



# ARCHITECTURAL RECORD

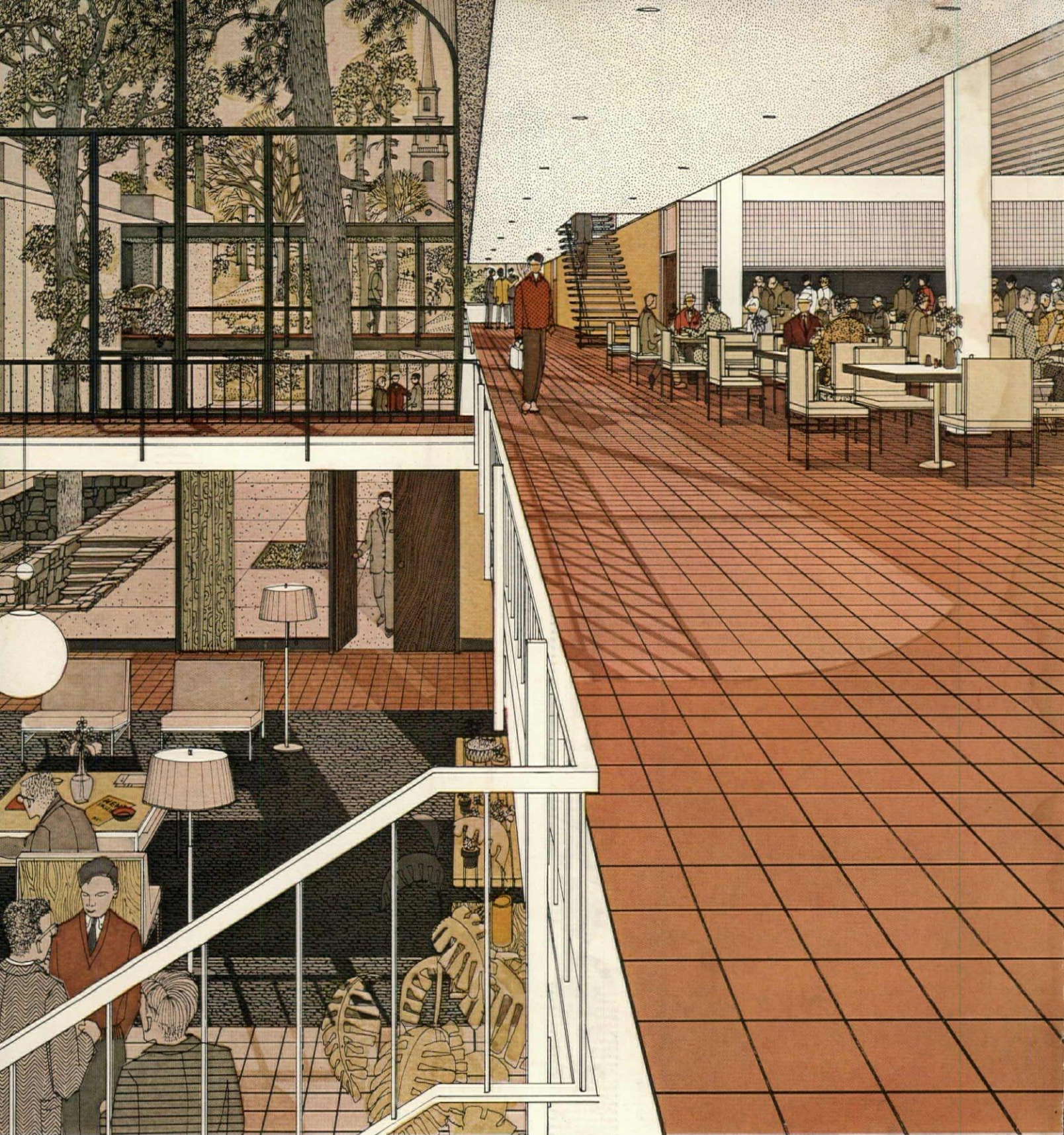
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BUILDING TYPES STUDY: INDUSTRIAL BUILDINGS

NORTH DAKOTA PRIORY BY MARCEL BREUER

TWO PROJECTS BY YAMASAKI

SEMI-ANNUAL INDEX • FULL CONTENTS ON PAGES 4 & 5



Murray quarry tile floors are 6" x 6" x 1/2" in Sahara and Golden Glow. Plate 483.

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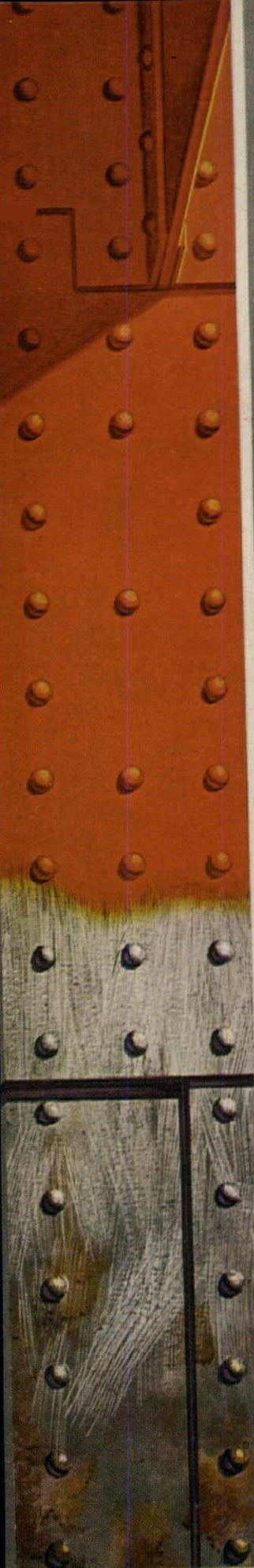
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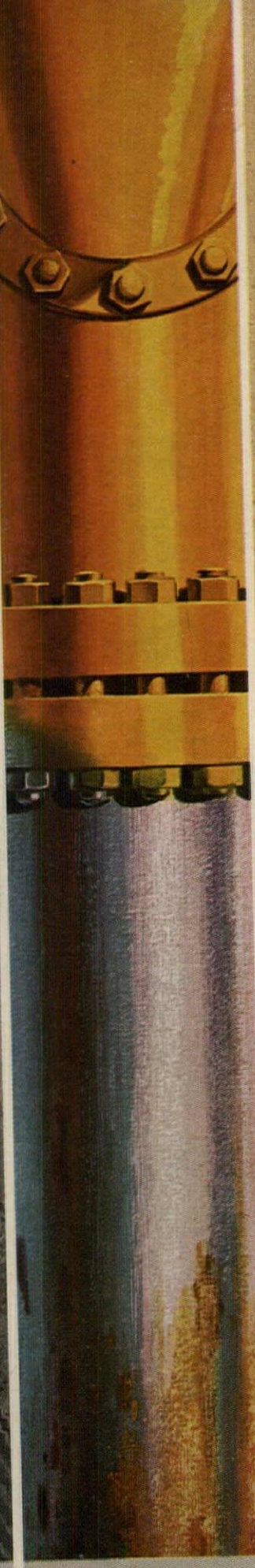
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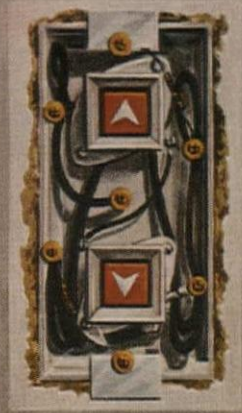
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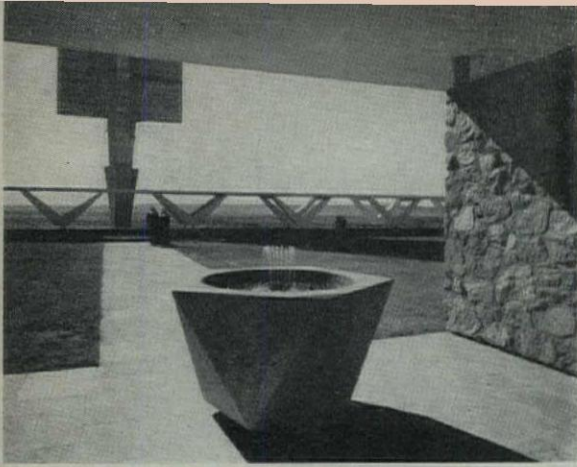


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Cover:

Priory of the Annunciation, Bismarck, North Dakota. Architect, Marcel Breuer. Photograph by Shin Koyama

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# Coming in the Record

## ARCHITECTURE OF QUALITY

*In the inevitable stimulus and excitement of the innovative in architecture, and perhaps in the discouraging prevalence of the dreary in non-architecture, it may be too easy to forget how many clients are being served these days at a very high level with buildings of the highest architectural quality for quite ordinary needs and how important a contribution to our architectural environment such buildings are. A group of small banks to be featured next month makes an impressive reminder.*

## BUILDING TYPES STUDY: APARTMENTS

*With the volume of multi-family housing construction continuing to promise increasing opportunities for architects in this building type, next month's study will provide a look at current accomplishments in projects of varied size and scope, together with a review of the recently selected award-winners in the first annual design competition sponsored by the Federal Housing Administration. Architects will be interested in the results of this awards program as an evidence of the developing effort in FHA to put itself on the side of good design.*

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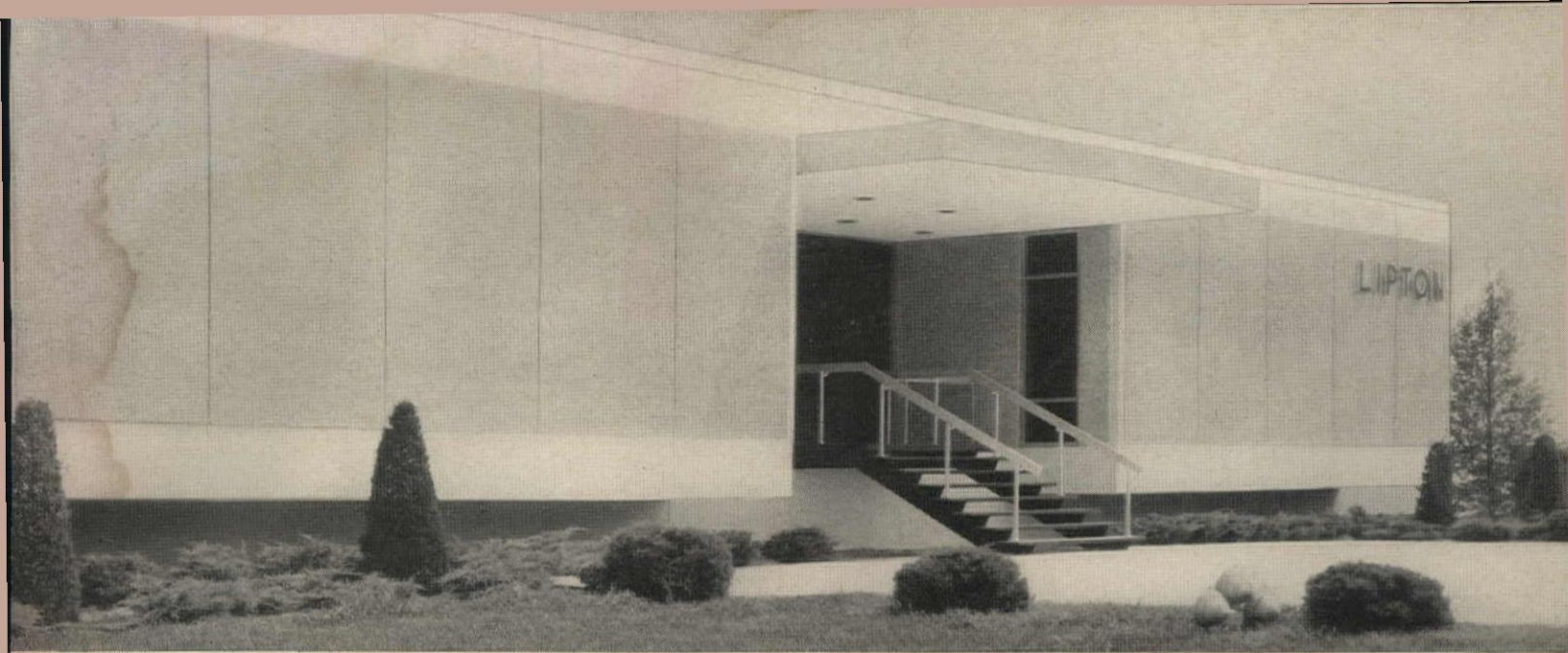
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## Concrete panels—precast with Incor®—featured in new Lipton plant

How to combine architectural distinction and rugged practicality? More often than not, modern concrete is the answer. For proof, consider Lipton's new \$1.5-million Wish-Bone Salad Dressing Plant at Independence, Missouri.

The use of precast concrete panels offered decided advantages—speed of construction, economy, beauty, durability, fire-safety and a minimum of maintenance. And, to meet future expansion requirements, one side of the plant can be removed by lifting the panels out of their flanged frames and extended outward as far as desired.

All 260 panels in the Lipton plant were precast using "Incor"—America's first high early strength portland cement.

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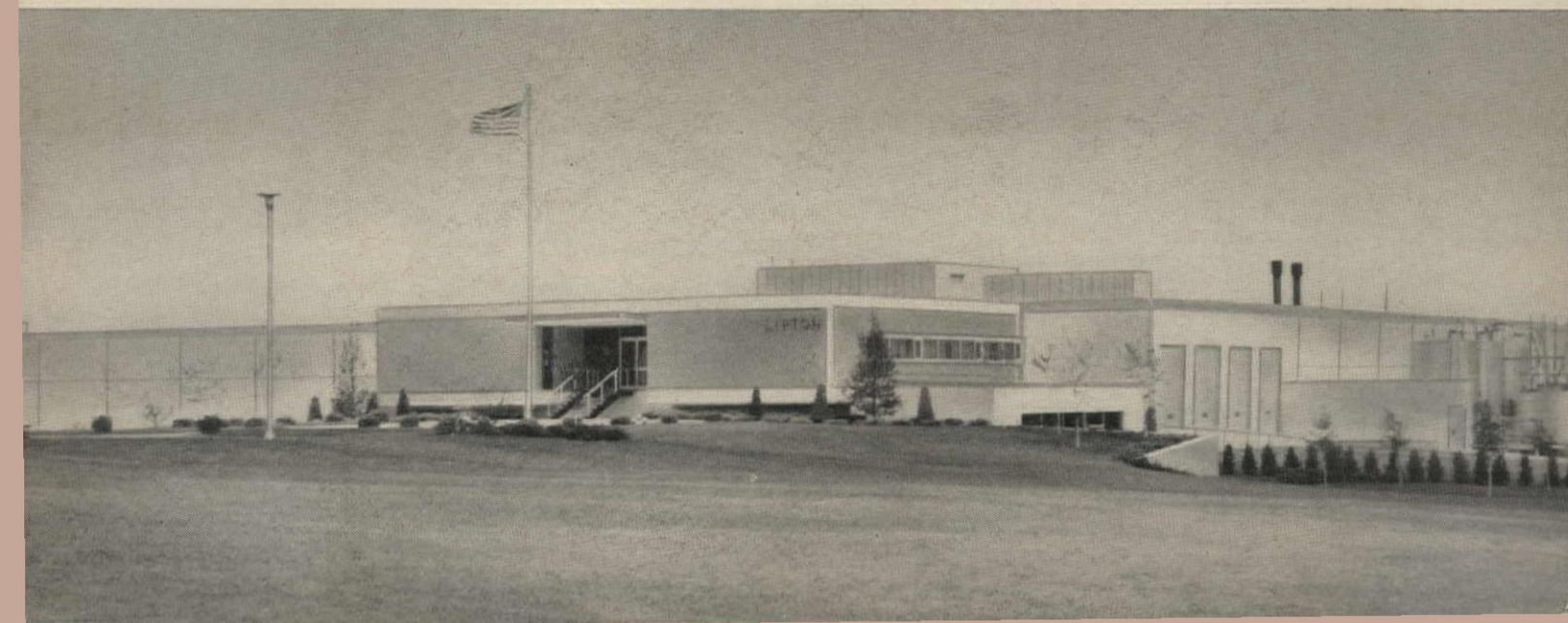


Reinforced concrete slabs—each 8 feet 4 inches high, 20 feet wide and 8 inches thick—are used for walls of manufacturing and warehouse sections. Slabs are laid horizontally tongue-and-groove fashion to form wall sections 25 feet high by 20 feet wide.



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## Hard World Department

Since we argued recently (this department, October) with Philip Johnson as to whether or not his was a "bad, bad world" for the artist, we have heard about two interesting efforts to guide the architectural student toward a congenial meeting with the world of work.

Gregory Ain was in the office last summer, on his way to become dean of the architecture school at Penn State. This California practitioner, his hair as gray as mine, was clearly entranced with the challenge of preparing the student to improve this vale of tears, and he spoke at some length of the attitude of the young graduate. He had seen so many, he said, a few years out of school, bitter, disillusioned, downhearted. Surely there must be something wrong with an educational system which sends young men out with so little knowledge of what is facing them. "If they were only prepared for what the world is really like."

One of the things he isn't prepared for, continued Ain, is the lack of interest of the world in his ego. "The free ego chatter is all right for their psychiatrists and their wives, but nobody else is interested in their emotional problems." One supposes (self speaking now) that the early artists who drew animals on the walls of the caves, felt themselves different from their fellows, and so started the business of ego analysis. Ain feels, in any case, that the school must lead the artist away from his feeling of isolation, or whatever it is, so that he at least suffers no worse disillusionment than do other college youths who charge out into the world.

Or, more positively, "If they're really assuming an adult responsibility they are expressing themselves. They have to realize that the glory of architecture is going to be in the *real* problems of the next 40 years. They will find the real meaning of archi-

ture in a living community."

Hear, hear!

Another effort in the same direction comes from a presentation of the graduate program of the University of California, from a paper by Joseph Esherick, Sami Hassad and Charles Moore:

"We are determined, at least for now, that the graduate program will be not a continuation of an undergraduate design sequence, but an antidote to it. This determination is based on a strong dissatisfaction with most of the architectural education we know about, which seems to drift along on 'expression' (at worst) or 'craft' (at best), allowing and even encouraging students to look to their own psyches and to rely on their whims for decisions which are certainly susceptible to rational analysis, to knowledge of human behavior and physical fact. It appears to some of us that the usual architecture curriculum is an elaborate framework of playing architect; it supplies the student with the notion that he is in charge of all sorts of factors he scarcely knows about, and develops therefore arrogance in lieu of responsibility. Our present efforts with our undergraduate curriculum are mostly toward a more responsible identification of the problems of the physical environment and the development of the tools for their solution, with a heavy reliance on discernible fact. We do not shy away from theory; indeed we believe that only with the development of a coherent body of transmittable theory based on verifiable information (not dogma) will it be possible for the architect to make a really responsible and necessary contribution to the society."

Arrogance in lieu of responsibility. Or, responsibility in lieu of disillusionment.

—Emerson Goble

## TAPIOLA, FINLAND, SEEN IN EXHIBIT

Tapiola, a Finnish new town of 17,500, is the subject of a major exhibition which had its premiere at the Architectural League of New York in October and November.

Begun in 1952 by Asuntosäätiö, a private nonprofit corporation, Tapiola has attracted the attention of planners and critics because of its sensitive treatment of a beautiful site on the Gulf of Finland, and its economic and social integration of population. Residents, 90 per cent of whom own their houses, may live in high- or low-rise apartments or in row houses.

The plan provides for neighborhood units—the Eastern and Western Neighborhoods are completed, the Northern is under construction—separated from each other and from the Town Center by green belts.

The exhibition will be on view at the National Housing Center in Washington until December 29.



Town Center; Aarne Ervi, architect



Terrace houses; Aulis Blomstedt, architect



"Chain" house; Kaija and Heikki Siren, architects



Tapiola High School; Jorma Järvi, architect



Apartment house; Viljo Rewell, architect

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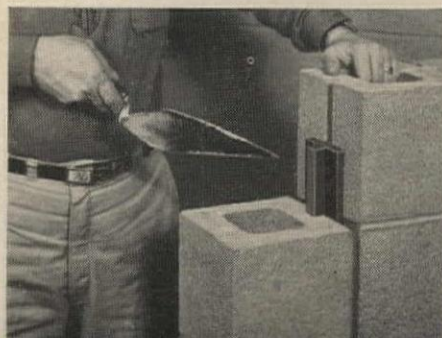
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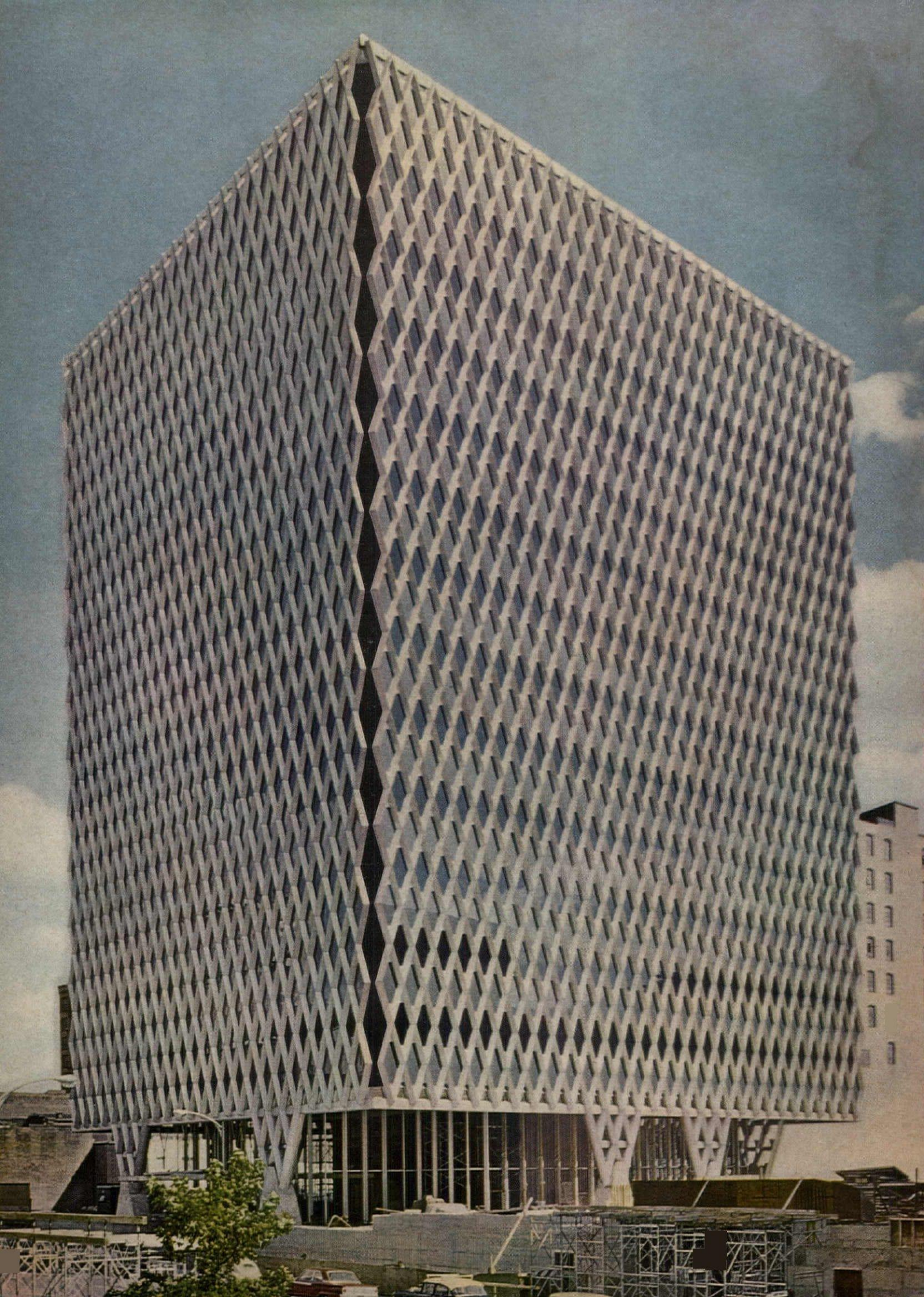
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... for architectural achievement

# Every facet has a function

The many facets of Pittsburgh's new IBM Building reflect the changing light of day, as well as a dramatic change in the concept of structure for high-rise buildings.

Rejecting traditional post and beam concepts, the IBM Building's designers made full and creative use of the strength levels of USS Structural Steels by placing the building's strength, structural support, and beauty in its walls. These steel-truss walls, supported at only eight ground points, share the loads of the long-spanned floor framing with the central service core—providing spacious and column-free interiors.

New, higher yield strength steels made this design practical. It is the world's first building to combine three strength levels of steel in its structure—USS "T-1" and "T-1" type A Steels (100,000 psi minimum yield strength) for the heavily stressed piers and lower wall elements, USS TRI-TEN Steel (A441) (50,000 psi minimum yield point) for less heavily stressed elements, and A36 steel (36,000 psi minimum yield point) where stresses were still

lower and more uniformly distributed. This concept required 250 tons less steel than traditional skeleton frame construction.

The symmetrical, diamond grid exterior is sheathed with lustrous, textured USS Type 302 Stainless Steel, which contrasts with gray glass spandrels and tinted windows to provide an intriguing over-all texture and interplay of light and shadow on each facade.

Used imaginatively, steel has unlimited aesthetic potential. For full details, write United States Steel, Room 6921, 525 William Penn Place, Pittsburgh, Pennsylvania 15230.

*USS, "T-1" and TRI-TEN are registered trademarks.*

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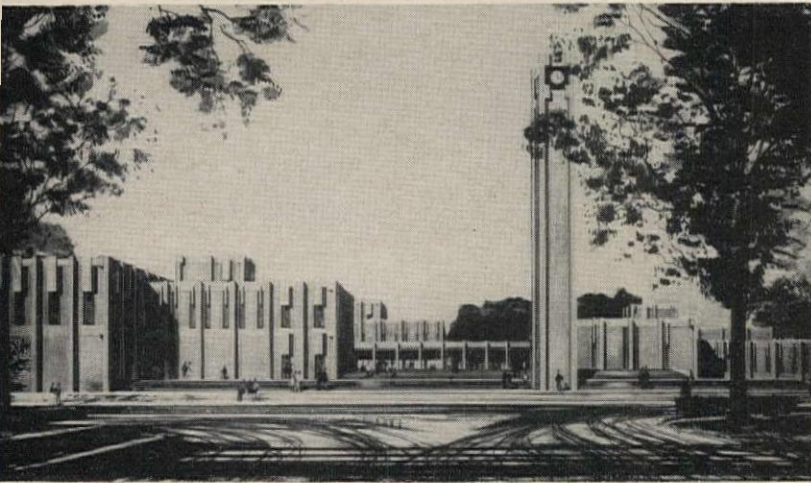


**United States Steel**



## Princeton: Architecture

Princeton's architectural students, housed since the school's founding in 1919 in a wing of McCormick Hall, moved this fall into the new Architecture Building. The new facilities include a drafting studio 165 feet long, 60 feet wide and 20 feet high. The studio is divided into graduate and undergraduate sections by a student common room and a jury room. Model building shops are on the mezzanine, and a casting shop for sculptors on the ground floor. The structure is poured concrete with post-stressed beams. The architect was Charles H. Richter, of Fisher, Nes, Campbell and Partners, Baltimore. Turner Construction Company was the general contractor.

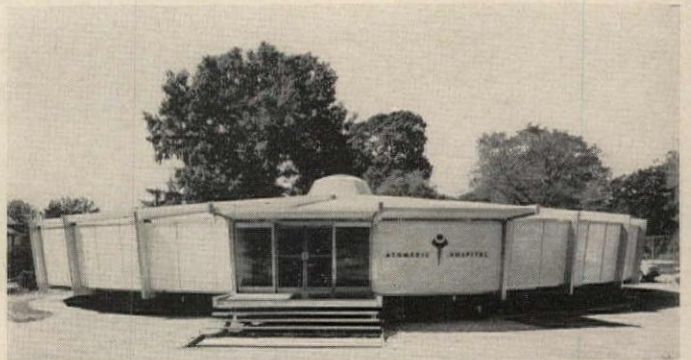


## Northwestern: Architecture

The Rebecca Crown Memorial Center will house Northwestern University's administration offices, now scattered about the Evanston campus. It will also house Hardin Hall, a conference area, to be used for trustees' meetings, receptions and other official university functions. The building will be faced with limestone, to conform with existing buildings on the campus. Construction, to cost an estimated \$2.5 million, will begin in the spring of 1964 and is scheduled to take 16 months. Skidmore, Owings & Merrill are the architects.

## Atomec Hospital

Atomec Hospital is a design estimated to save half the usual costs of hospital construction and operation. Its equipment includes telemetry (electronic reporting of such data as pulse and respiration), automated food system, and television monitoring of patients. Structure is extruded aluminum columns and beams on three concrete footings. Exterior walls are aluminum panels bonded to foamed plastic core. The design is the brainchild of Dr. Hugh C. MacGuire, concerned with the needs of satellite hospitals and neighborhood clinics. Paul Gilmore was the architect, aided by Alcoa's engineering staff. Prototype is in use at Montgomery, Alabama; a second hospital will be flown to the New York World's Fair.



## First at the Fair

The New York World's Fair had its first real beginning with the dedication in October of the Top of the Fair, exhibition building of the Port of New York Authority. The top floor contains a 1,100-seat dining room with views of the fair, Flushing and, in the distance, Manhattan. Called by the Port Authority the "aerial gateway" to the fair, the building provides a roof-top heliport which will accommodate shuttle services from the airports and Manhattan. The exhibit will be on the ground floor. The building was designed by the Port Authority's staff. Foundation contractor was M. Parisi & Son; builders were W. J. Barney Corporation.

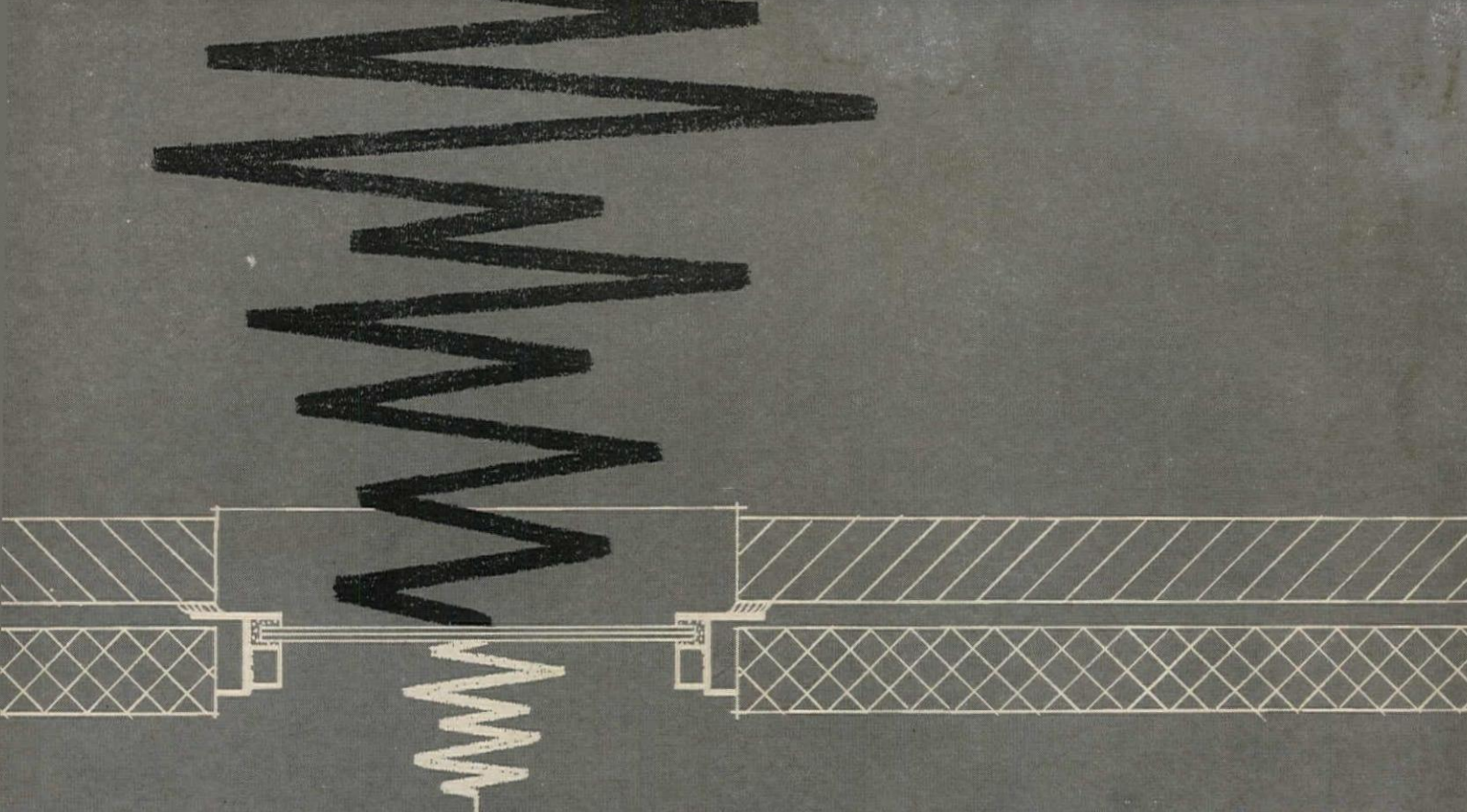






### Art and Architecture at Yale

Yale's new Art and Architecture Building, designed by Paul Rudolph, received a gala welcome last month, when more than 2,000 alumni and friends turned out for its dedication. The \$4 million building, latest in Yale's expansion program, is concrete with a "rippled" aggregate finish. Though apparently a nine-story building, its interior offers great spatial diversity, with 36-levels varying in height from 7 feet to 28 feet. In addition to facilities for teaching architecture, city planning, painting, sculpture, printmaking and graphic design, the building houses an art library and a penthouse apartment for visiting critics. The general contractor was the George B. H. Macomber Company.



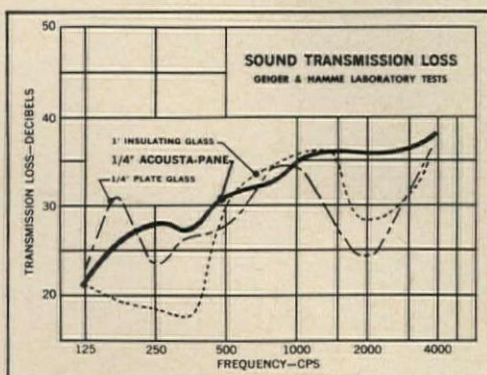
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Graph shows comparative reduction in sound transmission of **ACOUSTA-PANE** compared to 1/4" polished plate glass and to 1" thermal insulating glass (2 sheets of 1/4" plate with 1/2" air-space between). **ACOUSTA-PANE** is especially effective in the critical frequency ranges where ordinary glass is relatively "transparent" to disconcerting office sounds and extraneous noise emanating outdoors.

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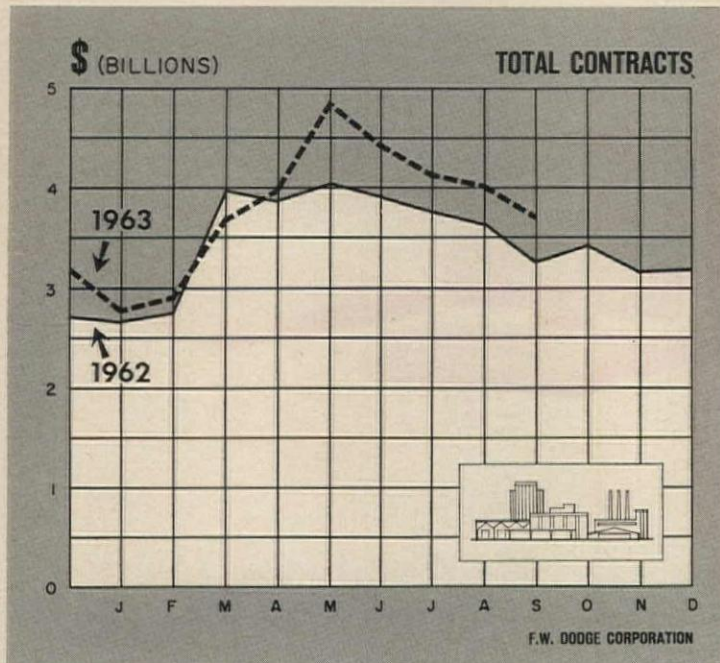
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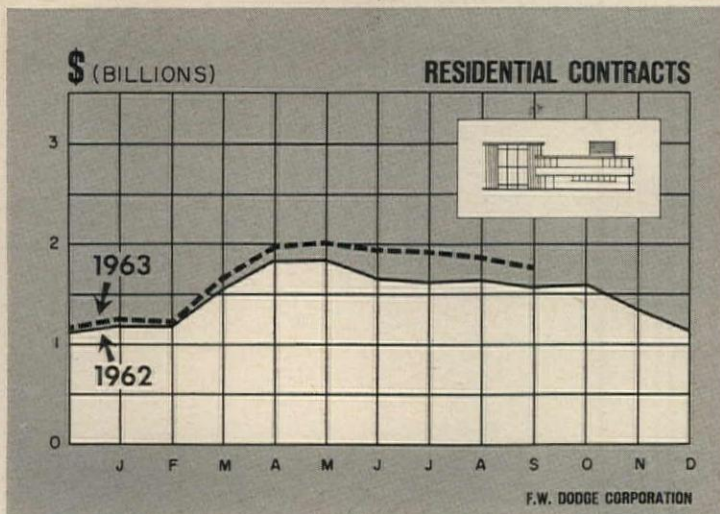
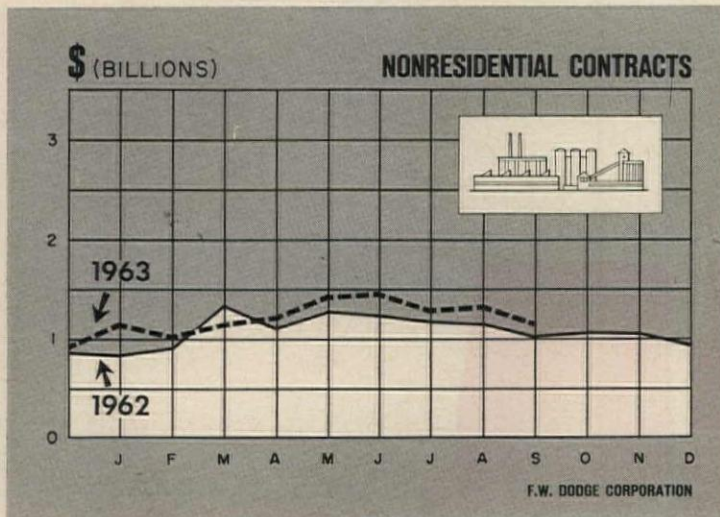
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## INDUSTRIAL BUILDINGS: STAGING A COMEBACK



Total contracts include residential, nonresidential and non-building contracts



Capital expenditures for new plants and equipment are basic to economic growth. Aside from the fact that investment directly adds to the nation's total economic output (Gross National Product), it also sets the stage for future growth in the output of goods and services by increasing our productive capacity.

Manufacturing industries went on a plant and equipment spending binge in 1956 and 1957 which culminated in the latter year's record level of outlays—almost \$16 billion. But a hangover followed the next year as capital outlays dropped nearly 30 per cent. From 1959 through 1962, capital spending fluctuated between \$12 and \$14.7 billion; this year, it is estimated that manufacturing companies will spend more than \$15.5 billion, which would be a 6 per cent increase over last year's total. The outlook for 1964 looks pretty good since McGraw-Hill's Fall Capital Spending Survey indicates that, right now, all manufacturing industries *plan* to spend 8 per cent more for plants and equipment in 1964, than they did in 1963. In recent years, just under one-fifth of all manufacturing plant and equipment expenditures has gone to new construction.

Dodge contract data for industrial buildings followed a somewhat similar course during the time period covered above. After postwar highs were reached during the Korean conflict in 1951 and 1952, the yearly total value of manufacturing plants contracts dropped sharply in 1954 because of the recession. During the recovery, contract value climbed to \$2.4 billion in 1956, and then traced a jagged course around the \$2 billion mark until this year. F. W. Dodge Corporation estimates that when 1963's complete data are posted the total value of manufacturing buildings contracts will be about 10 per cent higher than last year, and forecasts another 10 per cent increase in 1964.

Although many factors determine how much business invests in plants and equipment, anticipated profits and what per cent of capacity industries are operating at are among the more important. Relatively stable profits, but declining profit margins over the decade of the 50's, and lower than preferred operating rates in recent years, reduced the incentives of business to invest and was reflected in the sluggishness of the capital expenditure series. Profits have finally broken out of their straitjacket this year, as manufacturers set an earnings record in the second quarter; and there are indications that the third quarter was even better. The operating rate for all manufacturing companies has also improved, going from 77 per cent in 1960 to 85 per cent in September of this year, according to the McGraw-Hill Survey.

The outlook for industrial buildings looks bright when the above buoyant factors are added to the possibility that Congress will finally pass the tax cut bill next year. On top of this, corporations will not be hampered by the lack of the wherewithal to invest because cash flow, which had been climbing slowly, jumped in 1962 when the accelerated depreciation guidelines became effective and has continued rising this year.

Henry C. F. Arnold, Economist  
F. W. Dodge Corporation  
A McGraw-Hill Company

# The mellow charm of brick



Carroll Hall, Bennett College, Millbrook, New York.  
Brown, Lawford & Forbes — Architects.

## **Silaneal<sup>®</sup> protects it from dirt, efflorescence, leakage**

Brick — for texture and richness — was the architect's choice for this dormitory. Set among the warm tones of Bennett College, Carroll Hall's antique white brick enriches the campus complex. Specification of brick factory-treated with Silaneal assures lasting protection against unsightly discoloration from water-borne dirt . . . efflorescence . . . leakage.

**Keeps Brick Clean** Many brick, particularly light and pastel shades, have high suction rates and offer little resistance to water penetration. Water carries dirt *into* the brick, causing discoloration; water leaches soluble salts *out* of the brick, causing efflorescence. Factory-applied Silaneal makes brick water repellent so dirt stays on the *outside*, where it's easily washed away by rain, and efflorescence due to water leaching is minimized.

**Controls Water Absorption** High suction brick absorb water from fresh mortar so rapidly that improper hydration and mortar shrinkage may occur. As a result of poor bond between brick and mortar, hairline cracks may develop to allow leakage. But Silaneal *controls* water absorption; proper hydration of mortar is assured for maximum bond, less leakage.



**Proven By Tests** Hundreds of transverse pressure tests — and tests simulating wind-driven rain — have demonstrated that wall sections built of Silaneal-treated high suction brick prove stronger and resist leakage better than similar untreated brick.

For brochure and list of sources, address your letterhead to Dept. C424, Chemical Products Division, Dow Corning Corporation, Midland, Michigan.

## **Dow Corning**

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# Building Construction Costs

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

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

A. CURRENT BUILDING COST INDEXES—NOVEMBER 1963  
 1941 Average for each city = 100.0

Metropolitan Area	Cost Differential	Current Dow Index		Per Cent Change Year Ago Res. & Nonres.
		Residential	Nonresidential	
<b>U.S. AVERAGE—21 Cities</b>	8.5	261.1	278.2	+2.29
Atlanta	7.1	292.5	310.3	+2.44
Baltimore	8.0	264.1	281.0	+1.40
Birmingham	7.4	242.2	260.4	+2.68
Boston	8.4	234.3	248.0	+1.75
Chicago	8.8	291.0	306.1	+2.72
Cincinnati	8.8	252.2	268.1	+1.69
Cleveland	9.3	263.9	280.4	+2.52
Dallas	7.8	247.9	256.0	+1.93
Denver	8.3	269.5	286.5	+2.91
Detroit	8.9	262.9	276.0	+2.10
Kansas City	8.3	237.9	251.8	+2.99
Los Angeles	8.4	264.7	289.6	+1.76
Miami	8.4	260.3	273.3	+3.25
Minneapolis	8.9	262.6	279.1	+2.18
New Orleans	7.9	238.1	252.3	+1.34
New York	10.0	269.3	289.7	+1.80
Philadelphia	8.7	261.9	275.0	+2.53
Pittsburgh	9.1	246.3	261.8	+2.41
St. Louis	8.9	252.5	267.6	+2.84
San Francisco	8.5	330.1	361.2	+2.08
Seattle	8.5	239.9	268.1	+2.71

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

Metropolitan Area	1941 average for each city = 100.0														
	1947	1952	1957	1958	1959	1960	1961	1962 (Quarterly)				1963 (Quarterly)			
								1st	2nd	3rd	4th	1st	2nd	3rd	4th
<b>U.S. AVERAGE 21 Cities</b>	185.9	213.5	244.1	248.9	255.0	259.2	264.6	265.1	265.9	267.4	268.7	269.4	270.3	273.4	
Atlanta	190.0	223.5	269.6	277.7	283.3	289.0	294.7	296.5	297.6	298.2	300.6	302.0	303.0	305.7	
Baltimore	181.0	213.3	249.4	251.9	264.5	272.6	269.9	270.5	272.6	272.4	271.9	272.3	272.9	275.5	
Birmingham	175.0	208.1	228.6	233.2	233.2	240.2	249.9	249.9	249.9	249.9	250.6	251.3	252.0	256.3	
Boston	187.0	199.0	224.0	230.5	230.5	232.8	237.5	238.5	239.9	240.4	240.4	240.4	241.2	244.1	
Chicago	182.0	231.2	267.8	273.2	278.6	284.2	289.9	289.9	289.9	292.6	295.8	296.4	296.4	301.0	
Cincinnati	178.0	207.7	245.1	250.0	250.0	255.0	257.6	257.6	257.6	260.0	260.0	260.0	260.7	263.9	
Cleveland	173.0	220.7	258.0	257.9	260.5	263.1	265.7	265.7	268.4	268.4	271.7	272.3	272.8	275.8	
Dallas	202.0	221.9	228.4	230.5	237.5	239.9	244.7	244.7	244.7	247.7	250.8	251.5	252.2	253.0	
Denver	187.0	211.8	245.6	252.8	257.9	257.9	270.9	273.1	276.3	275.3	274.8	275.0	275.4	282.5	
Detroit	158.0	197.8	237.4	239.8	249.4	259.5	264.7	264.7	264.7	267.1	267.1	267.1	267.9	272.2	
Kansas City	172.0	213.3	230.5	235.0	239.6	237.1	237.1	238.5	239.5	240.8	241.8	242.3	242.9	247.8	
Los Angeles	180.0	210.3	248.4	253.4	263.5	263.6	274.3	274.3	274.3	278.0	278.6	279.1	279.7	282.5	
Miami	193.0	199.4	234.6	239.3	249.0	256.5	259.1	259.1	259.1	260.8	262.4	262.4	266.7	269.3	
Minneapolis	176.0	213.5	235.6	249.9	254.9	260.0	267.9	267.9	267.9	269.5	270.8	271.4	272.1	275.3	
New Orleans	180.0	207.1	232.8	235.1	237.5	242.3	244.7	244.7	244.7	245.5	245.5	246.5	246.5	248.3	
New York	181.0	207.4	240.4	247.6	260.2	265.4	270.8	273.5	273.5	276.7	280.4	280.9	280.9	282.3	
Philadelphia	209.0	222.3	255.0	257.6	262.8	262.8	265.4	265.4	265.4	265.0	265.0	265.6	265.6	271.2	
Pittsburgh	191.0	204.0	234.1	236.4	241.1	243.5	250.9	250.9	250.9	252.1	253.5	255.0	256.1	258.2	
St. Louis	191.0	213.1	237.4	239.7	246.9	251.9	256.9	254.0	254.3	256.2	257.3	260.1	262.4	263.4	
San Francisco	243.0	266.4	302.5	308.6	321.1	327.5	337.4	339.1	340.8	344.5	348.7	350.1	350.1	352.4	
Seattle	175.0	191.8	221.4	225.8	232.7	237.4	247.0	249.0	251.9	253.7	255.3	256.5	257.8	260.6	

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

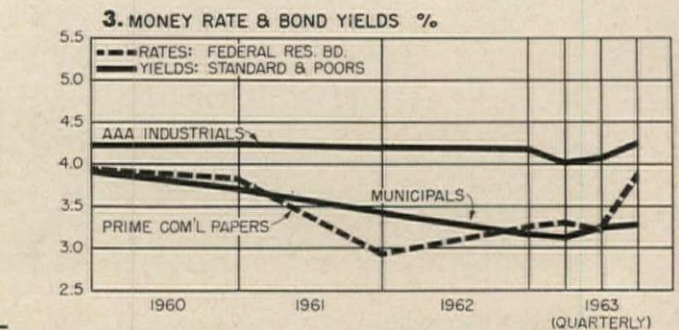
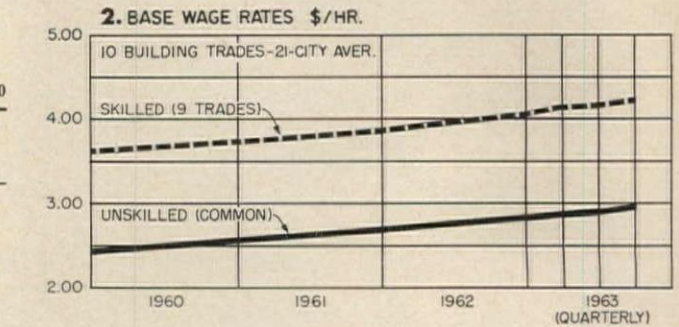
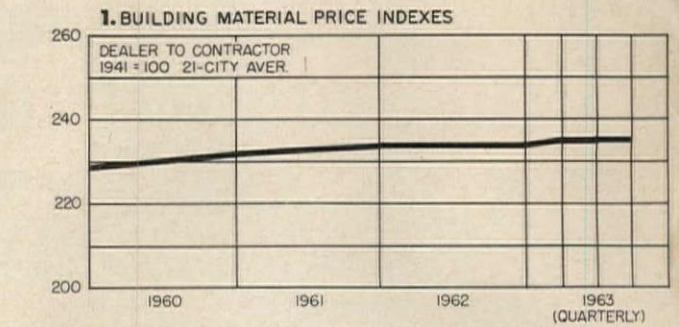


TABLE B. Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other: if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other.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



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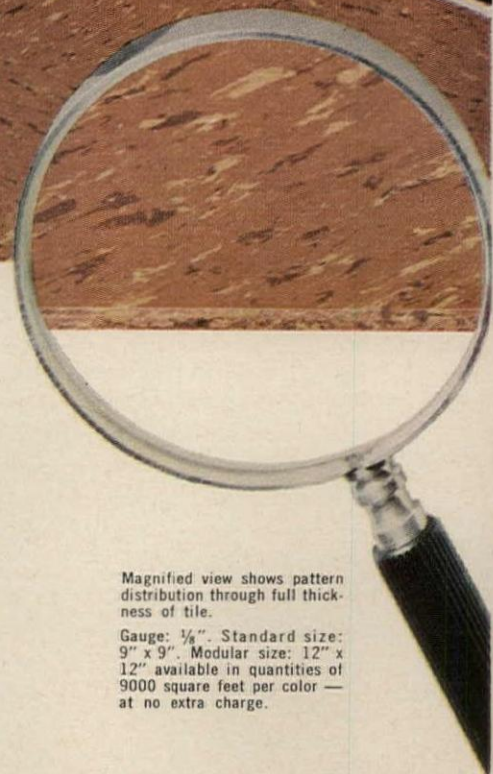
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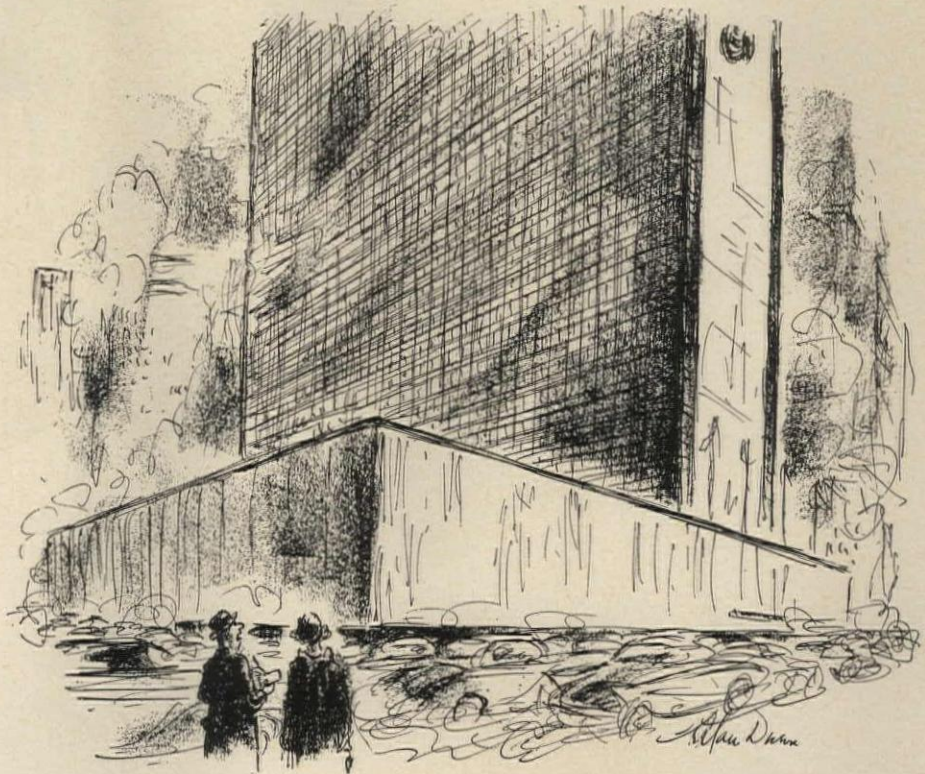
Magnified view shows pattern distribution through full thickness of tile.

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—Drawn for the RECORD by Alan Dunn

“Think of something else—I guess ‘X marks my room’ is out.”

## U.I.A. SESSIONS MEET IN HAVANA AND MEXICO

Speeches and proposals show international concern with the architect's role in a period of increasing urbanization, industrialization and population

*The following report of the U.I.A. sessions in Havana and Mexico City is based on dispatches sent to the RECORD from Wes Perry, of McGraw-Hill World News. Mr. Perry, the only American journalist covering the Havana sessions, was unfortunate enough to attract the attentions of the Cuban secret police. His offense, as nearly as he could gather, was conversation with a “counter-revolutionary” duly enrolled at the congress. He was subjected to a five-hour interrogation, personal and room searches, 24-hour room arrest, and confiscation of his papers. An apology was later tendered; his papers, except for passport, were not returned.*

This year's biennial meeting of the Union Internationale des Architectes was held in two sessions. The first, held in Havana, September 28 through October 3, was the VII Congress of the U.I.A. The United States

was not represented there, following a decision by the American Institute of Architects not to participate because of the break in diplomatic relations between the United States and Cuba. The second session, held in Mexico City, was the International Symposium on Architecture, and the meeting of the U.I.A. assembly; i.e., the official meeting of the full membership. A delegation from the United States attended.

### Havana

The Havana session was unfortunately marred by an infusion of political propaganda into what was to have been an architectural discussion.

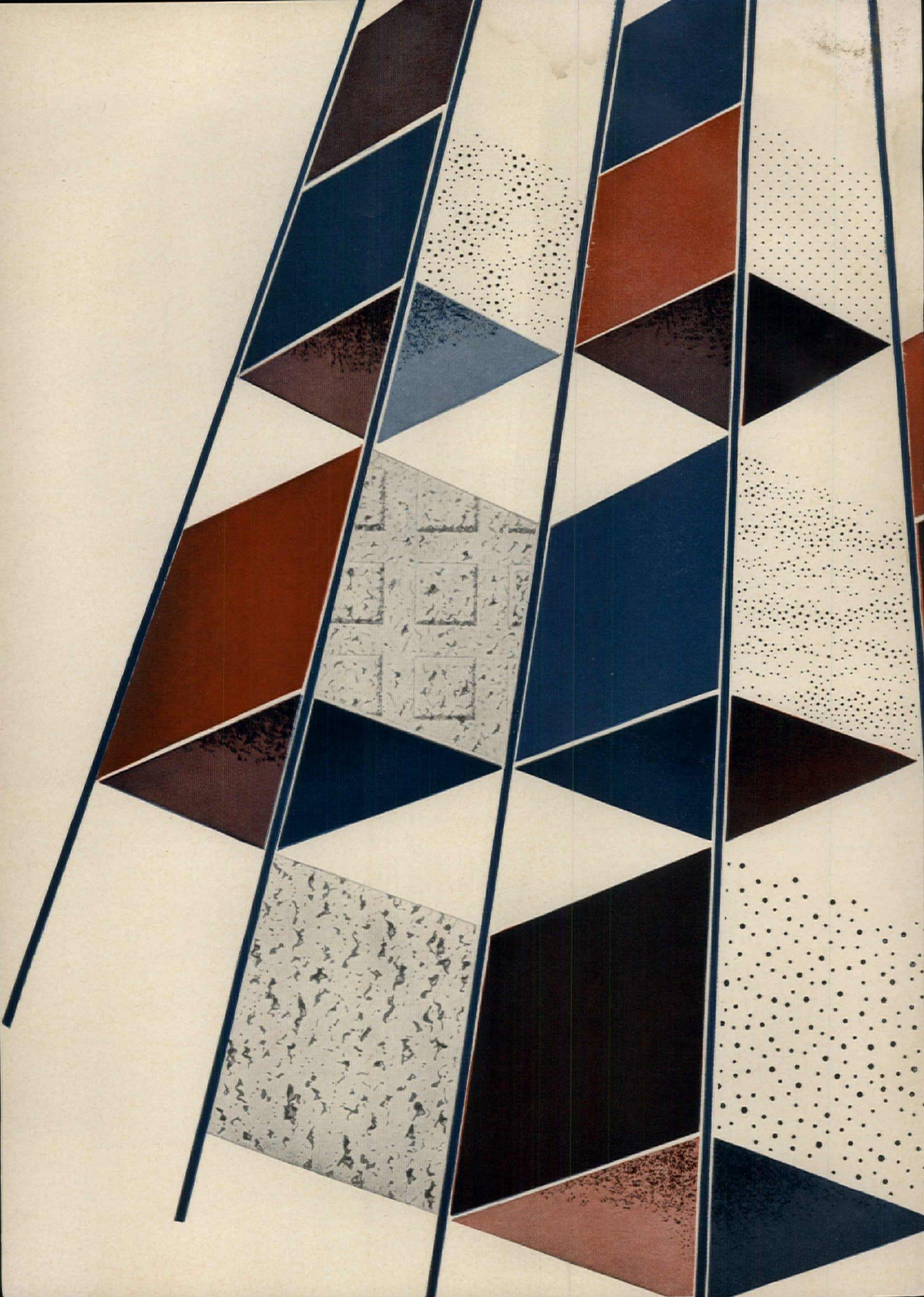
The work sessions of the meeting were divided into four categories: regional planning, housing, building techniques and neighborhood units. The emphasis was on relating these points to the economies of underde-


veloped countries. But despite continued exhortation from many of the delegates not to stray from the discussion of architecture, the sessions were largely dominated by speakers expounding the superiority of socialist countries in understanding and solving the problems of housing their citizens.

Neither was Sir Robert Matthew, president of the U.I.A., able to bring the meeting into focus, though he issued sharp, if tactful, reminders of the business at hand.

Commenting on the First International Meeting of Professors and Students, at which architectural discussion was overwhelmed by socialist polemic, Sir Robert said: “We have come here to talk about the problems of architecture and urban planning, not politics. We are grateful to the Cuban architects, the Cuban president and to Premier Fidel

*continued on page 26*





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▲ The 361st reason is a comfort to many a harassed architect. This is the huge body of *experience*—the lengthiest and most varied in the field—that the Celotex Corporation and Acousti-Celotex distributors have built up in solving acoustical-esthetic ceiling problems. *This experience is yours for the asking.* For free ceiling consultation service, specifications, samples, find your Acousti-Celotex distributor in the Yellow Pages—then call him.



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# U.I.A. in Havana and Mexico

continued from page 23

Castro for clarifying this point well. The major part of the students have come from very far to discuss the urgent problems of preparing and training architects and to interchange experiences and ideas, but few have had an opportunity to do so. Precious time was employed to utilize the speaker's platform for political speeches. There are many platforms for politics, but there are very few, almost none at the international level, for architecture, and we ought to take advantage of all those that are available to us. We cannot, nor will we, associate the name of the International Union of Architects in any way with political resolutions. . . ."

There was, nonetheless, an unauthorized attempt to associate the U.I.A. with political resolutions. A mimeographed document purporting to be the general conclusions of the Havana meeting was distributed to the delegates by the Cuban organizing committee. These conclusions were to be submitted for approval to the assembly in Mexico City. There, however, a Canadian architect rose to object to two of the included clauses. The first, under housing resolutions, called for "the abolition of land speculation by means of public ownership of land." The second, under construction technique resolutions, called for "public ownership of, or effective democratic control over, all the fundamental means of production." The executive commit-

tee had not, as a matter of fact, approved either of these clauses for submission to the assembly. Sir Robert did say that the other conclusions reported in this document, most of them concerning the obligations of the modern architect to his society, were substantially those which would have been submitted.

In any event, the official list of general conclusions, which were to have been shipped from Havana, did not arrive in Mexico City, and no vote was taken on the results of the first session.

## Mexico City

The meetings in Mexico City were more firmly fixed on architecture, though no less concerned with the relationship of the architect and contemporary life. Speeches and committee reports display a striking recurrence of such words as "crisis," "urbanization," "industrialization," and "population explosion."

Sigfried Giedion, speaking on "Continuity and Change in the Vocation of the Architect," suggested a desirable architectural response: "To recreate a universal outlook, it is necessary to restore something fundamental to the architect's vocation: the change away from specialization to an awareness of the overall pattern. . . . [The new type of specialist] must have at his disposal both the microscope and the aerial photograph."

Constantino Doxiadis considered

the architect the logical, if not the perfect, person to attack contemporary problems of planning and housing. Logical because of his early recognition of the problems, because of his courage in facing them at all, and because he is trained to "conceptualize new solutions." Mr. Doxiadis indicated that before the architect can assume the responsibility of dealing with these matters, there are many areas of knowledge with which he must familiarize himself. He may even have to reorganize his profession. Mr. Doxiadis proposed a 10-year program of study and action by the U.I.A. for mobilizing its membership to: "(1) participate in the proper conception of problems and programs for the universal city; (2) redefine the role of his own profession; (3) train himself for this new role; (4) educate as many others as necessary; (5) create a special class of assistants, as the task is too big for him; (6) establish a pyramid of experts to take over this great task."

Vladimir Kaspé put forward a proposal in behalf of the Mexican delegation: "The establishment of an international institute for promotion, study and experimentation in procedures, techniques and building materials." The Mexican delegation further suggested that such an institute might be associated with, or sponsored by, the United Nations or UNESCO.

This proposal reflected a concern, often expressed at both sessions, for international exchange of information, particularly for the benefit of underdeveloped countries short of both architects and researchers. The concern was reflected also in the suggestion of R. Buckminster Fuller, first introduced by him at the London U.I.A. meeting in 1961, for the establishment of a world design data center. The center would accumulate and organize statistics on population and production.

## Balloting

Costas Kitsikis of Greece was elected to the only vacancy on the executive board: the vice presidency which had been held by Carlos Ramos of Portugal, whose term had expired.

Delegates approved the continuation of Pierre Vago as secretary general "by unanimous applause."

Delegates also selected Prague as the site of the 1967 congress. The U.I.A. will meet in Paris in 1965.



U.I.A. members and speakers at Mexico City: (above left) Constantino Doxiadis; (above center) Sir Robert Matthew, president of the U.I.A.; Jaime Torres Bodet, Mexico's Minister of Education; Hector Velasquez, president of the International Symposium; (above right) Sigfried Giedion; (below left) Felix Candela; (below center) Mr. Velasquez and Alvar Aalto; (below right) Enrique Cervantes, vice president of the symposium, and R. Buckminster Fuller



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## BOOK LIST FOR WHITE HOUSE INCLUDES ARCHITECTURE

At the request of the First Lady, a list of books to fill the shelves of the White House library has been compiled by a committee headed by James T. Babb, librarian of Yale University. All of the titles, 1,760 of them, have been chosen for their contribution to an "understanding of the American national experience." All but a few are by American authors. The remaining few are commentaries on American life as seen by authors from abroad.

The library will serve as a working reference source for the President, his family and members of the Cabinet. The collection will remain in the White House.

Although the largest category by far is general history, 76 of the titles selected fall in the list headed Art and Architecture.

The White House library, at the time the list was announced, already

owned 400 of the suggested books. The remainder, Mr. Babb says, will be acquired by donation, both of volumes and of funds. Gifts of money should be made to The White House Historical Association, Inc., and may be sent to William V. Elder III, Curator, The White House, Washington, D.C. Each book will be given a bookplate bearing the name of the donor. Gifts of money will be applied to the purchase of specific books, and the donor's name placed in these.

Gifts are tax deductible.

Because the list is not entirely final, being subject to change both as to title and particularly as to edition, Mr. Babb has asked that books not be sent directly to the White House. *"All communications about the gift of books should be addressed to me. Please do not send any books until I have written you that they are needed. We want only the exact editions listed and the volume must be in fine physical condition."* (Mr. Babb's italics.) Inquiries may be directed to James T. Babb, Box 1604A Yale Station, New Haven, Conn.

The Art and Architecture titles follow.

Dunlap, William. "A History of the Rise and Progress of the Arts of Design in the United States," new ed. C. E. Goodspeed, 1918. 3 vol.

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Mumford, Lewis. "The Brown Decades," 2d rev. ed. Peter Smith, 1955.

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*continued on page 36*



Western Pennsylvania State School & Hospital; Cannonsburg, Pa.  
Celli-Flynn, McKeesport, Pa.; Archt. & Engs.  
John McShain, Inc., Baltimore, Md.; Contr.



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To achieve these effects in the new American Savings and Loan Association building in Whittier, California, Architect Kurt Meyer, AIA, took imaginative advantage of Huewhite's ability to transmit as well as diffuse light.

Huewhite panels, measuring 4' by 6' are set at the edge of the floor slabs, 4½' out from the main window wall and covering the upper half of the windows on the floor below. Huewhite gently diffuses virtually all entering light, yet allows occupants an unobstructed view of neighboring hills and the distant Pacific coast.

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Available plain, wired or corrugated, Huewhite® translucent glare-reducing glass is another member of the exciting family of architectural glasses available from ASG, the only U. S. producer of all three kinds of flat glass—plate, sheet and patterned.

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BY DAY (above), sunscreens form broad horizontals that create feeling of mass and solidity, become major element in building's design vocabulary.

AT NIGHT (left), Huewhite panels gleam softly, transmitting light from inside building and from concealed lighting fixtures.

GLARE REDUCING SUNSCREENS (right) and full height window walls form galleries on all four sides of the building. Huewhite panels are attached to exterior mullions of anodized aluminum. Illumination from angled lights (lower right) is "bounced" from 45° ceiling soffit and through sunscreens.



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"For example, by installing a total electric heating and cooling system, we were able to save approximately \$7000 in initial costs alone. And as far as maintenance is concerned, we haven't put in a single hour on it since our plant opened last year!

"In addition, the plastic-coated paper we manufacture here for food packaging is a new product which we expect to catch on fast. When it does, we'll have to expand. And this, of course, will be much simpler for us because our electric heating and cooling system permits complete flexibility and easy installation at a lower cost."

For architects and consulting engineers, total electric space conditioning is the modern method of combining heating, cooling and lighting into one efficient operation with a single source of energy. In many cases, for example, recommended lighting levels can provide a substantial part

of the heat as well, and thus reduce the size and cost of heating equipment.

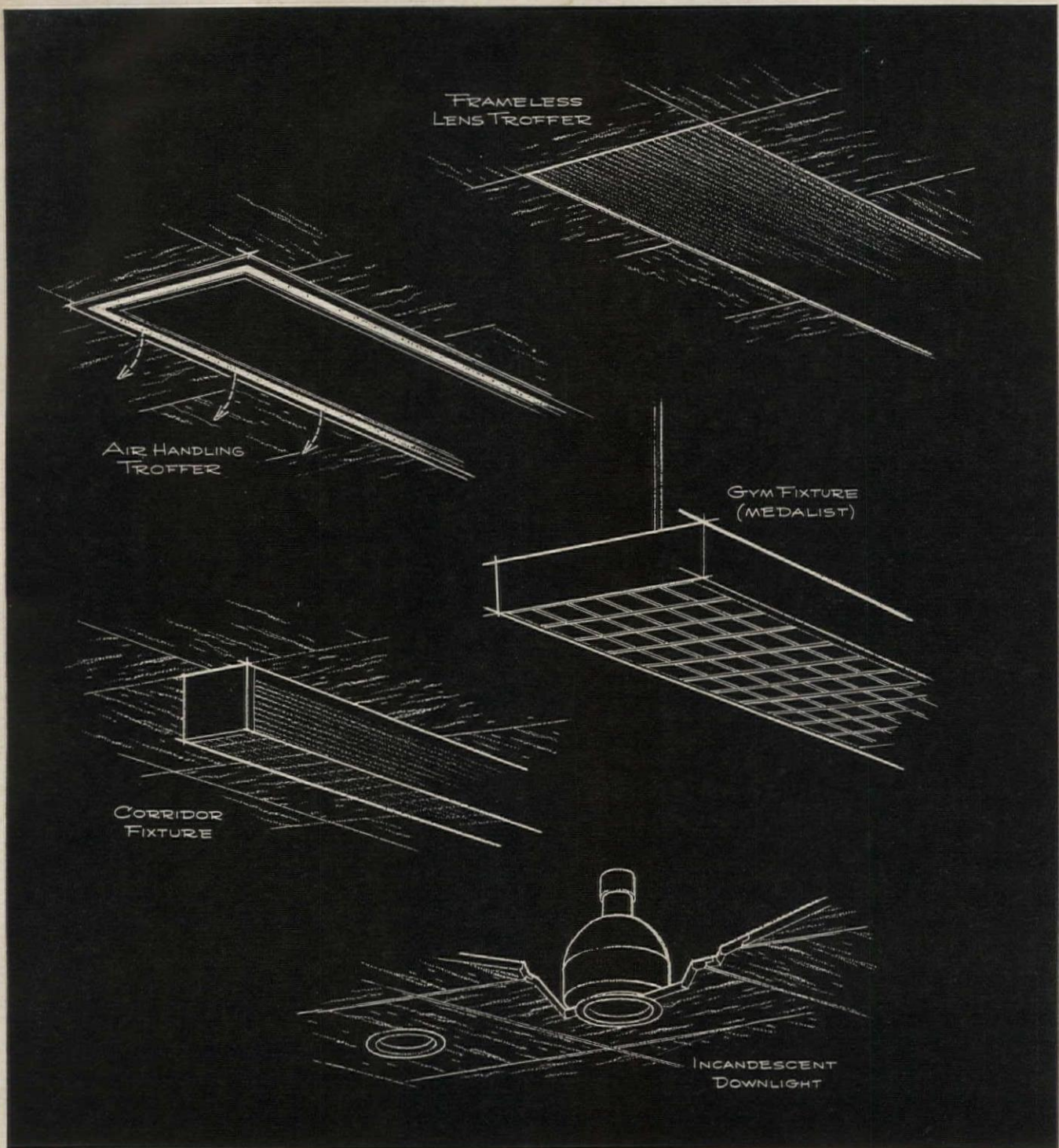
If you want to know how total electric space conditioning can help you in the design of industrial and commercial buildings, contact your local electric utility company. They will welcome the opportunity to work with you.

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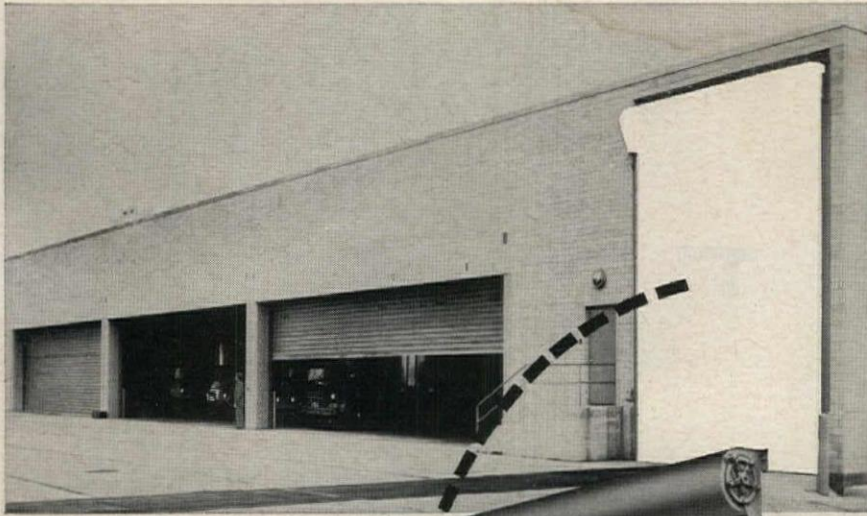
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## White House Library

continued from page 29

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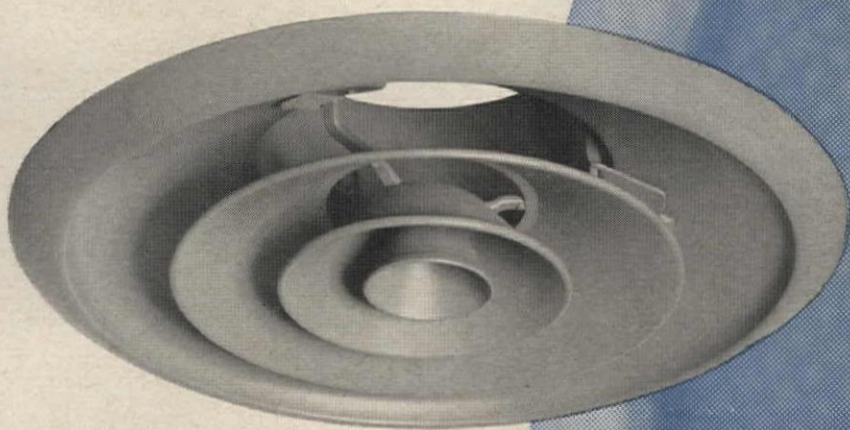
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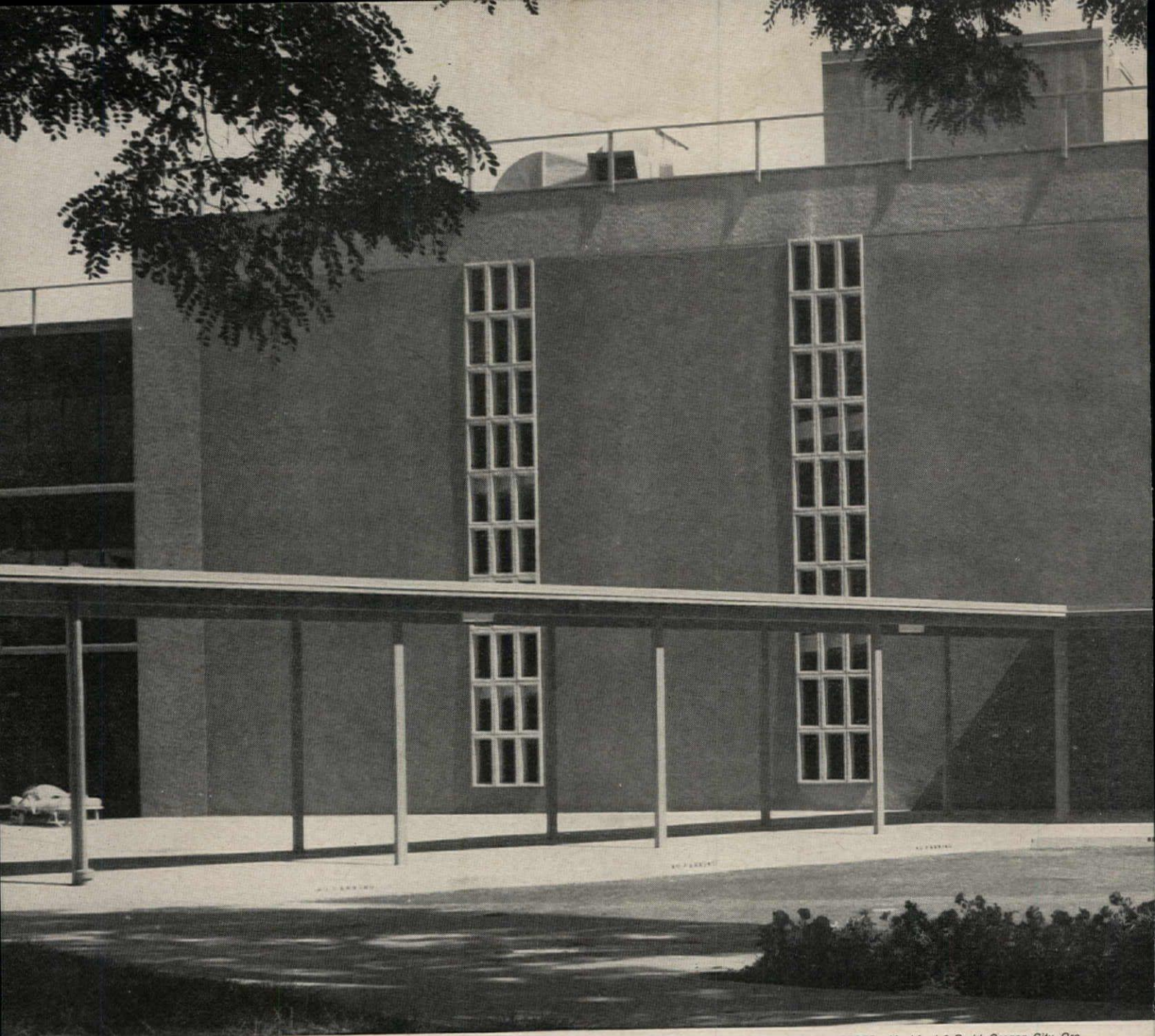


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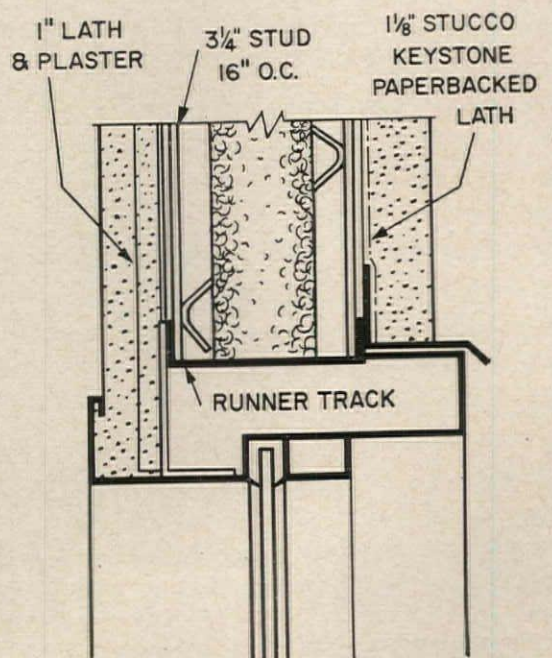


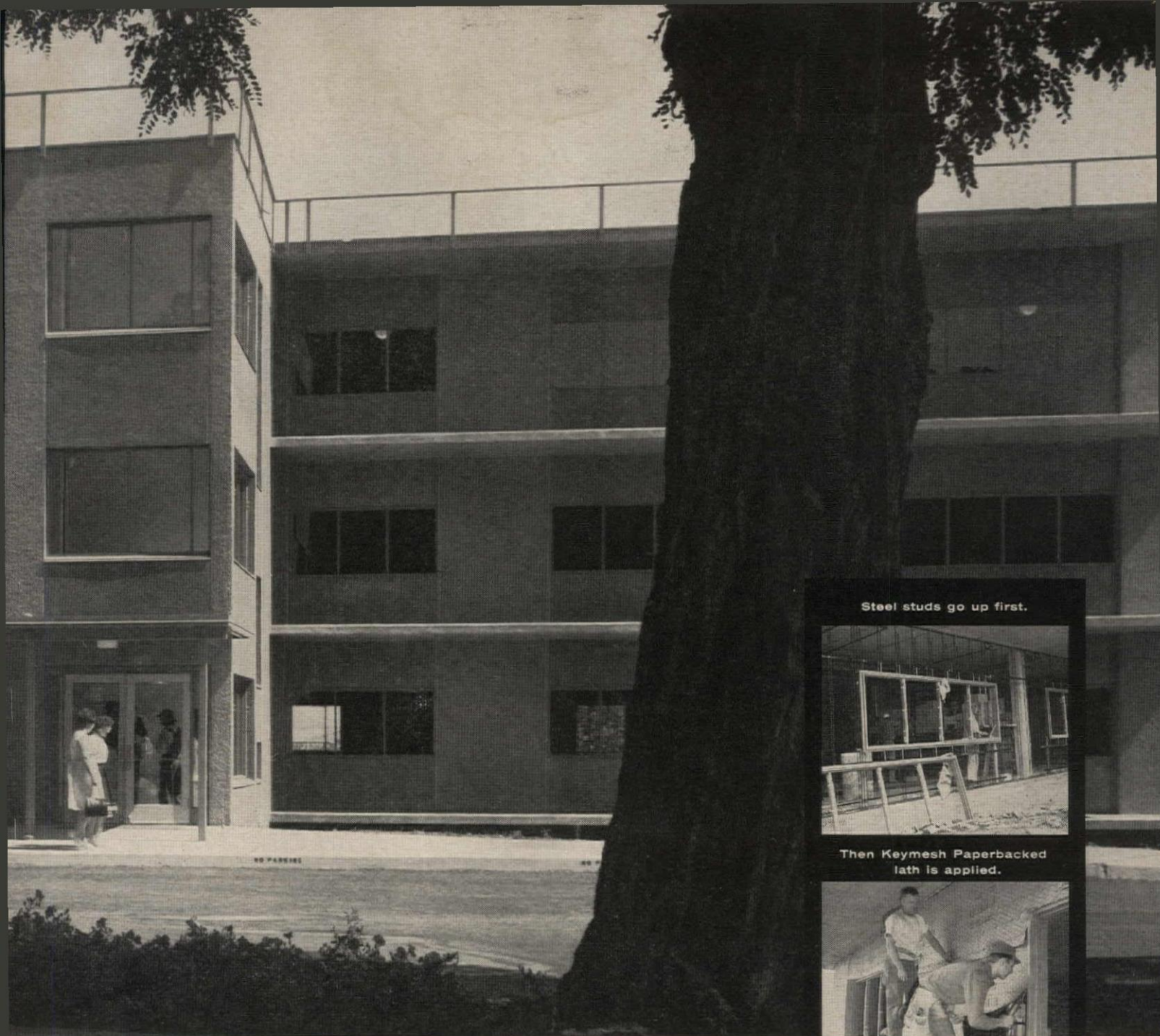
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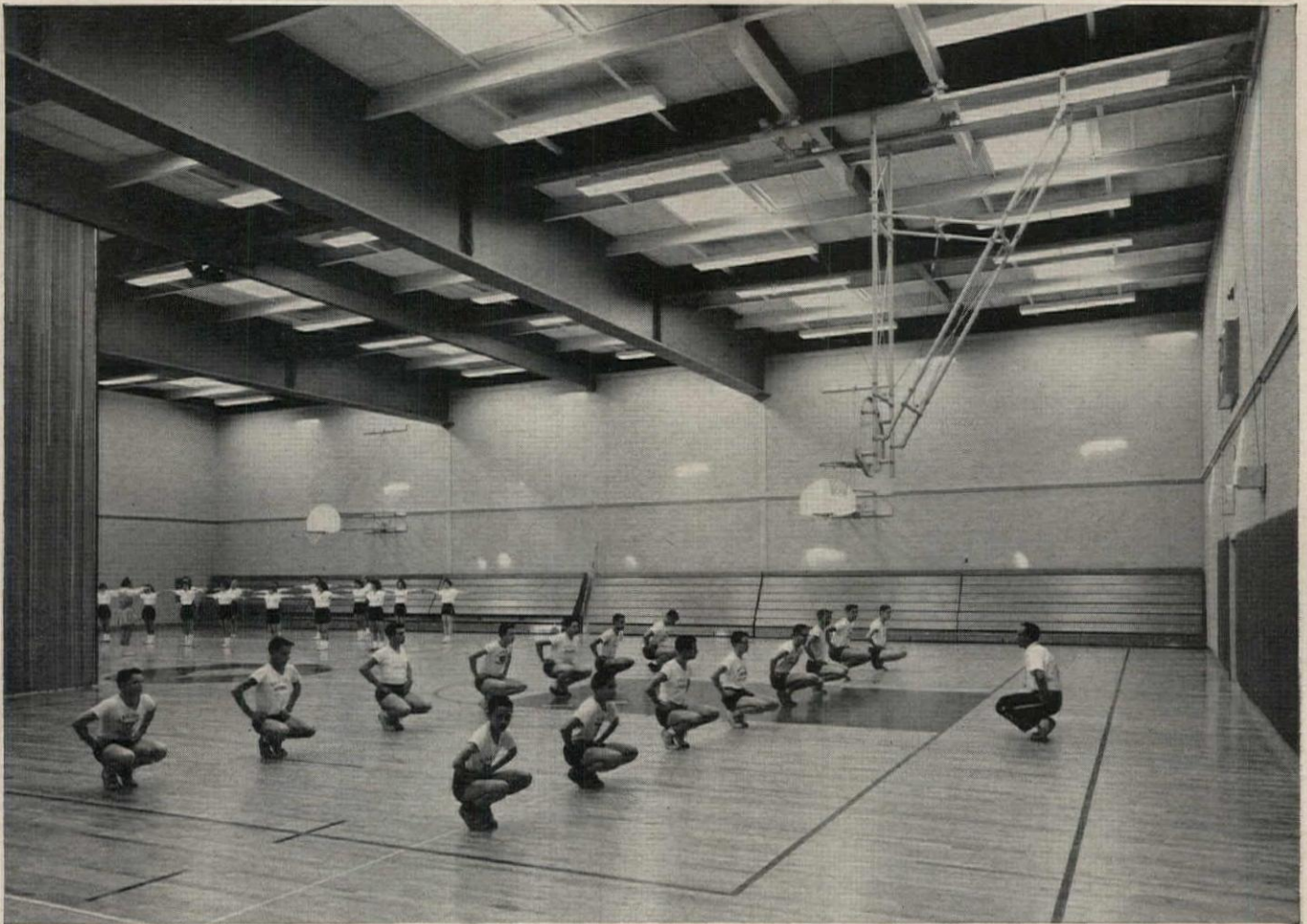
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**R**  
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Outer Concourse, Pennsylvania Station  
—from "New York Landmarks"



## The City

COMMUNITY AND PRIVACY. *Toward a New Architecture of Humanism.* By Serge Chermayeff and Christopher Alexander. Doubleday & Company, Inc., Garden City, N.Y. 236 pp., illus. \$5.95.

Mr. Chermayeff and Mr. Alexander are concerned, as are so many others, with the modern assault on man's senses, and ultimately soul, committed by the modern city. The assault, they maintain, is not merely psychic, but physical, and they cite noise, smell and physical contact as the malefactors. In their opening chapters, they catalog the failures of the 20th century in a litany familiar to any reader of recent books about our cities and our culture: the lack of civic form, dispersed planning, the disappearing wilderness, the automobile's presumptuous use of space, and finally, man's loss of privacy. It is this last problem to which they address themselves.

