



ARCHITECTURAL RECORD

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BUILDING TYPES STUDY: APARTMENTS

"THE WAVY LINE VERSUS THE CUBE" BY LEWIS MUMFORD

OFFICE TOWER IN CHICAGO

FULL CONTENTS ON PAGES 4 & 5



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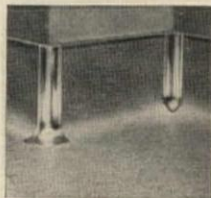
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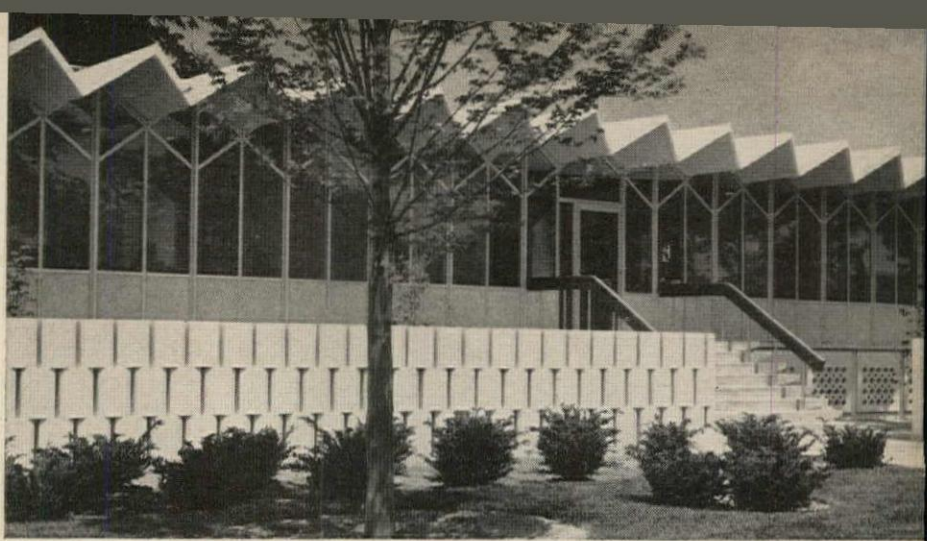
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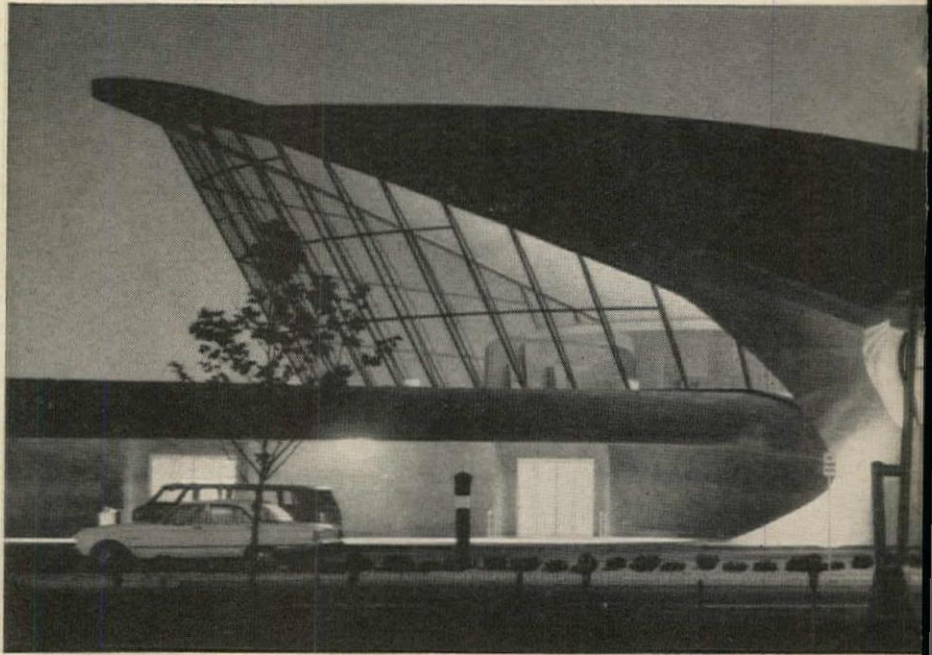
FOLDED

American Concrete Institute Headquarters, Detroit. Architects-Engineers: Minoru Yamasaki and Associates. General Contractors: Pulte-Strang, Inc. Oildraulic Passenger Elevator.



