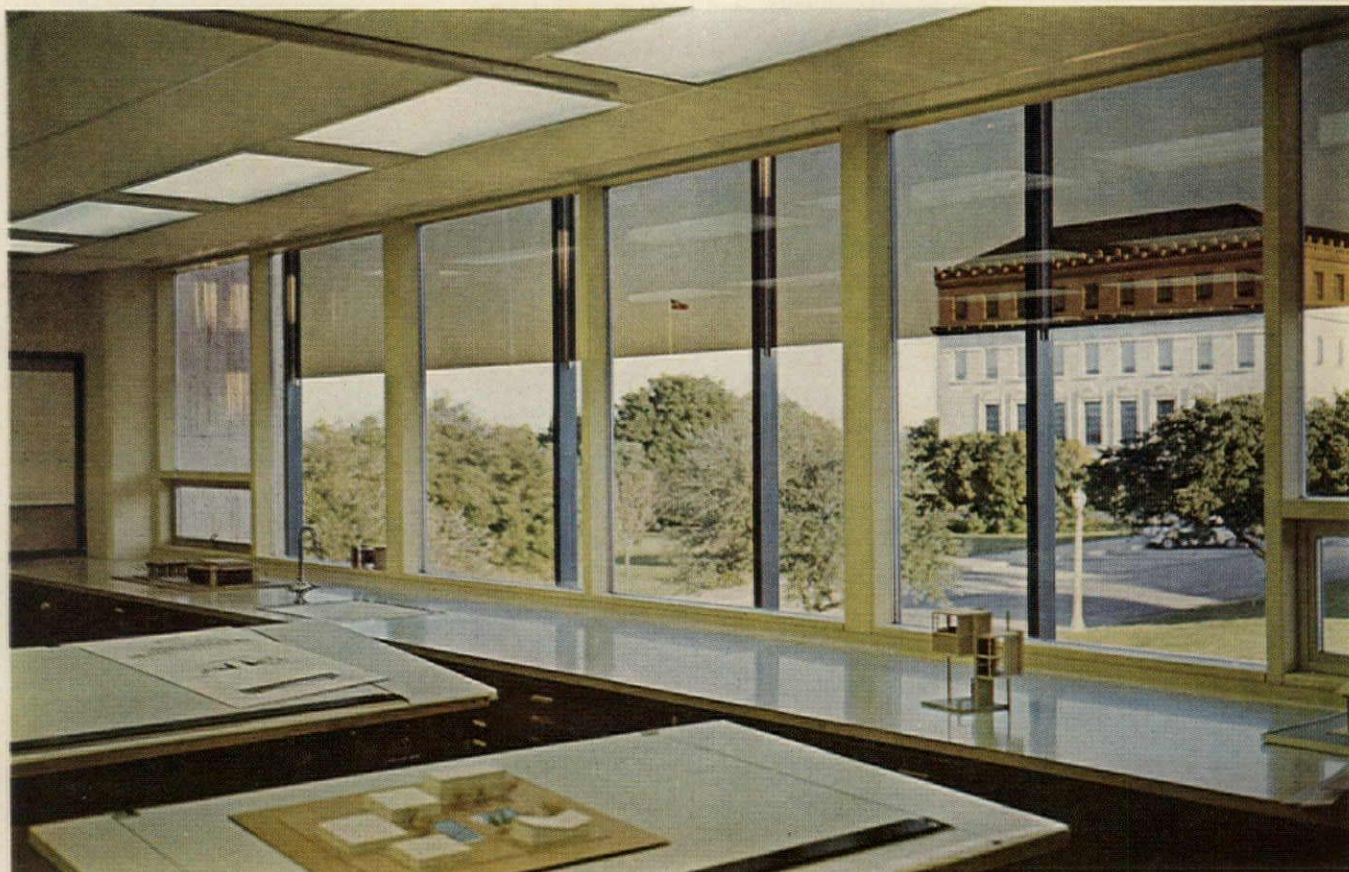
ARCHITECT: HARWOOD K. SMITH & PARTNERS, DALLAS, TEXAS

When the architect for the Texas A. & M. University Architectural School at College Station, Texas, considered the problem of solar control with sun screens, PLEXIGLAS® acrylic plastic was specified. Why? Because the light weight and impact resistance of PLEXIGLAS make possible a minimum structure to support the sun screens.

The 3/8" thick transparent gray #2088 PLEXIGLAS

sheet selected for these sun screens is one of a full range of tints that are available to satisfy a wide variety of light transmittance, glare and solar heat requirements.

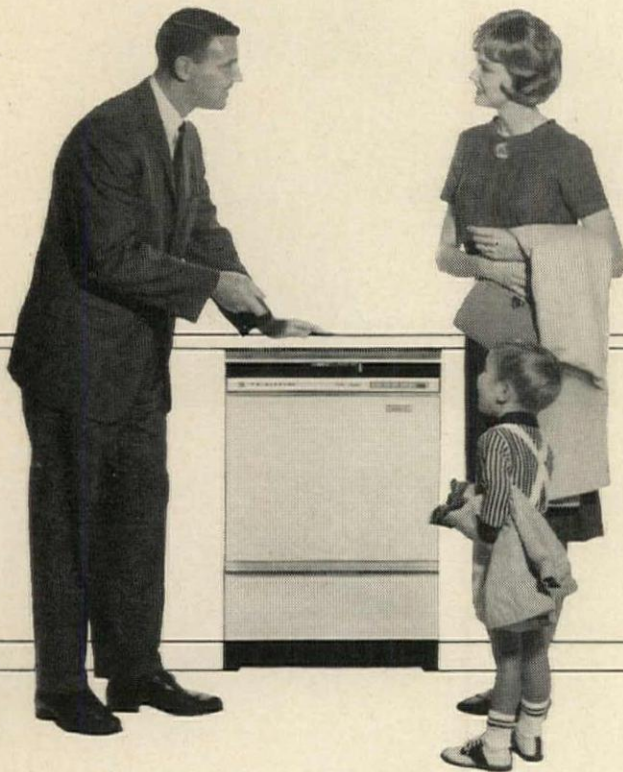
Get information and installation details on sun screens of PLEXIGLAS acrylic plastic. Write to Rohm & Haas for technical bulletins PL-591 and PL-592.



®Trademark Reg. U.S. Pat. Off., Canada and principal Western Hemisphere countries. Sold as OROGLAS® in other countries.

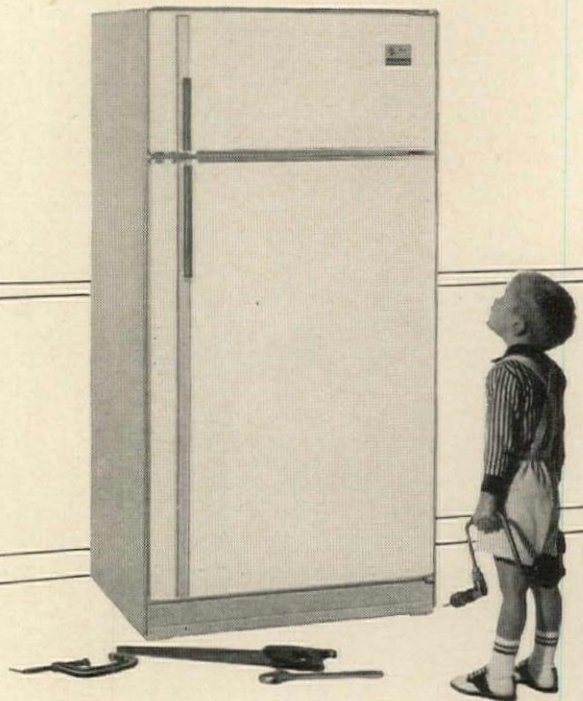
For more data, circle 141 on Inquiry Card

Women know Frigidaire



...as the name they can trust. They'll be delighted to see beautiful Frigidaire appliances like this whisper-quiet Custom Imperial Dishwasher (or a Frigidaire Frost-Proof Refrigerator or Flair Wall Oven) in your apartments, townhouses, or model homes. What a wonderful way to say "quality" to your prospects!

Building Owners know Frigidaire



...for low, low maintenance. Frigidaire's reputation for sturdy performance and minimum upkeep has often made the competitive difference on an investment property specification. But when service is needed ... it's there! Factory-trained Frigidaire servicemen are everywhere.

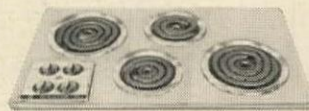
Where real quality shows...



Refrigerators



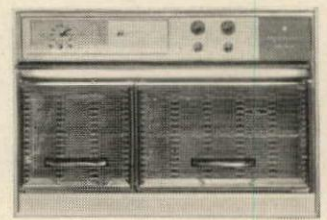
Freezers



Cooking Tops

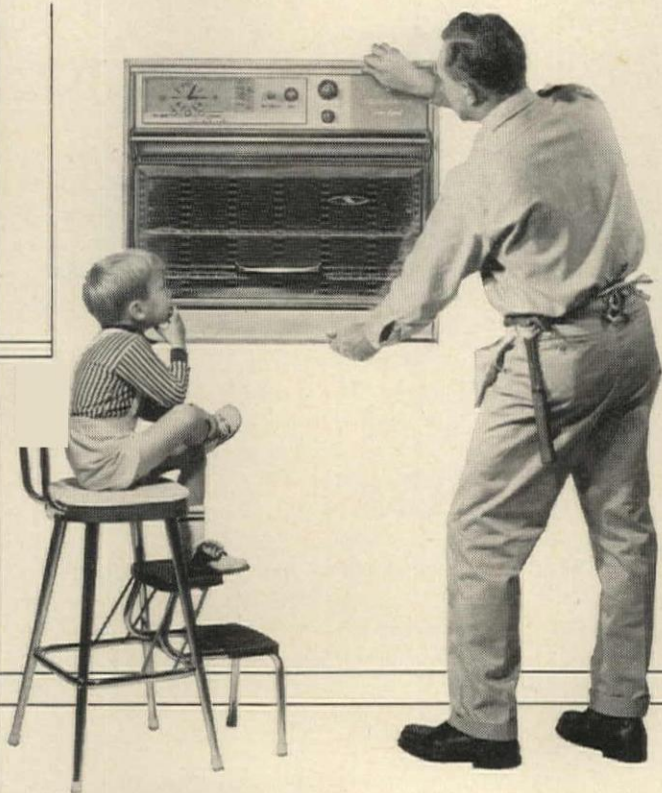


Free-Standing Ranges



Wall Ovens

Contractors know Frigidaire



...for fast, easy installation. The only cost that matters is cost installed—another reason why Frigidaire gives you the competitive edge! Easy installation is a quality feature of all Frigidaire Built-Ins. It's what lets you offer the performance and beauty people want at such low cost.

Architects know Frigidaire

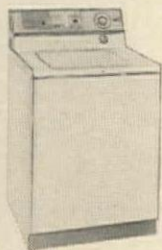


...for design flexibility. Frigidaire offers you wide variety in product design, models, sizes and colors. Your Frigidaire Representative can suggest a beautiful Frigidaire appliance package to suit any design or budget requirement... one with all the Frigidaire quality features your clients know and want.

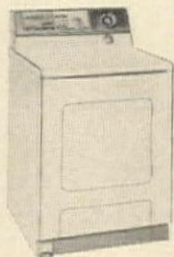
...use the appliance brand people know!



Disposers



Washers



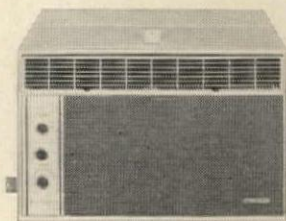
Dryers



Built-in Ranges



Dishwashers



Room Air Conditioners

Build-in satisfaction...build-in

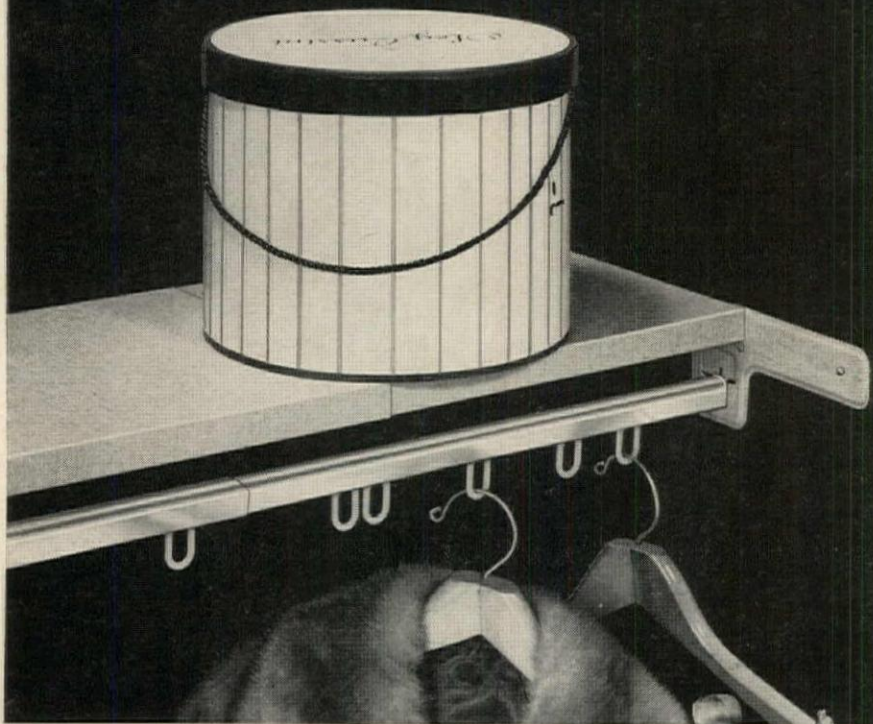


Find them all in your Sweet's Catalog Files

FRIGIDAIRE
PRODUCTS OF GENERAL MOTORS

For more data, circle 142 on Inquiry Card

X-Panda Shelves architecturally styled for beauty, utility



X-PANDASHELF

adds exciting "sales glamour" to the first place a woman looks in your new home or apartment. There are X-Panda-Shelf styles to fit every type of closet or storage application . . . providing solid, strong, durable steel shelving that instantly expands to fit space without sawing or planing. X-Panda is now factory-finished in four fashion colors . . . never needs painting . . . actually costs far less than installing conventional wood shelving. Send coupon today for complete details.



A.I.A. File 17-D
38d
Hom

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home comfort
products co.
box 68
princeville,
illinois

Please send information on X-Panda Shelf, plus other proven products in the Home Comfort line as follows:

VENT-A-SYSTEM attic ventilation LOUVERS & SHUTTERS

Name _____

Firm _____

Address _____

City _____ State _____ Zip _____

AR

For more data, circle 143 on Inquiry Card

LATERAL AND VERTICAL SUSPENDED FILING

Details of the *Accolateral* suspended lateral filing system are given in a recent brochure. Illustrations are included to give a comparison between this system and conventional filing methods, and the different components in the system are fully described. Information is also included on the *Accoflex* vertical filing system. *Acco Products, Ogdensburg, N.Y., 13669*

CIRCLE 411 ON INQUIRY CARD

STEEL FRAME AND PRECAST CONCRETE FLOORS

A six-page booklet describes the way in which three types of steel and precast concrete floors have been used to combine high strength with lightweight construction in a 14-story apartment building. Photographs, floor plans and details are included. *The Flexicore Co., Inc., P.O. Box 825, Dayton, Ohio, 45401**

CIRCLE 412 ON INQUIRY CARD

PLYWOOD TRUSS DESIGNS

Comprehensive information on nail-glued truss designs, ranging in span from 20 ft 8 in. to 32 ft 8 in. is contained in a new 12-page booklet. The booklet points out how the use of trusses with plywood gusset plates often reduces lumber requirements with a consequent saving in money. Plans and ordering instructions for 10 different truss designs are included in the booklet. *American Plywood Assoc., 1119 A Street, Tacoma, Wash., 98401*

CIRCLE 413 ON INQUIRY CARD

EXTENSIVE FURNITURE CATALOG

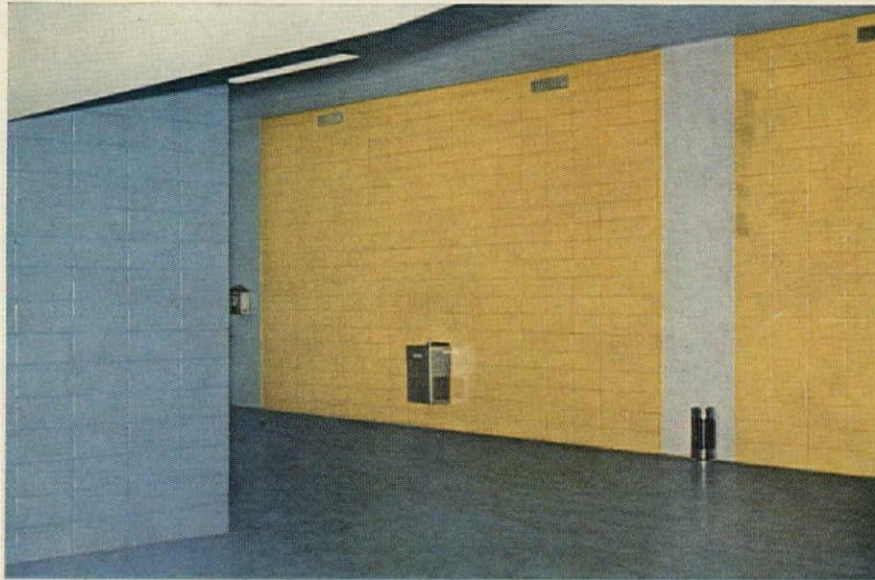
Somerset Craftsmen have issued a new catalog which contains more than 100 sketches of custom and stock designs of upholstered chairs and sofas, tables, desks, modular cabinets and other items. Construction details of many pieces are presented in the form of cross-section drawings. *Somerset Craftsmen, Ltd., 155 E. 23rd St., New York 10, N.Y.*

CIRCLE 414 ON INQUIRY CARD

*Additional product information in
Sweet's Architectural File

more literature on page 250

Durable coating based on Shell Epon[®] resin beautifies 250,000 square feet of Baltimore Civic Center

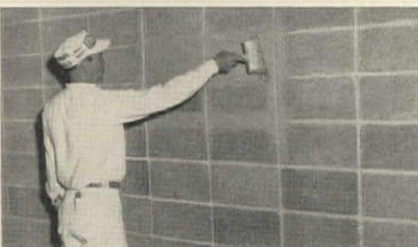


Smooth, easily cleaned coating based on Shell Epon resin will retain its good looks for years. Coating is Farbo-Tile, made by the Farboil Co., Baltimore. General contractor of Civic Center: Baltimore Contractors, Inc., Baltimore. Architect: A. G. Odell, Jr. & Associates, Charlotte, North Carolina.

Low maintenance coating of Epon resin selected for appearance and long service in one of nation's largest epoxy coating applications.

INTERIOR WALLS throughout the \$13,000,000 Baltimore Civic Center are finished with Farbo-Tile[®], a tile-like coating based on Shell Epon resin. The coating was applied to an average thickness of 30 mils, in six colors.

This coating gives the concrete



Brush-applied first coat. Initial coat, light gray in color, was brushed on concrete blocks. (Airless spray was used on poured concrete surfaces.) Leftover coating was stored overnight in dry containers at 45°F. to prevent curing.

block walls an eye-catching finish that will last for years. It can be cleaned easily and resists marring, scratching and attack from chemicals and solvents. Colors won't fade.

How coatings were applied to concrete block

The first coat was applied by brushing. Within 48 hours, following inspection and touch-up, the final coat in the specified colors was applied by airless



Final coat sprayed in colors. Within 48 hours, first coats were inspected and touched up. The final coat, in six different shades, was applied with airless sprayers. Beige, light beige, blue, carrot, dusty gray, and "incense" were used.

spray. Because the coating of Epon resin is easy to clean and resists abrasion, the job was done while other construction was still in progress.

Mail the coupon below if you would like to be referred to a supplier of tile-like coatings based on Shell Epon resin.