Seeing the automobile and noise as civilized man's most menacing *bêtes noires*, they conclude that "only physical isolation against the dangers and pain of invasion—interruption by people, traffic and noise—can inhibit chaos and confusion." Physical isolation, they say, can be achieved even in crowded cities. It could be achieved by following two general rules of urban design.

First, the strict preservation of functional zones, "domains," ranging from "Urban-Public" to "Individual-Private." Second, control of the points at which these zones join.

The authors have illustrated this approach by considering the "Group-Public" zone, where public roads and services join residential neighborhoods, and "Family-Private," where group demands meet those of the individual. They have provided, further, a suggested method of analysis of these interactions, and a neighborhood design which emerged from the application of this method.

It should be said, in fairness to the prospective reader, that Mr. Chermayeff and Mr. Alexander use a rather special vocabulary in writing this valuable study. But valuable it certainly is. The authors speak plainly enough when they say, "The hour is late."

## New York

NEW YORK LANDMARKS. Edited by Alan Burnham. Wesleyan University Press, Middletown, Conn. 430 pp., illus. \$12.50.

For lovers of New York City—natives and visitors, architects and laymen—this is a picture book plus. It provides, to start with, large photographic plates of about 150 landmarks. It is in addition a guide preservation.

Mr. Burnham's collection is based on the Municipal Art Society's list of New York's architecturally notable structures and buildings, which should be preserved in either the national or the municipal interest.

Like all such lists, this one, too, is bound to disappoint on occasion. For one thing, none of the landmarks included were built after 1930. Since the society's battle is for preservation, however, this is fair enough. New buildings are not in danger; older buildings are. At least one of the buildings listed—the Pennsylvania Station—is even now being demolished. Others are threatened.

It might happen, sadly, that "New York Landmarks" will turn out to be a memory book rather than a preservation guide.

## Candela

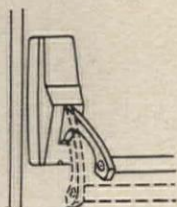
CANDELA: THE SHELL BUILDER. By Colin Faber. Reinhold Publishing Corporation, 430 Park Ave., New York 22. 240 pp., illus. \$16.50.

Mr. Faber, a British architect working in Felix Candela's office, has collected and commented on most of the important thin shells designed and constructed by Candela since his first, built in 1949. Such a collection comprises a great many thin shells

*continued on page 50*

# The new EXITER\* by Russwin

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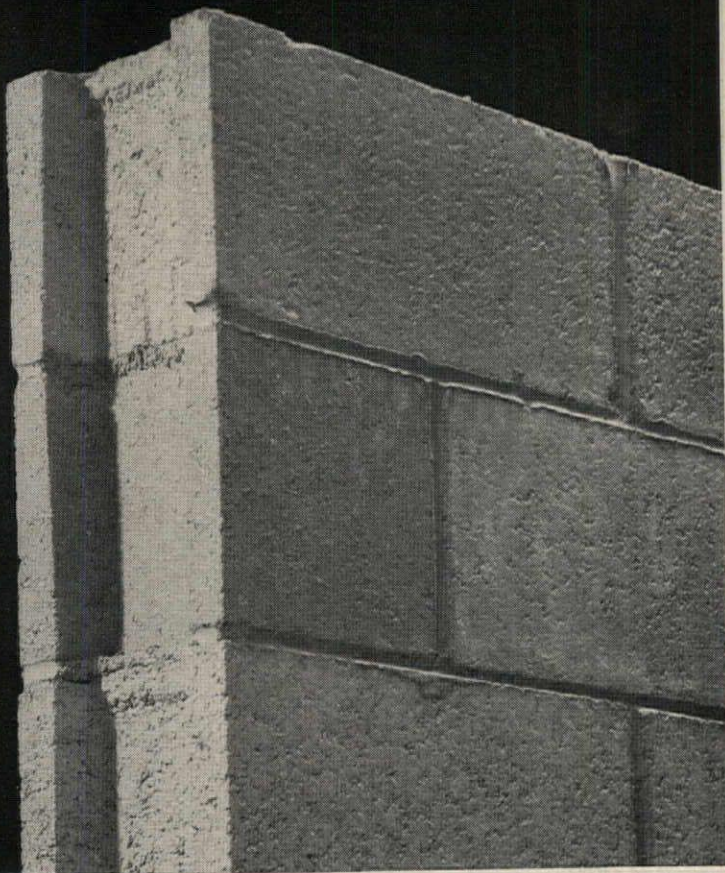
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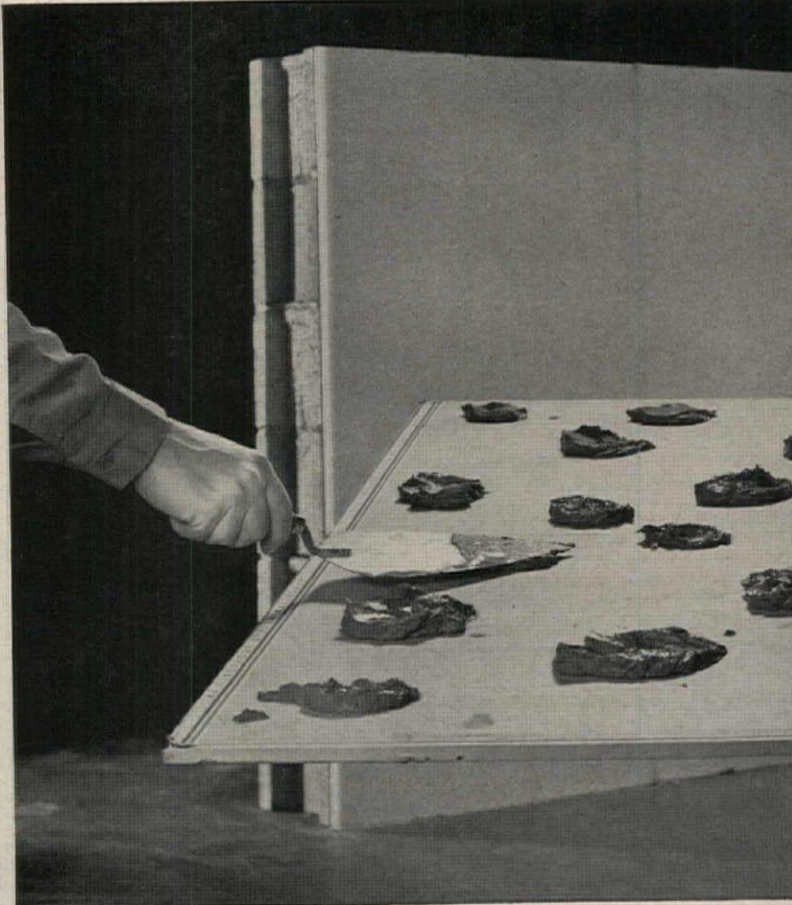
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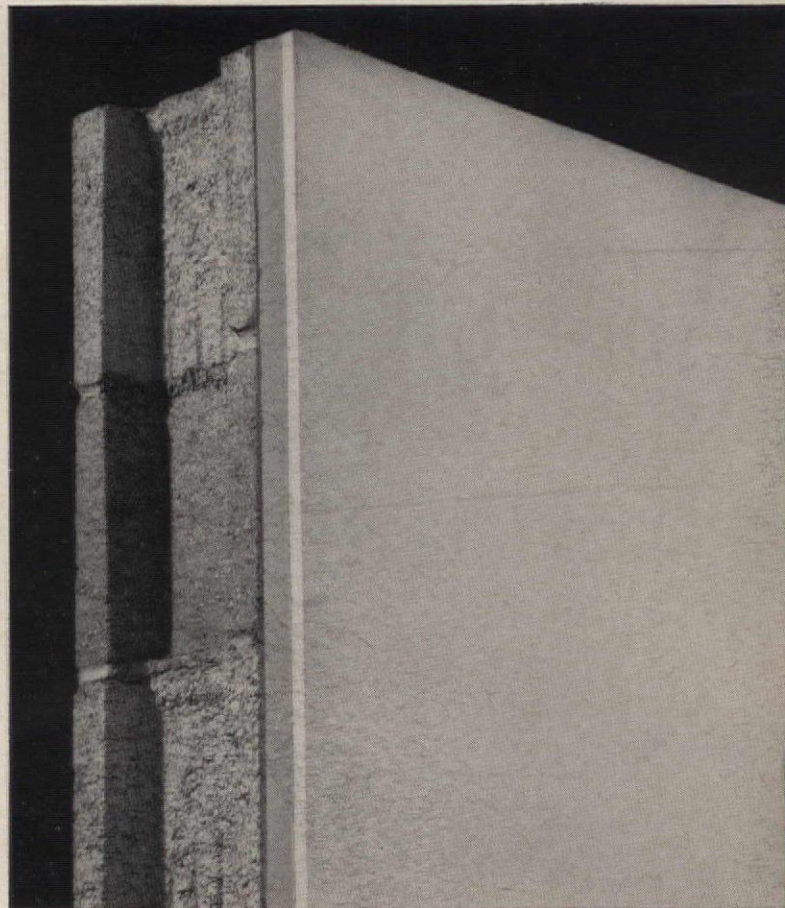
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**Architect**—William B. Tabler, New York, N. Y.

**Consulting Architects**—Harrison & Abramovitz, New York, N. Y.

**Engineer**—Consentini Associates, New York, N. Y.

**Builder**—Uris Buildings Corp., New York, N. Y.

**Plumbing Contractor**—Wachtel Plumbing Co., Inc., New York, N. Y.

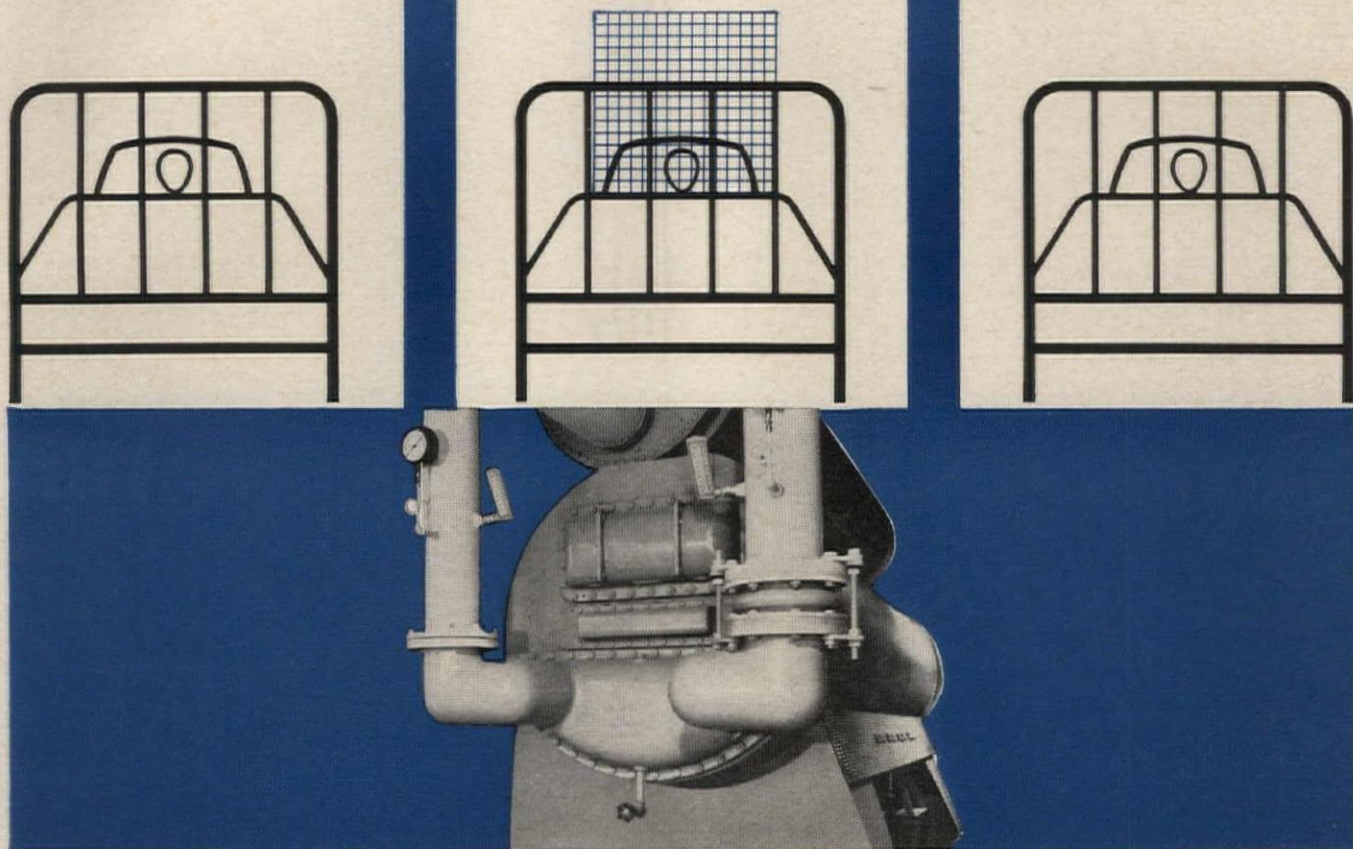
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**KOHLER OF KOHLER**

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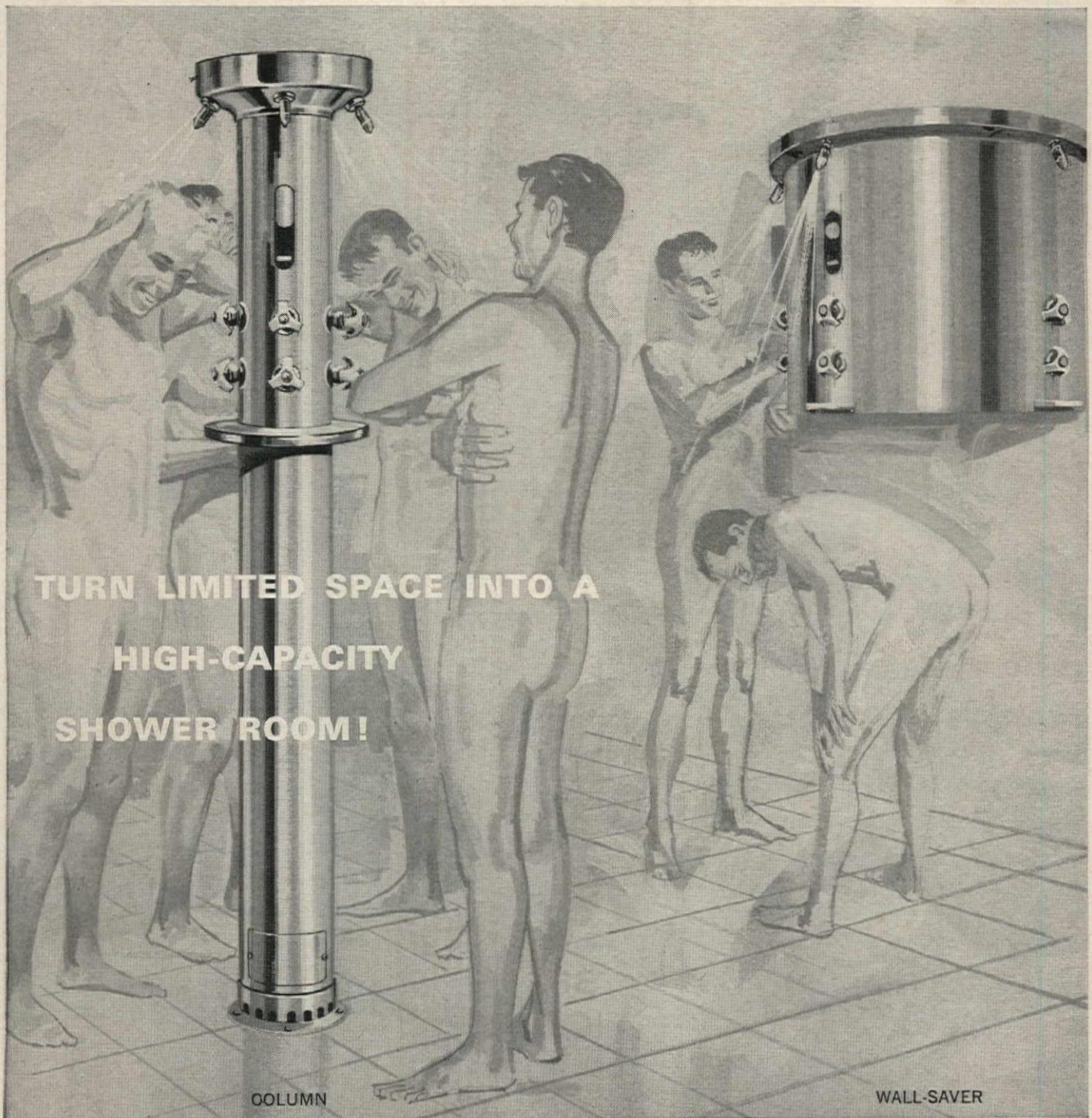


## Gas-powered Carrier Air Conditioning isolates airborne germs, too!

The new Community Hospital in Syracuse, N. Y., wanted the comfort of central air conditioning. But conditioned air recirculating from room to room often carries airborne infection. Solution? The Carrier Bypass Weathermaster® system. A Weathermaster unit and separate exhaust in each room permit individual control and removal of conditioned air before it travels into another room. And all at rock bottom operating costs because Carrier Air Conditioning uses the economical, safe, clean fuel—Gas. For more information on the unbeatable team of Carrier and Gas, call your local Gas Company. Or write Carrier Air Conditioning Company, Syracuse 1, N. Y. AMERICAN GAS ASSOCIATION, INC.

For heating and cooling  Gas is good business

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**TURN LIMITED SPACE INTO A  
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SHOWER ROOM!**

COLUMN

WALL-SAVER

## BRADLEY GROUP SHOWERS

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A wide variety of types and sizes — from 2-person Wall-Savers to 6-person Column Showers — gives you unusual layout flexibility, lets you make maximum use of every inch of floor space, and assures the most efficient traffic flow.

Bradleys save in other ways, too: water, maintenance time, and installation costs — a shower with one set of plumbing connections serves as many as 6 men.

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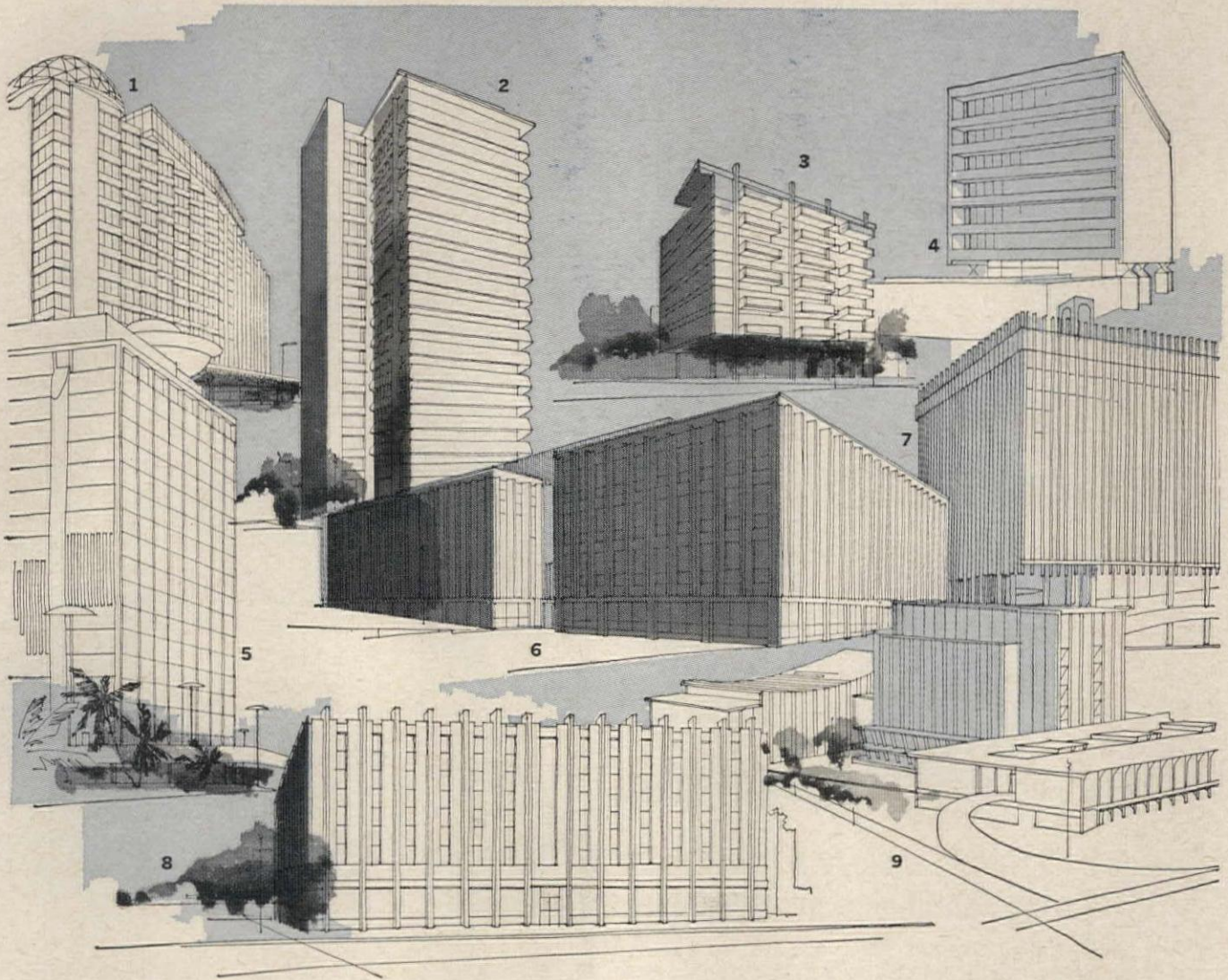


63-158R

**BRADLEY WASHFOUNTAIN CO.**  
2227 W. MICHIGAN STREET  
MILWAUKEE, WISCONSIN

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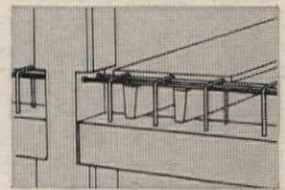
## PRESTRESSED CONCRETE

gives you LONG SPAN FLEXIBILITY with  
the ECONOMY OF CONCRETE in multi-story buildings

Every day, in project after project, concrete is proving to be the most economical material for multi-story buildings. This inherent economy and the ability of prestressed concrete to span long distances gives you the freedom you need to design buildings that meet today's requirements—and still keep within tight budgets. With longer spans columns are eliminated and costly remodeling or obsolescence is thus avoided when changes in interior arrangements are required. Many successful framing techniques have been developed. The buildings above represent a wide variety of structural concepts using prestressed concrete.

**1**—Capp Towers Motor Motel, Minneapolis. Architects: Ackerberg & Asso. Engineers: Ross Bryan. **2**—First Federal Savings & Loan Association Building, Atlanta. Architects: Tomberlin-Sheetz. Engineers: Chastain and Tindel. **3**—Grosvenor House, Winnipeg. Architects: Liblings, Michener & Asso. Engineers: Cazaly Asso. **4**—American Republic Insurance Building, Des Moines. Architects: Skidmore, Owings and Merrill. Engineers: Paul Weidinger & Asso. **5**—Ala Moana Building, Honolulu. Architects: John Graham & Co. Engineers: Alfred A. Yee

& Asso. **6**—Charlottetown Office Building, Charlotte, N. C. Architects: A. G. Odell, Jr. & Asso. Engineers: A. K. Durbachs. **7**—Exhibition and Parking Facility, San Diego. Architects-Engineers: Tucker, Sadler & Bennett. **8**—Doctors Building, New Haven. Architects-Engineers: Westcott & Mapes. **9**—Toronto Parkway Vocational School, Toronto. Architects: R. P. G. Pennington. Engineers: K. H. Hatch. For information on framing systems, spans or connections on any of the buildings illustrated, write the Prestressed Concrete Institute.



*Illustrated is just one of many methods of assembly of precast elements used in multiple story construction. Cast-in-place concrete is used to complete the connection.*

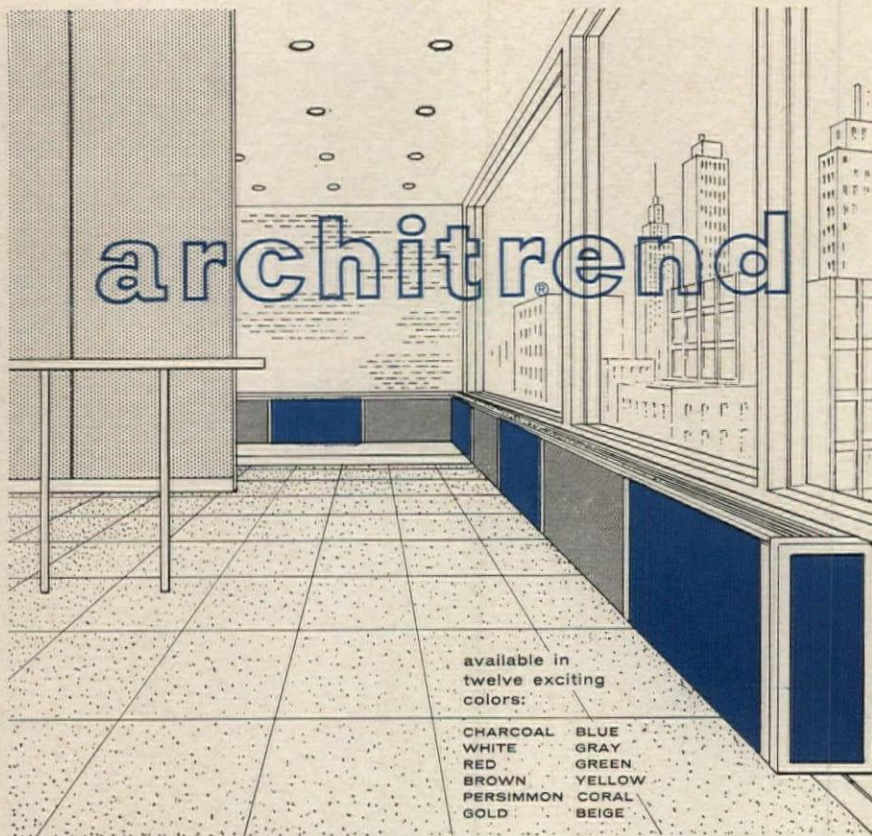
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## NEW DESIGN VERSATILITY

in a prestige enclosure for perimeter heating featuring continuous anodized aluminum grilles

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### FEATURES INCLUDE:

**COLOR:** Choice of 12 baked enamel colors. **ENCLOSURE SIZES:** Standard lengths of 2', 3', 3' 8", 4', 5', 6' x 4 1/4" to 5 1/4" depth and 13 1/2", 20 1/2" and 25" height. **TOP GRILLE:** Heavy duty extruded aluminum with anodized finish in continuous lengths up to 16' 6". Tamperproof construction. **FRONT PANELS:** Baked enamel over 16-gauge steel. Vertical dividers and end cap trim matches Top Grille. **INSTALLATION:** Exclusive mounting strip insures rapid, level application. Rugged inside panel supports keep it up. Simple screw, bolt and snap spring assembly. No exposed bolt or screw heads. **ALSO:** Thirty choices of enclosure and element, and matching accessories.



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## Required Reading

continued from page 42

indeed—vaults, slabs, cones, and especially hyperbolic paraboloids. Mr. Faber has provided illustrations in abundance, with photographs, drawings and plans. He has also provided architectural comment, structural descriptions, and a number of engineering analyses of specific shells.

Architecturally, the implications of Candela's shells are somewhat disturbing, as Ove Arup gently points out in his otherwise sympathetic foreword. Candela's engineering and Candela's (or other's) architecture are not always happily married. Mr. Faber allows that the "magic" of the shells disappears "after 'architecture' has been added." And, in fact, the most impressive photographs shown here are construction shots.

Architectural doubts aside, thin shells are exciting, as form and as structure. And here they are handled by an acknowledged master of the genre.

The structural information, while unlikely to interest the sophisticated engineer, may be of help to students.

## Latin America

ART IN LATIN AMERICAN ARCHITECTURE. By Paul Damaz. Reinhold Publishing Corporation, 430 Park Ave., New York 22. 229 pp., illus. \$15.

The author's intention was to show the Latin American fusion of a vigorous art with contemporary architecture. The book is beautifully illustrated by more than 400 photographs, including 16 in color. It is a companion volume to "Art in European Architecture."

Following a preface by Oscar Niemeyer, who discusses the synthesis of the arts, the book is organized into two sections:

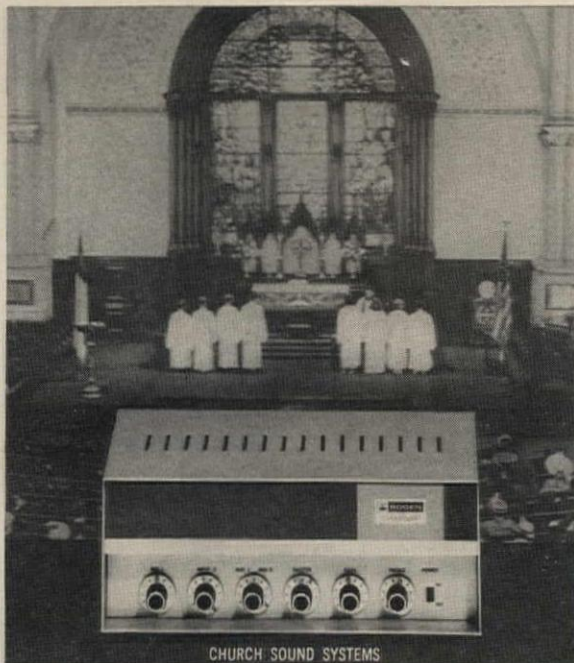
Part I is an historical survey of Latin American arts and architecture, from Pre-Columbian times to date.

Part II presents a wide variety of individual buildings, and the art contained within them, categorized into building-types.

continued on page 60



HOME COMMUND-PHONE



CHURCH SOUND SYSTEMS



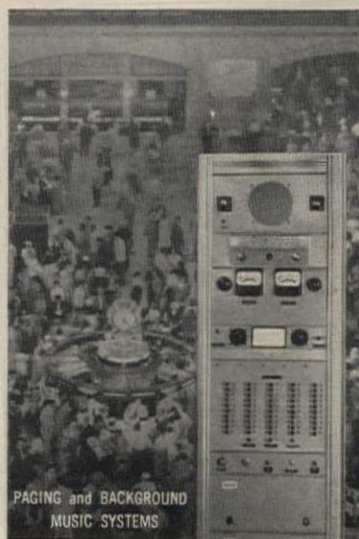
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Company .....  
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City..... Zone..... State.....  
AR-12

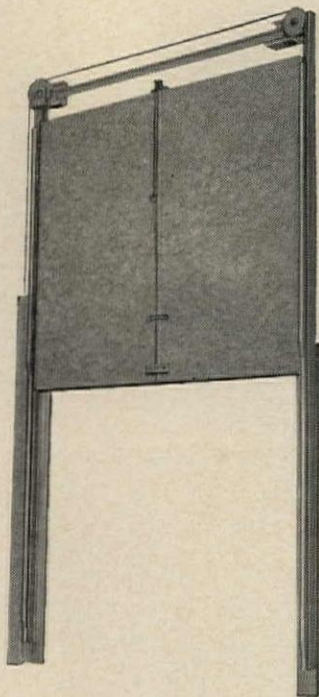
# BOGEN

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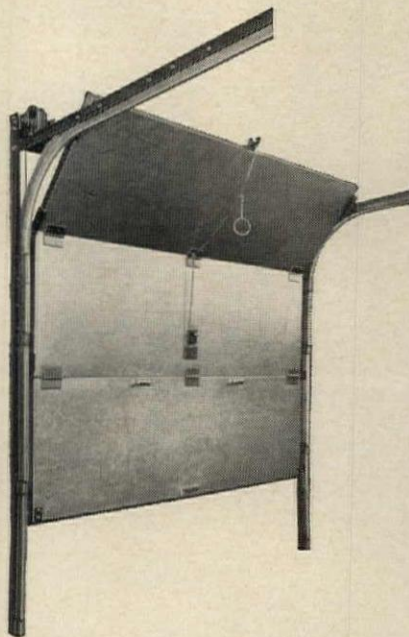
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lightweight, space-saving JAMCO\* doors developed for industrial use:



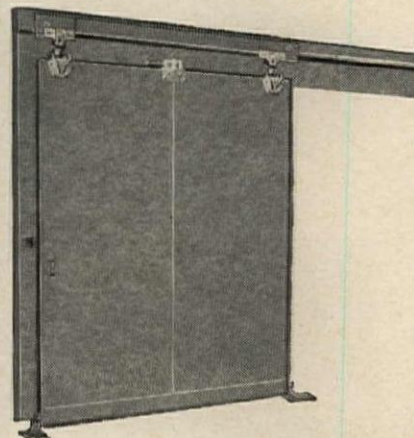
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Fully counterweighted for easy manual operation. Especially suitable for enclosed loading docks. Doorways can be positioned closer together to service more trucks.



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Heavy duty lightweight door for smooth, easy operation. Spring assist opening. Saves space in vestibules, corridors, loading docks. Compact overall dimensions facilitate installation on existing openings.

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- extremely lightweight—only 2" thick
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\*Trademark of Jamison Cold Storage Door Co.

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**STRONGER, SAFER  
NO VISIBLE HINGES  
NO UNSIGHTLY BOLTS OR LATCHES MAR BEAUTY  
NO VISIBLE FRAME**

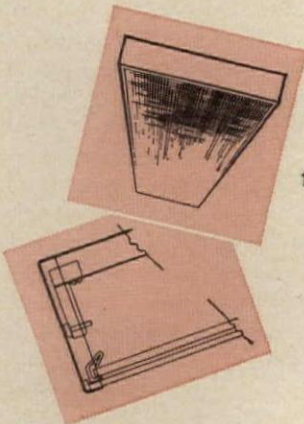
## In Guth Surface and Recessed Luminaires With Solid Lenses and Panels

Lately much is said about the "Frameless Look", yet Guth originated this frameless appearance over ten years ago.

In Guth fixtures the frames are *invisible* once installed in the fixture. These unique frames lie safely and solidly on built-in ledges. New stronger frame-rails are custom-fitted to securely hold lenses and panels in place — no clips necessary. And, Tubular-like design of frame side rails affords greater strength and rigidity.

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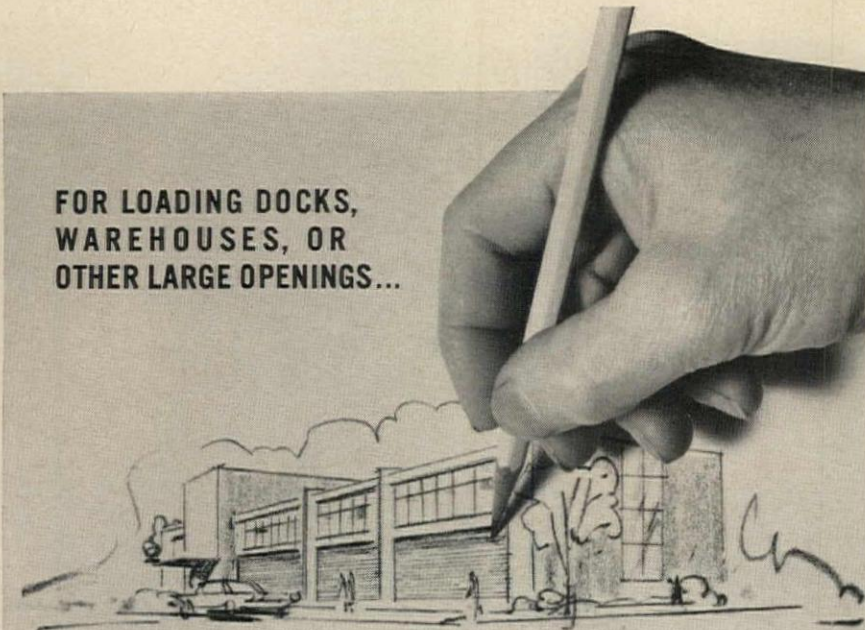
Seeing is believing. Ask your Guth sales engineer to show you a sample. Or, write us for details.

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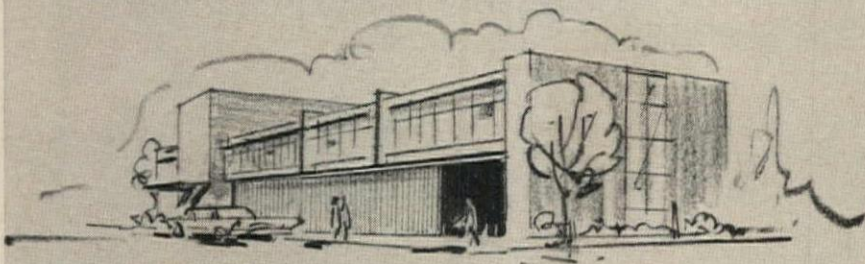


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WAREHOUSES, OR  
OTHER LARGE OPENINGS...



SEVERAL STEEL ROLLING DOORS?



— OR ONE SIDE COILING DOOR?

ARCHITECTS CAN NOW DESIGN TO THE SPECIFIC  
NEED WITH EITHER TYPE COOKSON DOOR

Standard design practice has been to provide for multiple openings for buildings of this type, with permanent post supports or mullions. □ Today, thanks to an important design innovation by Cookson, you can decide whether several steel rolling doors are the best answer to the ultimate use plan, or a single, side coiling steel rolling door serves the user to greater advantage. Both Cookson Doors have their places. □ If the unimpaired single opening (doors up to 125 ft. wide and 40 ft. high—twice this width for bi-parting doors) best fits the requirements, you will find the Cookson Side Coiling design and construction of special importance. It avoids the need for excessive space normally associated with sliding doors. It does not require the cost of heavy trusses for support. Curtain is coiled out of the way to one side in a relatively small box housing. Engineering problems are greatly simplified. Efficient operation either electrically or by hand crank. □ Write for full information, or see Sweet's.



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Required Reading

continued from page 50

Sullivan

THE TESTAMENT OF STONE. *Themes of Idealism and Indignation from the Writings of Louis Sullivan.* Edited by Maurice English. Northwestern University Press, 1840 Sheridan Rd., Evanston, Ill. 227 pp. \$6.50.

LOUIS SULLIVAN. *An Architect in American Thought.* By Sherman Paul. Prentice-Hall, Inc., Englewood Cliffs, N.J. 176 pp., illus. \$4.50, clothbound; \$1.95, paperbound.

In these two books, Sullivan the architect appears in a new role, as social thinker.

Mr. Paul, in a careful study of all Sullivan's writings, has placed him in an intellectual context which includes his contemporaries Whitman, Veblen and William James. While not claiming that Sullivan's impact on social thought was as manifest as that of these others, he does claim for him a place of honor. More importantly, he suggests, it was as an artist that Sullivan reached the matters which in one way or another concerned all these men. It was as an architect (and poet, as Sullivan would insist) that he viewed democracy and democracy's meaning for creative man. Says Mr. Paul: "No American architect has written so cogently or so well, compelling attention as a thinker and literary artist; none has a better claim to a permanent place in our intellectual history."

Mr. English, in his anthology of Sullivan's writings, agrees with Mr. Paul's views of the importance and power of Sullivan's thought. As a poet, he disagrees about the quality of Sullivan's expressive powers. In addition, then, to serving as an introduction to Sullivan's writings, this anthology allows modern readers to grasp the essentials of his thought without encountering all the difficulties of his verbose and flamboyant style.

Among the writings included are selections from "Democracy: A Man-Search," speeches hitherto scattered in the pages of early Midwestern architectural journals, and the previously unpublished essay, "Natural Thinking."

*a story  
worth  
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Witness the modern lounge or powder room . . . bright, beautiful, marvelously sanitary. A vast improvement over the washrooms of yesterday! One reason for this phenomenon: progressive architects and discriminating owners select Bradley Duos — the washfixtures that win

*Compliments  
For  
The House*

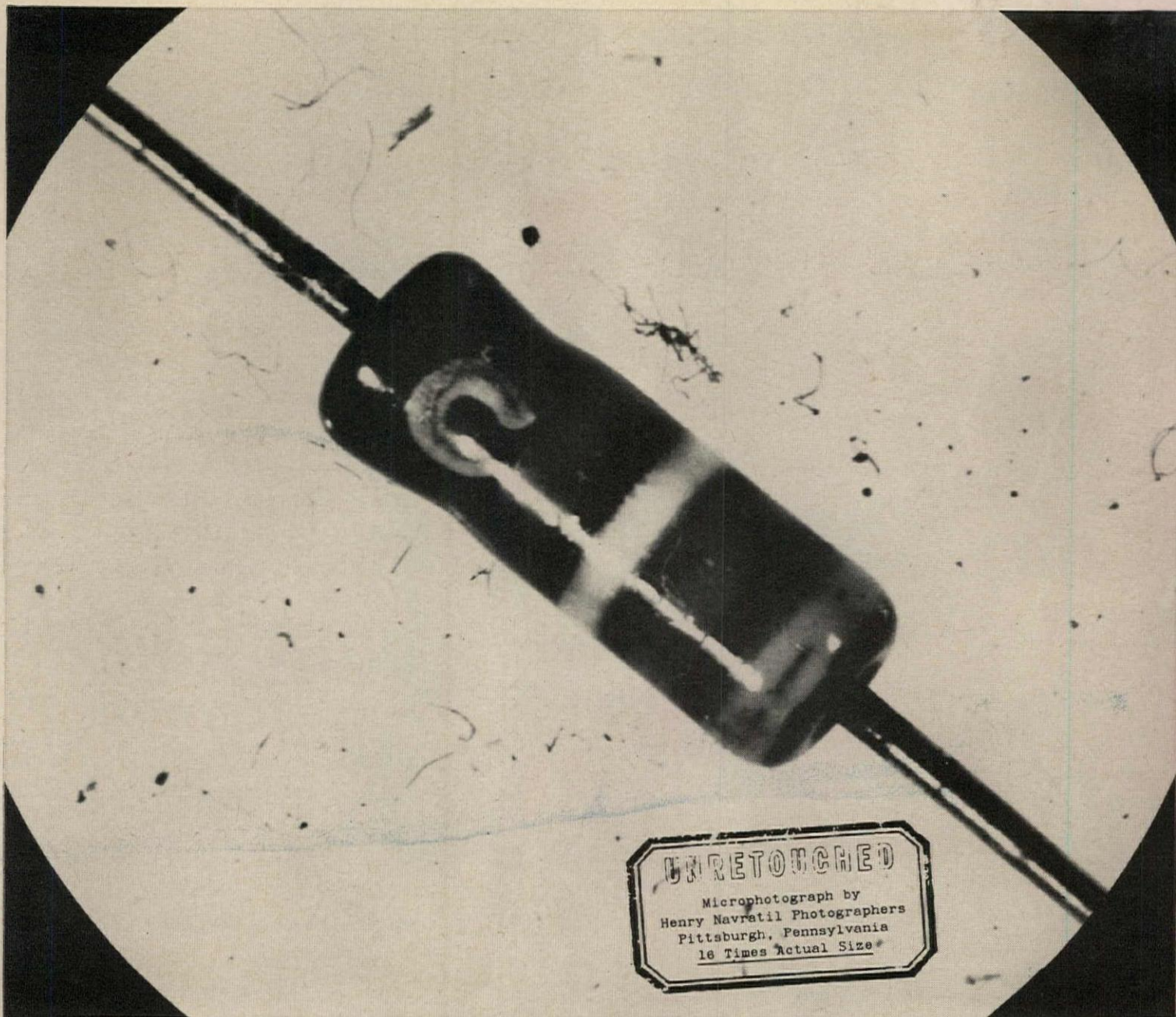
Duos are far more sanitary, because they are foot-operated. Hands touch only clean, tempered water, never germ-laden faucets or taps. And the water spray rinses the bowl *clean*. Space-saving Duos serve two people, yet require no more space than single lavatories. Of course, they are available in a full spectrum of colors to complement the most elegant decor. Bradley Duos are the last word in beauty and sanitation. And the last word of a guest leaving a Duo can well be "How thoughtful!"

Ask your Bradley representative for assistance on specific applications. Or write for latest literature. Bradley Washfountain Co., 2277 W. Michigan Street, Milwaukee 1, Wis.



COUNTER-TYPE  
WASHFOUNTAIN

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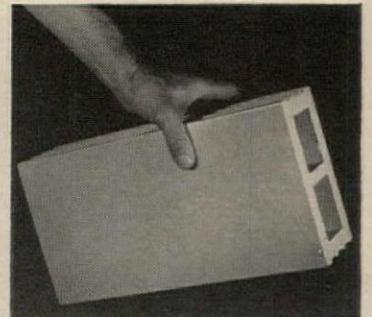


## What's a little dust to a diode?

IT'S A BIG PROBLEM if you're a manufacturer of delicate electronic components like the Clevite Transistor Company of Waltham, Mass. They *have* to control dust. In addition to elaborate air filtering systems, they installed walls of Natco Vitritile in all production areas. Dust cannot settle on Vitritile's hard-finished, non-porous ceramic glazed surface. Vitritile itself doesn't produce dust as porous materials will do. And a simple periodic cleansing with soap or detergent and water is all that's necessary to keep Vitritile attractive and spotlessly clean.

If your manufacturing problems include sanitation, dust, moisture, acids, alkalis, durability, fireproofing or maintenance, Natco Vitritile is your solution.

Natco Vitritile structural clay facing tile is available in three nominal face sizes: 8" x 16", 5 1/3" x 12" and 5 1/3" x 8", in 2", 4", 6" and 8" thicknesses. 44 standard and accent colors provide a wide selection of interior color combinations.



The block of Natco Vitritile shown on right is the 8-W series in the nominal face size of 8" x 16". The production area on the left shows typical installation.

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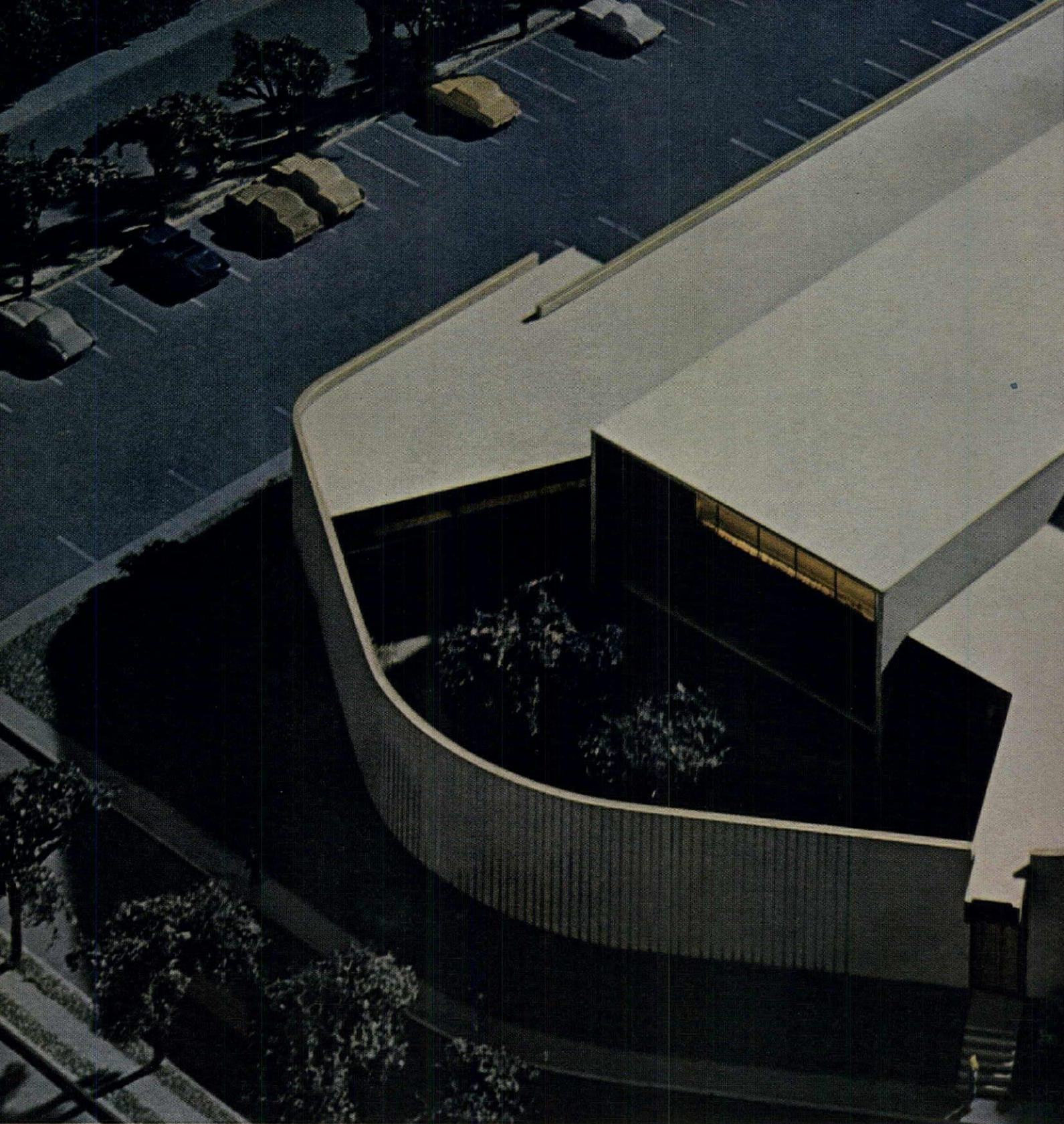
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Republic Steel Corporation  
Manufacturing Division  
Youngstown, Ohio

The Steelcraft Mfg. Company  
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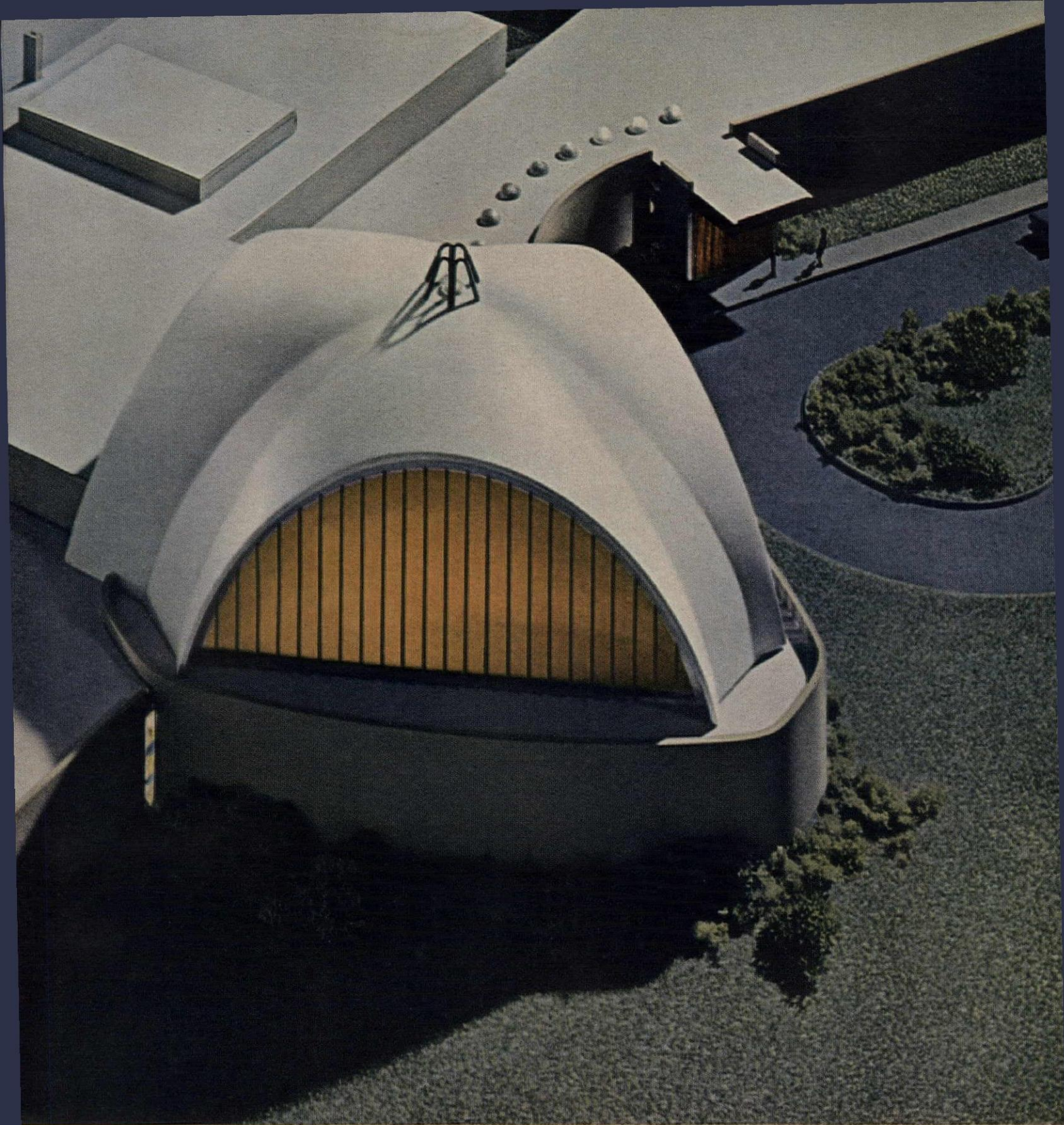
## Architect's dream. Roofer's nightmare.

When you come up with a roof design that swoops and soars dramatically, it can cause a roofer no end of problems.

But not when you specify Johns-Manville's new Last-O-Roof.

Last-O-Roof is a one-ply roofing that will literally bend over backward to accommodate any design concept. Just 55/1000 of an inch thick, it's 3 times lighter than usual smooth-surfaced roofing and 10 times lighter than gravel...yet will stand up to the elements longer than conventional roofing.

And since all components are completely compatible (thanks to a common polyisobutylene base),



THE SEPHARDIC TEMPLE, CEDARHURST, L. I., N. Y. ARCHITECT: BERTRAM L. BASSUK, AIA ASSOCIATED ARCHITECT: JULIUS STEIN, AIA

Last-O-Roof permits one-step application. Cold. Absolutely no on-site preparation is necessary. And that goes for the whole works: roofing membrane, flashing membrane, adhesive and color coating.

Speaking of color . . . as you can see in the photograph above, Last-O-Roof wears it beautifully. Gone are the days when color choice is limited to black.

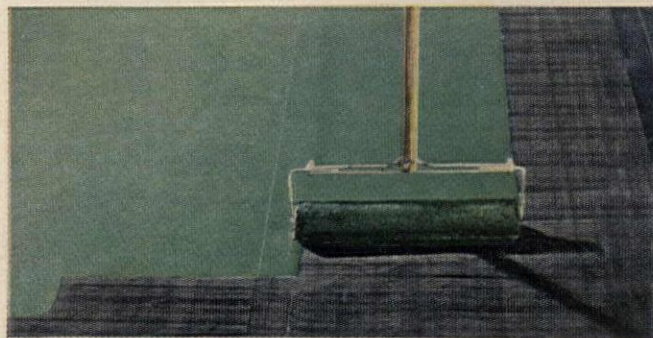
For further information, call your local J-M dealer. Or write: Johns-Manville, Dept. AR, 22 East 40th Street, New York 16, New York.

# Johns-Manville

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**LAST-O-ROOF** is as beautiful as it is functional. It can be green, white, or several other colors.

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## USS National Hollow Structural Tubing Progress Report:

Posts, columns, beams, rafters, and mullions! These three structures show the versatility of USS National Hot-Rolled Hollow Structural Tubing. The designers specified tubing because of its attractive finished appearance, compactness, workability and excellent strength-to-weight ratio.

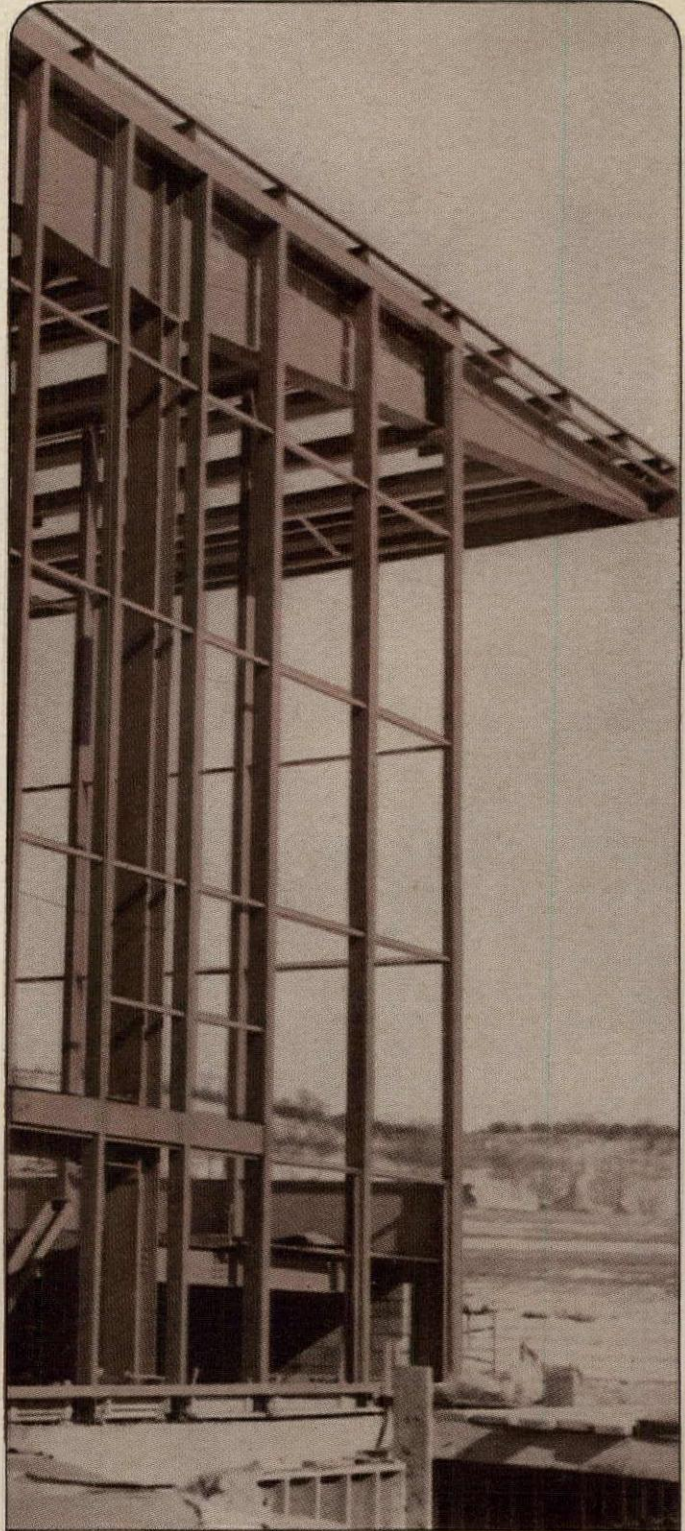
USS National Hollow Structural Tubing is highly efficient for compression members and can be easily joined with other structural members. Tubing is especially efficient when subjected to bending stresses in more than one direction.

USS National Hollow Structural Tubing in Grade 1 meets the mechanical and chemical properties of ASTM A7 and Grade 2 meets those for ASTM A36. Now a *new* Grade 3 tubing is available made of USS COR-TEN. Hollow structural tubing members can be painted or sheathed as required. Grade 3 tubing has a minimum yield point of 45,000 psi, atmospheric corrosion resistance 4 to 6 times that of carbon steel and is ideally applicable wherever weight reduction or maintenance cost savings are prime consideration. For more information, see your National Tube Distributor or write, National Tube, Department 101-3608, 525 William Penn Place, Pittsburgh, Pennsylvania 15230. USS, National and COR-TEN are registered trademarks.

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Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors  
United States Steel International (New York), Inc., Export Distributors

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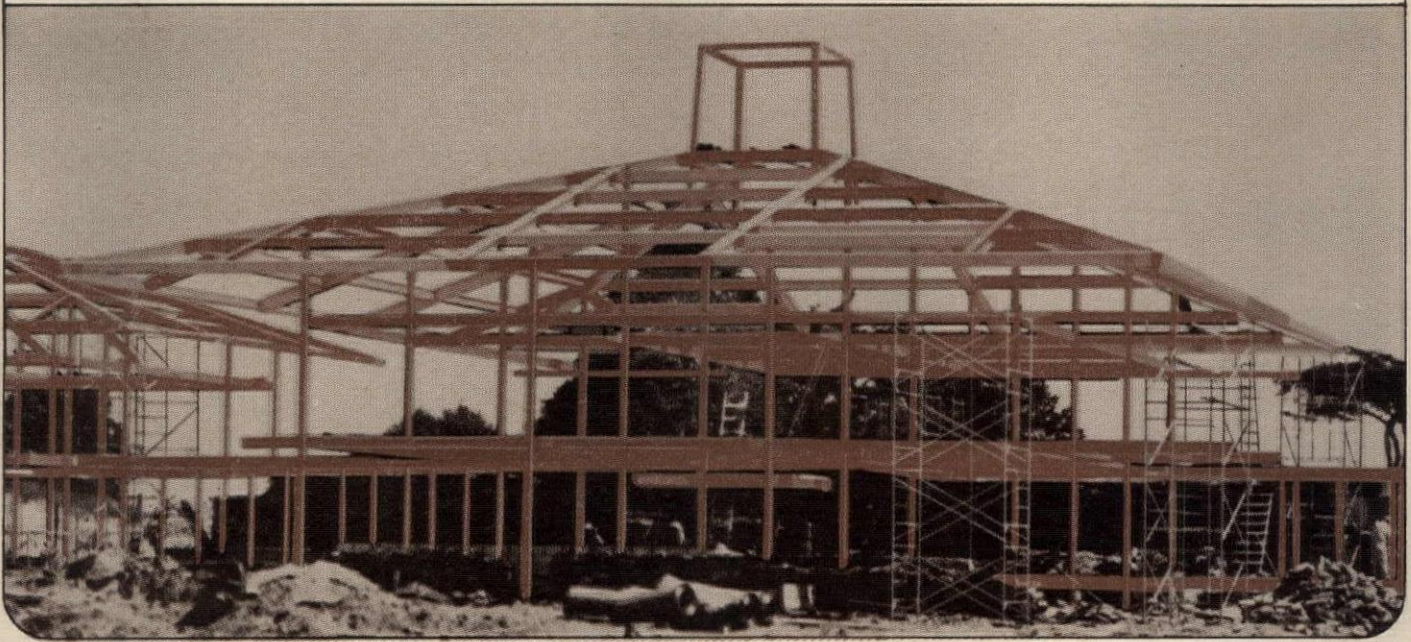
### Grandstand act

The cover grandstand and combination clubhouse at the Washington Trotting Association's new Race Track, the Meadows near Washington, Pennsylvania, was designed by Harding H. Thayer & Associates, Architects of New Castle, Pa. They selected 30-foot sections of Hollow Structural Tubing for use as mullions in the clubhouse area. The tubing, framing large glass areas, presents a finished appearance when painted. Placement of the glass is simplified by the attachment of glazing stops directly to the structural mullions. Clean straight lines result in little obstruction to the spectators' view.

### A steel house

Here's a large contemporary house in Baltimore where USS National Hollow Structural Tubing is used for columns and beams. The architects, Tatar and Kelly, and the structural engineers, Perry & Lamprecht, Baltimore, Maryland, specified struc-

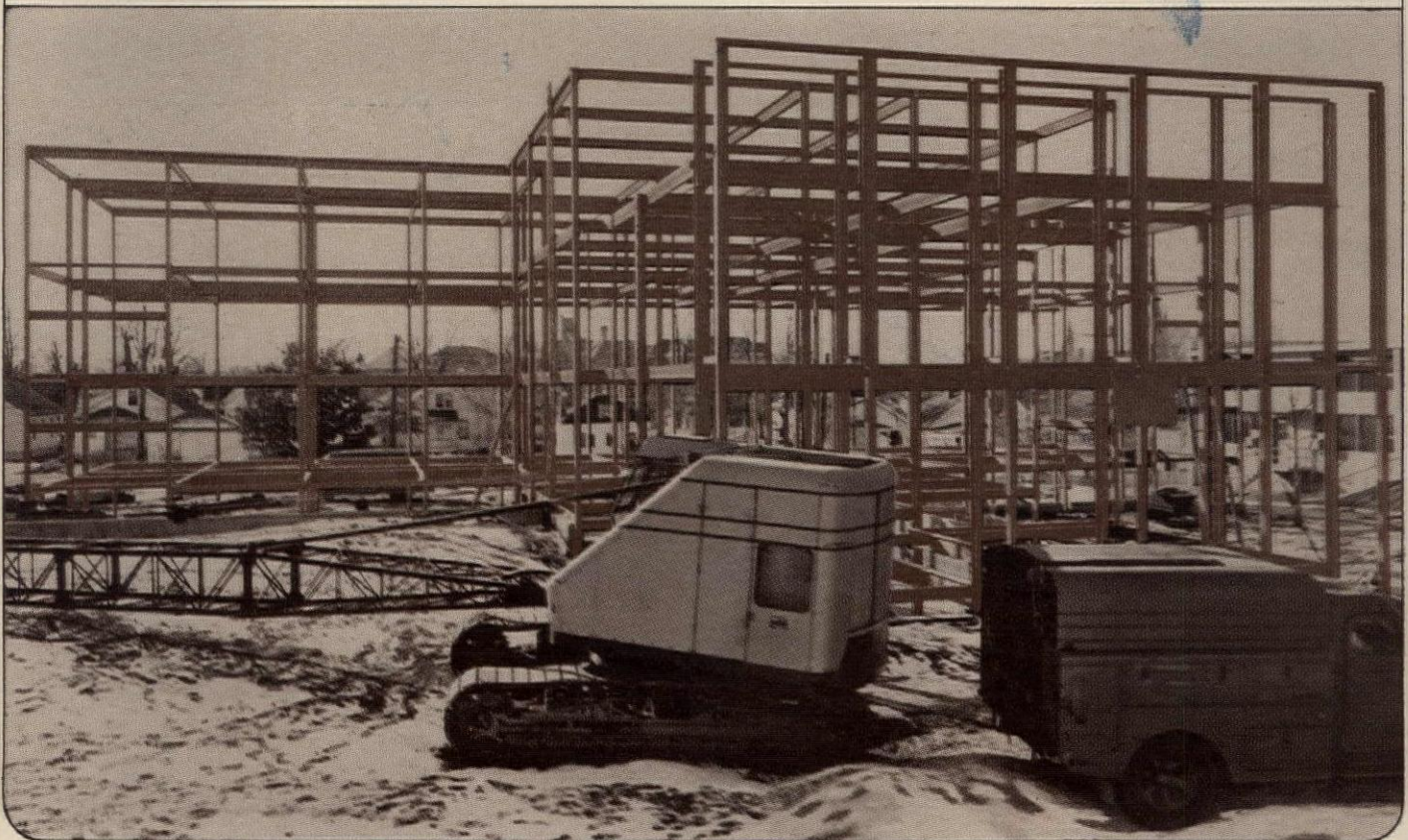
tural steel tubing because of its attractive appearance, easy maintenance and the ease with which it can be joined to other materials. Structural steel tubing was fabricated by the Maryland Steel Products Company.



### And one for the girls

In the three-story Quincy College Women's Dormitory all the perimeter columns are square Hollow Structural Tubing. Frank W. Horn A.I.A., & Associates, Architects in Quincy, Illinois, specified tubing to support the floors and roof. The structural steel fabrication was done by Michaelmann Steel Construction

Company of Quincy. Angle brackets were shop welded to the columns for easy connection with the beams and girders. Full height tube columns will be exposed on the exterior of the building and painted to express the structural frame between curtain wall panels.

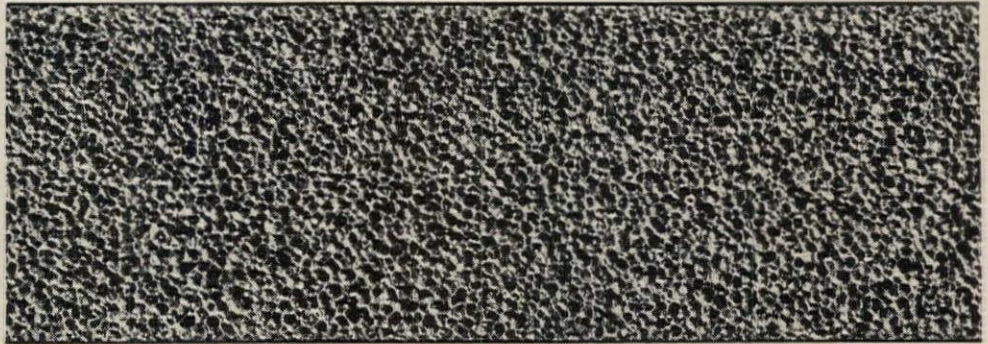


1 1/2"



It used to be just this thick

1 3/4"



Now it's also this thick

2"



And this thick

Now you can pick  
just the roof insulation thickness  
you need with  
**FOAMGLAS®-BOARD**

The 1 1/2" thick FOAMGLAS-BOARD roof insulation that's been available to date proved a good start. But only a start. It proved so popular we've had to add two new

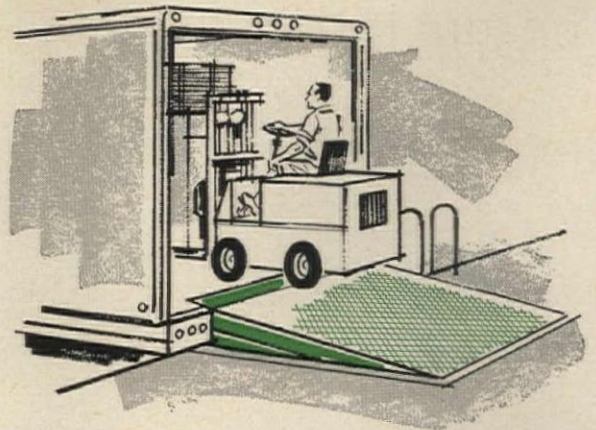
thicknesses: 1 3/4" and 2". Now the quality and permanence of FOAMGLAS are available in three thicknesses—all in 2' x 4' roofing units. Only FOAMGLAS Insulation carries a written guarantee that it will not absorb moisture, will retain its original insulating efficiency and compressive strength and will remain incombustible—for 20 years. Write for our new FOAMGLAS-BOARD bulletin. Pittsburgh Corning Corporation, Department B-123, One Gateway Center, Pittsburgh 22, Pa.



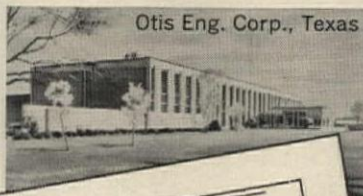
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8 of the "TOP 10" MANUFACTURING PLANTS\* HAVE LOADING DOCKS

**7 USE KELLEY DOCKBOARDS -EXCLUSIVELY**



Armstrong Rubber Co., California



Otis Eng. Corp., Texas



Symons Mfg. Co., Illinois



Parke, Davis & Co., S.C.



Dearborn Stove Co., Texas



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**\*1963 FACTORY MAGAZINE AWARD**  
 "These 7 pacesetting plants of 1963 are the peers of the U.S. manufacturing realm. Selected from nearly 1,500 contestants, they represent the cream of today's plant management and engineering talents."

55-26

The exclusive use of Kelley Adjust-A-Lip Dockboards in 87.5% of the ten top plants (utilizing dock facilities) is no coincidence. It is a true reflection of the acceptance, reliability and dependability of Kelley Dockboards.



**KELLEY COMPANY INC.**  
 6768 N. Teutonia Ave.  
 Milwaukee, Wisconsin 53209



A copy of modern methods of dock design is yours for the asking.

For more data, circle 54 on Inquiry Card

## LARGE COMPONENTS SYSTEMS DISCUSSED AT CONVENTION OF THE PRODUCERS' COUNCIL

Large building components occupied the attention of both a producer speaker and an architect speaker at the Producers' Council annual convention, meeting September 17-20 in Washington.

W. W. Sproul, general manager of the Construction Group of Westinghouse Electric Corporation, indicated the growing interest in "the systems approach," the over-all design of electrical distribution systems, transportation systems, lighting systems, and heating, ventilating and air-conditioning systems. He cited particularly California's program for designing school components (November 1963, page 36). "From the standpoint of the architects and consultants in this school program," he said, "the time which is currently spent on choosing structural and mechanical systems, and detail design, can now be devoted to programing, more detailed preliminary design, and other work of more immediate value to their clients." If producers are to keep up with the industry, he suggested, they must think in these terms.

Mr. Sproul's reading of the situation was confirmed by Francis D. Lethbridge, A.I.A. Representing the architects, Mr. Lethbridge said, "We need more industrialization, greater economy, increased standardization and continued development of larger and more efficient components of building construction." And he added that "these components must be developed and designed with an understanding of how they will best fit into the total context of planning and architectural design." He assured the producers that the architect had nothing to fear from the systems approach: "He'll still have to assemble the components."

The council elected A. M. Young, of Libbey-Owens-Ford Glass Co., Toledo, Ohio, as its new president. Other new officers include: first vice president—Charles S. Stock, American Air Filter Co., Inc., Louisville, Ky.; second vice president—Julien O. Heppes, The Ruberoid Co., New York; secretary—Roy E. Mayes Sr., Carthage Marble Corp., Carthage, Mo.; and treasurer—Otis M. Mader, Aluminum Company of America, Pittsburgh.

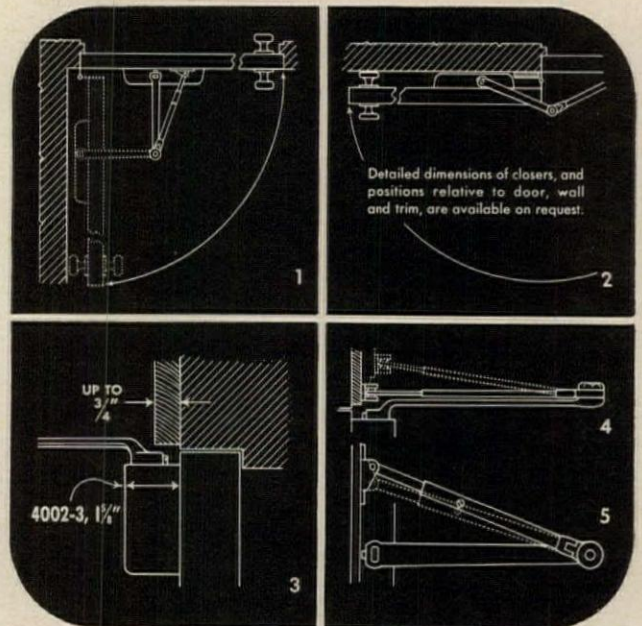
The council also elected two new members of the board of directors: Del Wakeman, Thomas Industries, Inc., Louisville, Ky., for a two-year term; and Robert E. Polson, Dow Chemical Co., Midland, Mich., for one year.

Other directors, re-elected for two-year terms, include: Earl F. Bennett, Koppers Co., Inc., Pittsburgh; Daniel J. Boone, Zonolite Division, W. R. Grace & Co., Chicago; H. L. Cramer, Westinghouse Electric Corp., Pittsburgh; E. Phil Filsinger, Gladding, McBean Building Products, International Pipe & Ceramics Corp., Los Angeles; William H. Hunt, Georgia-Pacific Corporation, Portland, Ore.; George H. Martens Jr., Johns-Manville Corp., New York; Albert L. Munsell, Formica Corp., Cincinnati; David A. Rothrock, Rohm & Haas Co., Philadelphia; Douglas Whitlock, Structural Clay Products Institute, Washington, D.C.; and Robert W. Williams, American Radiator & Standard Sanitary Corp., New York.

## Application Details

for No. 4003 SMOOTHIE® door closer  
shown on opposite page  
(See diagrams below)

- 1 In corners a "Smoothie" takes less space than most doorknobs between door and wall
- 2 Degree of door opening possible depends mostly on mounting, type of trim and size of butt used
- 3 Arm of "Smoothie" is formed to avoid conflict with almost any trim
- 4 Joints in arm and shoe make it easy to vary height of shoe as needed for beveled trim
- 5 Power of closer at latch may be increased or decreased by simply reversing position of shoe



Comprehensive brochure on request—no obligation or see Sweet's '63, Section 19e/Lc

# LCN

LCN CLOSERS, PRINCETON, ILLINOIS

A Division of Schlage Lock Company

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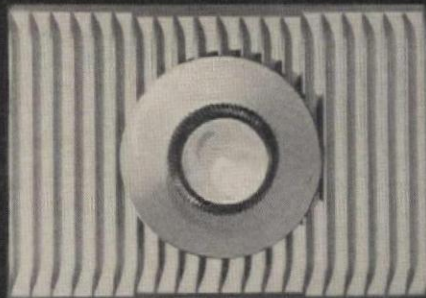
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*"Humph!  
who's given lighting  
the dimming range and  
economy that I have?"*

*"HUNT  
ELECTRONICS  
has!"*




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COMPANY**

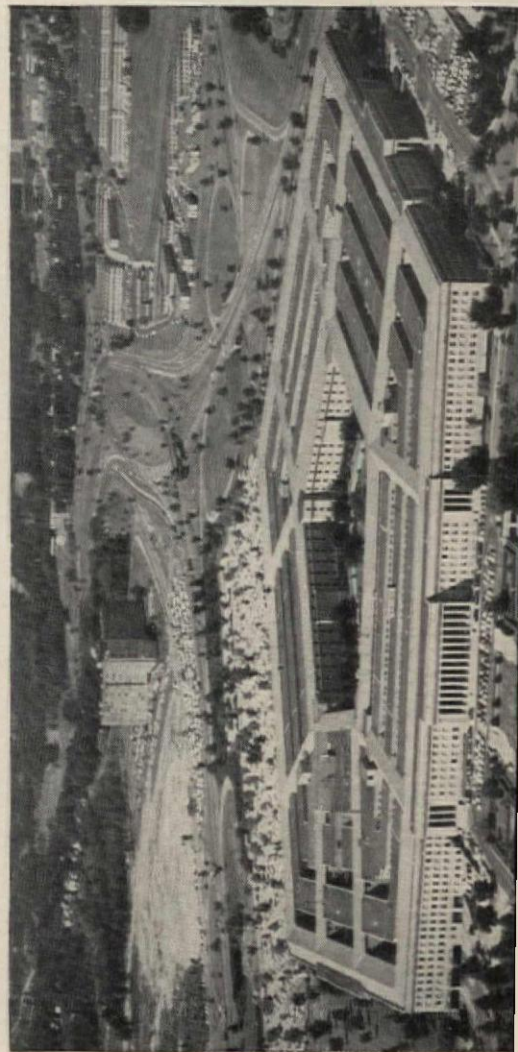
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SEE OUR CATALOG IN SWEETS

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# A. C. HORN

CAULKS AND  
SEALANTS

## Hornflex Sealant picked to stop infiltration at the Pentagon



DAREX  
**HORN**

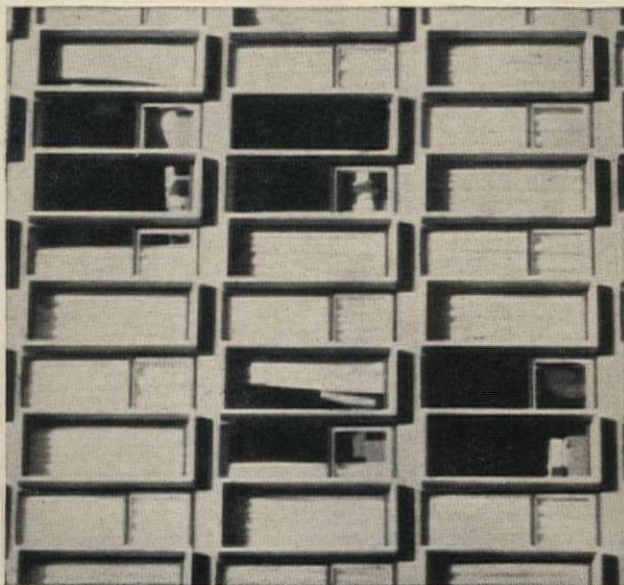
SINCE AS FAR BACK as McKinley's administration, A. C. Horn has been another way of saying quality and dependability in construction and maintenance products.

Horn product lines you hear most about include Caulks and Sealants, Floor and Surface Treatments, Waterproofing Products, Industrial Coatings, Admixtures, Adhesives and Bonding Agents.

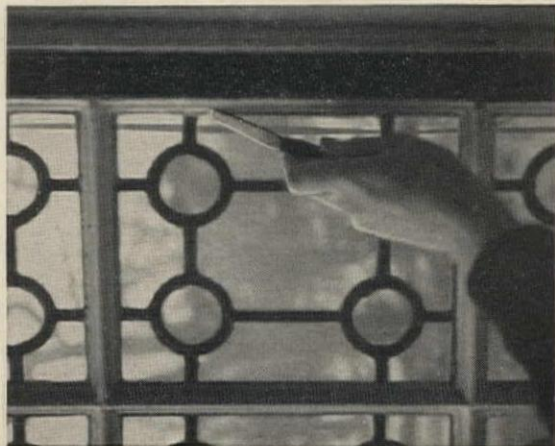
There are more than 200 time-tested and performance-proved products available from Horn. Chances are you will find one specifically designed to meet your particular construction or maintenance requirements. The man from Horn is ready to work with you — contact him through the nearest regional office listed below.

When Standard Waterproofing Corp. of New York City was handed orders a few years back to button up the Pentagon against severe attack from the elements, Hornflex LP-32 Thio-kol Sealant was picked to mount the guard. Work involved caulking expansion joints between concrete sections as well as joints between concrete and stone. Open flanks of

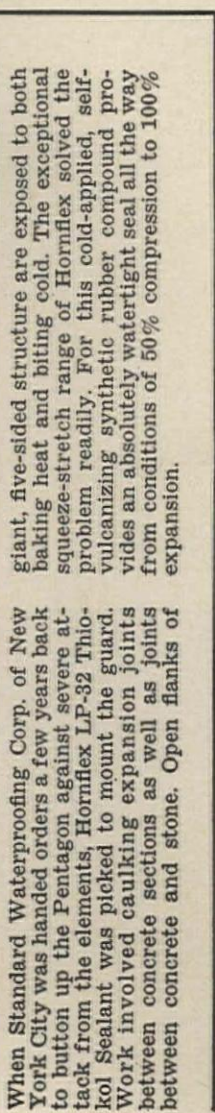
giant, five-sided structure are exposed to both baking heat and biting cold. The exceptional squeeze-stretch range of Hornflex solved the problem readily. For this cold-applied, self-vulcanizing synthetic rubber compound provides an absolutely watertight seal all the way from conditions of 50% compression to 100% expansion.



**Hornseal cuts sealing costs on pre-cast concrete panels.** For conventional applications on both new construction and maintenance jobs, Hornseal Synthetic Rubber Sealant holds down costs without any sacrifice of function or durability. This easy-to-use, one-component caulking is especially adaptable to weatherproofing pre-cast concrete panel joints. It is easy to apply with ordinary caulking guns. It bonds tightly, lastingly retains its elasticity to resist vibration without cracking. (A Product of A. C. Horn—Canada)



**Horn glazing compound makes putty obsolete.** On maintenance or new-glass jobs, Horn plastic glazing compound means time and money saved. It's ready to use without kneading, easier to apply. It doesn't set hard or dry out, won't crack or crumble. It sticks tight to wood, steel, glass; self-adjusts to contraction or expansion. Horn glazing compound also helps reduce glass breakage by cushioning shock. Simplifies replacement, too, because it can be peeled off without chiseling or scraping.



Horn caulking works both sides of Chicago street

**Vulcatex re-specified for 93-year-old Water Tower landmark.**

Historic survivor of 1871 Chicago fire, this famous landmark was caulked with Vulcatex when age began to show in 1933. On its 29-year performance record, Vulcatex was picked again for rehabilitation work begun in 1962. 800 gallons were used for tuckpointing limestone joints. Tough, rubbery Vulcatex made application easy. It will not stain or turn sticky. And its exclusive vulcanizing feature assures long service life.

**Hornflex seals curtain walls of plush new Water Tower Inn.**

When ultra-modern Water Tower Inn went up across the street, another job-tailored Horn Sealant got the call. Hornflex ThioKol LP-32 Sealant was selected to weatherproof the handsome curtain wall construction (Architects: Hausner and Macsai; Contractors: Schmitz and Liss). This highly elastic polysulfide sealant absorbs exceptional stress without loss of bond. Provides a lasting weather seal even under climate extremes,

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And rightfully so. The CHEX/IT Alarm from S&G sounds off loud and clear whenever unwanted people try to use a CHEX/IT-protected exit. ■ It helps prevent pilferage, vandalism, and unauthorized exit and entrance with a loudmouth alarm that can be heard a quarter of a mile away. ■ And it is simple! No wiring, no interlocking connection to other

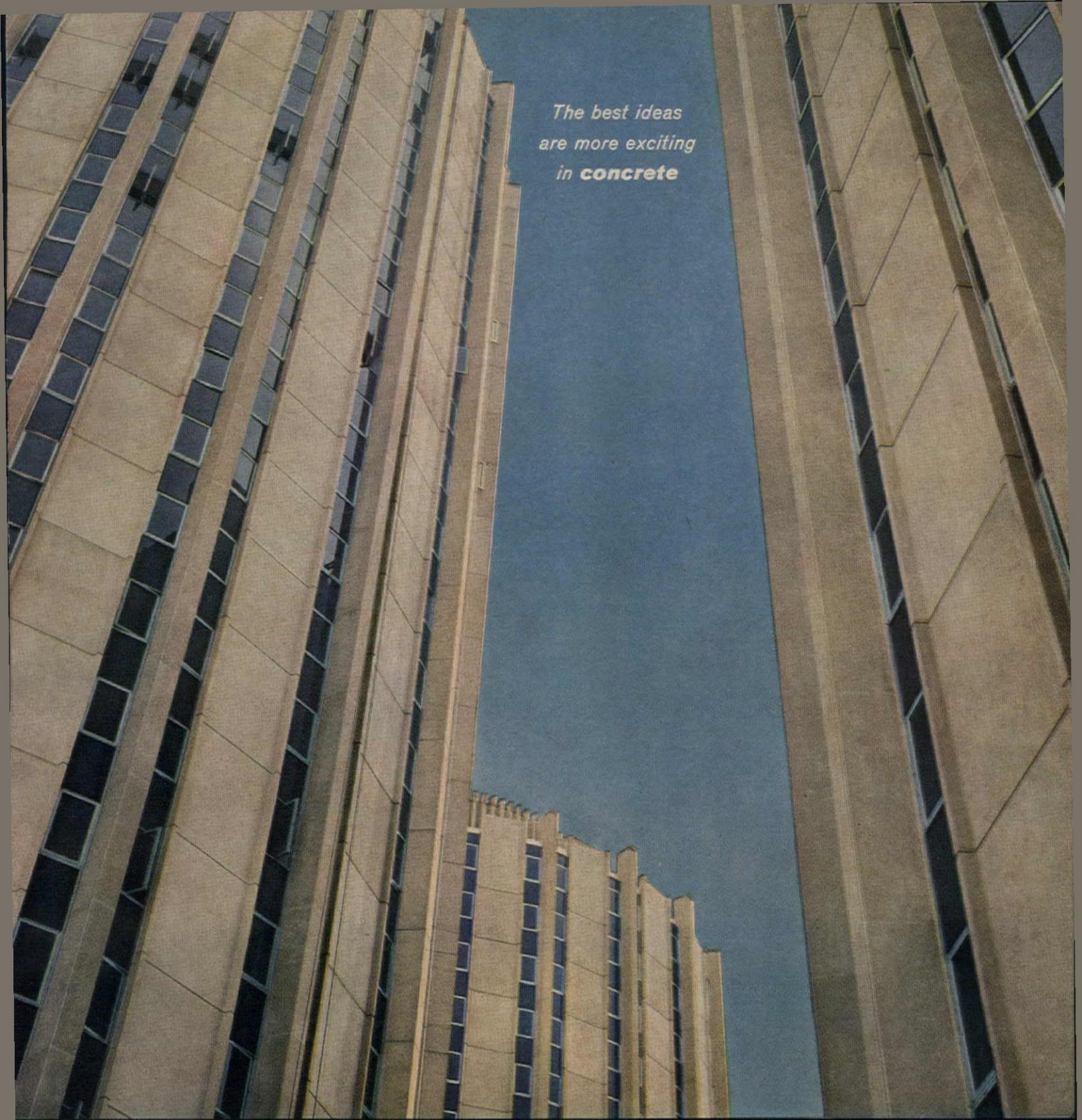
# LOUD- MOUTH

locks or panic hardware—installs with a screwdriver. CHEX/IT is key activated, limiting control to authorized key holders only. ■ Use it in stores, schools, hospitals, hotels, warehouses—any place where you would like a “loudmouth” door-watcher. For more details and a noisy demonstration, contact your Sargent & Greenleaf representative.