CURVED

Trans World Flight Center, New York City. Architects: Eero Saarinen & Associates. General Contractor: Grove, Shepherd, Wilson & Kruge, Inc. Oildraulic elevating equipment installed by Burlington Elevators, Inc.: two passenger elevators, freight elevator, Levelator Lift, two Leva-Dock Ramps.



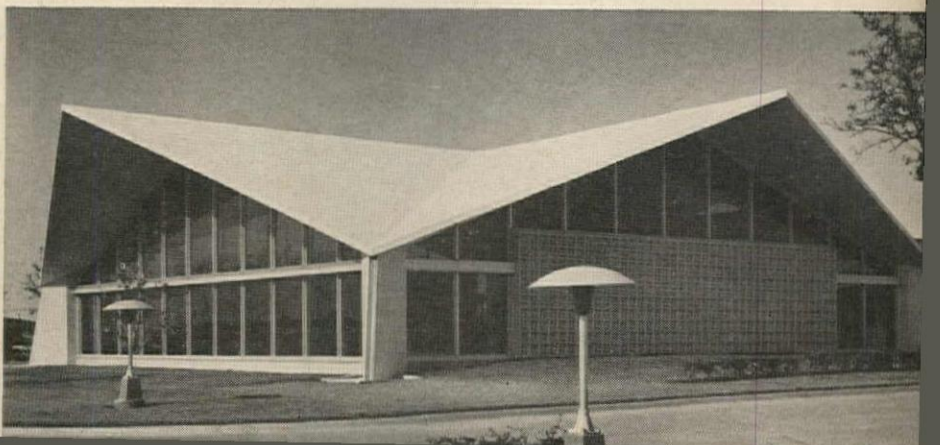
FLAT

General Electric Office Building, 201 University, Denver. Architect: Moore & Bush, Denver. General Contractor: N. G. Petry Construction Co., Denver. Oildraulic passenger elevator installed by Dover Elevator Co.