*Farbo-Tile is a formulation of the Farboil Co., Baltimore, Md.

Shell Chemical Co.
Plastics & Resins Div.
110 W. 51st St.
N. Y., N. Y. 10020



Please put me in touch with a supplier of tile-like coatings based on Shell Epon resin.

Name _____

Position _____


Firm _____

Address _____

City _____ State _____

AR-3

For more data, circle 144 on Inquiry Card



Pick-N-Pay Supermarket, Cleveland, Ohio, provides year-round air conditioning for shoppers and employees with York Sunline units that are roof-mounted, take no usable floor space.

For a busy supermarket...

**you can depend on
YORK AIR**

More and more architects and consulting engineers are specifying York for advanced equipment that assures automatic heating in winter, crisp, healthful cooling in summer . . . filtered air the year around.

One of York's outstanding units is the Sunline air conditioner, roof-mounted so it requires no floor space. This means greater freedom of design for the architect . . . more flexibility for the engineer.

Outstanding Sunline features include low ambient cooling . . . weatherproof design . . . complete application flexibility, with side or bottom discharge

available. And there is a complete range of capacities available—cooling, from 60,000 BTU/HR to 178,500 BTU/HR; heating, from 150,000 BTU/HR to 400,000 BTU/HR. Cooling-only models are also available for application in existing buildings where present heating system is adequate.

For complete specification data on York Sunline air conditioners, contact your nearby York Sales Office; or write York Corporation, subsidiary of Borg-Warner Corporation, York, Pennsylvania. In Canada, contact National-Shipley Ltd., Rexdale Boulevard, Rexdale, Ontario.

Mrs. Franklin Shop, Haverford, Pennsylvania. This well known dress shop, located on Philadelphia's Main Line, is air conditioned by York "packaged" units. Contractor, Airchamp, Inc.



or a high fashion salon...

CONDITIONING

YORK

air conditioning
and refrigeration

BORG **WARNER**™



The York Sunline Air Conditioner may be installed anywhere on the roof, not necessarily over the area to be conditioned; unit may also be located on the ground, outside building.

For more data, circle 145 on Inquiry Card

Are you specifying windows that give your clients **THE MOST** for their money?

With DeVAC THERMO-BARRIER WINDOWS your clients benefit from practical advantages that mean in-pocket savings. Their initial investment in heating and cooling equipment is less. Their savings on fuel costs will continue year after year.



THIS KIT CAN HELP YOU CALCULATE THE SAVINGS

The kit contains:

- Savings estimate cards
- Heating and cooling requirement factors
- Calculations to back these up

Here is an example of how this kit recently was used. In a college dormitory with 23,100 square feet of window opening, the savings of DeVac double-glazed windows versus single glazed were estimated to be \$14,230 in initial heating equipment, \$34,650 in air conditioning equipment . . . plus a year-after-year savings of thousands of dollars in heating and cooling costs.

Write for your free kit today.

We'll be glad to send you a copy of an independent analysis of field tests comparing DeVac Thermo-Barrier double glazing with single glazing and with twin-pane type of double glazing.

See our catalog in Sweet's.

DeVAC

Windows Without Equal

DeVAC, Inc. 10074 Highway 55
Minneapolis, Minn. 55427

Please send me

- DeVac Savings Analysis Kit
 N.Y. State Research Study

Name _____

Address _____

City _____ State _____

For more data, circle 146 on Inquiry Card

Office Literature

continued from page 246

WEATHER DATA FOR COOLING EQUIPMENT DESIGN

A new manual has been published by Fluor Products with the object of furnishing dry bulb reference material for architects and engineers who determine design criteria for mechanical equipment used for both heating and cooling. The manual was published to satisfy the need for reliable weather data at locations throughout the United States. *Fluor Products Company, Inc., P.O. Box 1267, Santa Rosa, Calif. **

CIRCLE 415 ON INQUIRY CARD

ORGAN DESIGN

Almost 50 years experience of organ building is displayed in this beautifully produced new catalog. Photographs showing stages in the construction of an organ are included as well as a selection of shots showing organs in place in churches throughout the country. *The Reuter Organ Company, Lawrence, Kan.*

CIRCLE 416 ON INQUIRY CARD

ENVIRONMENTAL CONTROL

An all-electric environment system which uses re-circulated, non-refrigerated water and includes water-cooled luminaires, water cooled thermal louvers, an evaporative cooler, a non-refrigerated circulatory water system connecting these elements with appropriate control valves, and supplementary equipment to adapt the system to specific climatic or operating conditions, is described in a new brochure. Diagrams are included to explain the function of each part of the system. *Environmental Systems Corp., Conyers, Ga.*

CIRCLE 417 ON INQUIRY CARD

LIGHTWEIGHT TEXTURED AGGREGATE

Versa-Tex architectural paneling is made up of thermo-setting resins, reinforced by fiber glass and faced with natural exposed aggregate. A new catalog sets forth the many applications of this material and also gives installation procedure and joint details. *Versa-Tex Division of Pritchard Products Corp., 4625 Roanoke Parkway, Kansas City, Mo., 64112*

CIRCLE 418 ON INQUIRY CARD

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

Rauland

offers the widest range of **ALL-TRANSISTORIZED SOUND SYSTEMS**

Now available—scores of solid-state basic sound distributing systems for schools, institutions, industry—with literally hundreds of possible variations to fit any need. Typical of the Rauland selection:

for the smaller installation



S330 Dual-Channel Control Center

Features: All-transistorized trouble-free circuitry • Only 6" high, 15 1/4" wide, 9 1/2" deep • Full dual-channel operation • Separate intercom and program amplifiers • Ultra-reliable Talk-Listen switch • Acoustic noise suppressor circuits • Overload protective circuits • 16 station selector keys (expandable to 50) • Choice of voice or light call-in • Selective privacy on intercom • Time or alarm signal available • RAULAND matching S304 AM-FM Tuner and S305 Record Changer available.

for the larger installation



S4867 3-Channel Control Console

Features: Solid-state reliability • 3-Channel capability—two independent program channels and Program-Intercom • Voice call-in facilities • Capacity expandable to 125 locations • Authentic emergency facility and pre-announcement tone signal • Versatile inputs • Selective aural and visual channel monitoring • Selective privacy on intercom • RAULAND matching SR136 transistorized AM-FM tuner and S402L Record Changer included • Dozens of optional deluxe features.

Rauland

ask for our

SPECIFICATIONS SHEETS

Detailed specifications of these RAULAND units are available to you. Ask for them on your letterhead. We specialize in working with architects and consulting engineers. Write today.

RAULAND-BORG CORPORATION
3535-R Addison St., Chicago, Ill. 60618

For more data, circle 147 on Inquiry Card



Who's creating exciting new carpet with electronics?

Monarch is...with Colorset

When electronics and carpet get together, watch out for COLORSET. When multicolor patterns come vibrantly alive in free-flowing uninhibited designs, then it's **sure** to be COLORSET. And when you see the same plush resilience, the same deep, deep pile and luxurious quality in each patterned carpet, of course it's COLORSET! Monarch's COLORSET process combines the creative craftsmanship of the past with electronic know-how and inventiveness of today. COLORSET glows with progress and personality . . . with new ways to magnetically dye and preserve color . . . to shape designs . . . to turn out better quality in less



time — at a lower cost. The old laborious, loom-threading methods for making patterned carpet are obsolete. Monarch's COLORSET marks the advent of a modern era in carpet-making. So . . . if you like to pioneer . . . look to COLORSET for exciting interiors. Select from a collection of elegant patterns in a wide range of color combinations . . . in any yarn. For additional information and samples, please write today to our CONTRACT DEPARTMENT.

Monarch fashions
ACRILAN ACRYLIC —
NYLON — HERCULON
OLEFIN (the longest
wearing carpet fibers
known) into luxurious
COLORSET carpet pile
of radiant, enduring
multicolor designs.

Monarch
carpet mills
CHAMBLEE, GEORGIA

On the Calendar

March

1-5 21st Annual Technical Conference, Society of Plastics Engineers, sponsored by Eastern New England Section—Statler-Hilton and Prudential Center Hotel, Boston
 1-4 61st Annual Convention and Exhibits, American Concrete Institute—Sheraton-Palace Hotel, San Francisco
 8-10 American Concrete Institute

meeting reconvenes—Hilton Hawaiian Village Hotel, Honolulu, Hawaii
 8-11 1965 Industrial, Institutional and Commercial Building Conference, sponsored by the American Institute of Consulting Engineers—Cobo Hall, Detroit
 10-11 First Annual Technical Conference on Elastomer Technology, sponsored jointly by the Elastoplastics Division of the Society of the Plastics Industry, Inc., The Institute for Applied Chemistry and

Physics and the College of Engineering of Wayne State University—McGregor Memorial Conference Center, Wayne State University, Detroit

14-15 Annual Convention, National Housing Conference—Statler Hilton Hotel, Washington, D.C.

15-17 Annual Meeting, Solar Energy Society—Towne House, Phoenix, Ariz.

15-18 46th Annual Convention and Exhibit of the Associated General Contractors of America—San Francisco

April

2 Conference on Chemistry Facilities for the Two-Year Colleges, a one day conference co-sponsored by the Junior College Chemistry Round Table, El Camino College and Henry Ford Community College—Henry Ford Community College, Dearborn, Mich.

21-23 Conference on "Planning for the Quality of Urban Life" sponsored by Washington University through a grant by the St. Louis Regional Planning and Construction Foundation, as a contribution to the St. Louis Bicentennial celebration—Washington University, St. Louis

25-29 Joint Planning Conference, American Society of Planning Officials and the Community Planning Association of Canada—Royal York Hotel, Toronto

27-29 The 1965 Conference on Church Architecture and Architectural Exhibit on Religious Buildings, the American Society for Church Architecture, the Church Architectural Guild of America, and the Department of Church Building and Architecture of the National Council of Churches of Christ in the U.S.A.—Pick-Congress Hotel, Chicago

30th Fifth Annual Conference on Theater Architecture, United States Institute for Theater Technology—Indiana University, Bloomington, Ind.; through May 2

May

19-21 Second National Convention of the Consulting Engineers Council—Chase Park-Plaza Hotel, St. Louis

21-22 Annual seminar and meeting of the International Society of Food Service Consultants—Bismark Hotel, Chicago

continued on page 258



another FOLDOOR Exclusive: NEW GRIP LATCH assures easy operation...tight sound-seal

FoIDoor again proves that beauty and quality go hand in hand . . . assuring TOTAL EXCELLENCE in every component. Example: FoIDoor's new Deluxe Grip Hardware . . . standard equipment on all sound-insulated models.

The new Grip Hardware is easy to "grip" for positive control. Natural downward motion of handle provides anti-panic safety action. Grip Hardware also offers a striking design that complements partition and surrounding decor with its lustrous anodized aluminum finish. Locks and privacy latches offer desired convenience and security.

FoIDoor offers a complete line of fabric covered folding partitions including the Super Soundguard X24 with its excellent sound retarding ability (comparable to that of an 8" concrete block wall). Eight separate FoIDoor models offer the price and performance combination best suited to every situation. All are TOTAL EXCELLENCE assured . . . backed by the strongest warranty program in the industry.

See FoIDoor details and specifications in SWEET'S 1965 ARCHITECTURAL FILE 16f/Ho . . . or ask your FoIDoor Distributor.



A new concept in decorative styrene grillework for space dividers and screens . . . factory fabricated with customized framing.



HOLCOMB & HOKE MFG. CO., INC.

1545 CALHOUN STREET • DEPT. F32 • INDIANAPOLIS, IND. 46207

For more data, circle 151 on Inquiry Card

**different buildings,
different budgets**



Old Kent Bank and Trust Company,
Grand Rapids, Mich.
Architects and Engineers:
Daverman Associates
General Contractor: Owen-Ames-Kimball Co.

**...all with tomorrow's
comfort control**



The Montgomery Bldg., Bethesda, Md.
Architect: John Samperton
General Contractor: Thomas H. Ryon Co.
Mech. Elec. Engineers: Frieden & Arey
Structural Engineer: R. Weiss

The Inland Radiant Comfort System

is making indoor climate history. Each building on this page provides the most advanced heating, cooling and air treatment ever available to man. Yet, each building has a different plan, a different client to please, and a different budget. The Inland Radiant Comfort System is completely flexible and meets the requirements of every building. It is designed as an integral part of the building itself, and each component is tailored to give utmost performance. The IRC System assigns heating and cooling loads primarily to radiant ceilings, reducing air volumes to those required only for ventilation. Chemical air conditioning keeps close control of humidity

and airborne contamination. For a complete explanation, send for the booklet, "Breakthrough in Office Comfort Control." Write for it today to Inland Steel Products Company, 4400 W. Burnham Street, Milwaukee, Wisconsin.



Administration Building, State College
Of Iowa, Cedar Falls, Iowa
Architects: Altfillisch, Olson Gray & Thompson
General Contractor: John G. Miller,
Waterloo, Iowa
Mechanical Engineer: Harold E. Rucks
Structural Engineers: Peterson and Appell

Inland Steel Products



On the Calendar

continued from page 254

24-26 9th National Convention of the Construction Specifications Institute—El Cortez Hotel, San Diego

Office Notes

Offices Opened

Winifred H. Hyde has opened an office for the practice of architecture at 618 Grand, Oakland, Calif.

Charles A. Wilsam Jr., Architect, has announced the establishment of his office at 1901 North 81st St., Omaha, Neb.

New Firms, Firm Changes

John L. Bartolomeo has announced the formation of a partnership with **Joseph A. Hansen** for the practice of architecture. The Chicago firm will be known as **Bartolomeo and Hansen, Architects**.

Alfred A. Calcagni, A.I.A. and

Richard B. Frazier, A.I.A. have formed a partnership for the practice of architecture under the firm name of **Calcagni and Frazier** with offices at 18 Marshall Drive, Burlington, Vt. and Park St., Stowe, Vt.

The firm of **Collins and Kronstadt**, Silver Spring, Md., has expanded to include **F. Michael Leahy, Donald J. Hogan** and **Richard E. Collins Jr.** The firm name will be **Collins & Kronstadt, Leahy, Hogan, Collins**.

John J. Farrell has become an associate of the New York-based firm of **Steinmann and Cain, Architects**.

The New York City firm of **A. Robert Fisher, A.I.A.** has been renamed **Fisher-Friedman Associates**, with **Robert J. Geering** as an associate.

Ronald J. Gee has been made chief draftsman of **Marchesani & Cohn-Architects**, Miami Springs, Fla.

Rose, Beaton, Corsbie, Dearden & Crowe, Architects and Engineers of New York City and White Plains, has announced the appointment of **Charles L. Koester, Louis H. Li, Robert J. Vanecek, George Harrison** and **Lee Hilton** as associates.

A. J. McArthur has been made a vice president of **Charles Luckman Associates**, New York, Boston, Los Angeles.

Smith, Smith, Haines, Lundberg & Waehler of New York has appointed **Charles L. Macchi** a senior associate and **Bronislaus Frank Winckowski** an associate.

Faulkner, Kingsbury and Stenhouse, Architects, Washington, D.C., have admitted **James Philip Marshall** and **Alberta Fuller West** as associates.

Peter R. Norris has been made a partner of the firm of **Morris Hall—Architect**, henceforth to be known as **Morris Hall & Peter Norris—Architects**, Atlanta.

Tician Papachristou and **Daniel Havekost** have announced the formation of the firm **Papachristou and Havekost, Architects and Planners**, with offices located at 1755 Glenarm, Tower Suite #2 of the Continental Oil Building, Denver.

Millard F. Whiteside, A.I.A., Architect, of White Plains, N.Y., has admitted **Laszlo Papp, A.I.A.** as a partner of the firm which will be known as **Millard F. Whiteside and Laszlo Papp Architects**.

Ross W. Pursifull has been made

continued on page 264



These outdoor-indoor fabrics don't fade

Guaranteed 5 years not to!

This could be a color ad of our fabric as parabola, fence, chair covers, blinds and canopy. But there are 25 Sunbrella® colors and patterns available, so we'd rather you used your imagination. Woven of 100% Acrilan* acrylic fiber, tests prove Sunbrella astounding. Plus colorfastness, it's mildew and rot proof. Retains its strength. Excellent porosity. Lightweight. Same color underneath as on top. Leave it up safely year 'round. Soft, non-glare finish. Increases efficiency of air-conditioning equipment up to 75%! Write for Sunbrella information and free new design idea booklet. Glen Raven Mills, Inc., Glen Raven, North Carolina. *Reg. T. M. of Chemstrand



For more data, circle 154 on Inquiry Card

For more data, circle 155 on Inquiry Card →

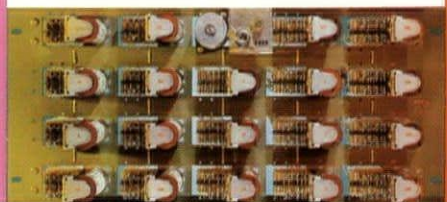


HAUGHTON

**source of
full-spectrum capability
in elevator system design**

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Office Notes

continued from page 258

production coordinator of Smith, Hinchman & Grylls Associates, Inc., Architects, Engineers, Planners, Detroit.

Martin Lovett, P.E., has announced the appointment of Alan H. Rozman and Karl Annen as associates in the firm to be known as Martin Lovett & Associates, Consulting Structural Engineers, New York.

Muhlenberg Bros. of Wyomissing, Pa. has changed its name to Frederick R. Shenk—Lee V. Seibert—Architects.

The Detroit-based architectural and engineering firm of Giffels & Rossetti, Inc. has appointed A. J. Smith as the director of industrial engineering.

Charles H. Stark III has been named an associate in the Toledo, Ohio, firm of Richards, Bauer and Moorhead, architects and engineers.

Marcellus Wright Jr., F.A.I.A., has expanded his Richmond firm to include Richard N. Anderson Jr., A.I.A., Frederic H. Cox Jr., A.I.A., Stevens M. Jones, R.A., William W. Moseley, A.I.A., and Donald L. Strange-Boston, A.I.A.-P.E. The new group will be known as Marcellus Wright & Partners, Architects-Engineers.

New Addresses

William P. McCue Jr., A.I.A., Architect, 1329 George Washington Way, Richland, Wash.

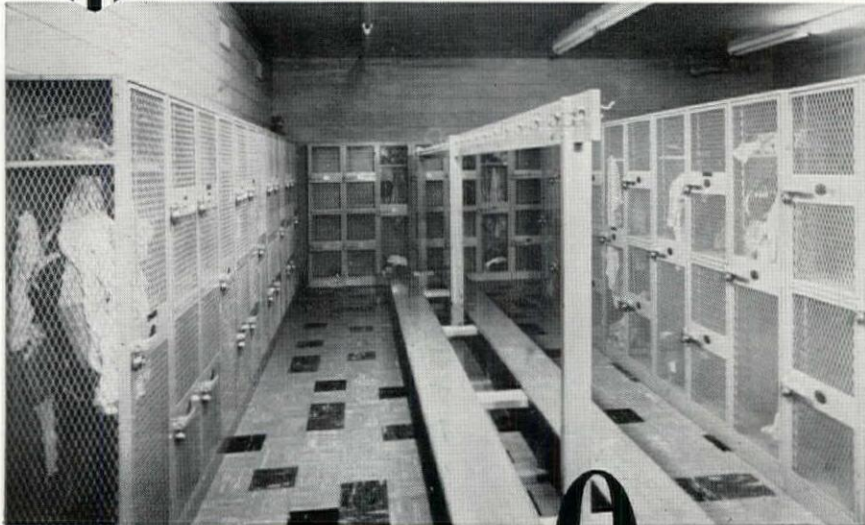
Malsin-Reiman Architects, 347 Madison Ave., New York City.

Stephens, Walsh, Emmons & Shanks, Engineers & Architects, Suite 114, Building Arts Building, 5045 North 12th St., Phoenix 14, Ariz.



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THAI EDUCATOR RECEIVES AWARD

An Nimmanahaeminda of Thailand has received the seventh annual Pan Pacific Architectural Citation of the Hawaii Chapter of the American Institute of Architects, an award originated in 1958 to honor outstanding contributions to the architectural profession in Pacific Basin countries.