**SARGENT & GREENLEAF, INC.**  
Rochester, New York 14621

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



## CAMPUS LIVING IN THE ROUND

### **Precast concrete curtain walls give space for 40 extra rooms**

The new dormitory towers for men at the University of Pittsburgh adapt to the modern scene the traditional house system used in England for centuries. Here the "houses" are separate, self-contained units each 3 stories high, stacked one above the other in the circular towers. Each of the 1,868 resident students enjoys an outside room.

The towers are structural concrete throughout. Finished to match the limestone of the older University buildings, enclosing panels of precast concrete are just 5 inches thick, including sandwich insulation. They conserve 7,300 sq. ft. of floor space that would have been lost with conventional walls. Today, the versatility of modern concrete is stimulating a whole new trend in architectural design.

### **PORTLAND CEMENT ASSOCIATION**

An organization to improve and extend the uses of concrete

## Solve Concrete Construction Problems With MODERN ANCHORING DEVICES

Three most dependable anchoring methods known. Used by industry leaders.

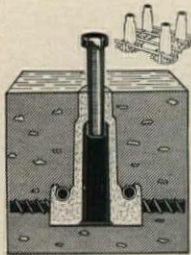
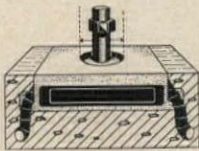
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Adjustability corrects setting errors. No hoisting or lowering of machinery. Area free for storage and traffic after installation.



WRITE  
FOR  
BROCHURE

Patt. App. For



### REDI ANCHORS

This anchor permits variable installation of bridge railing, building columns, lamp and sign posts. No projections to interfere with traffic.

### DECO THIN-SLAB ANCHORS

Positive anchoring for thin concrete sections. Floating nut permits adjustment in any direction.

## DECATUR ENGINEERING CO.

519 EAST WILLIAM

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See listings in Sweets and CE Spec. Data File

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# Season's greetings from GLOBAL

manufacturers  
of  
the finest toilet compartments made

(accessories, too)



GLOBAL STEEL PRODUCTS CORPORATION

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REPRESENTATIVES in most states of U.S.A., including Hawaii;  
some choice areas still open.

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Most we lost because we wouldn't follow doubtful specifications.

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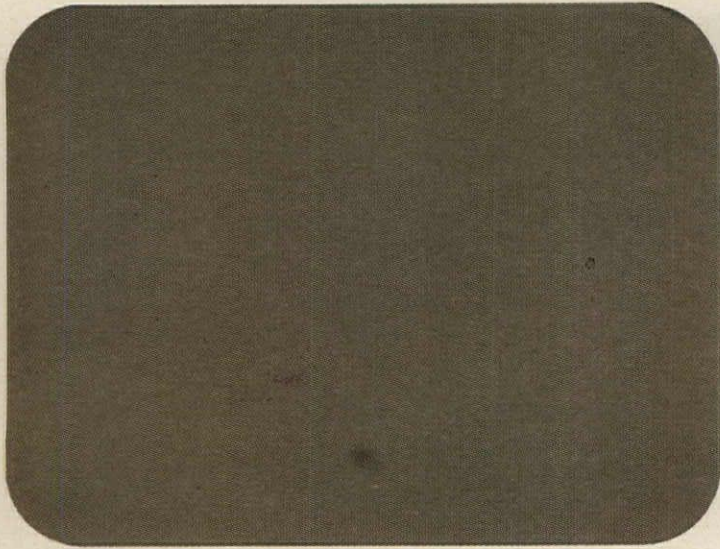
See them at places like the new Americana Hotel in New York, the New York Hilton at Rockefeller Center, the Tennessee Gas Transmission Co. Building in Houston, Texas.

For information, write to Commercial Carpet Department, James Lees and Sons Company, Bridgeport, Pennsylvania.



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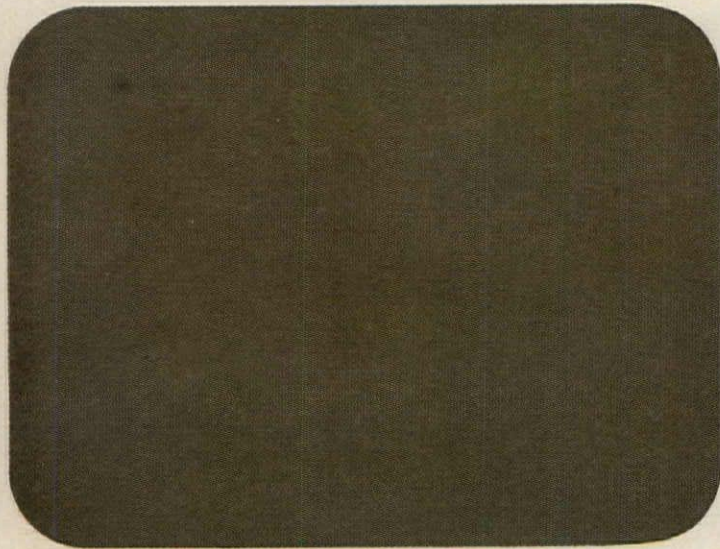
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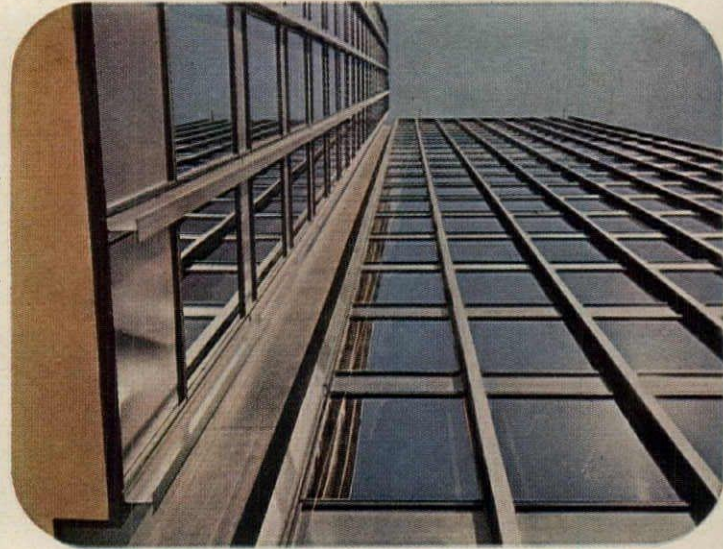
Duranodic 311S, Light Bronze  
Alcoa Sol-Dec® II Screen in various Duranodic "300"  
colors



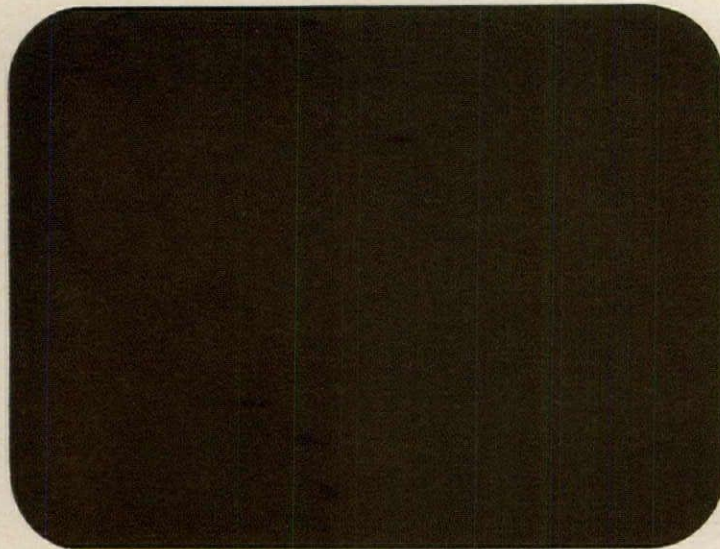
**Here they are: the changeless colors of**



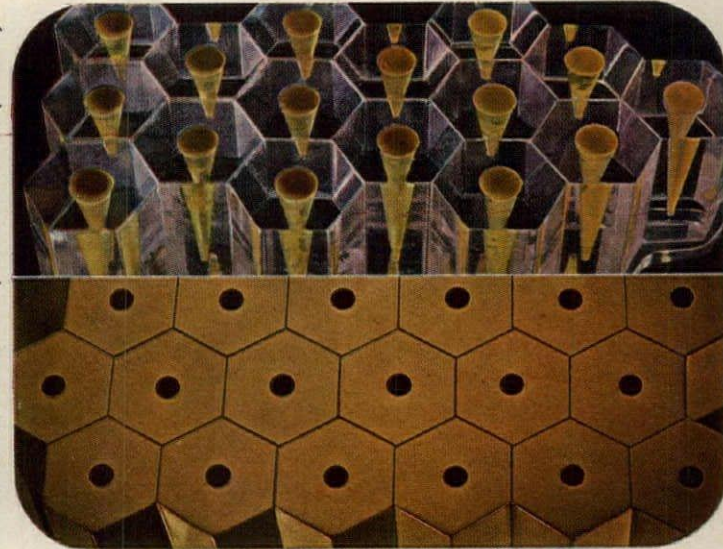
Duranodic 312S, Medium Bronze  
Number One Charles Center, Baltimore, Md.



**rich bronzes, onyx, gray. Specify colorfast**

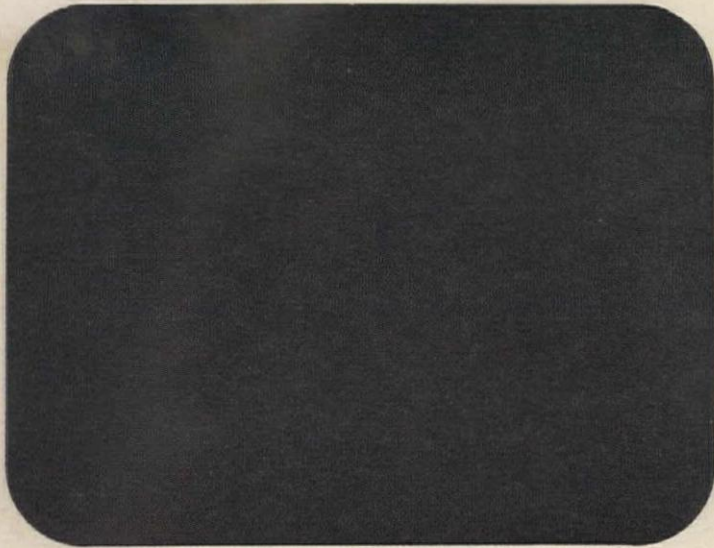


Duranodic 313S, Dark Bronze  
Cell structure: anodic finish, Duranodic finish (see text)

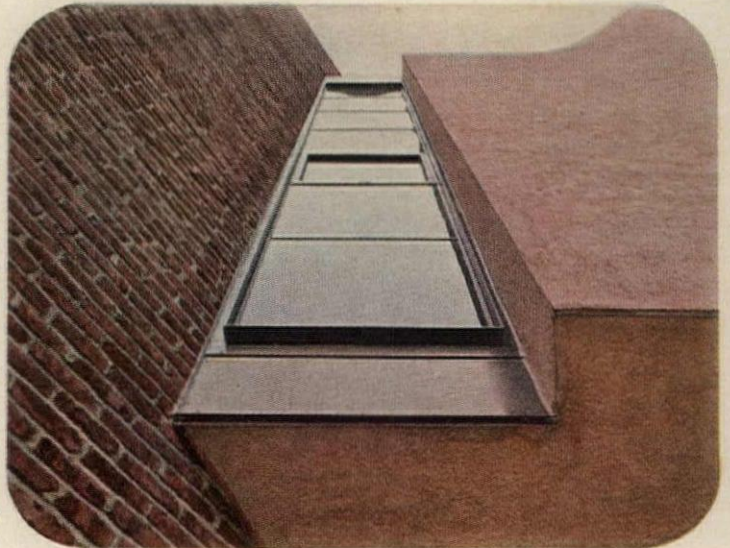


**windows, solar screens, mullions, framing.**

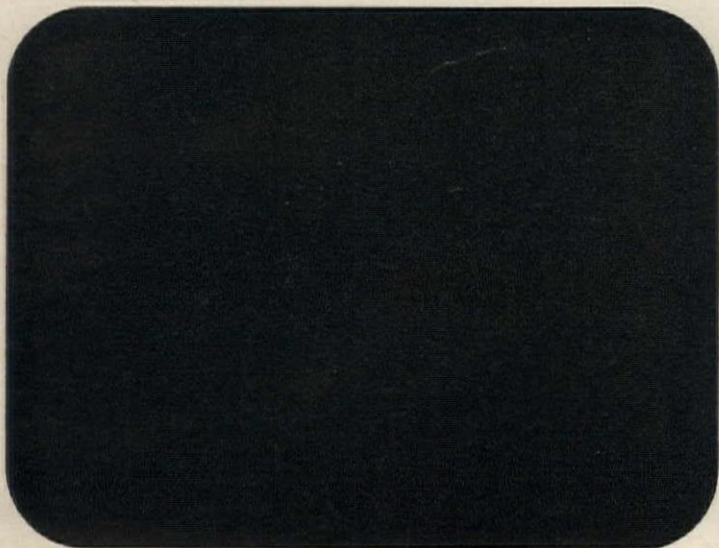




Duranodic 324S, Medium Gray  
Holy Trinity Episcopal Church, Hicksville, L.I., N. Y.



## Alcoa's new DURANODIC "300" finishes,



Duranodic 335S, Black  
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## DURANODIC "300" finishes for panels, trim,

Salt air, hot sun, corrosive atmospheres—Alcoa® Aluminum with Duranodic\* "300" finishes can take practically anything nature can dish out or man devise. And the color exhibits little or no change. Hard as sapphire, Duranodic "300" color finishes are inherent in the alloys and become integral with the metal during treatment. There are no dyes or pigments. Result: a color surface that's just about impervious to scuffing. See the enlarged model of an anodic cell structure to the left: The upper example has color added. Below it is the way cells in a Duranodic "300" finish look—color clear through! Call your nearest Alcoa Sales Office for complete information.

*Credits—Holy Trinity Episcopal Church. Owner: Holy Trinity Episcopal Church, Hicksville, L. I., N. Y. Architect: Seth Hiller & Edward F. Knowles, N.Y.C. Duranodic Applicator: Electro-Color Corp. Fabricator: Samson Window Corp., 605 Third Avenue. Owner: Fisher Bros. Architect: Emery Roth & Sons, N.Y.C. Duranodic Applicator: Cupples Products Corp. Fabricator: Cupples Products Corp., One Charles Center Building, Baltimore, Md. Owner: Metropolitan Structures, Inc., Chicago, Ill. Architect: Mies Van der Rohe, Chicago, Ill. Duranodic Applicator: Cupples Products Corp. Fabricator: Cupples Products Corp. Erector: F. H. Sparks Co., Inc.*

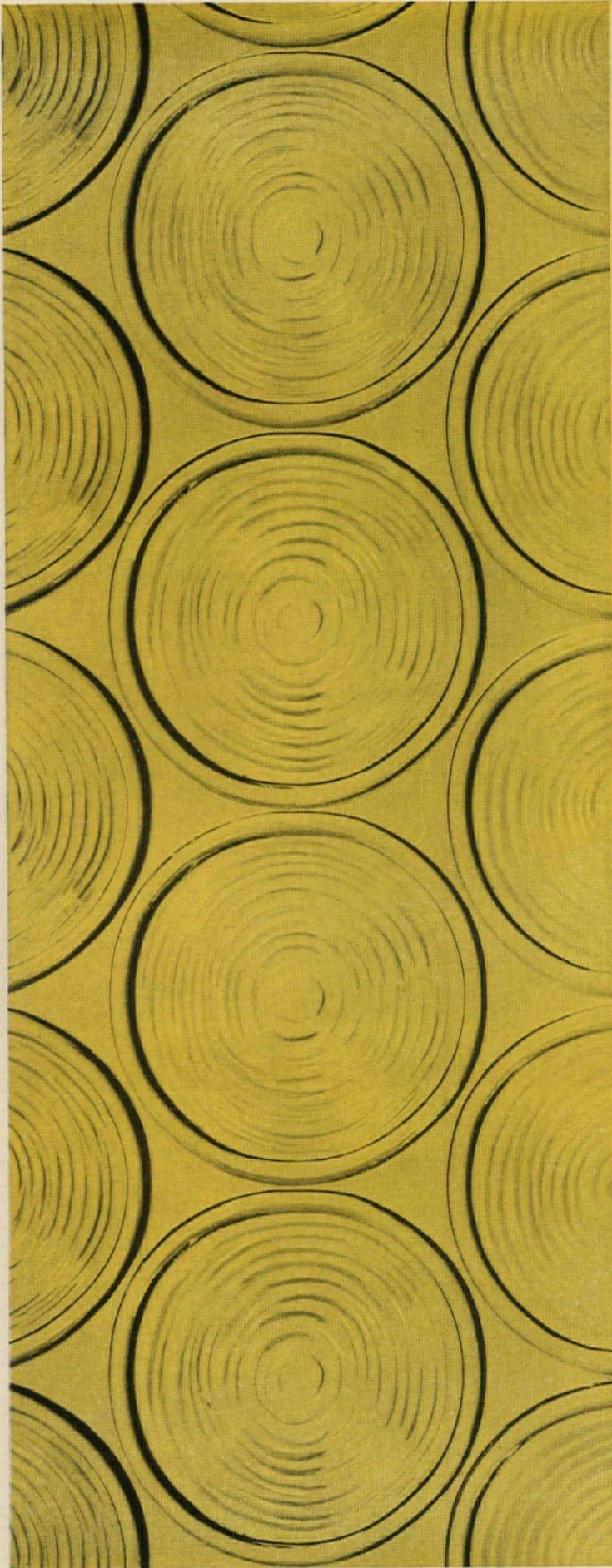
\*Trade Name of Aluminum Company of America

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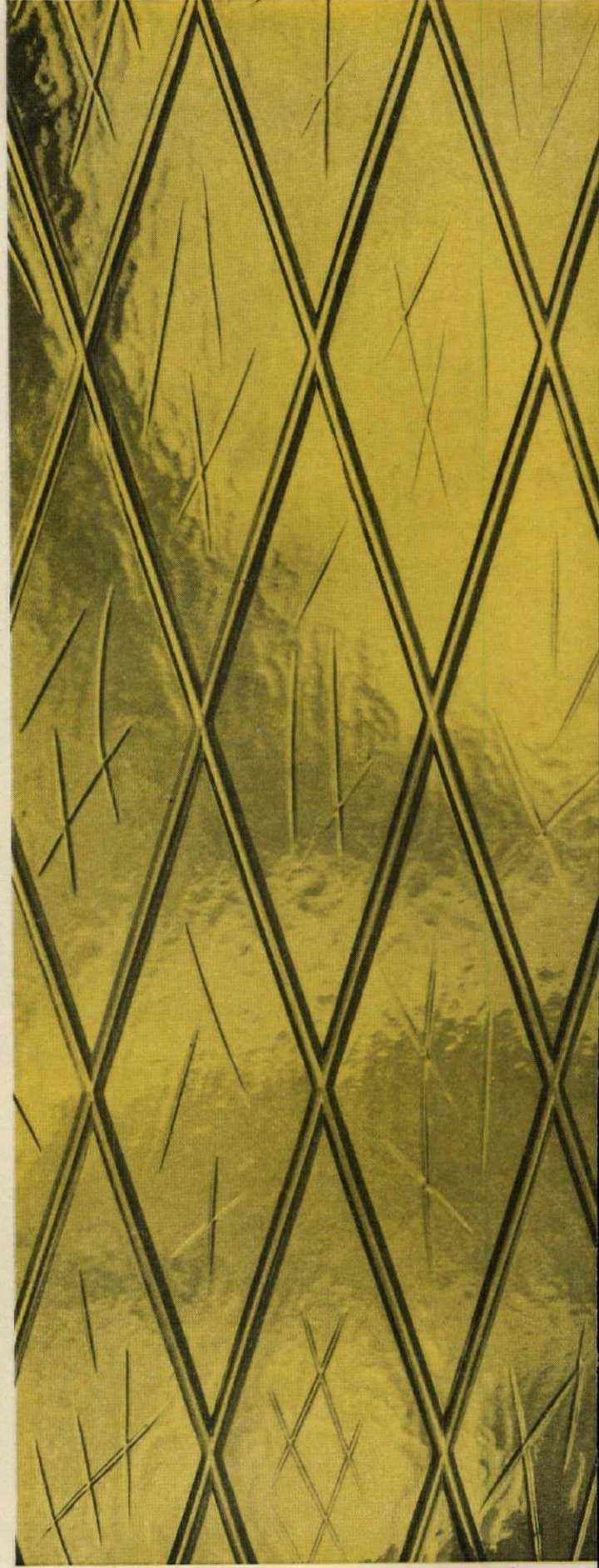
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# ALCOA



“Roundel”: clear, green, yellow, amber



“Lozenged”: amber

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Pattern Glass is a building material that gives light and privacy while simultaneously creating a feeling of airy spaciousness indoors. Forty designs, many of them available in both bold and delicate colors, compliment any architectural scheme.

The structural and decorative uses of permanent, maintenance-free Euroglass by Saint-Gobain begin with partitions, doors, shower enclosures and skylights...and keep pace with new construction techniques and the architect's imagination. It is the practical yet elegant solution to major and minor design problems in homes, stores, offices, schools, factories and institutional buildings.

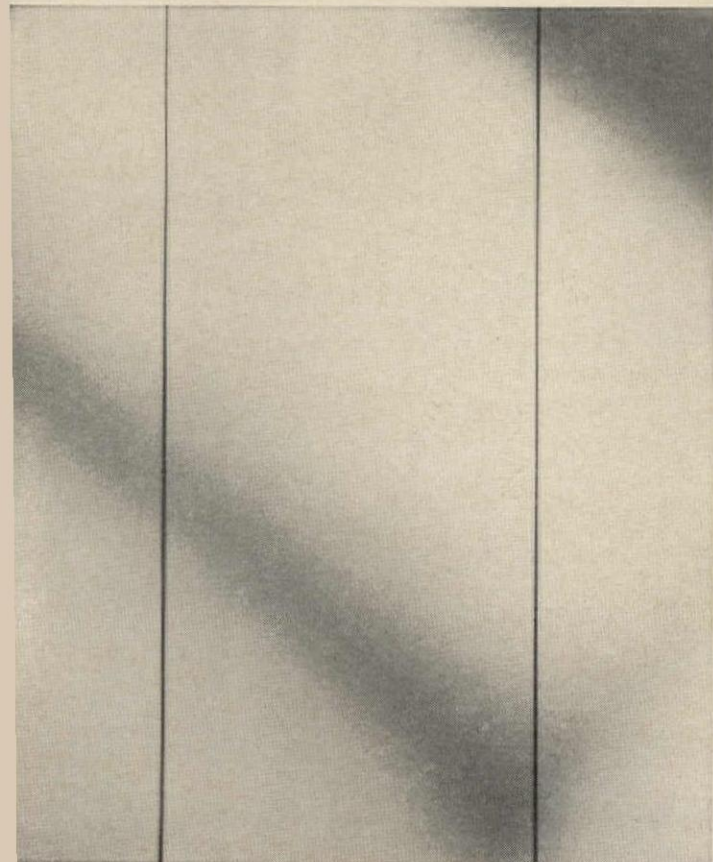
The luxurious quality of Euroglass by Saint Gobain is the heritage of three centuries of European craftsmanship. It is now readily available in the United States, exclusively through the Euroglass Corporation. Write for handsomely illustrated brochures on Pattern and Wired Euroglass by Saint-Gobain.



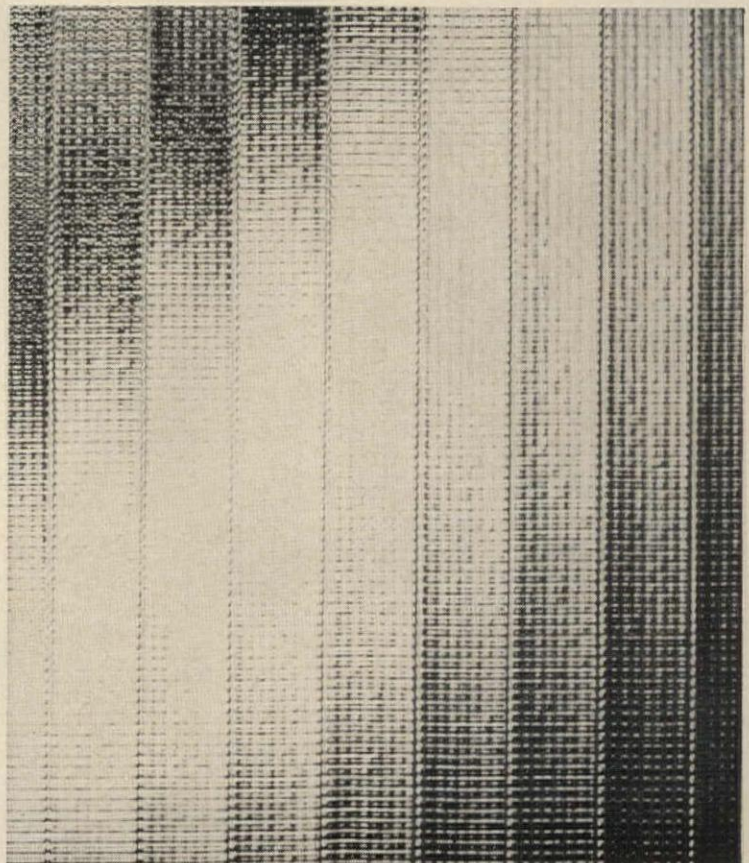
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## EUROGLASS

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“Chauvel”® Wired Polished Plate Glass



“Screenweave”

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under "Linen Supply"...or  
"Towel Supply". Call them.*

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For more data, circle 70 on Inquiry Card



Building: Home Federal Savings & Loan Assn., San Diego, Calif.

Architect: Frank L. Hope & Associates, San Diego

Fixtures: Day-Brite Lighting, Inc.

## How this *different* shielding glass saves \$3000 a year

It cuts the operating costs by \$3630 for this 18-story building because it bounces lighting heat back up into the "heat-extraction" troffers and allows reduction of the total air quantity requirements by 9800 CFM.

CORNING® Infrared-Reflecting Pattern #70 gives you all the permanent good looks that you get only with glass and the accurate prismatic light control that you're accustomed to getting from our conventional Pattern #70.

The difference is the invisible infrared shield which we bond to the smooth surface of IRR #70. It keeps lamp heat out of the occupied space.

In addition to dollar savings, which covered the extra cost of the installation shown here in just one year, it is possible to provide greater comfort when you specify IRR #70 in proper "heat-extraction" troffers. This shielding-troffer combination can cut drafts markedly because it can lower air re-

quirements and can permit reductions in the temperature differential between supply and return air.

Look into all the advantages of IRR #70 for your next building. Write for details to Building Products Department, Corning Glass Works, 8511 Crystal St., Corning, New York.

**CORNING**  
CORNING GLASS WORKS

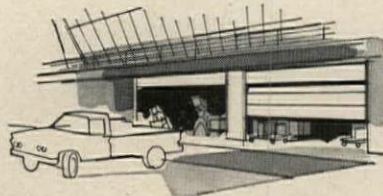
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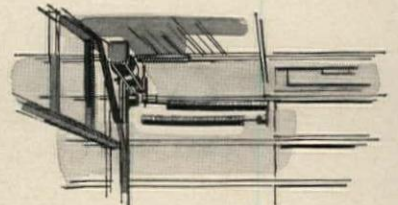
## CONTROL FLOW OF TRAFFIC WITH THE DESIGN



**SPEED** is imperative in responding to emergencies. Heavy steel "OVERHEAD DOORS" on Fire and Crash Building rise in 9 seconds *automatically*, at the touch of a button from main control tower.



**RELIABILITY** is key factor in all maintenance facilities required to keep the airport mobile. Special 19-ft. "OVERHEAD DOORS" deliver day-in, day-out dependability in Main Terminal Building.



**AUTOMATIC CONCEPT** of new "AUTO-MATE" door operators, engineered to meet jet-age requirements, provides the flexibility and control the architect sought throughout his design.

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Dulles International Airport, Washington, D. C. • Architects: Eero Saarinen & Associates, Hamden, Conn.  
Structural Consultants: Ammann & Whitney, New York City, N.Y. • Mechanical and Electrical Consultants:  
Burns and McDonnell, Kansas City, Mo. • Airport Consultants: Landrum & Brown, Cincinnati, Ohio.  
Planner: Ellery Husted, Washington, D.C. • Terminal Contractor: Corbetta Construction Co., New York City.

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At Dulles Airport, "Traffic" means much more than just people and planes. Traffic means a constant flow of air cargo *and* the ground vehicles to handle it. Traffic means a sizeable task force of fire and crash equipment *and* the maintenance crews to keep it "at the ready."

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No limitations on materials—The "OVERHEAD DOOR" comes in aluminum, steel, and wood. With glass panels or without. Doors of any size or style to fit any opening.

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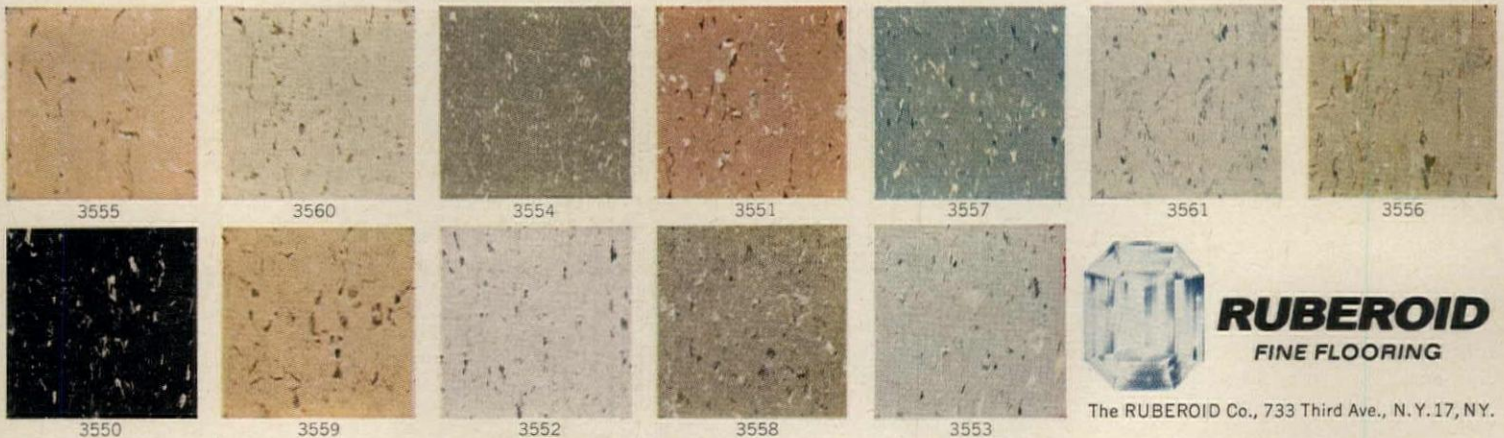
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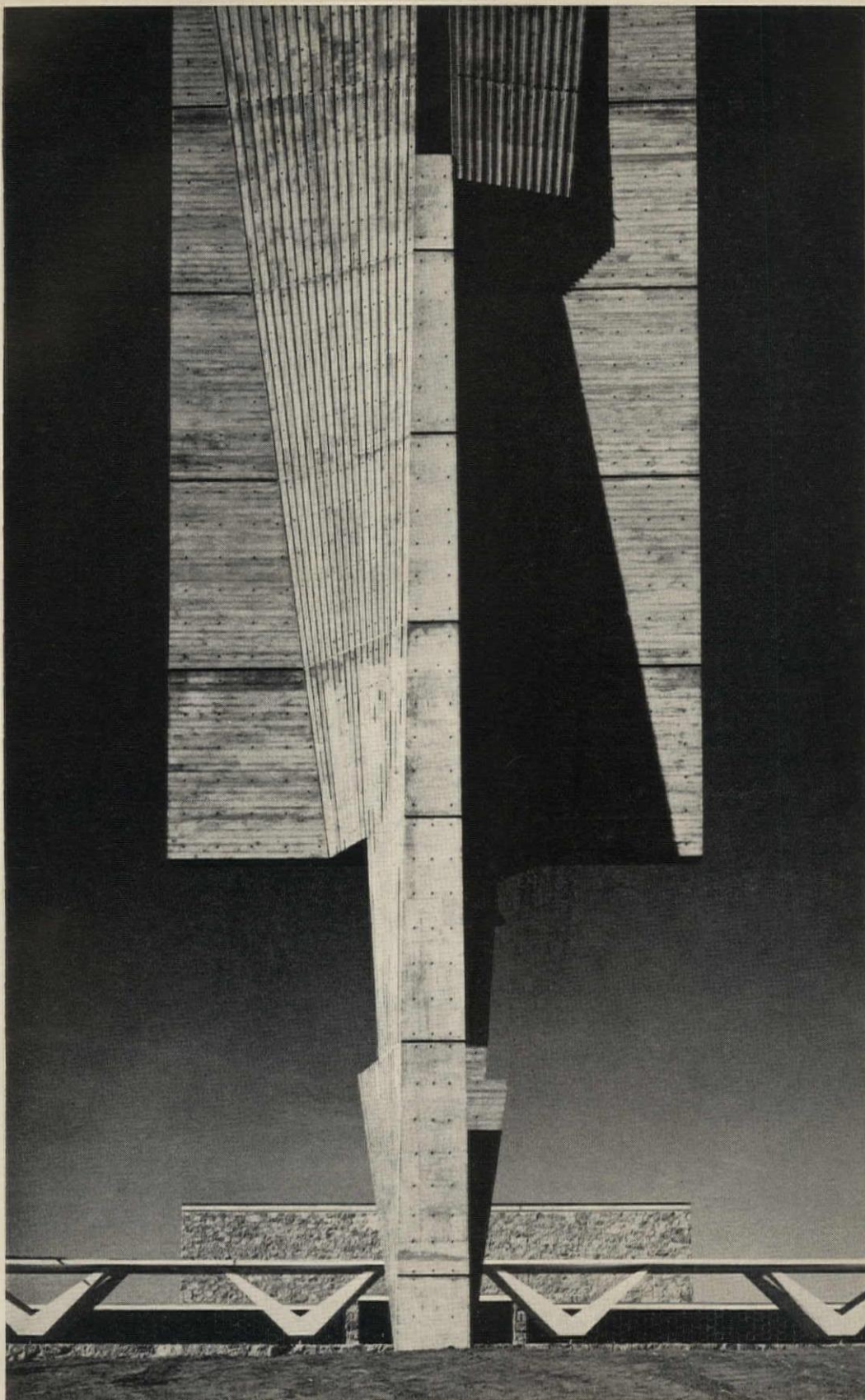
3" x 3" samples of the entire Thru Chip line beautifully mounted in a permanent binder. Ask your Ruberoid representative or write the Architectural Dept., The RUBEROID Co., 733 Third Ave., New York 17, N. Y.



The RUBEROID Co., 733 Third Ave., N. Y. 17, N. Y.

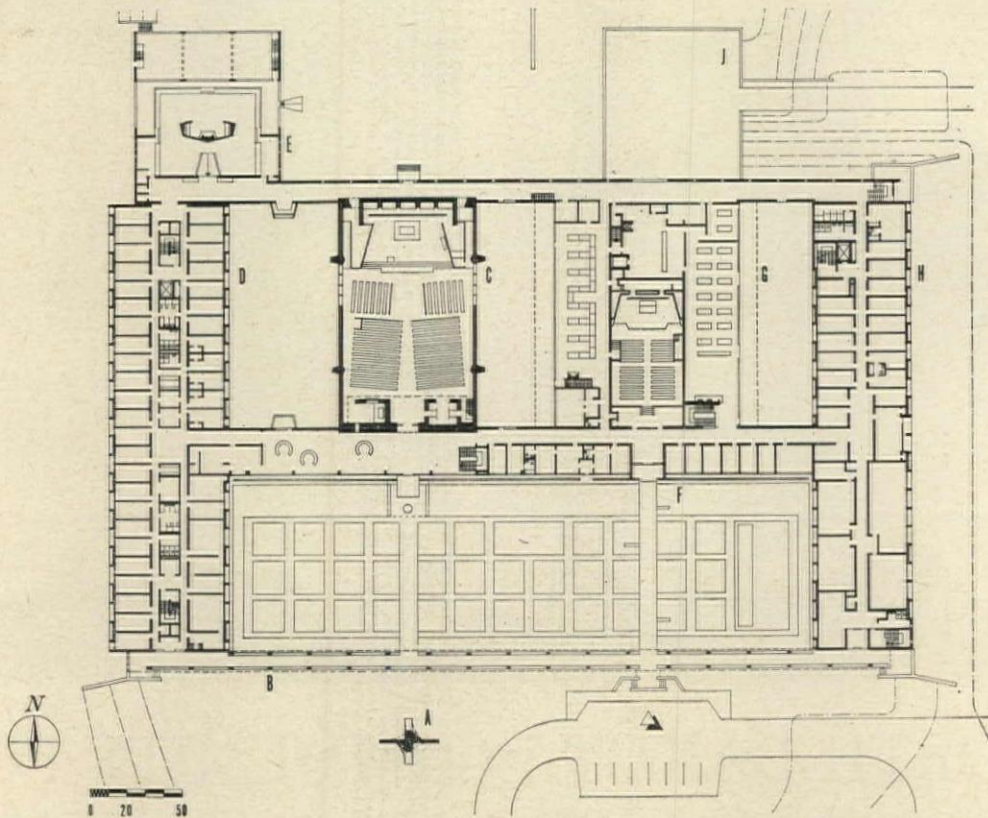
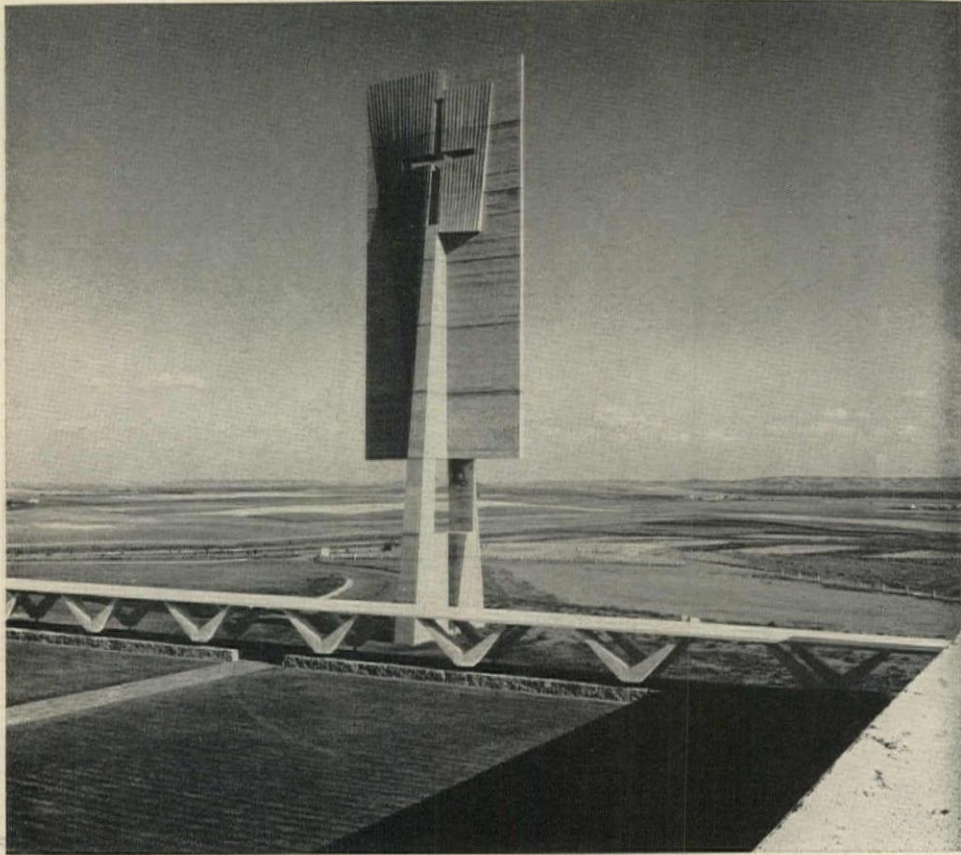
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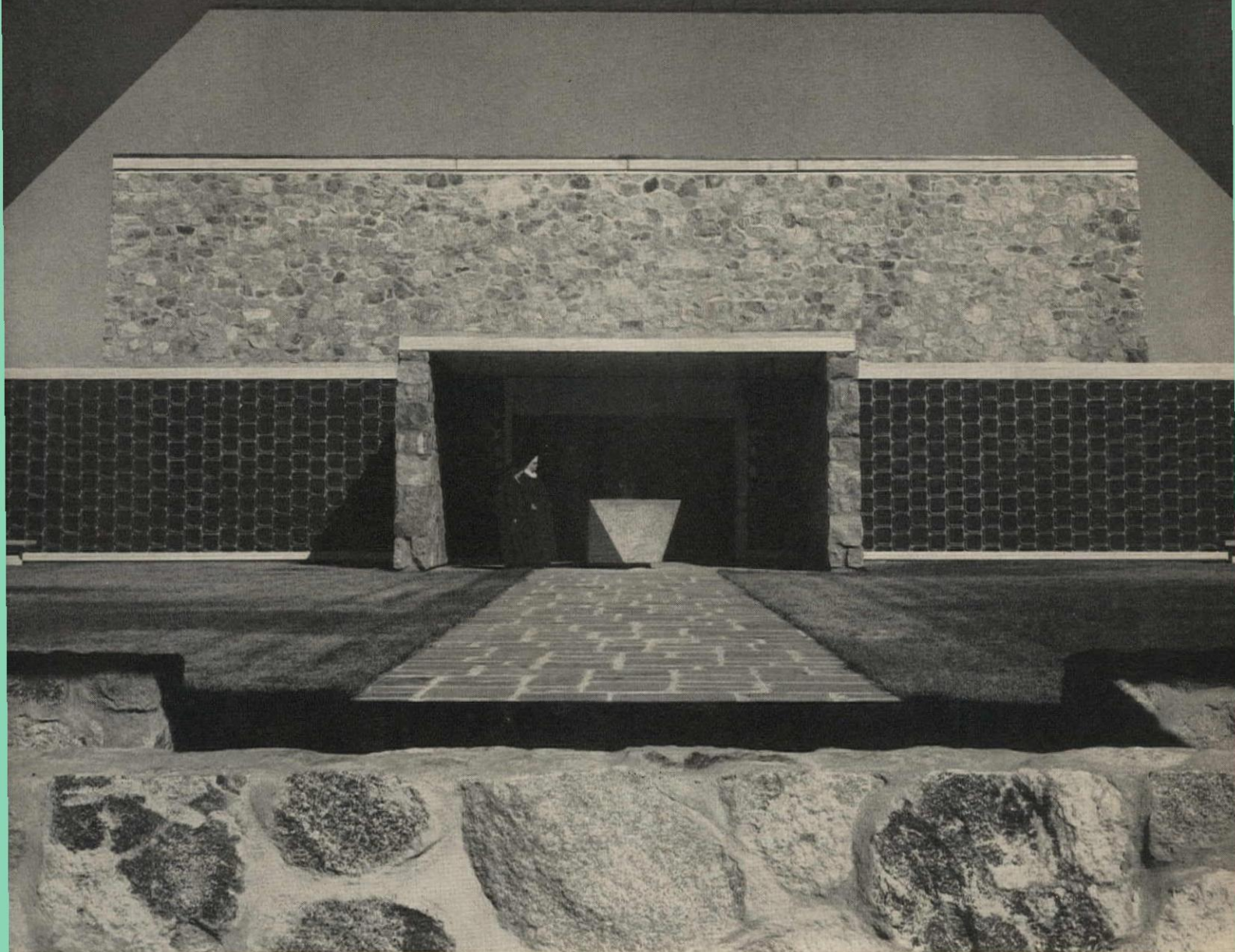


## NORTH DAKOTA COMMUNITY FOR THE BENEDICTINE SISTERS

Priory of the Annunciation, by architect Marcel Breuer, is  
notable for effective use of form and material



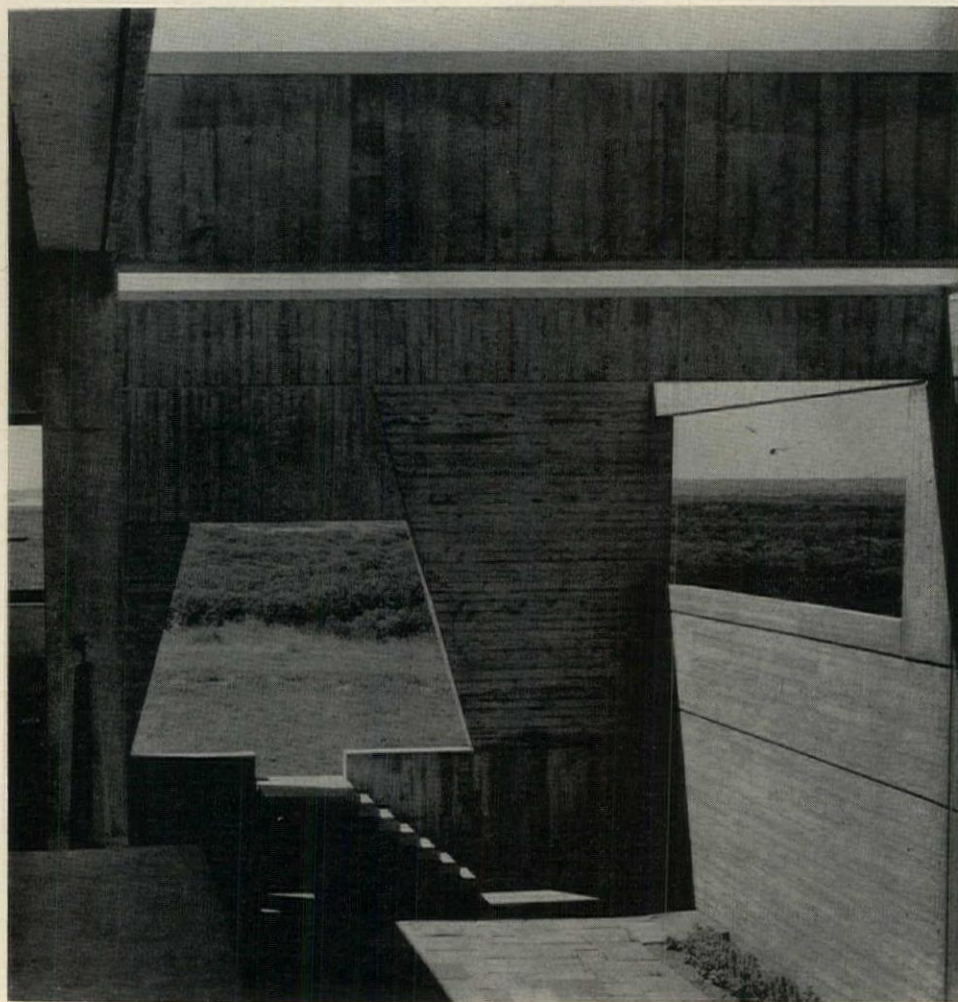
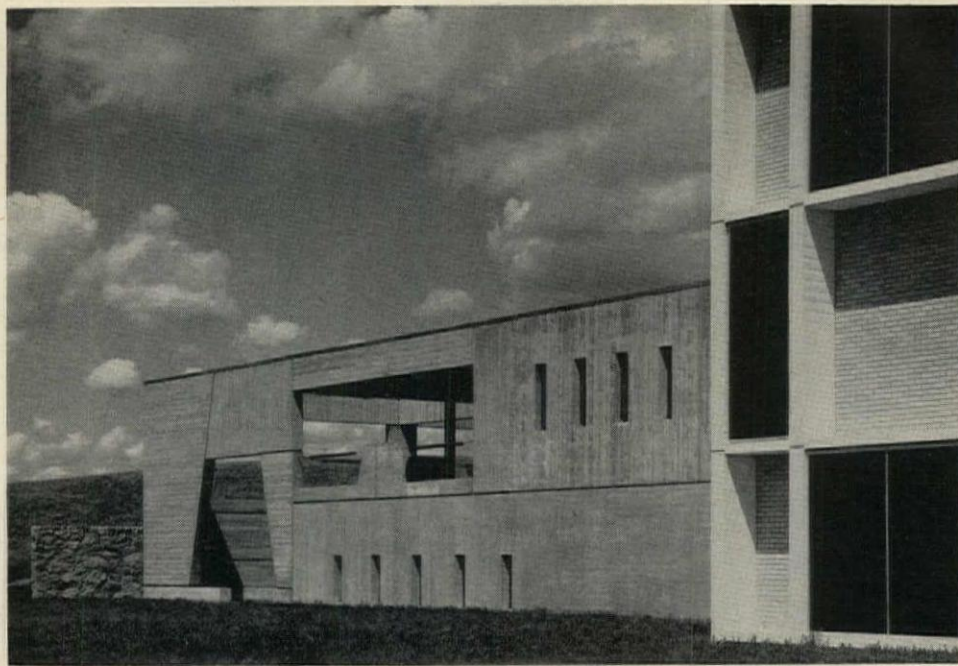
Of the 100-foot-high, cantilevered bell tower, which serves as symbol, landmark and belfry, architect Breuer says: "From afar the bell tower makes a distinctive silhouette in the otherwise fairly empty landscape, and from nearby marks the approach to the chapel. Its bronze bells strike the hours and announce the daily offices. Its form—generated by straight lines connecting two oppositely placed shapes—lends itself readily to the technology of wood formwork and concrete." The view (*above*) shows the nature of the site



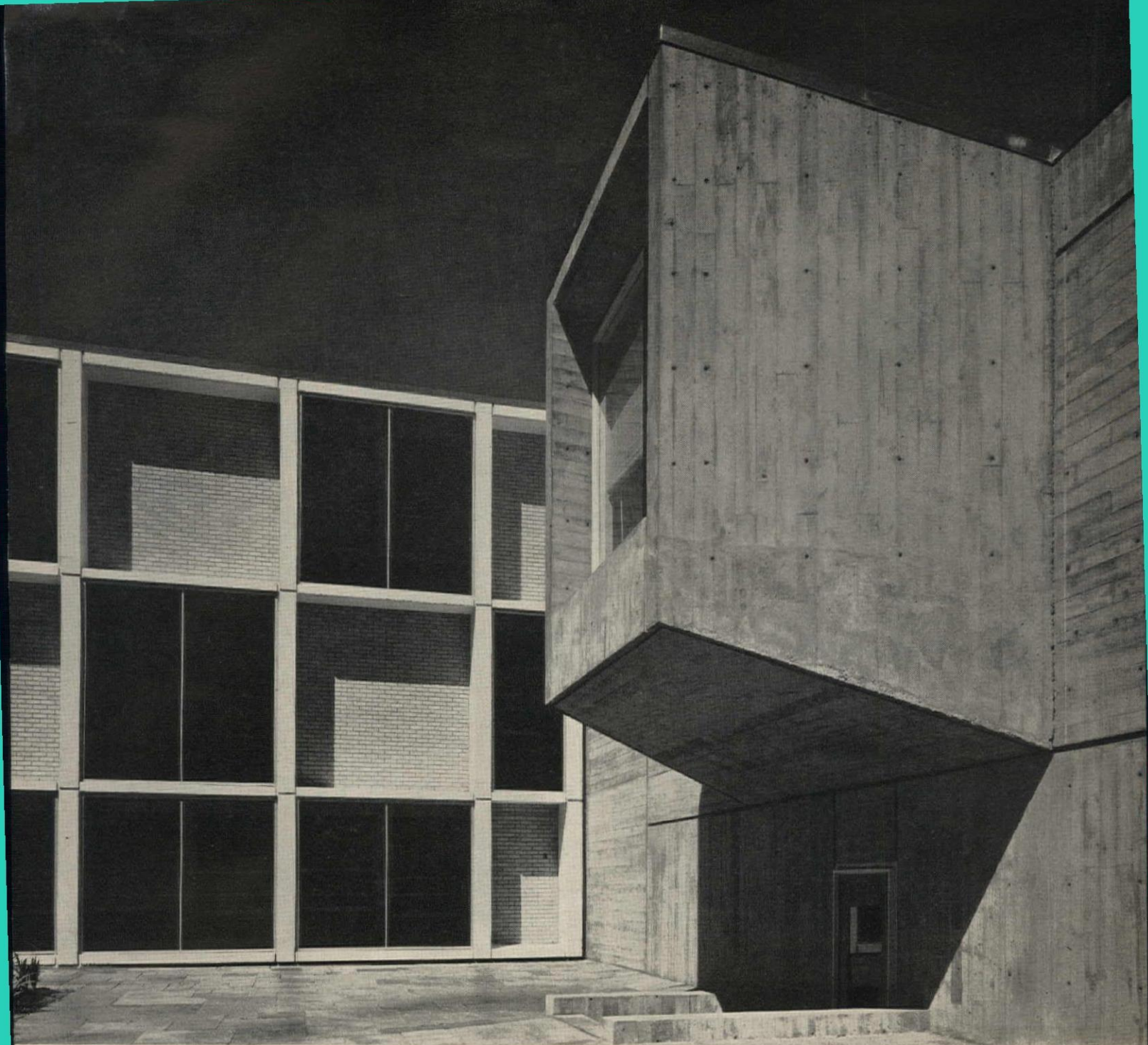
*Shin Koyama photos*

The problem was to design a convent and girls' preparatory school appropriate to a site characterized by a great sense of space and distance. The master plan at left explains the arrangement of the four principal elements, which are disposed on a great platform raised slightly above the terrain. These elements are connected by covered and open walkways which serve to pull them into unity, and also act to define courtyard spaces and give the entire scheme a proper human scale. The dramatic bell tower rises above the other construction to make a striking landmark, visible for miles.

In the plan at left **D** is the convent wing and **E** the sisters' living room and porch; **C** the main chapel; **G** the small chapel, flanked by sisters' dining and student dining rooms; **H** is the school wing, containing classrooms and dormitories. Locating the two residential wings as outside elements makes expansion possible.

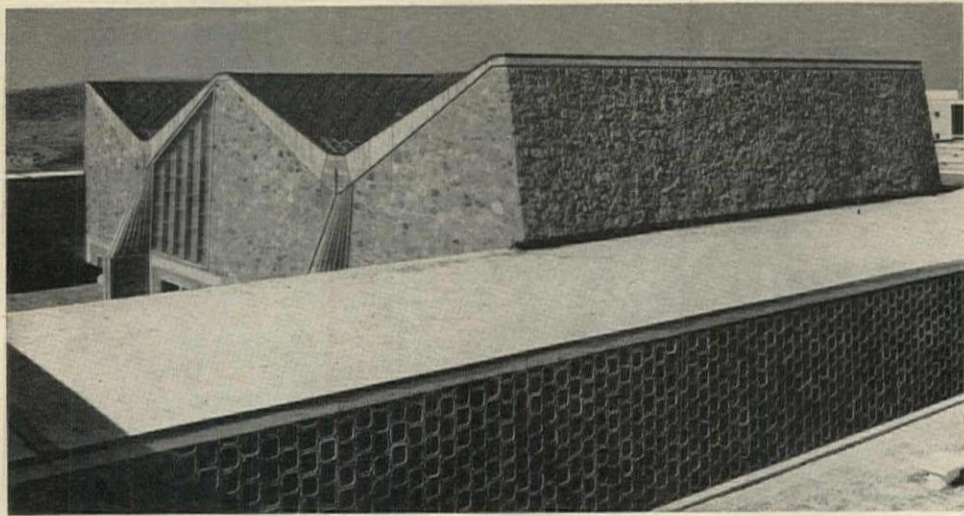


The sisters' community hall, which contains their living room, is a glass enclosure set within a larger concrete square pierced with openings to the landscape beyond, as shown in the photos (*above*). The spaces between the inner and outer enclosures become gallery-porches. The concrete pattern was motivated by recessed control joints which reduce the long walls to panels, or were located at the corners of openings where stresses are concentrated. Form-boarding patterns were varied in direction for surface texture

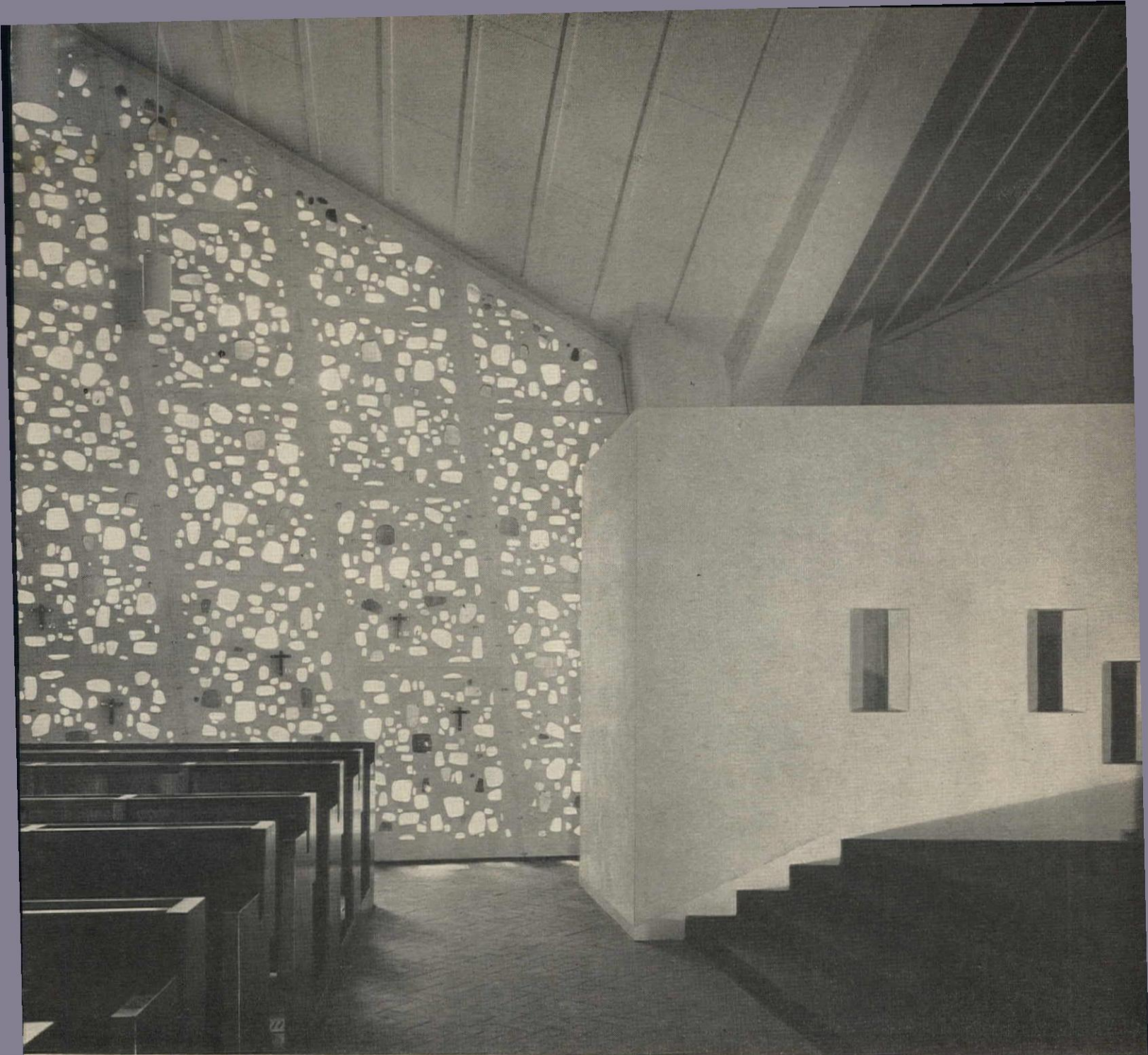


The photo above, taken from the courtyard between convent wing and church, shows an interesting juxtaposition of forms, patterns, textures and materials. The convent wing—in the background—is a rectilinear pattern of projecting slabs and columns of white-painted concrete, which casts sharp shadows into the infilling panels. These are alternately of black shade-screening for windows, or of a light buff colored local brick which combines pleasingly with concrete.

The projecting form at right is a small "green-house" niche for altar flowers, which is cantilevered from the cloistered passageway connecting the convent wing to the main chapel. It is interesting to note that concrete is used in four ways in this project: as a white-painted modulation of the building plane; as a sculptural material for fireplaces and stairs—bush-hammered to reveal aggregate; as a patterned natural surface of controlled texture and recessed lines; and as an expression of generating geometry, as in the bell tower.



The main chapel can be seen in the two photos (*above*). The exterior buttresses of rough concrete take the lateral thrust of the chapel roof, composed of four half-hyperbolic-paraboloid shells. The high edges of these shells conjoin along a central axis, leaving the interior space free of supports. The concrete roof and fieldstone walls are painted white inside; the reredos screen is gold leafed; the baldachino is lacquered primary blue; the floor is polished black brick; the pews are of dark-stained oak



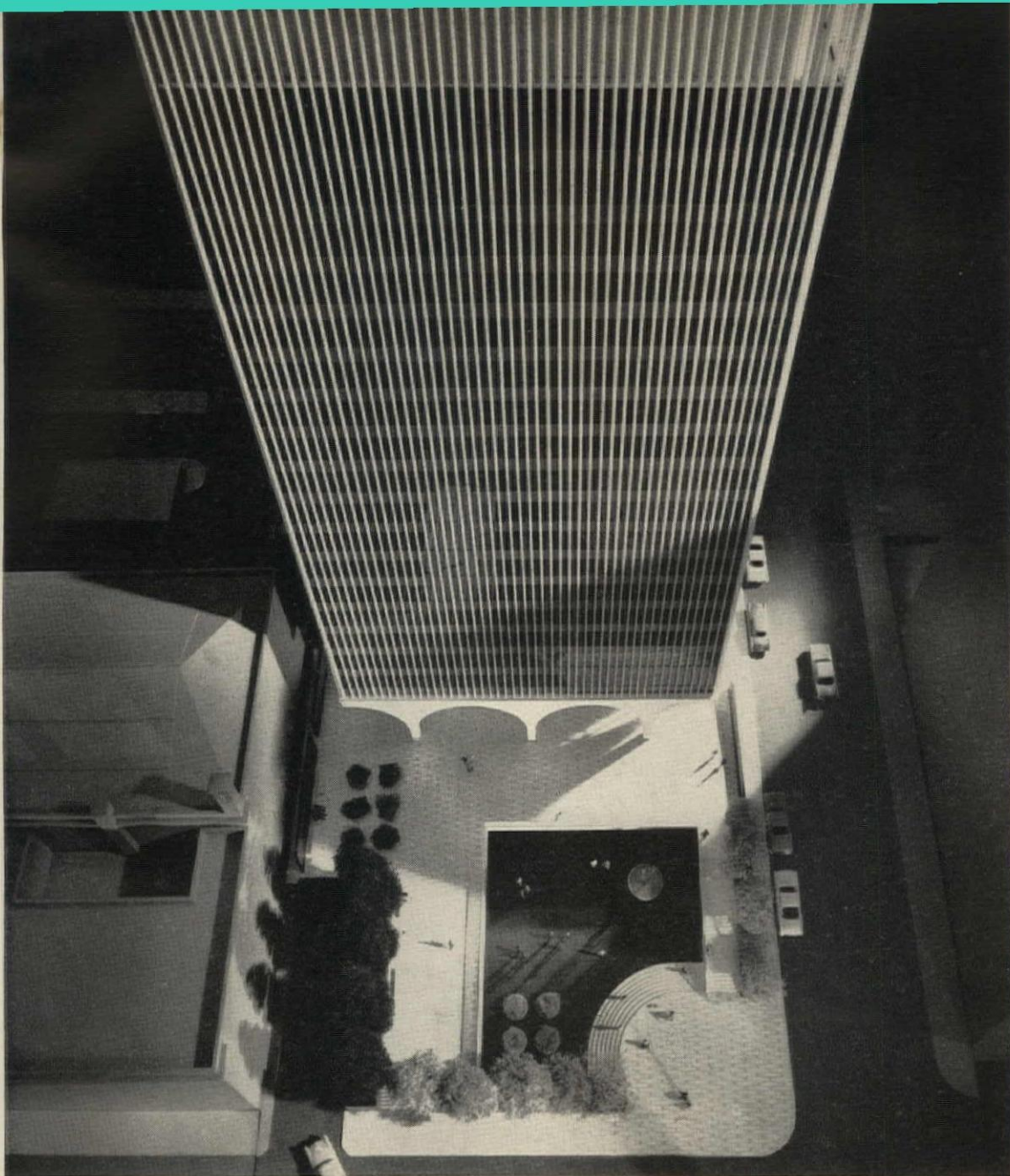
The photo above shows the glass-in-concrete windows, designed by the architect. These lights replace the traditional transept as a means of separating choir and nave. The west window is in hues predominantly amber in color; the east window predominantly brown-pink. The plaster screen wall at the right of the photo—one of a pair flanking the altar—permits aged and infirm sisters to attend the services in privacy.

Materials selected for the priory were possessed of such qualities that applied finishes were not necessary. The factor of availability in the sparsely settled region was important; local fieldstone and buff brick were used, as well as black brick, natural quarry tile and concrete block. Local workmen are familiar with these materials and handle them well. A further and perhaps the most important consideration revolved around the idea of using materials that would have the character of permanence and would age gracefully.



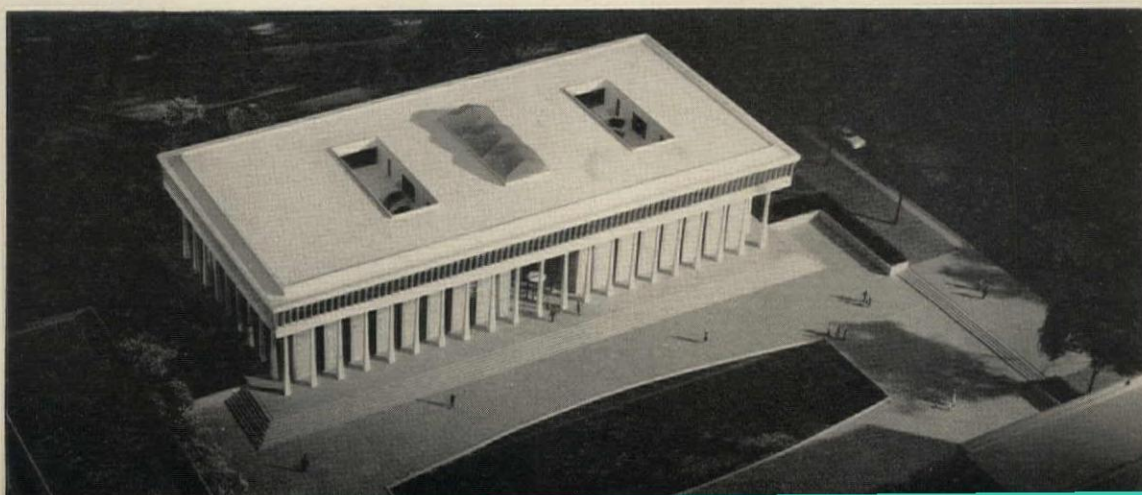
*Priory of the Annunciation, Bismarck, North Dakota*  
ARCHITECTS: *Marcel Breuer; Hamilton Smith, associate*  
ASSOCIATED LOCAL ARCHITECTS: *Traynor and Hermanson*  
STRUCTURAL ENGINEERS: *Johnson-Sahlman Company*  
*Paul Weidlinger, consultant for chapel roof system*  
MECHANICAL ENGINEERS: *Gausman and Moore*  
GENERAL CONTRACTORS: *Meisner Anderson Company, first stage*  
*Anderson, Guthrie and Carlson, second stage*





## STRUCTURE PLAYS LEADING ROLE IN LATEST YAMASAKI DESIGNS

Concern with the beautiful expression of structure  
determined the forms and details of a new Seattle office building  
and a new Princeton University building





Balthazar photos

## UNUSUAL STRUCTURAL WALL FOR IBM IN SEATTLE

*IBM Office Building  
Seattle, Washington*

FINANCING AND OPERATION: *University Properties*

ASSOCIATED ARCHITECTS:

*Naramore, Bain, Brady & Johanson*

*Minoru Yamasaki and Associates*

STRUCTURAL ENGINEERS: *Worthington, Skilling, Helle & Jackson*

MECHANICAL AND ELECTRICAL ENGINEERS:

*Bouillon, Griffith, Christofferson & Schairer*

CONSULTING ENGINEERS: *Jaros, Baum & Bolles*

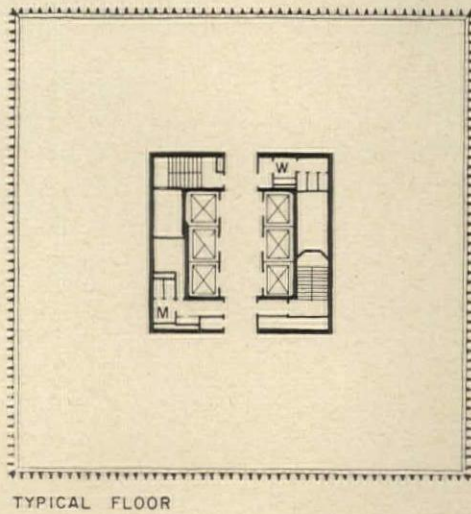
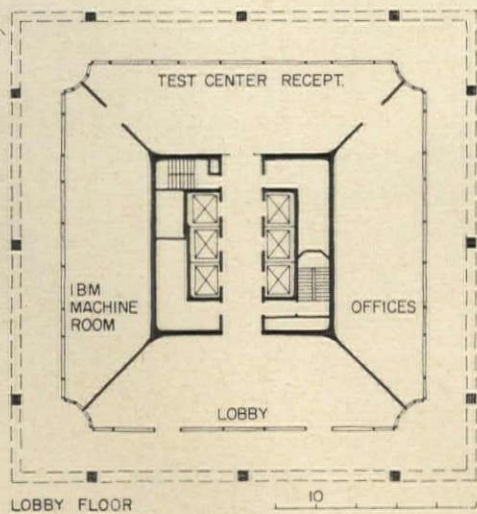
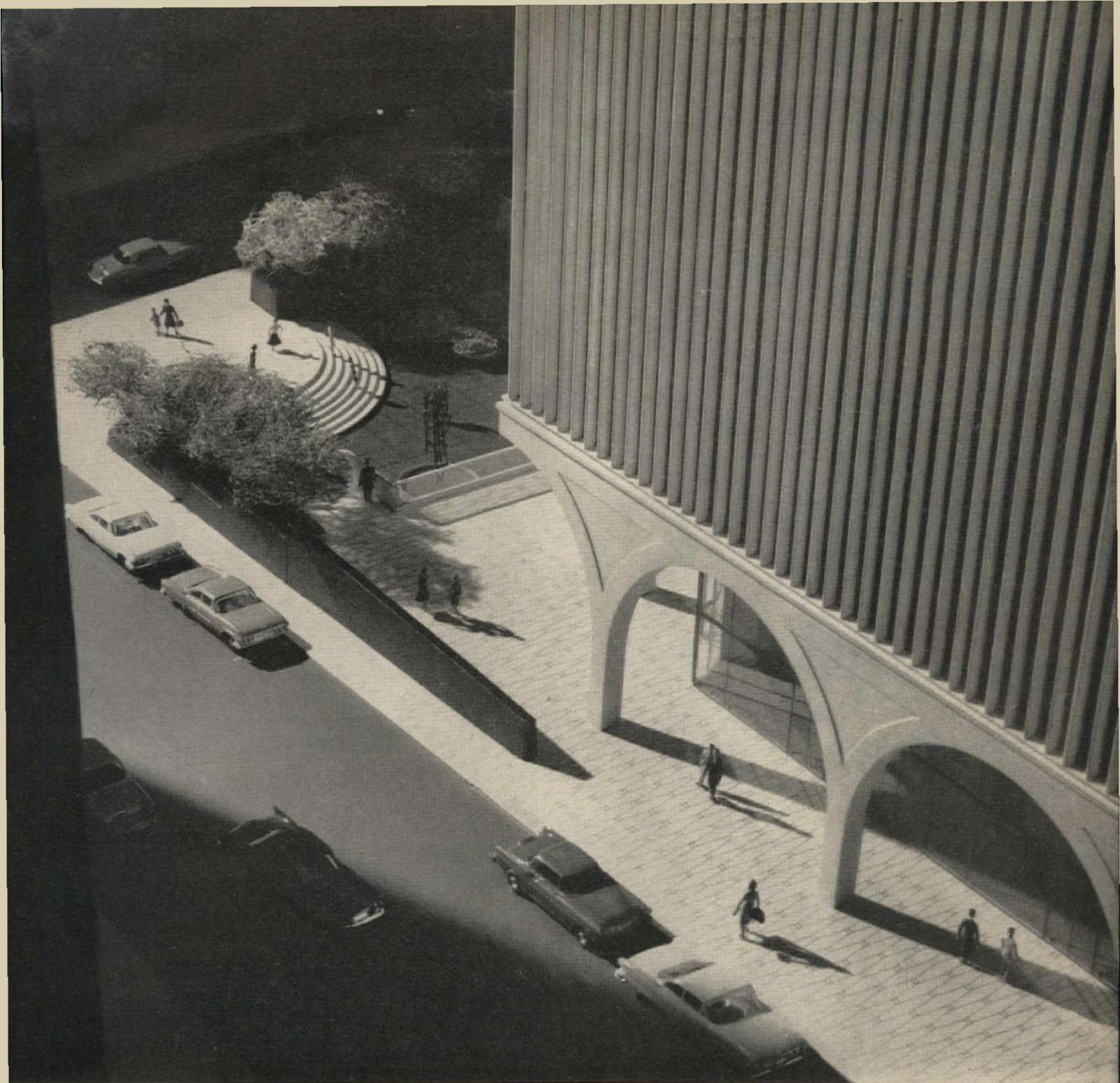
GENERAL CONTRACTOR: *Howard S. Wright Construction Company*

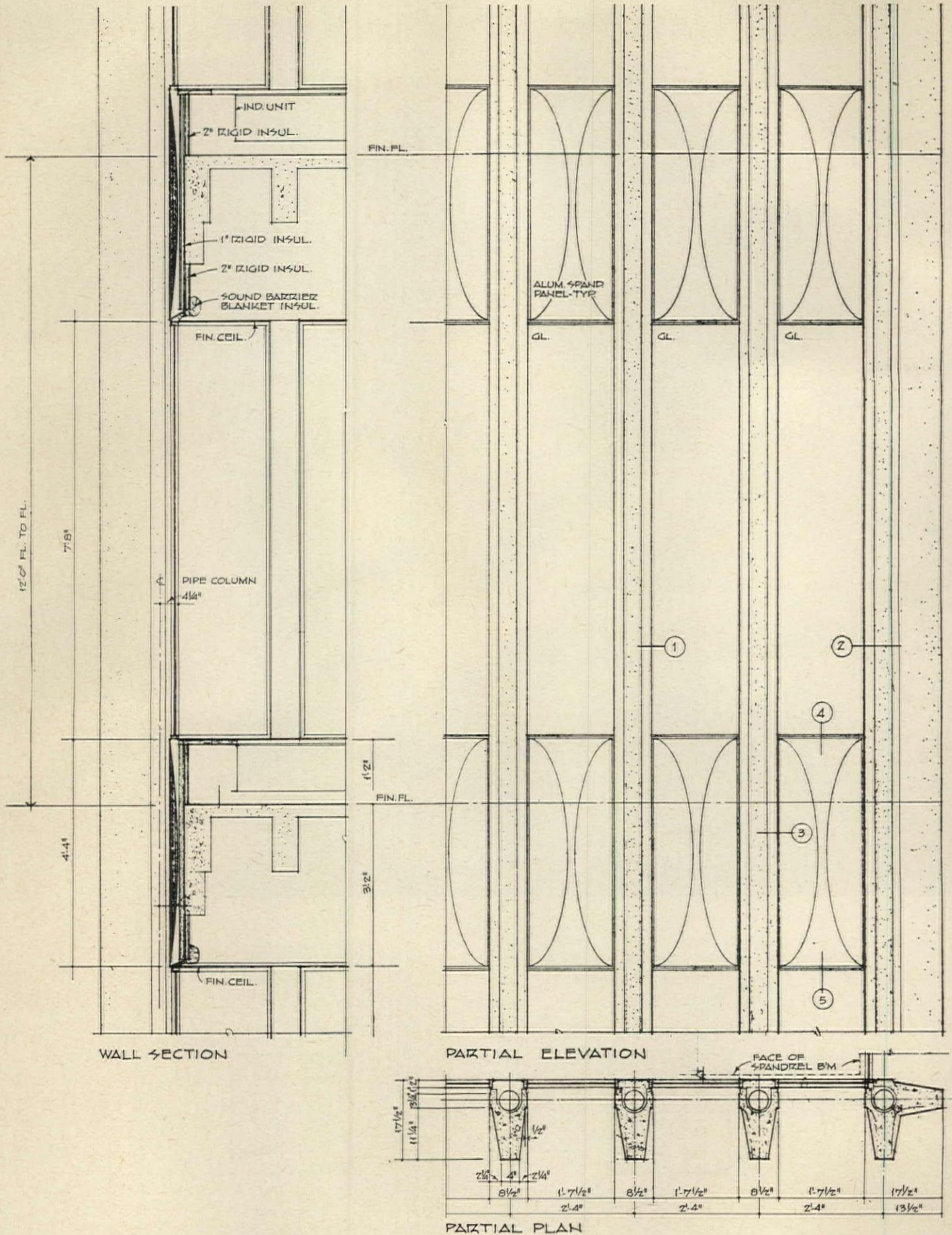
The design for this 19-story IBM building, now under construction in Seattle, makes a notable mark in the evolution of the American skyscraper. For the reappearance of the "bearing wall" in new guise—now composed of structural members rather than masonry—is the newest trend in tall building design, of which this is a distinguished example. Smaller in scale than Saarinen's handsome, faceted CBS building in New York, and more attuned to the nature of the building's occupancy than the diamond latticework of the IBM building in Pittsburgh by Curtis and Davis, Yamasaki's structural wall makes a striking vertical pattern that suppresses but does not deny the spandrels, and provides maximum flexibility of partitioning due to its small module.

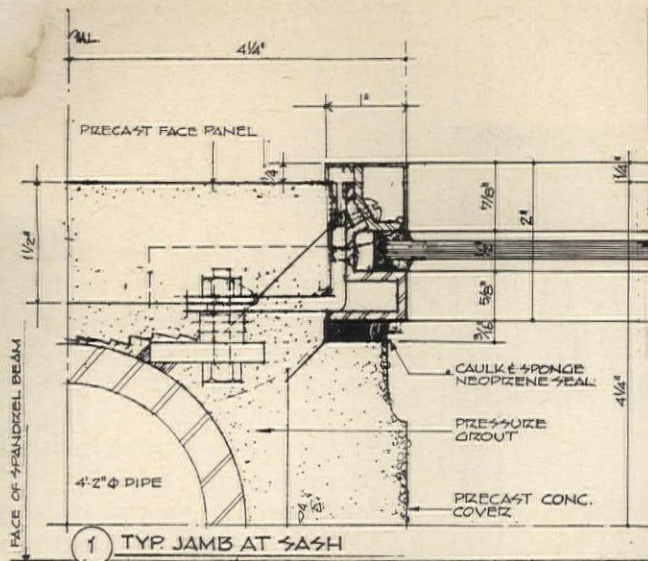
Yamasaki explains: "The wall consists of 4½-inch high-strength steel pipes, spaced 2 feet 4 inches on centers, acting as bearing studs. The pipes are encased in aggregate-surfaced precast elements with a 15-inch reveal. The floor slab spans from outer wall to central core, providing completely column-free office space.

"The gray glass, which is 19 inches wide, is held in surrounds of bronze-colored, hard anodic coated aluminum, also the material of the spandrels. The combination of light and dark will make a strong vertical pattern, and its scale will provide great flexibility of office arrangement.

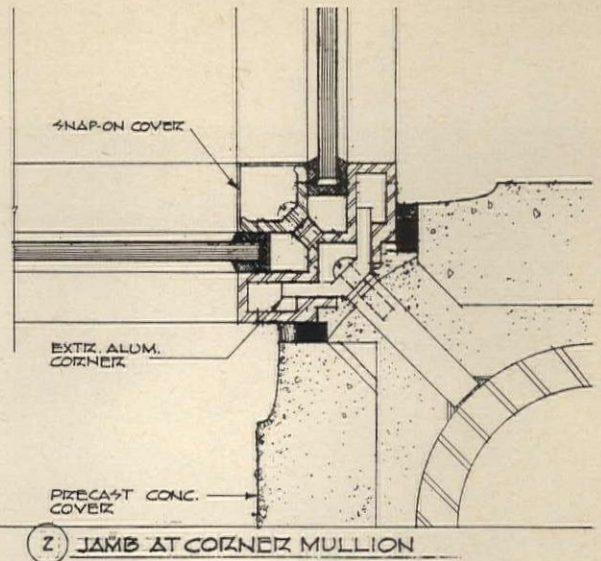
"The first floor columns had to be arranged to accommodate the garage below, so the upper wall was brought down upon a series of marble clad steel arches 37 feet 4 inches on centers, set 18 feet 8 inches from the corners. The first floor glass is recessed, and we are suggesting a scheme in which the first floor becomes a plaza extending out to the sidewalk. Such a design will fit into a plaza-type complex—such as Rockefeller Center—which the owners of the adjacent property hope to develop. John Skilling, our structural engineer, made this design possible; we could not have done it without him."