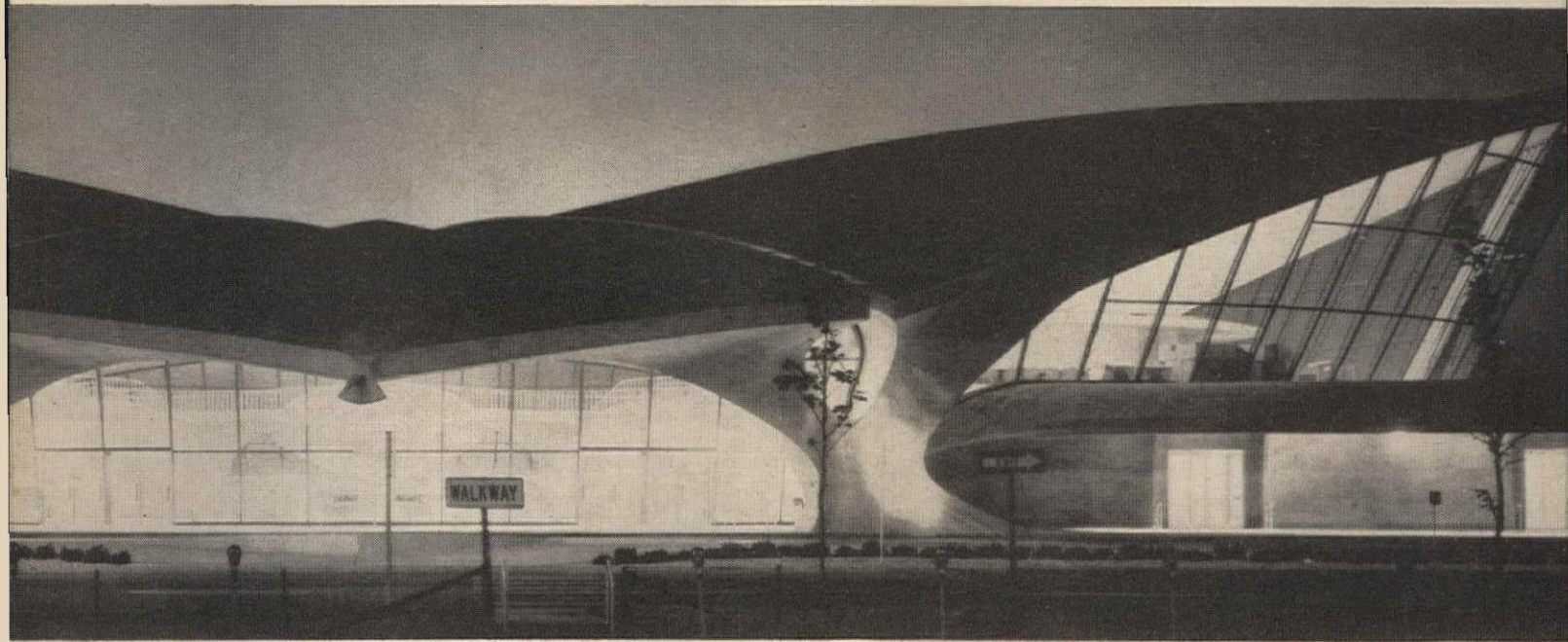


PEAKED

Allstate Insurance Company, Dallas. Architect: George L. Dahl, Architects and Engineers. General Contractor: Inwood Construction Co. Oildraulic passenger elevator installed by Hunter-Hayes Elevator Co.