This year's citation is in recognition of Mr. Nimmanahaeminda's achievements in the field of architectural education. A native of Thailand, he was educated in England and in the United States. While a professor at Chulalongkorn University in Bangkok in 1958, he organized a five-year curriculum for the Silpakorn Fine Arts University. At present, he is acting dean of architecture at Silpakorn and professor of architecture at Chulalongkorn. Mr. Nimmanahaeminda has engaged in private practice and has served in the Thai Ministry of Interior. In addition, he is active in committees of the Bangkok Municipality, including work in slum clearance, housing and planning, and revision of building codes.

Previous recipients of the award include: Kenzo Tange and Kiyonori Kitutake of Japan; the firm of Grounds, Romberg and Boyd of Australia; Leandro Locsin of the Philippines; Arthur C. Erickson of Canada; and Hector Mestre of Mexico.

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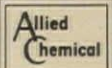
picked up papers, didn't crush out cigarettes on the floor. The building maintenance staff cut cleaning time by over 50%. Carpet eliminated the daily sweeping and buffing that tile floors required.

And after a year, carpet of resilient Caprolan pile still looks new. Still doesn't need to be shampooed. The University has just installed an additional 390 yards in the new planetarium.

To find out more about carpet of 100% Caprolan nylon pile, clip this coupon.

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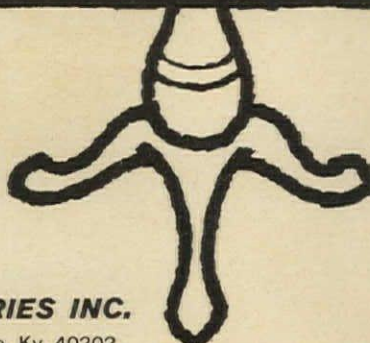
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"Great Society"

continued from page 268

"To deal with these new problems will require a new conservation. . . . Our conservation must be not just the classic conservation of protection and development, but a creative conservation of restoration and innovation. Its concern is not with nature alone, but with the total relation between man and the world around him.

Its object is not just man's welfare but the dignity of man's spirit."

For preservation of natural beauty in the cities, the President reiterated the proposal for community "extension" programs suggested in his education message.

The conservation message also called for an extension of the Open Space Program so that the Federal government could make matching grants for the cities to acquire and clear areas to create small parks,

squares, pedestrian malls and playgrounds; for landscaping and installation of outdoor lights and benches; and for Federal demonstration projects in city parks.

The President encouraged and supported the National Trust for Historic Preservation, and said that he will propose legislation to help local authorities acquire, develop and manage private properties for preservation purposes.

The President intends to use the Land and Water Conservation Fund to acquire lands for use as national parks in Maryland, Virginia, New Jersey, Pennsylvania, North Carolina, Michigan, Indiana, Oregon, Nevada, Texas, West Virginia, Montana, Wyoming, Utah and California.

For increasing the beauty of highways, President Johnson reiterated proposals outlined earlier in his letter to the Secretary of Commerce.

"... The time has . . . come to identify and preserve free flowing stretches of our great scenic rivers before growth and development make the beauty of the unspoiled waterway a memory.

"To this end I will shortly send to the Congress a bill to establish a National Wild Rivers System."

Then President Johnson discussed the increase in pollution in all areas and called for various programs dealing with clean water, clean air, solid wastes and pesticides, and disclosed that a National Center for Environmental Health Sciences is being planned as a focal point for health resources in this field.

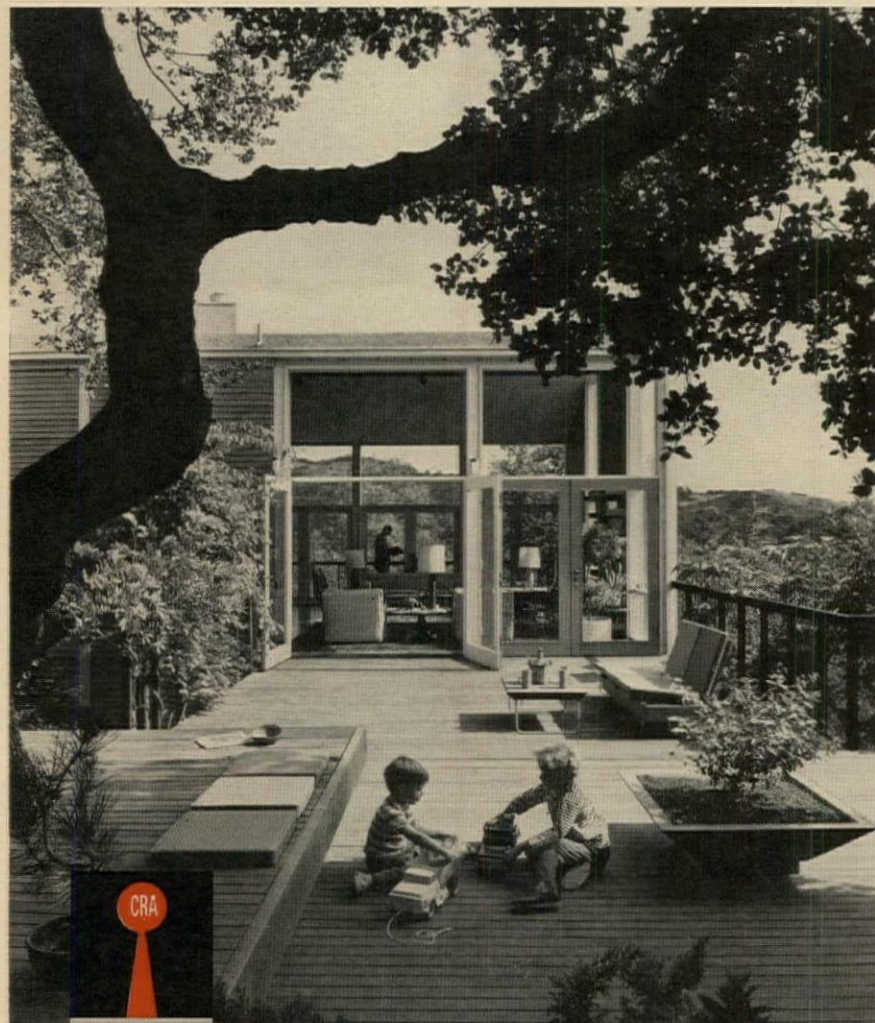
The President concluded by stating that a White House Conference on natural beauty will meet in mid-May of this year under the chairmanship of Laurance Rockefeller. It is the President's hope that this conference will produce new ideas and approaches for enhancing the beauty of America.

Grave Appropriation

On February 8, President Johnson asked Congress for \$1,770,000 to finance construction near the grave of President Kennedy in Arlington National Cemetery.

The government's appropriation would finance construction of walks, platforms and other facilities for the many visitors to the grave. The work in the immediate area of the grave, estimated at \$309,000, will be financed by the Kennedy family.

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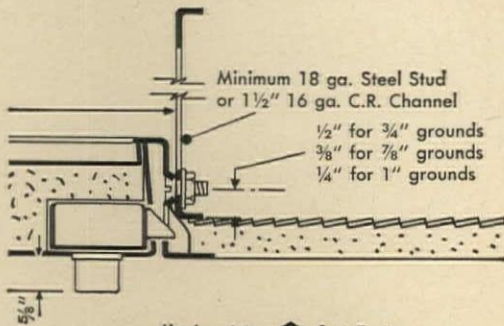
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(This advertisement appears March 17 in The Wall Street Journal. Free reprints available.)

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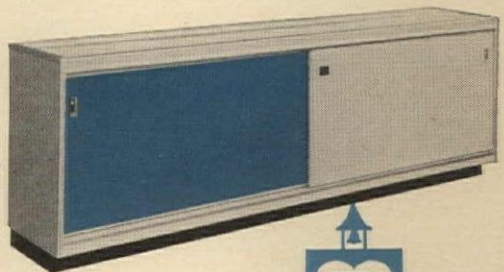
However, if you are among the *value-conscious* businessmen who ask *first* "what do I get" and then "how much," check up on the Schemenauer Unit Ventilator — *Heating or Cooling*.

It's the *only* unit on the market today made to last longer, perform better and cost less to operate and maintain *the entire life of the classroom*.

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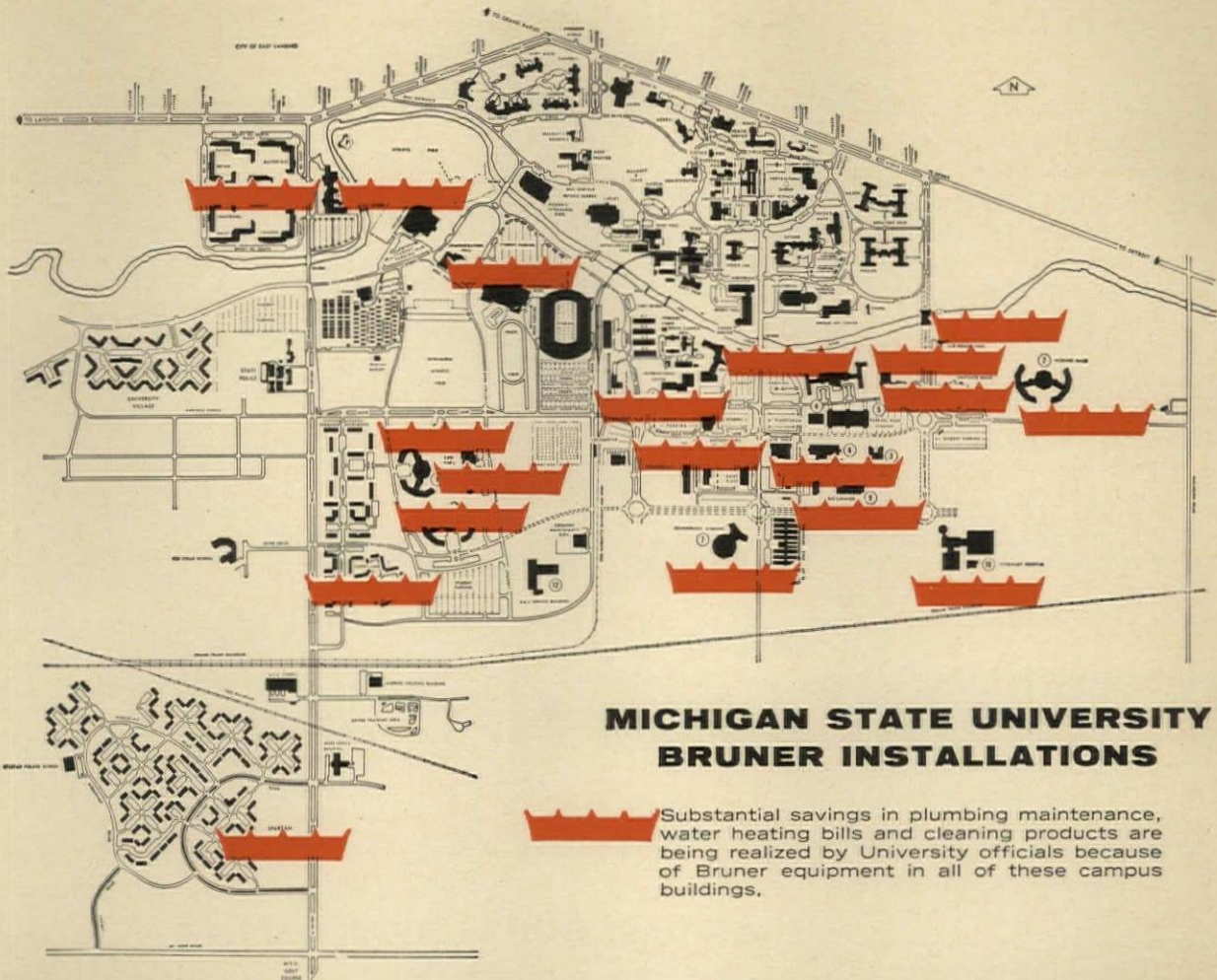


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Boston Competition

continued from page 12

ernment Center project until the B.R.A. agreed to give other developers the opportunity to bid for the site.

Therefore, in order to have the City Council act favorably on the urban renewal program, Mayor John F. Collins agreed to name a seven-man panel and open the Parcel 8 project as a competition. The Blue Ribbon Panel was formally announced by Mayor Collins on May 6, 1964.

Critics of the B.R.A. point out that the developers who came in later would have had less time than Cabot, Cabot & Forbes to develop their schemes and question whether a true competition could be held in these circumstances.

Competition Timetable

The Parcel 8 competition was held in two stages. The first stage, which ended August 31, 1964, included the submission of the developers' qualification and responsibility; the names of the architects and associate architects; a proposal letter; and a \$5000 deposit. On September 14, 1964, the panel announced the three competitors who had passed the prequalification stage.

The Stage II submissions, which required a detailed financial program for the building and the design proposal, were due on December 7, and the panel's final decision was scheduled for December 21.

After the panel's decision was accepted by the B.R.A., the successful developer was given 30 days in which to accept the designation and submit a letter of intent to the authority. As we go to press, it is reported that Cabot, Cabot & Forbes will submit this letter before a meeting of the B.R.A. on February 25. At this time it is also expected that Cabot, Cabot & Forbes will announce that construction on the project will begin by October of this year instead of April 15 next year as originally scheduled.

Controversy

On the morning of December 7, the State Street Tower Associates announced that it was not submitting its proposal in the second stage of the competition for financial reasons. The State Street Redevelopers also were

continued on page 300

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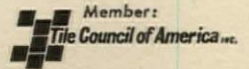
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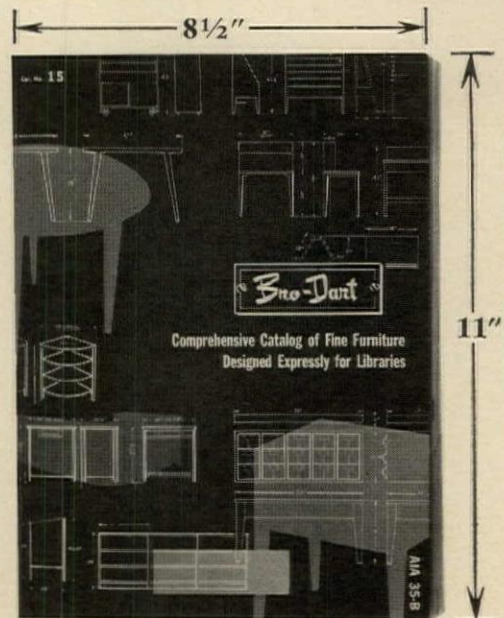
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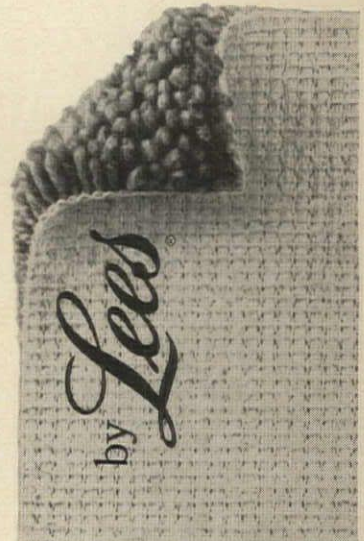
We won't.

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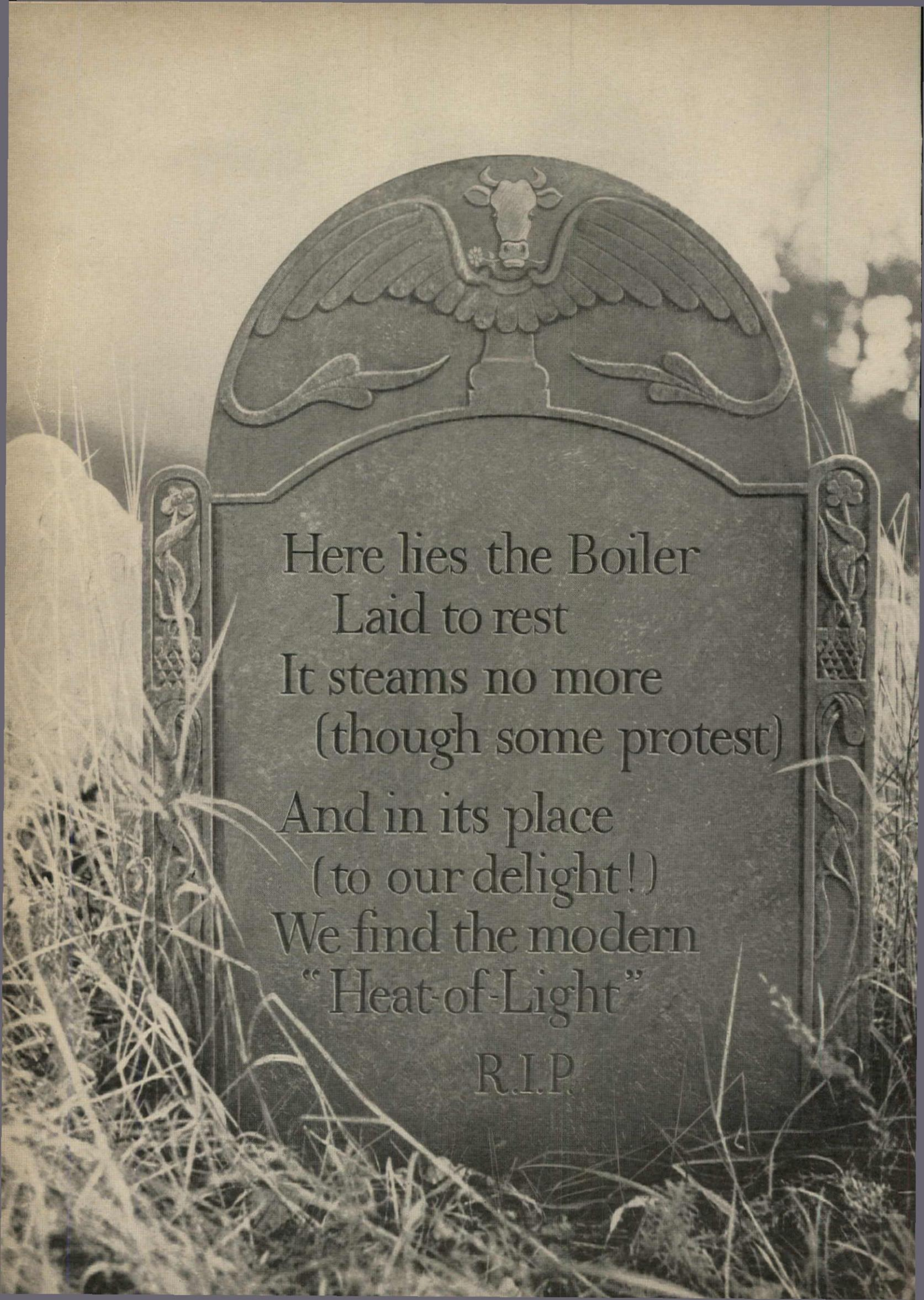
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Result: You can reduce the amount of heating equipment required and lower operating costs. Clip coupon for details.

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Boston Competition

continued from page 288

given more time to work out financial details. The Blue Ribbon Panel therefore postponed its final deliberations until January 29 to allow these entrants further time to work on their financial packages.

Mr. Breuer was not notified until the morning of December 7, the date when the second-stage proposals were

due, that the State Street Tower Associates were not going to submit. Francisco Iglesias, vice president in charge of real estate for New England for the Perini Land and Development Corporation, one of the component firms of State Street Tower Associates, stated that he "didn't think it was financially wise to submit their entry under the rules of the competition as established."

A spokesman for Cabot, Cabot & Forbes made the following statement

about the competition: "As a result of a political controversy on Parcel 8 in Boston's new Government Center, a competition was arranged, and Mayor John F. Collins appointed a distinguished Blue Ribbon Panel to select the developer. Cabot, Cabot & Forbes Co. was chosen to build the new office building by this eminent group. Franklin King, Jr., vice president of the development firm, in announcing details about the new tower to the Boston press stated that in such competitions for urban renewal, there is a needless economic penalty on firms which do not win. He further confirmed that Cabot, Cabot & Forbes would not seek out opportunities to enter other competitions for urban renewal."