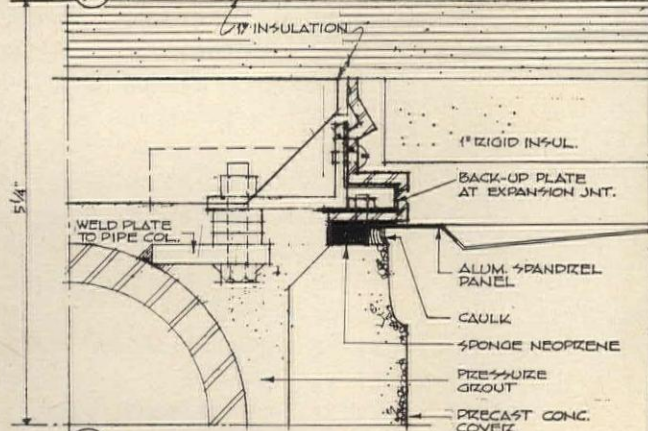




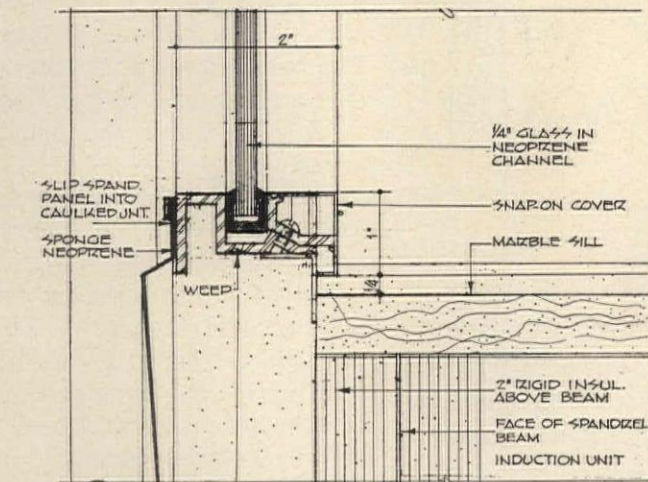
1 TYP JAMB AT SASH



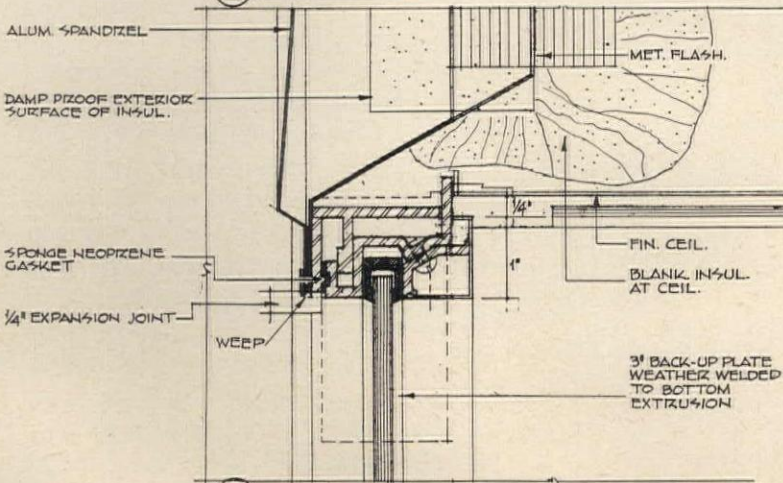
2 JAMB AT CORNER MULLION



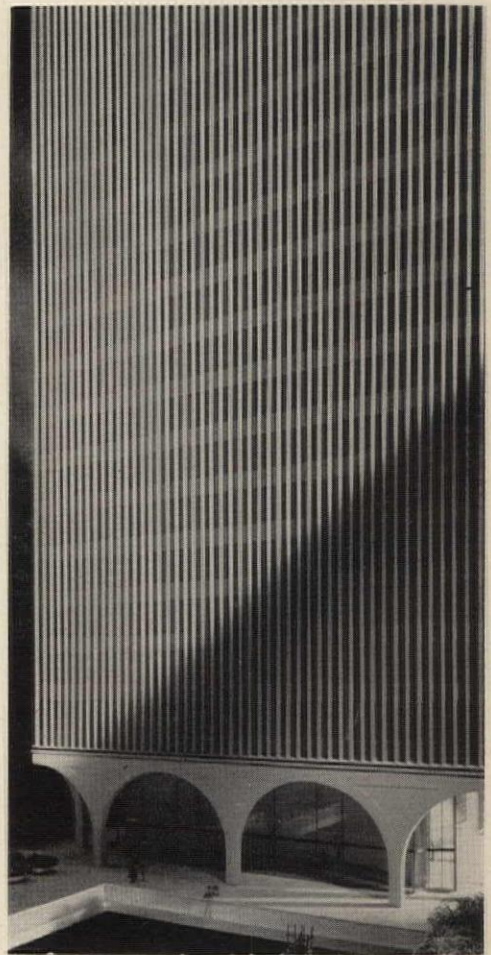
3 TYP JAMB AT SPANDREL



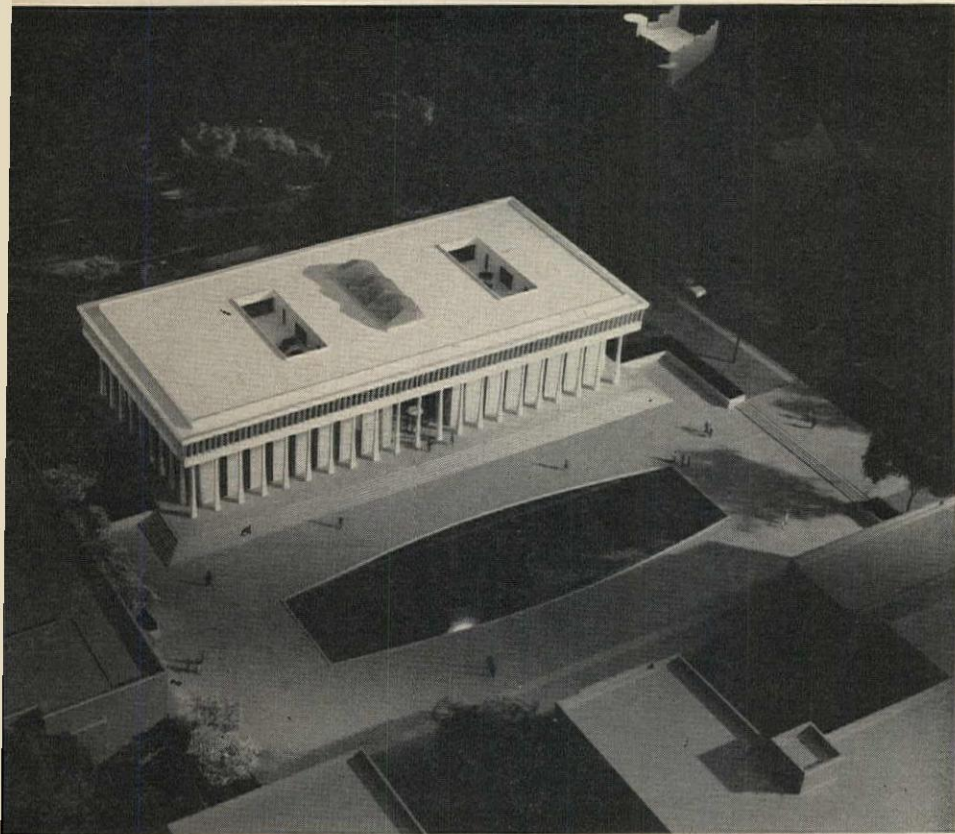
4 TYP SILL



5 TYP HEAD



The structural wall for IBM in Seattle is shown in detail on these two pages, reproduced directly from the architects' working drawings. Note that the precast covers for the structural pipes have a 4-inch outer face and then broaden to an 8 1/2-inch width at the rear, where they become the interior finish of the wall. Note also the manner in which the "corner is turned," so the interior space makes a clean right angle. The only element that takes any interior space is the induction heating unit enclosure, which acts also as a sill for the glass, 14 inches above the floor. The building is now under construction and will be finished in July, 1964



Balthazar photos

## PRINCETON BUILDING WITH COLONNADED FACADE

*Woodrow Wilson School of Public and International Affairs  
Princeton, New Jersey*

OWNER: *The Trustees of Princeton University*

ARCHITECTS: *Minoru Yamasaki and Associates*

STRUCTURAL ENGINEERS: *Worthington, Skilling, Helle & Jackson*

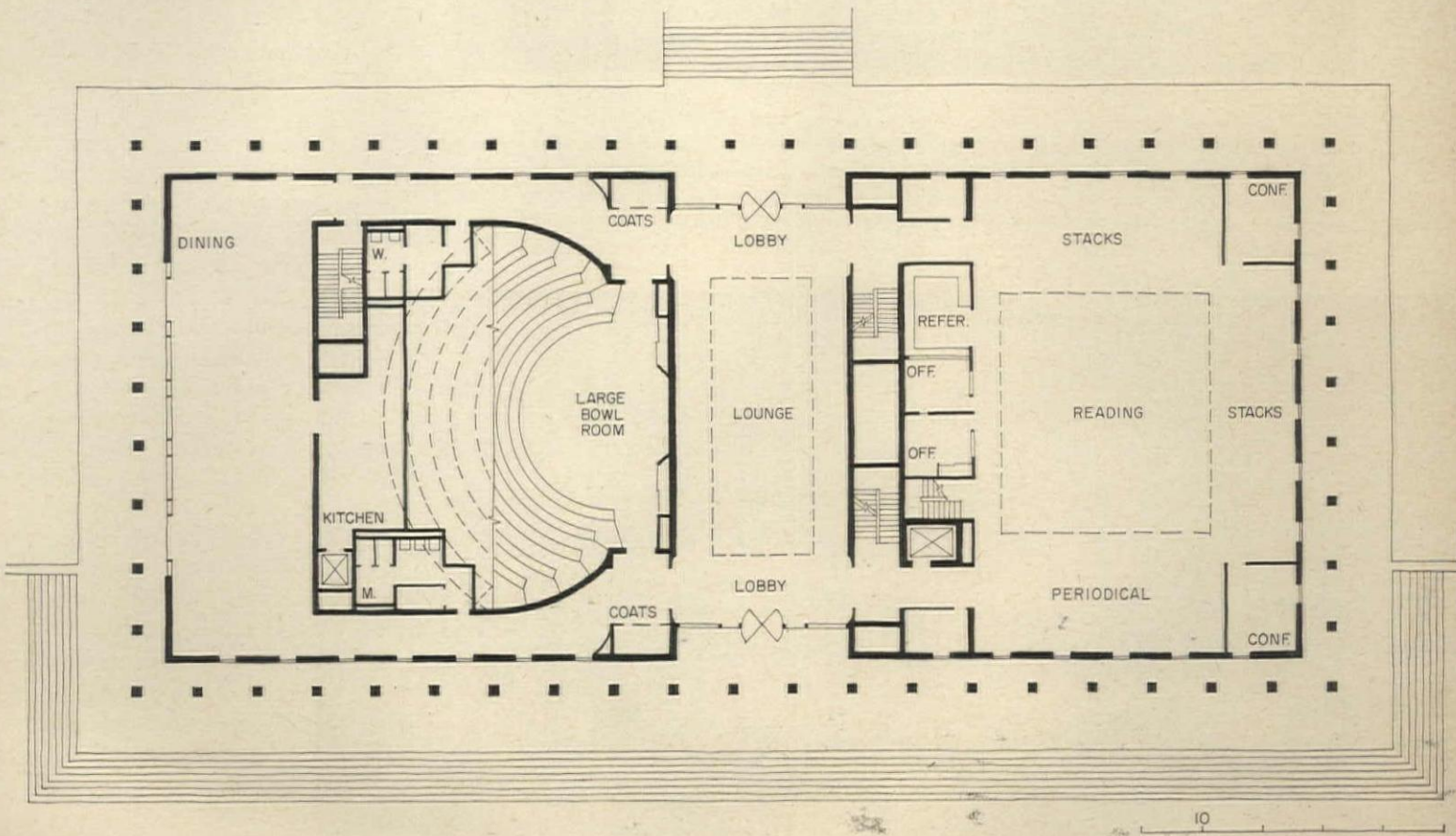
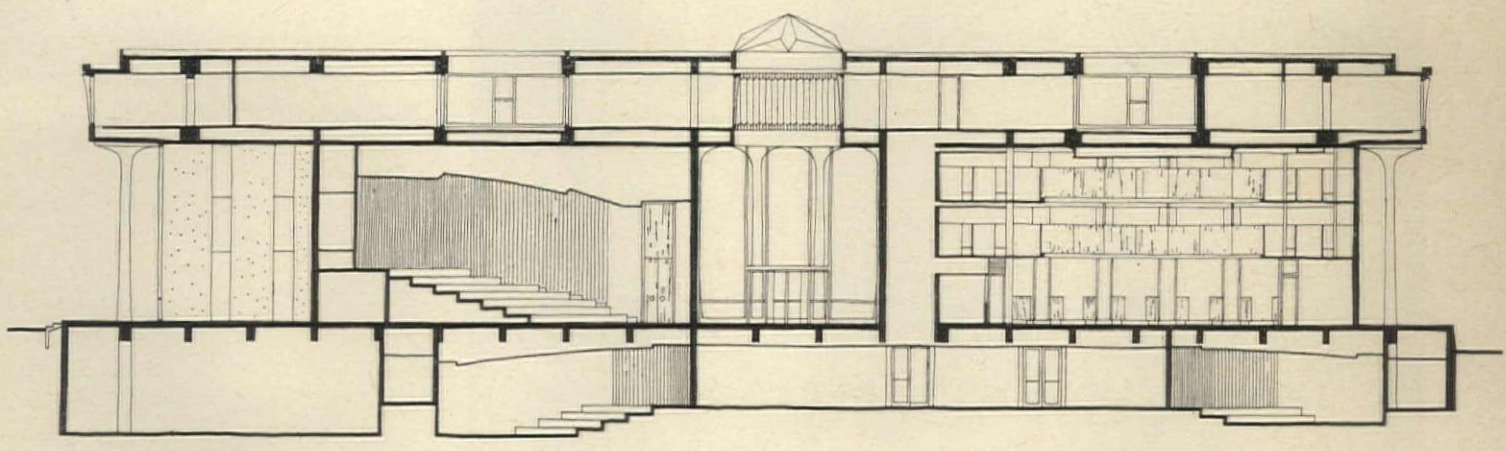
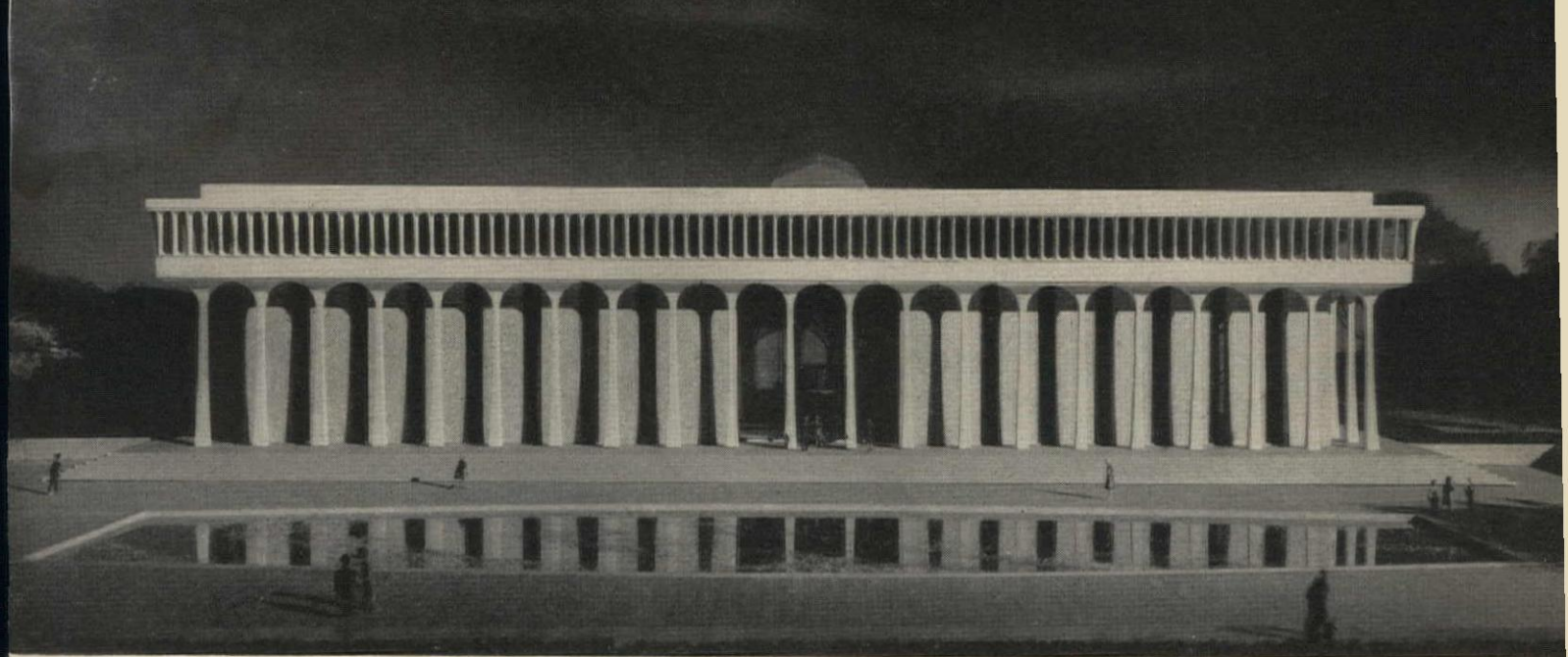
GENERAL CONTRACTOR: *William L. Crow Construction Company*

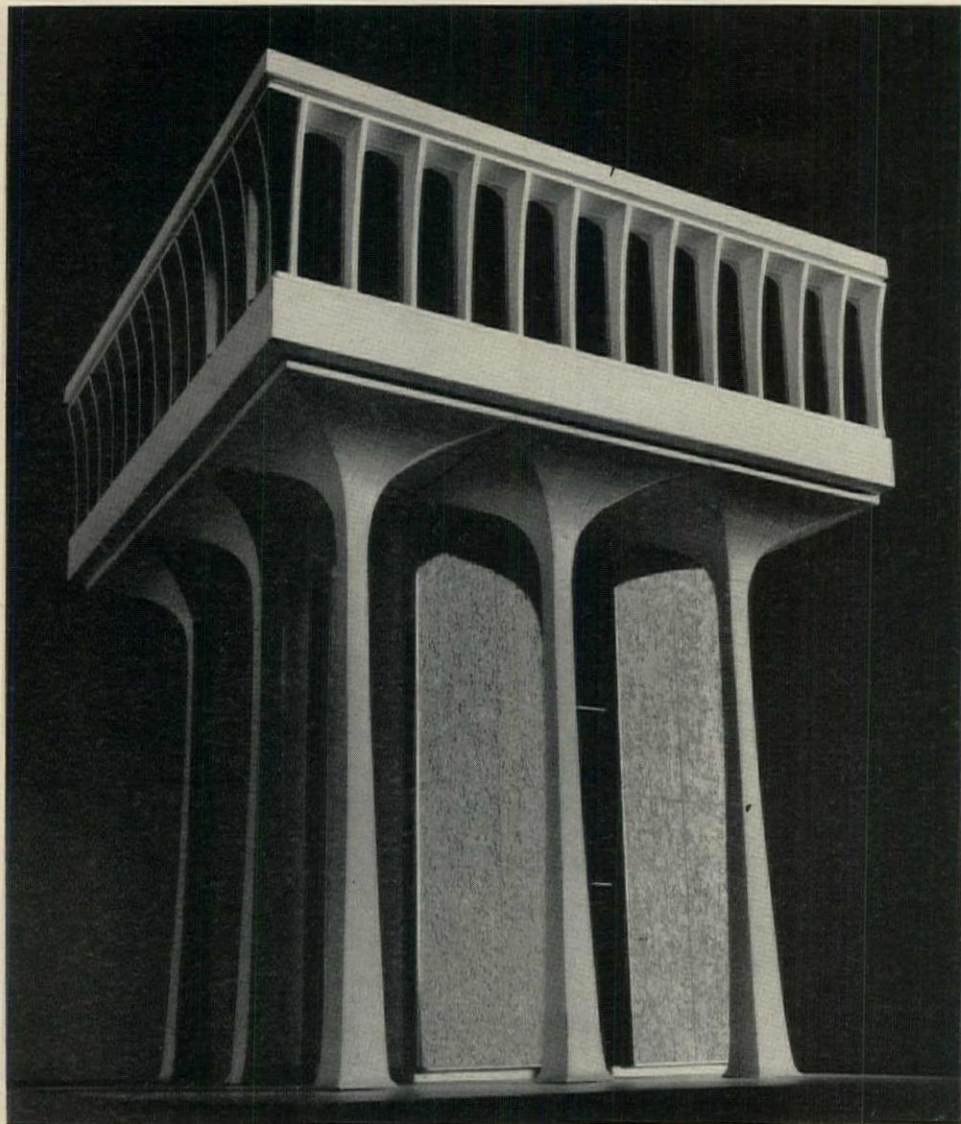
This design for the handsome, new School of Public and International Affairs at Princeton can be described as restrained but not dull; dignified but not stuffy. It will make a strong statement on the Princeton campus, but will speak in a refined—almost classic—voice.

Architect Yamasaki says: "Our scheme consists of a series of 60 columns which are the primary support for the upper floor of faculty offices. This floor is a 3-foot 6-inch-deep waffle slab, which spans the 90 feet from outside column to outside column in the width of the building. This structural scheme allows us to have non-bearing walls for the high ground floor, except for those around stair and elevator cores, etc., which are used to provide lateral stiffness. I believe this is the first time that such a structural scheme has been used. The first floor is devoted to a library with double mezzanine, a bowl room (auditorium) for 200 and a dining room. The below-grade floor houses conference and seminar rooms, four smaller bowl rooms and the usual service areas.

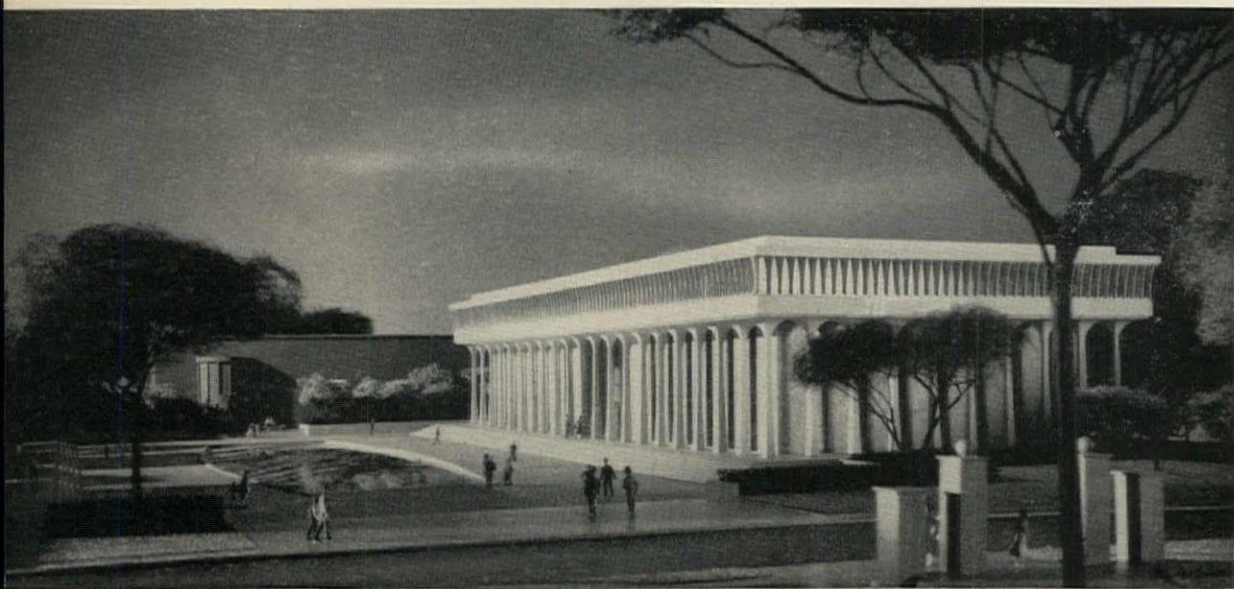
"With the 28-foot-high first floor and its exposed and orderly colonnade, we were able to gain a rich quality for the building with complete structural validity. The central hall will be topped by a skylight and will become the lounge-reception area for the school, with access to either the plaza or the street.

"The maximum potential of the site was made possible by moving the present existing building for the school; carried out at the suggestion of the consulting architect to the University, Douglas William Orr. The plaza which provides a setting for the new building—and the old building as well—also serves to connect, with a pleasant pause, McCosh Walk on the one side and the walk extending on to the engineering buildings on the other. It is hoped that the school, by opening significant new avenues of professional education, will help raise both the caliber and the prestige of government service."





The columns, which will be of white precast concrete, will be 28 feet high and 10 feet square, cast in one piece and gracefully shaped. The second floor window wall, which is curved to give sun shade to the glass areas, will also be precast. The walls behind will be travertine, with the windows framed with a bronze-colored aluminum. The plaza steps and retaining wall will be of gray mankato stone. Construction of the building was begun in August of 1963





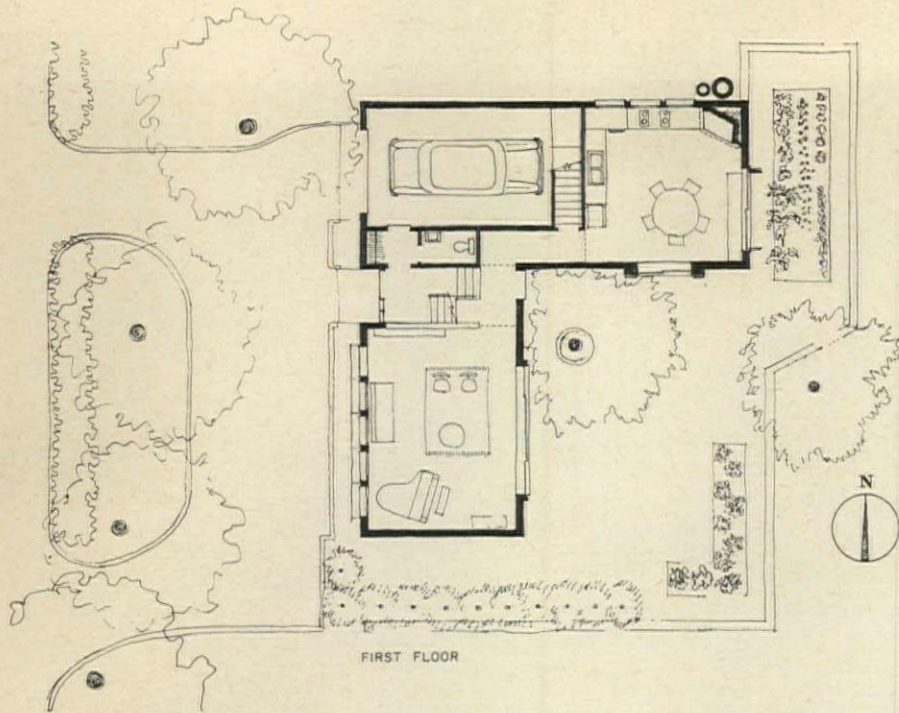


JOSEPH W. BROWNE PHOTO

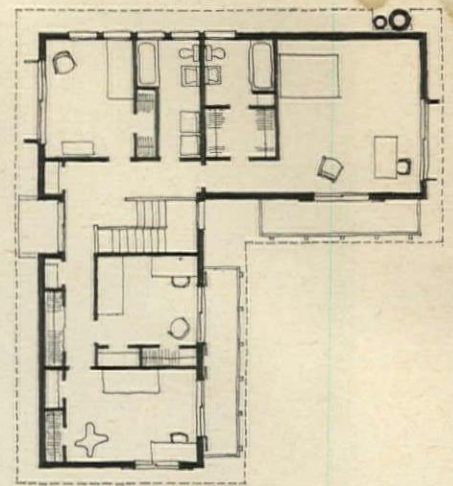
## MODERN HOUSE ECHOES TRADITION

H. Seymour Howard Jr. designs his own home to express continuity with the past in a fresh, contemporary manner

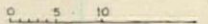




FIRST FLOOR



SECOND FLOOR



*Residence in Oyster Bay, New York*

ARCHITECT AND OWNER: *H. Seymour Howard Jr.*

CONTRACTOR: *R. M. Stanco & Son*

A simple, forthright philosophy has been advanced by Seymour Howard in planning this house for his own family: "This design evolved by a logical process from the requirements of the problem and the choice of materials. When a scheme makes sense, there is no point thrashing about in a desperate search for pseudo-originality. Harmony and repose are artistic essentials for a home; they will be felt if the spaces are clearly defined. If the forms evoke memories of similar problems in other places and other epochs, so much the better. A sense of continuity is also part of esthetics."

The planning problem was a typical one: privacy inside and out, controlled sunlight, and a realistic organization of spaces for a couple with three children. The site offered a nice view of the nearby bay to the southeast. An L-shaped plan was organized to orient a large terrace and most rooms to this pleasant outlook. Living spaces were divided into two areas: a living-music room and a kitchen-dining room. The garage was incorporated into the house between these elements. Upstairs are three children's bedrooms and laundry-bath on one side, and a large parents' bedroom-study, bath and dressing closet on the other.

The exterior walls are of 8-inch masonry block and reinforced concrete lintels; finished with white stucco on the outside, furred and plastered inside. The second floor and roof have conventional wood framing. Colors throughout are kept simple: white walls, dark stained wood, yellow gravel, red quarry tile and black slate counters.





A "Mediterranean flavor" has been given to the Howard house by such devices as wooden balconies off most bedrooms and operable shutters on all the windows. The architect, who is also an associate professor of architecture at Pratt Institute, Brooklyn, states that the shutters "have been put back to work here as the least expensive and most straightforward method of achieving privacy plus control of light, sun and summer heat." A wide overhang protects the whole structure. Gutters were omitted, with the rain simply draining off onto the gravel terrace below.

Copper tubing in the slab provides radiant heating for the lower floor. The upper floor has baseboard heating, as can be noted in the photo (*bottom left*) on the master bedroom. Ceilings are red cedar plank.

# INDUSTRIAL BUILDINGS

Architecture for industry deals with infinite variation of program, purpose, image and locale, as witness the five fallout shelter projects developed at Rice University and the buildings large and small which follow

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BUILDING TYPES STUDY 327

®

## RICE UNIVERSITY CONFERENCE DEVELOPS FIVE FACTORY PROJECTS

Five practicing architects from diverse regions lived and worked for 10 busy days in June at Rice University in Houston completing fully programmed designs and models for five different plants for light industries. The occasion was the second annual "Rice Design Fete," June 3 through 14, conducted this year with the aid of a research grant from the Office of Civil Defense. Each architect was assigned a detailed program and a team of six students (from Rice and nine other universities) to act as office staff. The single requirement common to all programs was the provision of dual-use space for community fallout shelters.

Purpose of the gathering was a two-fold venture in education. First, it was to allow students to participate in a working situation comparable to actual practice. Second, it was to demonstrate to both students and architects the simple, low-cost practicalities of shelter design—*where the shelter is a requirement of the architect's initial program*. It was definitely not the purpose of the conference to reflect any state of alarm or even any trend of opinion about the possibility of nuclear warfare.

Indeed, it was just that demonstration of basic simplicity which served to remove the whole question of dual-use, multiple-occupancy fallout shelters from the realm of emotional and ethical opinion to the realm of simple prudence. "From skeptic to convert in 10 hectic days," is about the way one of the participating architects described his own reaction to the exercise. It was found that OCD ground rules for reasonable protection could be incorporated unobtrusively and inexpensively into industrial plant designs without restricting any of the basic program requirements for production, flexibility, expansibility or amenity. And there are as many ways to accomplish shelter designs as there are plants.

*Rice Design Fete Number 2*

CONFERENCE DIRECTOR:

*Bill N. Lacy, Associate Chairman  
Dept. of Architecture, Rice University*

ARCHITECT PARTICIPANTS:

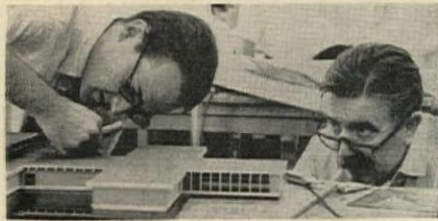
*Fred Bassetti, Seattle  
A. William Hajjar, Philadelphia  
George T. Heery, Atlanta  
Don M. Hisaka, Cleveland  
George Vernon Russell, Los Angeles*

CONSULTANTS:

*William Caudill, Architectural Consultant  
Robert Berne, Professional Adviser,  
Office of Civil Defense  
Richard Muther,  
Industrial Program Author  
Arlyn A. Orr, Structure of Shelters  
Ben H. Evans, Climatologist  
Kenneth Zimmerman, Structural  
Morris Backer, Mechanical*

SPECIAL ASSISTANCE:

*Coryl LaRue Jones, Dimitri Demopoulos,  
Laurie Olin, Edward Wundrum,  
Charles Lawrence, Frank Lawyer,  
Jack Yardley*



PROJECT A—George Vernon Russell's solution is an embodiment of his observation that: "Esoteric architecture applied to industry seems out of place to me. It is much more important to have a reasonable structural system instead of one that is exciting today and boring in five years . . . a modular plan that allows change, growth and flexibility . . . to have pleasant surroundings and careful landscaping . . . to bring order from chaos and add a little art in the doing. I hope my plan is unpretentious, efficient—and unmonumental."

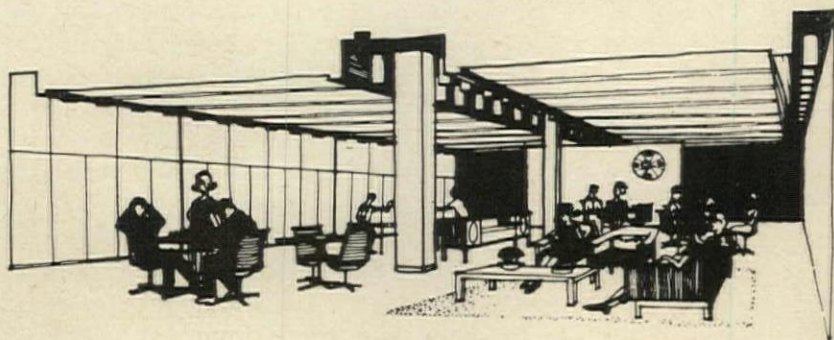
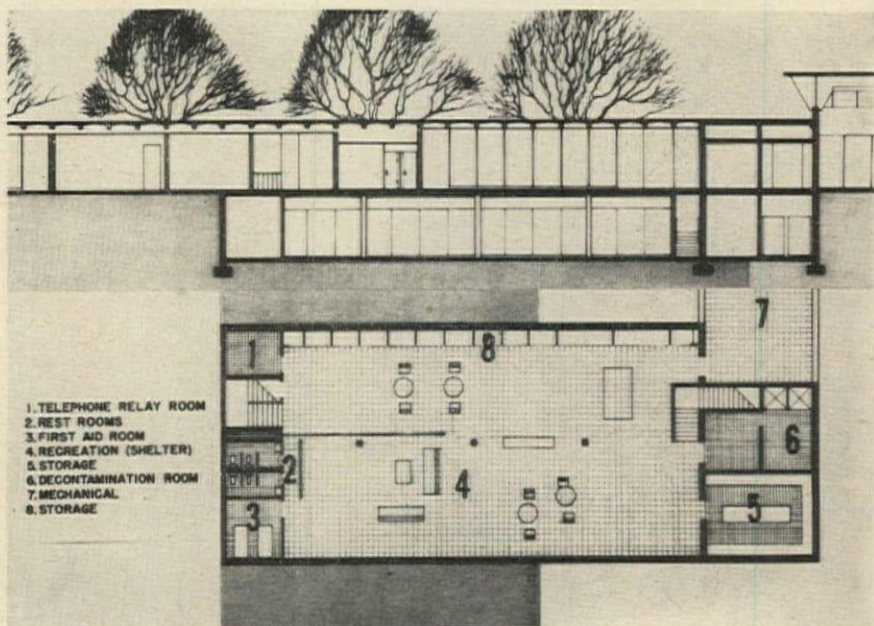
Translating these precepts into a solution for his plant, Russell proceeded to design the building as a workable tool for the production of nuclear detection devices, and as an attractive asset to its community.

Plan of the plant is based on a 5-foot modular system. Structure is predominantly concrete. The ground floor level is 18 inches above finished grade. Flat roof is designed for a 40 pounds per square foot snow load.

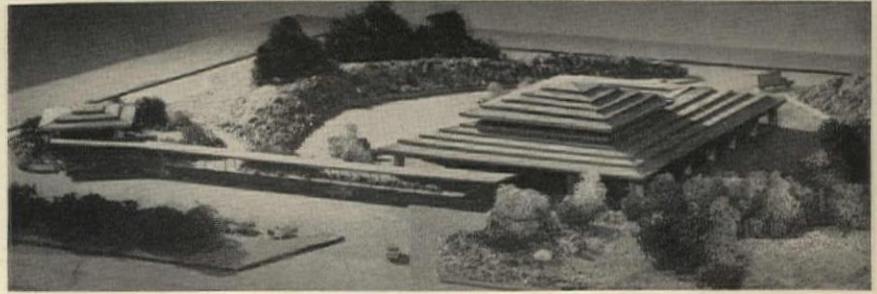
The fallout shelter of Plant A serves as the employe recreation room during normal operation of the plant. It is located in the basement below the lunch room and kitchen and is equi-distant from the production and administration—engineering areas. Russell was concerned that any space designated for fallout shelter would be usurped by other plant functions, and his choice of the recreation room seemed to solve that problem since it would not be involved in the engineering or production process. Its location enables the moderately protected kitchen to resume service to shelter occupants soon after peak fall-out activity has subsided. Shelter placement below grade makes it very easy to meet the required minimum fallout protection factor of 100.

The shelter accommodates 200 inhabitants, and it can be expanded in the future to handle twice that number by linking it to another identical unit through the extension of the mechanical tunnel.

Variety, in fact, was an essential characteristic of the conference. It was provided not only in the sizes, processes and locations of the plants, but also in the individual differences of interpretation that might be expected to evolve from such a gathering of architectural talents. Each architect accepted as his first task the fulfillment of a realistic and de-

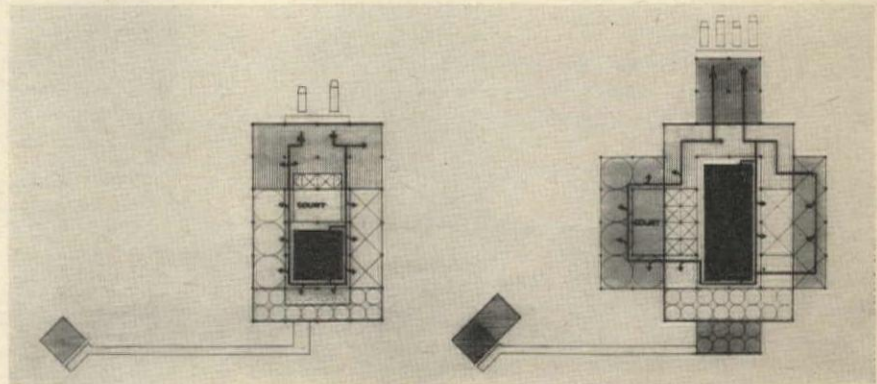
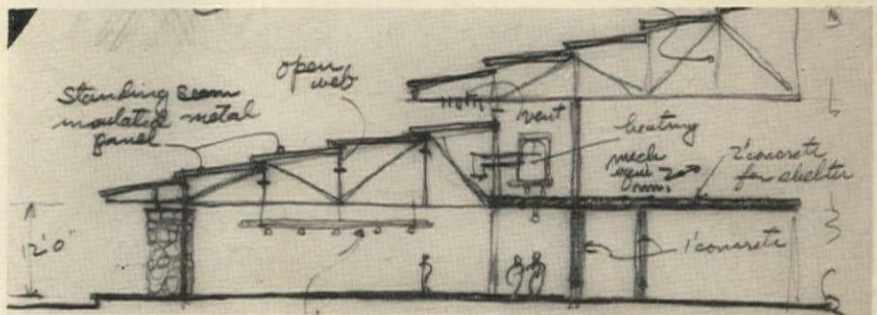


tailed program. The five solutions were presented by the architects on the 10th day of the conference and evaluated in general terms but not judged competitively. Each made his own provisions for growth potential, flexibility, cost control, structure, landscaping, community aspect and space for dual-use fallout shelter.



**PROJECT B**—William Hajjar has succeeded in bringing unity to four design determinants: location in a residential community, a work force predominantly women, complete flexibility and a silk screening process requiring special mechanical systems and a degree of isolation. To draw young married workers, a nursery for pre-school age children is provided as the separate, gate-house structure shown in plans for two expansion stages (right).

The central first floor core of Plant B is the dual-use fallout shelter. It is also the silk screening room and very few special structural and mechanical considerations were required to make this room serve both purposes. The wall barrier is created by the enclosure of this space by toilets and storage rooms. Protection above is furnished by attic space which contains mechanical equipment and is sufficiently large to store water, bunks, food, etc., for emergency use. Additional protection from ground direct radiation and skyshine is gained by the mounding of the earth in landscaping around the building and by the large factory space surrounding the core.

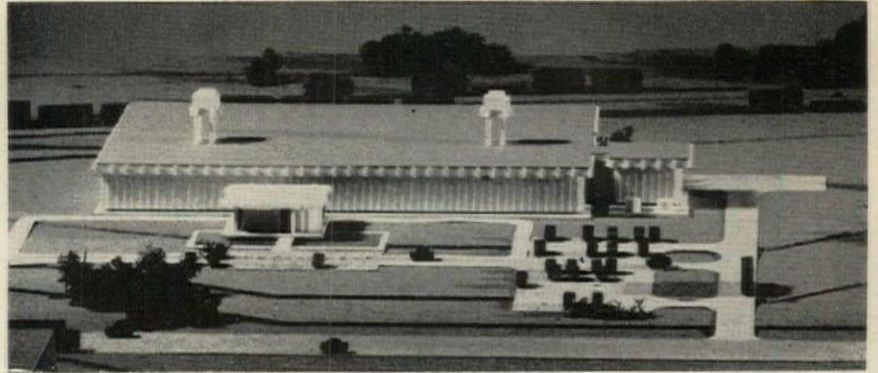


**TABLE 1: SUMMARY OF PROGRAMS**

	Project A—Russell	Project B—Hajjar	Project C—Heery	Project D—Bassetti	Project E—Hisaka
Products	Devices for detection of nuclear sources	Airline travel bags	Metal furniture	Food carts and containers	Molded and decorated plastic
Location	Suburban Boston	Denver	St. Louis County	Atlanta	Los Angeles
Site	New suburban	Edge of town	Small town	Industrial Park	Speculative land
Area	32,100 sq ft	31,100 sq ft	103,700 sq ft	62,500 sq ft	83,300 sq ft
Stories	One-floor, basement	One-floor	One-floor, possible balcony	One-floor, 2-floor office	One-floor
Process	Engineer, machine, assemble, test	Cut, decorate, sew	Press, form, cut, bend, polish, pad, paint, assemble	Shear, form, weld, assemble	Mold, trim, decorate

The technology of protection against radioactive fallout has been detailed in many publications (including two articles in the January, 1962 issue of ARCHITECTURAL RECORD). Basic facts pertaining to shelter design are these: (1) all matter, including air, water, glass and all construction materials, offers some barrier to fallout radiation, *but* only in

proportion to the total weight per unit area of the barrier. Thus, an 18-inch wall of concrete will transmit only 1/100 of the intensity of rays incident on one side, providing thereby what is called a protection factor of 100. So will 25 inches of earth. So will about 200 pounds weight per square foot of any material; (2) ray intensity diminishes also with dis-



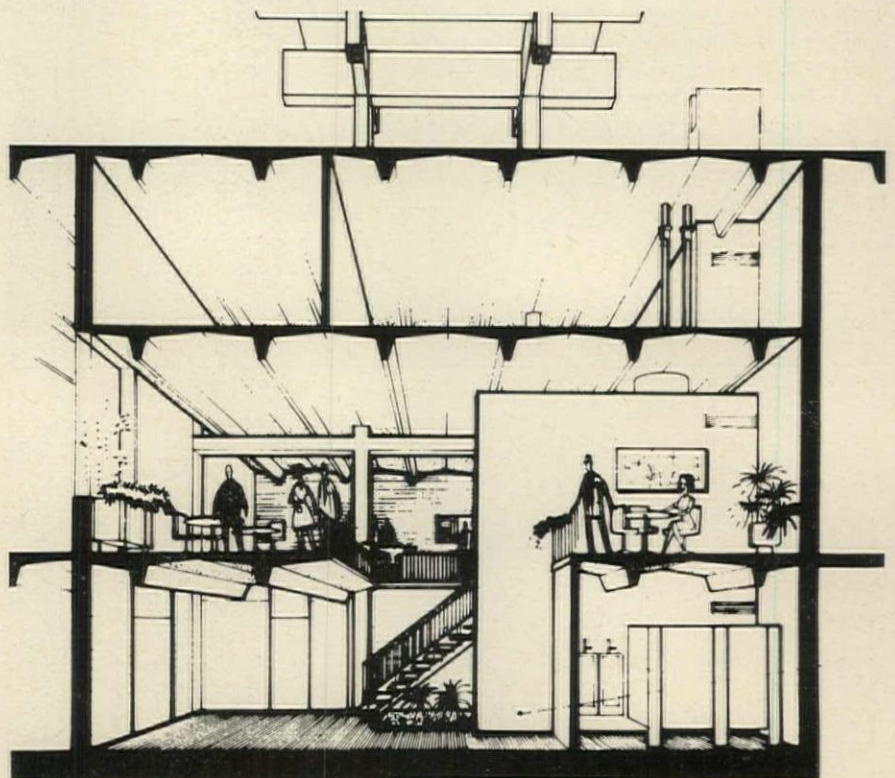
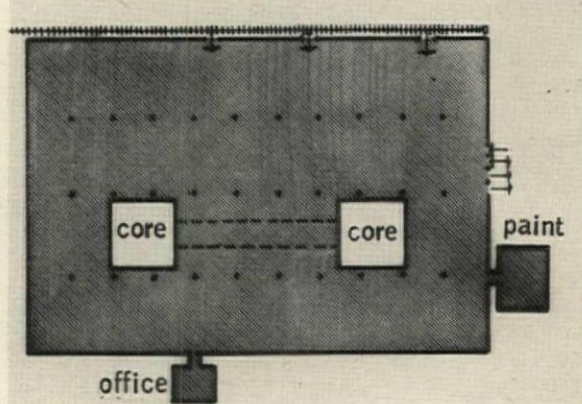
**PROJECT C**—George T. Heery insists: “The architect for industry who fails to provide for both growth and flexibility fails in his task.”

The architecture of this metal furniture plant is compatible with both these aims, and it accomplishes them with a wary eye toward cost without sacrificing appearance. In its final stage of growth as presented here, the building consists of a large production area with two adjunctive buildings; one of these, for administration, is located at the front entrance. The other, a paint shop, is segregated to eliminate the need for a fire-wall within the factory. The administrative wing treatment—concrete and brick in a special pattern and custom interior furnishings—makes this space a point of emphasis against the backdrop of repetitive patterns in the facade of the plant.

Steel structural system of the plant supports wall panels and roof joists of prestressed, precast concrete units. Concrete roof T-joists span 60 feet and allow large column-free spaces. Ceiling height 2 feet clear beyond that presently required is another provision against obsolescence.

Within the plant production space are two cores. These cores contain employe lockers, toilets and lounges. This space is dual-use space for a fallout shelter in time of emergency. Directly above each of the cores is a water storage tank that projects high above the roof line in dramatic silhouette.

Heery's fallout shelters for Plant C will accommodate 200 people in each core. Cores contain three levels: (1) basement, the locker and toilet area; (2) ground level, the vending machine lunchroom; and (3) the upper level, the storage and mechanical equipment area. A tunnel connects the basements of the two fallout shelters and serves as a dormitory for both. The occupants are protected by the earth fill and concrete walls at the lower level, by the thickness of the exterior and core walls, and by the distance between the two upper levels.



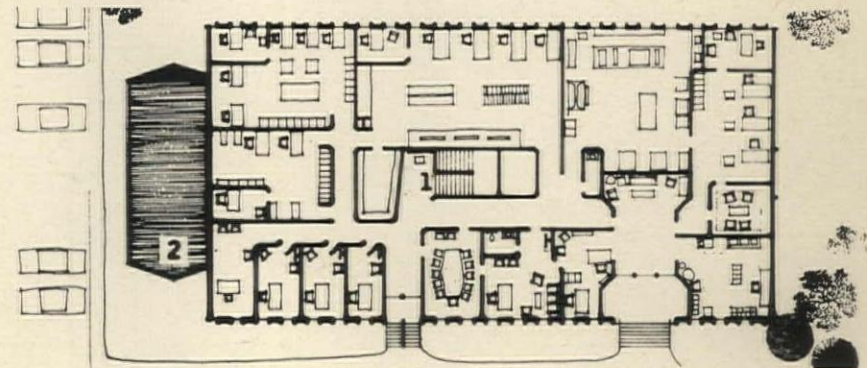
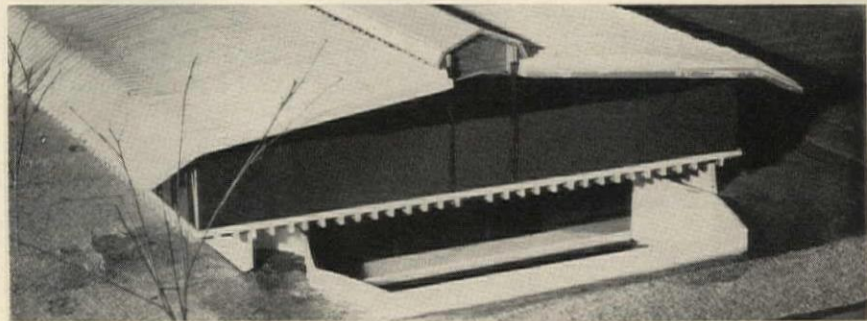
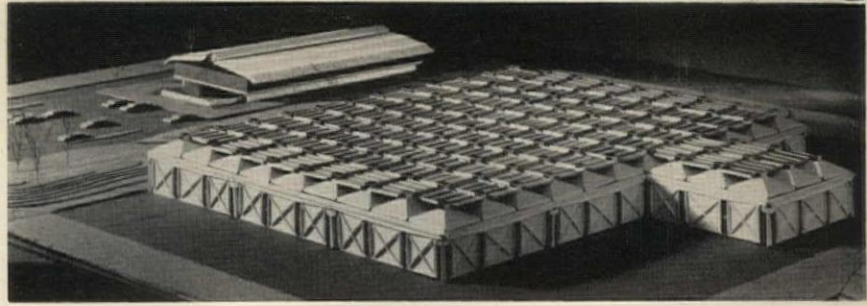
tance from the source; (3) sources to be reckoned with are fallout dust on the roof and ground and skyshine by diffraction from atoms in the air. Hence shelter design incorporates geometry and barrier shielding.

Minimum requirements established by OCD for the Rice conference were: a protection factor of 100;

dual purpose shelter space for twice the daytime employment roster; 65 cubic feet per person and not less than 10 square feet of floor per person; at least one access per 200 occupants and not less than two per shelter; permanent storage space for kits, food and water of at least 1.5 cubic feet per person.

Program and cost summaries are given in tables.





**PROJECT D**—Fred Bassetti's Plant D consists of two buildings, one for administration and one for production. The factory building is built of precast concrete columns, beams, roof units, and wall panels, all to be fabricated on site. Basic roof module is a 20-foot-square pyramid. Sun shades of redwood slats rest between pyramids. The office building is a load-bearing wall system on two levels. The first floor (*plan at right*) is raised 4 feet above grade with central access (1) to shelter-basement with a strip window at one end and a full glass wall at the other end looking out on a reflection pool; (2) also below grade. Pitched roof is of precast panels supported by brick exterior walls and central load bearing partitions.

Bassetti's shelter is in the employe lunch-room in the basement of the administration building overlooking the reflection pool. Skyshine radiation in this space is limited by an oversized spandrel beam above the glass. Direct ground radiation is limited by the retaining wall around the pool. Fallout in the pool settles, and the depth of water provides an effective barrier.

**TABLE 2: SHELTER COST ANALYSIS**

Item	Plant A	Plant B	Plant C Costs in dollars	Plant D	Plant E
Structural system	217,000.00	183,000.00	552,000.00	472,000.00	708,000.00
General construction	231,000.00	119,000.00	185,000.00	251,000.00	208,000.00
Mechanical and electrical	98,000.00	78,000.00	272,000.00	165,000.00	222,000.00
Total plant cost	546,000.00	380,000.00	1,009,000.00	888,000.00	1,138,000.00
Plant cost without fallout provision	534,000.00	366,000.00	959,000.00	883,000.00	1,129,000.00
Sq ft cost with shelter	17.00	12.22	9.73	14.20	13.66
Sq ft cost without shelter	16.63	11.66	9.40	14.12	13.55
Over-all plant area fallout cost per sq ft	.37	.56	.33	.08	.11
Incremental cost per sq ft of shelter area	2.85	2.86	4.33	1.52	1.56
Shelter area, sq ft	4,210	2,300	11,840	6,500	5,700
Over-all plant area, sq ft	32,100	31,100	103,700	62,500	83,300
Employees	200	115	200	55	85

Coordinating architect, Harry S. Ranson; project estimator, R. C. Partch; mechanical engineer, C. W. Ellis; fallout and structural consultant, A. A. Orr



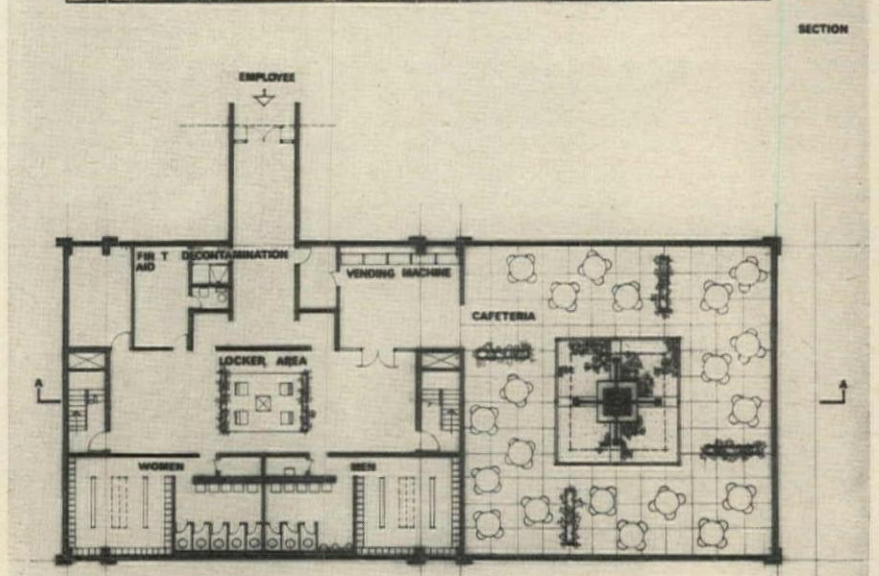
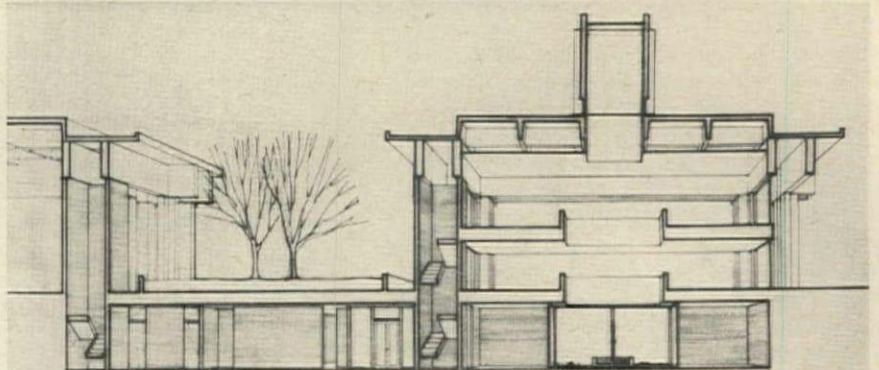
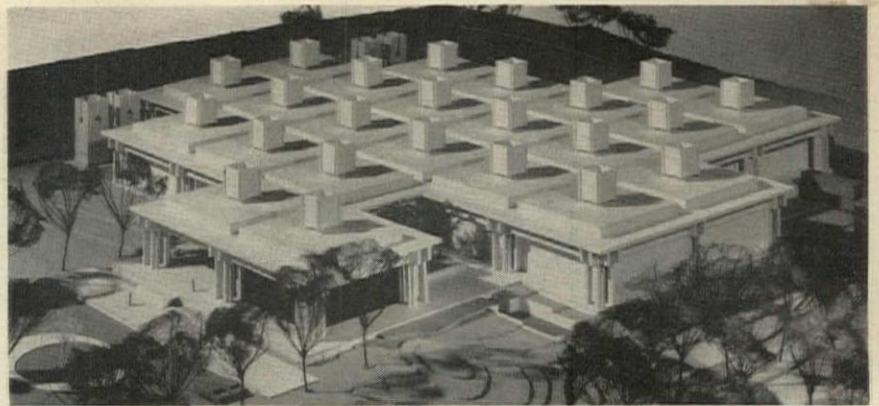
**PROJECT E**—Don M. Hisaka solves the problems of this molded plastics plant with an appearance of simplicity that disguises its ingenuity. Planning on a modular system of concrete, post-and-beam bays 50 feet square, permits an asymmetrical composition of elements that adheres to the production flow. Through use of this system, it is possible for the plant to grow freely without a rigidly established pattern.

Segregation, but not separation, of the administrative portion of the plant is made by projecting two of the modular bays to the front—one enclosing the offices, the other acting as an open entrance pavilion.

Two levels of administrative offices are housed in a single bay around an open light well. This same well supplies light to a sub-grade cafeteria court with a fountain. Employees enter the plant at the basement level where lockers and cafeteria are located.

This area below grade is the dual-use space which doubles as a fallout shelter. Although located below grade, it is a pleasant area facing onto an enclosed landscaped court lighted by an air well. Occupants of this space will be protected from roof contribution by a total of nearly 25 inches of concrete in the floors and roof (see section) as well as the distance factor from the roof to the shelter area.

The remainder of the shelter area is in an adjoining locker and toilet room, accessible from the parking lot by a ground level entrance. This space achieves its protection by use of a 12-inch concrete slab roof with 2 feet of earth fill above for plantings at the upper level.



"To provide adequate fallout protection for the entire population of the Nation in the event of a nuclear attack, the National Shelter Program must include a certain number of shelter spaces built by private capital. Every segment of American enterprise should be encouraged to participate in this phase of the program. This can be accomplished through the development of dual-use space at little expense without adversely affecting the functional requirements or esthetic appeal.

"The objective of the Second Rice Design Fete was to prove that such design can be achieved in one important facet of our economy—industry.

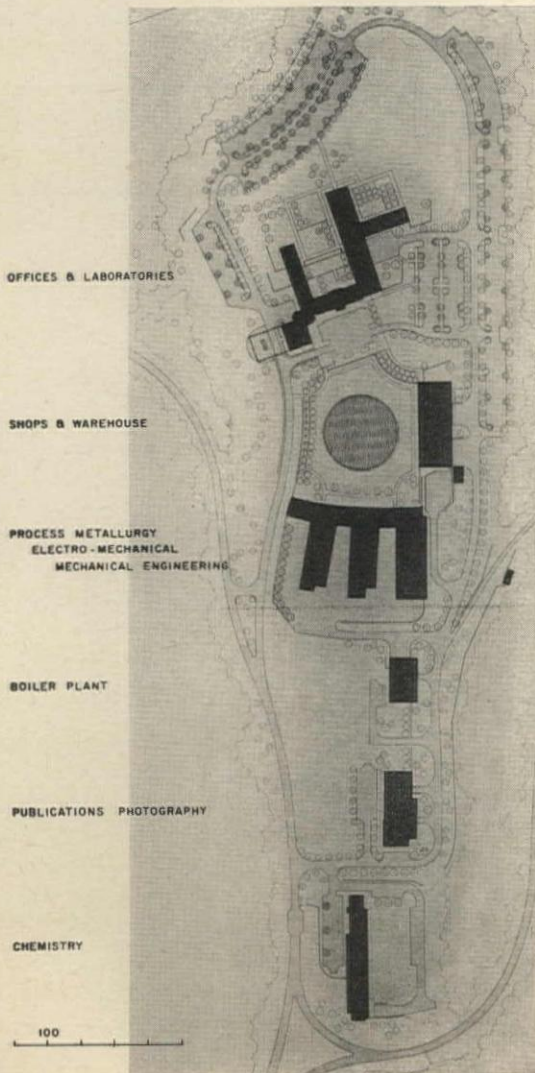
"The results show conclusively that efficient, attractive,

industrial buildings can be designed to include protection from the effects of fallout gamma radiation as an integral program element. Each solution provides shelter unobtrusively in a pleasant environment in accordance with minimum OCD requirements. This can be done not only in industrial buildings but in other types as well.

"The five architects, their teams and the staff of the Department of Architecture of Rice University are congratulated for the results of their imagination and creative skill as applied to a vital area in the over-all defense effort."

*Stewart L. Pittman*  
Assistant Secretary of Defense  
for Civil Defense

© Ezra Stoller photos



## CAMPUS PLAN FOR A MOUNTAIN-TOP RESEARCH COMPLEX

*Homer Research Laboratories, Bethlehem, Pennsylvania*

OWNER: *Bethlehem Steel Company*

ARCHITECTS: *Voorhees Walker Smith Smith & Haines*

SANITARY ENGINEERS: *E. T. Killman, Associates*

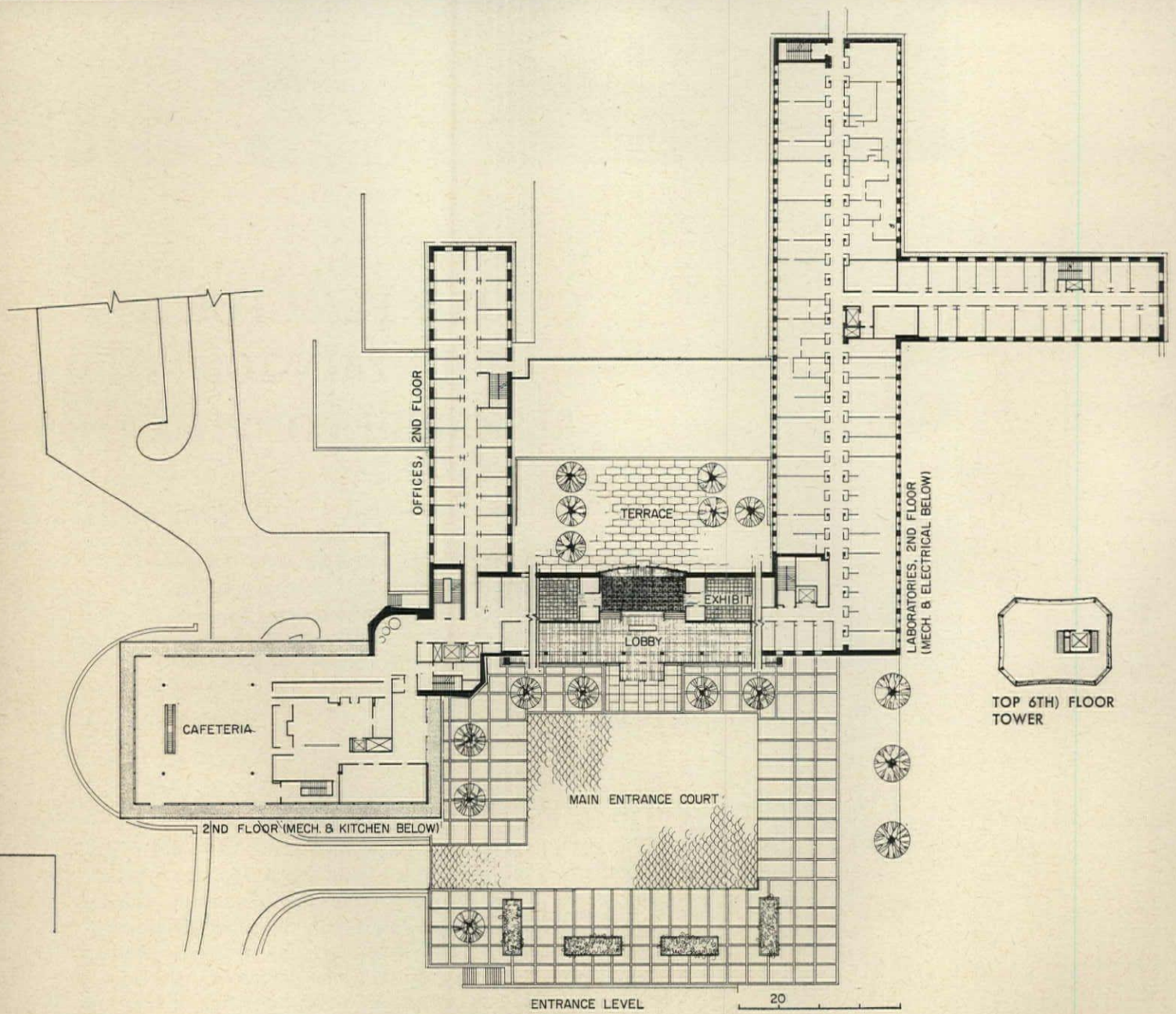
LANDSCAPE ARCHITECTS: *Clarke and Rapuano*

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

FOOD SERVICE CONSULTANTS: *Office of Howard Post*

CONTRACTOR: *Turner Construction Company*

This campus-plan research complex for Bethlehem Steel Company is situated on a 1,000-acre hilltop site overlooking Bethlehem's manufacturing facilities along the Lehigh River and makes itself a compatible neighbor to the campus of Lehigh University. The range of company activities brought together from dispersed locations to this site is reflected in the six main buildings of the complex. Dominating the hilltop is the administration and



OFFICE-LAB BUILDING; LOBBY AND SECOND LEVEL

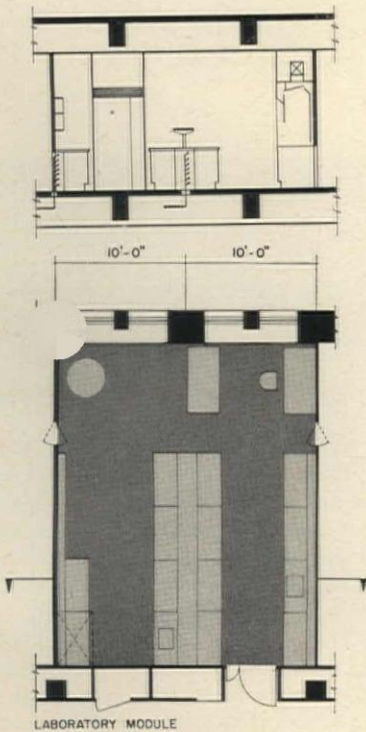
bench laboratory building with a six-floor tower overlooking the city and countryside for miles around. Directly across a large round cooling pond is a high-bay facility providing three separate wings for process metallurgy, mechanical metallurgy and other pilot plant operations. Also flanking the pond is a large two-story building housing shops and warehouses. Down the slope of the hill from these three buildings are the boiler house, photography building and chemistry laboratory. The structures are all framed in structural steel and faced with random ashlar and Indiana limestone and granite. Floor area of more than half a million square feet is provided in this \$35 million complex.

The administration and bench laboratory building provides office space for engineers from all research divisions as well as for the technical information division, service division and patent department. The tower lounge, library and second-level, glass-enclosed cafeteria form a striking change of pace and massing as a separate wing attached at the base of an essentially U-shaped, three-story building. The base of the U accommodates the entrance lobby with offices above. One leg of the U houses executive and technical offices, while the other, with a second wing attached at about mid-length, is occupied by laboratories.

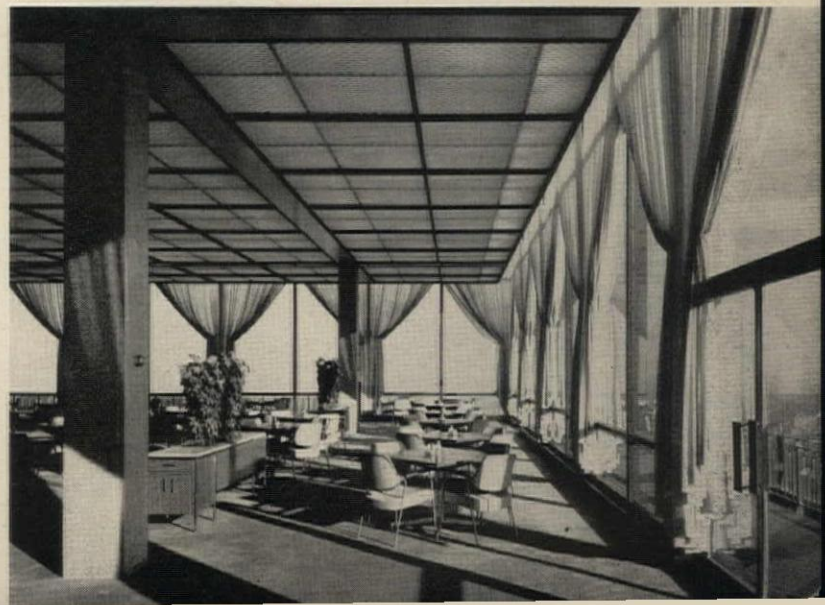
Mechanical services for the laboratories, are distributed from a penthouse through enclosed vertical wells spaced along center-line corridors to serve each pair of laboratory modules.

Bench laboratories are built on 10-foot modules. Each lab has a service enclosure, with a chain for a safety shower. Even the smallest lab has two ways of getting out in case of emergency. Normally a single 10-foot module is occupied by only one man. The service closet for each lab supplies special gases, fluids and electrical energy. Wide doors to labs permit large objects to be moved in and out.

Laboratories in this building serve four general categories of research: measurement and control, physical metallurgy, chemistry and chemical engineering. In each there are special processes. For example, metallurgy in-



Below, left: main entrance lobby. Right: cafeteria, second floor



cludes metallography in which X-ray diffraction, an electron microscope, high vacuum equipment, and bench-scale melting and coating facilities are contained. This building also contains a fully equipped dispensary and a large glass-blowing shop.

Offices are laid out on the basis of 5- by 15-foot modules with movable steel partitions. An office for a senior staff member, for example, consists of three modules, or a room 15 by 15 feet.

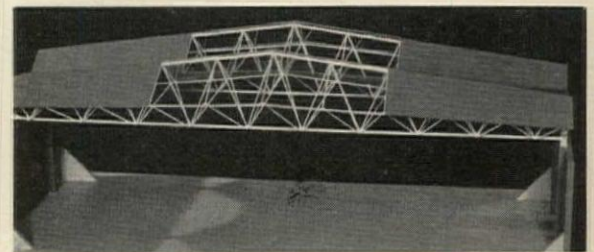
Perhaps the most unusual building of the complex is the shops and warehouse building, in which the ground floor is warehouse space and the second floor contains machine shops and some additional laboratories. Outstanding feature of the building is its roof which is 245 feet long and is spanned by 11 96-foot welded pipe trusses 12 feet deep at the center and 6 feet deep at the ends. In combination with the bracing used between them, these trusses constitute space frames that are stiff and strong yet afford a light and open appearance to the interior of the building.

The resulting roof has a ridge-type outline over the trusses and an arch shape along the center of each bay. There are two drainage valleys in each bay where ridge and arch roof elements intersect. And these valleys diverge from the center of the building outward because of the conical shape of the arch portion of the roof. The roof is covered with copper sheeting on steel decking, except where it is interrupted by skylights.

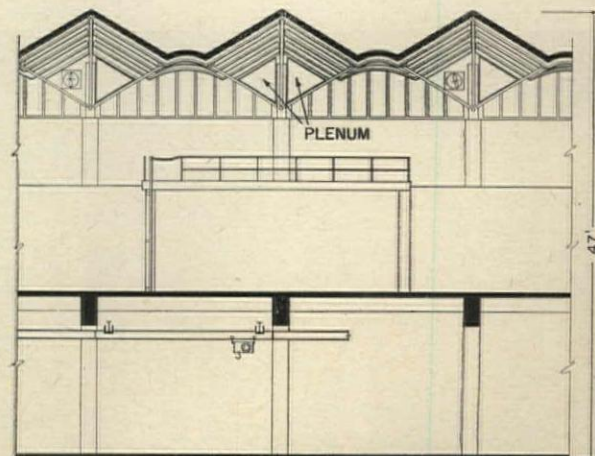
The pilot plant building is laid out in a three-finger plan, each finger or wing housing various research activities on a single high-bay floor. All are tied together across the front by a two-story office and laboratory section. Office laboratory space is comparable to that in the main building.

Each wing is 56 feet wide in the high-bay area, 215 feet long and 45 feet high from the floor to the underside of the roof trusses. An overhead crane spans between girders, bracketed to the wall columns. The columns are exposed on the outside of the building where they form a part of the wall pattern, which includes limestone panels and top-hung, steel casement windows.

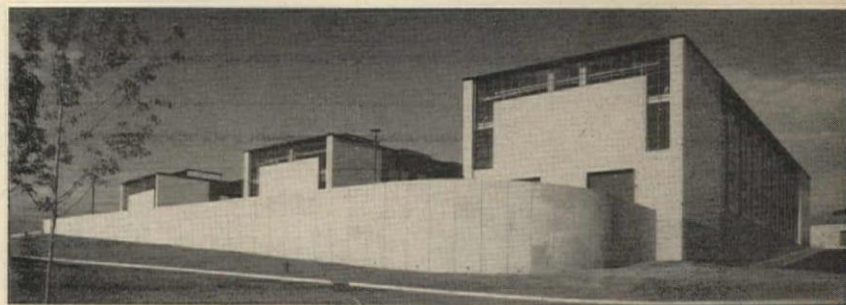
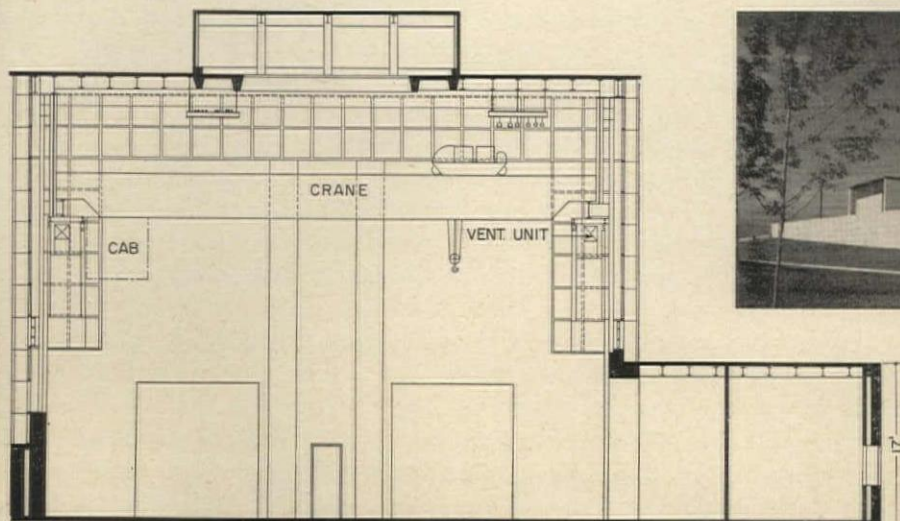
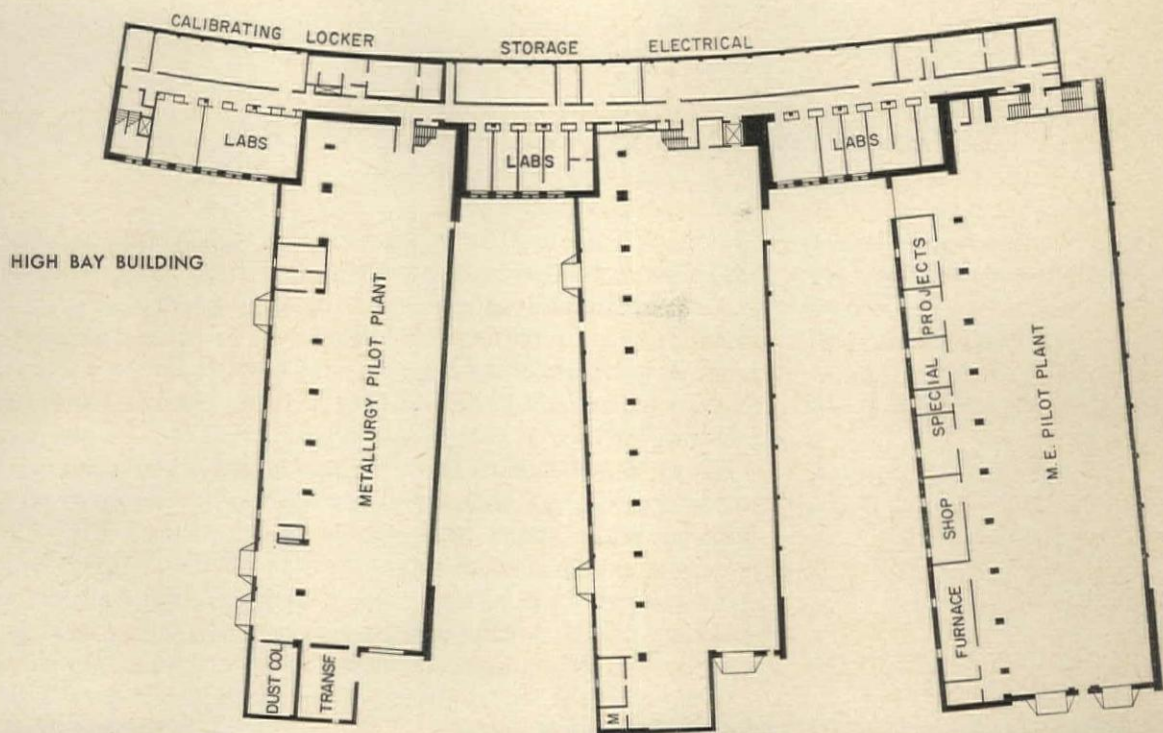
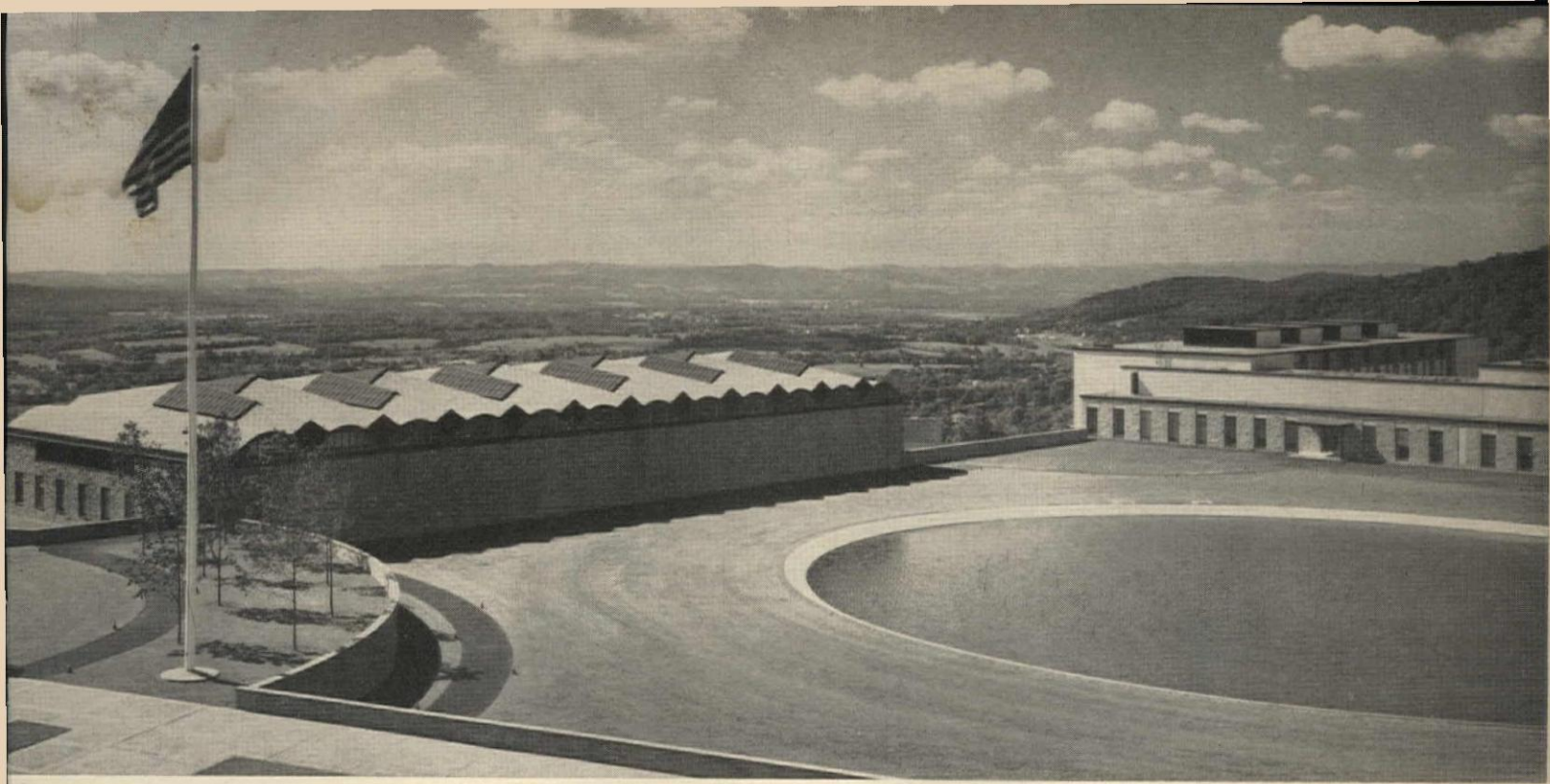
Top floor observation tower



The space framing in each 20-foot bay between trusses is made up of inclined pipe struts, their lower ends attached at the bottom chord panel points of the truss while their upper ends are joined to arch-shaped structural members disposed along the center line of the bay. The lengths of these arch-shaped members progressively diminish from the wall line to the centerline of the building, so that in total they constitute a section of a cone with its apex at the building centerline. To complete the bay framing, inclined structural members span between the arched members and the top chords of the trusses

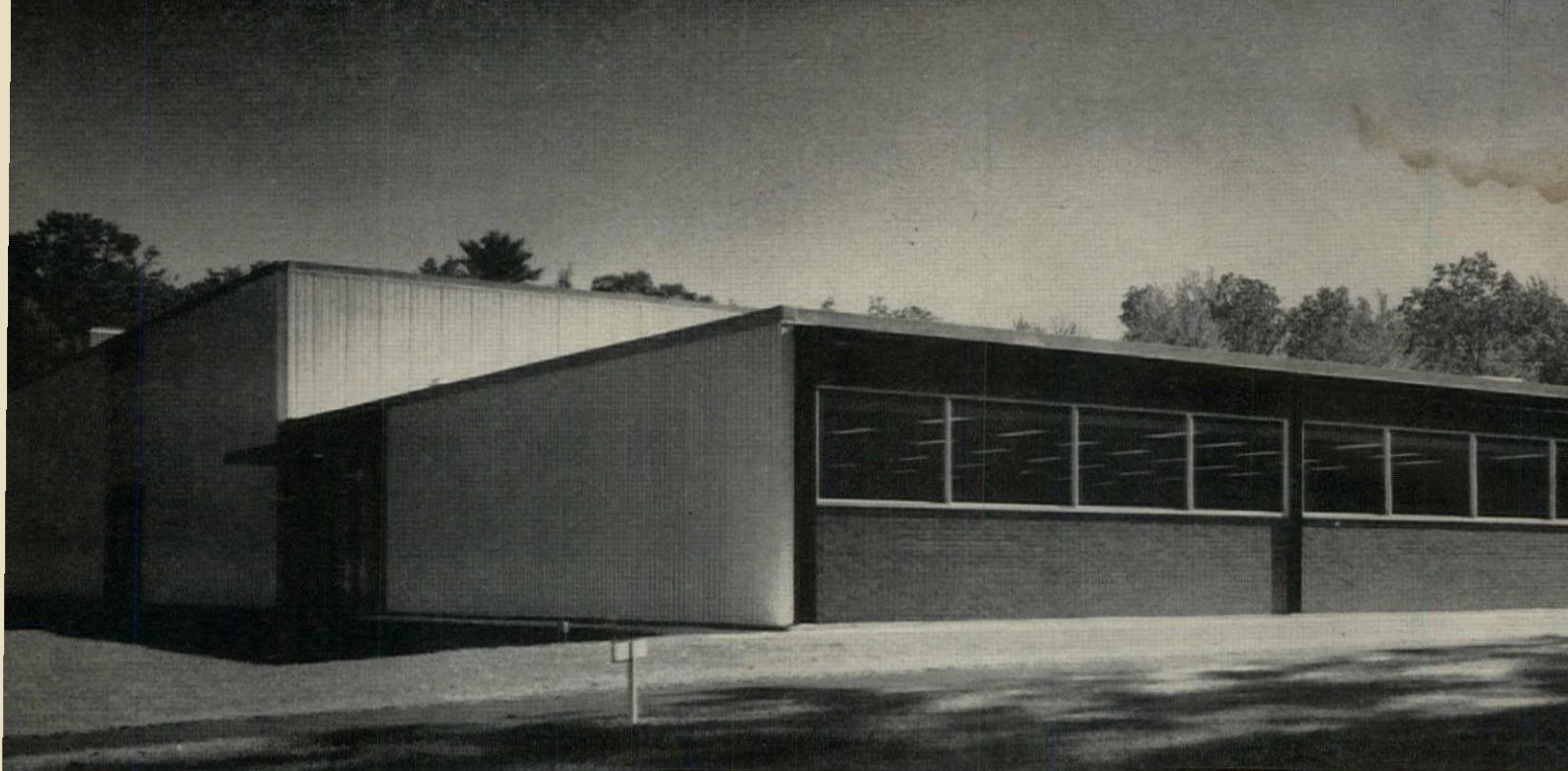


LONGITUDINAL SECTION OF SHOP-WAREHOUSE BUILDING



Engineering and pilot plant building provides three high-bay wings with 45-foot clearance from floor to trusses. Each wing is equipped to handle production size metalworking processes. Facilities include melting furnaces and controlled atmosphere test chambers

CROSS SECTION OF HIGH BAY



## MACHINE FACTORY WITH A WOODLAND SETTING

*Machine Division of  
The Torrington Manufacturing  
Company  
Torrington, Connecticut*

**OWNER:**  
*The Torrington Manufacturing  
Company*

**ARCHITECT:**  
*Marcel Breuer*

**ASSOCIATE:**  
*Robert G. Gatje*

**CONSULTING ENGINEERS:**  
*Westcott & Mapes, Inc.*

Faced with the need to expand from a tight complex of new and old construction on a downtown New England river front, The Torrington Manufacturing Company purchased a densely wooded, sloping site of about 60 acres on the outer edge of its home city. The preservation of trees and rocky landmarks was part of the program from the outset. The setting has been further enhanced by the addition of shade trees in the midst of the 160-car parking lot, picnic tables and boccei courts in a nearby clearing.

Siting 72,000 square feet of single-level factory space on the gentle slope provides for a possible future expansion by three times the original size with minimum earthwork and tree destruction. A large maneuvering yard is provided adjacent to one long side of the factory from which trailer trucks are able to choose between semi-sheltered dock delivery or complete pit entry under a crane with truck bed and factory floor at the same level, or entry at grade onto the floor itself, primarily for fork-lift trucks.

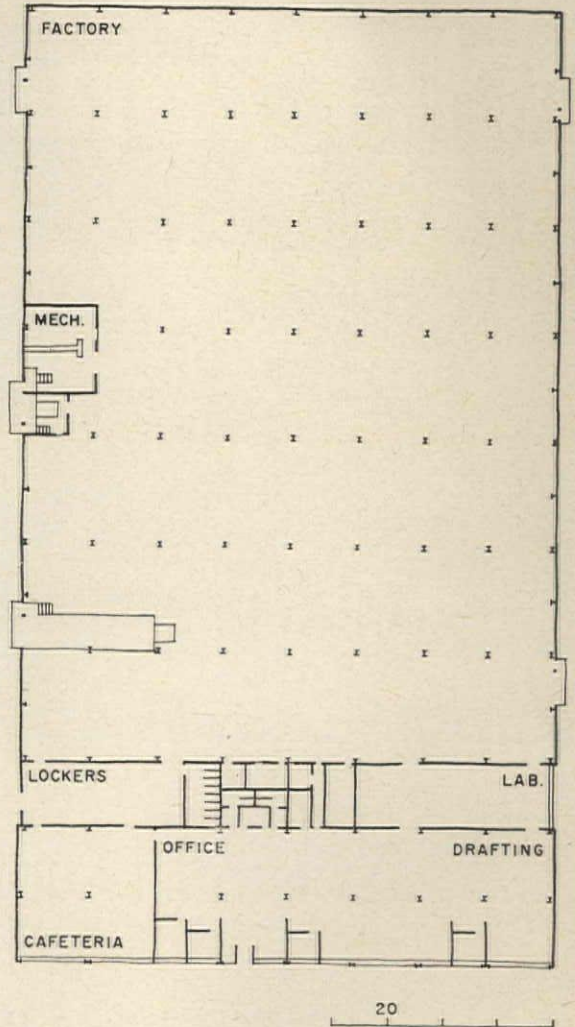
The structure is completely of rolled steel members with height, 19 feet 5 inches under the lowest girder, dictated by the required hook height of 10-ton cranes allowing free movement of large machinery in all required directions. All those spaces which do not require the factory height are grouped together under a lower roof along the front edge of the building.

White porcelain enameled aluminum siding provides maximum contrast to the dark colors of the forest. Wherever openings were required, they are complete—exposing the painted steel structure in combination with black brick, gray cement-asbestos board, aluminum sash and trim. Roof-mounted mechanical equipment is canary yellow, a brilliant contrast to blue sky.

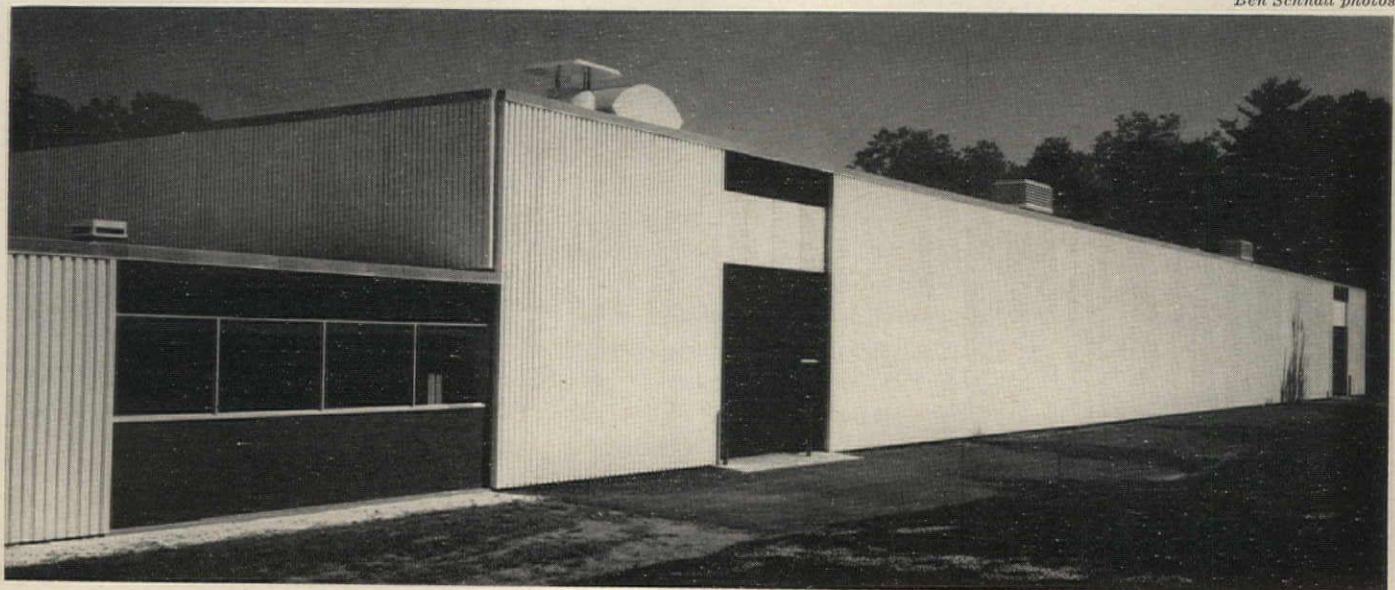
Within the factory, against a sombre background of black structural steel, gray machines and concrete, there is a disciplined rainbow of yellow cranes, red moving machine parts and varicolored utility lines. There are no windows as such in the factory itself, but a few panels of glass over pass-doors serve as a weather-check for the staff.