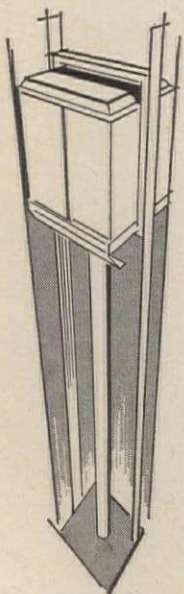


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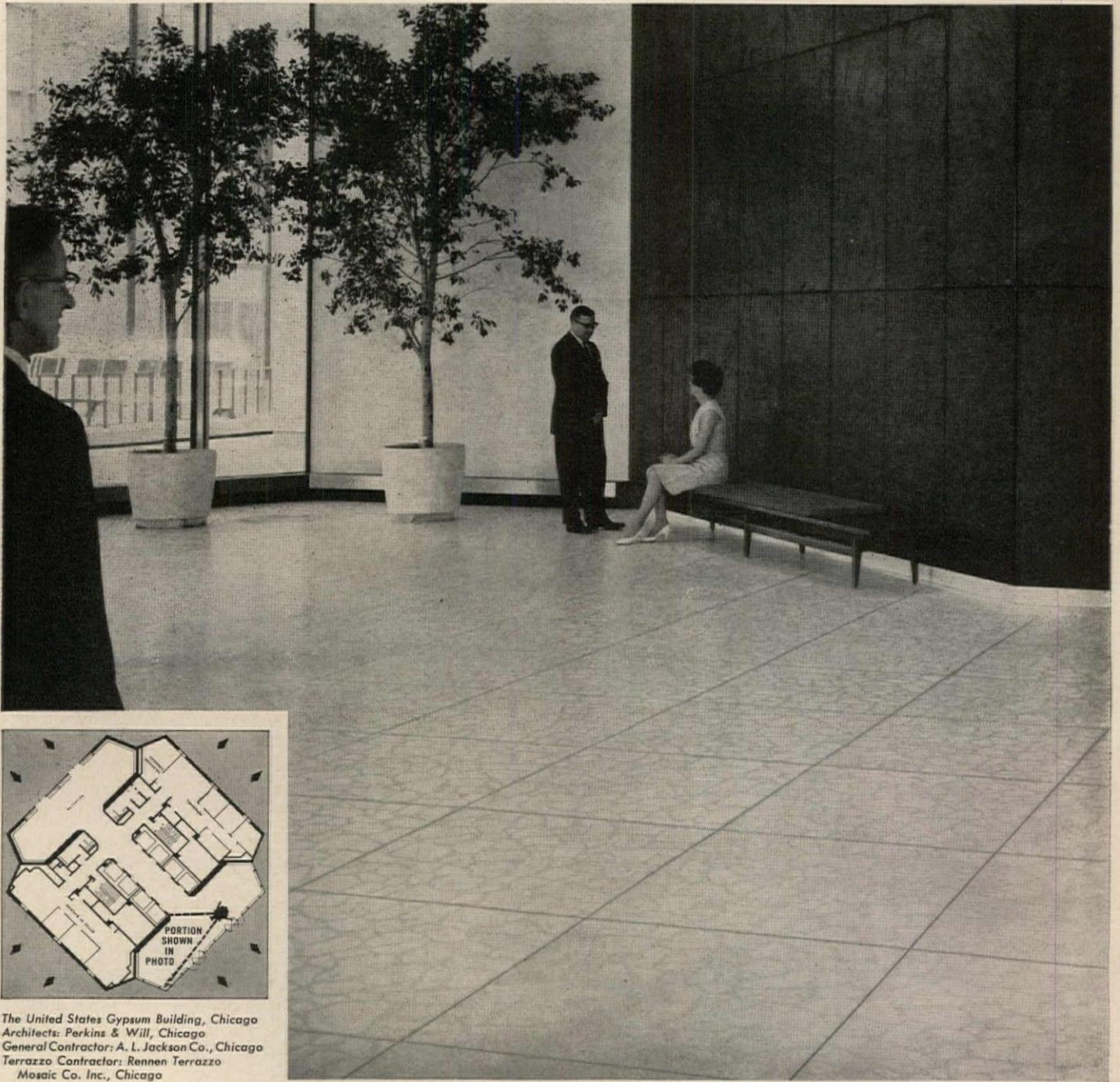
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 General Contractor: A. L. Jackson Co., Chicago
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A Hero is not MADE

It is with a sense of yielding to temptation that I report a bit of an argument. It was a friendly but nevertheless sharp little argument over the making of heroes by the architecture magazines. The charge is not new; it is about as old as the magazines. The sense of pleasure with which I meet this criticism I shall explain later.

The charge is, of course, that the architecture magazines are guilty of building up hero images through the extensive publication of the work of certain architects. There is always the implication of journalistic juggling, or at least of naive blindness to the consequences of our acts.

As for our intentions, I shall protest, sir, that our intentions are honorable. We NEVER consciously attempt to boost anybody onto a pedestal. I shall not deny that we are influenced by fame. We search assiduously for creative talent, and we are eager to applaud it and publicize it. But we hold steadfast to the thought that we are publishing work, not men. All of us have at times had occasion to refuse to publish a project by some famous architect because, in our judgment, that particular project was not significant. We get satisfaction out of publishing good work by famous architects, but nowhere does cynicism rear its ugly head so quickly as in editorial offices. As for naiveté, tut, tut, tut. I guess we have a few heroes, but we need more than we have.

Names make news—yes, of course. But let us take our work more seriously; architecture makes news.

Newspapers, movies and picture magazines deal with murder, robbery or rape, and thus build circulation. There are thrills in professional magazines, but they are the satisfactions of work and accomplishment. A photograph of a great building may stir a reader, one hopes, but one does not expect to excite a seasoned veteran with a name.

The editor tries (perhaps I should speak for myself) to publish even great work with some objectiveness. Yes, we are politely positive when we can be, but we tend to hold back on the adjectives. Ours to report; yours to judge. We shall not be so patronizing as to prejudice everything for you.

You do make the judgments, you readers. In each issue we publish work of many architects; you select the nominations for the hall of fame. One spectacular idea may go out and fall lifeless; another starts a wave of excitement and perhaps a bustle to copy.