Esther Maletz, project director of the Boston Redevelopment Authority for the Government Center stated that "it was unfortunate that architects thought of Parcel 8 as an architectural competition because it was a developer's competition. Designs weren't necessarily the overriding factor in the judging."

The Jury

The "blue ribbon panel" which served as a jury for the competition consisted of Robert W. Meserve, president of the Boston Bar Association, chairman; Pietro Belluschi, F.A.I.A., dean of the School of Architecture and Planning at Massachusetts Institute of Technology; Phillip W. Bourne, president of the Boston Society of Architects; Charles A. Coolidge, president of the Committee for the Central Business District, Inc.; Harold G. Kern, publisher of the Boston Record-American and Boston Sunday Advertiser; Anson Phelps Stokes Jr., Bishop of the Episcopal Church, Diocese of Massachusetts; and Benjamin Thompson, A.I.A., chairman of the Department of Architecture, Harvard Graduate School of Design.

Pietro Belluschi of the Blue Ribbon Panel said that if the competition "had been a project in an architectural school, the Kelly & Gruzen-Nervi entry would have won on the basis of architecture alone. But, the Cabot, Cabot & Forbes building was an excellent scheme that was designed as a commercial building that could pay its own way. The winning design makes a much more profitable use of the lower floor. It is suitable

continued on page 308

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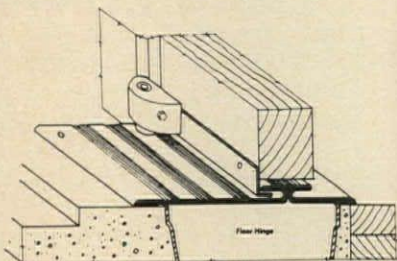
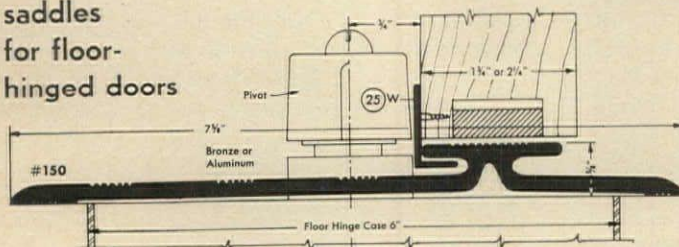
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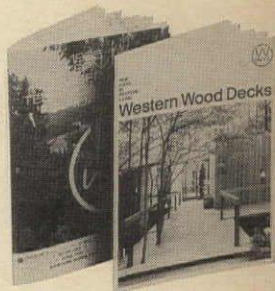
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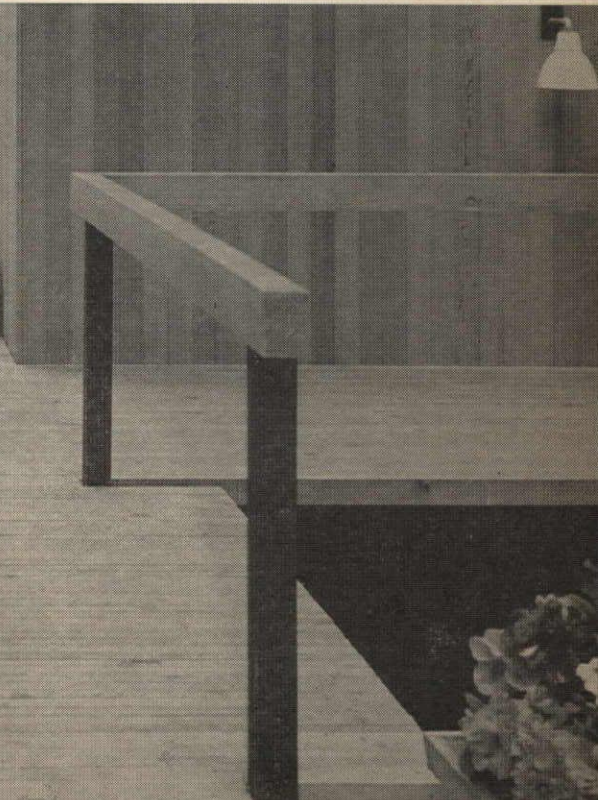
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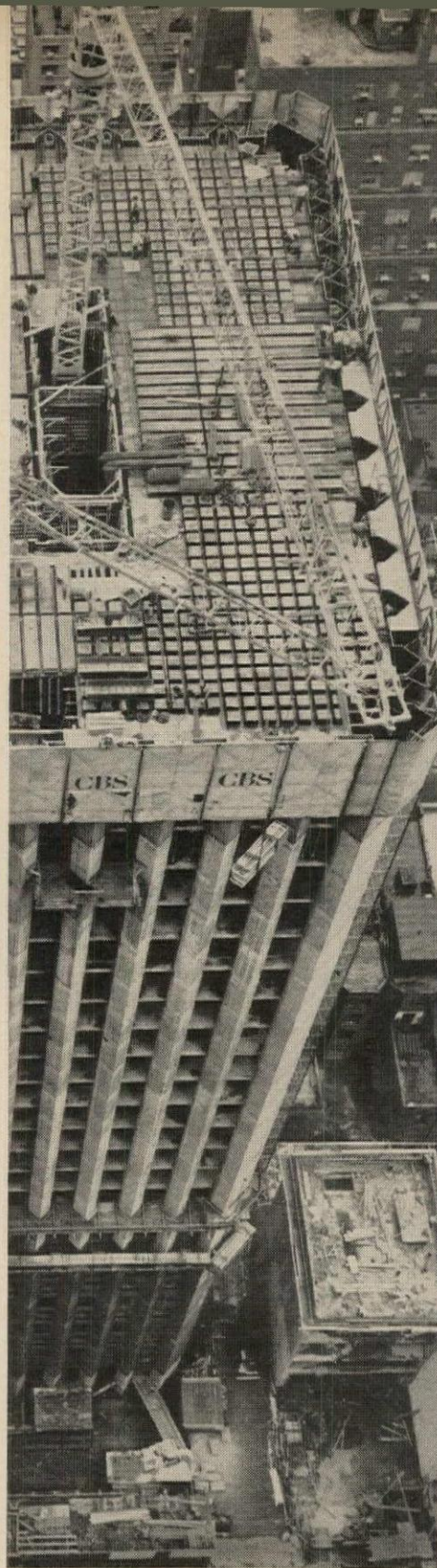
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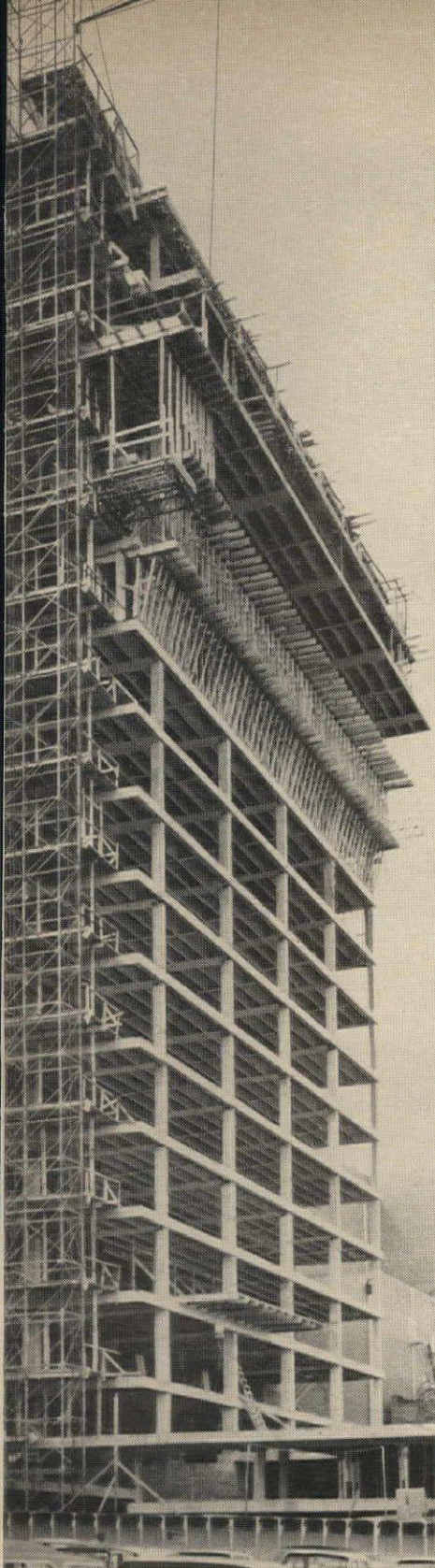
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Typical high-rise Steeldome project (Ceco Steeldome and Centering Service) / One Charles Center Building, Baltimore, Md. / Mies van der Rohe, architect / Farkas & Barron, structural engineers / Metropolitan Structures, Inc., general contractors / Bollinger-Leland Construction Company, concrete contractors / This waffle flat-slab design, with high-strength bars and lightweight concrete, cost 50¢ per square foot less than the alternate structural steel design.



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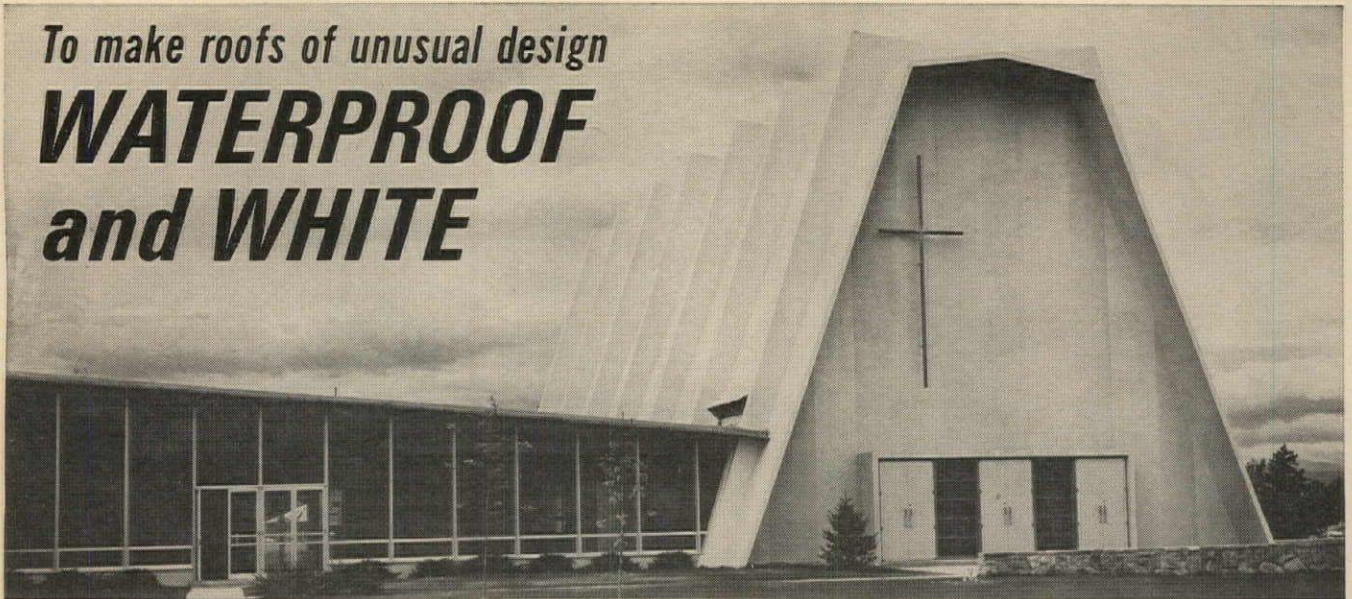
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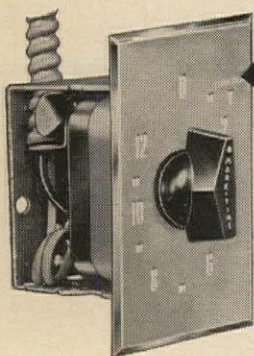
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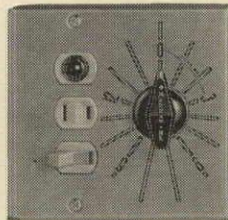


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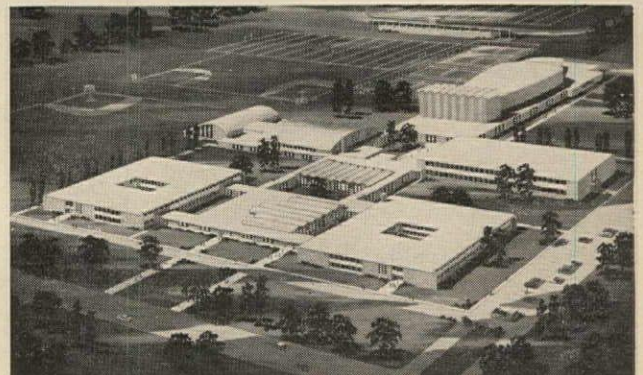
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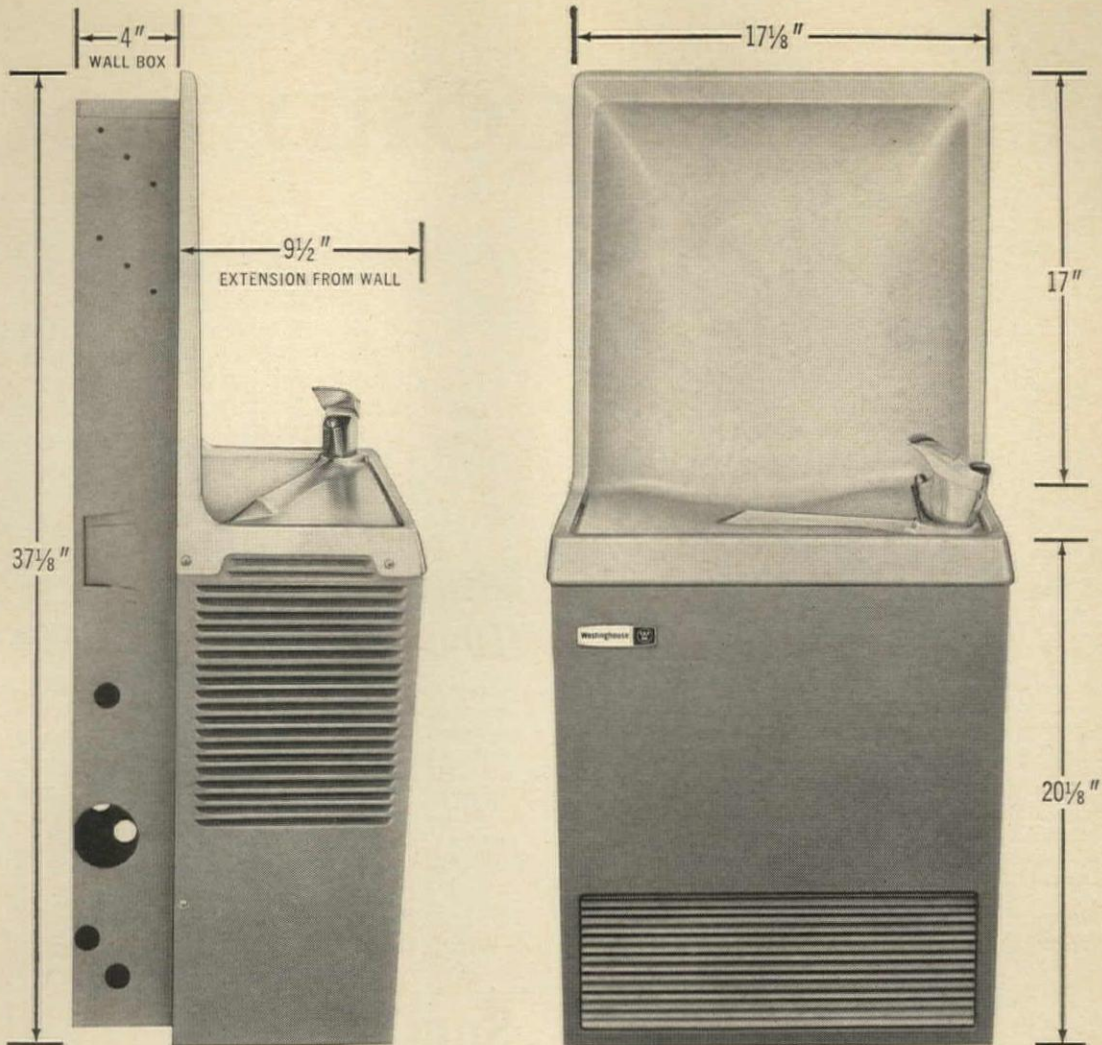
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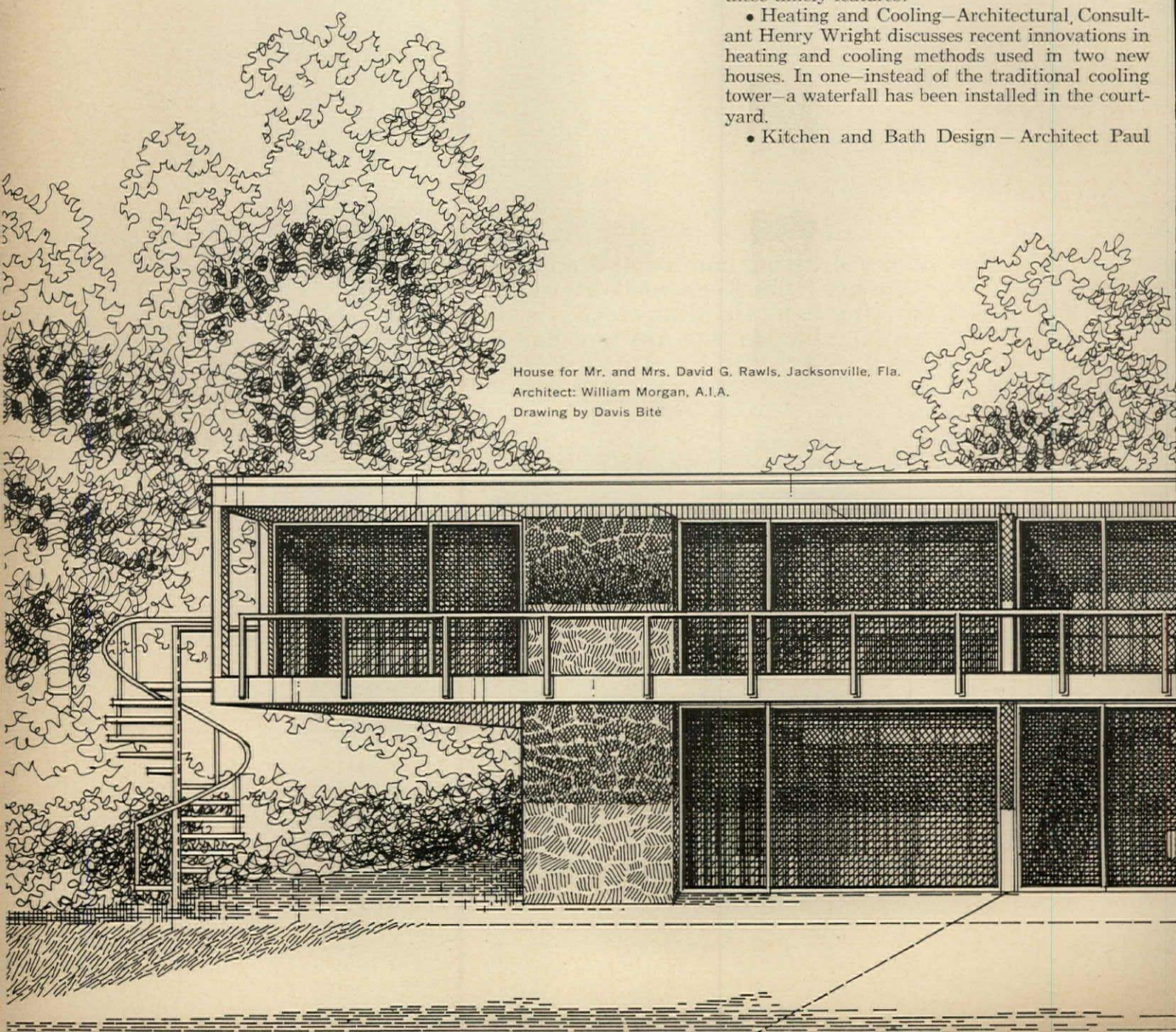
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House for Mr. and Mrs. David G. Rawls, Jacksonville, Fla.
Architect: William Morgan, A.I.A.
Drawing by Davis Bité

OF 1965




Wiener writes about new architectural approaches to kitchen design.