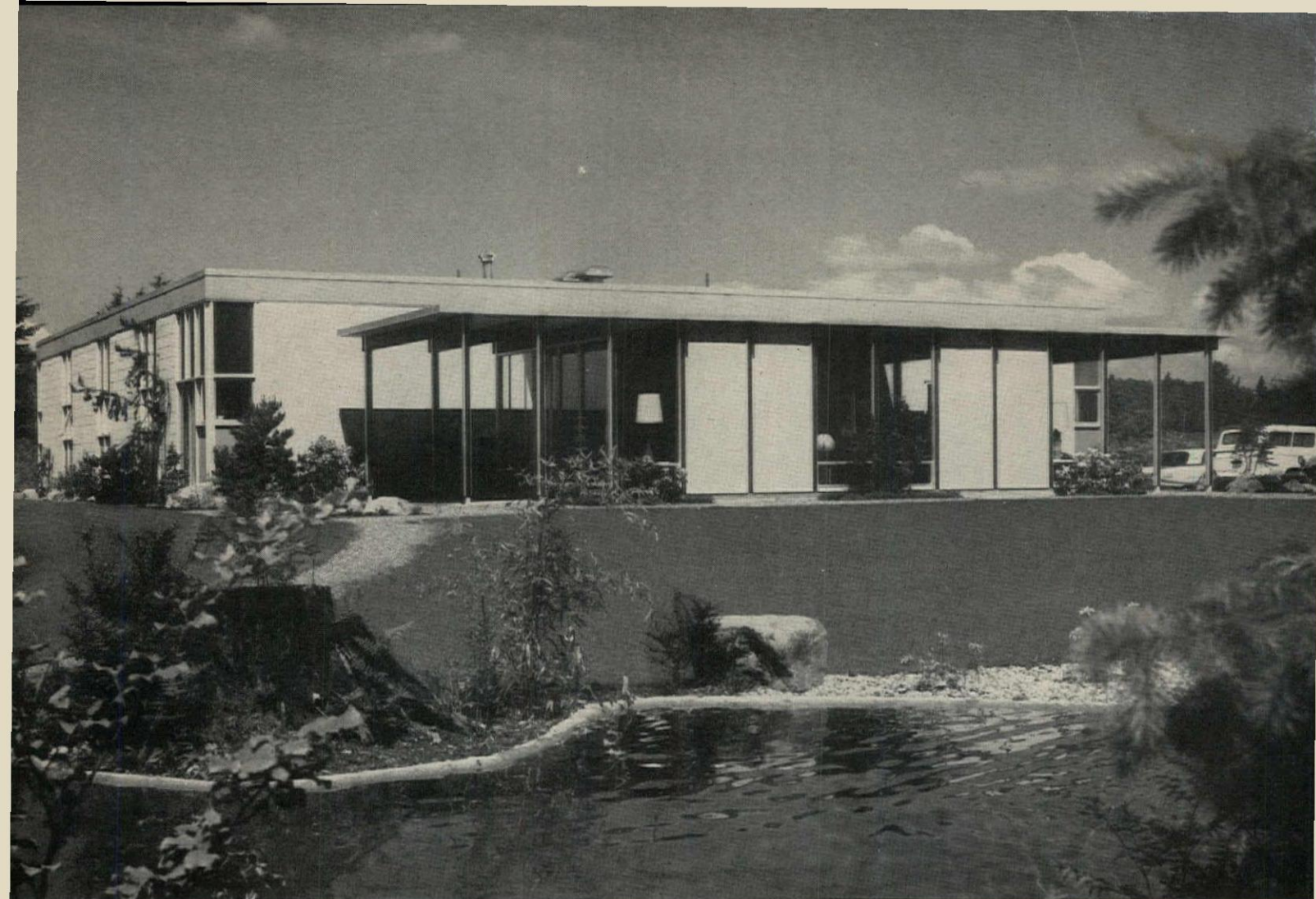
The office is lit by large north windows with a view into the woods and by fluorescent units mounted in a wooden grid suspended below air-conditioning ducts, drain and other utility pipes and conduit. Office partitions, whether full or half-height, are friction-bracketed between floor and grid.





Ben Schnall photos





Fred Milkie

## PRECISION LABORATORY IN AN INDUSTRIAL PARK

*Laucks Laboratories, Inc.*  
*Overlake Industrial Park*  
*Seattle, Washington*

ARCHITECTS:  
*Naramore, Bain, Brady &*  
*Johanson*

LANDSCAPE ARCHITECTS:  
*Puget Planners, Inc.*

MECHANICAL ENGINEER:  
*Alvin A. Morris*

STRUCTURAL ENGINEERS:  
*Worthington, Skilling, Helle*  
*& Jackson*

Flexibility of arrangement in assembly and work areas, and a structural system allowing easy future expansion were primary requirements for this small plant. In addition, it was to suitably house the corporate headquarters of a manufacturer of highly specialized electronic devices for measuring and recording moisture content of forest products during their manufacture. The plant is located on a landscaped one and a half acre in Overlake Industrial Park, just east of Bellevue near Seattle.

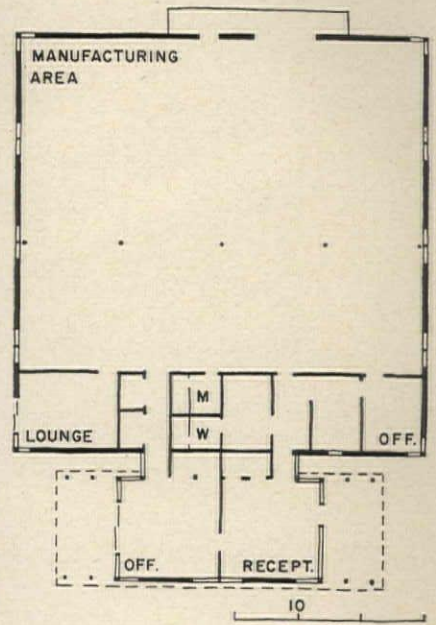
Office and reception areas are set forward from the basically square assembly area and acquire a studio character by virtue of their steel post and laminated wood beam construction carried through at both sides to sheltered terraces overlooking gardens and pool. Curtain wall of glass and wood panels is framed in wood. Work areas are tailored to a strict budget, but are well lighted and comfortable.

The building is of steel and timber construction with liberal use of exposed wood adding warmth and character throughout. Glass and wood paneling of the office and reception area are in sharp contrast to the pumice block walls of the manufacturing area. The warmth of wood, however, is carried through to the manufacturing area by laminated wood beams and joists supported by tubular steel columns. Ceiling of this area is also exposed wood roof decking from which lighting and utility piping are suspended.

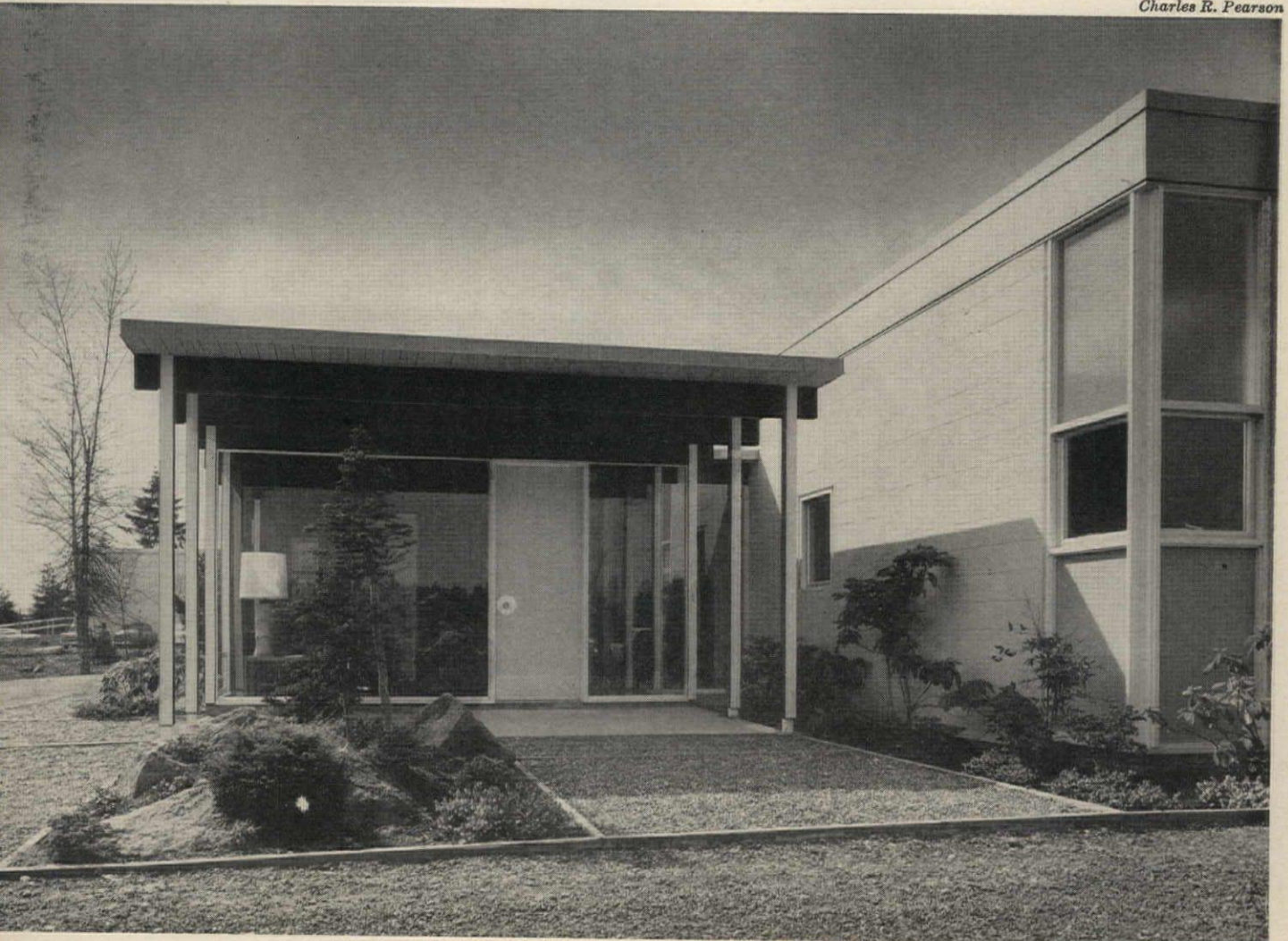
The floor is concrete slab on gravel, treated with sealer in manufacturing area and with vinyl asbestos tile or carpeting in office and reception areas. Total contemplated area in three stages of expansion is 12,000 square feet. Present first stage is 4,900 square feet.



Charles R. Pearson



Charles R. Pearson





## A TRUCKING TERMINAL AND HOME OFFICE

*Saginaw Transfer  
Terminal and Office  
Saginaw, Michigan*

OWNER:  
*Saginaw Transfer Company, Inc.*

ARCHITECTS:  
*Oeming & Waters*

MECHANICAL AND ELECTRICAL:  
*J. B. Olivier*

LANDSCAPE ARCHITECT:  
*H. Redfern*

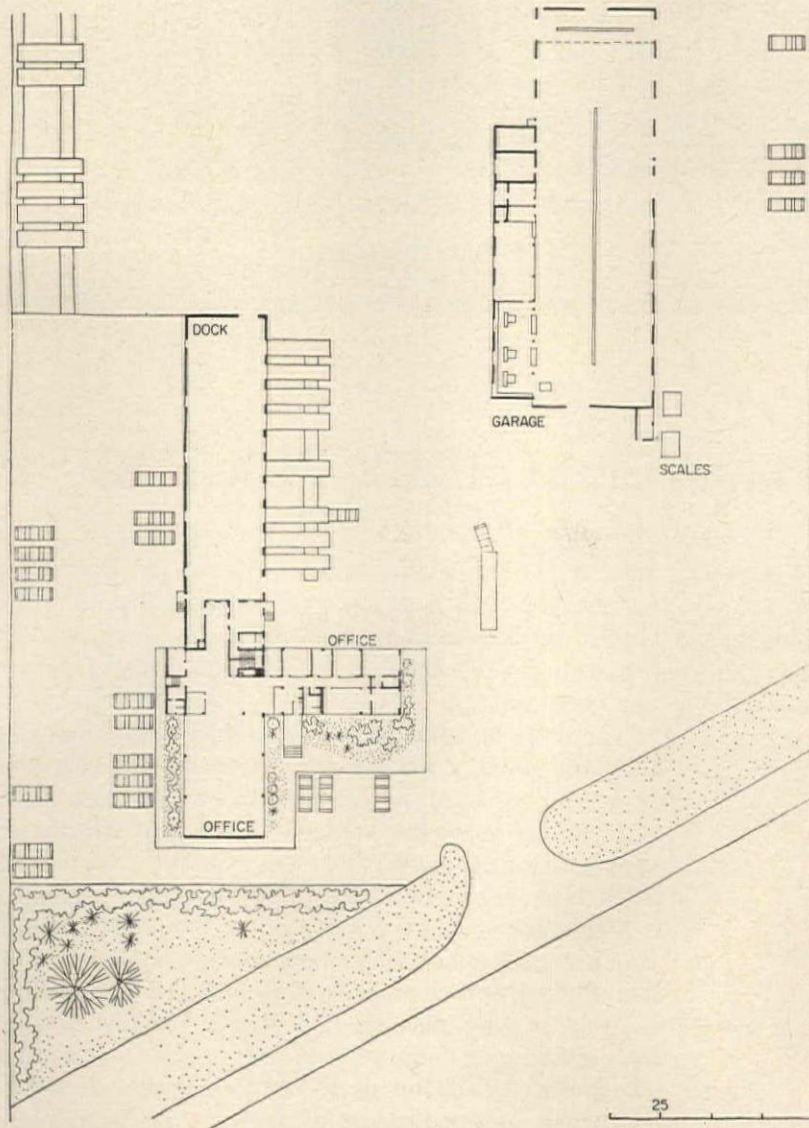
CONTRACTOR:  
*Fred C. Trier Construction  
Company*

Program for this trucking transfer terminal was to provide facilities consisting of general home offices, dock area and maintenance garage on a seven-acre site with access from two highways. The function of the dock area is to accommodate unloading and transfer of freight. The office building is a two story and basement arrangement with general office space on the first floor, employes' lounge and record storage in the basement, and sleeping quarters on the second floor for drivers who are on stopovers from other terminals. A maintenance garage is housed in a separate building to service the truck fleet. Other elements of the program included weighing scales and scale house, gas pumps, parking area and exterior yard lighting for night operations.

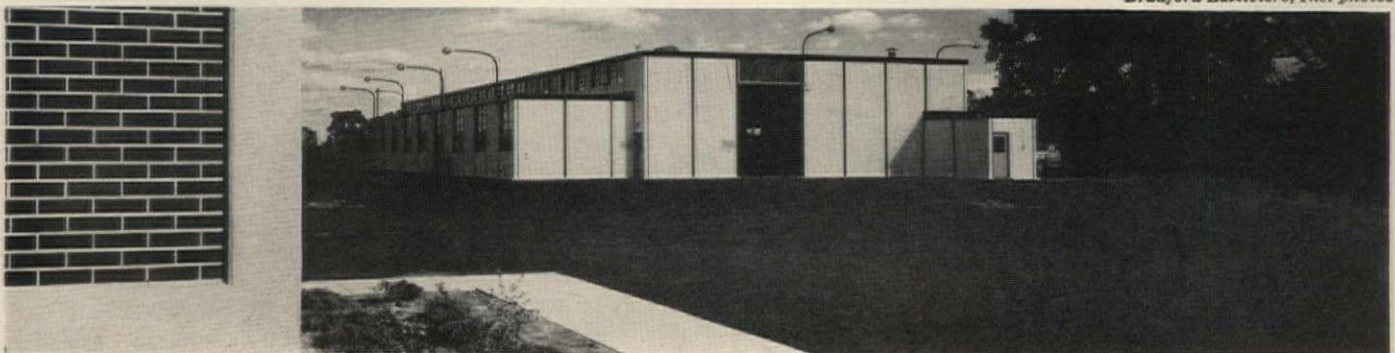
The design solution is a T-shaped dock and office building with all the dock traffic assigned to one long arm of the T away from general office space. The garage building is located near the docking area so that loaded trucks can move out through a preventive maintenance lane along the side of the garage to the scales and from there to the highway. Dock and driver personnel are segregated from the administrative section except through an operations control point which has visual control of the dock area.

The architectural design directive was to achieve a simple exterior, clean in line and detail, denoting efficiency and reliability of the client.

The office and dock building is constructed of reinforced concrete beams with precast roof and joist sections. Matte glazed exterior brick was used in company colors which are black and white. The garage was constructed of preassembled panels of block with channel sides. Clear span steel joists support proprietary roof decking.



Bradford LaRiviere, Inc. photos





## A TWO-LEVEL SCHEME FOR FOOD PROCESSING

*The Jel Sert Company  
Bellwood, Illinois*

ARCHITECT:

*Edward D. Dart*

STRUCTURAL ENGINEERS:

*Samartano & Robinson*

CONSULTANT:

*Albert Eisman*

Jel Sert's new plant, winner of one of *Factory* magazine's "Top Ten" awards for 1963, was designed to assert the identity and permit the expansion of an independent food packaging company. The company specializes in production of flavored drink mixes; its expansion rate has been about 30 per cent annually.

The plant was completed in August 1962 on a five-acre site near Chicago. Rail and truck transportation are conveniently nearby. The neighborhood is residential-industrial, and provides a ready labor force of high quality.

Program requirements were: (1) emphasis upon manufacturing and material handling efficiency; (2) a building that would favorably reflect the company's character; (3) a pleasant, clean, stimulating environment.

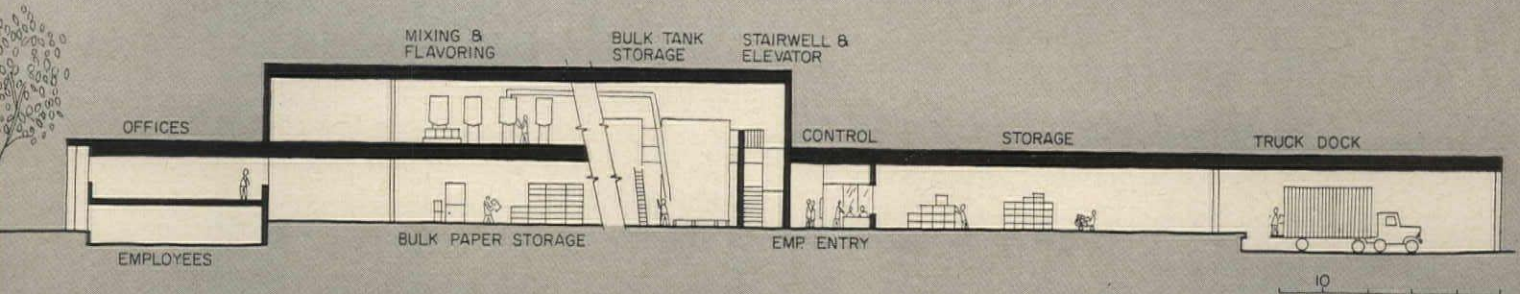
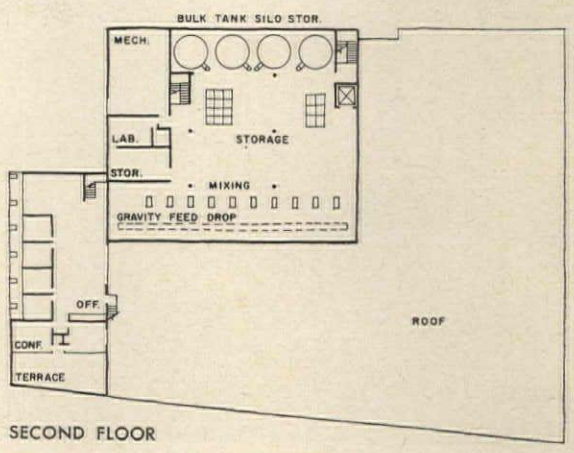
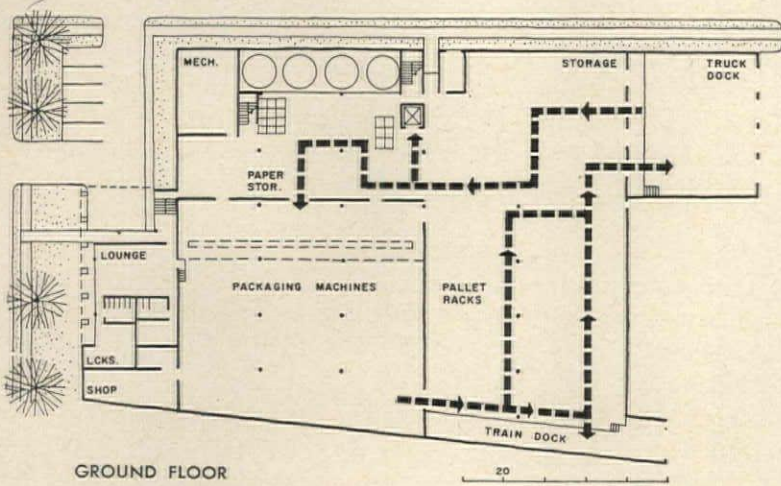
The plant occupies about half of its corner plot. The manufacturing portion occupies about 60,000 square feet, and is laid out in a two-level scheme for efficient flow of materials. Raw materials (dextrose and sucrose) are delivered in tank trailers and stored in silos two stories high. Screw conveyors transport sugars from the silos to an upper mixing room where they are automatically weighed and proportioned before discharge into mixing machines. Mixed product is fed by gravity to packaging machines on the lower level. From packaging, the product proceeds to storage space which adjoins both rail and truck loading areas.

Offices are on the second story level directly over employe facilities, including lunchrooms and locker rooms. The main entry, adjacent to a shelter for executive cars, leads directly into a three-story stair well with reception area on a mezzanine overlooking the entry.

The two-story office wing is joined to a taller manufacturing area by the reception lobby and stair well which forms a narrow link emphasized by full height tinted glass facade. Vertical emphasis is further enhanced by exterior columns and irregularly spaced windows set between tall piers. Colors are light and bright throughout, except for the jet black staircase which is in contrast to white glazed brick carried in from the exterior.



Robert Howell Ward photos





President's office (*top*) overlooking Japanese garden is furnished with dark woods and contrasting red and yellow upholstery against white glazed brick walls and white draperies. Executive chair is white leather. Stairwell (*left*) in entrance area is jet black against white brick. Exterior columns and piers on side street facade (*below*) provide vertical texture to approaches to first-floor employees' lounge and second-floor offices





# Architectural Engineering

## Minimum Cost Design

"In the conventional approach to design of structures, there are innumerable solutions to almost every design problem, but no way to determine the most economical solution," says Ralph B. Barnett, research engineer for Illinois Institute of Technology's Research Institute. "In a new approach, called minimum cost design, one expects a unique solution—one design which will carry the load and which is demonstrably more economical than any alternative."

Construction costs can be cut to an absolute minimum, Barnett states, by formulating the design problem as a classical mathematical problem in maxima and minima. Barnett suggests that minimum cost design can be best explained as follows: in conventional design, the non-arbitrary structural parameters, such as the depth to width ratio of a concrete girder, the span-to-rise ratio for an arch, or the inclination of the diagonal in a truss, are decided arbitrarily by rules of thumb. The result, therefore, is one workable solution out of an infinity of workable solutions. In minimum cost design, however, these parameters are treated as independent variables, making it possible to find a unique design which satisfies all pertinent requirements in the most economical way.

One important advantage of the minimum cost approach is the investigation of the entire complex of a structure simultaneously. When a designer writes a cost equation, he is in a position to evaluate the importance of certain details in relation to the entire cost. He might turn his attention, for instance, to the effect of a code requirement governing the minimum slenderness of a bending member, and might perceive that a 10 per cent modification in the code would produce a 50 per cent improvement in the cost of the whole structure.

The immediate application of minimum cost design appears to lie in mass-produced, or mass-designed, structures. Design optimization according to the above procedures would usually be too costly for only one structure. Barnett's full discussion of minimum cost design appears in the summer, 1963 issue of *Frontier*, published by IIT Research Institute.

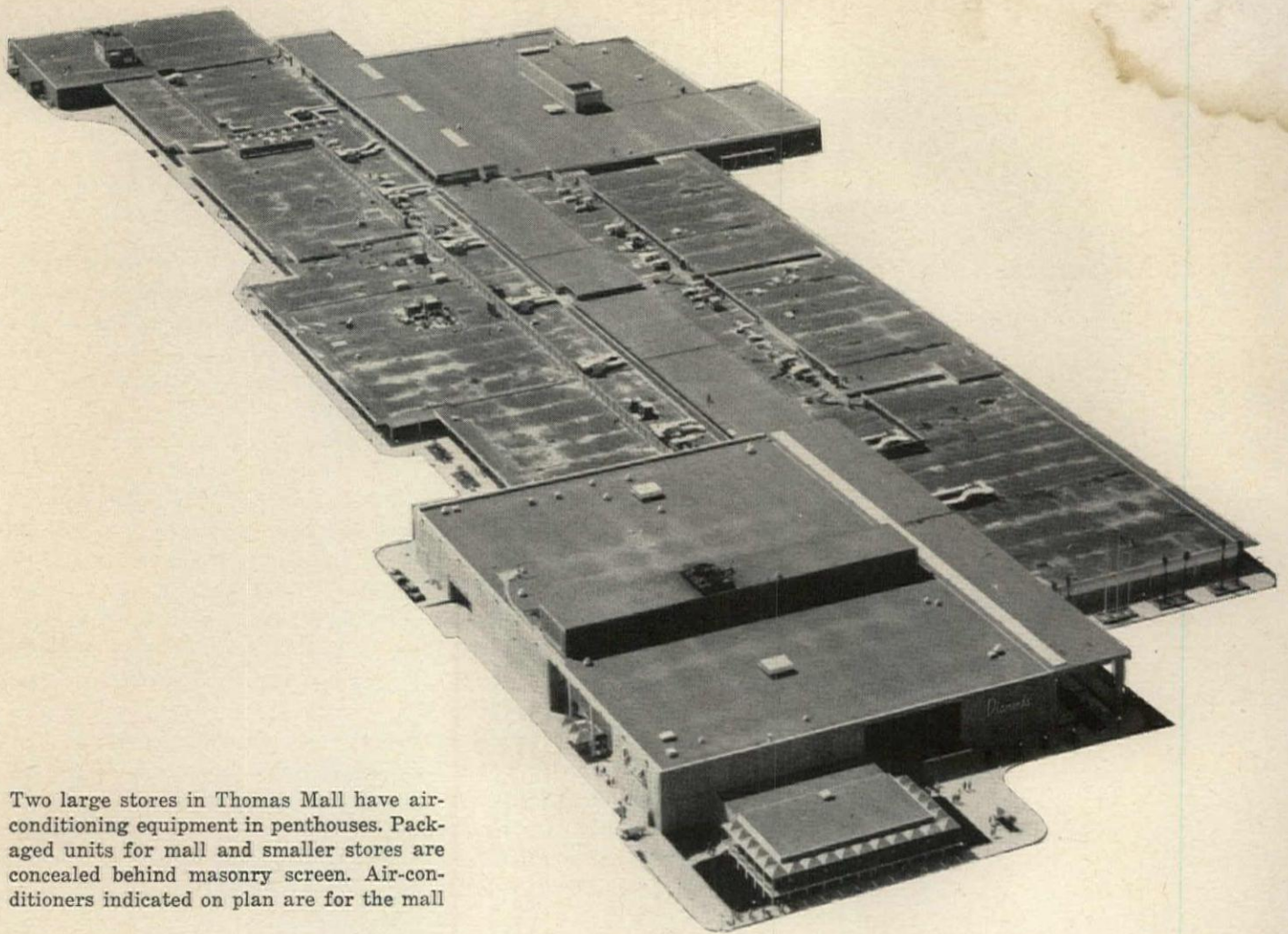
## Predicting Wind Effects

The increasing number of tall buildings being constructed in Canadian cities, which may be subjected to certain wind related problems not previously encountered, has stimulated the interest of engineers and scientists in wind research. Tall, slender buildings, often clad in lightweight curtain wall panels, may for example present problems of dynamic response to gusts, rain leakage caused by wind-induced differential pressures across walls, and high suction forces acting on individual wall panels. Although much research has already been done in the laboratory and in the field, information is needed on actual pressures and suctions occurring on full-scale buildings in the field. Too little attention has been paid in the past to field measurements, say Canadian building researchers, but now activity is beginning in several countries to serve this need.

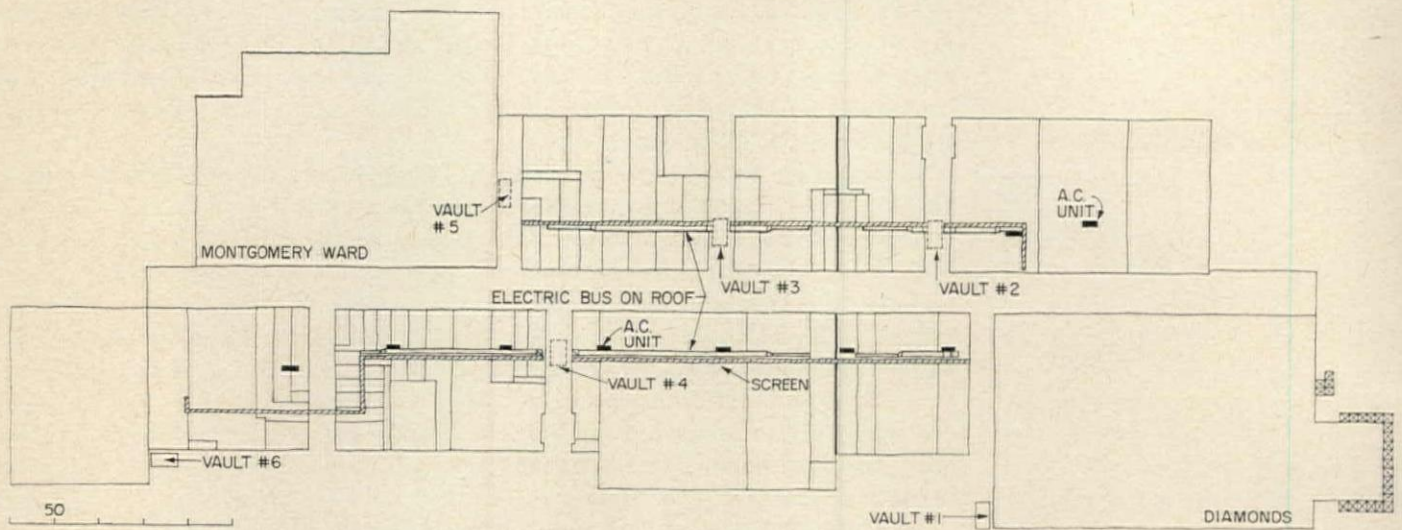
Among the varied aspects of research being carried out in Canadian laboratories are: (1) establishing the relationship—usually in the form of "pressure coefficients"—between wind speed and the pressures or suctions that result on different types of buildings; (2) analyzing the "structure" of the wind to determine the distribution of gust energy according to the size and duration of the gust; and (3) the effect of wind on snow drifting. Efforts are being made to assist and coordinate these activities through periodic meetings such as the first International Conference on Wind Effect on Buildings and Structures held in June, 1963, in England. These studies were discussed in *Building Research News*, July 1963, issued by the Division of Building Research, National Research Council, Ottawa.

## This Month's AE Section

*UTILITIES SET ON THE ROOF OF PHOENIX SHOPPING CENTER*, page 136. *TYPHOON-PROOF LOUVERS SCREEN TROPICAL SUN*, page 139. *RETRACTABLE HOUSING OPENS POOL IN SUMMER*, page 142. *APARTMENT HEATING COSTS CUT BY MULTIPLE-BOILER SYSTEM*, page 144. *BUILDING COMPONENTS: Drainage Details for Buildings Using Standard Steel Components*, page 149. *Products*, page 151. *Literature*, page 152.



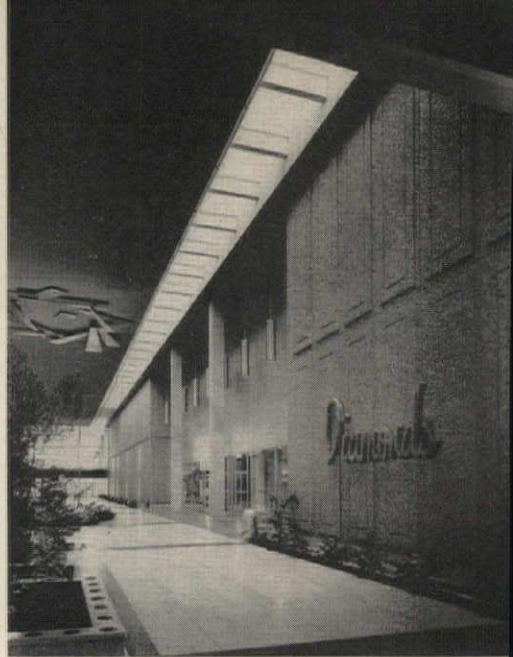
Two large stores in Thomas Mall have air-conditioning equipment in penthouses. Packaged units for mall and smaller stores are concealed behind masonry screen. Air-conditioners indicated on plan are for the mall



## UTILITIES SET ON THE ROOF OF PHOENIX SHOPPING CENTER

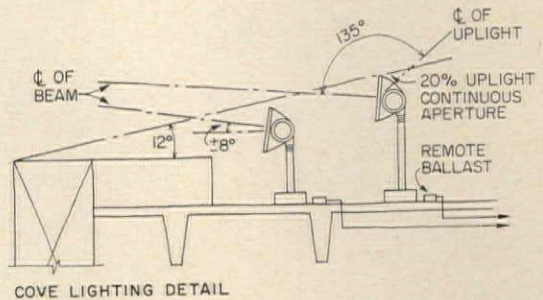
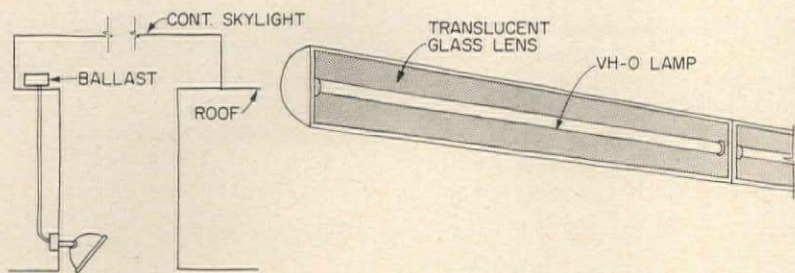
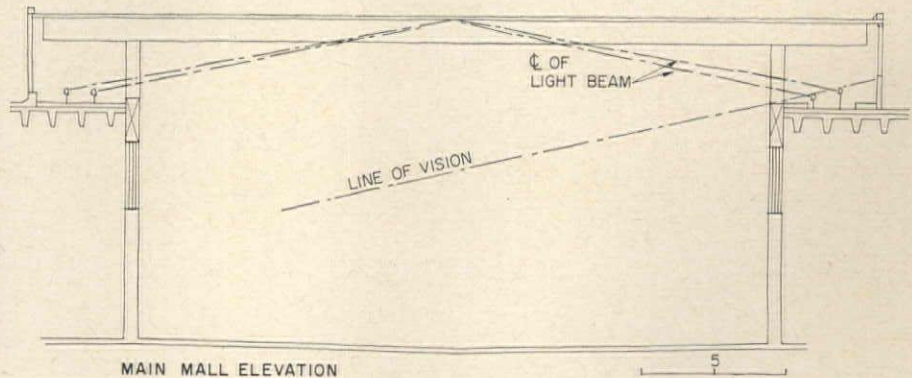
Exposed packaged air-conditioners and electrical bus provide temperature control and power for stores and mall

Engineer Sidney Barbanel took advantage of the warm, dry weather of Phoenix to expose all air-conditioning apparatus and electrical bus on the roof for Thomas Mall Shopping Center. This arrangement not only saved cubage in the stores proper and in the air-conditioned mall, but permitted sizing and placement of air-conditioning equipment when leases were let, long after the structure had been designed. And later on, if stores change, new air-conditioning units



Above left and right: high end of mall adjacent Diamond's store gets daylight from clerestory on one side, skylight at top of store wall on the other. Above center: at night, continuous strip of fluorescent fixtures "wash" wall (detail, bottom left); downlights illuminate floor. Below: center of mall with

22-ft-high ceiling has clerestories on both sides. Two strips of concealed fluorescent fixtures bounce light off ceiling. Outer row of fixtures has aperture in top of light roof overhang. Small photo shows center mall during the day. Mall is punctuated by pools and illuminated fountains



can be added on the roof or resized.

The packaged air-conditioning units which serve the enclosed mall and all stores except for the two "anchor" stores of Diamond's and Montgomery Ward, range in capacity from 5 to 25 tons. A decorative screen on the roof not only shields these units from view, but also carries the main electrical feeders, gas piping and meters. The two large stores have air-conditioning equipment enclosed in penthouses.

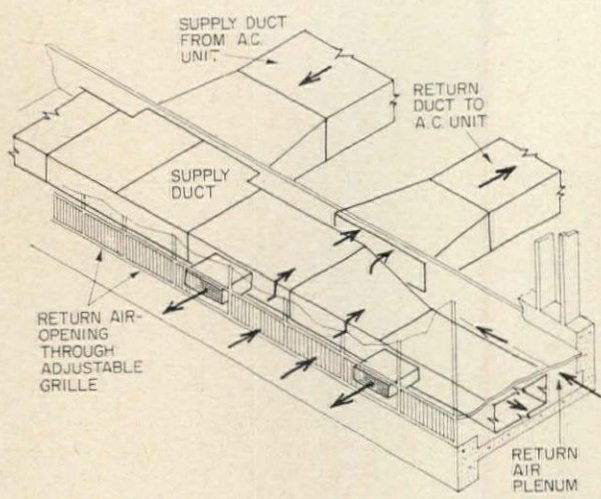
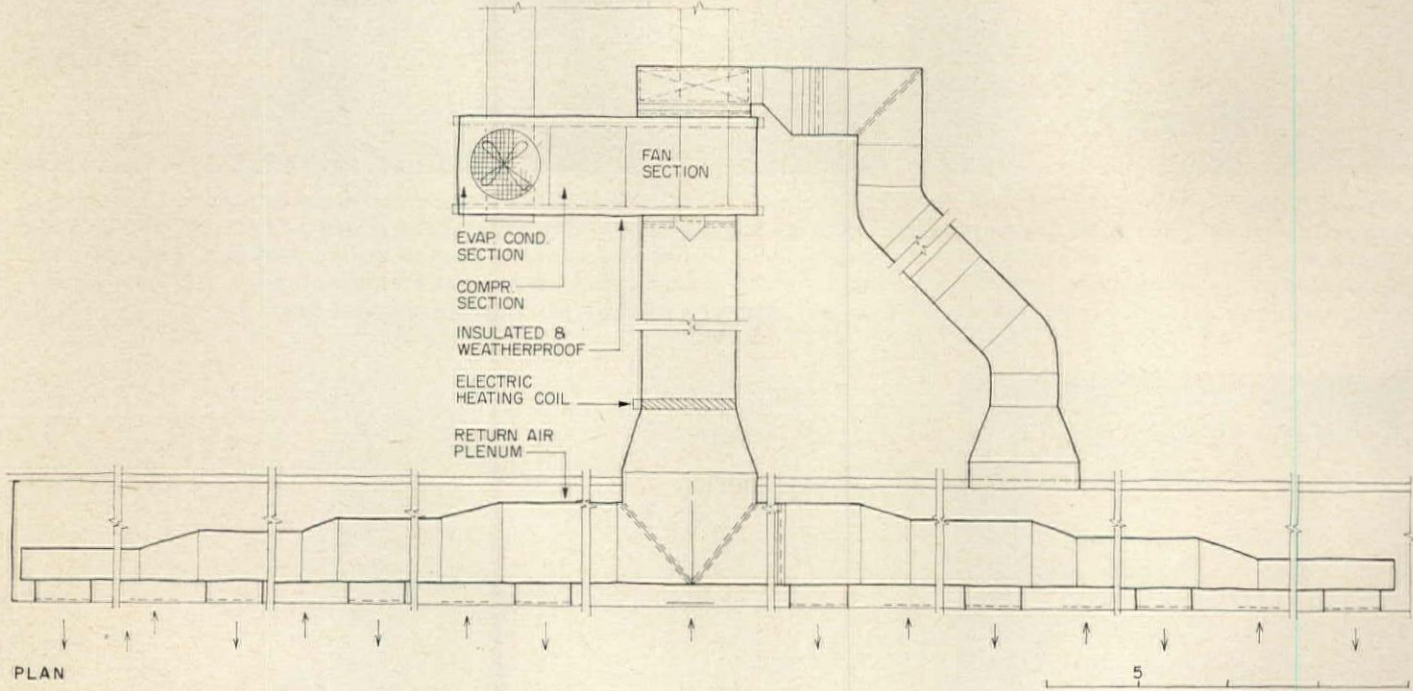
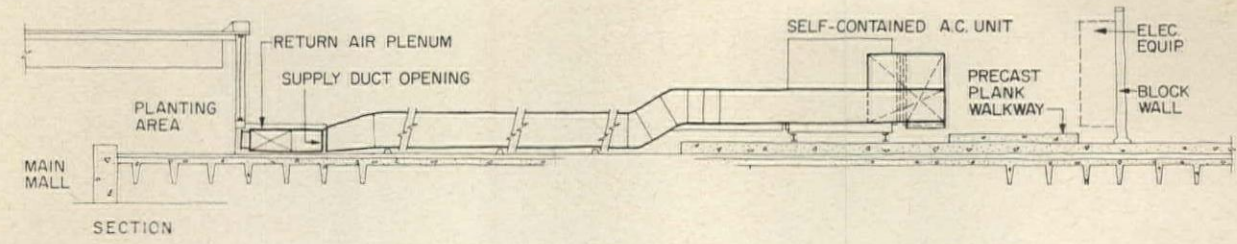
All maintenance on air-conditioning equipment can be performed outside. Special stairways give maintenance men access to the roof.

Lighting has been skillfully employed in the mall to give an "outside" feeling and to identify the two large stores at either end of the mall.

The 1,100-ft main mall is 22 ft high except at the ends next to Diamond's and Montgomery Ward where it is 35 ft and 30 ft respectively.

The 22-ft-high section of the main mall, which has exposed precast concrete double T's for roof structure, is daylighted by clerestories. At night and on dull days the ceiling is indirectly lighted by high output fluorescent fixtures set inside the clerestories and concealed by planting.

At the ends of the mall, the walls of the two large stores are illuminated by long, narrow skylights during the day and by hidden fluor-



All air-conditioning equipment and ductwork for the mall is exposed, but concealed from view by means of a block wall. The block wall serves also to carry electrical bus, gas piping and meters. Insulated enclosure around lateral supply duct is used to return air to the conditioning unit. Source of conditioned air is concealed on the inside by planting. The small amount of heating required is supplied by electricity

escent strip fixtures at night. A tall clerestory is used in the opposite wall. Downlights in the ceiling illuminate the floor at night.

The shorter feeder malls are lighted either by skylights supplemented by open-top fluorescent fixtures, or by surface-mounted incandescent fixtures.

All ductwork for the malls is exposed on the roof. For the individual stores, holes for ductwork access were either provided in or punched

through the precast concrete roof structure. Air is supplied to stores through diffusers in hung ceilings.

The air-conditioning units will be cooling most of the time. When occasional heating is required, this is provided by electric heating coils in the ductwork.

Electric power is brought in from the utility in a primary underground loop to six transformer vaults, one for each "block" in the center. The developer picks up the

current at the vaults, well within property lines, and distributes it to individual meters and tenants. Meters, mounted on the backs of the roof screen are always accessible.

*Architects, Copeland, Novak & Israel; associate architect, Allan Grossman; associate architect, John Schotanus Jr.; mechanical and electrical engineer, Sidney W. Barbanel; structural engineers, Frank Foltz & Associate; developer, Winston-Muss Corporation.*



## TYPHOON-PROOF LOUVERS SCREEN TROPICAL SUN

Expansion joints eliminate creaking when temperature changes sharply. Adjacent to Philippine American Life Insurance Company building is an auditorium with acoustics designed for company and community use

Protection against the hot summer sun in Manila, located near the equator, was an inherent design condition for the Philippine American Life Insurance office building. Relief from a humid summer's average 92 F at mid-day procured through air-conditioning alone would have been quite costly, so the architects decided to use a sunscreen. Early calculations indicated that its use reduced the air-conditioning load by at least 50 per cent.

Designing these screens and the curtain wall panels of the building to withstand severe weather conditions, including 130 mph typhoon winds carrying driving rains, an average yearly rainfall of 82 in., and a 17 degree drop in temperature at night, called for several unique engineering solutions.

Technical requirements, moreover, were handsomely incorporated into the building design. (This is true not only of the five-story office building but of the company's separate multi-purpose auditorium, discussed later in this article.) The multi-tiered sun-screen, for example, underscores the horizontal lines of the office building and enhances its facade. Projecting 6

ft out, the screen goes around the entire building and allows an unlimited lateral view of Corregidor and the sweep of Manila Bay.

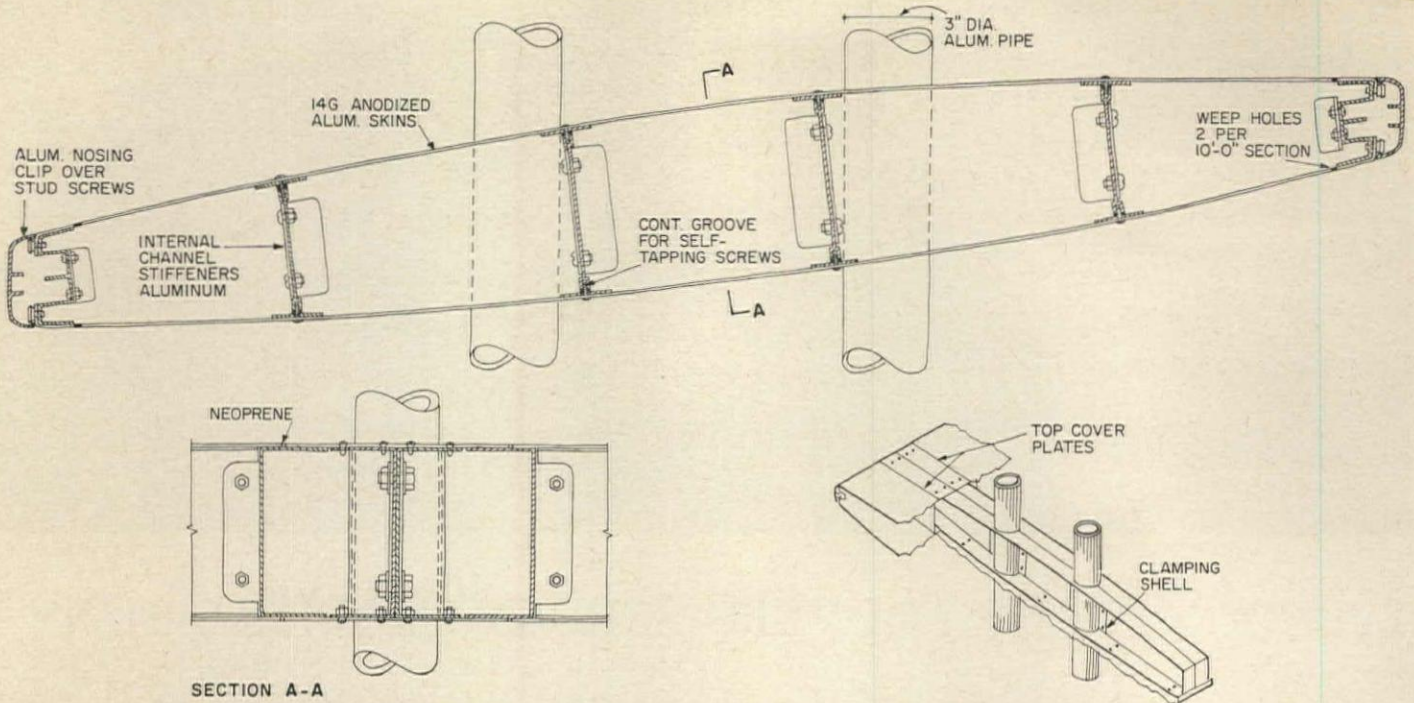
Aluminum blades were selected over concrete to avoid the problem of heat transfer into the structure and re-radiation within the building. These blades, which are used on floors beyond the second, are constructed of anodized aluminum and are 4 ft wide. They are supported by means of 3 in. O.D. high strength aluminum tubes which hang from the roof overhang. By suspending the blades free of the building wall, the only contact is a tie bar at each floor, which gives lateral support to the tubes and carries the catwalk for window washers. The screen itself is cooled by natural air movement.

Sealing the edges of the glass areas so securely that a typhoon could not force water through or blow out any lights, was another successfully handled problem, as evidenced by the building's excellent weathering of a major typhoon. A neoprene gasketing system was chosen because it also protects against temperature and weather extremes. U-channel gaskets

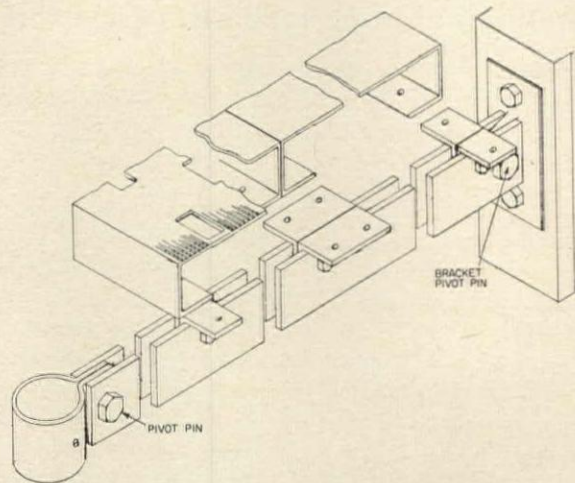
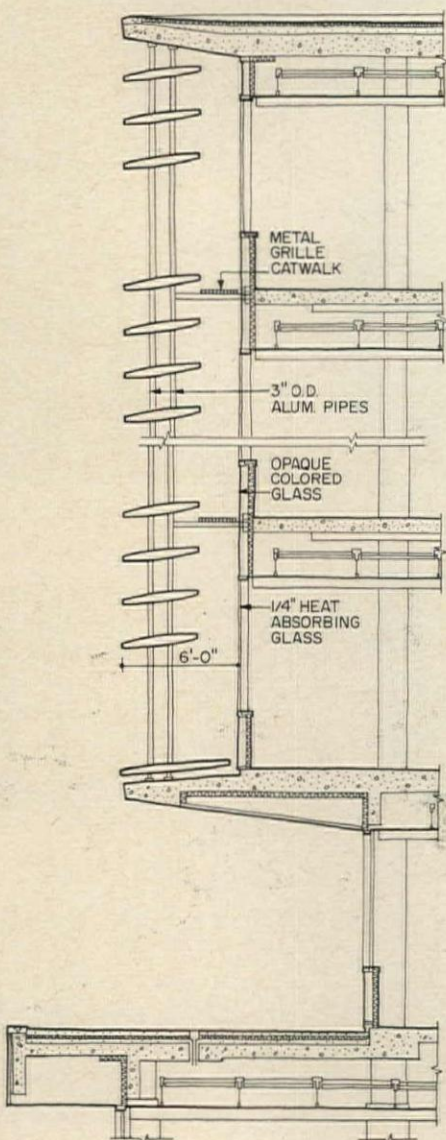


Neoprene gaskets between 10-ft lengths of sun-blades allow thermal expansion





Sun louvers are supported by cradle consisting of two channels back to back which are attached to the 3-in. aluminum pipes by means of clamping shells. Channels at end of 10-ft louver sections slip between cover plates. Neoprene permits expansion



Tie bar carries catwalk, stiffens 3-in pipes

were used for seating the opaque colored glass panels into the mullions, for seating aluminum window frames and for casement windows.

While the major role of the 2,000 neoprene gaskets used in the structure is for sealing the curtain wall panel, the gaskets also play a part in the performance of the sunblades. Neoprene gaskets are fitted around each of two 3-in. stabilizing tubes at the point where sunblades are attached to them. Purpose of the gasketing is to prevent creaking from expansion and contraction and to prevent encroaching sand from weighting down the sunblades.

Neoprene strips are used for the same reason where the 10-ft sections of the fins are joined together. Also,

gaskets are used to prevent thermal expansion noises and metal to metal exposure where tie bar brackets are attached to the mullions.

#### Auditorium Design

The Manila Times acclaimed the acoustics of the Philamlife Auditorium: "At long last Manila has a concert hall that does justice to the musical profession. The auditorium is a magnificently resonant box . . . and is well insulated against outside noises. It is especially flattering to the human voice . . ."

This auditorium, seating just over 700 people, was designed to serve the many needs of the Philippine American Life Insurance Company as well as those of the entire community.

While its primary function is to provide good hearing conditions for large meetings and conferences where speech originates both on the platform and in the audience, this facility also serves as a concert hall for chamber music and for larger groups. Its use as a theater is limited as a fly gallery was not included.

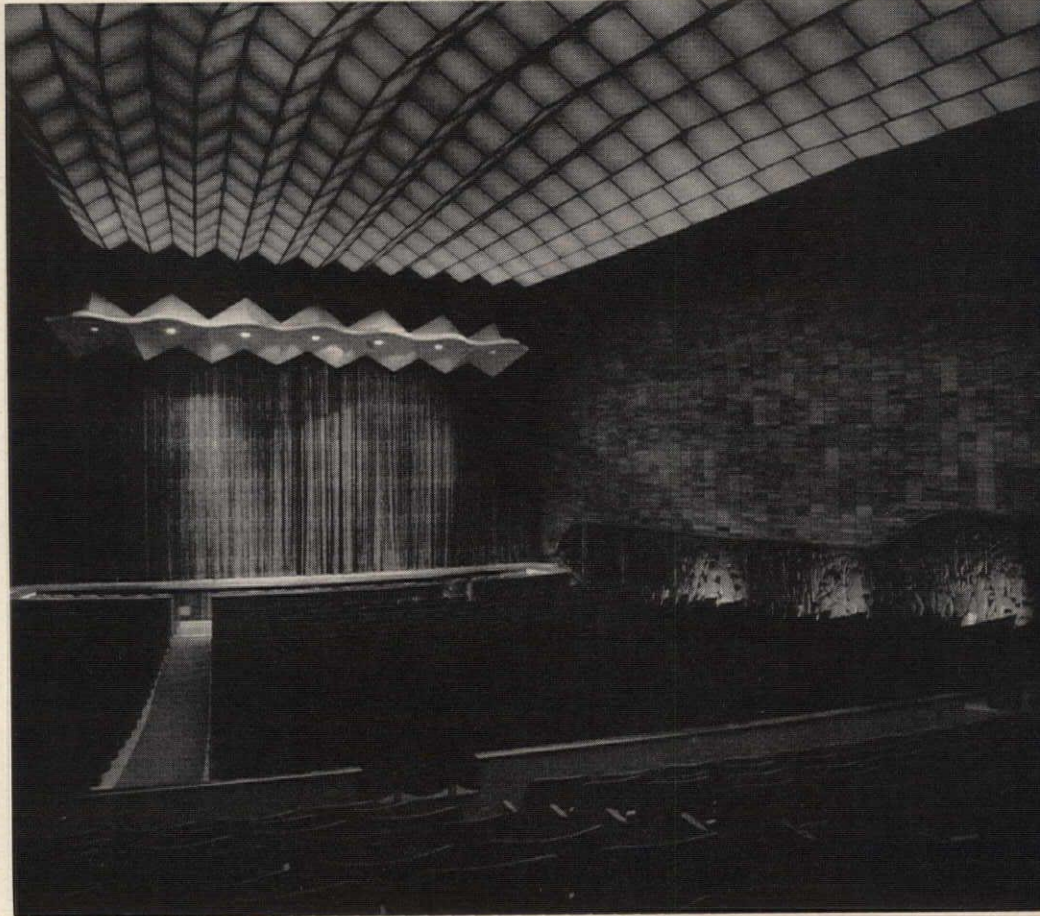
The audience is arranged on one floor with a good slope for both hearing and seeing. The plan and section shapes were worked out to provide an optimum distribution of sound and to achieve a reverberation time appropriate for a multi-use room of this sort. The upper side wall surfaces are finished in wood for sound reflection, and the ceiling over the major portion of the auditorium is made of translucent acrylic plastic set in a saw-tooth pattern. This "corrugated" design provides the luminous ceiling the architects wanted as well as adequate sound diffusion for good acoustics.

The only sound absorbing materials used are on the rear wall and at the lower side walls. A glass fiber blanket behind the very open horizontal wood slats of the rear wall controls echo very well. To provide a slight additional amount of reverberation control, and most especially to prevent cross-room echoes when members of the audience stand up to speak, sound absorbing material was introduced behind the openings in the native wood carving which forms the lower side walls of the auditorium.

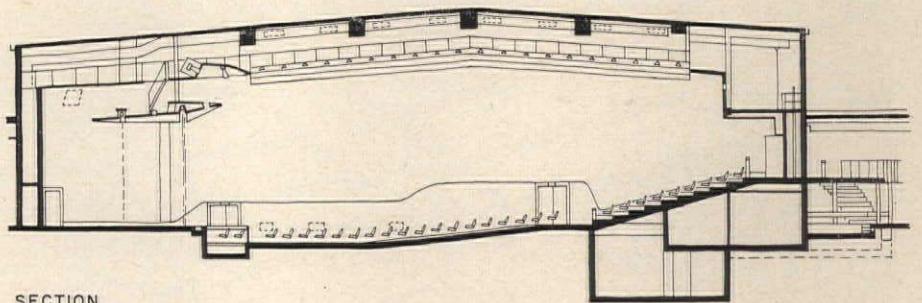
Over the platform area a sound-reflecting ceiling of plaster, faceted for sound diffusion, was installed to provide good projection of sound from the platform area, and to enable musicians performing in a group on the platform to hear each other and get a good sense of blending.

The reverberation time in the auditorium at mid-frequencies is just over 1.3 seconds, making it ideal for the many speech uses and for chamber music. It could be a little more "live" for symphonic performances, but the auditorium is really too small to be a successful symphony hall, according to Robert B. Newman of Bolt, Beranek and Newman, Inc.

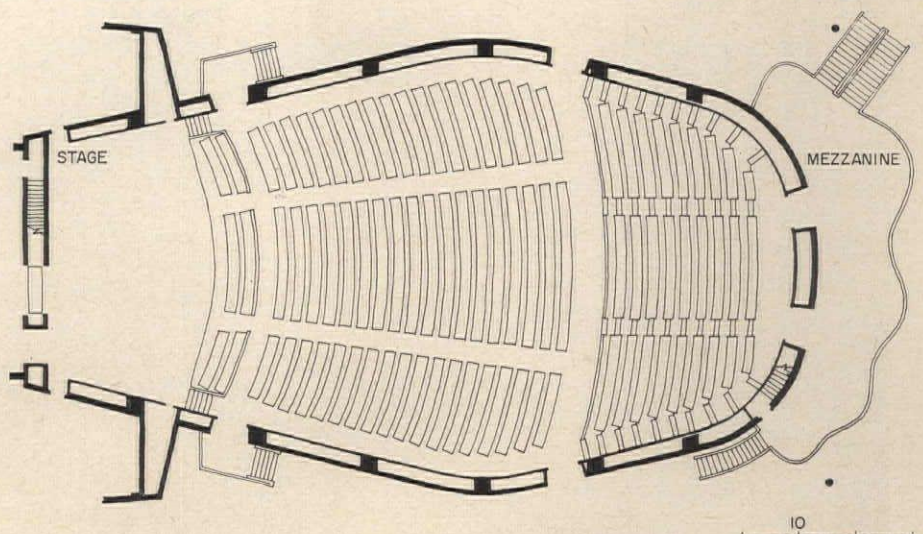
*Architects, Carlos D. Argulies & Associates; architects, Anderson, Beckwith and Haible; structural engineers, Severud-Elstad-Krueger; acoustical consultants, Bolt, Beranek and Newman, Inc.*



Faceted plaster canopy over platform projects sound into auditorium and enables musicians to hear each other. Saw-tooth luminous ceiling aids sound diffusion

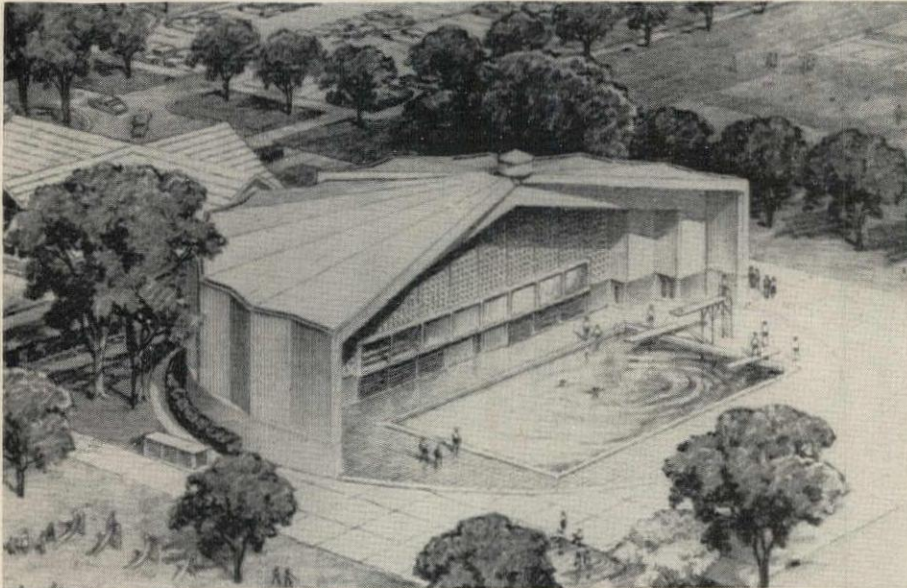


SECTION

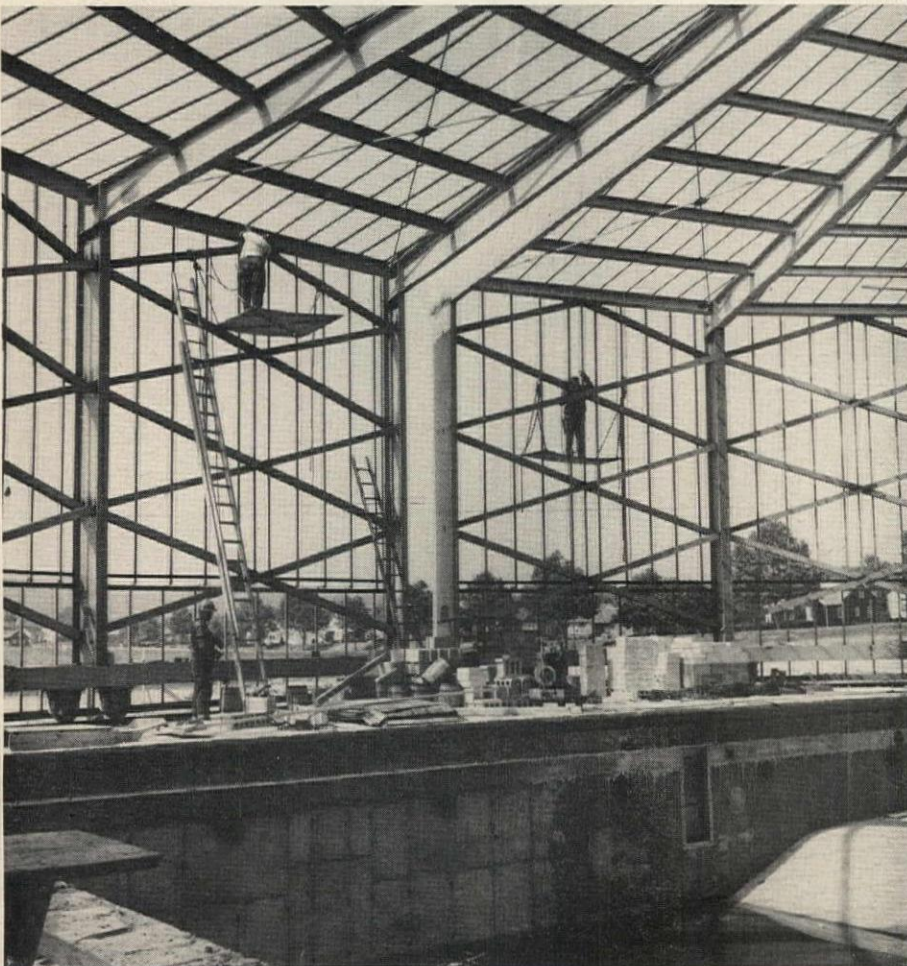


# RETRACTABLE HOUSING OPENS POOL IN SUMMER

Quarter-circle segments of insulated structure for Hershey sports center ride on wheels



Ken Smith photos



How can a swimming pool be designed for contact with the outdoors and at the same time be comfortable for cold weather usage? Architects Lawrie & Green, in designing an outdoor club for a community sports center in Hershey, Pennsylvania, have provided for year-round pool operation through means of a fully-retractable pool housing.

Mounted on railroad trucks which roll on steel rails, the two slightly larger quarters of the roughly circular building move back, around and over the stationary half of the building. Geared-down electric motors located within the retractable housing turn the wheels. A double seal around the movable areas is provided by specially manufactured inflatable rubber gaskets.

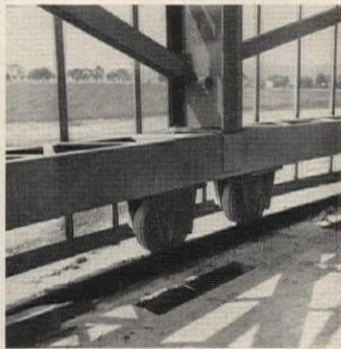
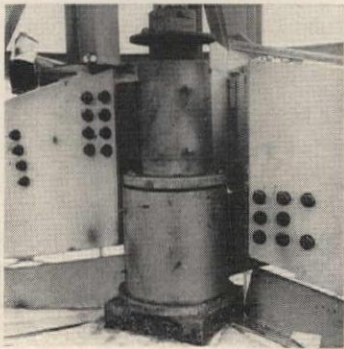
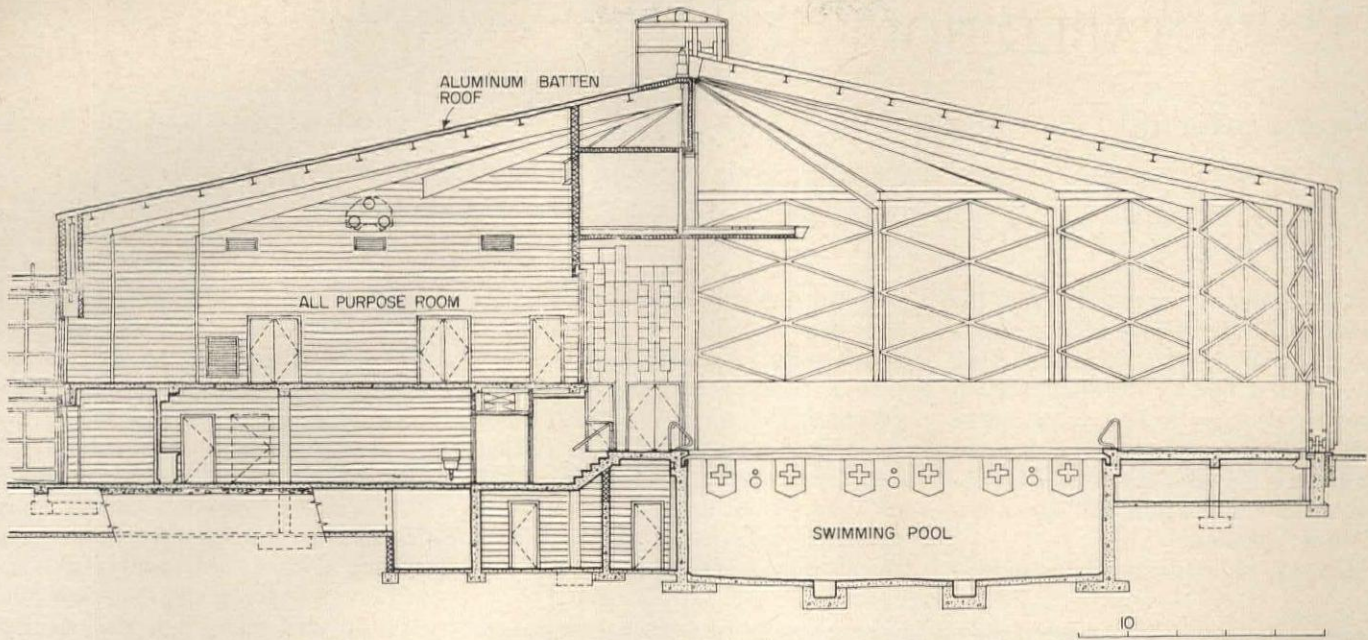
The pool housing had to be a lightweight structure, for ease of movement. Also, thermal insulation of the housing had to be sufficient to prevent discomfort and at the same time be unaffected by the pool area's high humidity. Solution for the housing was a T-iron and cellular glass insulation covering over a steel rigid frame structure.

The pool area is lighted from fixtures attached to a fixed canopy.

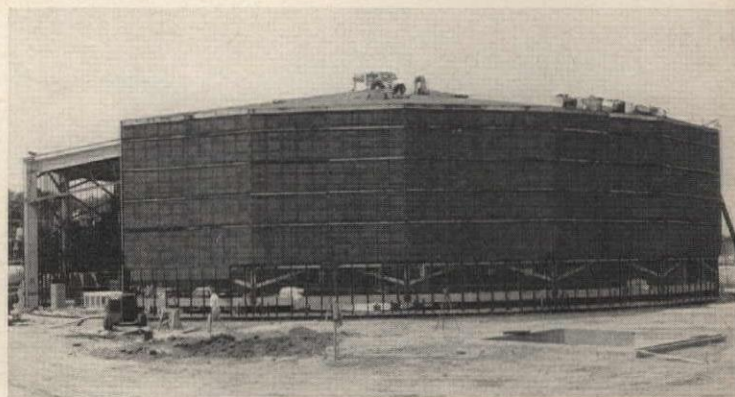
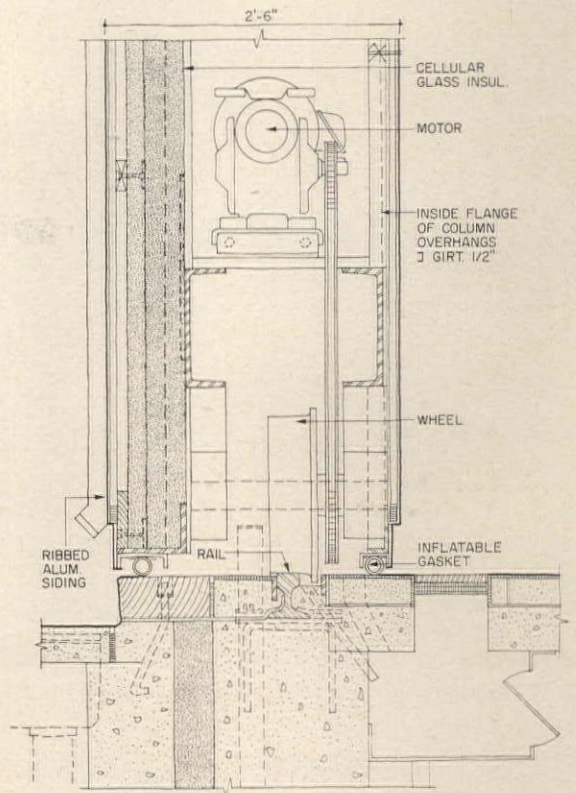
Alternating blue and white aluminum panels placed in zig-zag fashion cover the cellular glass insulation on the walls, and white-colored aluminum batten panels protect the sloping roof—the shape and colors giving a “circus tent” aspect to the building.

Although a number of cold storage warehouses have used T-iron roof construction, the Hershey pool structure is the first known “normal-temperature” application, employed for walls as well as roof. Insulation thickness is 6 in. For the roof deck, 4-in.-thick cellular glass blocks are fitted in T-irons on 24-in. centers. A tape sealant on flanges of the T's provides adhesion and some cushioning. A second layer of 2-in. blocks is set in hot asphalt, followed by a built-up roof. Wall insulating blocks are installed in a similar manner.





Two retractable segments have rigid-frame structure with walls and roofs of cellular glass insulation set in T-irons, a system frequently used in cold storage warehouses. Segments turn about hubs (above left) enclosed in canopy and ride on motorized wheels (above right). Rear half of building enclosing an all-purpose room is fixed. Inflatable gaskets seal spaces between fixed and retractable sections at roof and along walls, also space between retractable walls and sills (detail, right)



# Apartment Heating Costs Cut by Multiple-Boiler System

Natural gas is fuel for 18 small boilers, which operate in groups of three to meet varying loads, and for two gas-engine driven chillers. Gas-engine exhaust heats domestic water

The mechanical engineers for the new 87-unit Executive House apartments in Worcester, Massachusetts, have found that substantial flexibility and economy in operation can be achieved by using a greater number of boilers and chillers of smaller capacity in the heating and air-conditioning systems.

Instead of one large boiler to pro-

vide full input requirements (5,400,000 Btu including a maximum of 833,000 Btu for hot water supply) plus a stand-by boiler of two-thirds capacity, 18 natural gas fired boilers in batteries of three, each of 300,000 Btu input, were installed. This bank of boilers meeting full design input makes it unnecessary to have two-thirds excess stand-by capacity—up

to six of the small boilers can be shut down and there is still sufficient stand-by capacity to meet legal requirements. Moreover, only the minimum number of boilers needed to meet different heat loads under varying weather conditions are used.

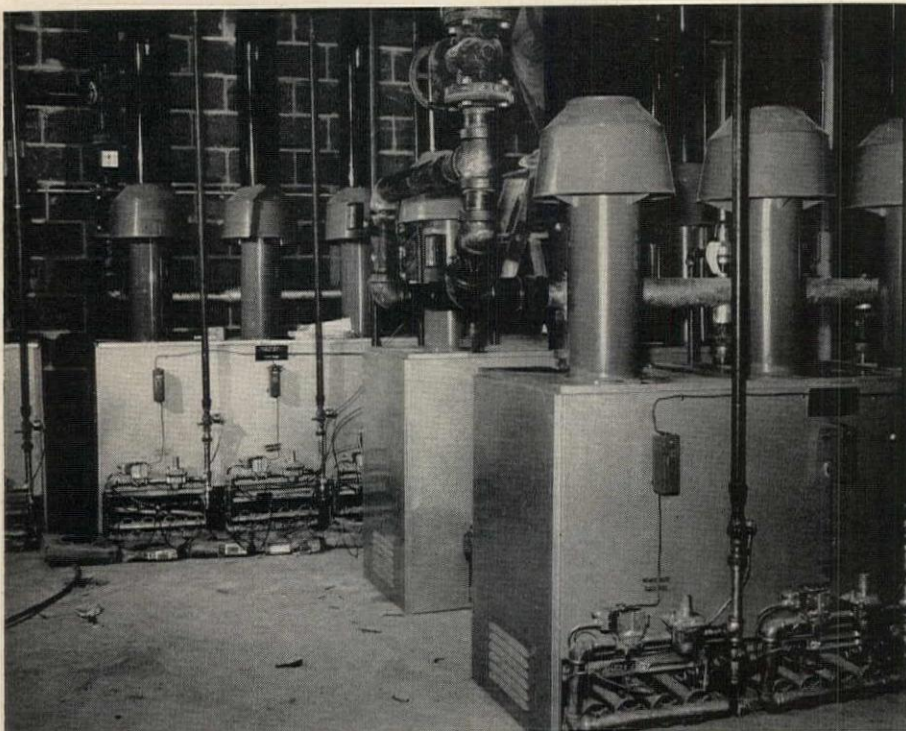
A similar flexibility and economy is achieved in the air-conditioning system. Two 75-ton natural gas engine driven chillers rather than one 150-ton unit carry the full cooling load. When the load is low, only one unit will operate. In addition, each unit can modulate down to a load of 15 tons. Thus, for minimum load, the system can operate at only 10 per cent of full capacity, permitting significant savings in operating costs.

Another important economy is achieved by utilizing the engine jacket water and exhaust heat of the gas engines for heating domestic water during the cooling season. If this heat supply exceeds the hot-water requirements, the engine cooling water automatically bypasses the hot water tank and goes to the 200-ton cooling tower on the roof. When engine heat is insufficient for hot water requirements, one or more of the heating boilers goes on automatically. In winter domestic hot water is provided by the hot water boilers.

The apartment's water distribution system has an interesting reverse feed and reverse return feature. Hot and chilled water is pumped through a two-pipe system. To avoid air pockets, the system feeds as it goes up, starting with the first floor. The return flow is also up, starting with the first floor and reaching a return main on the roof. Switchover from heating to cooling or vice versa takes about eight hours.

Each room has a thermostatically controlled fan-coil unit recessed in the wall. And each unit has an aquastat on the supply pipe which automatically switches the thermostat from heating to cooling or vice versa.

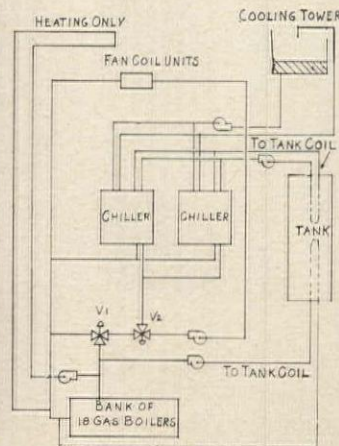
Architect is Fred Lenox; mechanical engineers, Jarvis Engineering Company.



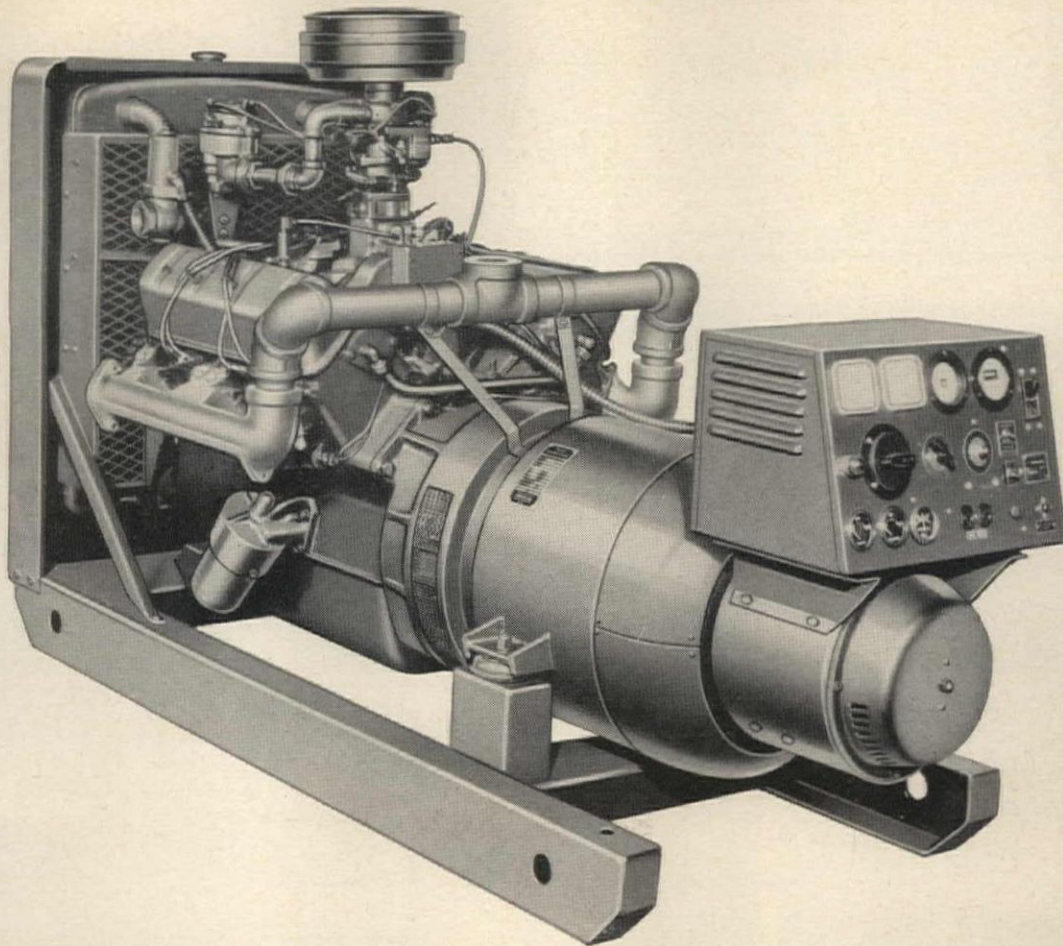
Three-unit batteries of 300,000 Btu input boilers in basement equipment room



Fan-coil units are recessed in outside walls; bathrooms have hot water convectors



## How to Select a Stand-by Electric Plant



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#### KOHLER "CHECK LIST" FEATURES

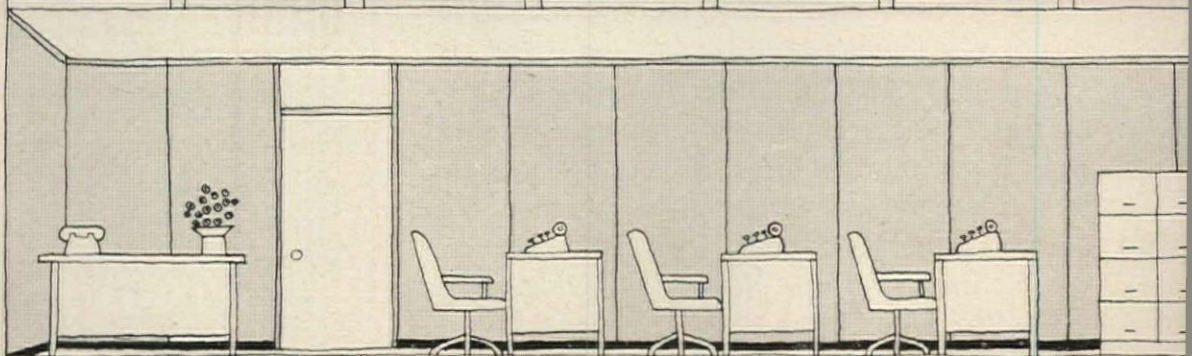
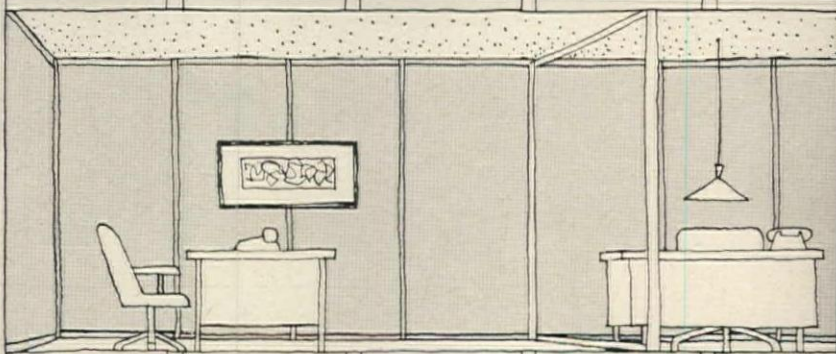
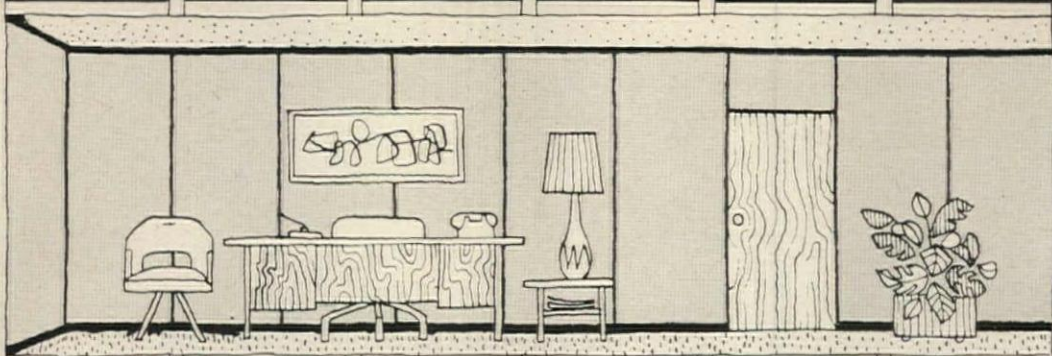
✓	<b>Unitized Design</b> —perfect match of engine and generator assembled and fully tested at the factory.
✓	<b>One Source Responsibility</b> —the Kohler name, reputation and experience stand behind the complete engine and generator unit.
✓	<b>Overload Capacity</b> —job capabilities beyond their rated power, protect Kohler plants from damage and abuse.
✓	<b>Automatic Voltage and Speed Regulation</b> —maintains a steady level of power to electrical equipment for best performance at all loads.
✓	<b>Gas, Diesel and Gasoline Options</b> —matches fuel and power to the needs of the job.
✓	<b>Exciter Cranking</b> —generator acts as starting motor for fast, constant engine turnover that assures quick starts.
✓	<b>Nationwide Sales and Service</b> —one source service easily obtained and performed by Kohler-trained distributors.

## KOHLER OF KOHLER

Kohler Co., Established 1873, Kohler, Wisconsin

ENAMELED IRON AND VITREOUS CHINA PLUMBING FIXTURES • ALL-BRASS FITTINGS • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

For more data, circle 74 on Inquiry Card



## From Hauserman's Total Interior Concept **INTEGRATED MOVABLE WALL SYSTEMS TO FIT ANY BUSINESS, ANY BUDGET**

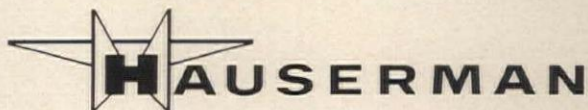
Now you can create a business interior that ranges from the elegance and economy of precisely engineered walls to the most basic kind of space division.

Hauserman DELINEATOR provides quiet elegance and distinction to executive and reception areas. SIGNATURE, companion product to DELINEATOR, lets you create modern, attractive offices that provide the ultimate in function and long range economy. And now, new Hauserman CO-ORDINATOR DOUBLE-WALL, the first practical metal movable wall at low initial cost, makes the advantages of metal walls available at any budget level.

All systems in the complete Hauserman line are design-coordinated—may be combined with each other to provide exactly the kind of space division you need for a particular area—from the low initial cost of Vaughan® Movable Walls—to the ultimate in flexibility, function and long range economy.

As a part of the Total Interior Concept, Hauserman also installs the complete line of CRITERION acoustical ceilings. Both walls and ceilings can be included in the unique, capital conserving Lease-Wall plan.

Whatever your choice, your complete installation is handled under one **Hausermanaged** contract for delivery, erection, and subsequent rearrangement as required. The Hauserman Total Interior Concept is the most complete, practical and flexible proposal ever made for the division of interior space.



-----  
**The E. F. Hauserman Company**  
7315 Grant Avenue, Cleveland 5, Ohio  
In Canada: Hauserman Ltd., Don Mills, Ontario

Gentlemen: Please send me complete information on the Hauserman Total Interior Concept, and Hauserman products and services.