You think WE make heroes? The occasion of this particular little argument was a cocktail party marking the opening of the Arts and Architecture Building at Yale, by Paul Rudolph. Invitations went to 3,000 "figures" in architecture circles; 500 were expected; 2,300 attended. There were more discussions of architecture floating around that night than in many a moon. Paul knows how much of the babble was controversy, but 2,300 people from all over the East considered it an occasion not to be missed. Now the RECORD published the building in some beautiful drawings (April 1963), but there had been almost no publication of the finished building yet (coming next month) in the architectural press. I should like to think that our early publication of it was the reason for such a turnout, but I should have to believe that architecture was the drawing card. Publication is a mechanism of communication—yes, an important one—but design is the basic message. Hero images come from the response, only incidentally from the publication.

And when you point a finger at us and charge us with undue influence, you are worrying about some other fellow, not yourself. You know perfectly well that you want to know what other architects are doing, and that you can take care of yourself as to undue influence. Well, so can the other fellow. It is good, not bad, to be exposed to ideas.

I spoke in the beginning about pleasure in such an argument. Nobody really dislikes being charged with having too much influence, even when he doesn't believe it. But the greater pleasure comes, said the editor with a tear in his eye, from the realization of the tremendous interest, not to say passion, of the architect for his calling, and of his consequent concern for his publications.

—Emerson Goble

PRESIDENT JOHNSON AND PUBLIC ARCHITECTURE: CONVICTIONS ON ARCHITECT'S ROLE RECALLED

The architectural legacy of John Fitzgerald Kennedy's tragically abbreviated Administration can be claimed for the nation only through the actions of succeeding Administrations; and the architectural world will be watching for indications of the new President's attitudes on key matters relating to public architectural policy as it was developing in the Kennedy years.

Will President Johnson believe that "good design is not optional" for Federal buildings and that "major emphasis should be placed on the choice of designs that embody the finest contemporary American architectural thought"? Will he support the concept of enrolling "the foremost architects of the nation" to advise Federal agencies on architectural matters? Will he consider that architects have a role of consummate importance in the rebuilding of U.S. cities and the preservation and renewal of their historic sites?

It was not to be expected that such questions would be among the first to be answered in the frenzied activity of President Johnson's first weeks in office. But his first public reference to future development of Washington, D.C., made November 29 in a statement affirming his interest in the problems of the District of Columbia, did suggest that he would be sympathetic to the goals of the Pennsylvania Avenue Redevelopment Plan which was awaiting President Kennedy's review at the time of his death. "A great nation deserves—indeed, requires—a beautiful and inspiring national Capital," President Johnson said. "We shall do everything possible to achieve this goal."

And Mr. Johnson's views on architects and architecture generally, and on the role of the private architect in public building, were rather fully set forth in an address he made to the Texas Society of Architects some 10 years ago, when he was Senate Minority Leader. His words seem worth recalling now. (The address was published in full in the February 1954 issue of the RECORD, pages 24 *et seq.*)

Mr. Johnson began by commenting on the contemporary trend toward specialization and then, after ac-

knowledging the inevitability of that trend, continued:

"But there are dangers in the trend. Somewhere there must be people who can put the highly complicated machines together. Somewhere there must be men who know how to adapt the tools of one field to another.

"As I understand it, that is the function of the architect. He is the man who understands the complete job—from inspiration and design to completion and use.

"In the modern world he is one of the few who can really look at a project and say: "That is mine—from start to finish."

Recalling his considerable experience as Congressman and Senator with matters relating to public construction, Mr. Johnson discussed his concern over the huge cost of public works, and his investigation, as chairman of the Senate Preparedness Committee during the preceding Congress, of the conduct of Federal construction projects:

"In almost every outstanding instance of high and unnecessary cost, there was one common characteristic. It was the lack of a plan—the lack of supervisors who understood the overall requirements of construction.

"In the case of construction, I checked to determine the extent to which the Federal government made use of architects. I found that it was far more limited than I had assumed.

"Many agencies seemed reluctant to concede the status of architects as a profession. In many instances—particularly in the military—they appeared to be 'engineer'-minded.