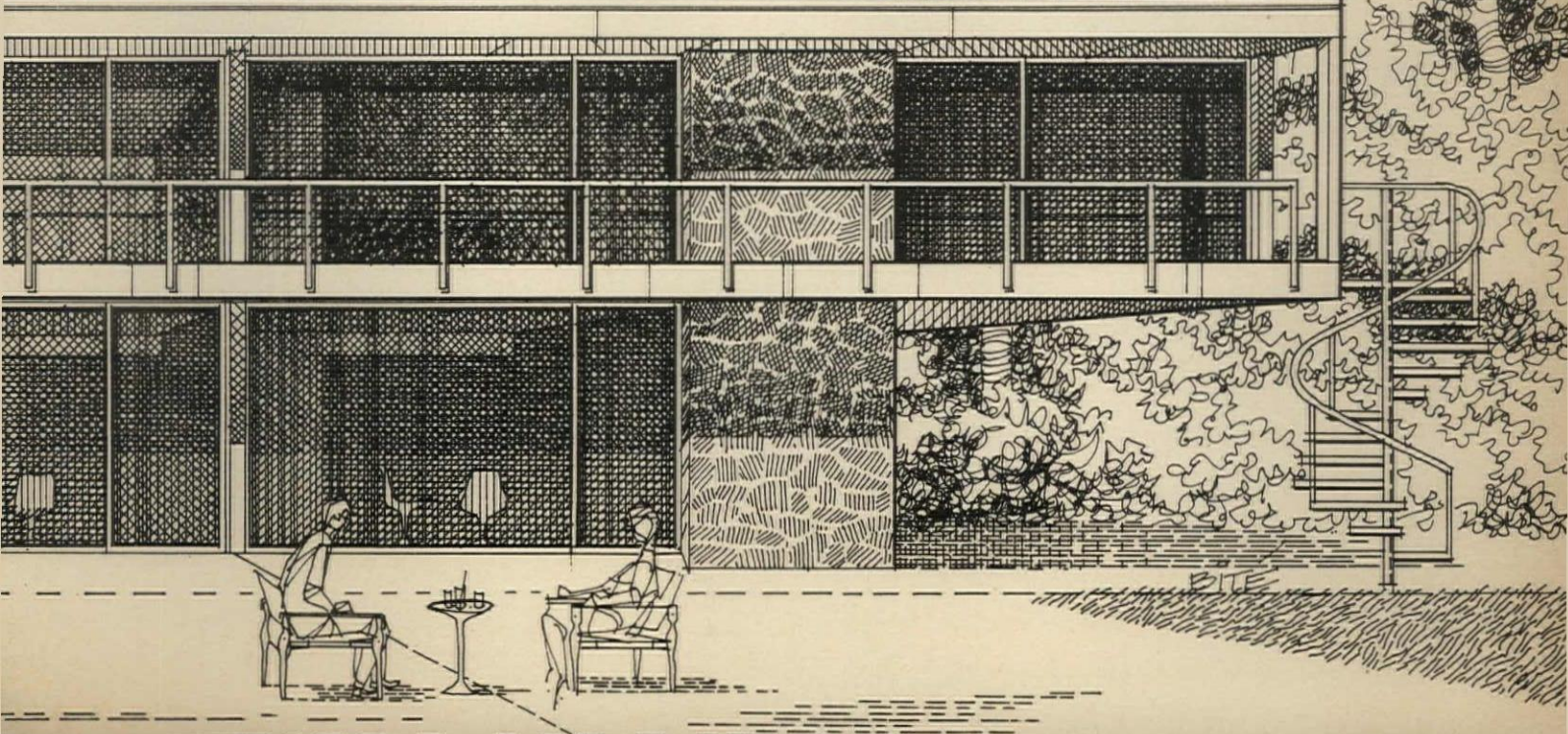
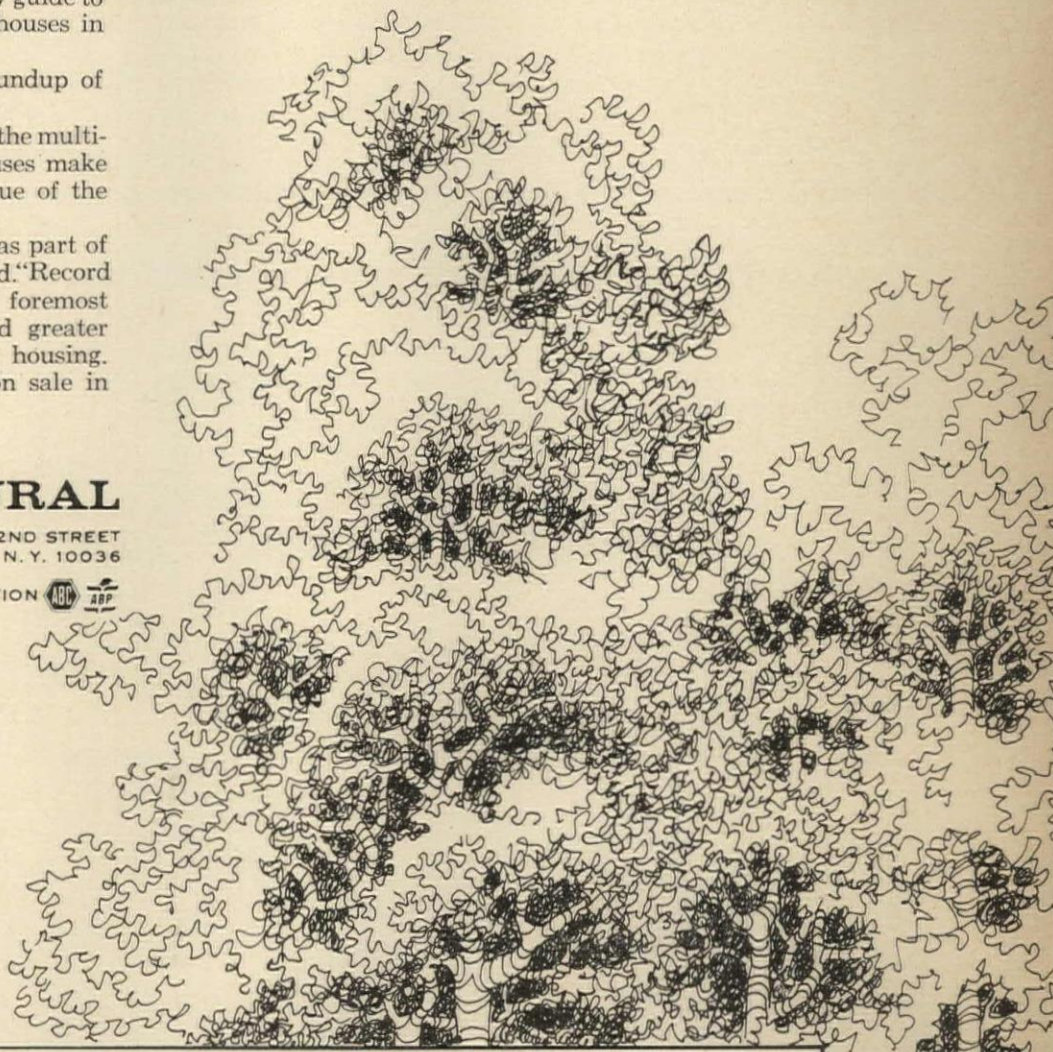
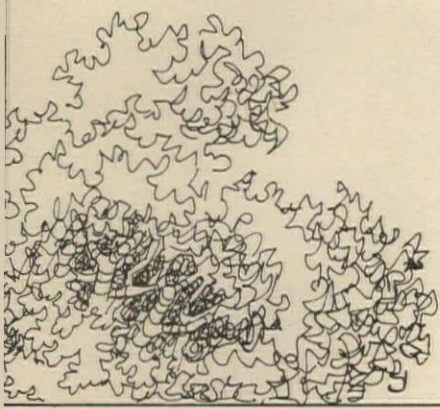
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Boston Competition

continued from page 300

to Boston, uses good materials, and was well conceived financially."

Winning Design Concept

The winning concept, by Edward L. Barnes and Emery Roth & Sons, associated architects, will serve as a transitional landmark from the historic to "New Boston." The 40-story

tower will have a steel framework with recessed tinted glass windows and a warm textured pink granite exterior.

The granite spandrels are tipped inward to provide sun protection and to make the glass line flush with the interiors of columns, therefore providing a flush interior wall. The floor line will come approximately in the middle of each spandrel level.

The tower will contain a gross area of 67,000 square feet, and a net ren-

table area of 544,000 square feet. Direct subway access and nearby parking facilities will be available.

The tower conforms to its sloping site and creates what Mr. Barnes calls a "medieval podium effect." It will be surrounded by a large, terraced colonial brick plaza which sweeps from City Hall to Congress and State Streets. Specimen trees will be included in the plaza scheme.

A large columned arcade runs the length of the 97- by 173-foot building, paralleling the plaza and linking the historic Old State House to the new City Hall.

A special design feature of the tower is the stepped top which permits the 39th and 40th floors to overlook a roof garden adjacent to the restaurant on the 38th floor. Floors 39 and 40 are penthouse floors and feature two-story executive board rooms at either end, each with its own terrace.

The utility core is placed slightly off center to provide wider bays on the Congress Street side of the structure. To date a total of 65 per cent of the space is committed, with an additional 12 per cent reserved and 9 per cent reserved for expansion. Construction is scheduled to begin on April 15, 1966 with a completion date of October 15, 1968.

The New England Merchants National Bank will be the prime tenants in the new building, and will have 13 floors for its own use.

Runner-Up Design Concept

The design concept for the Kelly & Gruzen-Nervi entry is a four-story open space which serves to visually link the building to its plaza and surroundings, above which are 39 office floors each containing about 17,000 square feet of gross area.

Essentially the tower consists of three tiers, placed one above the other. Each tier is an independent 13-floor tower. Part of the loads are carried by the core, and the remaining loads are carried by the structural section in each window unit down 12 stories where the loads are picked up by a framework of trusses. These trusses transmit the loads of all of the above tiers into the four large columns at the base.

Breuer-Glaser Design Concept

The design concept for the Breuer-Glaser scheme consists of the ground

continued on page 316

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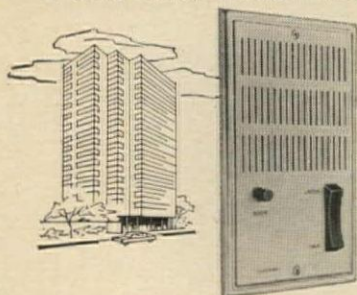
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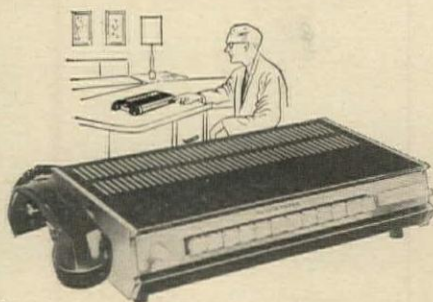
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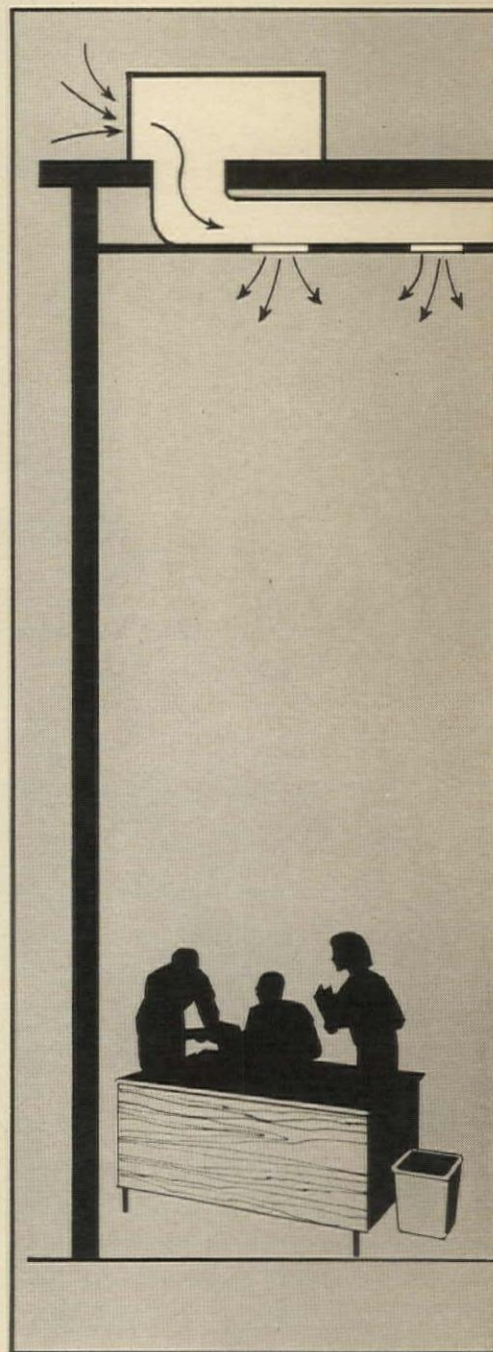
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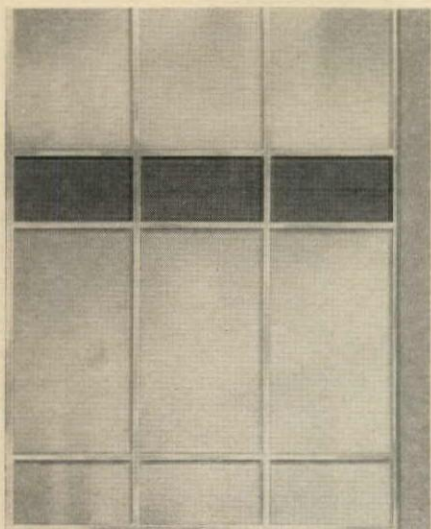


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SYSTEMS

Clip for a.i.a. file 4-a

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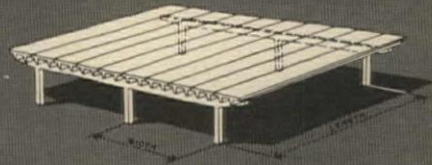
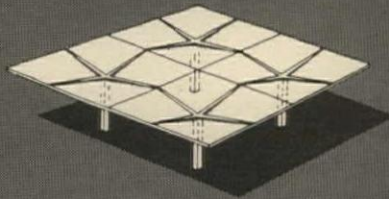
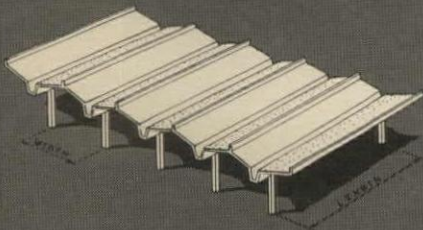
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Boston Competition

continued from page 308

floor of glass and brick walls set on a brick plaza to relate to the Old State House, and above 38 floors of precast, reinforced concrete to relate to the new City Hall. The enclosing column wall is factory molded in two-story-high, deep, modular sections, of which the hollow uprights act simultaneously as load-bearing supports

and as pipe and duct chases. The building would have 16,990 square feet of space on each floor.

Jury Criteria

The developer's kit for the competition explained that the three principal criteria which would form the basis for the panel's selection were: *Experience*: For an important building of this kind, the members of the team—developer, architect, and contractor—should have a proven record

of performance.

Financial strength: Urban renewal plans have frequently suffered delays because of inadequate financial resources to execute the project. The developer will, therefore, be required to make a sufficient showing of financial strength to assure that if selected on the basis of design, he can be relied upon financially to perform.

Design: The Government Center Project has set a very high standard of design quality, and the mayor and the authority wish to assure that these high standards will be carried through in the Parcel 8 tower.

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Government Center Background

The basic site plans and site controls for the Government Center were made by I. M. Pei & Associates under contract to the Boston Redevelopment Authority. These plans include 15 parcels of land, 10 for private and five for governmental development.

The parcels for government development consist of the site of the \$25 million City Hall (architects and engineers: Kallmann, McKinnell & Knowles; Campbell & Aldrich; and William J. LeMessurier Associates) now under construction. Another Parcel is the site of the \$34 million State Service Center (coordinating architect Paul Rudolph; associated architects, Shepley, Bulfinch, Richardson & Abbott, M. A. Dyer Company, Pederson & Tilney, and Desmond & Lord.)

Also a part of the governmental development is the site of the \$23 million John F. Kennedy Federal Office Building, under construction and designed by The Architects Collaborative and Samuel Glaser.

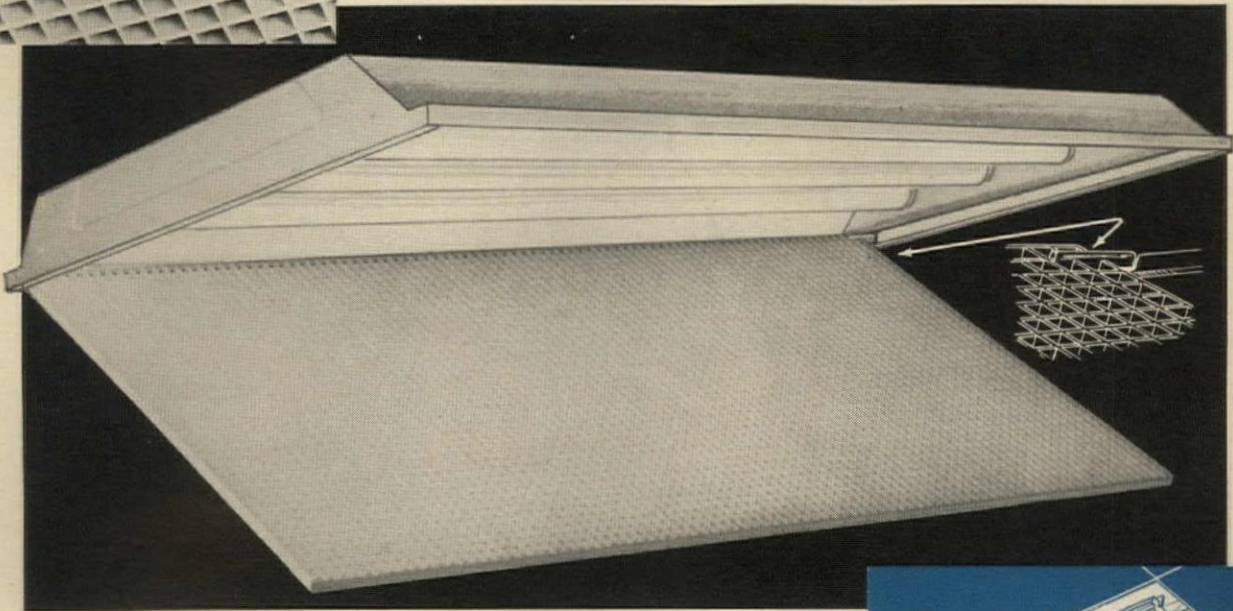
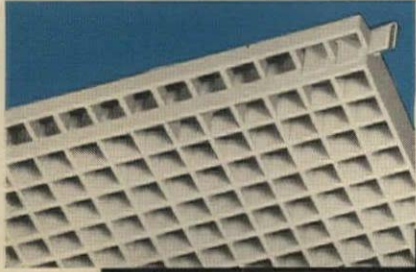
Parcel 8 Site

Parcel 8 is situated at the southern edge of the Government Center project area. To the east it is bounded by New Congress Street, a major street leading into the downtown central business district. To the south, it is bounded by State Street, the most important street in the financial district, with the historic Old State House located on its far side, across from Parcel 8. To the west, it is bounded by a broad pedestrian right-of-way which connects the City Hall with Washington Street, the principal retail street in downtown Boston. On the north, it is bounded by the Government Center Plaza and a major pedestrian access system.