Name \_\_\_\_\_

Title \_\_\_\_\_

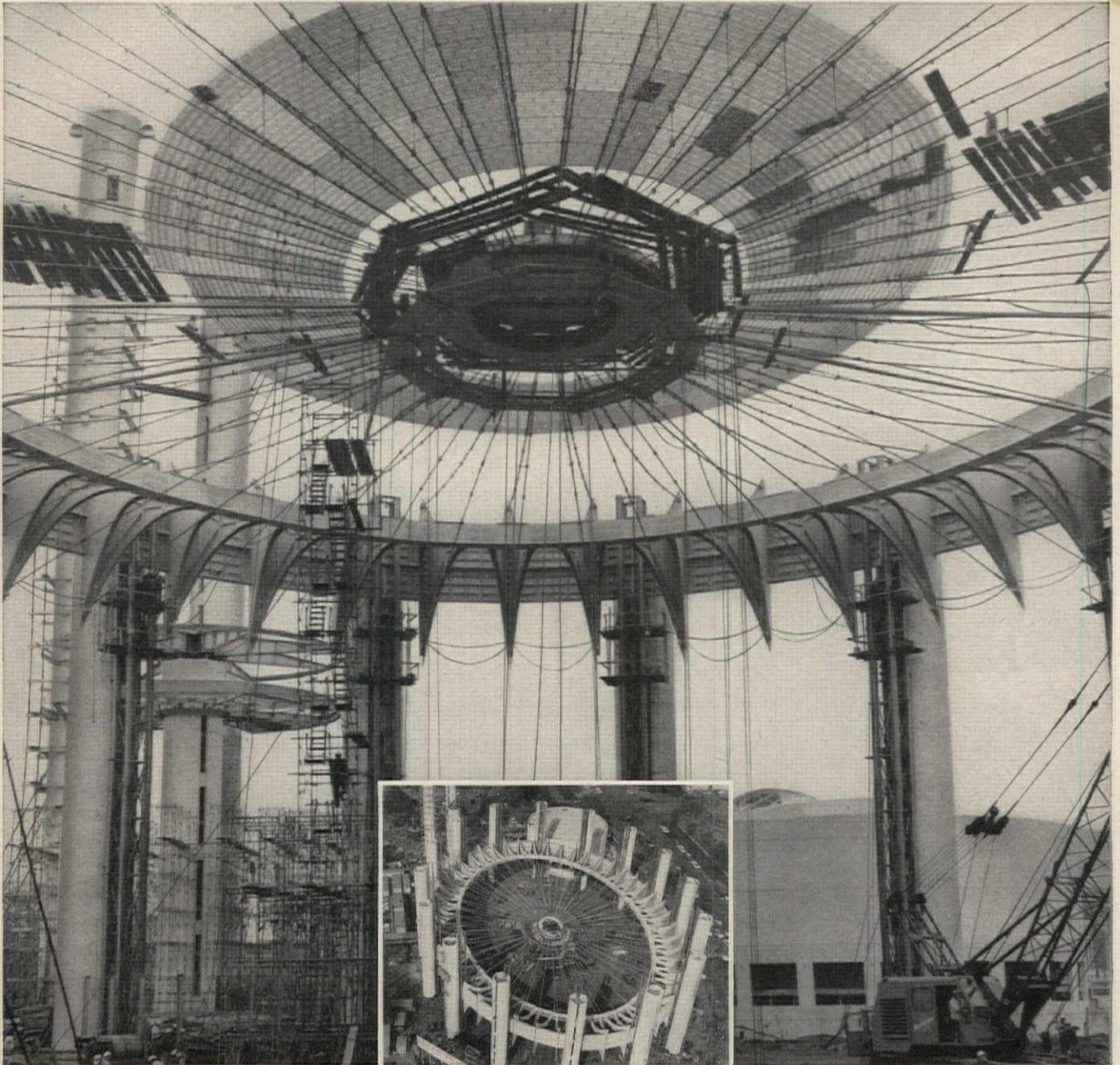
Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

For more data, circle 75 on Inquiry Card

Architect: Philip Johnson Associates; Consulting Engineer: Lev Zetlin & Associates; General Contractor: Thompson-Starrett Construction Co., Inc.; Steel Fabricator and Erector: The Ingalls Iron Works Co. Construction supervised by New York State Dept. of Public Works, Division of Architecture.



## NEW YORK STATE RAISES THE ROOF

Largest suspended roof in the World crowns N. Y. State pavilion at World's Fair. Named the "Tent of Tomorrow," this dramatic structure embodies a significant number of engineering advances. The 55,000 sq. ft. (350 ft. by 250 ft.) oval suspended roof, hydraulically raised to final 100 ft. high position, uses 96 Roebling-built suspension cables and provides an obstruction-free area. Its weight, 9 lbs. per sq. ft., is 71 lbs. per sq. ft. lighter than conventional steel construction, resulting in lighter and more economical foundation requirements.

Of primary interest is the construction feature that eliminates temporary scaffolding. This is made possible because of the lightness of the cables; they can be easily

strung over large areas without temporary supports.

The above are but a few of the advantages that are inherent in the suspended roof. As an early advocate of suspended roof construction, Roebling has accumulated valuable data and experience on design and procedures. We welcome inquiries of any nature on suspended roof construction, whether it relates to plants, warehouses, auditoriums, arenas, transportation terminals, or other types of installations. Just write or call Colorado Fuel & Iron Corporation, Roebling Bridge Div., Trenton 2, N. J.

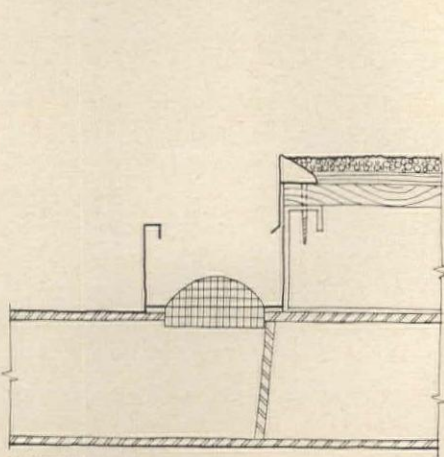
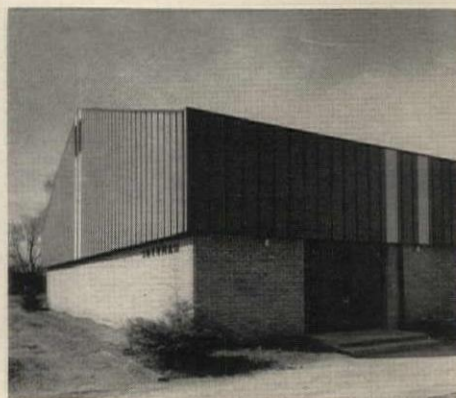
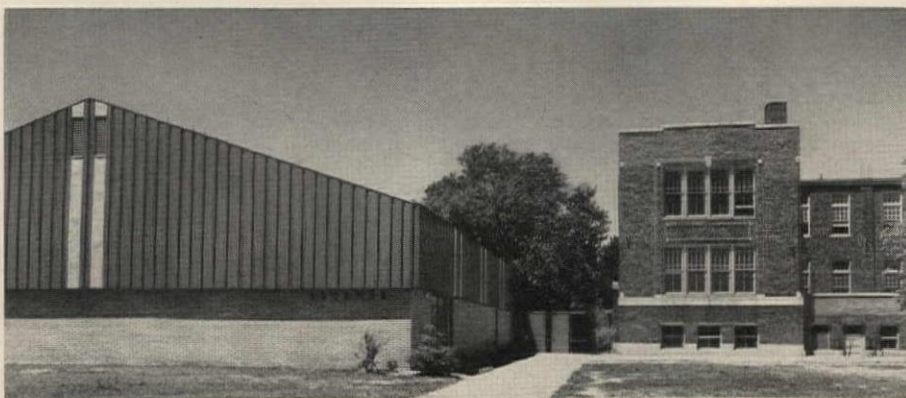
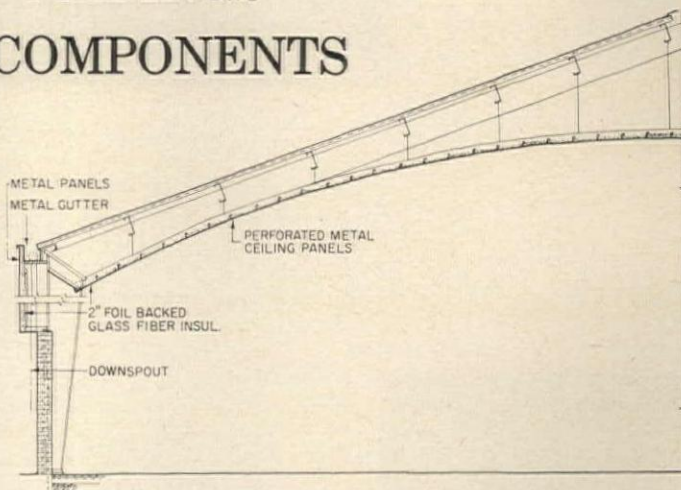


**ROEBLING**  
CABLE-SUPPORTED  
STRUCTURES

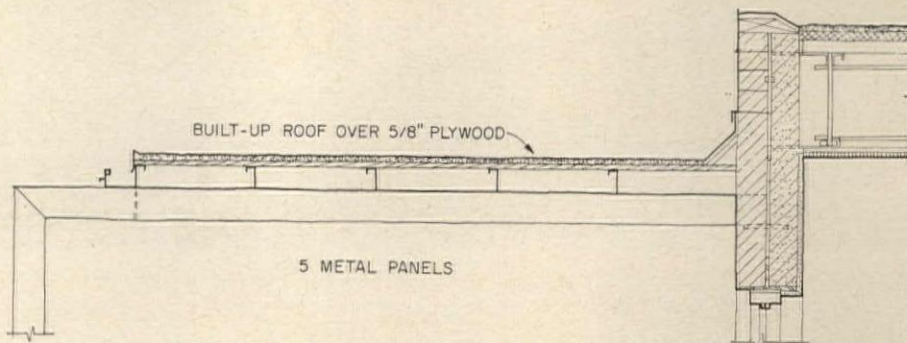
For more data, circle 76 on Inquiry Card

## DRAINAGE DETAILS FOR BUILDINGS USING STANDARD STEEL COMPONENTS

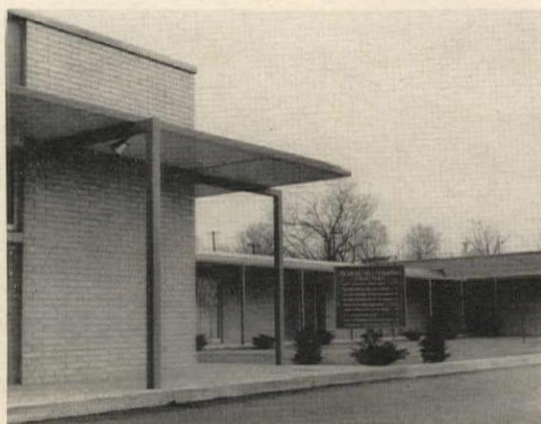
STEEL COMPONENT STRUCTURE visually sits atop masonry wall for auditorium-gymnasium addition to Sherman School in Middletown, Ohio, tying it in with existing school. Downspout comes down through overhang of steel structure and is left exposed in front of masonry wall. Standard rigid-frame structure supports roof and a curved metal-pan ceiling. Column of rigid frame is left exposed. *Architects, H. W. Goetz Associates*

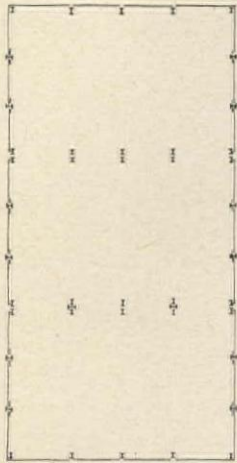


GUTTER DETAIL

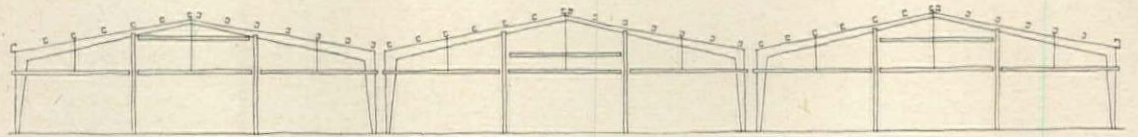


CANOPY FRAMING serves as conduit for rainwater in Medical Arts Center, Middletown. Framing is of standard C-channels welded to form tubular units. Standard metal panels provide finished underside of canopy and support plywood roof sheathing covered by built-up roof. Canopy frame is blocked off inside behind the gutter. *Architect, Brandenburg & Switzer*

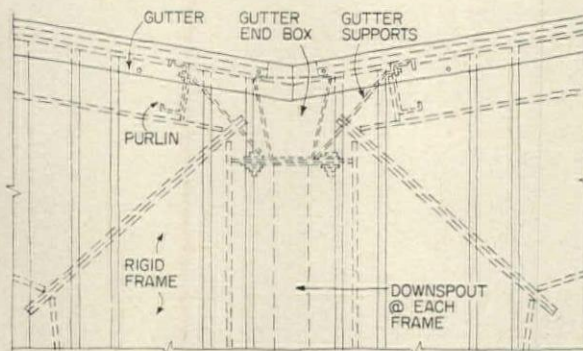




STRUCTURAL PLAN

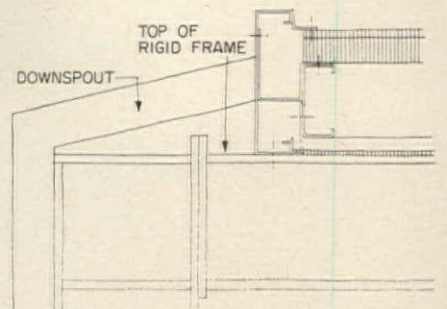
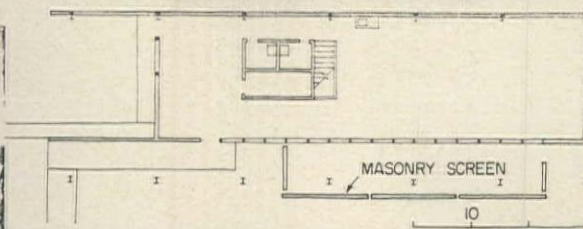


TYPICAL END WALL FRAMING ELEVATION



END WALL ELEVATION AT ROOF VALLEY

SERIES OF THREE RIGID FRAMES permitted flexibility in location of interior partitions for Elks Country Club in Hamilton, Ohio. Split-system heating and air-conditioning package units are hung from this frame. Column portion of rigid frame is left fully exposed on end walls to break up expanse of wall. Gutters at valleys and edges of roof are concealed by standard steel panels. Downspouts are provided at each frame and are left exposed on short ends of building. *Architect, Edward E. Loewe*



TIE-ROD BRACED RIGID FRAME supports roof and canopy of laboratory for Geo-1 instrument company in Dallas, Texas. Downspouts are placed in front of columns to minimize distraction. Masonry screen shields west wall from sun. Rigid frame is completely exposed inside and out. Roof is aluminized steel for corrosion resistance. Standard steel components provide roof framing. *Architects, Prinz & Brooks*



For more information circle selected item numbers on Reader Service Inquiry Card, pages 181-182

## ELECTRIC ELEVATOR PERMITS LOW ROOF LINES

Engineered to permit low roof lines, the new "low overhead" fully automatic passenger elevators introduced by Otis Elevator Company for moderate-height buildings have electric traction driving machines.

These elevators retain the inherent operating and safety characteristics of this type of electrical equipment, but eliminate the penthouse machine room of conventional traction elevators. Instead, the compact driving machine may be located alongside the hoistway at the lower landing (*below*). The elevators also simplify building structural requirements in much the same way as plunger elevators, but don't require a hole for a hydraulic plunger.

One arrangement, with an under-slung car, requires a total height of as little as 12 ft 11 in. above the top floor. A second arrangement, with overhead suspension, requires slightly more height. In either case, the hoistway roof will not usually project above the building roof or parapet.

The new elevators are available at speeds up to 300 fpm. *Otis Elevator Company, 260-11th Ave., New York 1, N.Y.*

CIRCLE 300 ON INQUIRY CARD



## NEW FURNITURE GROUP EMPLOYS CATENARY SUSPENSION SYSTEM

The *Catenary* group of furniture designed by George Nelson for Herman Miller Inc.—a reception room chair, ottoman and table—all have identical polished chrome-plated steel bases.

The chair's upholstered cushions are suspended on concealed cables which hang from the frame in a downward curve (a catenary curve). This produces a flexible, resilient seat. If a single cushion is damaged, it can be replaced individually.

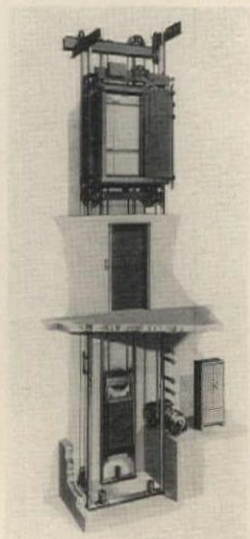
The identical steel parts create a family resemblance in the group but form different structures in each piece. The same elements produce

both a flexible base for the seating and a rigid base for the table.

The steel parts are connected by means of epoxy adhesive, an innovation in furniture construction. The epoxy joint provides an invisible connection which is exceptionally strong.

The seating is upholstered in leather or a selection of fabrics; the coffee table top is of 3/4-in. clear plate glass or clear glass laminated to an amber-tinted plastic core. *Herman Miller Inc., 305 E. 63 St., N.Y. 21, N.Y.*

CIRCLE 301 ON INQUIRY CARD  
more products on page 158



# Office Literature

For more information circle selected item numbers on Reader Service Inquiry Card, pages 181-182

## STRESS-RELIEVED STRAND FOR PRESTRESSED CONCRETE

Excerpts from a comprehensive article, "Flexible Bond Tests of Pretensioned Prestressed Beams" by Norman W. Hanson and Paul H. Karr are included in a 28-page reference manual on the manufacture, characteristics and uses of stress-relieved strand for prestressed concrete. *Bethlehem Steel, Bethlehem, Pa.\**

CIRCLE 400 ON INQUIRY CARD

## ACOUSTICAL CEILING CATALOG

Several hundred varieties of acoustical products, ranging from the most common perforated tiles to the advanced integrated acoustical-ventilating-luminous ceiling systems, are listed in the company's 1964 catalog. Complete data is given on sound absorption, sound attenuation, light reflectance, and fire ratings of each product. An entire section is devoted to "privacy of speech" products and components. Products are also rated for ease of maintenance, limitation of use, cost and other practical selection consideration. *Elof Hansson, Inc., Acoustical Division, 711 Third Ave., New York, N.Y.\**

CIRCLE 401 ON INQUIRY CARD

## SOUND CONTROL UNITS

"Geocoustic" explains how this three-dimensional product achieves improved sound absorption. A sound absorption chart, design information and illustrations, information on where and why such control is needed, and application data and specifications are then presented. *Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa.*

CIRCLE 402 ON INQUIRY CARD

## CEILING INSTALLATION

The three basic methods of installing ceilings and the particular conditions under which each method should be used, are explained in a 24-page illustrated booklet. Tips on cementing tile directly to a ceiling, stapling tile to furring strips, or installing a suspended ceiling are also given. *Armstrong Cork Company, Dept. PI, Lancaster, Pa.\**

CIRCLE 403 ON INQUIRY CARD

## SEAMLESS DOORS AND DOOR AND FRAME UNDERLAY

A new four-page brochure devoted to 1 $\frac{3}{4}$ -in. metal seamless doors listing standard heights of 6 ft 8 in., 7 ft, 7 ft 2 in. and 8 ft, shows 34 designs produced for use in schools, motels, apartments, factories and office buildings. Complete specifications, together with a chart on standard door glass sizes and detailed drawings of a new 2-in. face frame line, complete the brochure. In addition, a free tracing underlay of durable parchment paper for steel doors and frames in the standard heights listed above is available upon request. *Am-weld Building Products, Niles, Ohio\**

CIRCLE 404 ON INQUIRY CARD

## HONEYCOMB ALUMINUM CEILING SYSTEM

A 4-page color brochure describes functional and design applications for *Honeylite*, luminous ceiling systems of expanded aluminum honeycomb panels. The booklet discusses the technical aspects of *Honeylite* as an open ventilation screen, radio frequency shield, and lighting louver. Charts and graphs are used to provide specifications working data. *Nova Industries, Inc., 699 Castro St., P.O. Box 631, San Leandro, Calif.*

CIRCLE 405 ON INQUIRY CARD

## MICROPHONE CATALOG

The "Shure Audio Catalog for Sound System Specialists" is an expanded catalog containing 44 pages of detailed technical information on over 75 microphones and audio products manufactured by the company. *Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill.*

CIRCLE 406 ON INQUIRY CARD

## CHALKBOARD, TACKBOARD SELECTOR GUIDE

A new condensed guide for the evaluation, selection and specification of chalkboards and tackboards gives data on structure of various types, colors, sizes, mounting arrangements, trim and accessories. Installation and rough-in drawings are also provided. *Weber Costello, Chicago Heights, Ill.\**

CIRCLE 407 ON INQUIRY CARD

## STEEL COLUMN MANUAL

A new steel column manual which incorporates load tables and design data based on new AISC A-36 steel specifications is one of the first published references containing tables which reflect the increased load bearing capacities possible with the new steel and the only one devoted exclusively to steel columns of all types. It also includes complete specifications for *Fire-Trol* prefabricated fireproofed steel columns. *Fire-Trol Corporation, 8001 S. Western Ave., Chicago 20, Ill.\**

CIRCLE 408 ON INQUIRY CARD

## METAL DOORS, WINDOWS AND CURTAIN WALLS

Three 1964 catalogs on the company's line of metal doors, windows and curtain walls include specifications, features, detailed diagrams and installation photos. The door catalog shows 14 of many possible combinations of the manufacturer's balanced doors. *Hupp Corporation, Flour City Architectural Metals Division, 2637 27th Ave. South, Minneapolis 6, Minn.\**

CIRCLE 409 ON INQUIRY CARD

## OFFICE FURNITURE

A new full-color brochure covers the complete line of *Tempic-9* desks, credenzas, tables, and secretarial and modular work stations as well as a newly designed line of harmonizing contemporary-styled file cabinets. *Yawman & Erbe, Rochester 3, N.Y.*

CIRCLE 410 ON INQUIRY CARD

## VINYL WALLCOVERING

A revised edition of a guide for the specification, selection and use of *Vicrtex* vinyl wallcoverings gives detailed information on such physical characteristics as weights, thicknesses, tensile and tear strengths. There is full data on UL ratings and fire hazards too. *L. E. Carpenter & Co., Empire State Bldg., New York 1, N.Y.\**

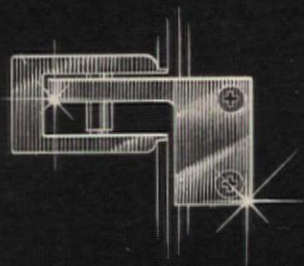
CIRCLE 411 ON INQUIRY CARD

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

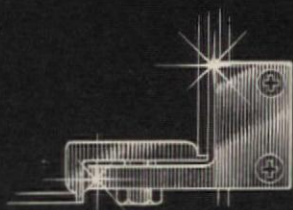
more literature on page 196

## 250,000 Kicks . . . and Still Swinging Smoothly!

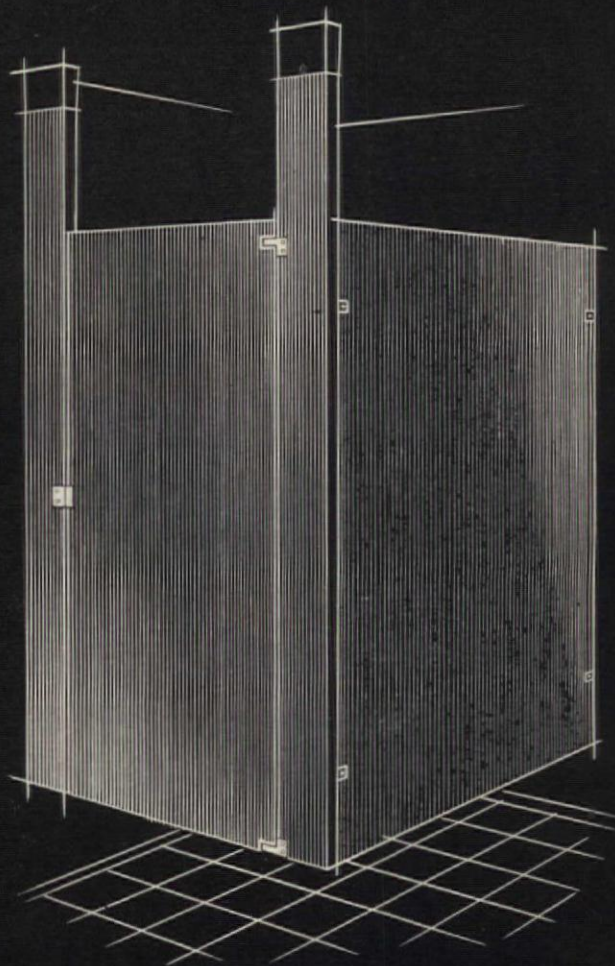
Abuse centers on the hinges of all toilet compartment doors. And Mills laboratory tests prove conclusively that after more than 250,000 slam cycles — or "kicks" — Mills toilet compartment doors still swing smoothly, because they're supported by Mills super-strong, wear-resistant, corrosion-proof fittings —



Mills Top Hinges — sturdy stainless steel pintle — rigidly supported at 3 points, locked to a channel reinforcement, **welded** to inside of door. Suspension arm of hinge bracket rides on this shaft, protected by pressure-fitted, life-time Molybdenum Nylon bushing.



Mills Lower Hinges — cam-to-follower true gravity type; adjustable; factory-installed; concealed within door. Top follower: square-locked, secured to **welded** steel reinforcement. Lower cam: molded to knurled, hardened stainless steel shaft which axially aligns cam and follower. Both are naturally-lubricated, life-time Molybdenum Nylon.



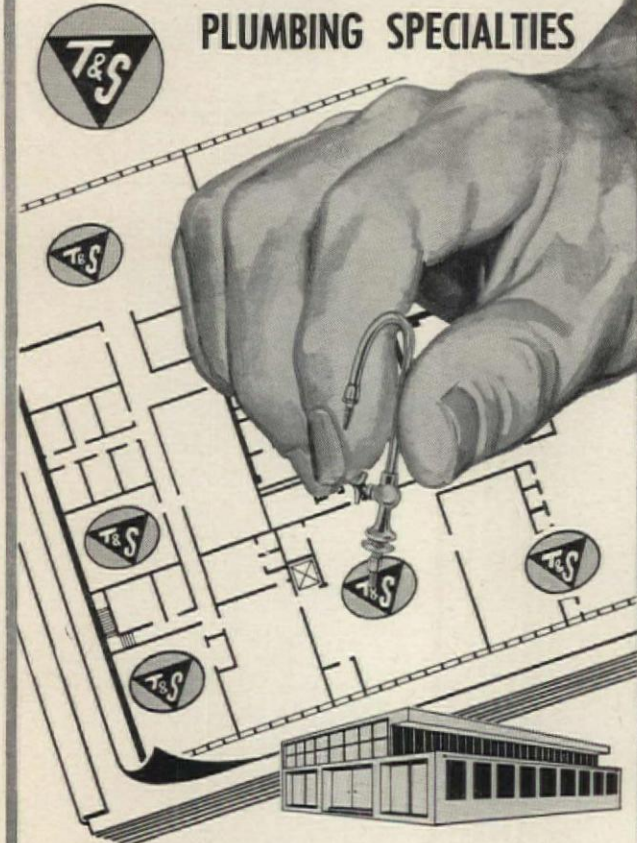
**All exposed parts** of Mills hinges are non-ferrous, polished, and chrome-plated. **All working parts** are stainless steel; or corrosion-proof Molybdenum Nylon — heat-resistant and almost friction-free — eliminating the troublesome periodic adjustment required by miniature metal cams, rollers and bearings, and springs.

Mills Company toilet compartments are available in 20 decorator colors; in porcelain and baked-on enamel finishes, and plastic laminate.

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the complete quality line of  
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Picking the right fixture for the right spot in an industrial or institutional building plan makes the plumbing installation operate the way you designed it. T&S offers the widest range of quality plumbing specialties to choose from for every job in the building... and all the working tools architects and specifiers need to make plans easy, foolproof, quality controlled.

**Complete Line Of Fixtures.** The T&S complete line of "stream-mated" plumbing specialties simplifies the planner's task of unit integration and quality controlled performance throughout his specifications. A full complement of quality-built T&S fixtures and service outlets for every purpose helps him to select the most suitable units for each location... Food Service, Drinking and Filling, Sanitation and Maintenance, Laboratories, and other specialized areas. When you specify T&S, you have positive insurance of reliability and service harmony "all-through-the-house".

**Complete Set Of Planning Guides.** T&S offers a two-volume library of specification manuals to the planner. They are fully detailed with exact specs and dimensional drawings of all stock fixtures and service outlets with variations to custom design every layout. Personalized, registered manuals of "Plumbing Specialties" and "Lab-flo Laboratory Service Fixtures" are available on request.

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Refer to 1963 Sweet's Catalog, Code: 35b  
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A Complete line of Self Contained Fountains, Fountain Kits, Reflection Pools with Water Displays, Fountain Heads, Complete Design, Engineering & Manufacturing facilities for all types of Fountains & Water Displays.



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46 page catalog.

**JABON STUDIOS**

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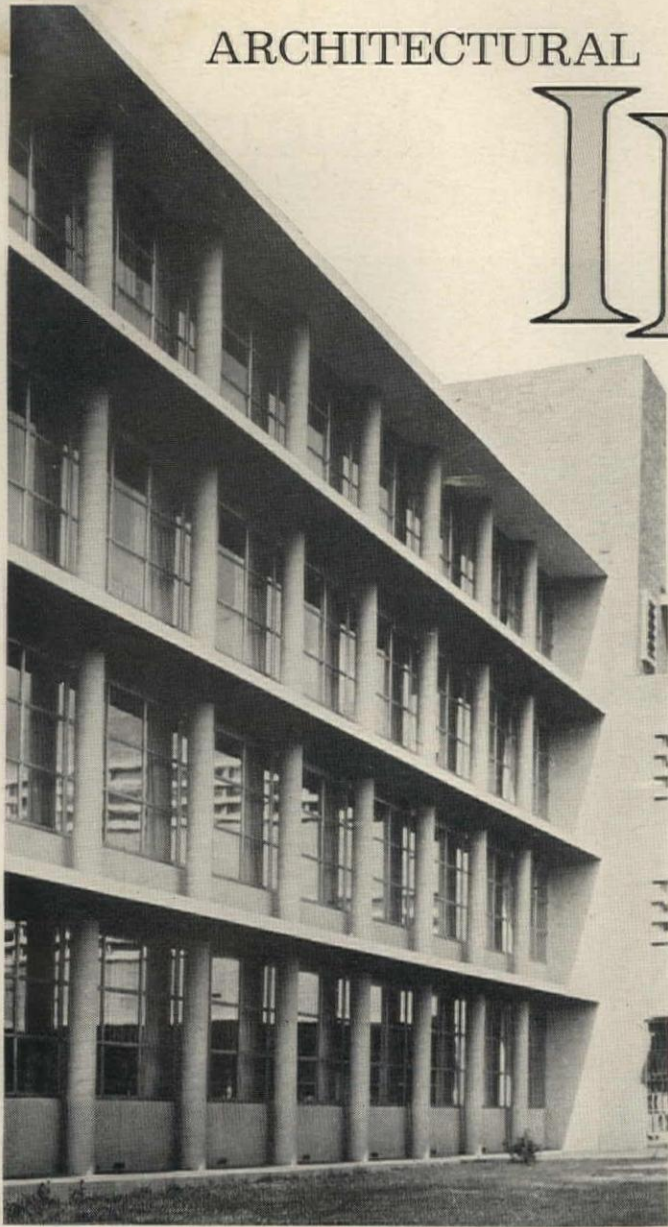
New York Office and Warehouse  
114 Liberty Street, Dept. AR  
New York 6, New York

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ARCHITECTURAL

# IDEAS

by **SONOCO**

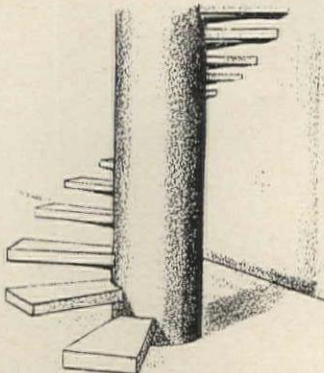


Round concrete  
columns combine  
beauty with brawn

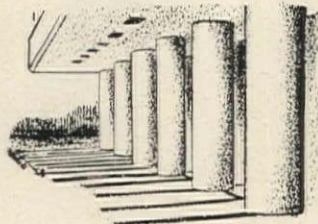
*Specify forming with*

**SONOCO**  
*Sonotube*<sup>®</sup>  
**FIBRE FORMS**

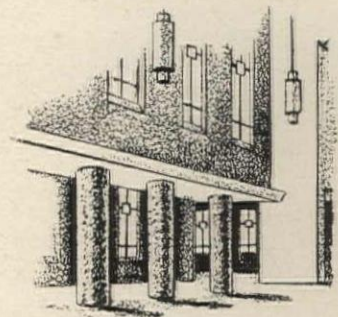
For classic beauty . . . for structural brawn, design for round columns of concrete, and specify forming with low-cost SONOTUBE Fibre Forms. They place, brace, pour, and strip quicker to save contractors time, labor, and materials. For lower overall job costs, call for SONOTUBE Fibre Forms whenever round concrete columns are designed into the structure. Five types, sizes 6" to 48" I. D., in standard 18' lengths or as ordered.



*Economical SONOTUBE Fibre Forms permit new design features such as this spiral step emplacement in column.*



*Columns formed with SONOTUBE Fibre Forms may be finished in many ways to blend into any type of architecture.*



*SONOTUBE Fibre Forms, readily available from distributors coast to coast, provide today's fastest, most economical method of forming round concrete columns.*

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For more data, circle 79 on Inquiry Card

*Creative use of lighting control  
in new Wichita church shows...*

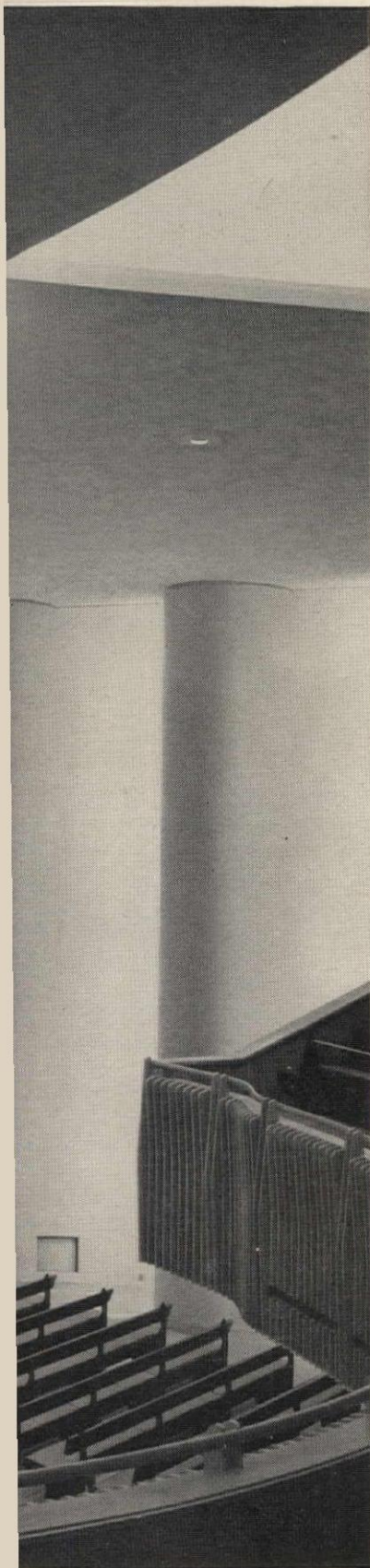
How G-E  
do dramatic



Down the center of the huge fish-shaped ceiling slab of the First Methodist Church of Wichita, a row of nine spotlights points directly toward the floor. At the touch of a button a G-E Motor Master turns on the lights in sequence from the

rear to the chancel. A second Motor Master turns them off. Additional 12-circuit Master-Selector Switches permit laying down a path of light just ahead of processionalists and then picking it up right behind them.

# Remote-Control Wiring can help you new things with mood lighting



**T**HE FIRST METHODIST CHURCH of Wichita is one of the nation's truly magnificent contemporary sanctuaries. One reason for this: the power and majesty of its lighting. Another reason: modern lighting control made simple, flexible, and convenient with General Electric Remote-Control Wiring.

Simple remote-control stations in the narthex and in the chancel permit the selection of any one of five lighting moods at the touch of a push button. The change takes place over a period of slightly more than one minute due to the action of the General Electric Motor Masters, thus reducing any objections to sudden changes in lighting levels. Even while seated in the clergy seating area or while standing in the lectern or pulpit, the ministers have a last chance to use effective dimming or brightening of either chancel or nave lighting to assist them in delivering their messages. At each station, colored indicator lights show which mood is in effect.

As Mr. Carl Green of Carl Green & Associates, consulting engineers for the installation, puts it, "The General Electric Remote-Control Wiring helps give the church the ultimate in mood lighting effects at only a fraction of the cost you would expect."

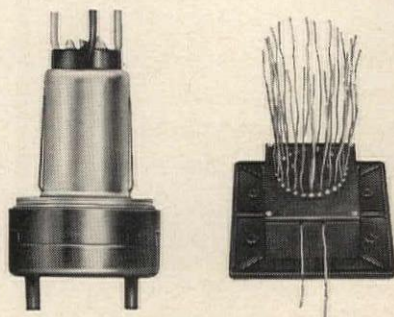
Instead of big, expensive switchboards there are neat, compact General Electric Motor Masters, relays and a 24-volt cross-connect or "patch" panel that permits a wide flexibility of the various lighting moods, as well as of control. At the touch of a mood switch a preselected Motor Master starts turning the desired circuits

either ON or OFF, one at a time in rapid succession; and in order to handle the 47 mood lighting circuits, the last contact on the Motor Master starts a second Motor Master to control the remaining circuits. The last contact of this second Motor Master lights a certain color indicator at all control points to show which mood is in effect. All circuits are also controlled individually from 12-circuit manual Selector Switches, when desired.

Churches . . . country clubs . . . night-clubs — wherever you need the many moods of modern lighting under simple fingertip control — General Electric Remote-Control Wiring can make it safer, easier, less expensive.

For the complete story on modern lighting control, write for the Remote-Control Wiring Manual for architects and consulting engineers. General Electric Company, Wiring Device Department, Providence, Rhode Island 02907.

**Architects:** Glenn E. Benedick, AIA, Wichita  
**Consultant:** Harold E. Wagoner, AIA, Philadelphia  
**Electrical Contractor:** Wichita Electric Co., Inc., Wichita  
**Consulting Electrical Engineers:** Carl Green & Associates, Wichita



The sanctuary building uses 100 relays for lighting and a total of 14 General Electric Motor Masters.



While the entire system may be controlled from this control room overlooking the sanctuary, other switches are placed throughout the church for the convenience of the minister, ushers, the organist, and the sound technician.

*Progress Is Our Most Important Product*

**GENERAL  ELECTRIC**

For more data, circle 80 on Inquiry Card

## Product Reports

continued from page 151

### CLASSROOM DOORS

New school classroom doors are surfaced with low-maintenance *Micarta* plastic laminate in patterns which make no attempt to simulate wood. Unlike wood finishes, the door surfaces do not require repainting and can be wiped clean with a damp cloth. *Westinghouse Electric Corporation, Micarta Division, Hampton, S.C.*

CIRCLE 302 ON INQUIRY CARD

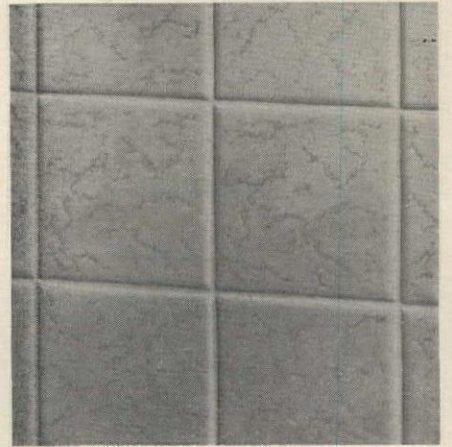
### METAL PROTECTION

A new four-way metal protector called *LPS* is guaranteed by the manufacturer to stop rust and corrosion, displace water, and lubricate and penetrate the metal as well. *LPS* is an inorganic metal preservative compound that sprays a micro-thin, non-greasy, non-gummy film on any metal surface. It is effective at any temperature and will not oxidize. *LPS Research Laboratories, 8701 Wilshire Blvd., Beverly Hills, Calif.*

CIRCLE 303 ON INQUIRY CARD

### MARBLE PATTERNED WALL TILE

The subdued new texture and pattern of *Ceratile*, a glazed wall tile, is particularly effective when used to create unusual color panels, inserts or background feature walls. It is also suitable for light-duty horizontal areas in bathrooms and kitchens such as vanities and counter tops. Colors



are produced on a background of white in soft shades of green, beige, sand, gray, pink, blue, azure, gold and lilac. *Ceratile Marble Colors* are produced in 4¼- by 4¼-in. flat tiles. *The Cambridge Tile Mfg. Co., P.O. Box 15071, Cincinnati 15, Ohio.*

CIRCLE 304 ON INQUIRY CARD

### HEAVY-DUTY SWITCHES

A new line of heavy-duty AC switches, cataloged as the *Series 700*, includes over 80 different models ranging from single pole, double pole, three- and four-way, locking, lighted handle and momentary contact switches. They are available in 15-a and 20-a, 120-277-volt AC ratings. All switches feature a choice of side or side and back wiring. *Slater Electric, Inc., 45 Sea Cliff Ave., Glen Cove, N.Y.*

CIRCLE 305 ON INQUIRY CARD

### SMALL PARTS CABINETS

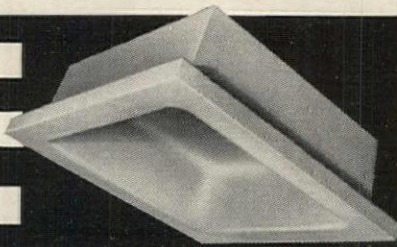
Standard-width modular cabinets with drawers of various sizes for small parts storage have been designed with drawers whose size and number are completely flexible for function and need. Modular storage combinations of welded steel frames with transparent drawers which are the standard "building blocks," will stand, stack, hang on the wall or fit existing shelving. *Akro-Mils, Box 989, Akron, Ohio, 44309*

CIRCLE 306 ON INQUIRY CARD

more products on page 164

## DUWE of Oshkosh... in Endicott\*

# DUWE

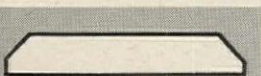


### ACOUSTI-DOME WAFFLE UNITS

\* Installed in IBM's cafeteria, Endicott, N. Y. Architects: Sherwood, Mills and Smith.

Acousti-Domes are fabricated by Duwe of concrete and DuCrete aggregate (lightest and strongest available). In one installation operation a ceiling is formed and finished. It is complete when Acousti-Domes are set in position. Reinforcing materials are laid as needed and concrete poured. These units naturally bond to concrete. The insulating "U" value is .20, noise reduction coefficient is .70. Weight of dome is not over 115 lbs. for 9 square feet.

### WHEN DESIGNING ROOF SYSTEMS — LOOK TO DUWE



**DuLITE Roof Slabs** — Precast of concrete plus a special DuCrete aggregate. High insulating, acoustical value.



**Duwe Channel Slabs** — Lightweight, of (rotary kiln) Haydite concrete. Available in varying sizes.



**Duwe Tongue & Groove Plank** — accurately molded to form a permanent, easily constructed roof deck.

Roof deck and joist precast by Duwe to precision standards have multiple advantages in modern structures. These practical, efficient roof systems are incorporated in buildings of a wide variety of types.

Immediate and long range savings are achieved through selection of Duwe systems. For more complete details refer to Sweets Architectural File or write or phone us. Duwe assistance at all stages of building design and construction is always available.

# DUWE

**PRECAST CONCRETE PRODUCTS, INC.**

Phone (Area 414) 231-3980

P. O. Box 1277 • Oshkosh, Wisconsin

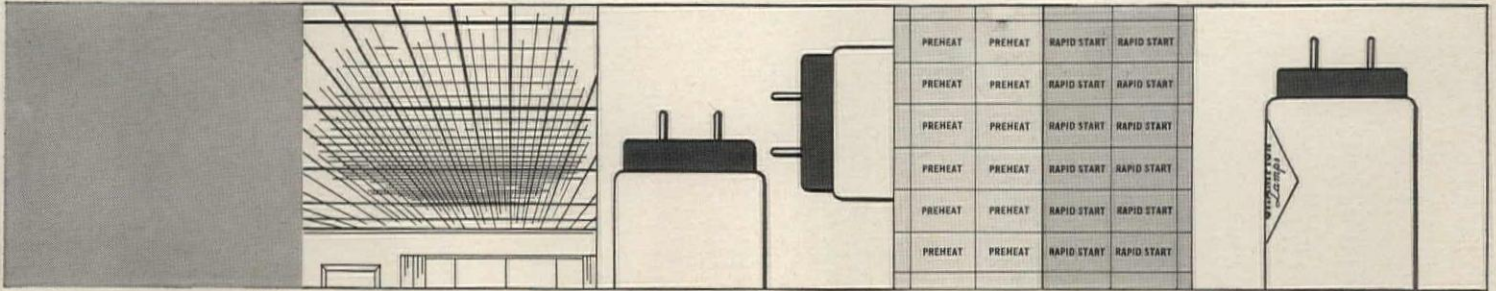
For more data, circle 81 on Inquiry Card

For more data, circle 82 on Inquiry Card →

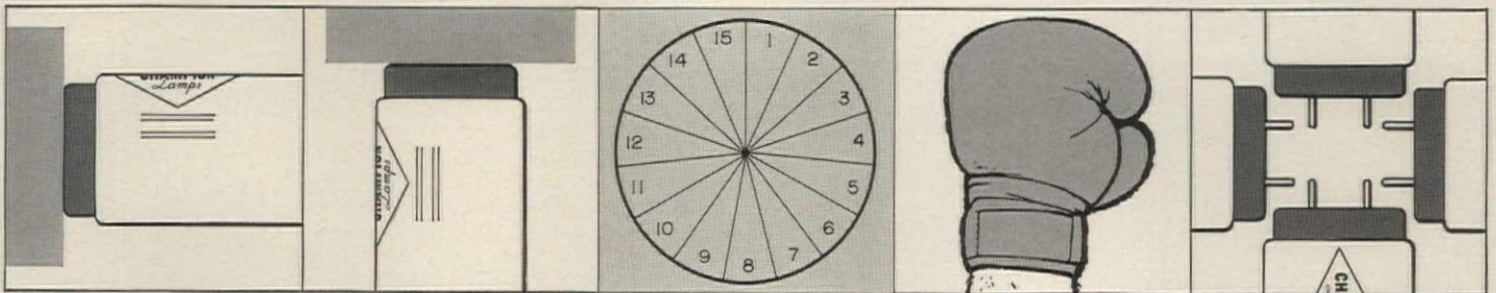




If you take this pre-heat lamp ... and stick it in a pre-heat fixture, it works swell. But just try it in a rapid-start, and you know what you'll get. Same with the old rapid-start: in a rapid-start fixture, it does what it's supposed to. But in a pre-heat?



Same old story. Less efficiency. Which means, of course, that if a building has both kinds of lighting fixtures on the ceiling, you need both kinds of lamps on your ceilings... and in your inventory. Which makes things complicated, and costs you money. Unless you buy the Champion F-40, most versatile 40-watt fluorescent on the market.

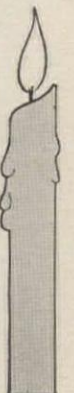


It works equally well here, as a rapid-start ... or here, as a pre-heat. Other nice things about the F-40? Well, for one thing it comes in 15 different colors; It meets or beats the lumen output of any other 40-watt you can buy; and its specifications invite comparison with those of any other 40-watt lamp made by any other leading manufacturer in America, bar none.



The F-40 is versatile enough for 99% of commercial and industrial installations. If you're in that group, we are the people to talk with.

If you're not, may we suggest one of these?





Automotive Life Insurance Building, New Orleans, La. Architects: Curtis & Davis & Assoc. General Contractor: Haase Construction Company. Plastering Contractor: A. L. Fishman, New Orleans.

## The Gold Bond difference: Sprayolite simplifies a complex ceiling

Hundreds of passers-by weekly stop to admire the exterior of this beautiful contemporary New Orleans building. Just what the owners wanted. And the interior is just as attractive. The arched ceiling—which follows the contour of the exterior motif—was formed with metal lath, channels, and Gold Bond Sprayolite Plaster. Sprayolite was the ideal product for this plastering job; it is sound-absorbing, non-

combustible, and is exceptionally white for high reflectivity. Application was no problem. The base coat and the first coat of Sprayolite were hand-troweled. Then the finish coat was machine-sprayed. Ask your Gold Bond® Representative for technical information on Sprayolite. Or write Dept. AR-123, National Gypsum Co., Buffalo 25, N. Y.



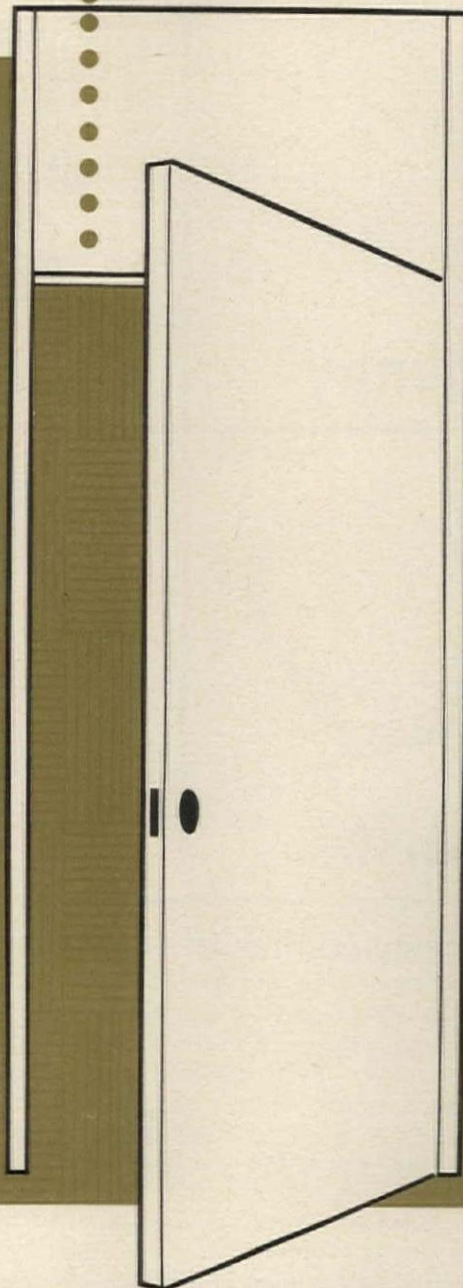
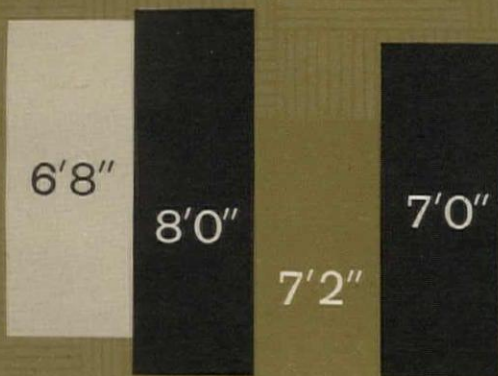
**Gold Bond materials and methods make the difference in modern building**

For more data, circle 84 on Inquiry Card

steelcraft metal door/frame idea

no. 10 in a series

*Versatility  
to meet design  
requirements*



### CEILING HIGH FRAME AND TRANSOM PANEL ...



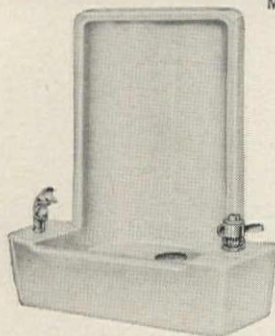
All Steelcraft doors and frames are available in a wide range of standard sizes... providing versatility such as the use of matching flush transom panels or 8' high doors.

This is another of the many advantages gained from the use of Steelcraft metal doors and frames. Write for other ideas... and the name of your technically trained Steelcraft distributor.

The Steelcraft Manufacturing Company, 9017 Blue Ash Road, Cincinnati 42, Ohio, U.S.A.

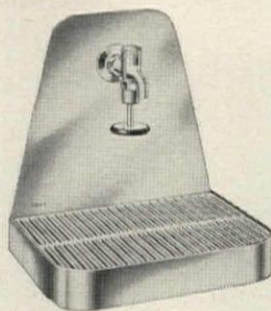
For more data, circle 85 on Inquiry Card

# Wherever he is in school...



Model 77

**Johnny**



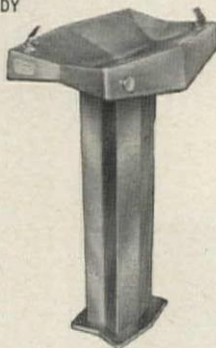
Model 440

**wants**



Model 2050

**a drink**



Model 36-DY

**of water**

## Haws complete line of fountains and coolers

fits every school area. When Johnny wants a drink in classroom, corridor, cafeteria or outdoors, there's a Haws fountain to suit the situation. To protect Johnny, all Haws fountains have sanitary design. To protect the fountains, they're cast in hi-strength Tenzaloy aluminum, stainless steel, bronze, vitreous china, fiberglass and enameled iron. Vandal-proofing keeps Haws fountains working smoothly and looking sharp. Multiple bubbler models meet "rush hour" demands; color and design provide decoration. There's a Haws fountain to fit your "specs." Write for the new Haws catalog.

*Insist on HAWS - a quality product!*

**More to choose from.....**



Since 1909

**HAWS DRINKING FAUCET COMPANY**

GENERAL OFFICES:  
1441 Fourth Street • Berkeley 10, California

For more data, circle 86 on Inquiry Card

## Product Reports

*continued from page 158*

### PACKAGED AIR-CONDITIONERS

The newly designed three- and five-ton packaged air-conditioning units for air and water cooled applications are adaptable for heating as well as cooling. The units can be used in offices, hotels, and many other types of commercial and industrial buildings. An improved cabinet combines attractiveness in appearance with compactness. Cabinet panels are 18-gauge steel finished in gray enamel. Components consist of a heavy duty hermetic compressor balanced with a 3-row cooling coil; a centrifugal type blower; blower motor; water cooled or matched air cooled condenser; replaceable low velocity filters; plenum and adjustable air foil grill assembly. *Curtis Manufacturing Company, 1905 Kienlen Ave., St. Louis, Mo.*

CIRCLE 307 ON INQUIRY CARD

### FLOOR SMOKING STAND

A floor smoker in the form of a rectangular walnut column has a top of solid cast aluminum with heavy stainless steel blades supported by stainless steel bearing plates. The tip action top empties debris into an extra large capacity removable alumi-

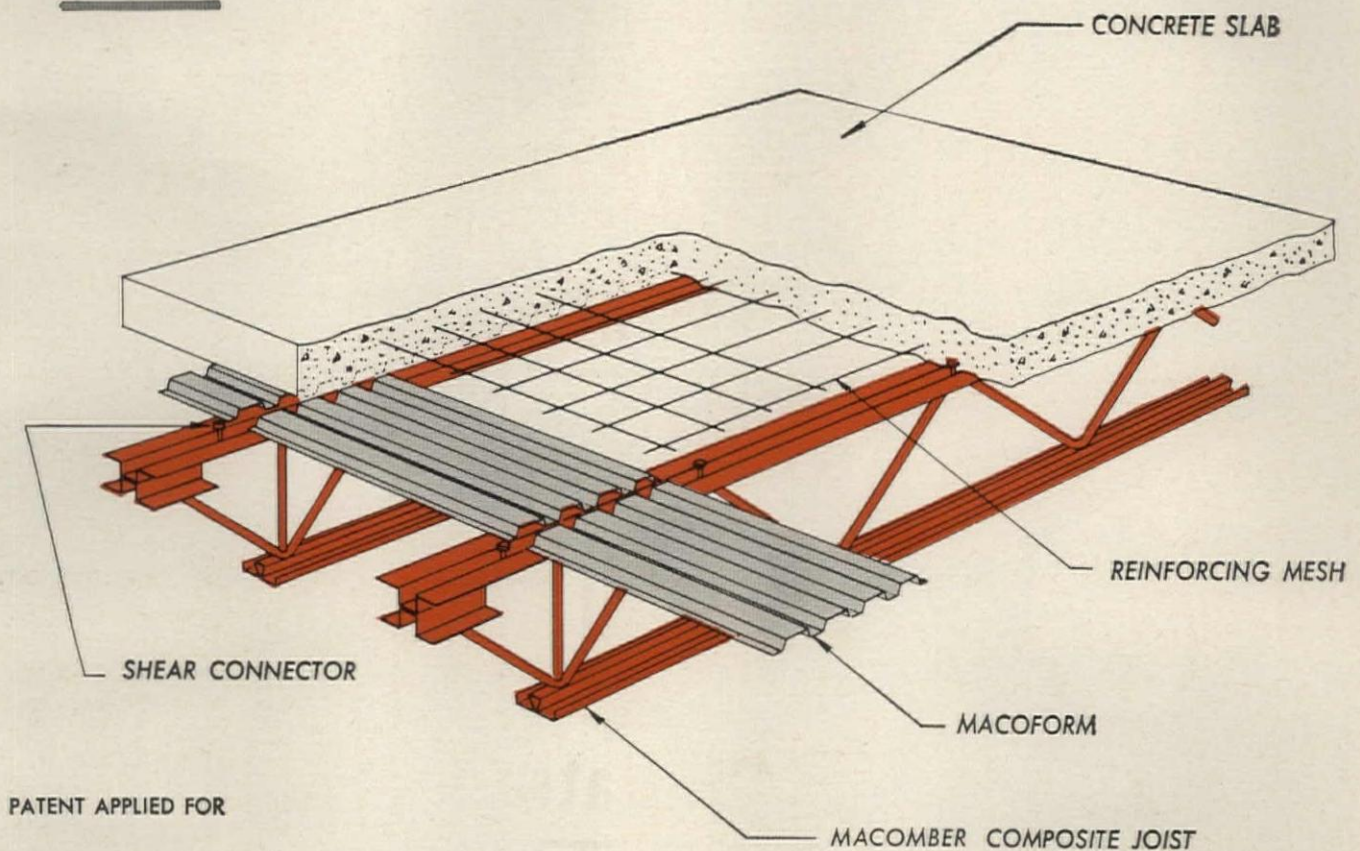


num inner bucket. Finishes in *Formica* or oil rubbed or lacquered walnut are available. The two sizes are 5 by 9 1/4 in. and 7 by 14 1/2 in. Both are 22 in. high. *McDonald Products Co., 721 Seneca St., Buffalo 10, N.Y.*

CIRCLE 308 ON INQUIRY CARD

*more products on page 168*

**NEW**



## A way to improve multiple story construction (and reduce its costs)

Build a tall building, or a single-story, with less wasted space, more economically. It can be done with an exciting new system developed, tested and proved by one of America's best known structural steel fabricators — Macomber Incorporated, a Subsidiary of Sharon Steel Corporation.

It's called the Macomber Composite System, because it combines steel and concrete into a structural member which functions integrally, utilizing the strength of open-web joists with the capacity of a concrete slab. The inter-action of the joists and slab provides a more

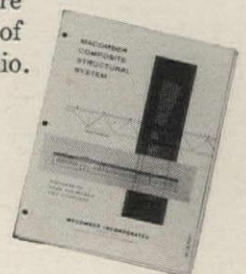
rigid unit than steel and concrete acting independently. Developed around a special open-web joist, the system permits longer spans with shallower depths, reducing height per floor. More efficient use of materials with a reduction in total dead weight and labor costs, result in decreased building costs.

The Macomber Composite System is another new custom steel product from the expanding world of Sharon Steel. For technical brochure write Macomber Inc., Subsidiary of Sharon Steel Corp., Canton 1, Ohio.

**MACOMBER INCORPORATED**



CANTON 1, OHIO  
SUBSIDIARY OF SHARON STEEL CORPORATION



For more data, circle 87 on Inquiry Card



Tree and house demonstrate wood's naturally wonderful way with a site. Planked siding and decking, exposed overhangs, and weathered shingle roofing all contribute to this home's friendly feel for its rustic surroundings. Architects: Burde, Shaw & Associates, Carmel, California.

*For domestic comfort in exciting form*  
use **WOOD** . . . and your imagination



Latticed walls, square columns, and arched and criss-crossing members of wood overhead form a sunny welcome for a walkway entrance to this contemporary home; show still more of wood's wealth of uses.

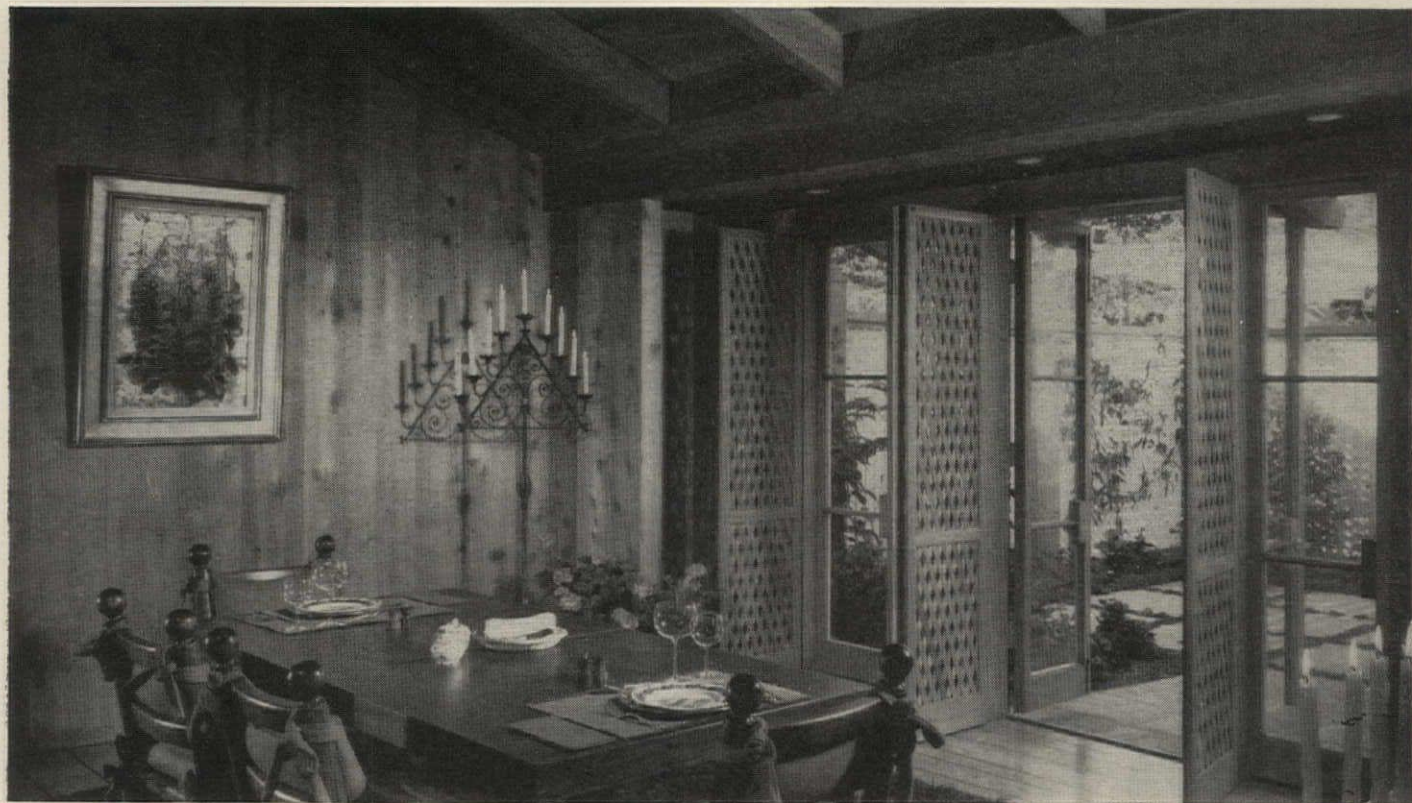
Be different with wood in structures for living. Work freely with its flexibility. Take advantage of its economies. Plan new daring with its versatility in roofing, siding, paneling, and flooring. Depend on its natural suitability to any site.

Outside, changing seasons treat wood beautifully. Inside, wood treats changing moods warmly. Its inherent sound-subduing qualities, insulating characteristics, and resilient strength all contribute to generations of comfortable residence. Wood's infinite grains, tones, and textures invite the use of other materials . . . make a house even more to come home to. For additional information on designing with wood, write:

**NATIONAL LUMBER MANUFACTURERS ASSOCIATION**  
*Wood Information Center, 1619 Massachusetts Ave., N.W., Washington 6, D.C.*

nlma

find the better way with **wood**



A dining room of wood creates a tasteful setting with paneled walls, plank and beam ceiling, and complementing Spanish-style furniture. Note, too, the lattice-like wood doors for airy privacy.

For more data, circle 88 on Inquiry Card

NEEDED FOR YEARS...to prevent perplexing predicaments in the bathroom...AND HERE IT IS



**A NEW BATHROOM CONVENIENCE** Just a cover-opening away is the spare...insurance against embarrassment. Closed it's one of the most attractive accessories a modern bathroom can have. Beautifully chromed and precisely made in every detail, it combines a new and original idea with Hall-Mack's fine styling.

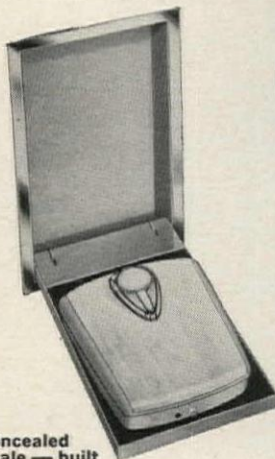
The smoothly operating door which conceals the extra roll is a sparkling, chrome plated brass panel—compact and flush with the wall—that blends pleasingly with any decor.

For new homes or remodeling, you're sure to make friends and influence new customers when you specify, sell or install built-in features by Hall-Mack—especially Conceal-A-Roll with the "spare" compartment that solves a delicate problem.

shower recess unit



— handy, safe spot for shampoo bottles, etc.



concealed scale — built in the wall for utmost safety and convenience

**HALL-MACK COMPANY**

AR-1263

a **textron** company

1380 W. Washington Blvd., Los Angeles 7, California

- Please send free color booklet on bathroom planning.
- Include complete information on Conceal-A-Roll.

Name \_\_\_\_\_

(PLEASE PRINT)

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Sold by leading plumbing, tile and hardware dealers everywhere.

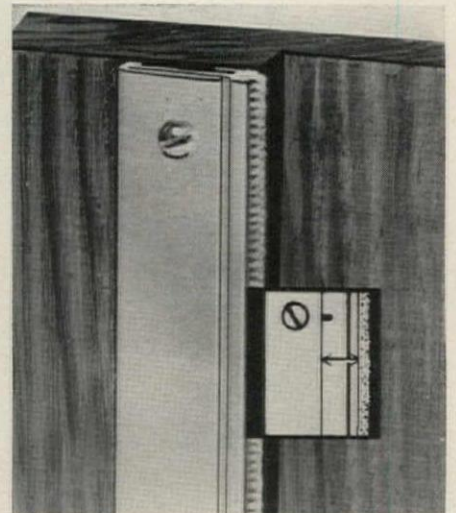
For more data, circle 89 on Inquiry Card

**Product Reports**

continued from page 164

**DOOR WEATHERSTRIP**

A new *Adjust-a-matic* door weatherstrip utilizes an expansion principle that permits quick adjustment of the weatherstrip to compensate for door variations caused by warp, distortion or poor fit. Concealed springs



in the two-part extruded aluminum body automatically force the wool-pile sealer against the door by a light loosening of the attaching screws whenever additional sealing is required. The aluminum body may be surface mounted to existing wood or hollow metal door jambs, or integrally flush applied on mill order wood frames. *Sun Screen Products, Inc., Seal-Draft Weatherstrip Division, 2220 N. Division St., Spokane, Wash. 99205*

CIRCLE 309 ON INQUIRY CARD

**PRESTRESSED CONCRETE WALL PANELS**

*Conwall* panels are prestressed concrete wall panels which form the wall of buildings when placed on top of one another in a horizontal position between vertical structural steel columns. Standard panels can be manufactured in any length up to 25 ft 6 in. and are tongue and grooved along their horizontal edges forming a locking seal when placed in position. Future building expansion is easy because existing panels can be lifted out and, when additional steel framing has been installed, can be set into place again to form the new wall. *Steelene Engineering Company, York, Pa.*

CIRCLE 310 ON INQUIRY CARD  
more products on page 172



Great new things  
are shaping up  
in concrete block



**Conventional masonry goes original.** Imaginative use of standard concrete masonry units leads to rich "custom" effects of texture and pattern at low cost. Here, standard 8x8x16 blocks are laid in running bond, with 2x8x12 slab block projecting 3" at each joint. (The slab block also projects 1" at back to provide a design for the interior wall surface.) Vertical joints are filled flush; horizontal joints are tooled to a depth of  $\frac{3}{8}$ ". Ask your local block manufacturer. ■ To lay up concrete block in new, imaginative effects, ATLAS MASONRY CEMENT provides the right mortar. It gives weather-tight joints that are uniform in color. Complies with ASTM and Federal Specifications. For information on masonry cement, write Universal Atlas, 100 Park Avenue, New York 17, N. Y.

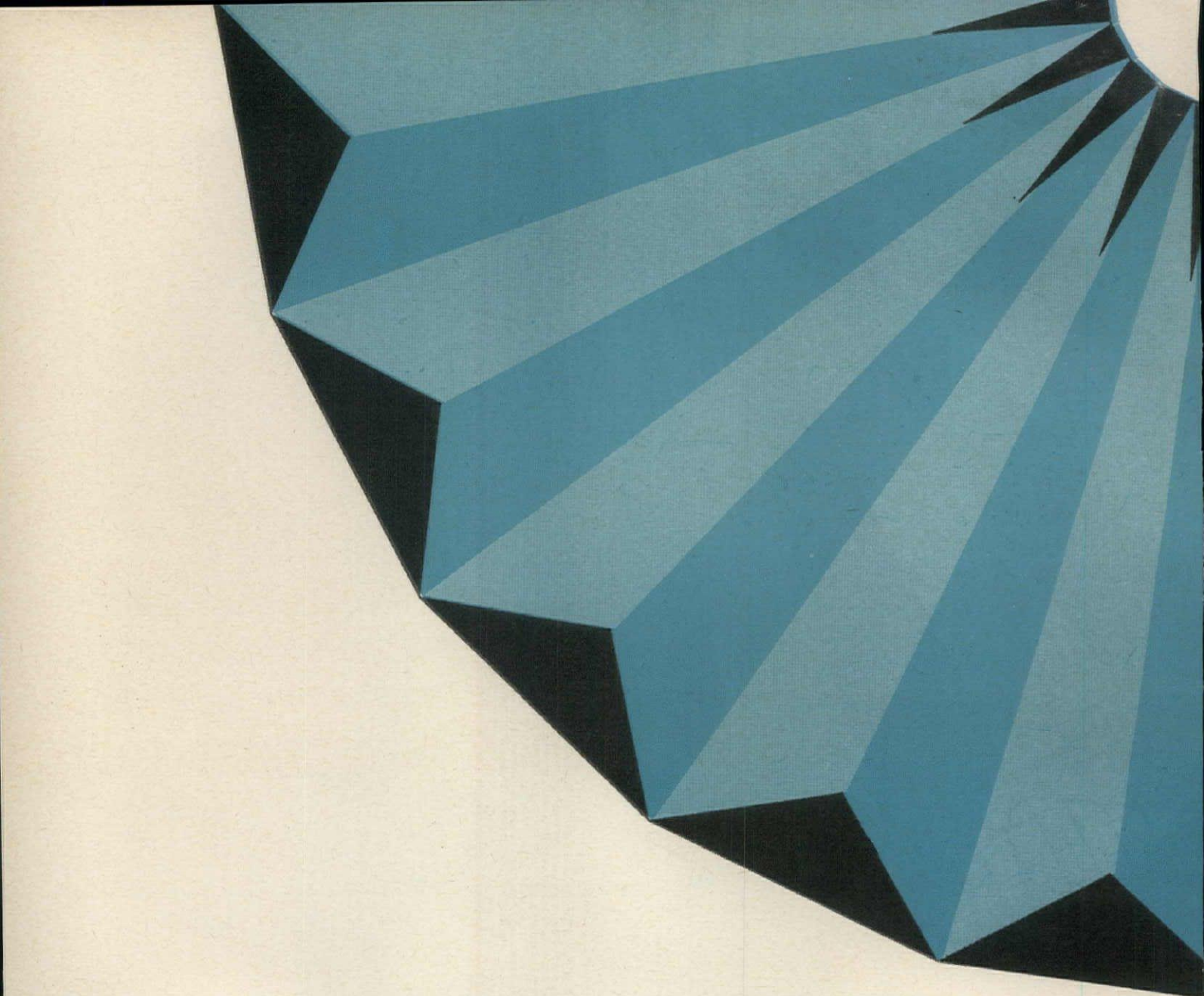


**Universal Atlas Cement**  
Division of  
**United States Steel**

41-00

"USS" and "Atlas" are registered trademarks

For more data, circle 90 on Inquiry Card



**the most exciting ideas take shape in plywood**





3x4 valley chord

3/8" EXT-DFPA plywood skin (nailed only)

2x4 rafters 24" o.c. (3x4 rafters at plywood joints)

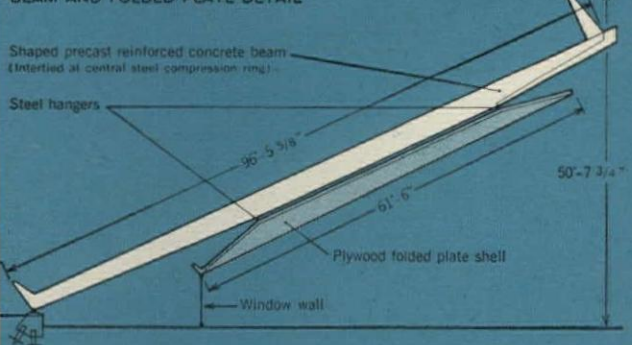
3x4 blocking at all plywood joints

Shaped 4x6 ridge chord

Texture One-Eleven plywood ceiling

20'-0 1/8"

**BEAM AND FOLDED PLATE DETAIL**



ST. PETER'S CHURCH, PACIFICA, CALIFORNIA

ARCHITECT: MARIO J. CIAMPI, F.A.I.A.  
PAUL W. REITER, ASSOCIATE ARCHITECT  
SAN FRANCISCO

STRUCTURAL ENGINEER: ISADORE THOMPSON, SAN FRANCISCO

CONTRACTOR: PACIFIC COAST BUILDERS, SAN FRANCISCO

This parasol-like plywood folded plate roof, suspended beneath slender reinforced concrete beams, is another prime example of how modern materials and engineering systems can be combined to create a new architecture, free of traditional restraints. The plywood canopy is so nearly self-sustaining that each folded plate needs only two beam connections. The result is a large clear-span structure of remarkable harmony and simplicity. ■ Construction was efficient and economical. Components were site-fabricated with plywood and light lumber framing, and crane-lifted into place. ■ As in so many of today's new architectural forms, only plywood had the requisite design flexibility coupled with adequate structural and appearance values. For more information, write (USA only) Douglas Fir Plywood Association, Tacoma 2, Wash.

ALWAYS SPECIFY BY  
DFPA TRADEMARKS

# Big news from *Halsey Taylor*<sup>®</sup>

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## CAPACITIES INCREASED

*on popular models of  
Halsey Taylor coolers*  
**WITH NO INCREASE IN COST**

Here's another extra from the makers of Halsey Taylor Coolers, first in their field in styling, dependability and sanitation. Now, due to advanced engineering, you get *increased capacities without any increase in cost!*

In our three popular series, the Wall-Mount, the Wall-Tite and the Free-Standing Models, all coolers formerly 6 and 11 gallons in capacity *are now increased to 8 and 14 gallons.* Thus Halsey Taylor gives you far greater convenience, by serving more people at less cost!

Ask for latest catalog, or see Sweet's or the Yellow Pages

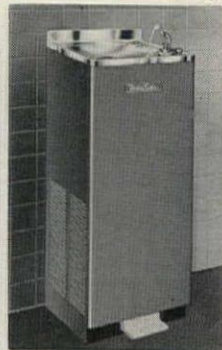
The Halsey W. Taylor Co., Warren, Ohio

# *Halsey Taylor*<sup>®</sup>

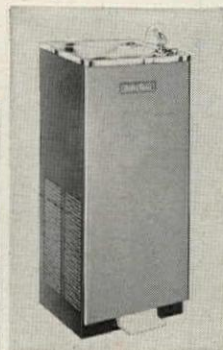
563



**Wall-Mount** — On the wall, off the floor  
8, 14, 16 gallons



**Wall-Tite** — Snug to the wall. Less space  
8, 14, 16, 21 gal.



**Free-Standing**  
Away from wall  
8, 14, 16, 21 gal.

For more data, circle 91 on Inquiry Card

## Product Reports

*continued from page 168*

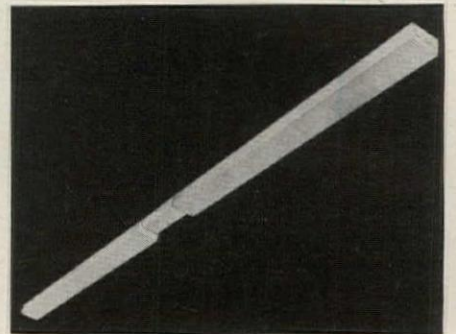
### DROP FRONT FILES

A new line of drop-front files features a new unitized card holder and handle mounted flush with the door front. The front of each tier drops forward giving easy access to a row of filed material nearly 3 ft in width. The over-all dimensions of the *Montisa 400* are 37<sup>3</sup>/<sub>8</sub> in. wide, 39<sup>3</sup>/<sub>4</sub> in. high with a 4-in. base, and 15<sup>1</sup>/<sub>16</sub> in. deep. *Browne-Morse Company, Muskegon, Mich.*

CIRCLE 311 ON INQUIRY CARD

### CORRIDOR LIGHTING

*Louverglo*, designed specifically for corridor applications, is only 2<sup>3</sup>/<sub>4</sub> in. deep and 4 in. wide, making it especially suitable for low ceilings. Its injection-molded louver/diffuser combines the diffusing qualities of white acrylic or styrene with the shielding ability of closely spaced lateral louvers. Diffuser sections between louver blades screens the lamp from di-

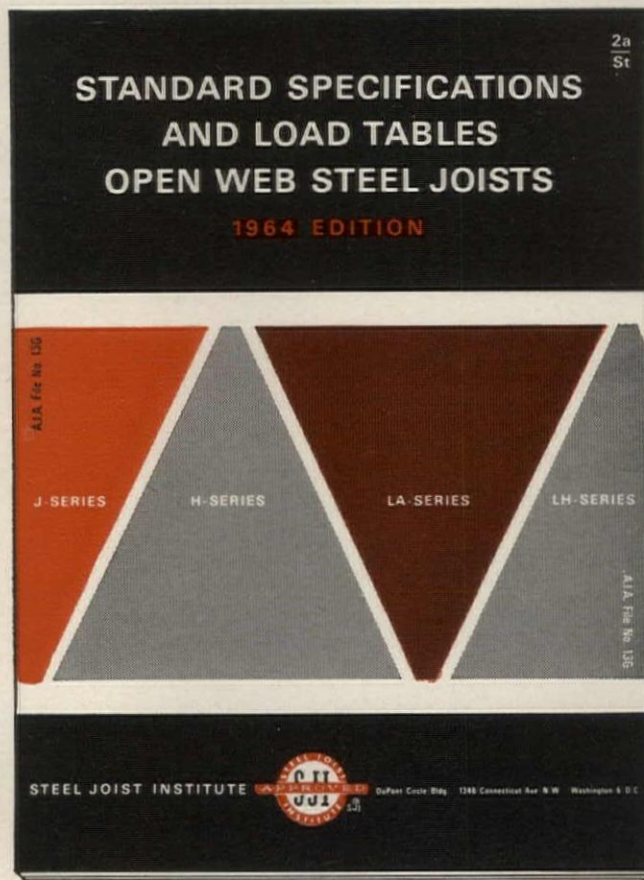


rect view. *Louverglo* is available in one or two lamp tandem, 40-watt *Rapid Start* units, in 4- 5- 8- or 9-ft lengths, for individual, continuous row or pattern mounting, *Dept. L, Silvray Lighting, Inc., 1270 Avenue of the Americas, New York 20, N.Y.*

CIRCLE 312 ON INQUIRY CARD

### EXPOSED AGGREGATE PANEL SEALER

A transparent, permanent sealant which strengthens and preserves the beauty of exposed aggregate surfaces of concrete panels called *EAC-Seal* has undergone continuous weathering tests for five years without noticeable deterioration, the manufacturer reports. It is applied easily by brush, spray or roller at the factory before a panel is delivered to the construction site. According to the developer, the coating preserves *more products on page 176*



**NEW!**

**REVISED!**

**1964 EDITION SPECIFICATIONS & LOAD TABLES FOR HIGH STRENGTH OPEN WEB STEEL JOISTS**

INCLUDING:

- |                  |   |                  |  |
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| <b>LA-SERIES</b> | longspan joists compatible with the J-Series              | <b>LH-SERIES</b> | Longspan joists compatible with the H-Series                           |

Here's all the information you need for fast and accurate specification of joists to carry uniform loads on spans up to 96 feet. Send coupon today for your copy of this practical, up-to-the-minute, 36-page reference manual from the Steel Joist Institute.

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**STEEL JOIST INSTITUTE**  
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Please send me a complimentary copy of the 1964 Edition of Specifications and Load Tables

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CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

For more data, circle 92 on Inquiry Card

# From Carpenter Center...



Carpenter Center for the Visual Arts, 1963. Architect: Le Corbusier.

## Honeywell's at Harvard...controlling temperature

Just two men at two Honeywell Selectographic Control Centers supervise the whole job in Cambridge! One man at each centralized control panel can check and change temperature . . . start, stop and monitor fans, heating and air conditioning equipment. He can even operate steam valves and monitor flood valves . . . all from a console about the size of an ordinary desk.

Three years ago, an analysis showed "an inordinate amount of time" needed for operating men to go from building to building to perform routine functions. Harvard was ready for automated control.

The Harvard campus poses some interesting problems for an automated control system. For one thing, it's big . . . both in area and in number of buildings. For another, the buildings themselves differ greatly in age, size, design and requirements. Finally, Harvard is growing

fast. They had to have a system that could handle the expansion they plan in the years ahead. Working with Honeywell engineers, they decided the best solution was two centrally-located Honeywell Selectographic Data Centers.

As the map shows, one center controls 67 campus buildings north of the Harvard Yard. Another, in Holyoke Center, will control 40 buildings south of the Yard. As an indication of the capability of these systems, one man at the north Data Center can:

1. view 37 schematic diagrams (projected from slides) representing systems for the 67 buildings.
2. start, stop, or listen to 42 fans up to  $\frac{1}{2}$  mile away.
3. operate 32 steam valves.
4. check temperatures at 100 points.
5. get immediate warning of humidity changes in steam tunnels or library



# To Divinity Hall



Divinity Hall, landmark on campus since 1826. Drawn and supervised by Tomas W. Sumner.

## and equipment in 107 buildings, all sizes, all ages

areas (which include, among other treasures, priceless Oriental manuscripts).

Reports indicate that savings from this automatic control program will amortize the investment in two years, besides improving service. And, Harvard has a modern control system that can accommodate new facilities as they're built.

Automated control is an important part of any modern building program . . . any expansion plan. The booklets offered at right are designed to help you in the planning stages of your newest project. And, whether it involves new or old buildings, one building or hundreds, Honeywell has the systems and the know-how to survey, plan, install and service any job efficiently and economically. 112 offices in the U.S. . . . others in all principal cities of the world.

FIRST IN CONTROL SYSTEMS



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Minneapolis 8, Minn.



Send me the following free planning guides:

- Security and Surveillance
- Clock Programming Systems
- Automatic Fire Protection
- Temperature Control
- Automation Techniques
- Preventive Maintenance Programs

- I'd like a free automation analysis for a project.
- I would like to see a typical installation in my area.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

## Honeywell

For more data, circle 93 on Inquiry Card

## PROFESSIONALS IN SOUND

(WESTERN ELECTRIC FOR ONE)

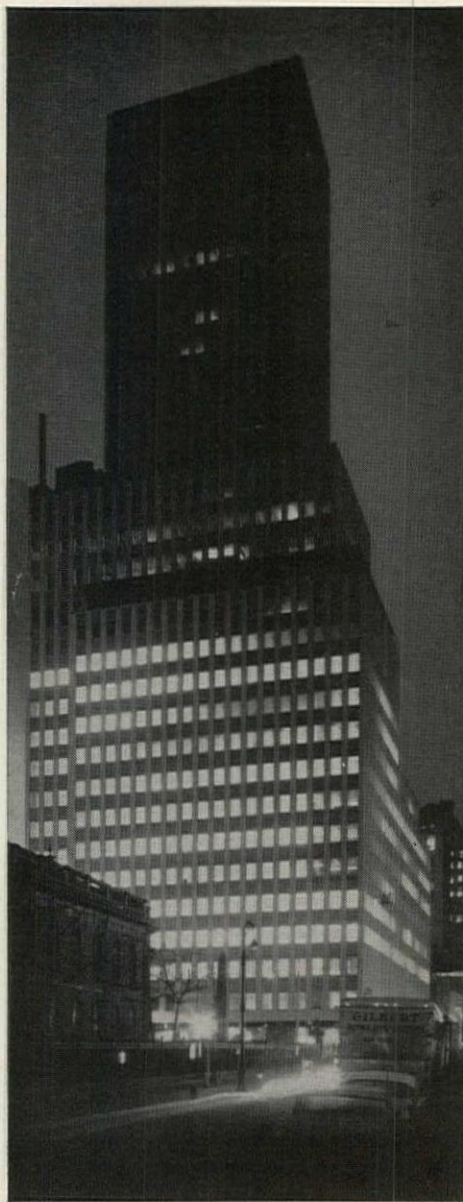
## PREFER SOUND SYSTEMS BY ALTEC

Three independently functioning sound systems were required to serve Western's public areas, meeting rooms, and music room. The systems selected had to meet the high standards offered and demanded by Western Electric Company.

In every respect—from reliability to sound quality, from sophistication of design to ease of operation—Altec met Western's standards. Altec sound systems were selected to provide paging, public address, and background music. And, in Western's music room, famous Altec studio playback components provide superb stereo reproduction.