For more data, circle 192 on Inquiry Card

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frameless louvers



FRAMELESS AMERICAN LOUVERS offer a monolithic appearance since there are no unsightly frames or visible hinges and latch mechanism.

AMERICAN FRAMELESS LOUVERS offer more light for each ceiling opening because there is no frame obstruction. This also means that the fixture traps less light.

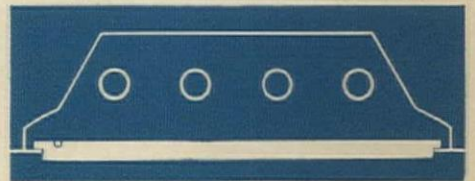
AMERICAN FRAMELESS LOUVERS are lower in brightness because the light is spread out over a larger area.

AMERICAN FRAMELESS LOUVER means lower maintenance cost because there are no tricky latches or hinges, they are 70% open therefore accumulate 70% less dirt, and there are no metal frames to rust or discolor when washing.

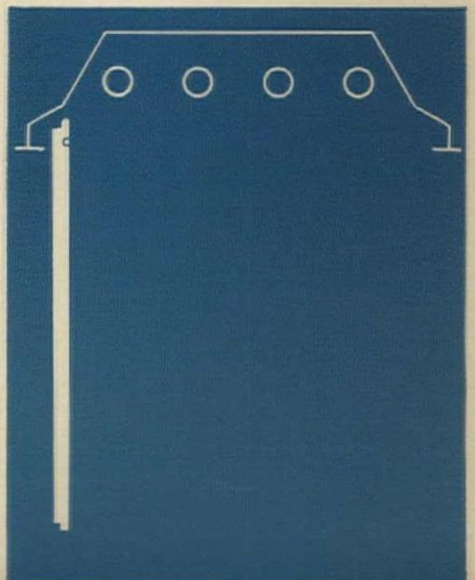
Fixture costs are reduced since costly frames are eliminated.



No latches required on self frames.
just lift and shift to swing down.



Self frame swings down freely from
its pin hinges.



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Only steel columns could bear the load. The 30-story Michigan Consolidated Gas Company Building in Detroit is the world's tallest all-welded building for a reason: integrated architectural design prohibited use of columns larger than 2 ft., 4 inches square. Reinforced concrete columns that size couldn't carry the required 6½ million pounds. Connections were welded to eliminate bulkiness and achieve smooth right angles between beams and columns. Heavy columns for lower stories are four plates welded into a rectangular box section. Where extra strength was needed a fifth interior plate was added. Lighter upper columns are regular rolled sections. The field-welded wind-resisting system contains the equivalent of 40 miles of 5/16-inch fillet welds. American Bridge Division fabricated and erected 5,700 tons of steel, inspected welds by radiographic and dry powder magnetic particle techniques. Architects: Minoru Yamasaki-Smith, Hinchman & Grylls, Associated Architects & Engineers. Contractor: Bryant & Detwiler Co.

Steel dome saves Syracuse University \$193,500. Fabricated and erected by American Bridge, the low-profile dome of the Syracuse University field

house has a rise of only 32 ft. and a diameter of 300 ft. Because there are no interior supports, all of the 80,000-sq.-ft. floor is usable. Seating capacity is over 4,000 with room enough for basketball, track and field meets, or a 70-yd. football practice field. There are over 700 tons of structural steel in the dome and canopy. In a competitive bid with the alternate concrete design, steel saved \$193,500. Architect: King and King. Engineer: Eckerlin and Kleper. Contractor: R. A. Culotti Construction Company.

High-rise truss walls—now possible with unique design and the "combination of steels." Through a new building design concept using four different steels of varying strengths, designers trimmed 200 tons of steel (and saved \$300,000) from the skeleton of Pittsburgh's IBM Building, first high-rise building with truss walls. External framework is a diagonal, criss-crossing truss system. Only interior vertical supports are the six columns of the central service core. Outer truss walls direct all wind, wall and most floor loads down to two ground contacts on each side of the building. Using different strength steels (from 33,000 to 100,000 psi) engineers accommodated stress levels much as bridge designers have done in the past. This principle also kept truss members a near-uniform size from top to bottom regardless of stresses, and permitted American Bridge use of time-saving modular fabrication and erection.

Truss walls form the facade, eliminating spandrels and independent curtain wall system. Diagonals were fireproofed with asbestos plaster and sheathed in 22-gauge stainless steel. Architect: Curtis and Davis Associates. Engineer: Worthington, Skilling, Helle & Jackson. Contractor: George A. Fuller Company.

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In the new Allen-Bradley building, Milwaukee, Wisconsin, there are 32 large Venetian Blinds, engineered and built by LEVOLOR. All of these Venetian Blinds (192 square feet each) are controlled by one light cell that responds to the intensity of the sun. In addition, each Venetian Blind is operated by a slave box, and all are connected to a master control panel.

From the master control, all of these blinds can be tilted independently of the sun and if desired, all Venetian Blinds can be stopped in any position and will remain so for any length of time. From the slave box, each Venetian Blind can also be raised, lowered, and tilted individually for window maintenance.

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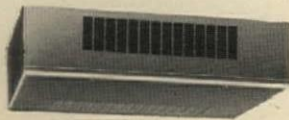
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LOOK TO THE LEADER...

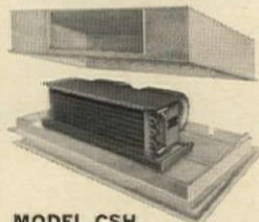
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HIDEAWAY FAN-COIL UNIT
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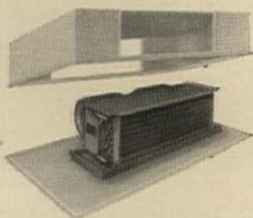
Extremely compact with a modern thinline design, McQuay's new Model CSH Hideaway Seasonmakers offer benefits never before attainable in horizontal fan-coil units. They are available in eight sizes, 200 through 1,200 cfm with nominal cooling capacities of 1/2 through 2 3/4 tons—Standard Ratings ARI Certified. The CSH Model is a fully enclosed horizontal unit for recessed applications with an adjustable ceiling frame and access panel permitting installation in stages compatible with construction progress. Important time savings result. The ceiling frame is telescopically fitted into the cabinet enabling a perfect alignment regardless of the ceiling type. Maintenance is highly simplified as the controls, filter, fan deck and entire base unit are readily reached, or removed, through the hinged ceiling panel. Maximum thermal efficiency is achieved with McQuay's exclusive Rippled-Fin and staggered tube coil design.



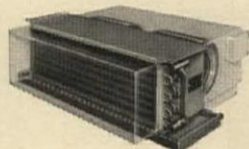
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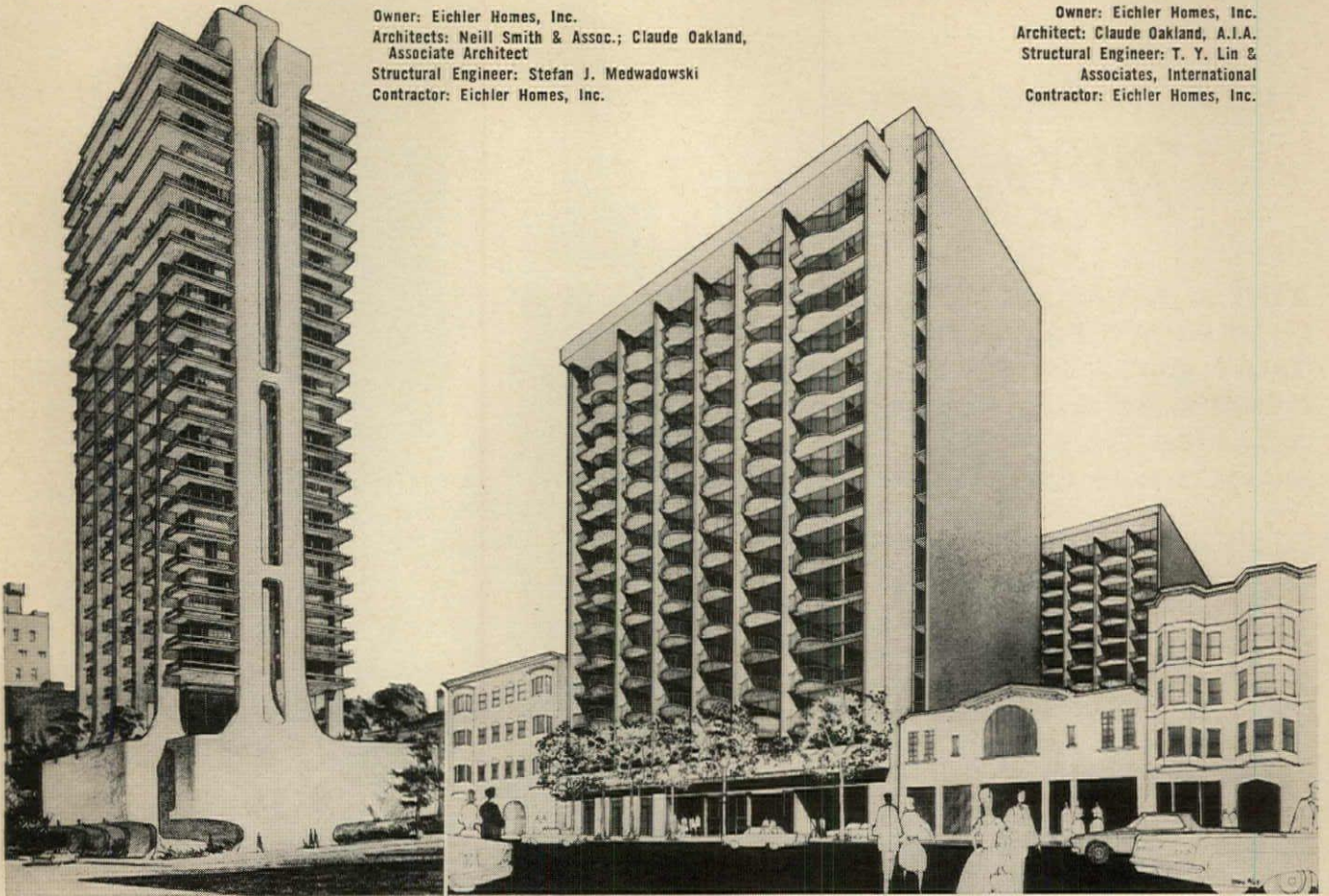
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Owner: Eichler Homes, Inc.
Architects: Neill Smith & Assoc.; Claude Oakland,
Associate Architect
Structural Engineer: Stefan J. Medwadowski
Contractor: Eichler Homes, Inc.

2. EICHLER CENTRAL TOWERS — San Francisco

Owner: Eichler Homes, Inc.
Architect: Claude Oakland, A.I.A.
Structural Engineer: T. Y. Lin &
Associates, International
Contractor: Eichler Homes, Inc.



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EICHLER CENTRAL TOWERS is the first U. S. job combining slip-formed walls and post-tensioned slabs. The two 15-story towers are connected by a central plaza at grade, with two underground parking levels. The towers are slip-formed from the second floor up, with the PRESCON tendons running one direction, through 2½" diameter holes precast in the slipped walls. The post-tensioned parking and plaza slabs (115' x 137') vary in thickness from 9" to 13", for surface drainage.

Write for brochures giving advantages and applications of the Prescon System of post-tensioned prestressed concrete.

THE PRESCON CORPORATION



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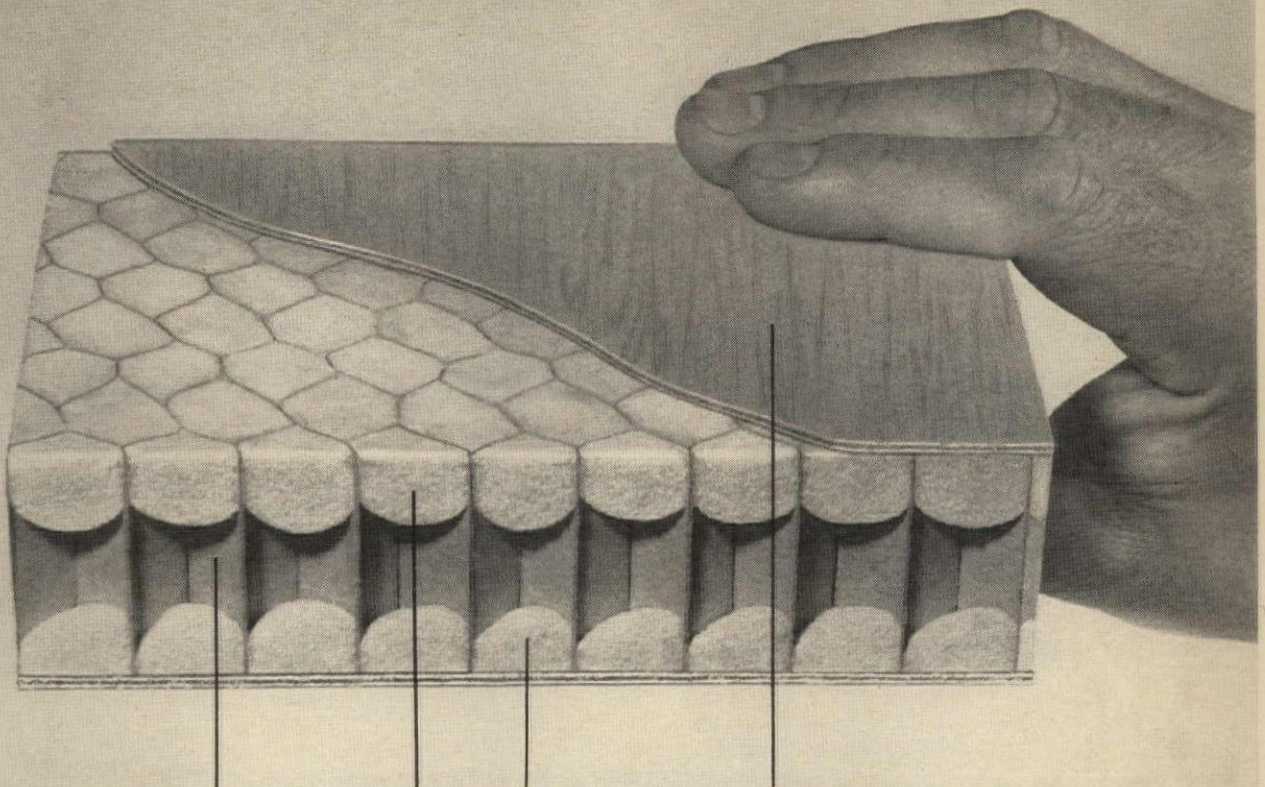
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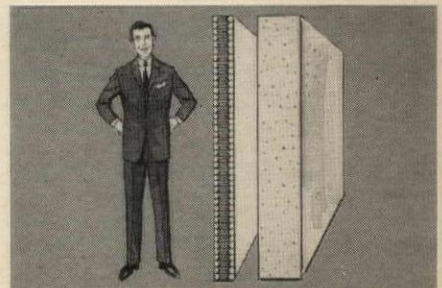
Amazing strength-weight ratio. The URECOMB core in a typical wall panel (2" thick) has a compression strength of more than 50 lbs. per square inch...yet it may weigh less than ½ a pound per square foot!

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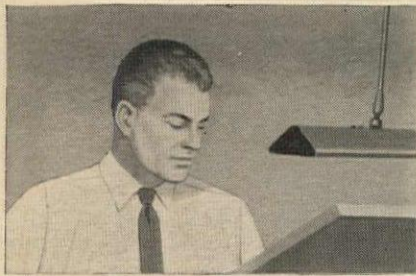


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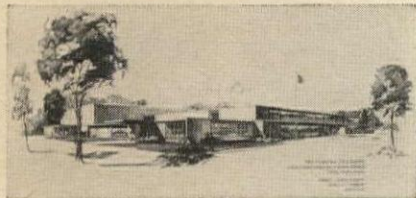
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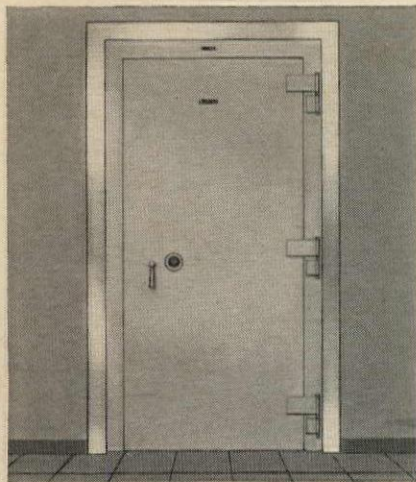
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PRATT STUDENTS PLAN NEW TOWNS

Eleven concepts for new towns of 100,000 population for Suffolk County, Long Island, New York, were presented by senior architectural students at Pratt Institute, Brooklyn, New York, on January 14. William Slayton, commissioner of the Urban Renewal Administration and Lee Koppelman, director of planning for Suffolk County, as well as other county officials were present.

The five critics in charge of this study were Professors Stanley Salzman, William Conklin, Dean McClure, Robert Dennis and Olindo Grossi, dean of the School of Architecture.

The problem posed to the 50 students, who were divided into 11 teams, was that the population of Suffolk County is expected to increase by one million people by 1985. How could this additional population be accommodated in new towns instead of formless subdivisions?

In three months' work each team developed a master plan for 10 towns of 100,000 population in areas from Port Jefferson to Patchogue and Montauk Point. Each team then planned one of the towns and built a model. The students planned for education, highways, utilities, government structure, retail trade, industrial activity, taxes, land use, housing and zoning.

Generally the communities had a great amount of high-density residential housing, allowing for preservation of recreational and open areas.

Urban Renewal Administrator Slayton praised the proposals in general. However, he pointed out that the students displayed a "New York provincialism" in assuming that a majority of people would live in a high density environment similar to New York City.

Mr. Koppelman praised the students for the quality of their presentations as well as for their astuteness in grouping industrial facilities along the central transportation core of the island, thus leaving the shore areas available for residential and recreational use. "You have in three months arrived at conclusions that took the Suffolk County Planning Board five years to perfect," Mr. Koppelman added.

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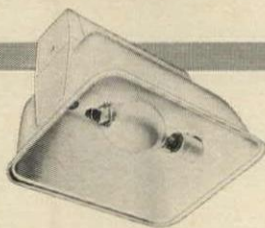
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SYLVANIA

INTRODUCED ALL OF THIS

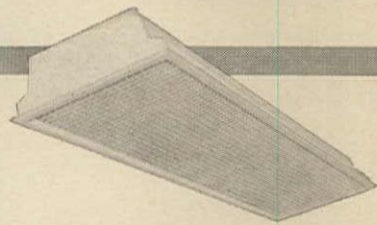
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A unique fixture designed for use with either Mercury or Metalarc lamps. Features many of the lighting characteristics of fluorescent lighting fixtures in a Mercury-type unit. Ideally suited for high and medium mounting. Provides wide, efficient, comfortable light distribution. The entire integrated unit is supplied complete—porcelain reflector, lamp and ballast.



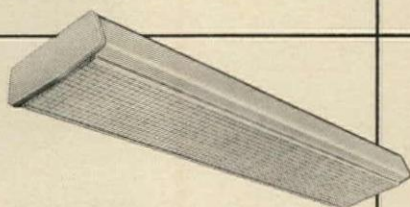
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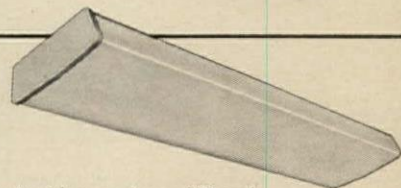
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This completely contained unit with one-piece, diffused, medium impact polystyrene wraparound shielding presents a clean, smooth appearance with low brightness and reduced reflected glare. The budget-priced Stratford combines attractive appearance with quality illumination. Excellent for general lighting in a variety of applications.