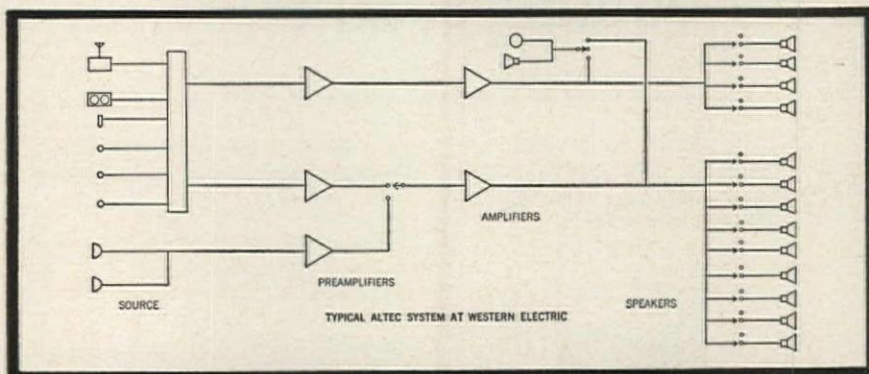
Investigate the solutions Altec offers your sound problems. For the endless variety of services a modern sound system can contribute to most projects, call the nearest Altec Sound Contractor (listed in your Yellow Pages) or write Dept. AR12.

Altec Sound Contractor to Western:  
Sound Systems, Inc., New York, N.Y.



The Western Electric Building at 222 Broadway is one of New York City's newest skyscrapers. Housed here are Western Electric Company's general offices.

See Sweet's: Architectural File 33a/AL • Industrial File 17f/AL



©1963 ALTEC LANSING CORPORATION

## ALTEC LANSING CORPORATION

LTV A Subsidiary of Ling-Temco-Vought, Inc.  
ANAHEIM, CALIFORNIA

For more data, circle 94 on Inquiry Card

## Product Reports

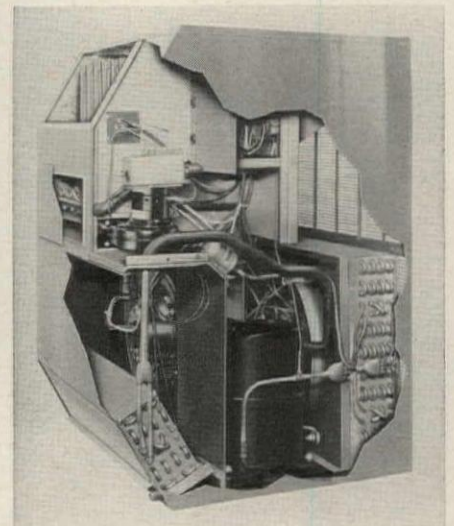
continued from page 172

the freshly polished appearance and beauty of the aggregates and prevents dulling and weathering. Because it seals moisture and acids from the porous concrete, it prevents defacing rust stains and soiling. The sealing action also minimizes damage from freeze-thaw cycles, undermining of the concrete base and subsequent loosening of the aggregates. *Preco Chemical Corp., 589 Main St., Westbury, N.Y.*

CIRCLE 313 ON INQUIRY CARD

## CLIMATE-CONTROL UNITS

Two new gas heating and electric cooling forced air units have been introduced by Worthington. With the *Climatrol 750* forced-air units, tenants have complete individual control over their indoor environment the year 'round. The compact unit measures about 2 ft wide, 2 ft deep and less than 5 ft high. It is available in gas heating inputs from 37,500 to



75,000 Btuh and cooling capacities from 16,000 to 22,000 Btuh. The single package *Climatrol 760* roof top gas heating/electric cooling unit is the lowest profiled unit of its type, states the manufacturer. *Mueller Climatrol, 2005 W. Oklahoma Ave., Milwaukee 1, Wis.*

CIRCLE 314 ON INQUIRY CARD

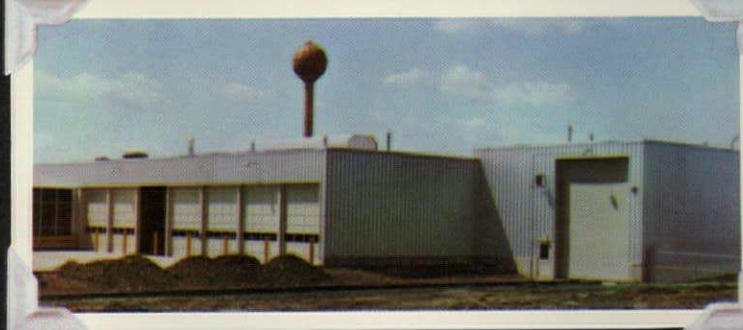
## HEAVY DUTY PLATE GLASS

Libbey-Owens-Ford has announced a substantial increase in the maximum sizes available for heavy duty plate glass in thicknesses of more than 1/2 in. to provide greater flexibility in building design, and has added 7/8-in.-thick plate glass to its line. *more products on page 188*

For more data, circle 95 on Inquiry Card



# SMITH Metal Walls are **VERSATILE!**



United Motors Service, Division of General Motors Corp., New Brunswick, N. J.  
General Contractor; Fred J. Brotherton, Inc., Hackensack, N. J.



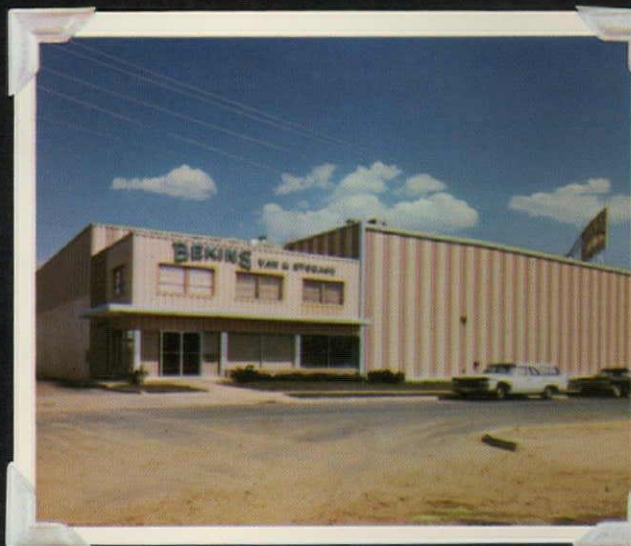
McKee Run Generating Station, City of Dover, Delaware. General Contractor; Somers Construction Co., Bala Cynwyd, Pa.



Sears, Roebuck and Co., Greensburg, Pa. Architects; Kuhn, Newcomer & Valen-  
tour, Pittsburgh. General Contractor; Westmoreland Construction Co., Greensburg



V. T. Grant Company store, Port Jefferson, Long Island, N. Y. Architect; Frederick  
Maphier, New York City. General Contractor; Reliable Construction Co., Bronx, N. Y.



Bekins Van & Storage Co., Falls Church, Va. Architect; John M.  
Walton, Falls Church. General Contractor; Earl J. Rosti, Falls Church

North, east, south, west, all over the nation, you'll see Smith Walls on factories, warehouses, offices, schools, hangars, power plants, shopping centers, each with its own individuality. The wide range of color and configurations of Smith metal wall panels are in harmony with any architectural styling and compatible and enhancing in combination with other wall components of masonry and glass.

Smith metal walls are functional, too, as well as

decorative. Their light weight, thin wall construction, adequately insulated, permits economical erection and more efficient use of interior space. The rich baked-on enamel finish, protected by a strippable plastic coating until erected, assures lasting beauty and low maintenance.

Best of all, when you buy Smith Walls you deal with the single Smith responsibility for engineering, manufacture, transportation and erection. This single responsibility saves you money, details and worry.



**"Smitty builds walls for keeps"**

**ELWIN G. SMITH & CO., INC., Pittsburgh, Pa. 15202 / Detroit • Chicago • Cincinnati • Cleveland • New York • Toledo • Philadelphia**



## Over an acre of **Bigelow Carpet** in Martin Company's new Executive Office Building

It's Bigelow by the acre in the spacious Baltimore headquarters of the Martin Marietta Corporation's aerospace division. 6,000 square yards of Gropoint Director Cushionlok, sturdy tweed, famed for color, texture, beauty, service, plus special areas custom-carpeted by Carpets, Inc., a Bigelow subsidiary.

Bigelow Carpet is selected by leading designers for their most important hotel and motel installations. Reasonable price, long economical service, and top performance under traffic—as well as beauty—are prime considerations in every Bigelow Carpet designed for use in public areas. Special designs, colors

and textures available. If you plan an installation, consult Bigelow's Carpet specialists concerning colors, patterns, weaves, at prices you can afford. No charge for this service. Contact Bigelow through the nearest sales office by writing or telephoning the Bigelow Contract Dept., 140 Madison Ave., N.Y. 16, N.Y.



PEOPLE WHO KNOW...BUY



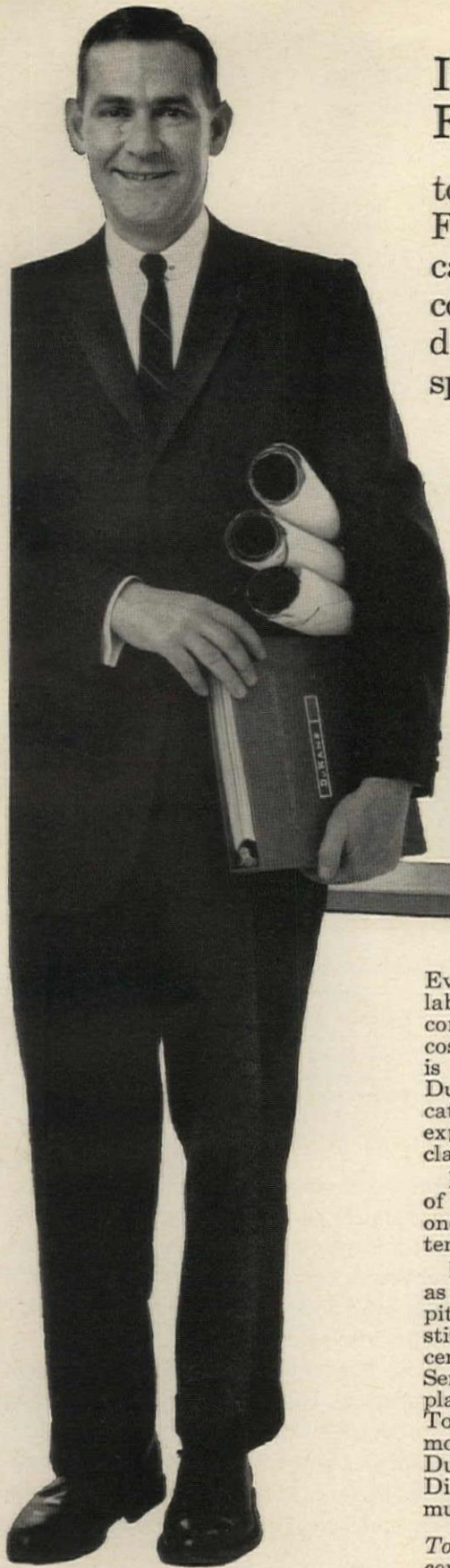
**Bigelow**

RUGS • CARPETS  
SINCE 1825

Bigelow sales offices are located in the following cities: Atlanta, Ga.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Texas; Denver, Colo.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Kansas City, Mo.; Los Angeles, Calif.; Minneapolis, Minn.; New York, N.Y.; Philadelphia, Pa.; Pittsburgh, Pa.; St. Louis, Mo.; San Francisco, Calif.; Seattle, Wash.

← For more data, circle 98 on Inquiry Card

For more data, circle 99 on Inquiry Card



## IT'S A COMFORTABLE FEELING...

to know that your DuKane Franchised Distributor can provide you with a total communications system designed to meet your specific needs

Everyone relies on experience . . . so why belabor yourself with designing or planning a communications system . . . eliminate the costly design time frustrations. Your burden is our specialty. Your local, factory-trained DuKane Franchised Distributor is a communications specialist. Depth of line . . . depth of experience and depth of service support this claim.

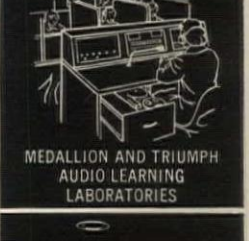
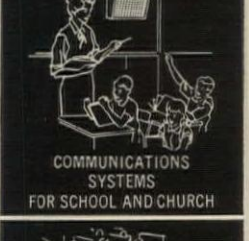
He can point with pride to literally thousands of Dukane Communications installations second to none in performance, flexibility, low maintenance, rugged dependability, and quality.

His proven "know-how" has established him as a communications expert in schools, hospitals, business offices, industrial plants, institutions, churches, hotels, motels, recreation centers, shopping centers, sports areas, etc. Service-wise, he's "Johnny-on-the-spot" for planning, installation, and follow-up service. To him, service and satisfaction are synonymous. It's a comfortable feeling to rely on his DuKane credentials. Call your local DuKane Distributor for an evaluation of your communications systems needs.

To the right are a few of the many DuKane communications systems.



COMMUNICATIONS SYSTEMS DIVISION  
**DUKANE CORPORATION**  
 DEPARTMENT AR-123 • ST. CHARLES, ILLINOIS



For more data, circle 100 on Inquiry Card

"For many years  
I have used masonry cement  
for stucco and  
cement plaster work  
with excellent results"



30 years a plastering contractor, John W. Thomson, Jr. now heads the firm founded by his father in 1918. He is president of CPLIA (Contracting Plasterers and Lathers International Association) and past president of the Contractors and Plasterers Association of Southern Florida. John W. Thomson & Son, Inc. is well known for expert work throughout the state.



Point View North is a 13-story structure with reinforced concrete frame, floors and roof, with concrete masonry stuccoed walls. Owner: Paul Dennis, New York City. Architect: Charles F. McKirahan & Associates, Ft. Lauderdale. Structural Engineer: D. E. Britt & Associates, Miami Beach. General Contractor: Frank J. Rooney, Inc., Miami. Plastering Contractor: John W. Thomson & Son, Inc., Miami.

For uniform results and highest quality, more and more architects and contractors are choosing masonry cement for all exterior plaster and stucco jobs. With masonry cement, everything except the sand and water comes in one bag. Portland cement, air-entraining agents, plasticizers, water repellents come scientifically proportioned and interground. Because no other materials are added, inspection and job quality control are easier. Uniformity of color and strength is assured.

And because of its controlled ingredients and air entrainment, masonry cement plaster provides improved workability and durability. There is better water retention and less segregation of materials. Plastic shrinkage and cracking are minimized.

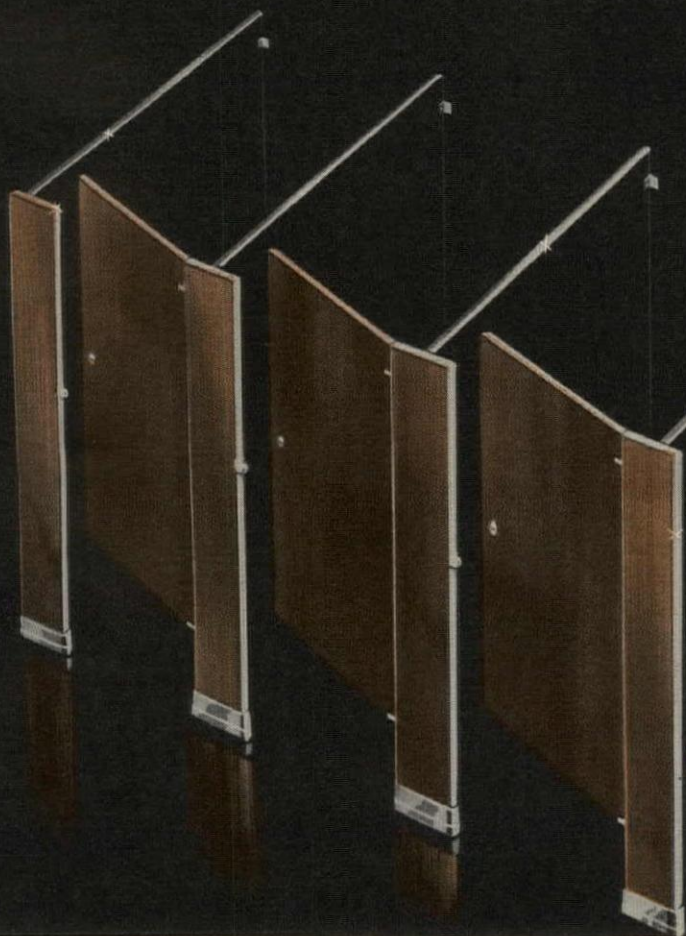
All masonry cement made by member companies of the Portland Cement Association meets high specifications and is produced under rigid laboratory and production controls. For more information, write for free literature. (U.S. and Canada only.)

## Portland Cement Association

Dept. A12-8, 33 West Grand Ave., Chicago, Illinois 60610  
An organization to improve and extend the uses of portland cement and concrete

For more data, circle 101 on Inquiry Card

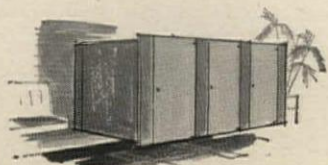
# Silent Steel?



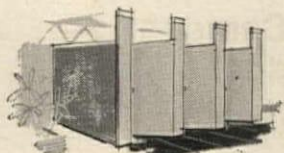
In a toilet compartment? You'd think so . . . with the absence of banging and clatter when doors close . . . or open. Quiet . . . Privacy . . . Peace . . . Designed that way. Doors, panels, AND pilasters are insulated. Unlike others. Heavy chrome door stop has gasketed rubber bumper. No metal-to-metal contact. (It's theft-proof, too.) Door action is smooth . . . floated in Nylon or Delrin . . . soundly silent . . . the surest sign of distinct Sanymetal quality.

New, full-color catalog tells the complete story. Write for yours today. THE SANYMETAL PRODUCTS COMPANY, 1701 Urbana Road, Cleveland, Ohio 44112.

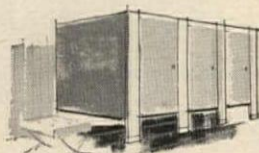
# Sanymetal®



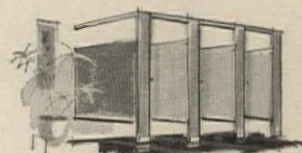
WALL SUPPORTED



CENTURY



NORMANDIE



ACADEMY

For more data, circle 102 on Inquiry Card



**OR  
BELOW  
GRADE**



**...WHEN THE FLOOR SLAB IS PROTECTED BY THE ORIGINAL TRUE VAPOR SEAL, PREMOULDED MEMBRANE WITH PLASMATIC® CORE**

In the past, there has been a justifiable hesitation on the part of many architects and contractors to specify and install resilient floors of asphalt, cork and vinyl tile and linoleum directly over concrete slabs on-grade or below grade. *Justifiable* because moisture migration into the slab, caused a deterioration of the adhesive that bonded the resilient flooring to the concrete.

However, many forward thinking architects and contractors first protected the slab from excessive moisture by installing PREMOULDED MEMBRANE Vapor Seal and the resilient flooring has functioned effectively for years. Protect your flooring application and the entire structure by first installing the best vapor seal available—PREMOULDED MEMBRANE with PLASMATIC® Core.

**PREMOULDED MEMBRANE with PLASMATIC CORE . . . the only vapor seal offering all these features . . .**

- Water and vapor proof . . . WVT rating only 0.0048 grains/per square foot/per hour
- Durable, flexible and strong . . . will not rupture or tear under normal installation traffic and handling
- Monolithic when installed to expand and contract in direct ratio with the concrete without breaking bond
- Available in 4' x 8' sheets and rolls 4' wide to 50' long
- Lightweight, easy to handle and install.

FOR COMPLETE INFORMATION REQUEST CATALOG NO. 753.



<p><b>SEA LIGHT®</b></p> <p>PRODUCTS FOR BETTER CONCRETE CONSTRUCTION</p>	<p><b>W. R. MEADOWS, INC.</b></p> <p>4 KIMBALL STREET • ELGIN, ILLINOIS 60122</p> <p>W. R. MEADOWS OF GEORGIA, INC. 4765 FREDRICK DRIVE, S. W. ATLANTA, GA. 30331</p>	<p>W. R. MEADOWS OF CANADA, LTD.</p> <p>130 TORYORK DRIVE WESTON, ONTARIO, CANADA</p>
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For more data, circle 103 on Inquiry Card

**Product Reports**

*continued from page 176*

new sizes reach a maximum length of 25 ft. *Libbey-Owens-Ford Glass Company, 811 Madison Ave., Toledo 2, Ohio*

CIRCLE 315 ON INQUIRY CARD

**OUTDOOR TELEPHONE EXTENSION UNIT**

A new, private telephone service unit for use in apartment house patio, sundeck, or pool areas allows tenants to bring their own telephone and plug it in. Besides the normal ring, a flashing light on each compartment also indicates an incoming call. *Jensen Industries, 1946 E. 46 St., Los Angeles 58, Calif.*

CIRCLE 316 ON INQUIRY CARD

**HOSPITAL BED**

A new, fully automatic electric hospital bed, featuring a unique power and transmission package and priced as



much as 25 per cent less than comparable beds, has been introduced by American Seating Company. Known as *Lectra-Care*, the new bed represents the first use of the rack-and-pinion power system in the electric bed field. Custom-styling is an additional feature of this bed. Choice of headboard designs helps to eliminate the "institutional look." *American Seating, Grand Rapids 2, Mich.*

CIRCLE 317 ON INQUIRY CARD

**HOSPITAL CABINET**

In designing a special cabinet for private or semi-private hospital rooms, Bobrick had in mind the convenience of both ambulatory and wheel chair patients. Although the cabinet door is mirrored, another mirror has been set just above the stainless steel shelf for wheel chair patients. The liquid soap dispenser valve can be furnished at center, right or left of the soap vessel as a further wheel chair convenience. Five hundred paper towels and 100 standard 3-oz cups are fitted inside the cabinet, which takes a rough wall

*more products on page 193*



# SILENT GLISS

*the silent*  *drapery tracks*

®

... best investment for quality installations



SILENT GLISS . . . the drapery track selected for the new offices of Home Federal Savings and Loan Association, Des Moines, Iowa.

*Architect: Mies van der Rohe, F.A.I.A.*



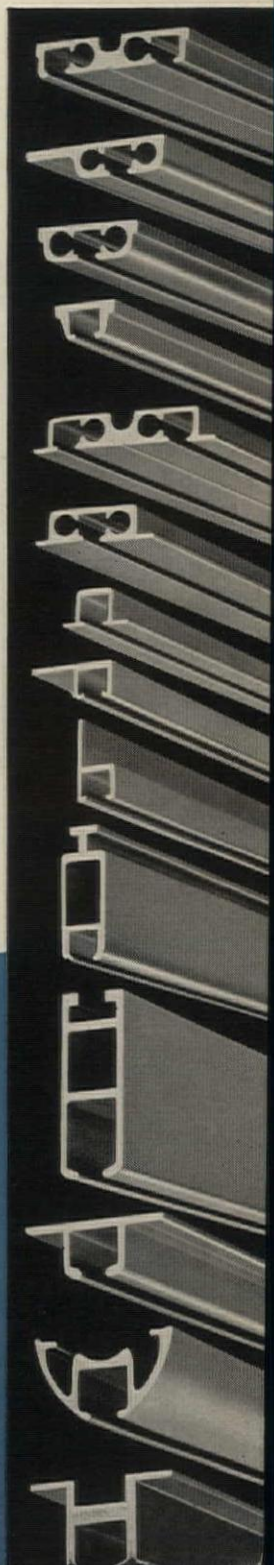
Here you see Barrington Plaza, Los Angeles, developed and owned by Louis Lesser Enterprises, Inc., and consisting of 712 luxury apartments in which almost 5 miles of Silent Gliss track is used.

*Architects and Engineers: Daniel, Mann, Johnson & Mendenhall, A.I.A.*



SILENT GLISS . . . the drapery track selected for the beautiful United Building, Chicago.

*Architects and Engineers: Shaw Metz and Associates*



Send for free illustrated catalog. Find out why you can buy less expensive tracks, but never make a better track investment than Silent Gliss! Address Dept. AR-12.

**SILENT GLISS, INC., FREEPORT, ILLINOIS**

*Distributing Companies:*

Angevine Co., Crystal Lake, Illinois

Drapery Hardware Mfg. Co., Monrovia, California

THREE OF THE **Newell** COMPANIES

Makers of Quality Drapery Hardware Since 1

Where quality counts, there is no substitute for Silent Gliss, the one best investment in drapery track! Only Silent Gliss gives *silent* operation, free of annoying "echo chamber" roller noise. Only Silent Gliss, with its patented system of separated, semi-enclosed cord channels, gives such foolproof operation, such all-time freedom from maintenance. And only Silent Gliss offers 14 track styles to choose from • 9 hand traversing models • 5 cord traversing models (2 with separated carrier channels for maximum overlap) • 4 recessed models • 8 surface mounted models • 4 flange mounted models • a model for bracket mounting • 4 models for cubicle or other heavy duty use — suspended, surface mounted, or recessed • tracks for curving . . . both single and *compound*. Silent Gliss is the track with *everything*. Write today.

For more data, circle 104 on Inquiry Card





Republic Type 304 ENDURO Stainless Steel was used for escalator interior panels, deck and skirt boards at the new Pan Am Building in New York. Architects: Emery Roth & Sons. General contractors: Diesel Construction Company. Stainless fabricated by Flour City Architectural Iron Company, Minneapolis, Minnesota.



# LASTING BEAUTY WITH MINIMUM MAINTENANCE

Rely on time-proven stainless steel to guard the beauty and elegance of your designs year after year.

With excellent resistance to impact, abrasion, scratching, discoloration, and chemical attack, stainless steel delivers lowest possible maintenance costs. Stainless eliminates the need for paint or special finishes. Costly scouring is never required because dirt won't cling. Stainless steel is exceptionally smooth and nonporous, washes bright as new with simple soap and water cleaning.

Leading producer of stainless and alloy steels, Republic will help you select the stainless steel types and finishes best suited to requirements. Republic produces 45 standard types of ENDURO® Stainless Steel, tailors other types to meet special customer requirements.

Republic produces continuous rolled ENDURO Stainless Steel Sheet in widths to 60 inches, special wide sheets in widths to 72 inches. Mill rolled finishes 1, 2B, and 2D are available in coils and cut lengths; mill polished finishes 3, 4, 6, 7, and 8 in cut lengths.

There is also exclusive new TEXTURE-STAINLESS\* Steel—with a three-dimensional, nonrepetitive texture. Supplied in the natural color of the stainless or with depressed pattern areas colored. Sheets to 36 inches in width, 10 feet in length.

For information on Republic Stainless Steels, contact your nearest Republic representative or send the coupon.

## REPUBLIC STEEL

CLEVELAND, OHIO 44101



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REPUBLIC STEEL CORPORATION  
DEPARTMENT AR-6973  
1441 REPUBLIC BUILDING • CLEVELAND, OHIO 44101

Please send more information on:

- ENDURO Stainless Steel Sheets—Adv. 1085
- New TEXTURE-STAINLESS Steel—Adv. 1428
- High Strength Re-Bars—Adv. 1247
- Heavy Head High Strength Structural Bolt Assemblies—Adv. 962-R
- Republic ELECTRUNITE Structural Steel Tubing.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

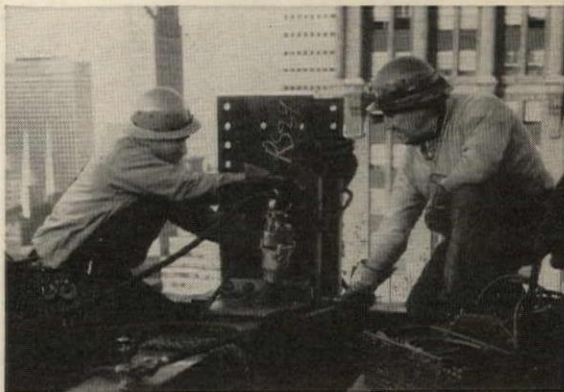
STRENGTH WITH MINIMUM COST:



**SAVED 100 TONS OF STEEL.** Republic High Strength Re-Bars reduced steel requirements by an estimated 30% at Case Institute's new Olin Laboratory for Materials. Produced from new billet steel, these bars meet ASTM Specifications A-432 and A-431. All standard sizes including 14S and 18S are available. Send the coupon below for complete information.



**SAVED 1/16 ALL AROUND.** ¼-inch wall Republic ELECTRUNITE® High Strength Structural Steel Tubing replaced conventional ⅝-inch wall tubing originally specified for this school in Utica, Michigan. ELECTRUNITE costs no more, yet provides guaranteed minimum yield strength 36% over ASTM Specifications A-7 or A-36. Send for 52-page booklet.



**SAVED 40% IN ERECTION COST.** Six hundred thousand Republic High Strength Bolts were used for structural fastening at the new Pan Am Building. Installation was fast. And bolting delivers up to 40% more strength than riveting. Costs can be cut by as much as 40%. Send for brochure on Republic's new Heavy Head High Strength Structural Bolt Assemblies.

For more data, circle 105 on Inquiry Card



## An Affinity for Striking Design and Practicality

Where the finest flooring is wanted, Ludowici's special shapes tile is used. It was chosen for Glenn Ford's home not only because it combines unsurpassed elegance and adaptability, but because it is in every way as practical as it is decorative.

Its textured surface reduces skids in areas that get wet. Maintenance is simple. Its non-fading, non-discoloring beauty endures. It pays for itself in extra years of service.

The practical advantages in Ludowici's genuine quarry tile make it attractive to even the most cost-conscious clients.

Available in red or fire-flashed colors; brushed or smooth texture.



*For additional information, write Dept. R*

**\* LUDOWICI-CELADON CO.**  
75 E. WACKER DRIVE, CHICAGO, ILL. 60601  
*Manufacturers of quarry tile, the nation's largest producer of roofing tile and NAILON Facing Brick*



The architectural application of tile creates a magnificent pool and patio area...makes the kitchen inviting... provides the delight of the unexpected on the stairway—all in the home of movie actor, Glenn Ford.

**ARCHITECT:**  
Mathew Leizer, A.I.A.

**TILE by LUDOWICI:**  
Rich, red Provence tile used in pool and patio area; on stair treads and lower level garden area. Rectangular, red quarry tile in kitchen.

Member:  
**Tile Council of America INC.**

**TILE CONTRACTOR:**  
Fleishman Tile Co.

**WEST COAST REPRESENTATIVES:**

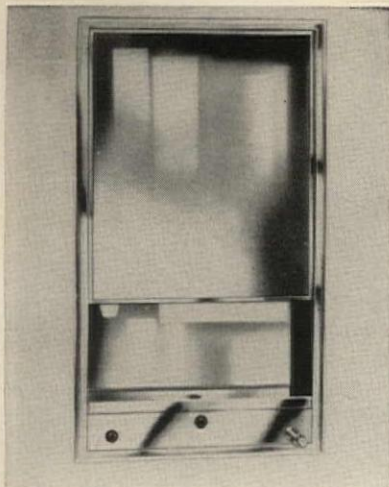
International Pipe & Ceramics Corporation, Los Angeles

**HAWAII REPRESENTATIVES:**

Lewers & Cooke, Ltd., Honolulu

For more data, circle 106 on Inquiry Card

**Product Reports**  
continued from page 188



opening of 15½ by 28¾ by 4¼ in.  
*Bobrick Dispensers, Inc., 503 Rogers Ave., Brooklyn 25, N.Y.*

CIRCLE 318 ON INQUIRY CARD

**PLASTIC LAMINATED PEWS**

The new *Plas-A-Lam* line of maintenance-free, high-pressure plastic laminated pews is reported the first of its kind manufactured. The pews are available in a choice of 27 long-lasting wood grain patterns with a variety of pew ends and bodies.  
*James Cabinet Corporation, 1532 North Elk Grove Ave., Chicago 22, Ill.*

CIRCLE 319 ON INQUIRY CARD

**PRINT PROCUREMENT**

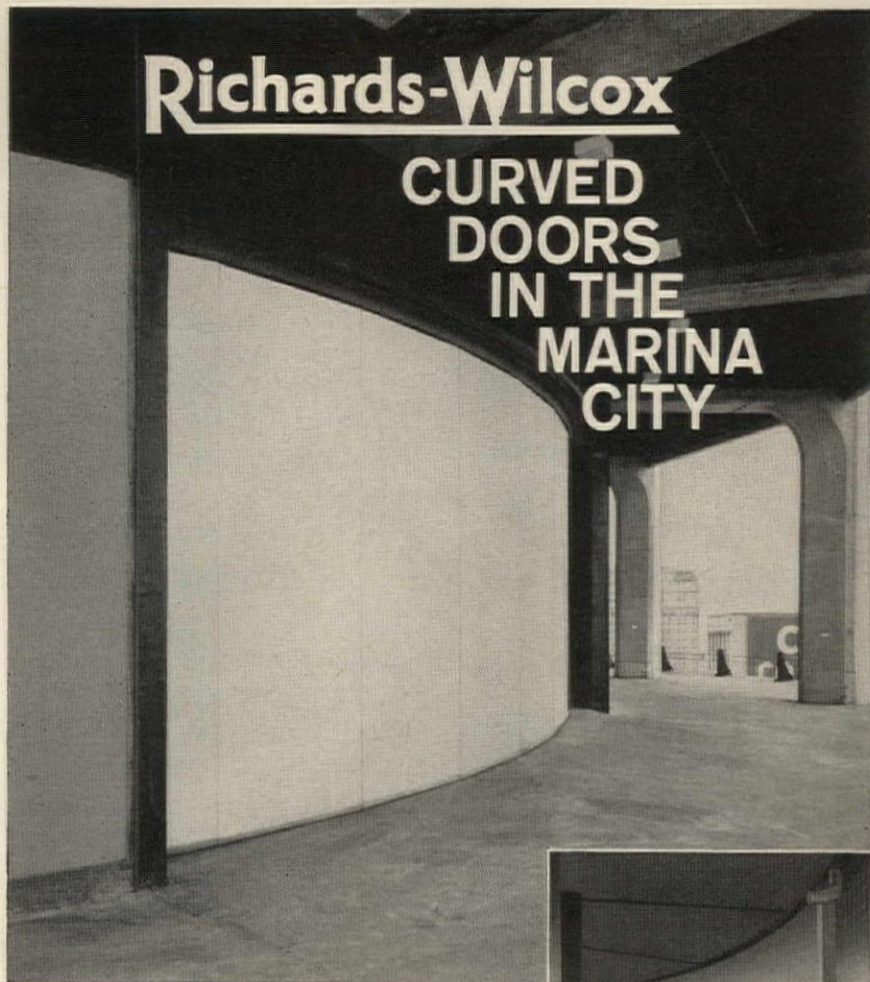
Architects desiring to furnish buildings with artwork can obtain prints, lithographs, woodcuts, silkscreens and other original art work of moderate cost through Tanglewood Gallery. The gallery will also arrange for the framing and hanging of these prints by well-known artists.  
*Tanglewood Gallery, 4 E. 95 St., New York, N.Y.*

CIRCLE 320 ON INQUIRY CARD

**DATA PROCESSING STORAGE**

A new "short-depth" *Datacenter*, Model 7235, an auxiliary unit to provide increased working and storage space in data processing departments, is basically the same size as an earlier model, except the depth has been reduced to 19¾ in. from 34 in. The unit provides island-top working surfaces while housing forms, cards, disk packs, control panels and *CRAM* cartridges on flat shelves.  
*Steelcase Inc., 1120 36 St. S.E., Grand Rapids 8, Mich.*

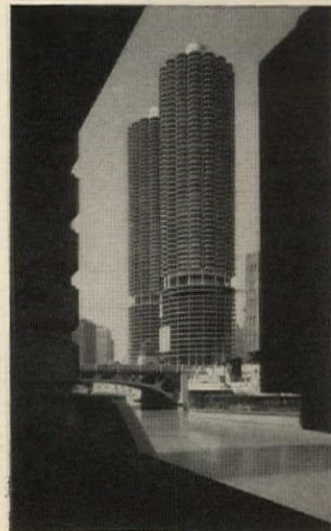
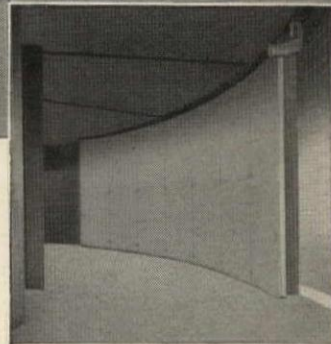
CIRCLE 321 ON INQUIRY CARD



This installation provides another excellent example of how R-W can "fill-the-opening" whenever you want more than just a standard door or have a tough door problem to answer. The above R-W No. 200 Insulated, Aluminum Faced Doors were segmented to meet the curvature of the wall. The doors are automatically operated by a special tractor-type, R-W Electric Operator . . . openings are 28' wide by 14' high. In addition to the curved doors, R-W also supplied electrically operated, straight sliding, angle frame doors with corrugated faces that match the pattern of the wall. Architects, Bertrand Goldberg Associates.

The design and construction of custom industrial and commercial doors with allied hardware and electric operators to meet your esthetic and functional requirements is a specialty with R-W. Your local R-W APPLICATION ENGINEER is an expert in this field—he would appreciate the opportunity of consulting with you in regard to your door problems.

**YOU PROVIDE THE OPENING . . .  
R-W WILL FILL IT!**



For additional information request Catalog No. A-410.

**HUPP**  
CORPORATION

**RICHARDS-WILCOX DIVISION**  
116 THIRD STREET • AURORA, ILLINOIS 60507

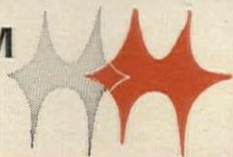
For more data, circle 107 on Inquiry Card



**NATIONAL WINNER OF BOTH DESIGN AND MERCHANDISING AWARDS** is this Horizon Home in Tampa, Florida. Architect Mark Hampton, A.I. A. designed the house chosen by a distinguished panel of architects for its many excellent design features. His prize: a trip for two to any place in the world.

# 1963 AWARD WINNERS CONCRETE INDUSTRIES HORIZON HOMES

PROGRAM



Crisp, clean lines of the interior reflect the spirit that characterizes the exterior of this award-winning home.

Once again, the annual Horizon Homes Program has been an outstanding success. Visitors by the thousands have toured the 1963 model Horizon Homes and have been impressed with the beauty and livability of modern concrete.

Across the country the imaginative uses of concrete in and around these homes are creating enthusiasm and tremendous buyer interest. Everywhere, architects and builders report the effectiveness of the wide publicity and promotional support—the dramatic response accorded the Horizon Homes.

## REGIONAL DESIGN AWARDS

**Western Region:** Riverside, California.  
Architect: Ruhnau, Evans, Brown & Steinmann

**South Central Region:** Fort Smith, Arkansas.  
Architect: Robert Wanslow

**Southeastern Region:** Durham, North Carolina. Architect:  
Carr, Harrison, Pruden & DePasquale, Assoc. Architects, AIA

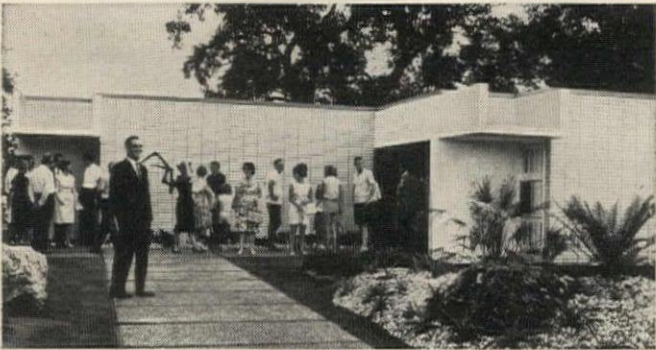
**Rocky Mt. Region:** Englewood, Colorado.  
Architect: Langdon Morris

**Midwestern Region:** Indianapolis, Indiana.  
Architect: Fran E. Schroeder & Assoc.

**Eastern Region:** South Hadley, Massachusetts.  
Architect: Reinhardt Associates, Inc.



**CONCRETE IDEA CENTER** shows versatility of modern concrete, created added interest in the Tampa Horizon Home. The special merchandising awards jury selected the home as receiving the most effective selling support. Prize to Sunstate Builders, Inc.: a trip for two to any place in the world.



Crowds of people were attracted to this unusual home. Many expressed lively interest in the charm of modern concrete.

Again in 1964 architects and builders are offered a big opportunity to team up and share in nationwide programs developed expressly to showcase the freshest ideas in concrete and *help sell more homes*.

Literature detailing the new program will be available for the asking at the PCA booth at the NAHB convention. Stop by for your copy!

## PORTLAND CEMENT ASSOCIATION

*An organization to improve and extend the uses of concrete*

### REGIONAL MERCHANDISING AWARDS

**Western Region:** Riverside, California.  
Builder: Harry C. Marsh & Co.

**South Central Region:** Houston, Texas.  
Builder: Pace Setter Imperial Homes

**Southeastern Region:** Mt. Airy, North Carolina.  
Builder: Blue Ridge Enterprises, Inc.

**Rocky Mt. Region:** Englewood, Colorado.  
Builder: Better Built Homes

**Midwestern Region:** Marion, Indiana.  
Builder: H. W. Wilkins & Son

**Eastern Region:** South Hadley, Massachusetts.  
Builder: Desrosiers & Son, Inc.

For more data, circle 108 on Inquiry Card



SEE THE WINNING DESIGNS  
AND MERCHANDISING IDEAS  
AT THE

NAHB CONVENTION  
SPACES 440-441  
McCORMICK PLACE  
DECEMBER 11 TO 15



## Office Literature

continued from page 152

### REPAIRS WITH ADHESIVES

Over 40 typical industrial repair jobs calling for cements or adhesives of epoxies and polysulfides are described and illustrated in an eight-page repair handbook designated Bulletin IM. *Smooth-On Manufacturing Company, 572 Communipaw Ave., Jersey City 4, N.J.*

CIRCLE 412 ON INQUIRY CARD

### WARBLE TONE AND NARROW-BAND RANDOM NOISE

Technical Review 462 is a 28-page technical handbook on the use of warble tone and random noise for acoustical measurement purposes such as reverberation-decay time in rooms. It also describes techniques for feedback control of narrow-band random noise. The handbook is based on two papers which were presented by the authors, Jens T. Broch and P. E. Mller Petersen, at the fourth International Congress on Acoustics

in Copenhagen, Denmark. *B & K Instruments, Inc., 3044 W. 106 St., Cleveland 11, Ohio*

CIRCLE 413 ON INQUIRY CARD

### SLIDING WINDOWS

Full-size details and exhaustive specifications of the 1900 series of "insulated" aluminum windows with double sliding sashes are presented in the company's May, 1963 "Architectural Aluminum Design Study." *Cupples Products, Division of Alcoa, 2650 S. Hanley Rd., St. Louis 17, Mo.*

CIRCLE 414 ON INQUIRY CARD

### DOOR CLOSERS

The new door closer "Selector Manual" gives easy-to-find door closer selection and sizing information on the complete line of Norton closers, including complete specifications for each type. A second manual (N-2) provides detailed information, installation photographs, and sizing data on Series 700 and 7000 closers. *Norton Door Closer Company, Division of The Yale & Towne Manufacturing Co., 372 Meyer Rd., Bensenville, Ill.\**

CIRCLE 415 ON INQUIRY CARD

### SLIDING GRILLES

Aluminum or steel sliding grills which are vinyl coated in four possible colors are the subject of bulletin SG 6. *Cornell Iron Works, 36th Ave. and 13th St., Long Island City, N.Y.\**

CIRCLE 416 ON INQUIRY CARD

### COPPER FOIL

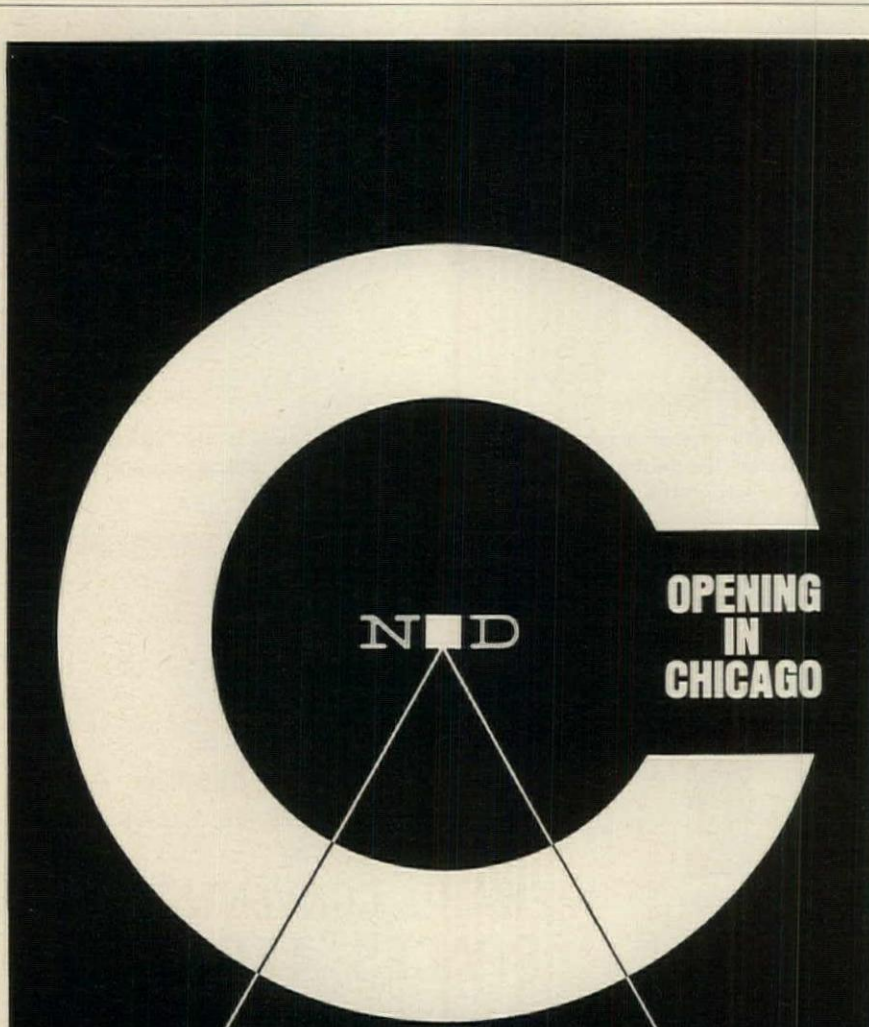
Booklet D-8P containing data on building applications for *Electro-Sheet* copper foil includes information on the use of the laminated products for head and sill flashing, membrane waterproofing, curtain-wall waterproofing, damp coursing, and shower stall and moisture pans. Another feature is a section on copper foil used as radio frequency interference (R.F.I.) shielding. *Anaconda American Brass Company, Ansonia Division, Ansonia, Conn.\**

CIRCLE 417 ON INQUIRY CARD

### LITERATURE REQUESTED

Fire in the offices of Oliver and Smith, architects, 333 W. Freemason St., Norfolk, Va., destroyed their file of manufacturers' samples and catalogs. They will appreciate new ones from the various manufacturers.

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



**OPENING IN CHICAGO**

**NATIONAL DESIGN CENTER MID-WEST HEADQUARTERS**  
**Architectural & Building Products Div., Marina City, Jan. 4, 1964**

All under one roof, a touch-and-know, 3-dimensional "library" of exhibits . . . products . . . structural systems . . . ideas and trends in functional settings—when . . . while . . . and as they begin to happen combined with an authoritative, thorough industry service, including industry-wide research, reports, bulletins, source data . . . seminars and lectures.

Comfortable conference and lounging areas.

Opening ceremonies on January 4th initiate a month of previews for industry professionals and executives exclusively. Come then, come often. Write for detailed information.

NATIONAL DESIGN CENTER, 415 EAST 53rd STREET, NEW YORK 22, MARINA CITY, CHICAGO, ILL.

For more data, circle 109 on Inquiry Card

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

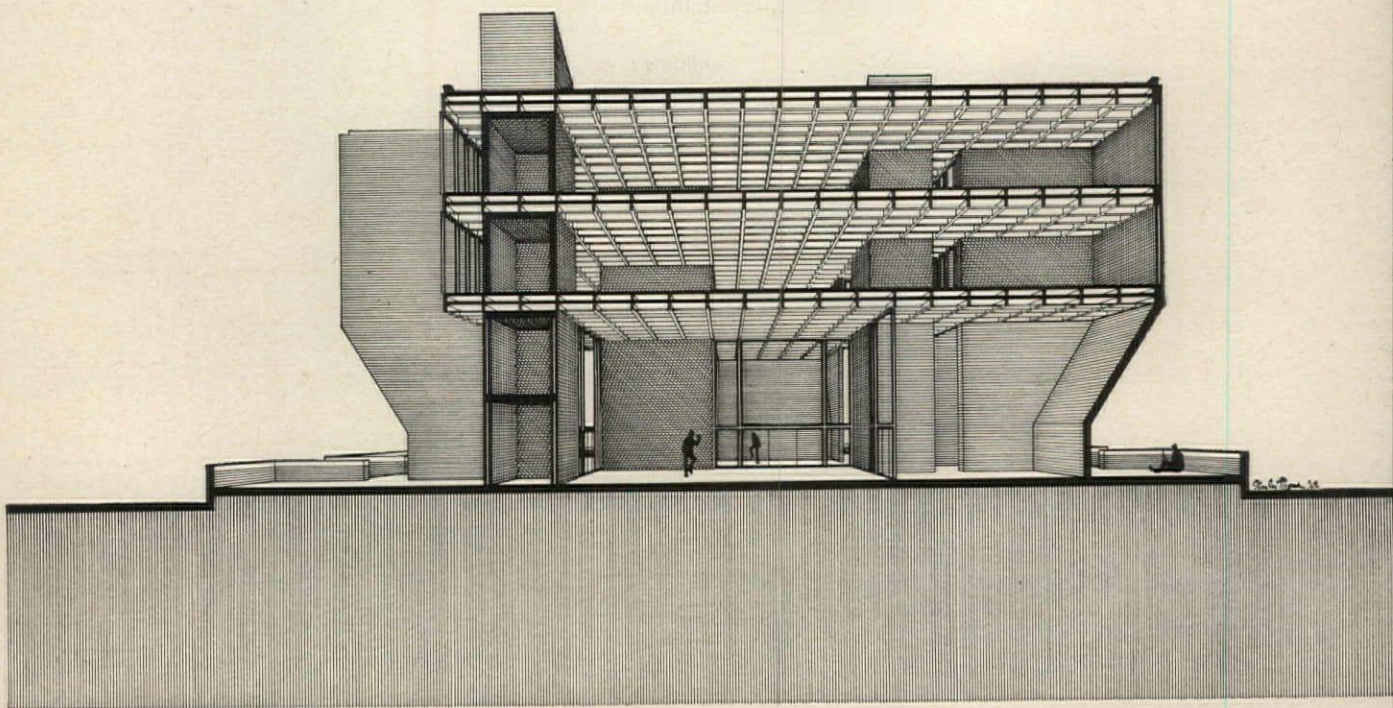
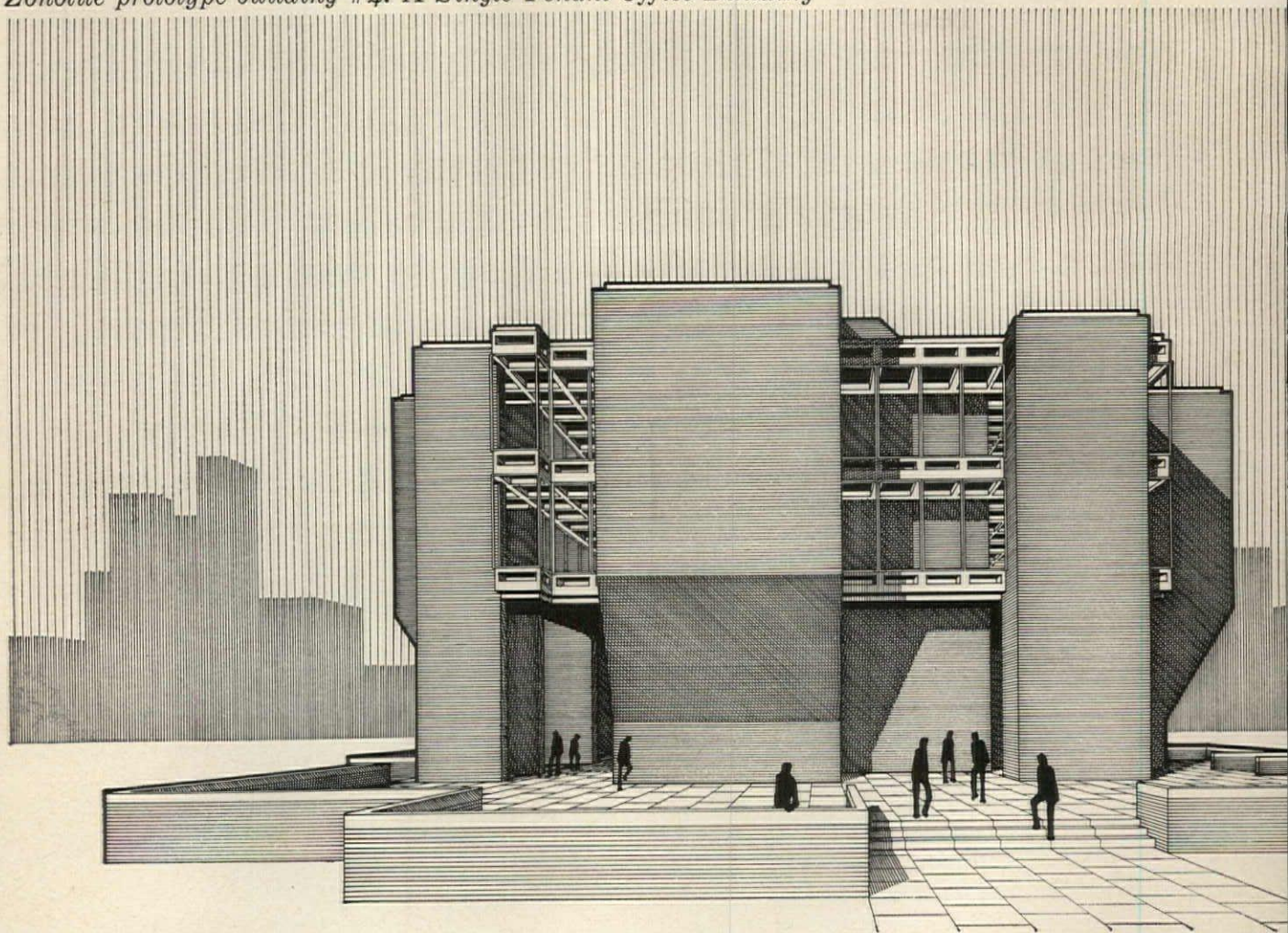
*Follansbee is the world's pioneer producer of seamless terne roofing*



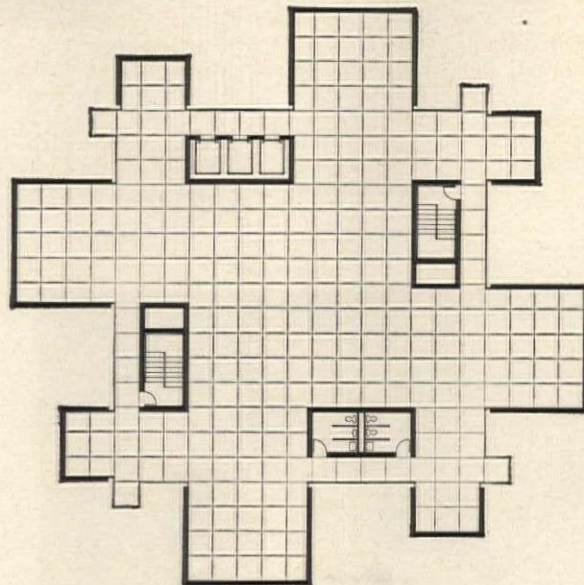
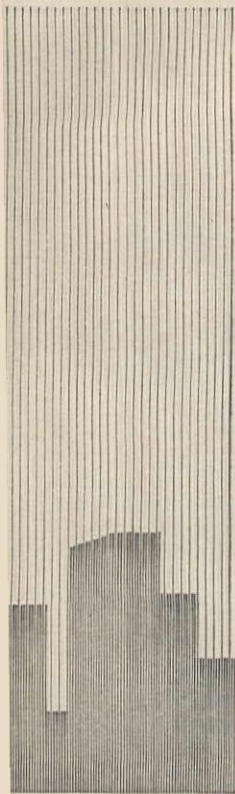
**FOLLANSBEE STEEL CORPORATION**

Follansbee, West Virginia

*Zonolite prototype building #4: A Single Tenant Office Building*







## The concept derives from point tower block; the practicality is provided by Zonolite Masonry Fill Insulation in the cavities

Stanley Tigerman of Tigerman and Koglin, Chicago architectural firm designed this office building. Consulting engineer Norman Migdal of Chicago engineered it. Zonolite commissioned it.

The practicality of the building is improved in several ways by the use of Zonolite Masonry Fill Insulation in the cavities.

It forms a permanent, clean, dense barrier which cuts heat costs 17.29% in this particular installation. Cooling costs are cut 5%. In addition to a reduction in heating and cooling costs of \$490 per year, a proportionately smaller heating unit can be used (see chart). Note, too, in the smaller diagram, how interior wall surfaces maintain a more comfortable temperature.

ventional insulation is used on the inside. Moreover, Zonolite Masonry Fill Insulation is water repellent. Interior walls stay dry.

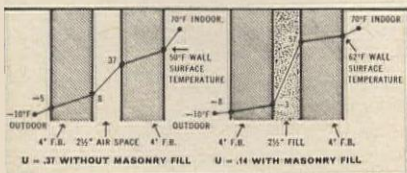
In multiple-room buildings, the sound dampening qualities of this material greatly contribute to the overall desirability of your project. You can expect at least a 20% to 31% reduction in loudness of sound transmission through the walls.

At an installed cost of approximately 10¢ per square foot in cavities of this type, obviously the use of Zonolite

Masonry Fill Insulation is more than justified. The installed cost is so low mainly because the material is simply poured out of the bag into the cavities.

Our Bulletin MF-83 contains additional facts you will want to consider. Write Department AR-123, Zonolite Division, 135 South LaSalle Street, Chicago 3, Illinois.

**ZONOLITE**  
 GRACE ZONOLITE DIVISION  
 W. R. GRACE & CO.



Design Conditions	Winter Heat Loss in Btu/Hr Assuming 75°F Indoor -10°F Outdoor		Summer Heat Gain in Btu/Hr Assuming 78°F Indoor 95°F DB 75°F WB Outdoor			
	Without Masonry Fill	With Masonry Fill	Without Masonry Fill	With Masonry Fill		
Wall	4" Face Brick Air Space 4" Face Brick	4" Face Brick 2 1/2" Fill 4" Face Brick	390,000	151,000	72,000	28,100
Solar and Transmission	Roof 3" Insulation Overhang 4" Batt Glass-Heat Absorbing and Regular Plate		386,800	386,800	220,300	220,300
Infiltration Ventilation	600 CFM 6,000 CFM F.A.		610,000	610,000	227,000	227,000
Lights	—		—	—	240,000	240,000
People	—		—	—	81,000	81,000
<b>Total</b>			1,386,800 Btu Hr	1,147,800 Btu Hr	840,000 Btu/Hr 70 tons	796,400 Btu/Hr 66.5 tons
<b>Percent Savings with Masonry Fill</b>			$\frac{1,386,800 - 1,147,800}{1,386,800} = 17.2\%$	$\frac{70 - 66.5}{70} = 5.0\%$	(1)	

(1.) Heating and Cooling operating costs are reduced by approximately \$490.00 per year\*. First cost of insulation (\$1,250.00) can be paid off in less than 3 years.

\*Based on 6113 degree days. Gas at 7 cents per therm. Absorption refrigeration 60 hrs./week of ventilation operation.

For more data, circle 111 on Inquiry Card

## White House Library

continued from page 36

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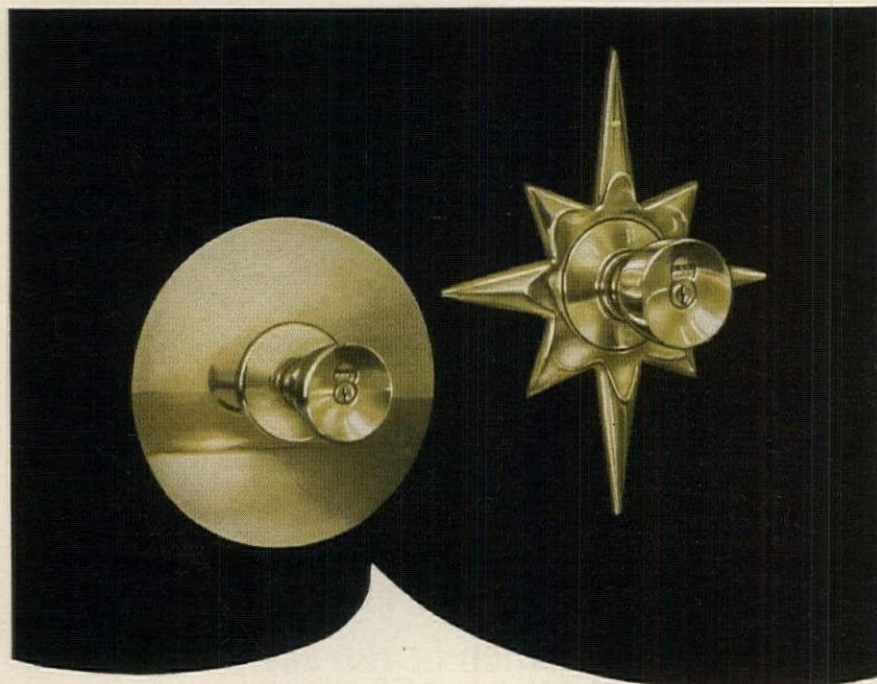
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There is an exquisite lock set by Best to complement any decor you create. Luxurious escutcheons and knobs are artist-designed, and tooled from solid brass for the finest quality.

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CHEEKTOWAGA, N. Y., HIGH SCHOOL

Architects: Pfohl, Stoll & Roberts, Buffalo

Engineer: William E. Standeven, Buffalo

General Contractor:

Siegfried Construction Co., Inc., Buffalo

Radiant-acoustic ceiling installation:

Davis-Fetch & Co. Inc., Buffalo

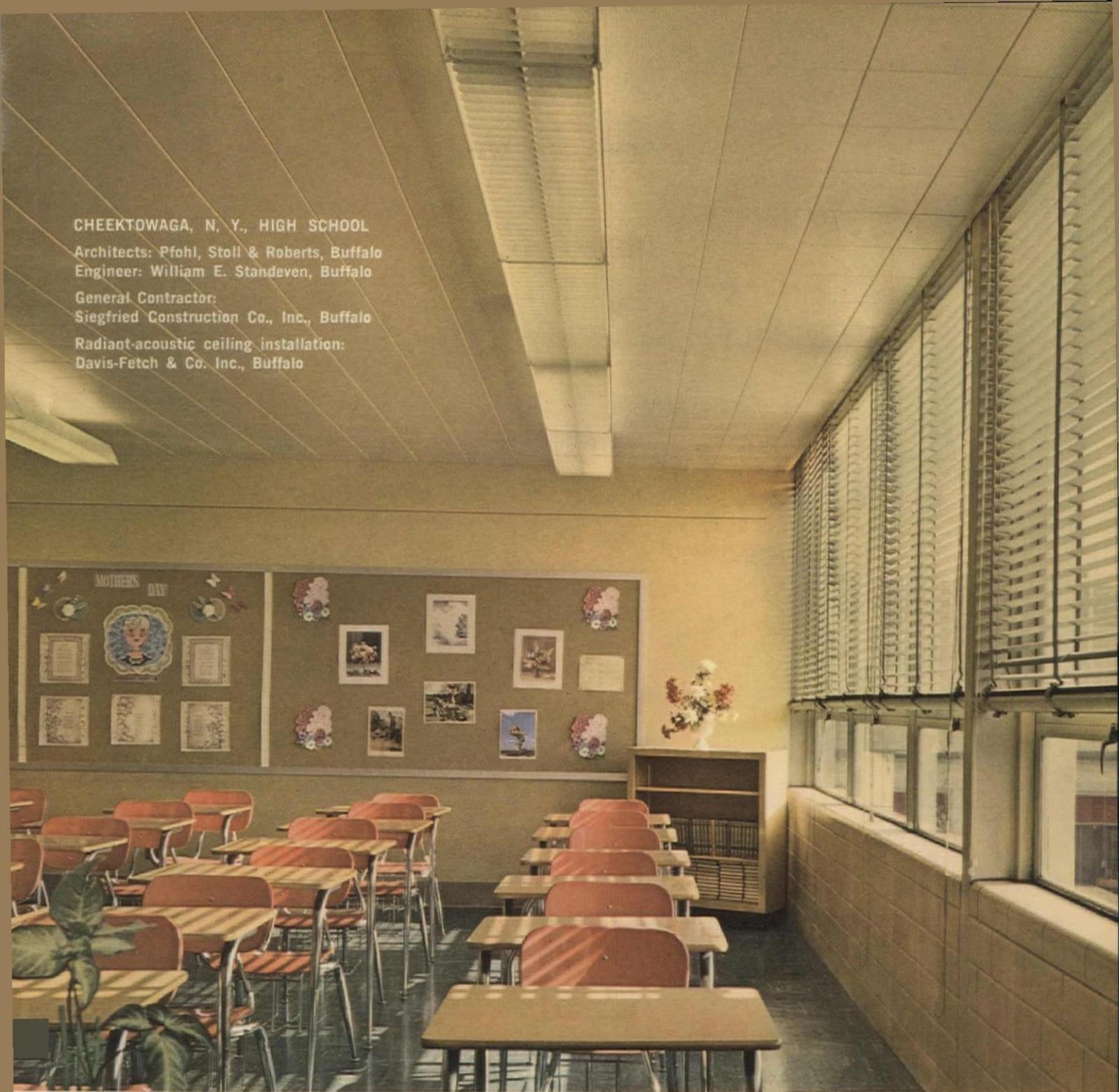


Photo by Cortlandt V. D. Hubbard

## **IDEAL TEACHING AND LEARNING ENVIRONMENT**

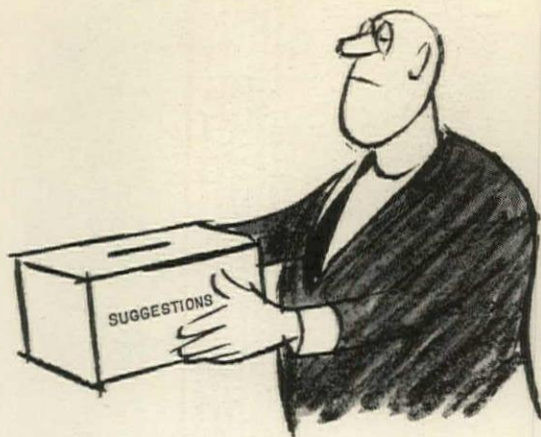
*Fast-acting Burgess-Manning/Inland radiant ceiling heating* keeps classrooms comfortable and draft-free, even next to large window areas. Students are more receptive and teachers more effective when classrooms are free from "cold spots" and "hot spots." ■ Burgess-Manning/Inland Radiant-Acoustic Ceilings are providing quick, uniform and silent heating—and in many cases, also cooling—in scores of new schools across the nation. Administrators appreciate their trouble-free efficiency and low maintenance requirements. Architects find them attractive and flexible in layout and adaptation to lighting. ■ For a description of radiant heating and cooling principles, along with performance curves, design procedure and acoustical data, see Sweet's Architectural File, section 11a/In, or write for Catalog 250.



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"It's either my eyes or that light, but I'm having trouble reading this suggestion"

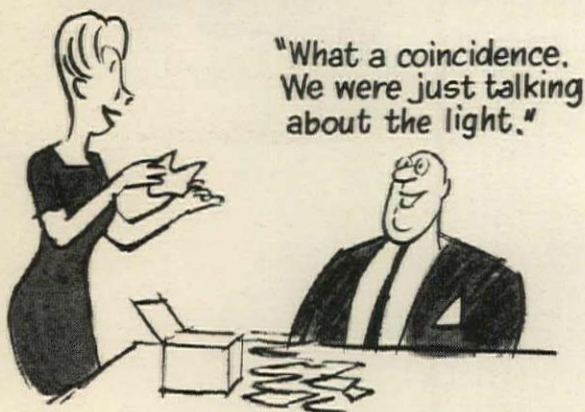


"It's the light, Mr. Templeton. It's gotten yellow. Here, I'll read it!"



"I'd hate to think it was me"

"It says Install lighting shields of crystal clear LUCITE and you'll have NO YELLOWING PROBLEM."



"What a coincidence. We were just talking about the light."

"I have to admit, Mr. Templeton, it was MY suggestion."



And here's our suggestion. For a free lighting booklet and more information on acrylic lighting shields made from LUCITE, write: Du Pont Company, Dept. AR12, Room 2507L, Wilmington 98, Delaware. (Du Pont does not make or sell lighting shields, but supplies LUCITE acrylic resin, or acrylic monomer to manufacturers of quality diffusers.)

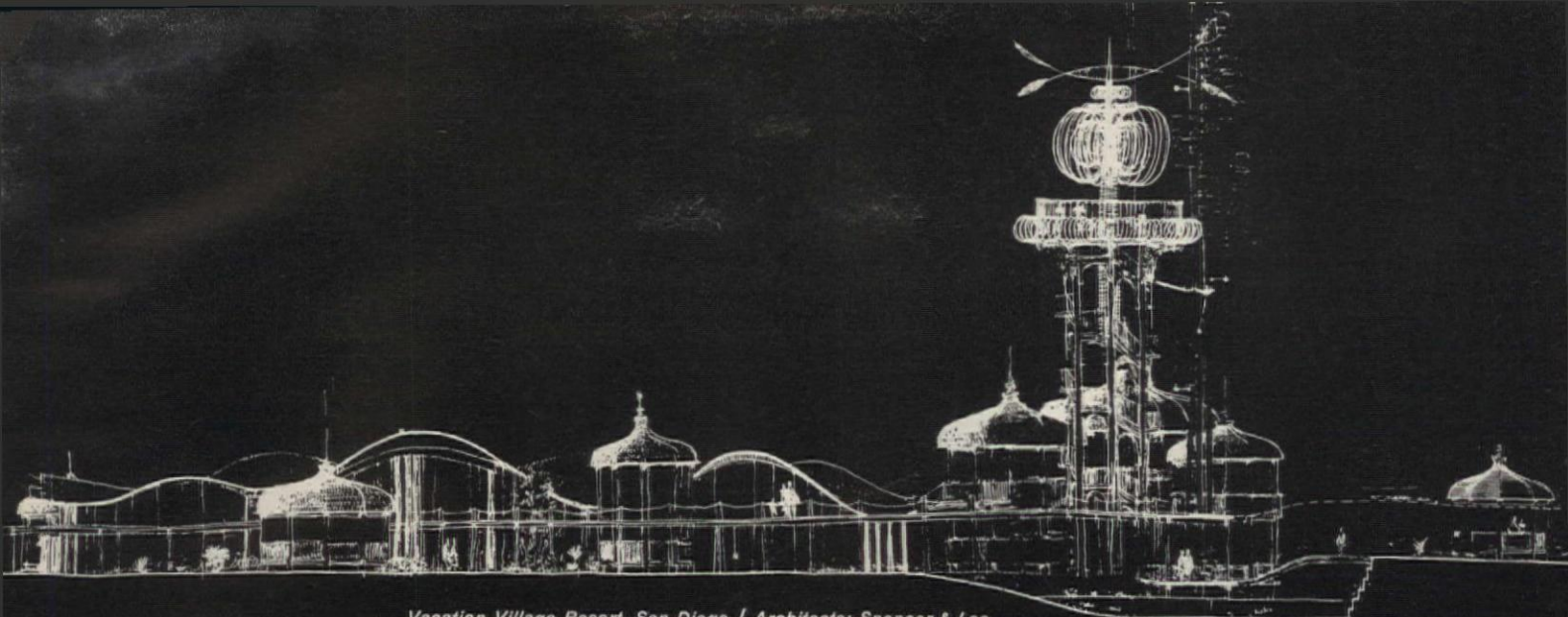
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BETTER THINGS FOR BETTER LIVING  
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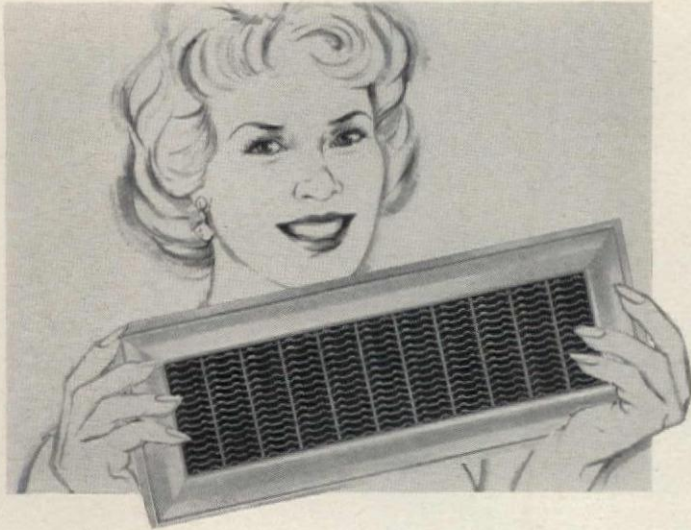
*Vacation Village Resort, San Diego / Architects: Spencer & Lee*



## The good nature of Red Cedar Shingles

Imaginative application comes naturally to this unique material, and the beauty is more than skin-deep. Red Cedar Shingles are light-weight and strong. They offer superior wind and weather resistance, insulation and durability. Maintenance free, a roof of Red Cedar ages

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### 1. Make air behave . . . beautifully

You can combine the superior air distribution performance of Barber-Colman Uni-Flo sidewall diffusers with any one of a wide variety of attractive, extruded aluminum frame styles to make air behave *beautifully*—in more ways than one. Each frame style is functionally designed to blend inconspicuously with room decor.

Adjustable Uni-Flo core creates a controlled turbulence that thoroughly (and quietly) diffuses the conditioned air *before* it reaches the occupancy zone. This principle completely eliminates drafts associated with "streamlined" diffusers which can drop masses of cold air onto people in the room.

# 5 ways you can profit

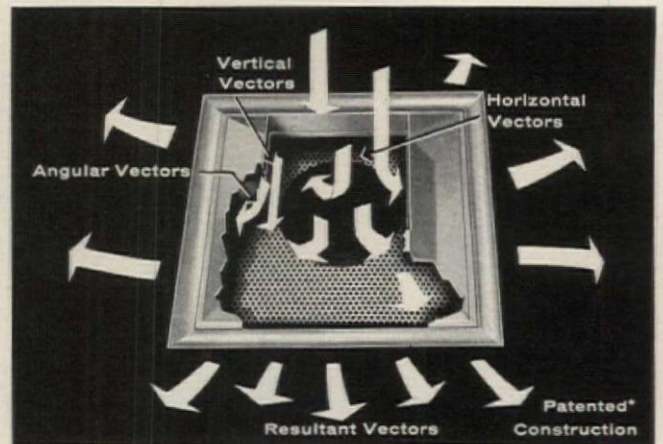


### 2. Provide complete air control

Barber-Colman Control-Line air diffusers give you everything the name implies—built-in control of air volume and pattern, plus linear design distinction to meet all architectural requirements, including the latest integrated ceilings.

These diffusers are available in single- or multi-slot designs to fit all capacity requirements. Air pattern is fixed or adjustable from vertical to horizontal throw, depending on model.

Construction is extruded aluminum—easy to handle, simple to install in ceiling, sidewall, or soffits. Mechanical interlocking permits assembly in continuous lengths.



### 3. Cut costly call-backs

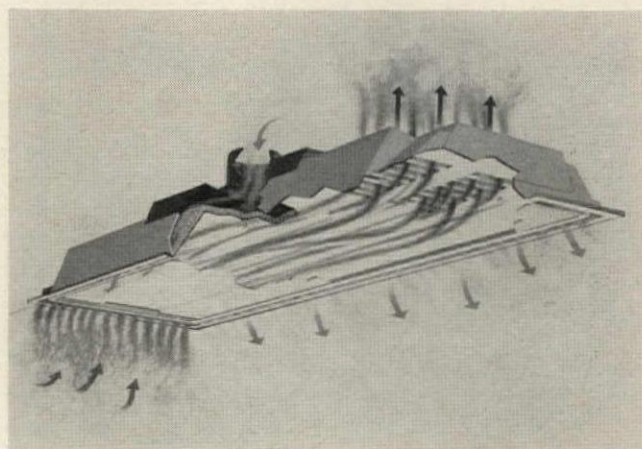
You make air go where *you* want it to with Barber-Colman perforated-face ceiling diffusers. Accurate selection data plus simple on-the-job adjustment avoids expensive call-backs. Patented design assures draft-free comfort at very low noise levels.

Vertical or horizontal deflection or one-, two-, three-, or four-way air discharge pattern can be set on the job—*without altering the exterior appearance*. Engineered air flow minimizes ceiling smudging—another plus benefit for your customers.

Available in recessed- or surface-type units for all types of acoustical, plastered, or metal pan ceilings.

**Get the facts!** For more information on the profitable advantages of these and other quality engineered air distribution products, consult your nearby Barber-Colman field office.

# with air diffusers



#### 4. Simplify diffuser installation

Now, Barber-Colman diffusers are available mounted integrally with perforated metal ceiling panels in modular sizes to fit modern integrated ceilings.

Installation is easier, costs less . . . no cutting or fitting is required. Modular units drop easily into place and are supported by the ceiling grid. Perforated panel face blends in with ceiling panels. One-, two-, three-, or four-way discharge can be provided *without* altering the outward appearance.

Modular panels from 12" x 12" to 48" x 48" are available in both supply and return models, with or without fiber glass insulation.

#### 5. Combine air distribution and lighting

Here's the *practical* way to provide efficient lighting and air distribution without detracting from integrated ceiling design.

New Clymatron 5-way air/light diffuser that lights, diffuses air, returns air, extracts heat . . . and acts as an air exchanger. The combination of functions it performs can be easily altered at any time to quickly meet changes in room or zone requirements.

What's more, the heat extractor function prevents lamp heat from entering the room . . . enables you to install more light, reduce air quantity requirements, and even integrate a thermostat in the fixture design.



## BARBER-COLMAN COMPANY

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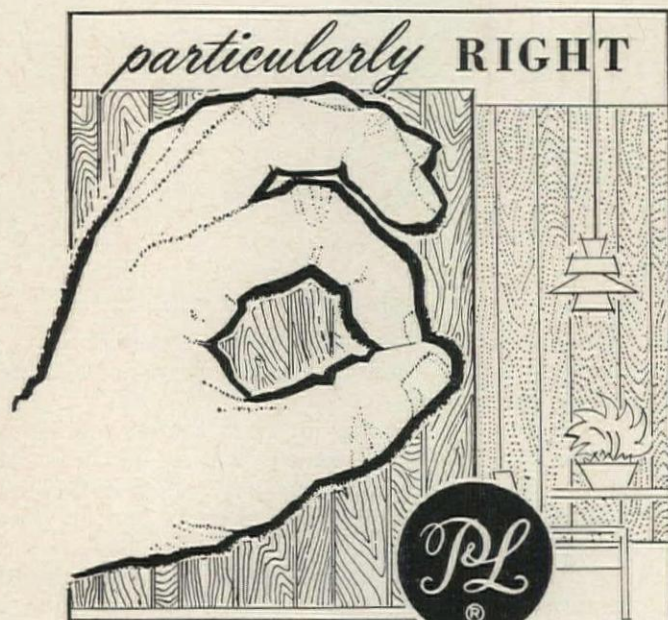
RUSCO employs the modular principle in window dimensions, affording infinite mulling and stacking design variety. Here you see just three of the many possibilities in RUSCO windows. Write today for the new RUSCO catalog. Then, phone your local RUSCO representative for free consultation.



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## CURRENT COMPETITIONS: LIBRARY DESIGN AWARDS

The American Institute of Architects, the American Library Association and the National Book Committee are co-sponsors of the Second Library Building Award Program. The competition is open to any library built in this country since January 1, 1959, and designed by an American architect. The deadline for entry slips and fees is December 16; for submission of entries, January 24, 1964. Judgment will be made in February by a jury of three architects and a representative each of the A.I.A. and the National Book Committee. In addition, three librarians, representing three categories of libraries, will help in the judging.

Inquiries should be directed to Library Buildings Award Program, The American Institute of Architects, 1735 New York Avenue, N.W., Washington 6, D.C.

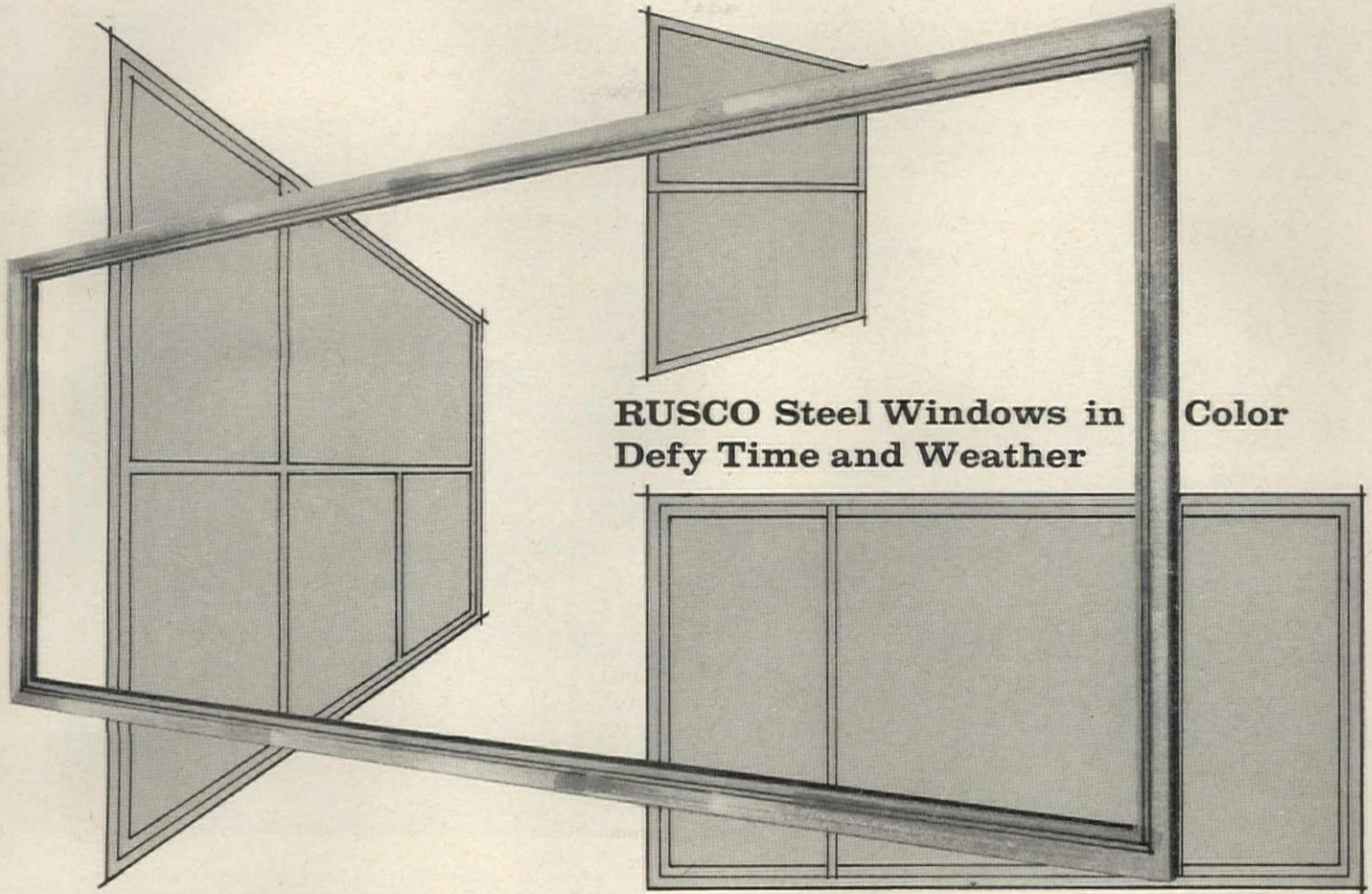
### A.I.A. Honor Awards

The American Institute of Architects has announced its 16th annual program of National Honor Awards. Any registered architect is eligible to enter a building, or a group of buildings, completed since January 1, 1959.

The deadline for preliminary submission was November 29. Entries must be received at the Octagon by January 10, 1964.

Information is available from 1964 Honor Awards Program, The American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C., 200060.





**RUSCO Steel Windows in Color**  
**Defy Time and Weather**

**Fallout Shelter Competition**

The National Community Fallout Shelter Design Competition (November 1963, page 69) has announced the appointment of a seven-man jury: J. Raymond Carroll, of the engineering firm Carroll-Henneman & Associates, Urbana, Ill.; Max Flatow, A.I.A., of Flatow-Moore-Bryan & Fairburn, Architects, Albuquerque; Henry L. Kamphoefner, F.A.I.A., Dean, School of Design, University of North Carolina, Raleigh; Morris Ketchum Jr., F.A.I.A., New York City; Richard H. Tatlow III, president of Abbott, Merkt & Company, Inc., Engineers and Architects, New York City; Max S. Wehrly, executive director of the Urban Land Institute, Washington, D.C., and Maynard W. Woodward, F.A.I.A., of Welton Becket and Associates, Los Angeles.

James B. Roembke, director of the Architectural and Engineering Development Division, Office of Civil Defense, will serve the jury as its technical adviser.

**Reynolds Student Prize**

Three architects have been appointed as jurors in the fourth annual Reynolds Aluminum Prize for Architectural Students. They are Joseph D. Murphy, F.A.I.A., of Murphy and Mackey, St. Louis; Sam T. Hurst, A.I.A., dean of the School of Architecture, University of Southern California; and W. G. Lyles, A.I.A., of Lyles, Bissett, Carlisle & Wolff, Columbia, S. C.

The competition begins with a competition held in 30 schools, awarding each winner \$200. The jury will consider these designs and select a finalist, who will receive \$2,500 for himself and another \$2,500 for his school.

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 ALL TRANSISTOR  
**HOME INTERCOM-RADIO SYSTEM**

Everyone in the family will enjoy the comfort, convenience, and peace of mind this system provides. From any room in the house you can . . .

- Listen-in on baby, children, or sick room.
- Answer outside doors without opening door to strangers.
- Talk to anyone—upstairs and downstairs, inside and out.
- Enjoy radio in every room with the simple flick-of-a-switch.