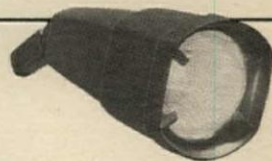
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A new outdoor series combining efficient illumination and attractive styling for driveways, walkways, parks or garden areas where distinctive lighting is desired. A variety of designs allow you to select the styling of your choice. Various wattages available in mercury, incandescent and fluorescent.



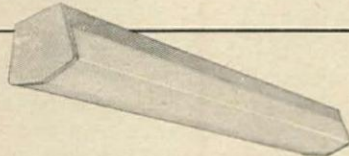
Sun Flood CARIBBEAN

This outdoor fixture features a quartz-iodine lamp with screw base. The Caribbean provides 4,000 lumens and 86% beam efficiency with color that doesn't change. Combines versatility, modern styling and rugged construction. Available with or without clamp and cord.



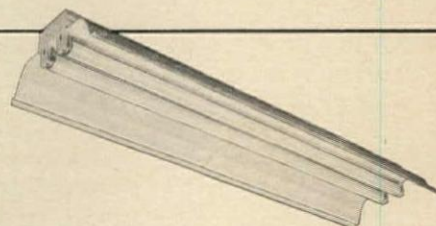
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Here is a new unit combining modern styling and effective light control in a single lamp fixture for lighting corridors, hallways, rest rooms, utility rooms, bin and stack areas. Wide distribution of light at high angles assures good vertical illumination on side-walls of long narrow areas with good brightness ratios. One-piece wraparound shielding available in two types of plastic.



Economy Industrial

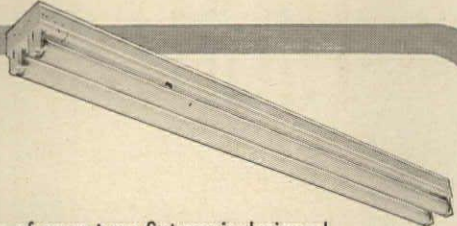
Selected models of Sylvania's QWIK-STRIP Series have been equipped with 12" wide reflectors to provide an economical line of industrial-type fixtures. These are offered as complete units and are available in 2', 4' and 8' lengths, each 2-lamps wide.



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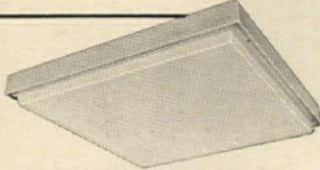
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DURING THE PAST 12 MONTHS



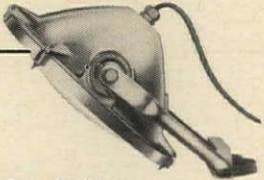
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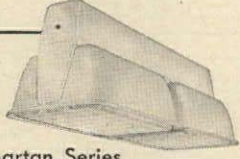
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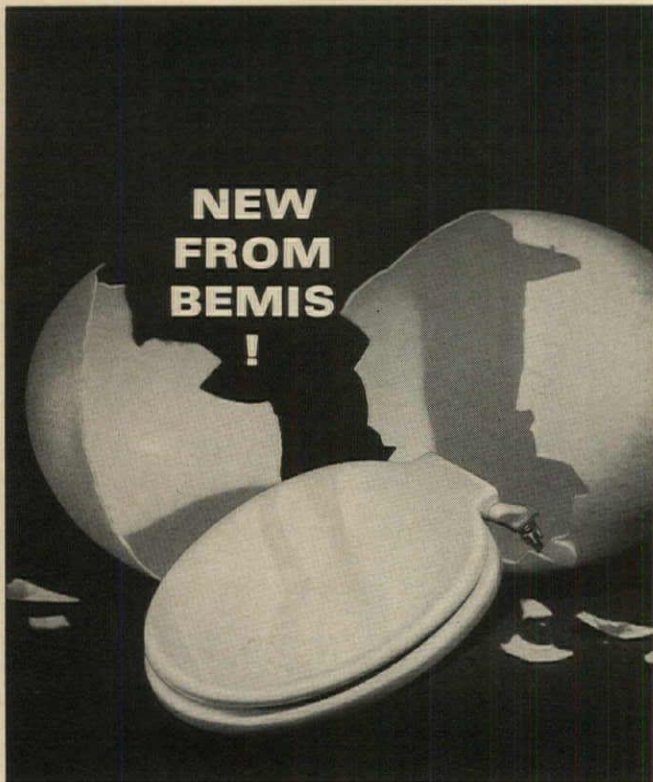
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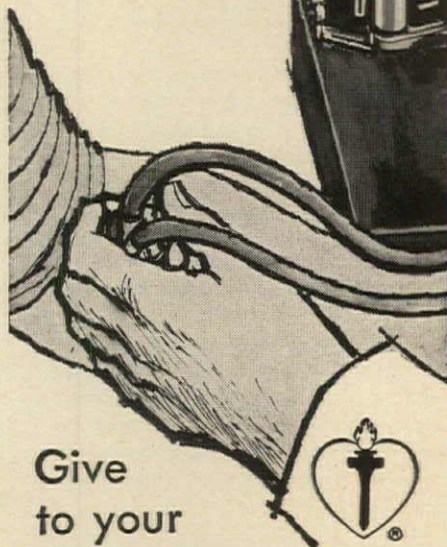
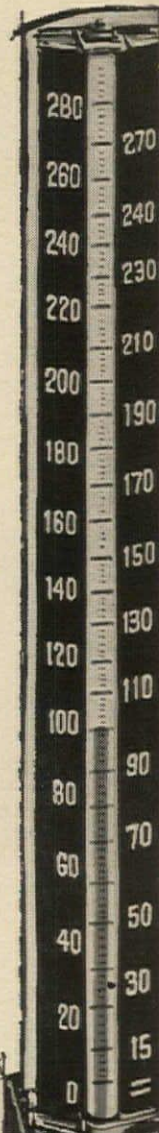
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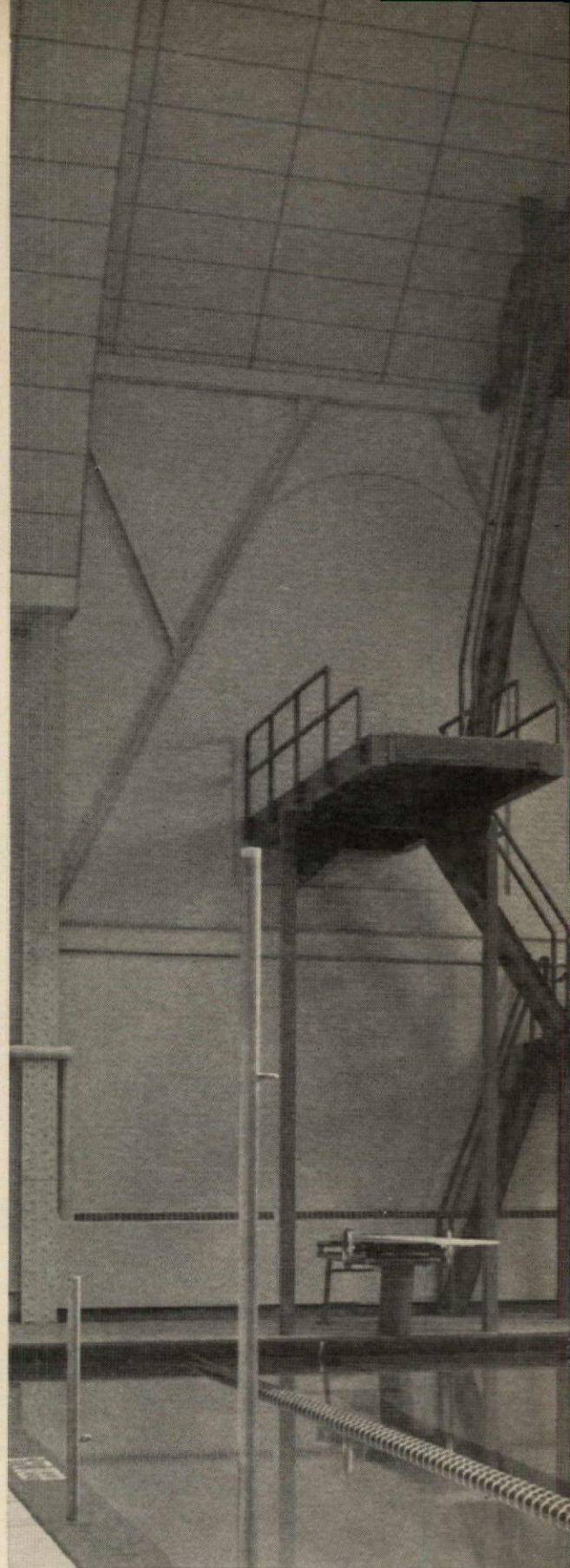
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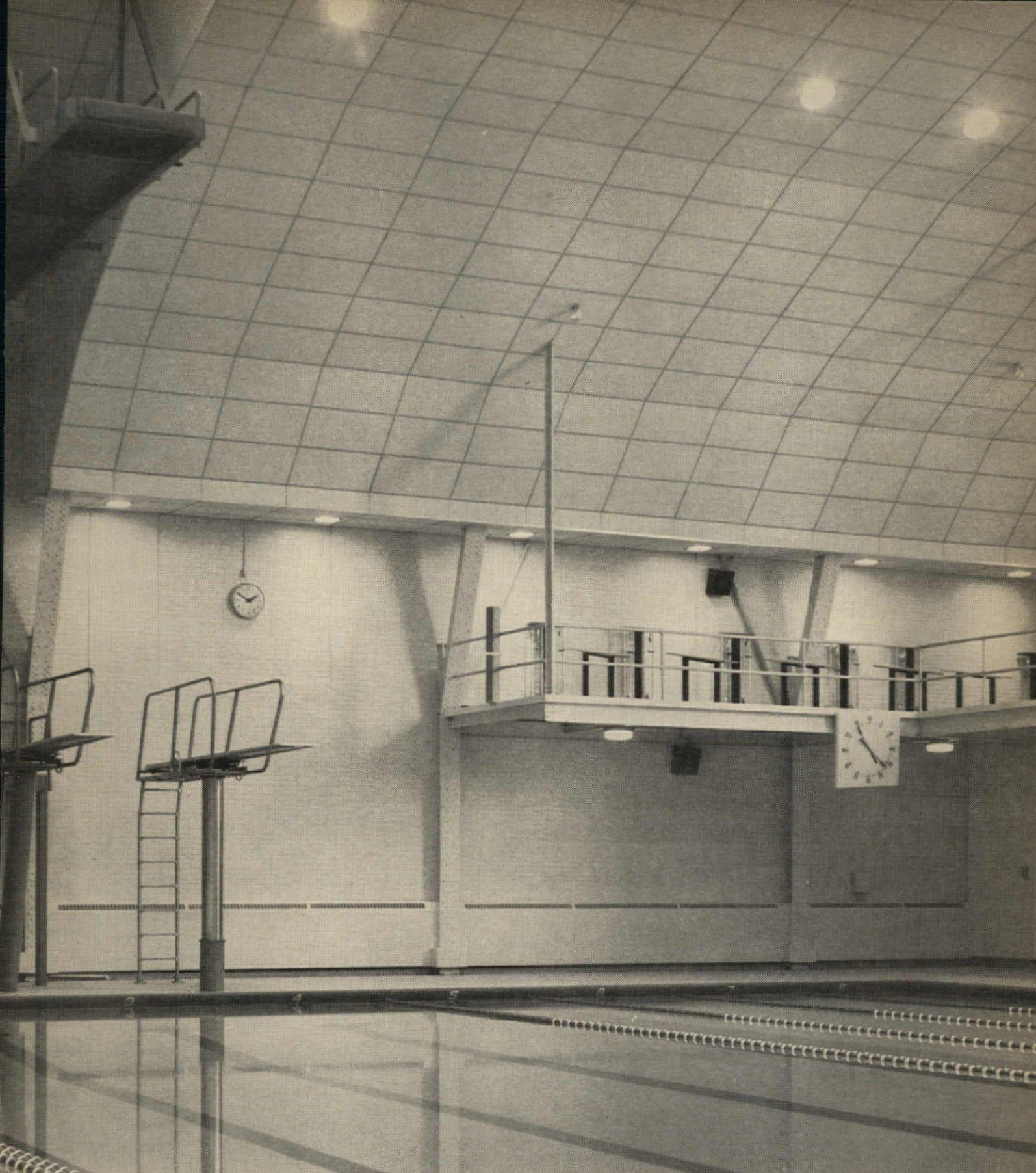
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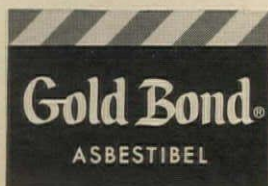
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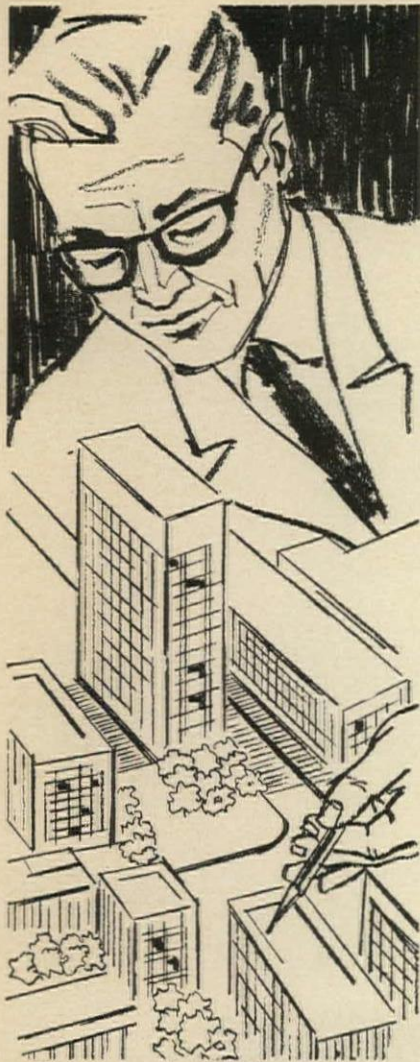
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EXHIBIT MARKS CENTENNIAL OF LANDSCAPE ARCHITECTS

The American Society of Landscape Architects is circulating an exhibition of the works of Frederic Law Olmstead as part of its centennial program. It was about 1863-1864, when Central Park, New York City, was being developed by Mr. Olmstead, that the Park Commission of New York City first used the term "landscape architect" rather than "landscape gardener" in referring to Mr. Olmstead.

The Olmstead exhibit, prepared by students at the Harvard University Graduate School of Design, is being shown at the Washington County Museum of Fine Arts, Hagerstown, Maryland, from March 8-31.

The tentative itinerary for the exhibit then calls for the exhibit to appear at the Howard University Gallery, Washington, D.C. and at the Peale Museum, Baltimore, in April; at the New Jersey State Museum, Newark, from May 10 to June 4; and at the New Jersey Historical Society, Trenton, from June 4-24.

Also, the exhibit will be shown at the Wadsworth Atheneum, Hartford, Connecticut, from June 24 to July 18; at the Brooklyn Museum, New York, in September; at the Kent School Gallery, Kent, Connecticut, in October or November; at the Springfield Museum of Fine Arts, Springfield, Massachusetts, in January, 1966; and at the Hopkins Center, Dartmouth College, Hanover, New Hampshire, in February, 1966.

Serving on the Centennial Committee of the American Society of Landscape Architects are: Theodore Osmundson, San Francisco, chairman; Wolcott E. Andrews, New York City; Robert F. Foeller, Norfolk, Virginia; Richard C. Guthridge, New York City; and Sidney N. Shurcliff, Boston.

In connection with the centennial program, a book, "Landscape Architecture of the United States" is being prepared under the direction of Walter Keith, a member of the Department of Landscape Architecture at the University of Illinois. It will be a series of illustrated critical essays on history of garden design in America.

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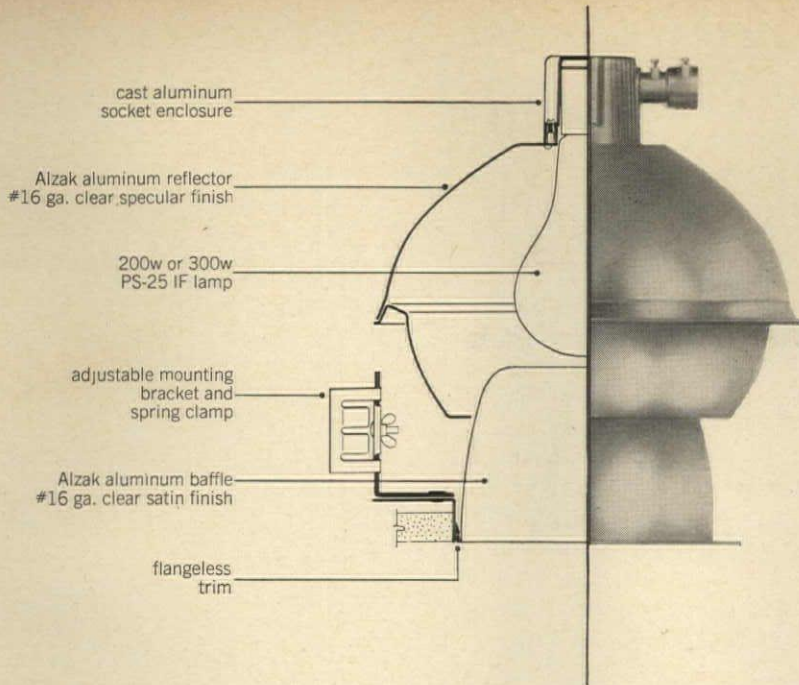
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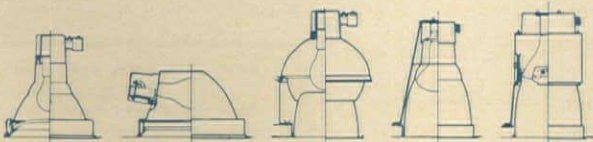


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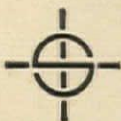


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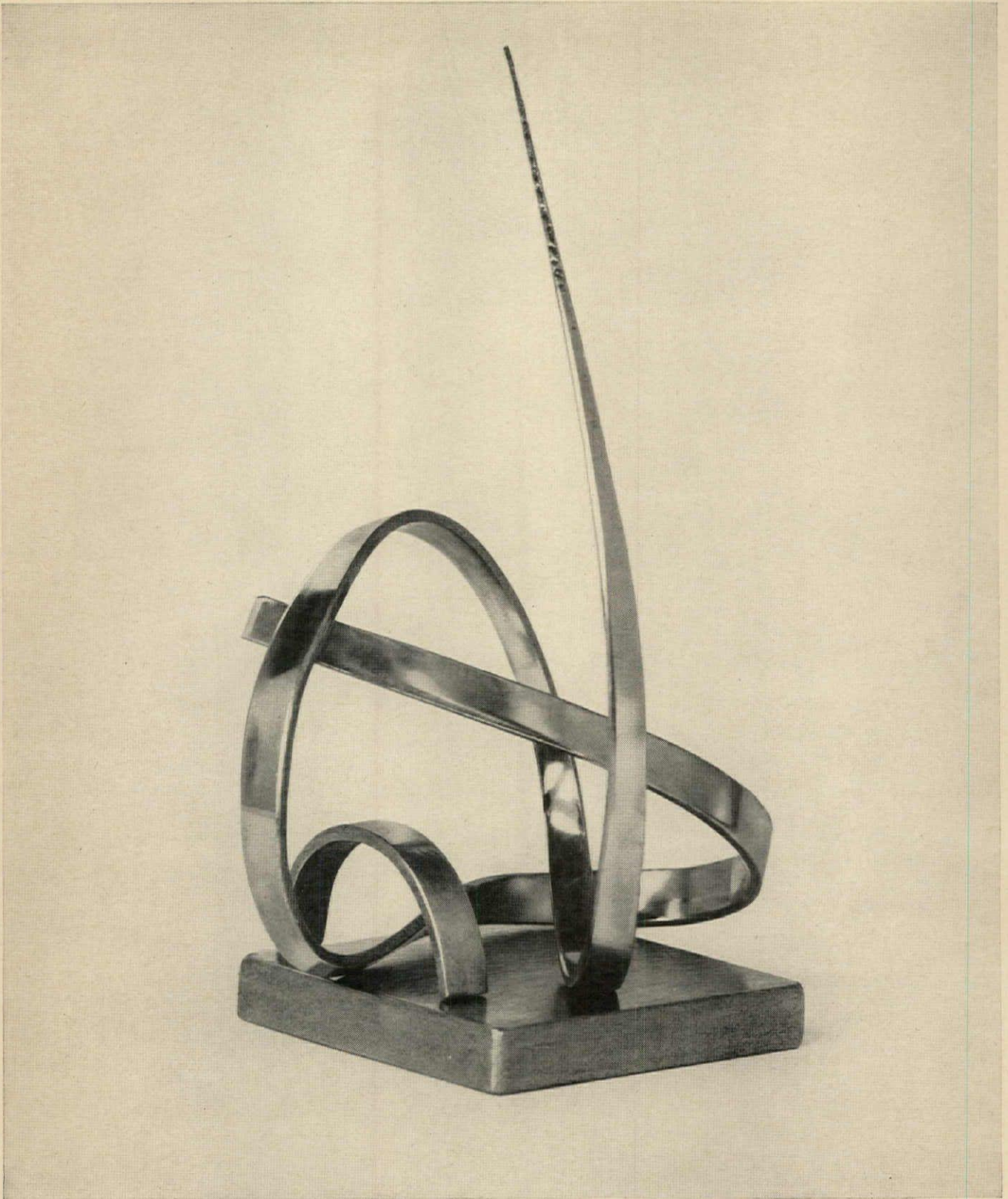
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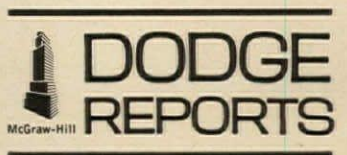


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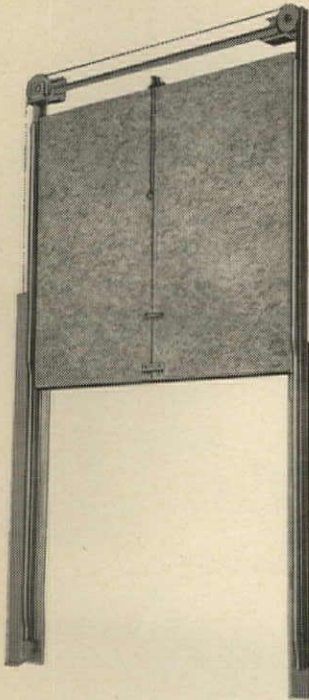
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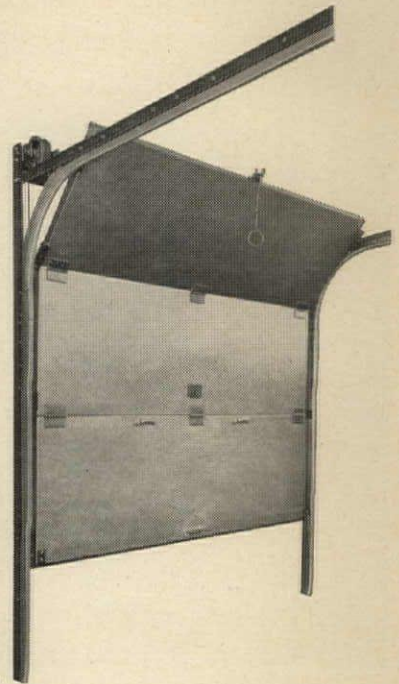


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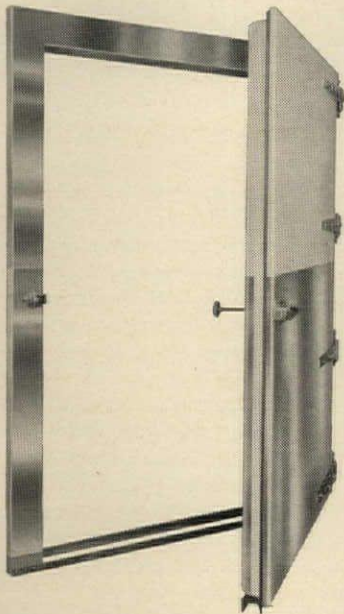
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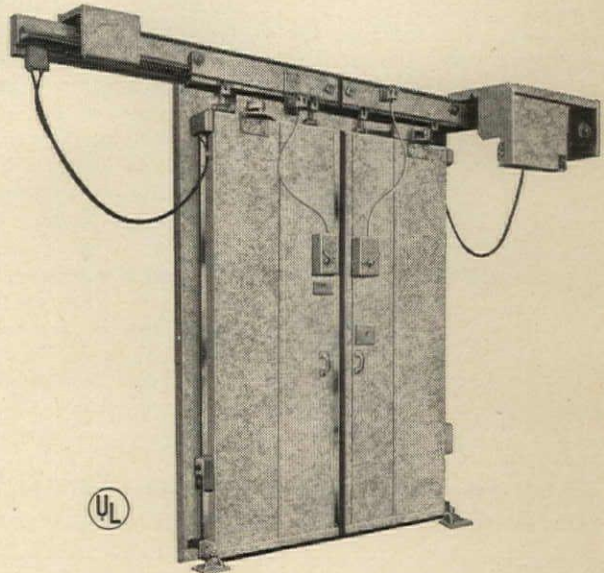


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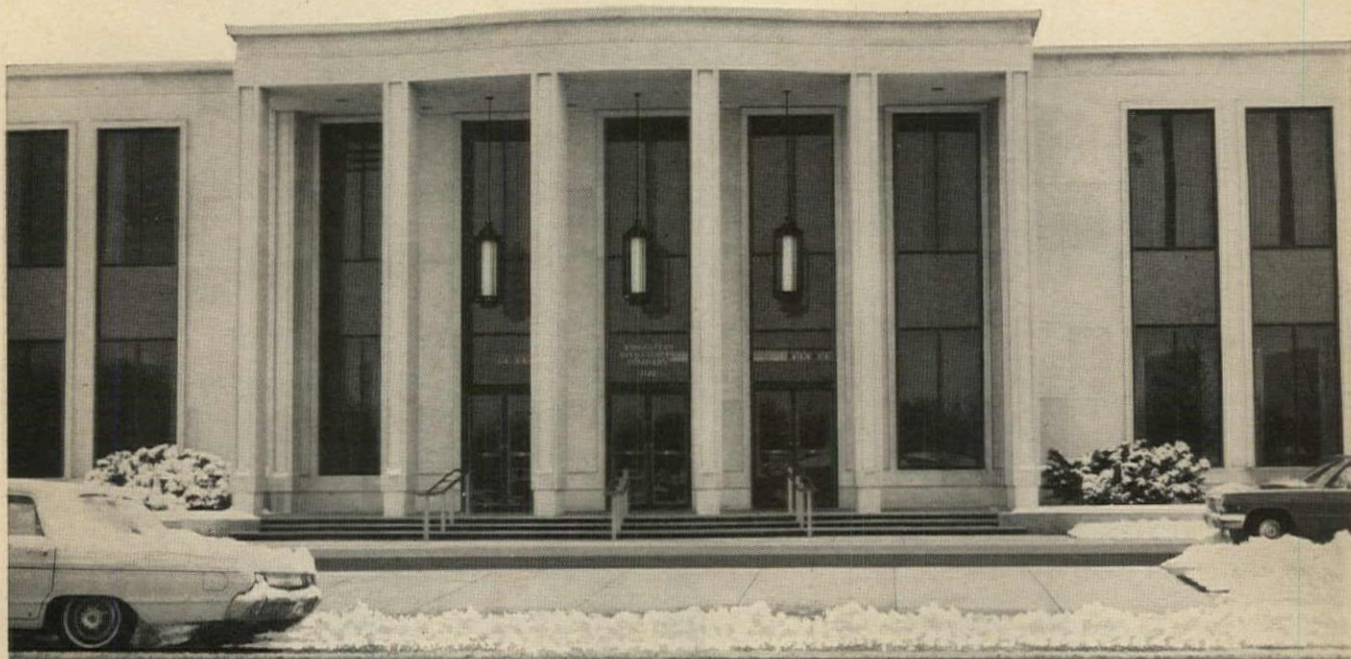
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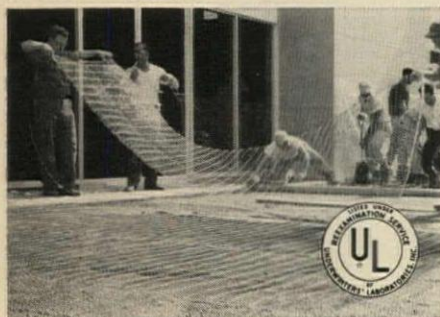
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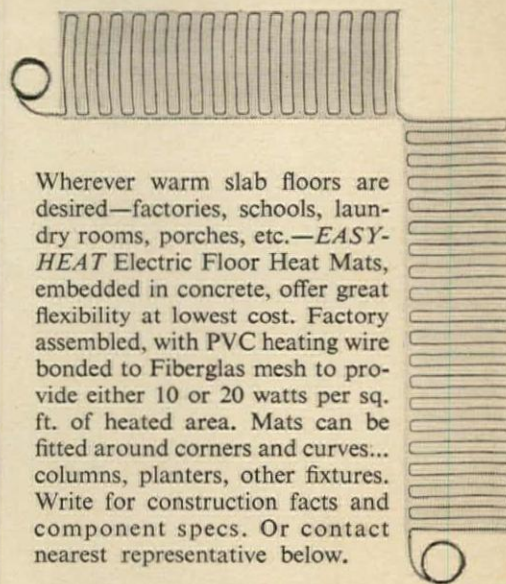


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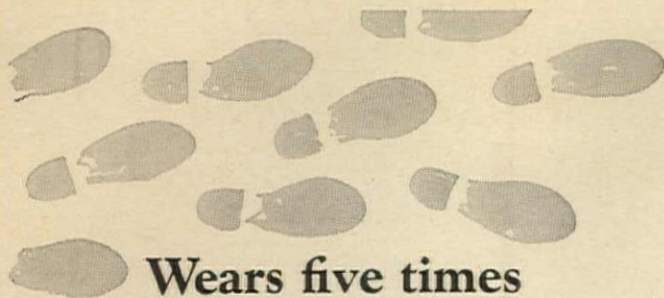


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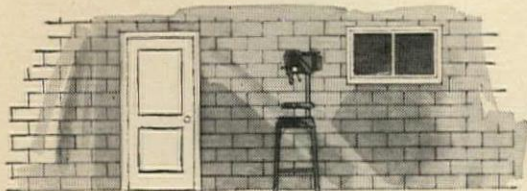
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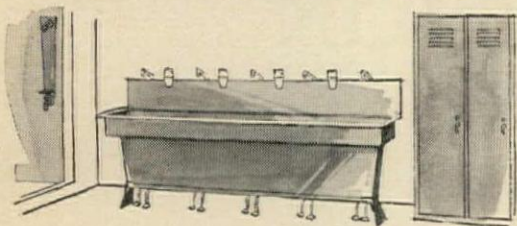
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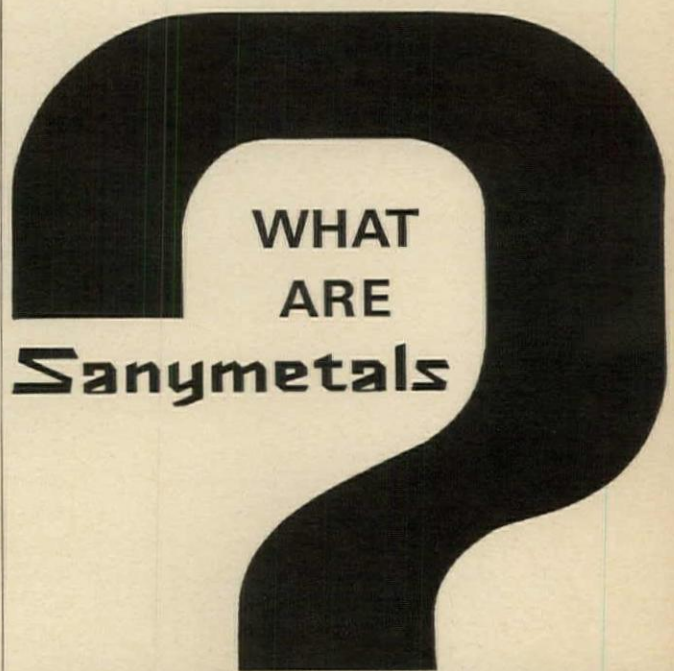
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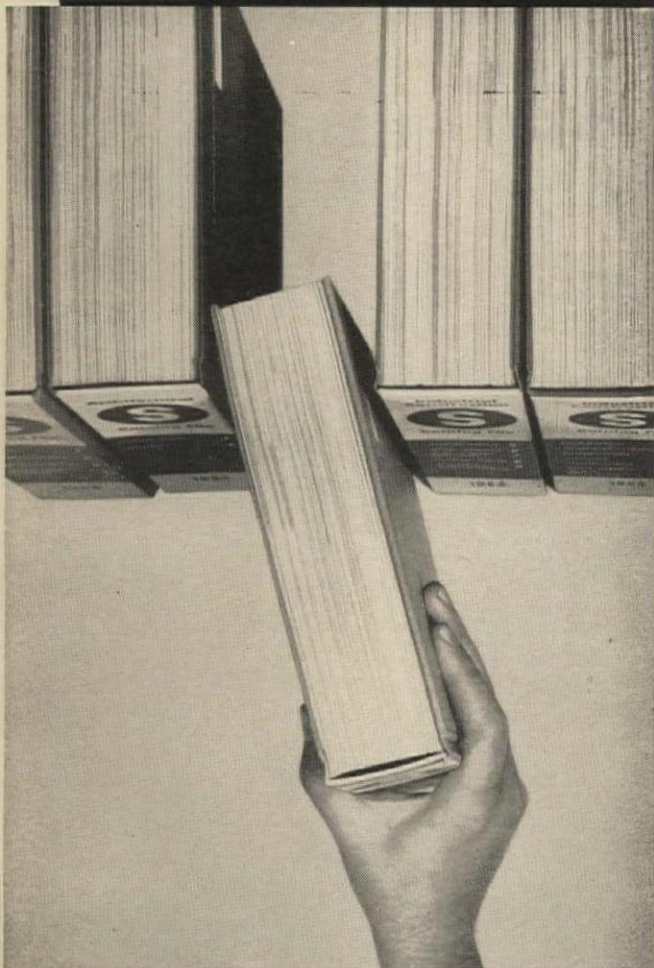
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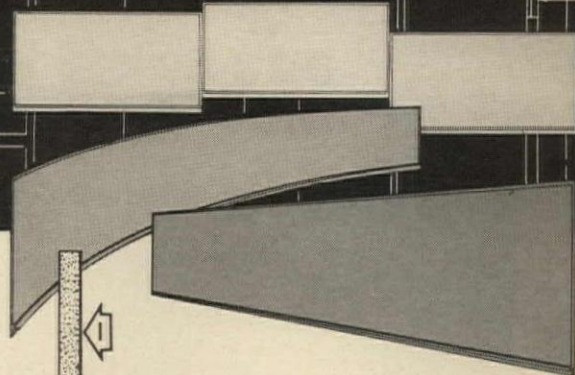


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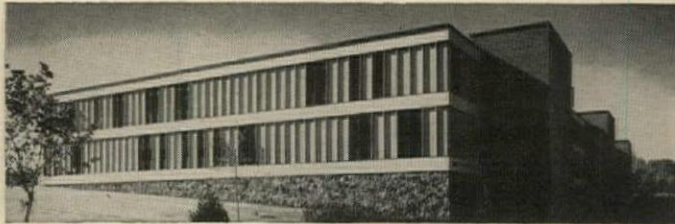
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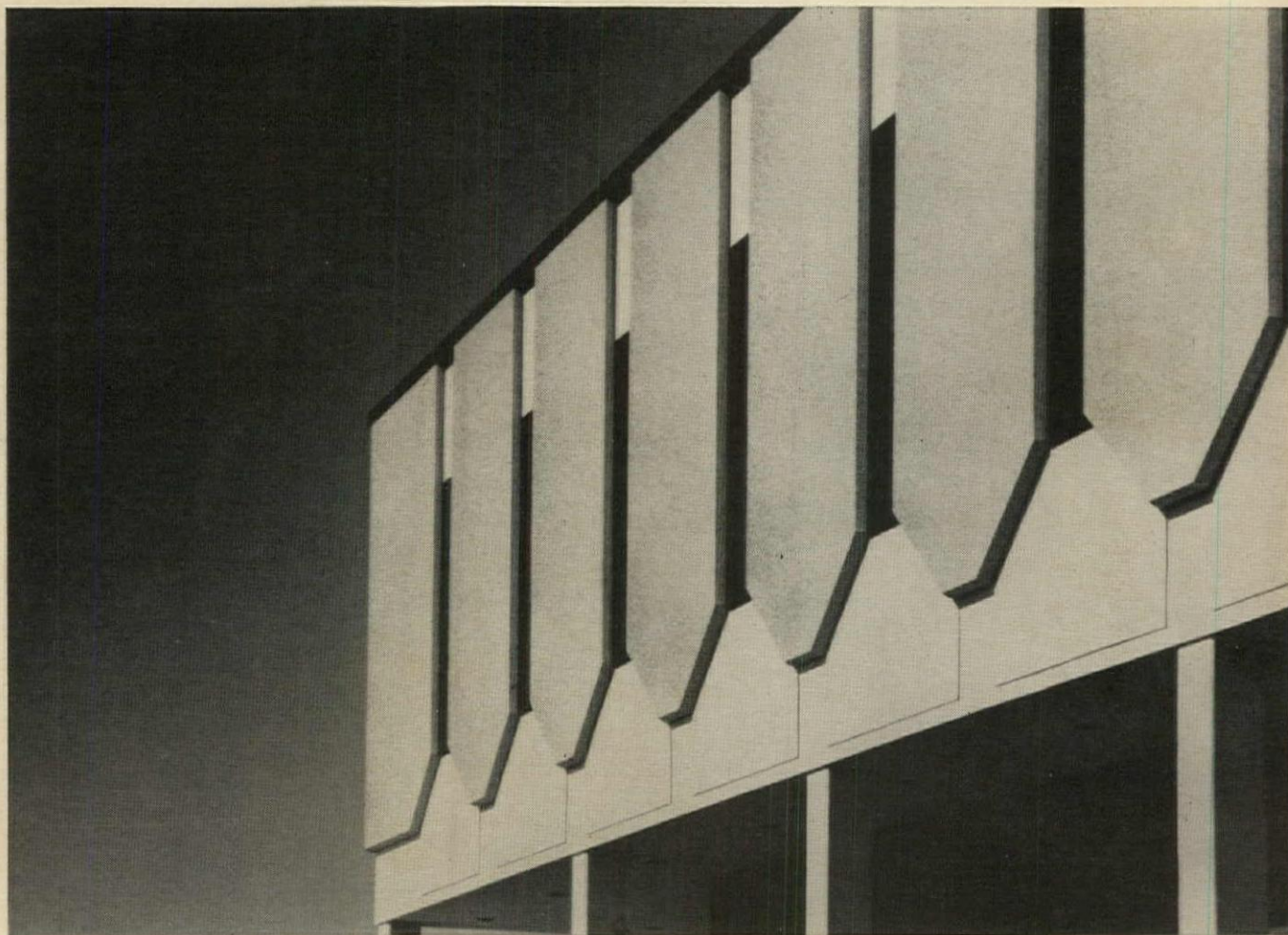
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