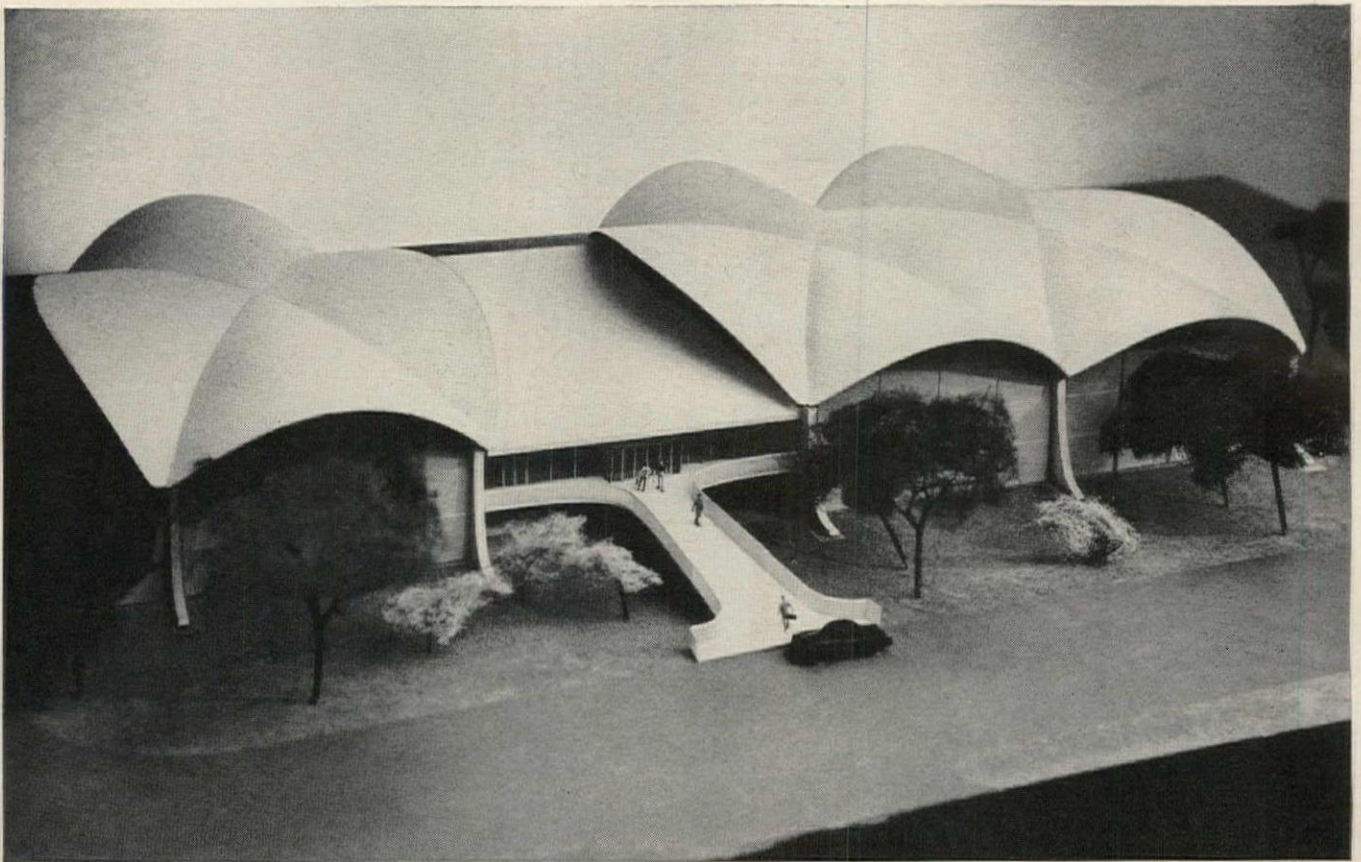
Distinctively styled. Beautifully finished in richly blended gold, polished and satin silver tones. Easily installed in any home. Built-in and surface-mounted models available. Write for complete information.

World Honored for Style, Quality, and Dependability.

**TALK-A-PHONE CO.**  
 Dept. AR-12 5013 N. Kedzie Ave., Chicago 25 Ill.

A.I.A.  
 File No.  
 314-51

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**CARLETON COLLEGE GYMNASIUM, NORTHFIELD, MINN.**

To compensate for the thrust exerted by the roof at support points, the column tops of this dramatic new building are connected by post-tensioned tie cables supplied by Ryerson. This permits use of ties with relatively small cross-sectional area and makes it possible to apply the desired force very accurately. Since this building will be most frequently viewed from above (its site is lower than the rest of the Carle-

ton campus), a handsome roof design was thought to be especially important. The intersecting parabolic groined vaults of the shell roof that resulted span a 6-lane Olympic swimming pool on the left and two basketball courts on the right. **ARCHITECT:** Minoru Yamasaki and Associates. **ENGINEER:** Worthington, Skilling, Helle and Jackson. **CONTRACTOR:** O. A. Stocke and Co., Inc.

## NEW POST-TENSIONING APPLICATIONS SHOW



**PARKING GARAGE, DAVENPORT, IOWA**

Large column-free areas and low per-car-cost of this garage were achieved through a combination of several types of prestressed concrete construction in the framing. Columns are precast, conventionally reinforced concrete with built-in brackets at each floor level to receive precast tees. The tees are pre-tensioned to permit handling, then post-tensioned for live load and to provide a rigid-frame connection with columns. Slabs were poured in place, between and over tees, and post-tensioned for structural reasons and to create a crack-free surface. The latter feature prevents seepage of water and oil from cars through the slabs.

**ENGINEER:** De Leuw, Cather & Co.

**CONTRACTOR:** Priester Construction Co.

Here's one of the most efficient and versatile methods of structural framing available to you—cast-in-place or precast concrete post-tensioned by the Ryerson BBRV system.


This system permits longer spans at economical cost, provides good deflection control and often effects savings by reducing structural depth. And when you specify Ryerson post-tensioning you deal with one of the nation's largest suppliers of construction steels—a company with the resources and facilities to provide a complete service package. This includes:

**Services for architects and engineers:** Ryerson assists in feasibility studies on use of post-tensioning in specific projects. Provides preliminary cost data. Shares experience in structural design and layout. Furnishes details and specifications.

**Services for contractors:** Ryerson delivers shop-fabricated tendons, completely assembled and ready for placement. Also provided: equipment for stressing and grouting, technical job-site assistance, architect-approved drawings, stressing data and reliable labor estimates.

If you would like more information or help on a current project, call Ryerson or write to Box 8000-A, Chicago 80, Ill.

# RYERSON

JOSEPH T. RYERSON & SON, INC., MEMBER OF THE  STEEL FAMILY

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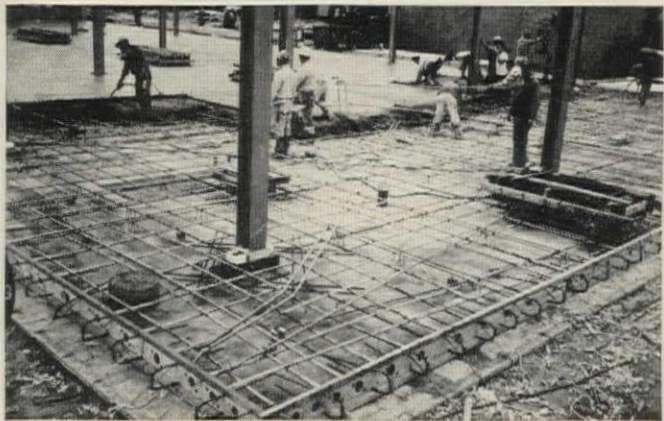
### HIGH SCHOOL, CORONA DEL MAR, CALIFORNIA

All six major buildings in the complex making up this new school use Ryerson post-tensioning to achieve structures that are functional, esthetically pleasing and economical. The two flat-roofed buildings in the center (see model below) are one-story lift-slab structures with post-tensioned flat slab roofs of 10½" lightweight concrete. The larger slab measures 335' x 195' and was lifted in four sections. Bay size in both buildings is 34' x 28'. A third post-tensioned lift-slab structure (U shape at top center) uses 8½" lightweight concrete supported by WF steel columns. The three other buildings have sawtooth roofs formed by precast post-tensioned wing tees. (See photo at right.)  
ARCHITECT: Blurock, Ellerbroek & Associates, William E. Blurock, Architect  
ENGINEER: John Martin & Associates  
CONTRACTOR: Nylin Hurd Construction Co.



ELEVEN TEES FORM THE ROOF OF THE GYMNASIUM—each is 20-ft. wide, 101-ft. long, post-tensioned with two 40-wire tendons. Stem dimensions: 15" x 42". Here one of the units is lifted into place. 1-in. pour strips tie the tees together.

POST-TENSIONING TENDONS IN ONE OF THE TWO-WAY FLAT SLABS—note wide tendon spacing and minimum of auxiliary reinforcing. This simplifies placement of utilities and pouring of concrete.

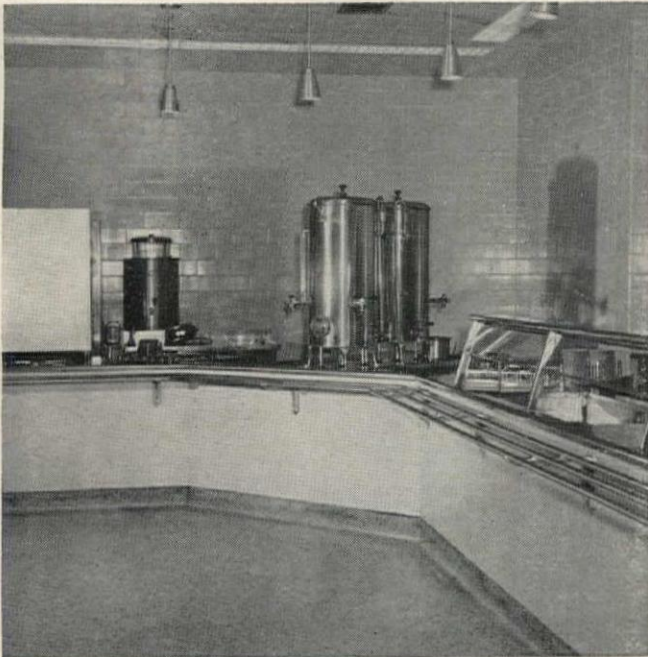


## VERSATILITY OF RYERSON BBRV SYSTEM



### N. Y. WORLD'S FAIR PAVILION FOR EQUITABLE LIFE ASSURANCE SOCIETY

Comparative cost studies on post-tensioning vs. conventional reinforcing in this structure showed the advantages of post-tensioning would cost no more. The 116' 6" longitudinal girders over the supporting columns are each post-tensioned with five Ryerson BBRV tendons—three 40-wire units, two with 28 wires. These girders span 61-ft. center to center of columns, leaving a 27' 9" cantilever at each end. They are L-shaped to support 13 T-beams which form the roof structure. The 94' tees combine pretensioning with post-tensioning by Ryerson. The pavilion exhibits will highlight population growth. A 45' map will record births and deaths as they occur in each state, and a huge illuminated sign will keep a running tally on total U.S. population.  
ARCHITECT: Skidmore, Owings & Merrill  
ENGINEER: Weiskopf & Pickworth  
CONTRACTOR: Humphreys & Harding, Inc.



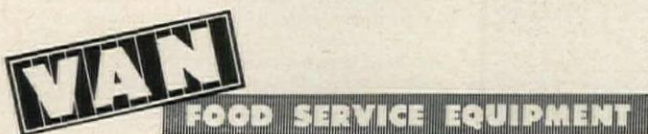
Architect: Small, Smith, Reeb and Draz

## VAN helps serve 3000 at John Carroll

Van was privileged to collaborate with the architect and Saga Food Service Company, Oberlin, in the planning of the food service facilities of John Carroll University, Cleveland. The trays of 3,000 students and faculty daily slide along the above-illustrated gleaming stainless cafeteria counter. Saga Food Service says that the kitchen engineering was excellent . . . that there was good flow . . . the equipment is well spaced . . . and the Van-designed-and-fabricated equipment has been properly chosen for each function. No matter what you have on the boards . . . if food service is involved . . . new, expansion, modernization, Van can help with its century of experience.

### assembly line idea

When you recommend to clients equipment to save motions and steps, you are on solid ground. Conveyor systems, custom-made for the particular institution, have proven their worth. Where space is at a premium, have our kitchen engineers help you use a conveyor system. Write THE JOHN VAN RANGE CO., 429 Culvert Street, Cincinnati 2, Ohio.



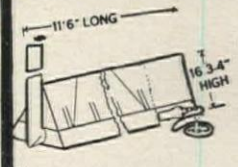
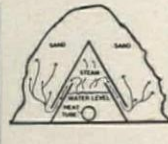
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## STOP BURNING SAND..

with the **WHITE Model "60"**  
**Sand or Aggregate Steamer.**

Burned sand does not set properly in mortar. During freezing weather protect the sand from disintegrating from overheating by specifying use of a White Sand Steamer on your jobs. The White Model "60" is simple to operate, and gives maximum steam per gas consumption. Has a 60-gallon capacity—can handle up to 10 yards of sand at a time . . . gives steam in 40 minutes from a cold start, heavy duty construction. Recommended by architects and contractors.

WHITE'S SAND OR AGGREGATE STEAMER  
IN OPERATION.



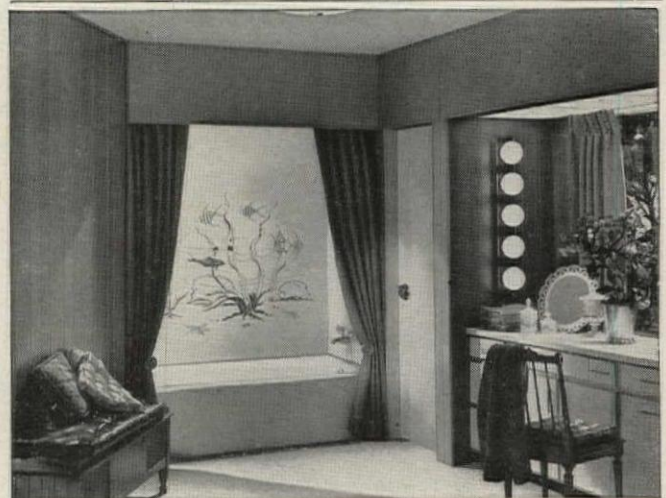
Suggested specification—"To assure proper mixture of sand with cement in freezing weather, the sand or aggregate shall be heated throughout by steam with a White Sand Steamer or approved equal."

Write for Descriptive Folder and Prices

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6344

### New 5' wide Marlite Murals for walls with a custom-decorated look!

These strikingly new 5' wide pictorial panels feature original scenes and designs to add a dramatic new dimension to any room. Crafted in luxurious gold on white, Marlite Murals feature Marlite's exclusive baked plastic finish that seals out grease, stains, moisture. Choose from nine different Marlite Murals, plus a wide choice of distinctive colors, patterns, and Trendwood® reproductions. See your building materials dealer, consult Sweet's Files, or write Marlite Division of Masonite Corporation, Dept. 1205, Dover, Ohio.

**NEW! FREE!**  
Send for full-color  
architect's catalog



**Marlite®**  
plastic-finished paneling

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Atlanta Towers, 22-story, 120-unit apartment. Aeck Associates, Inc., Architects.

## Why Atlanta Towers went total-electric... by General Electric



The new 120-unit Atlanta Towers is the latest total-electric Gold Medallion project of developer A. B. Simms, and is equipped by General Electric from its zone-electric heating and cooling units to its modern electric kitchens.

Mr. Simms gives the following reasons for building Atlanta Towers to Gold Medallion standards and selecting General Electric's equipment and program:

1. Reasonable initial investment.
2. Economical operating costs.
3. Flexibility in performing maintenance.
4. Individual room control for heating and cooling.
5. Wide range of equipment and appliances which can be included as standard equipment in each apartment.
6. Valuable electrical system design counsel.
7. Promotional support to speed rentals.

"We feel that on the basis of economics, tenant appeal

and dependability of performance, the decision to go all-electric was a sound business decision, and we are enthusiastic with the results."

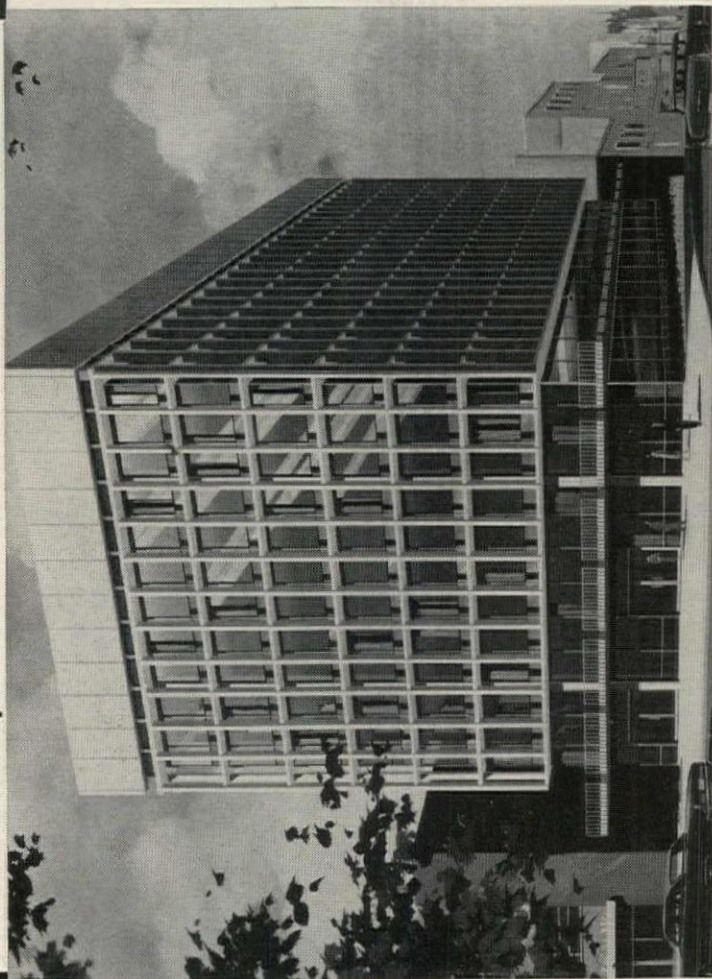
Find out how General Electric's engineering and design assistance and customized promotional programs can be of service in your total-electric projects by writing: Construction Market Development Operation, General Electric Company, Appliance Park, 6-230, Louisville, Kentucky.

*A. B. Simms, the developer of Atlanta Towers, is now building Bay Shore Towers in Tampa, Florida, another total-electric Gold Medallion high-rise apartment equipped by General Electric.*

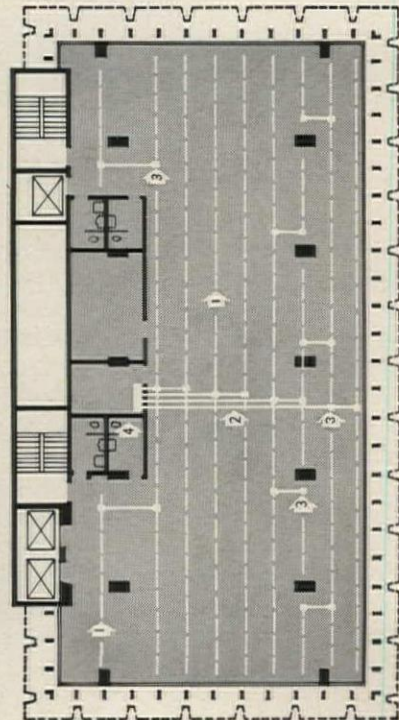


**GENERAL  ELECTRIC**

For more data, circle 125 on Inquiry Card



Anchor Savings and Loan Building, Madison, Wisconsin. Architects & Engineers: John J. Flad & Associates, Madison.



LEGEND

- 1 = Distribution Ducts
- 2 = Pyramidal Feeders
- 3 = Junction Boxes
- 4 = Electrical Panel

NOTE:

Space ducts and floor inserts to match desk module. Check with Electrical Engineer.



Fig. 1

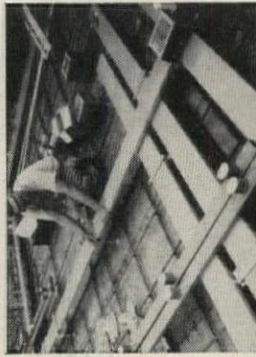


Fig. 2



Fig. 3



Fig. 4

Today, raceways under concrete floors can be readily designed for maximum versatility. One method, a pyramidal feed system, that provides adequate capacity for future utility requirements as well as changing plant or office layouts is shown at left.

Fig. 1 shows the distribution ducts and the floor inserts. All inserts for the service fittings will be flush with the finished concrete floor. One duct is for power, one for telephone wiring. Fig. 2 shows the installation in progress. The two-level system allows feeder ducts to pass under distribution ducts. Fig. 3 shows the placing of concrete after reinforcement and ducts have been carefully set. Fig. 4 shows a typical completed installation.

In addition to the basic power and telephone services, many modern buildings may require additional raceways for other uses. These include, for example, panelboard feeders with voltages up to 600V, low potential signal services, intercoms, T.V. and programming. Designers should estimate future requirements as generously as possible.

Write for additional free information.  
(U.S. and Canada only.)




## What's wrong with this new washroom? Scott found 4 big design mistakes.

At first glance it looks great. Neat, clean, up-to-date. But there's more to a washroom than handsome fixtures. Scott's trained consultants found four planning errors in this layout:

- Mirrors are best located away from washbasins. That way people don't brush loose hair into sinks, and clog them. And successive users aren't kept waiting.
- The Scott towel dispenser should be located between the sink and the exit for a more efficient traffic pattern.
- The waste receptacle should be located between the towel dispenser and the exit, so people aren't kept waiting while each user dries his hands.
- Uncovered wall-hung waste receptacles increase maintenance efficiency, discourage litter, speed traffic flow.

For the washrooms in your buildings, remember: 1) Scott fixtures give your clients years of value, dispensing the nation's finest paper products; 2) Scott's unique Washroom Advisory Service is always available to you, free of charge. Write for our 16-page washroom planning booklet, or call your local Scott office. Scott Paper Company, Philadelphia 13, Pennsylvania.

**SCOTT**  **MAKES IT BETTER FOR YOU**

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## Tempo With Style: Boston Bank Opens At Government Center

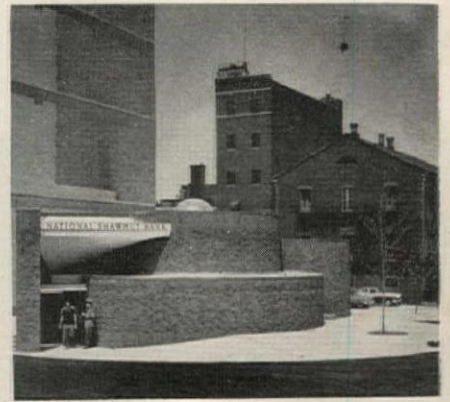
Boston's Government Center acquired its first private building with the dedication in July of the National Shawmut Bank.

The branch bank is technically a temporary building. It is built in the middle of a site earmarked on the cen-

ter's master plan for park space. The problem, therefore, was a contradiction in terms: an impermanent bank.

In response, architects Imre and Anthony Halasz designed a "pavilion"—self-effacing in scale, self-assured in form.

The plan of the main banking room resembles a snail shell. The bank's clients, entering 2 feet below grade, are led in a curve past desks and teller's counters and eventually out the door they came in. Two other inter-



secting cylinders house offices and conference space.

The exterior is of "overbaked" brick, conforming in appearance to materials used in near-by buildings.

Tredennick-Billings Company of Boston was the general contractor.

## No. 4 Penn Center Extends Philadelphia Renewal

Still another building is in process of being added to Penn Center, part of Philadelphia's ambitious downtown redevelopment.

Four Penn Center, now under construction, will provide 500,000 square feet of office space at a cost of \$15 million. It is scheduled for July 1964 occupancy.

The building's curtain wall will have limestone spandrels and bronze-colored aluminum mullions.

Emery Roth & Sons are the architects. The general contractor is the Carlyle Construction Company.



# ZERO meets all your needs for

- WEATHER STRIPPING
- SOUND-PROOFING
- LIGHT-PROOFING



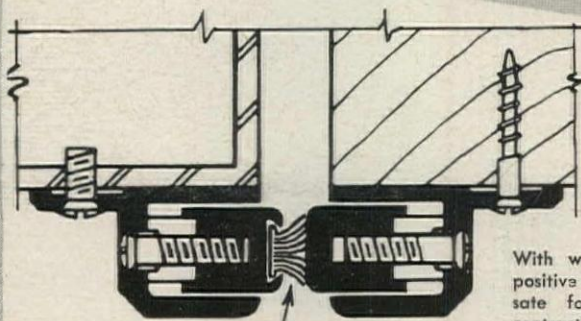
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Contains full size  
details, 168 draw-  
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stripping and re-  
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- doors
- sliding doors
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- windows
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Architects agree,  
weather strip-  
ping can be the most  
significant detail of a  
structure's success. For  
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changing needs.

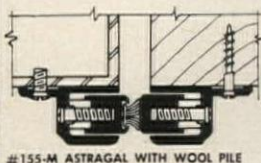
*our 40th year*



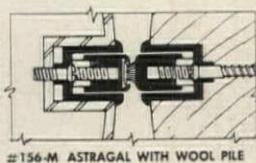
ADJUSTABLE  
ASTRAGALS

Wool pile insert

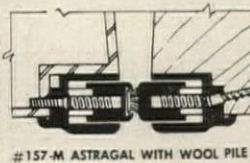
With wool-pile inserts for  
positive closure. Compensate  
for expansion and  
contraction of doors. Avail-  
able in extruded bronze or  
aluminum.



#155-M ASTRAGAL WITH WOOL PILE



#156-M ASTRAGAL WITH WOOL PILE



#157-M ASTRAGAL WITH WOOL PILE



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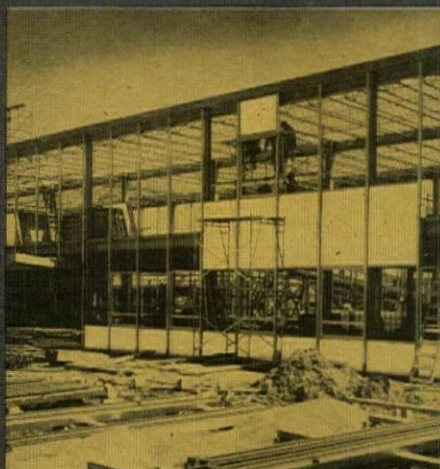
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## Lighter!

Rigid urethane foam at 1½ pcf, sandwiched between layers of pre-finished steel, provides at least twice the insulation value of conventional materials.



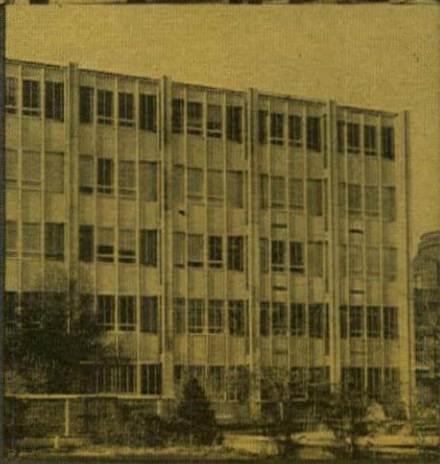
## Stronger!

The urethane foam core is permanently bonded as an integral part of the panel unit; high strength adds firm structural support plus good dimensional stability.



## Faster!

In just 12 minutes, a 5-ft. by 20-ft. factory-engineered panel is raised, positioned, interlocked and anchored into place—for speediest construction yet.

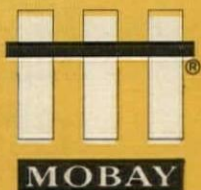


## Cheaper!

The low cost of curtain wall construction has made it first choice in commercial building design. Improved isocyanates by Mobay now add new economies.

## Urethane foam puts the BIG PLUS in curtain wall construction

Rigid urethane can be foamed in place on the job site or delivered in the form of pre-sized panels ready to be fitted into place. Walls go up faster, require little or no maintenance, and give up to 5% more useable interior space. Insulation qualities of rigid



urethane foam are excellent and it makes an efficient acoustical, thermo and vapor barrier. For more specific data on rigid urethane for insulating, void-filling and structural reinforcement, write Mobay Chemical Company, Code AR-4, Pittsburgh 5, Pennsylvania.

# MOBAY CHEMICAL COMPANY

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"...complements the design, safeguards the tenants..."

says E. Wolman of the Jerry Wolman Construction Company, Silver Spring, Maryland.



"Anchor's All-Aluminum Picket Railing protects nine levels of balconies around Summit Hill Apartments in Silver Spring. We chose it for its elegance and attractive appearance, the way it complements the design and safeguards the tenants."

Consider new Anchor All-Aluminum Picket Railing for your choice, too . . . whenever its lasting beauty and positive protection are compatible with your building design. Pickets, posts, and handrail are all bright, rust-proof Reynolds Aluminum. And Anchor's national network of skilled erectors provides quick and efficient installation.

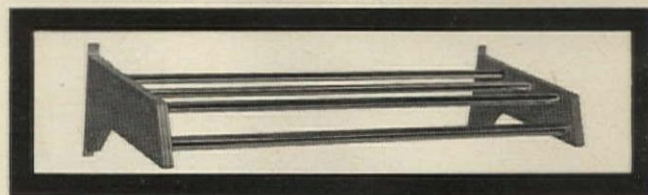
For detailed information, call your local Anchor office or write: ANCHOR POST PRODUCTS, INC., 6691 Eastern Avenue, Baltimore 24, Maryland.



Plants in Baltimore, Houston, Los Angeles.

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## THE <sup>new</sup> EXECUTIVE HAT AND COAT RACK



SAVES SPACE / HARMONIZES WITH DECOR / EASY TO MOUNT / ANY LENGTH

Contemporary styled, easily mounted wooden end brackets available in birch, oiled walnut, or mahogany finishes to harmonize with room decor.

Sleek chrome-plated rods available in any length at economical prices for quality hat and coat rack. Snap-on hooks are available if needed. Write now for price list and catalog showing new motel items.



By makers of Plaza <sup>®</sup> Towel Holder the compact towel-saver for motels. Over 30,000 in use. (2-guest size shown)

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Get accurate cost estimates in minutes with the Dow Building Cost Calculator.

With the Dow Calculator you can give your clients a realistic estimate on the cost of any projected building in any location. The Calculator is revised and supplemented each quarter.

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It's an easy two-step process. Simply find the cost of the building most like the one you're planning, then adjust that cost to local prices. It's that simple! At \$36 a year — 10¢ a day — it could be the most valuable volume on your reference bookshelf.

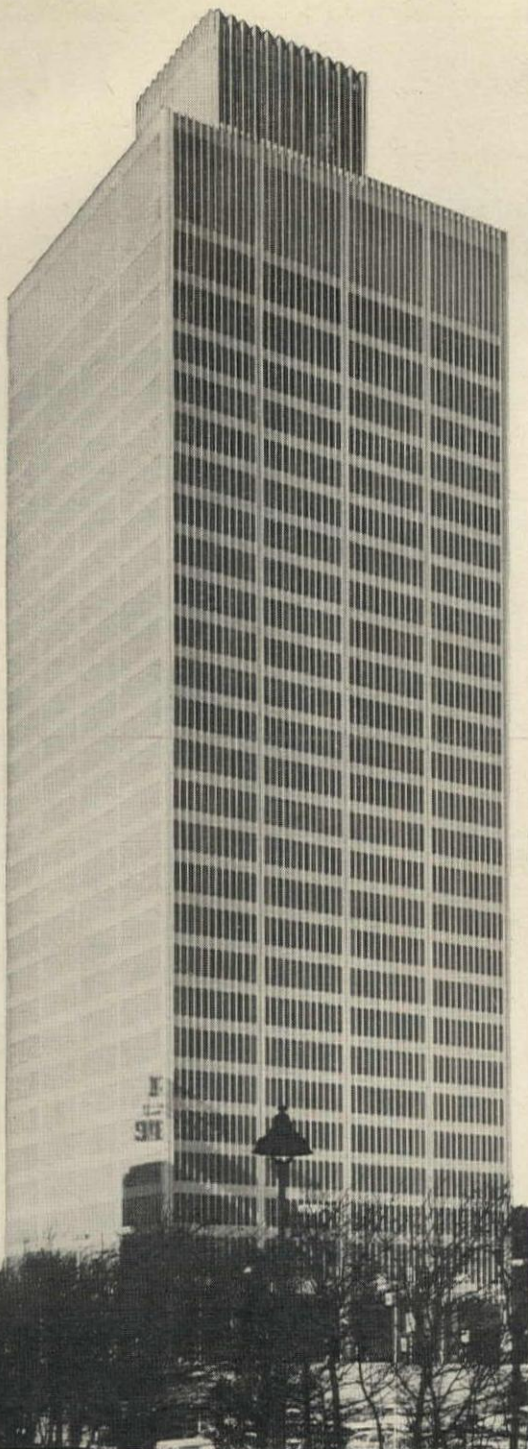
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MICHIGAN CONSOLIDATED GAS COMPANY, Detroit, Mich. ARCHITECTS: Minoru Yamasaki-Smith, Hynchman & Grylls Associated Architects and Engineers. GENERAL CONTRACTOR: Bryant & Detwiler Company. AUTOMATIC CONVEYOR SYSTEM: Standard Conveyor.



Mail room clerk sends basket to designated floor simply by pushing a button. Each tote box carries up to 32 lbs. of payload... the conveyor accepts up to 12 loads a minute.



At proper floor, the box is automatically shunted off vertical conveyor. "Magnetic memory" control system has no moving parts, levers, or between-station wiring... nothing to wear out.

**New Michigan Consolidated Gas Co. Building features**

## 28-story Recordlift mail conveying system

A recent publication from the U. S. Post Office Department\* recommends that "in the large office building the owner and his architect should assure that proper consideration has been given to the mail collection and delivery needs of tenants." It suggests further that the use of vertical tray conveyors is "most effective."

An outstanding supplier of this type of high-speed mail distribution equipment is STANDARD CONVEYOR COMPANY... and STANDARD's *Recordlift* system in Detroit's new 28-story Consolidated Gas Company Building is an outstanding recent installation.

Mail can be sent from any floor to any other floor on the system in a matter of minutes—simply by pushing the proper address button. During rush hours, the *Recordlift* can deliver 384 lbs. of mail a minute to or from the mail room.

A complete *Recordlift Data File* can prove most useful in designing your next multi-story building. Request one today.

\*POD Publication 55, Office of Research & Engineering, U. S. Post Office Department—July, 1963

### Other typical Standard Conveyor Recordlift Installations

- Kaiser Center Office Building  
Oakland, California
- Western Electric Co., New York, N.Y.
- Atlantic Coast Line Railroad Company  
Jacksonville, Florida
- Ontario Hospital Services Commission  
Toronto, Ontario, Canada
- Bank of America Service Center Bldg.  
San Francisco, California
- Bankers Life Company  
Des Moines, Iowa
- State of Oregon, Salem, Oregon
- First National Bank  
Minneapolis, Minn.
- Lincoln National Life Insurance Co.  
Fort Wayne, Indiana
- Time-Life Building, New York, N.Y.
- Mutual Service Insurance Company  
St. Paul, Minnesota
- State of Texas Employment Comm.  
Austin, Texas
- Ohio Oil Company, Findlay, Ohio
- California State Teachers Association  
Burlingame, California
- Los Angeles County Hospital  
Los Angeles, California
- Zurich Insurance Co., Chicago, Illinois
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Dispensers • Case Unstackers • Spiral Chutes

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**A NEW  
COMFORT HEATING CONCEPT  
for Industrial and  
Commercial Buildings**

**WHY PAY TO  
HEAT THE ROOF?**

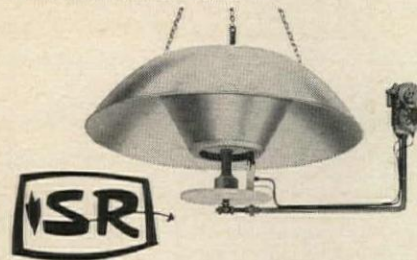


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GAS HEATERS**

**DIRECTLY HEATS PEOPLE, FLOORS  
AND EQUIPMENT FIRST... NOT THE AIR**

Space-Ray, like the sun, directs its infra-red heat rays downward from above; these rays travel through the air without warming it... turn into heat only upon striking people, objects, and surfaces below. No fans or blowers to create air movement—clean, draftless sunshine warmth continually blankets the entire lower working area—fuel costs are greatly reduced.

Save up to 50% the costs of ordinary heating systems. Initial cost of heaters is low. Space-Ray requires no ducts or vents; no in-plant wiring; installation is simple, inexpensive. Space-Ray is being installed in a wide variety of size and type buildings, all over the country, for 25¢ per sq. ft.—and less. No moving parts; little or no maintenance. A. G. A. approved. Operates on Natural, L.P., Manufactured or Mixed Gases. Each unit 40,000 BTU.



**SPACE-RAY CORPORATION**  
306 W. TREMONT AVE., CHARLOTTE 3, N. C.

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*On the Calendar*

**December**

9-10 White House Conference on Community Development—Sheraton Park Hotel, Washington, D.C.  
11-15 20th Annual Convention-Exposition, National Association of Home Builders—McCormick Place, Chicago

**January 1964**

20-23 13th Exposition, Air-Conditioning, Heating and Refrigeration Industry, sponsored by Air-Conditioning and Refrigeration Institute—International Amphitheater, Chicago  
28-30 20th Annual Technical Conference, Society of Plastics Engineers, sponsored by Philadelphia Section—Chalfonte-Haddon Hall Hotels, Atlantic City, N.J.

**February 1964**

3-7 International Conference on Materials, sponsored by the American Society for Testing Materials—Sheraton Hotel, Philadelphia  
15-19 1964 National Convention, American Association of School Administrators—Atlantic City, N.J.

*Office Notes*

*Offices Opened*

Joseph J Oshiver, Architect, has opened offices in the Lathrop Building, 1005 Grand Ave., Kansas City, Mo., 64106.

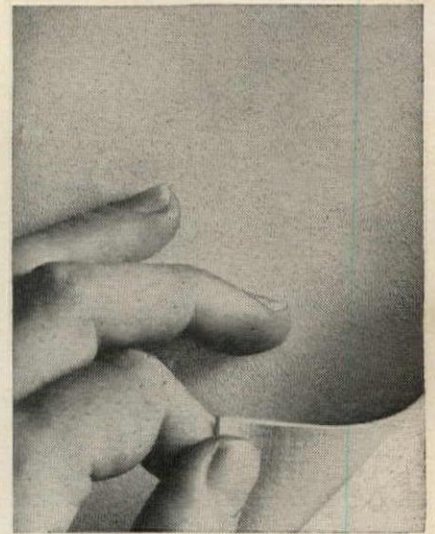
Laurence L. Rubin, Architect, has announced the opening of his office at 6 Long Wharf, Boston, Mass.

*New Firms, Firm Changes*

Ballard Todd Associates, Architects, of New York City, have announced the appointment of Frank G. Lopez, A.I.A., as an associate in the firm.

Brock, Johnson and Romanowitz, Architects, is the new designation of the former firm Brock and Johnson, Architects. The partners, Ernst V. Johnson, A.I.A., Byron F. Romanowitz, A.I.A., and John Boyer Moore, A.I.A., practice at 159 Barr St., Lexington, Ky., 40507.

Migdal, Layne & Sachs, Inc., Consulting Engineers, is the new firm established by the association of Migdal & Layne, Consulting Engi-  
*continued on page 222*



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4. require subcontractor to submit with his bid the manufacturer's name and product quality on which his bid is based.

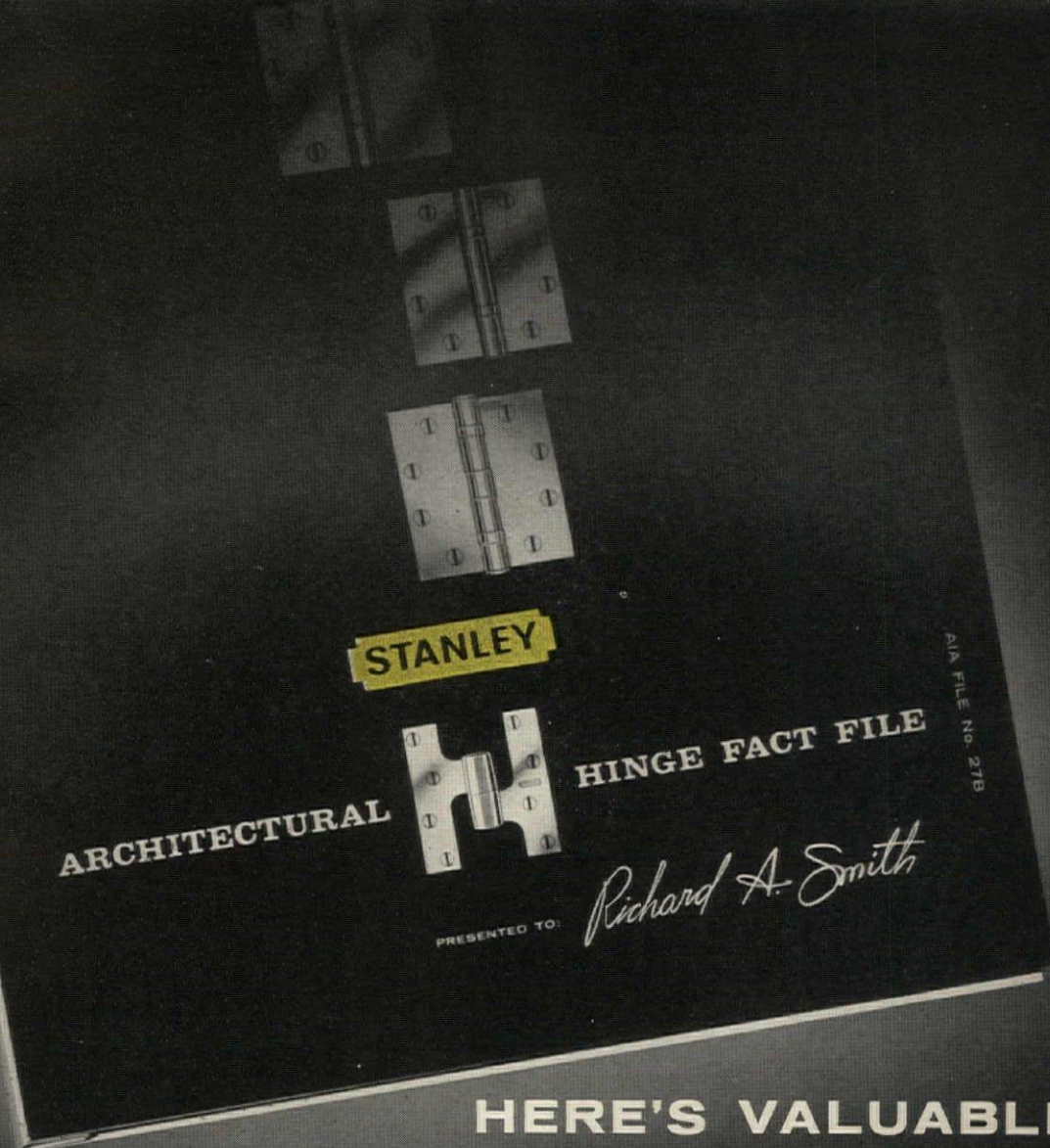
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**Only steel columns could bear the load.** The 30-story Michigan Consolidated Gas Company Building in Detroit is the world's tallest all-welded building for a reason: integrated architectural design prohibited use of columns larger than 2 ft., 4 inches 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 ¼-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.

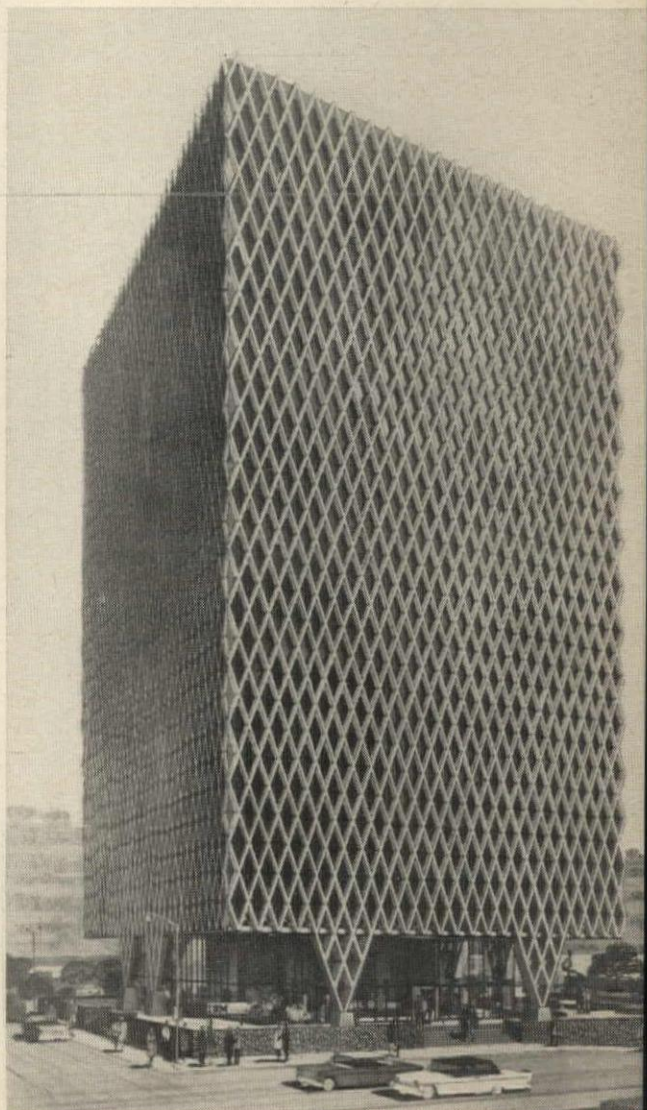
**Steel dome saves Syracuse University \$193,500.** Fabricated and erected by American Bridge, the low-profile dome of the Syracuse University field

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.

General Offices: 525 William Penn Place, Pittsburgh, Pa. Contracting Offices in: Ambridge • Atlanta • Baltimore • Birmingham • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Elmira • Gary • Harrisburg, Pa. • Houston • Los Angeles • Memphis • Minneapolis • New York • Orange, Texas • Philadelphia • Pittsburgh • Portland, Ore. • Roanoke • St. Louis • San Francisco • United States Steel International (New York), Inc.



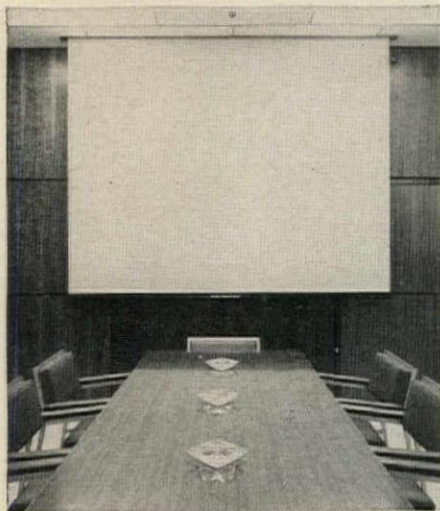
**American Bridge  
Division of  
United States Steel**



TRADEMARK

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## Office Notes

continued from page 218

neers, and Donald J. Sachs. Offices are at 10150 W. Nine Mile Rd., Oak Park 37, Mich.

Ross W. Pursifull has been made head of the architectural and research department of Smith, Hinchman & Grylls Associates, Inc., Detroit architects.

Carl A. Giffels has been named president of Giffels & Rossetti, Inc., Architects-Engineers, Marquette Building, Detroit 26, Mich. Other management appointments are Merrill M. Bush, executive vice president; Bertram Giffels, treasurer; A. M. Entenman Jr. and S. A. Littmann, vice presidents.

Robert D. Guss Jr. and Dellas H. Harder have joined with Ted Granzow to form Granzow, Guss and Harder, Architects, located in the Brinker Building, 1857 Northwest Blvd., Columbus 12, Ohio.

Harley, Ellington, Cowin and Stirton, Inc., 153 E. Elizabeth St., Detroit 1, has opened a new housing and urban development department. Jack D. Cronk is head.

Huddleston, Satterfield, Evans & Lillie, Architects and Engineers, 1215 West Tharpe St., Tallahassee, Fla., is the successor to the firm Prentiss Huddleston and Associates.

Leo Kornblath Associates, a New York architectural firm with offices in Washington, D. C. and San Juan, Puerto Rico, have announced the formation of Leo Kornblath Interiors, Inc., with David Kaplan as head of the organization. Harry Katz has been appointed controller of the parent firm.

Morris Lapidus, Liebman & Associates, an architectural firm at 139 E. 56th St., New York City, has announced the appointment of George D. Wechsler as treasurer.

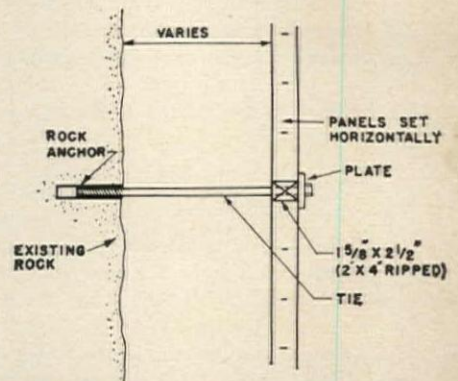
Otto H. Kilian has been promoted to vice president and assistant general manager of Charles Luckman Associates, 9220 Sunset Blvd., Los Angeles 69, Calif.

Maloney, Harrington, Freesz and Lund, Architects, 754 Central Building, Seattle 4, Wash., is the successor to the firm John W. Maloney, Architect, A.I.A. New partners are Arthur Herrington, A.I.A.,

continued on page 226



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Complete, illustrated story on request. Symons Forms can be rented with purchase option.

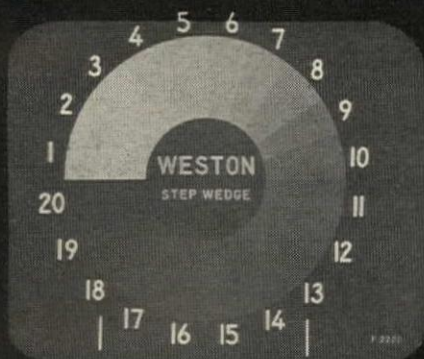
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## PARKWAY APARTMENTS Niagara Falls, New York

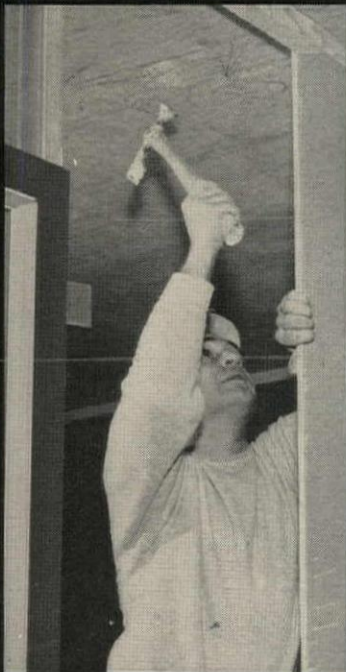
**Architect:**  
Aaron Colish of Philadelphia

**Builder:**  
Arthur A. Kober Co.  
of Bala-Cynwyd, Pa.

**Gypsum Drywall Construction:**  
Interior Finishes, Inc.  
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### BETWEEN ROOMS—SEMI-SOLID PARTITIONS



1. Nail face layer to ceiling and floor runners



2. Apply adhesive-coated gypsum studs



3. Secure gypsum studs with nails or screws



4. Apply back face layer to runners and studs

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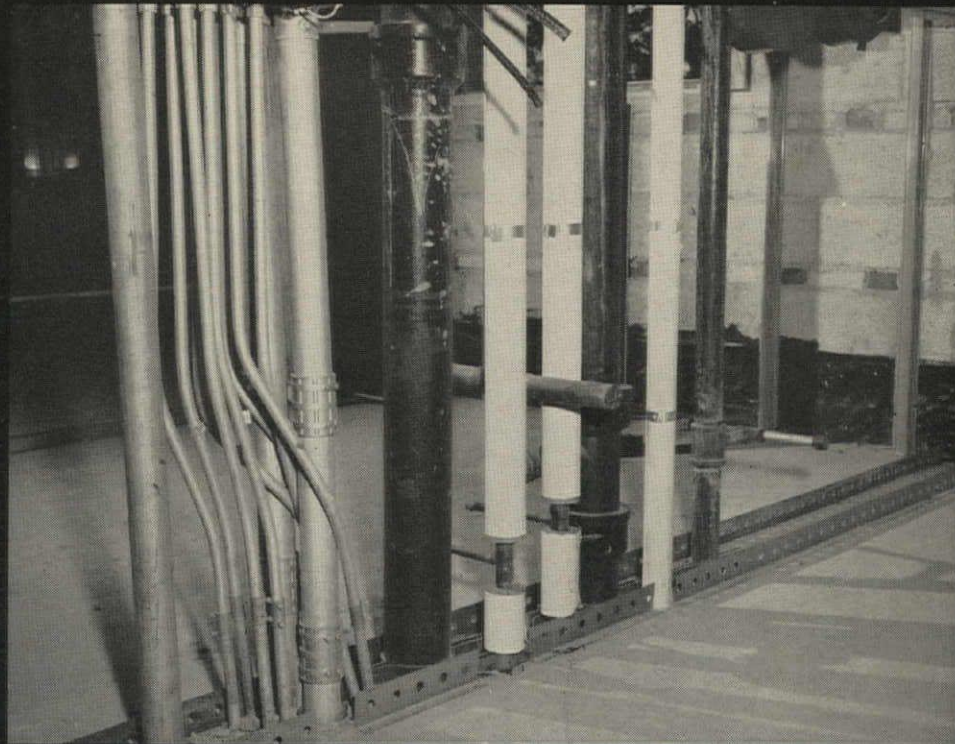
**Gypsum drywall methods  
that help sound-condition  
\$3,500,000 Parkway Apts.  
...two ways**

Quiet conditioning will be a fast-renting feature at the Parkway . . . Niagara Falls' new 144-suite apartment building. Part of the "quiet" feature: two Gold Bond gypsum drywall partition systems. Actual construction is shown in these on-site photographs. For other ways with walls, see Sweet's File 12 C/NA.

# BETWEEN APARTMENTS—DOUBLE-WALL, SOLID-LAMINATED PARTITIONS



A. Install metal floor and ceiling runners



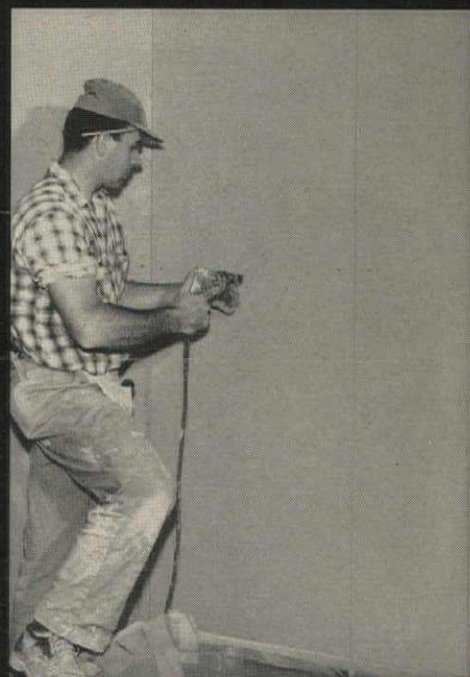
B. Space is left for utilities to pass through double walls



C. Attach 1"-thick gypsum coreboard to each side



D. Apply adhesive to back of gypsum face layer



E. Screw face panels to gypsum coreboard on each side of double-wall partitions

BETWEEN ROOMS, privacy is achieved with low-cost, Gold Bond semi-solid drywall partitions. These non-bearing walls were constructed around metal door frames with two faces of gypsum wallboard laminated to gypsum studs. Either  $2\frac{1}{4}$  or  $2\frac{5}{8}$ " thick, these walls go up fast and save valuable floor space. They will withstand normal wall abuse for the lifetime of the building. And when  $\frac{5}{8}$ " Fire-Shield wallboard is used, the walls earn a one-hour fire rating.

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continued from page 222

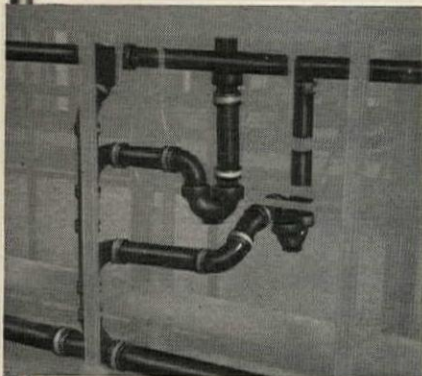


Joseph T. Wearn Laboratory for Medical Research, University Hospitals of Cleveland, Ohio.

ARCHITECTS: Schafer, Flynn & Williams.  
CONSULTING ENGINEERS: Byers, Urban, Klug & Pittenger. MECHANICAL CONTRACTOR: Smith & Oby Co. GENERAL CONTRACTOR: Hunkin-Conkey Construction Co.

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**Tibor Freesz, A.I.A., Ralph O. Lund, A.I.A. and John W. Maloney Jr.**

Neuhaus and Taylor, an architectural firm at 3221 W. Alabama St., Houston 6, Tex., has named **Benjamin E. Brewster Jr.** as associate partner and **James R. Goodrum** as associate.

**Roy S. Tanaka** has been appointed vice president of **Irving D. Shapiro & Associates**, an architectural and land planning firm at 447 S. Robertson Blvd., Beverly Hills, Calif.

**Robert A. Heller** has joined the consulting structural engineering firm of **Schupack and Zollman**, of Stamford, Conn., and Newton Square, Pa.

**Sigmund F. Blum, A.I.A.**, has been appointed vice president in charge of architectural design and a member of the board of directors of **Smith, Hinchman and Grylls Associates, Inc.**, 3107 W. Grand Blvd., Detroit 2, Mich.

**Jordan M. Brown** has been named business coordinator for **Freidin-Studley Associates'** New York City office at 342 Madison Ave.

**Charles E. Nolan Jr.**, has joined the firm of **Voll & Buffington, Architects**, to form the new firm of **Voll, Buffington & Nolan, Architects**. Offices are in Roswell, N.Mex., and Alamogordo, N.Mex.

#### New Addresses

**S. Cabell Burks, A.I.A., Architect**, 101 Professional Building, Madison Heights, Va.

**Jack Pickens Coble, A.I.A., Architect**, 117A E. 38th St., New York, N.Y., 10018.

**Ralph Stoetzel, Inc., Architects-Engineers**, 1 E. Wacker Dr., Chicago, Ill., 60601.

**Barrows, Parks, Morin, Hall and Brennan**, a Rochester, N.Y., architectural firm, have opened a branch office at 21 N. Lemon Ave., Sarasota, Fla. **John Piercy**, of Sarasota, will be associated with the branch office.

**Schupack and Zollman**, consulting structural engineers, 1707 Summer St., Stamford, Conn.

**Triggs Myers McQuade and Associates**, architects and engineers, 3400 Forbes Ave., Pittsburgh, Pa.

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



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SW-68



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"Twinstile," one of a wide variety of nickel stainless steel swinging and balanced doors designed and manufactured by Schacht Associates, New York, N. Y.

As installed in Butler Senior High School, Butler, Pa. Architects: Perkins & Will, Chicago, Ill.; Associate Architects: Howard & Murphy, Butler, Pa.

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These are the highly practical reasons why more and more architects are specifying nickel stainless steel

for commercial and institutional building entrances—for swinging, sliding, rolling or revolving doors that will last the life of the building. For more information on the many advantages of stainless steel, write for the 32-page booklet, "Architectural Uses of the Stainless Steels."

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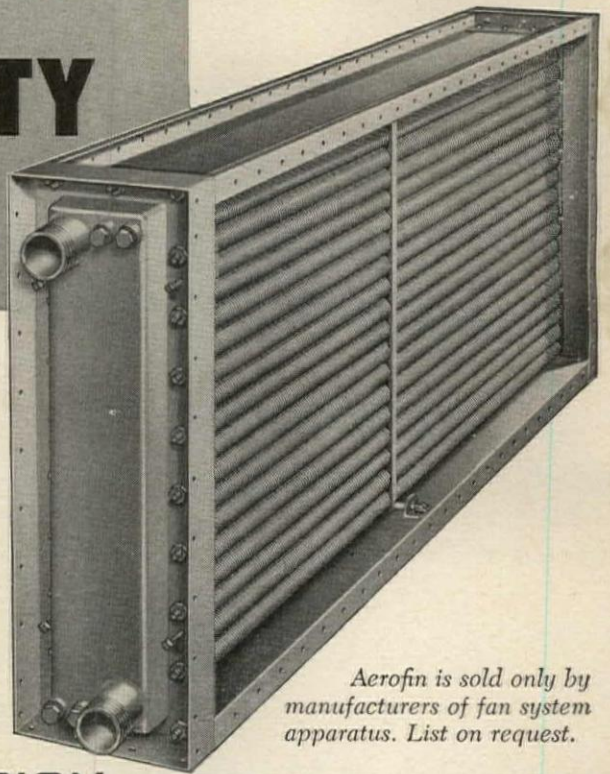
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# AEROFIN CORPORATION

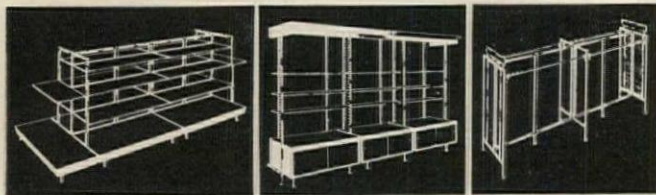
101 Greenway Ave., Syracuse 3, N. Y.

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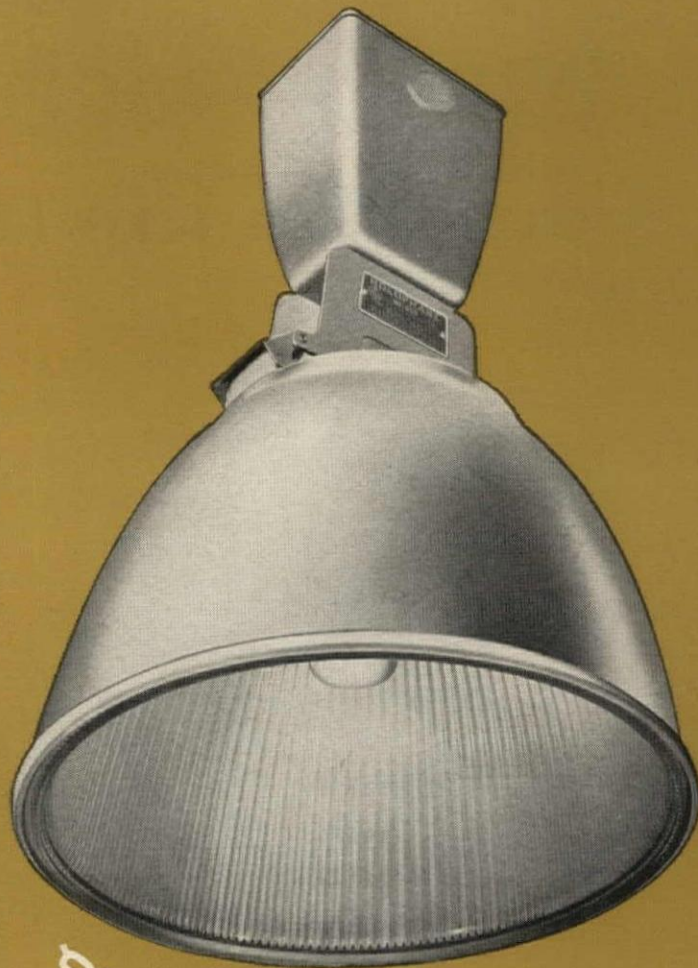
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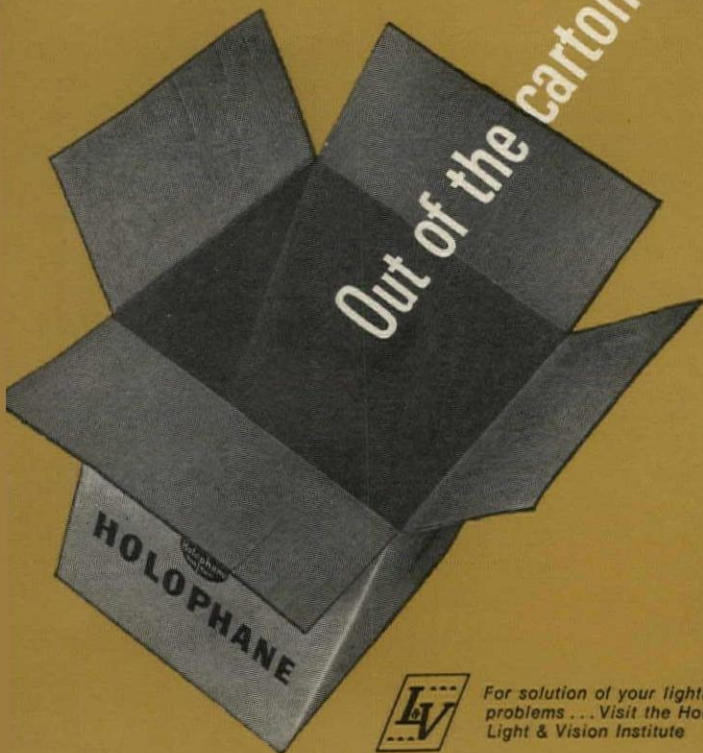
**HOLOPHANE** Introduces

# Prismpack

The Mercury Luminaire  
that is Installed Instantly



Out of the carton...onto the ceiling



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

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

## HOLOPHANE COMPANY Inc.

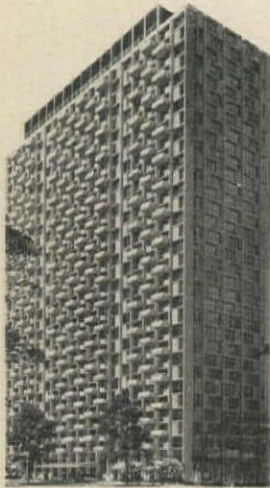
Lighting Authorities Since 1898  
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The Holophane Co., Ltd., 418 Kipling Ave. So., Toronto 18, Ont.



For solution of your lighting  
problems...Visit the Holophane  
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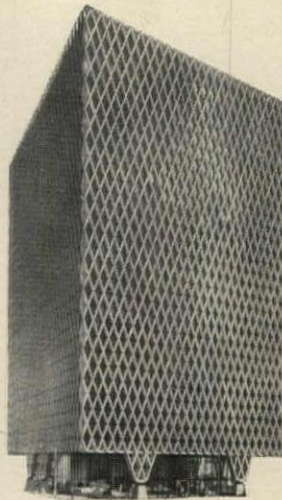
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# When one top advertising value you're on the track of the leader



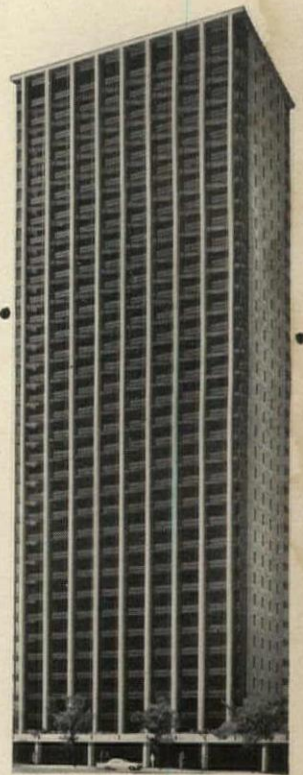
## Editorial Superiority

The Record publishes more editorial pages than any other architectural magazine. Moreover, its content is continuously attuned to the current activity and interests of architects and engineers with the aid of *Dodge Reports* and the most intensive audience research in the field.



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The Record's architect and engineer subscribers are responsible for planning over 88 per cent of the total dollar volume of all architect-planned building, non-residential and residential—a fact documented by *Dodge Reports*.



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# "CONSTRUCTION DUST" TEST PROVES MONO-LASTO-MERIC®

(1-PART ACRYLIC TERPOLYMER)

## MOST POWERFULLY-ADHESIVE CONSTRUCTION JOINT SEALANT KNOWN!



**1** Mono-Lasto-Meric placed on a metal plate, allowed to set a few minutes to skin over, then sprinkled lightly with "construction dust" to form a typical deterrent to good construction joint sealing.

**2** Glass plate gently placed on top of dusted Mono-Lasto-Meric, which quickly and visibly "bites" its way through to glass.

**3** After a few minutes, when metal and glass are pulled apart, there is no loss of adhesion to either surface.

This test proves that the extreme adhesion of Mono-Lasto-Meric can eliminate many causes of sealant failure and provide a greater factor of safety on every construction job. All other types of sealants fail in this critical test.

**FEATURES:** Factory mixed; eliminates high cost and hazards of job-site mixing • exceptional adhesion and flexibility • Ability to reseal if by chance a sealing bond is not achieved initially on application because of moisture, dust or other deterrent • Non-staining without primer on all types of masonry • Proved by over 4 years of actual use in hundreds of buildings of every type • Wide range of colors. Any color can be matched • Life expectancy — 20 year minimum • Available in cartridge or bulk

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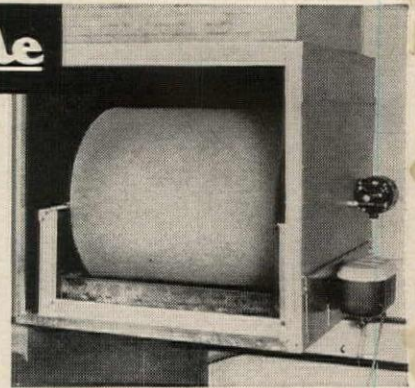
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**Skuttle**

solves  
the  
problem  
of



## large humidity requirements

### NEW DESIGN — ASSURES HIGH CAPACITY... POSITIVE OUTPUT

Dry, winter air has always been a problem during the heating season. Now, from SKUTTLE, comes the most efficient, economical method of supplying adequate humidification to large residences and commercial buildings... the SKUTTLE Model 160 DRUMATIC Humidifier.

The 160 is mounted in the warm air stream of the furnace. It utilizes a polyurethane evaporator pad on a motor-driven, spoked drum which rotates in a pan of water. Warm air is circulated through the rotating pad where it is moisturized and then forced through the duct system.

The water level in the pan is automatically maintained by Skuttle's single pivot float valve. The unit uses a 115 volt, moisture-sealed motor with graphite bearings to assure long trouble-free service. The usual water pump and drain have been eliminated, and there are no moving parts to wear or require servicing.

The Model 160 DRUMATIC humidifier is also designed to eliminate mineral dust in the air. Deposits form on the evaporator pad and, when filled, it can be easily cleaned or replaced. All "in-water" parts are stainless steel and the cabinet is non-corrosive, epoxy coated, galvanized steel.

The Model 160 has an output capacity of up to 7 gallons of water per hour\*. \*Maximum output requires a 100,000 BTU output furnace capable of 950 CFM @ .5 S. P.

Skuttle manufactures DRUMATIC humidifiers with capacities from 1/2 gallon to 7 gallons per hour.

**SKUTTLE MANUFACTURING COMPANY**  
MILFORD MICHIGAN

In Canada: Wait-Skuttle Co., Oakville, Ontario

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## New 5' wide Marlite Murals for walls with a custom-decorated look!

These strikingly new 5' wide pictorial panels feature original scenes and designs to add a dramatic new dimension to any room. Crafted in luxurious gold on white, Marlite Murals feature Marlite's exclusive baked plastic finish that seals out grease, stains, moisture. Choose from nine different Marlite Murals, plus a wide choice of distinctive colors, patterns, and Trendwood® reproductions. See your building materials dealer, consult Sweet's Files, or write Marlite Division of Masonite Corporation, Dept. 1205, Dover, Ohio.

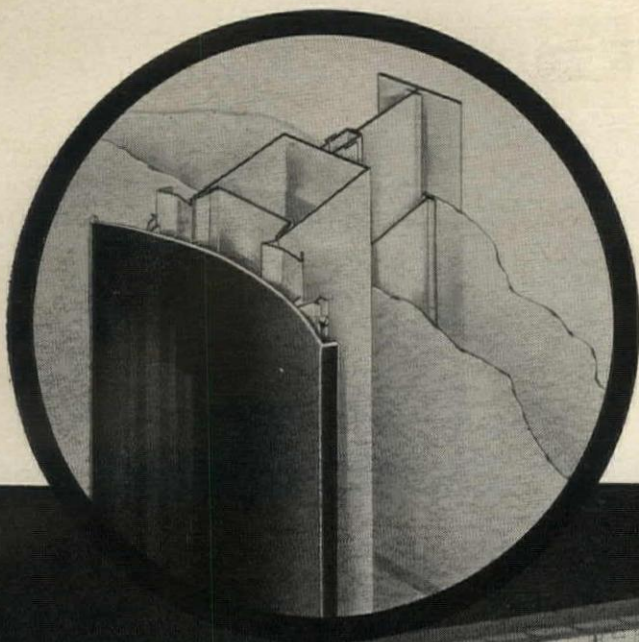
**NEW! FREE!**  
Send for full-color architect's catalog



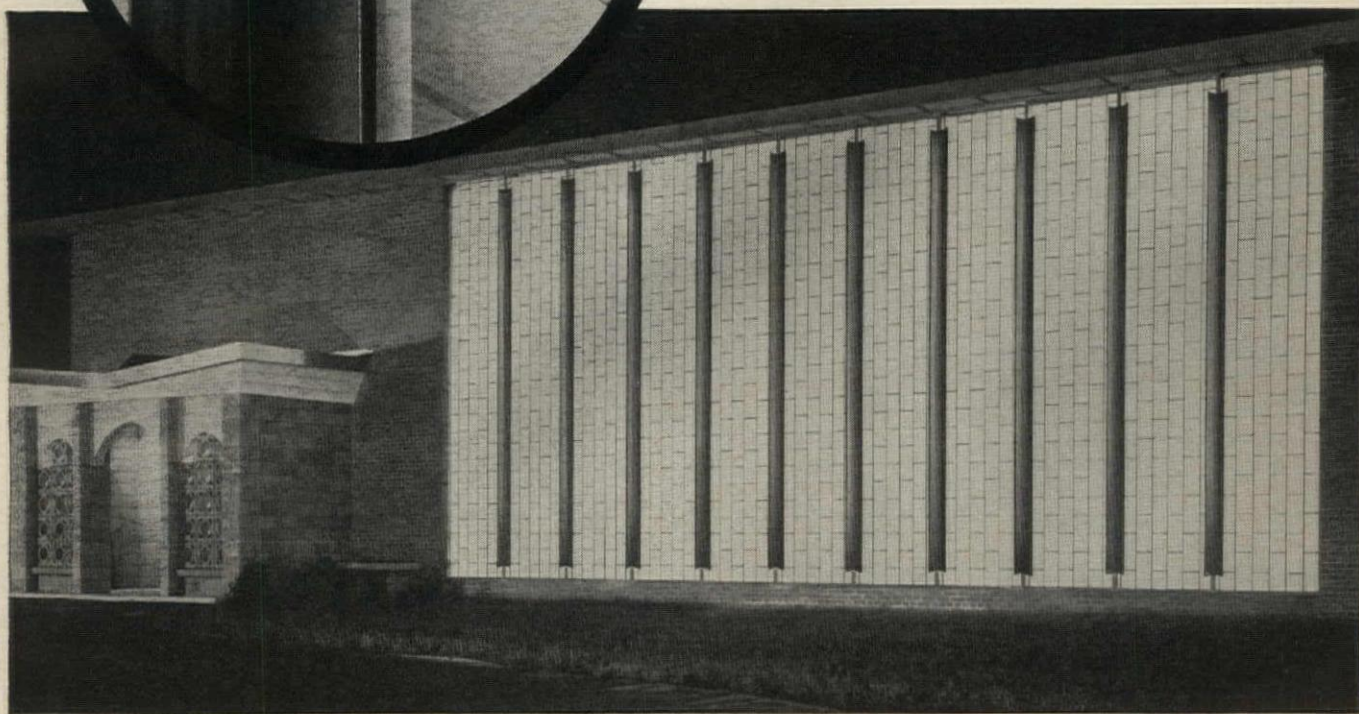
**Marlite®**  
plastic-finished paneling

ANOTHER QUALITY PRODUCT OF MASONITE® RESEARCH

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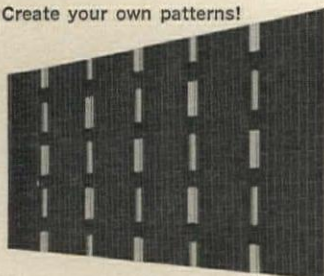


## EXCLUSIVE **SANPAN** "PROFILE" SYSTEM

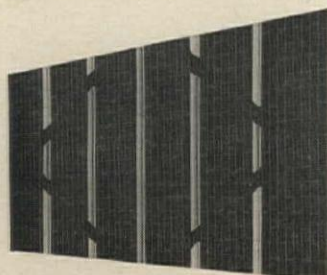


**...MAKES EVERY WALL A NEW DESIGN ADVENTURE!**

Create your own patterns!



*SOME POSSIBILITIES USING  
PROFILE SYSTEM by SANPAN*



Create your own "Profile" shape!

A wall is **more** than "just a wall" when designing with SANPAN "Profiles". Aluminum "Architectural" Profiles mount quickly and securely to extended vertical mullions in unlimited random or symmetrical patterns. **Concealed fasteners** assure uncluttered design. Shown best in tests and actual installations, SANPAN may cost you no more...yet offers so many more quality features. For your next "Special Wall", use SANPAN...cut glare...control light...insulate...and make the wall "come alive" with PROFILE!

*For further information on SANPAN Translucent Panels...  
SANPAN "Profile" System...or Colorscreen Translucent  
Partitions and Facades, write:*



**PANEL STRUCTURES INC.**

45 Greenwood Ave., East Orange, New Jersey

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# How the Dodge Reporter helped erect this modern air terminal



Memphis, Tennessee, is a spot where mid-continent air routes converge. Because it is served both by large airlines and smaller feeder lines, many passengers make flight connections at Memphis, adding their numbers to the passengers beginning or ending flights there. Clearly, Memphis needed an air terminal in which this traffic could circulate smoothly, without congestion.

The new Metropolitan Airport Terminal, designed by architects Mann & Harrover, answers this need. Its multi-level layout enables deplaning passengers to exit at ground level, and emplaning passengers to enter main terminal facilities on the second floor via an elevated roadway. The third level consists of a mezzanine and observation deck. A Y-shaped concourse extending from the main terminal leads to plane gates.

"The Dodge Reporter helped us greatly by transmitting our needs to contractors and suppliers," said Partner Roy Harrover. "This way, suppliers came prepared to make helpful suggestions concerning materials and products. Also, we were able to review work loads of available contractors, so bid dates could be scheduled with a minimum of conflict."

Metropolitan Airport Terminal, Memphis, Tennessee  
Architects: Mann & Harrover  
Contractor: J. A. Jones Construction Company

To a person approaching the terminal building, the most noticeable and striking element is its soaring roof. A hyperbolic paraboloid roof design was chosen to impart scale, dignity and symbolic visual impact to the building. Its subtle lightness relates the building to the air above. An equally important relationship of building to ground is achieved by the horizontal concrete and masonry masses of the concourse and two lower floors. These masonry walls, with their absence of windows, plus the reinforced concrete structure, insulate the building against jet blast and noise.



## DODGE REPORTS

F. W. DODGE COMPANY  
A Division of McGraw-Hill, Inc.  
330 West 42nd Street, New York

# 4 proven cost cutters from Crawford



## 1. DON'T BUY "HALF-A-DOOR"

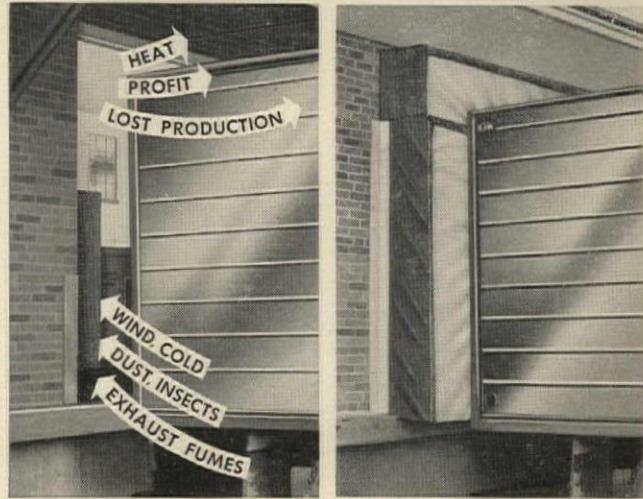
Any industrial door worth having is part of a "package" which **MUST** include after-service to keep the door in good, safe working condition through the many years that a good door lasts. Any door without assured competent after-service is only "half-a-door" and lands you in trouble every time a truck nudges it out of commission. Every Crawford Door is backed by a factory-trained local service crew. Many of the service trucks are radio-dispatched. You're safe with Crawford.



## 2. ELECTRIC OPERATORS and CONTROL SYSTEMS CUT COSTS 3 WAYS

a) **IN MANPOWER**, by ending need for man to stop work, open door, wait for vehicle, close door, walk back to work and go all through it again when the vehicle leaves. Often, man-hours saved in a single year could pay for the operator. b) **IN HEAT AND PROCESSED AIR**. Manually operated doors often are left open needlessly. A power-operated door and one of the many available Crawford Control Systems ends this waste. c) **IN EQUIPMENT**. Manually

operated doors are, often, literally "banged to pieces" involving needless service costs. But, an operator "gentles" the door; never shoots it up or slams it down. Like good service, an operator is "life-insurance" for any door.



## 3. DON'T LET PROFITS BLOW AWAY THROUGH UNSEALED DOORS

Introduction of Crawford Dor-Seal revealed an amazing need for these resilient pads which surround a dock door opening, shut out weather and contamination and seal in heat, processed air, employee comfort and—profits. Also, by cushioning the truck or trailer rear end, eliminate damage to doors and hinges, save costly delays and repairs. Easily installed on any door, adjustable, and save their small cost very quickly.



## 4. MOVABLE MULLIONS CAN CUT DOOR COSTS AND SPEED UP TRAFFIC MOVEMENT

Crawford Removable Mullions (Patented) give big, unobstructed openings by using batteries of smaller doors with these removable posts between. This combination is practically always the least costly way to get wide, clear-span openings for free and easy traffic movement and yet have a good, substantial closure instantly available. Mullions weigh only 2½ lbs. per foot, are easily handled; lock into place, lift out in a jiffy. For literature on any or all of these cost-cutters, call your local Crawford Door Distributor, listed under **DOORS** in the Yellow Pages or write direct.

**CRAWFORD DOOR CO., 20263-58 Hoover Rd., Detroit 5, Michigan**

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# ARCHITECTURAL RECORD

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ABBREVIATIONS: BTS—Building Types Study; AE—Architectural Engineering; TSS—Time-Saver Standards; BC—Building Components.

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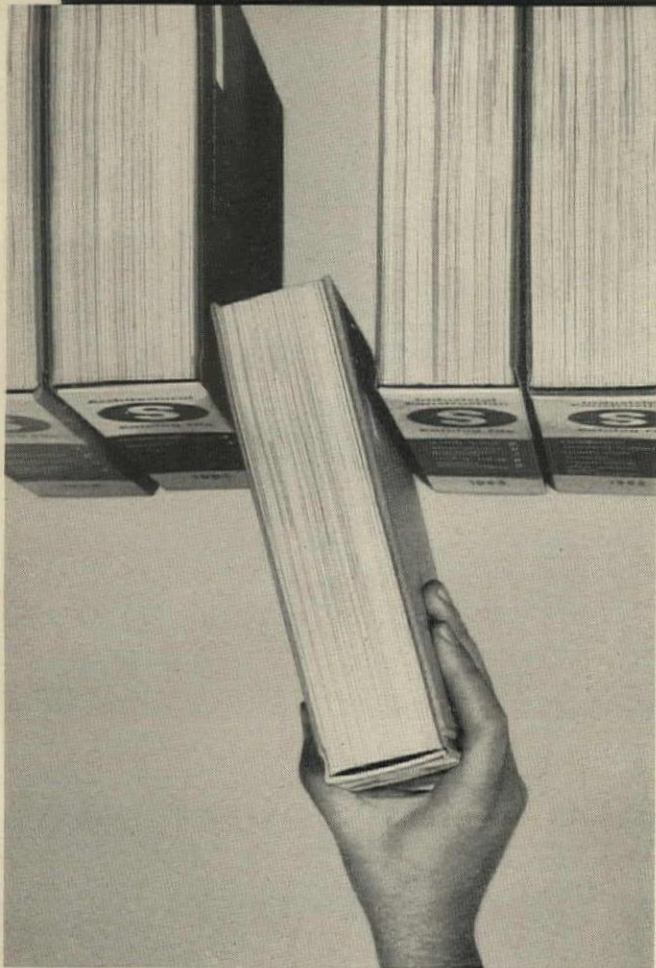
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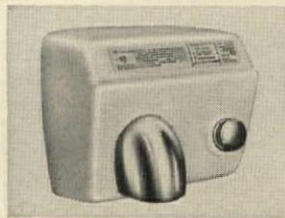


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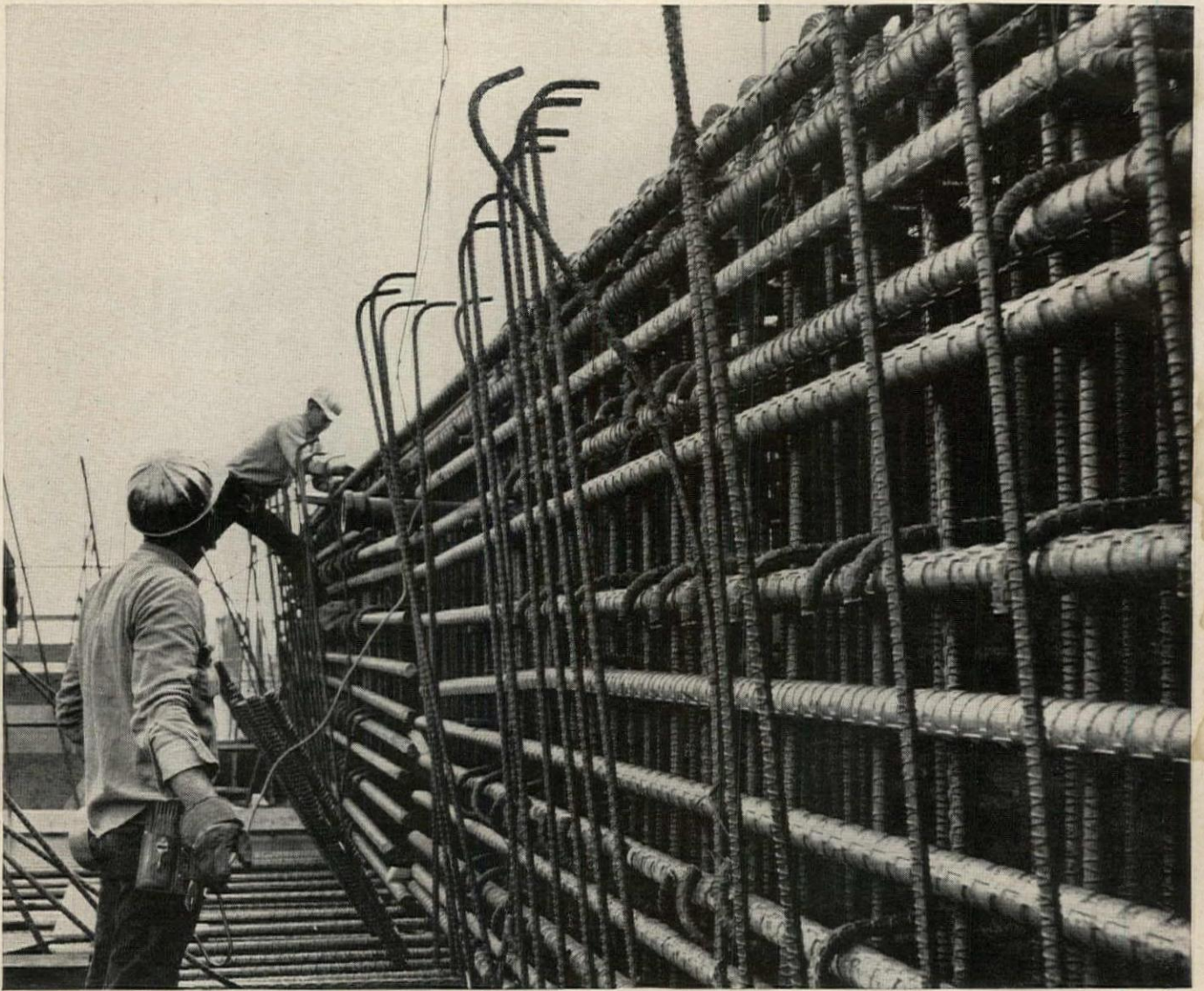
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