"I have no intention of decrying engineers. It is an ancient and honorable profession—one that commands much respect. I do not, however, expect an engineer to perform the architect's work any more than I expect the architect to play the role of engineer."

Mr. Johnson went on to comment on his investigation of problems of North African air base construction and the "two glaring failures" he found:

"First, there was an almost complete lack of advance planning. The job was tackled in such a haphazard

way that the planlessness seemed determined.

"Second, the architect-engineer was reduced at the start to the status of a subordinate to the district engineer. He could make recommendations, but they could be—and usually were—over-ruled.

"In other words, the organization specifically charged with inspection and supervision was permitted only to inspect.

"When we dug into the files, we found that practically all of the more glaring deficiencies had been spotted in advance by the architect-engineer. But his warnings were not heeded. About all he could do was protest. Nobody paid much attention until the Preparedness Committee became interested.

"There was no evidence of fraud or deceit. It was simply that the men on the job had no concept of the role the architect could play. They did not appreciate the value of long-term over-all planning."

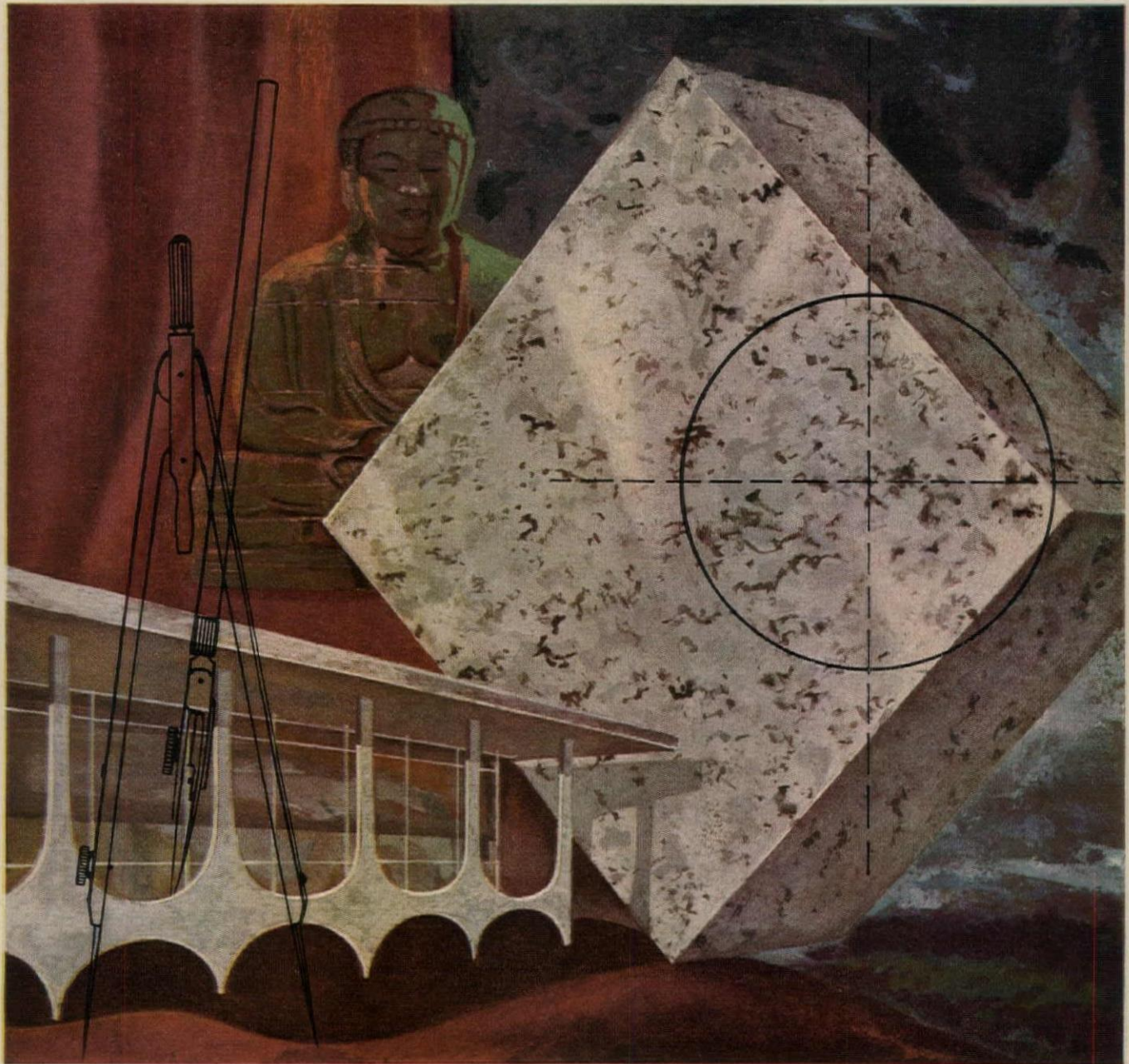
Reporting on a check he had recently made as to the policies of Federal construction agencies on the use of private architects, Mr. Johnson commented:

"I could not avoid the feeling that many of the agencies were unaware of the potentialities of the architect's profession. Certainly in most of their transactions they prefer to deal through their own staff architects rather than with the profession as a whole. I intend to look further into this situation."

As for future objectives, Mr. Johnson had this to say:

"We must plan our construction in line with over-all policies which do not have Federal bureaus working against each other.

"As architects, you are uniquely qualified to make a contribution in this field. You have the experience which has given you insight into the problems of coordination. . . . As our problems become more complicated, I feel certain there will be heavier demand for your services. I know you will respond with a will and enthusiasm that will justify the esteem and respect in which your profession is held."

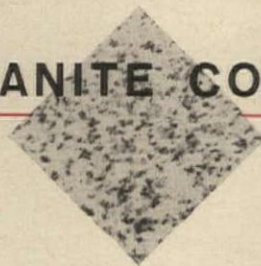


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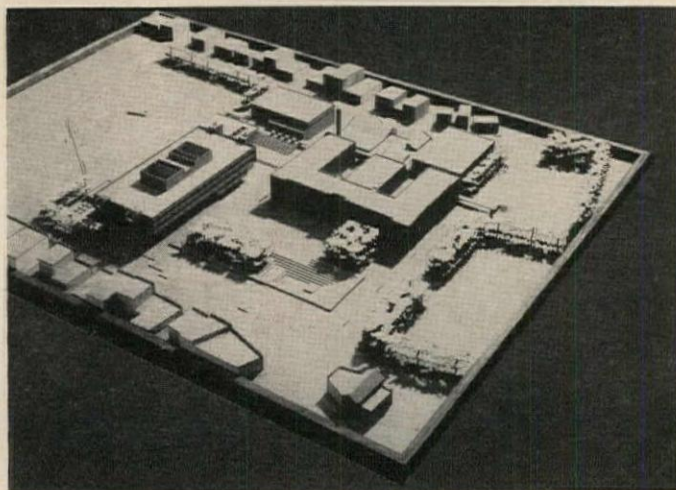
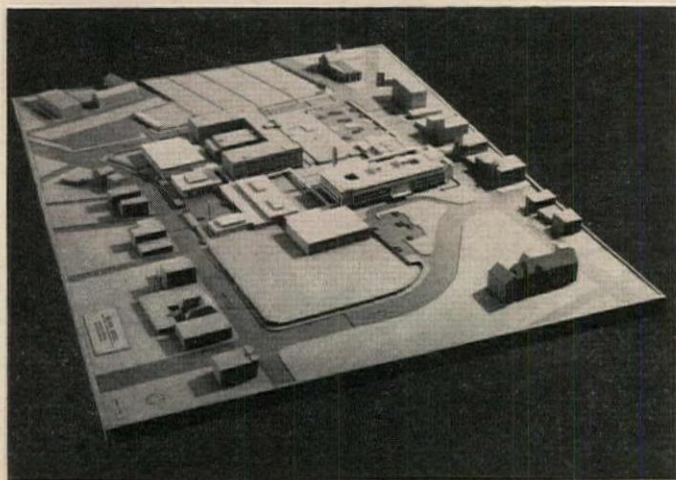
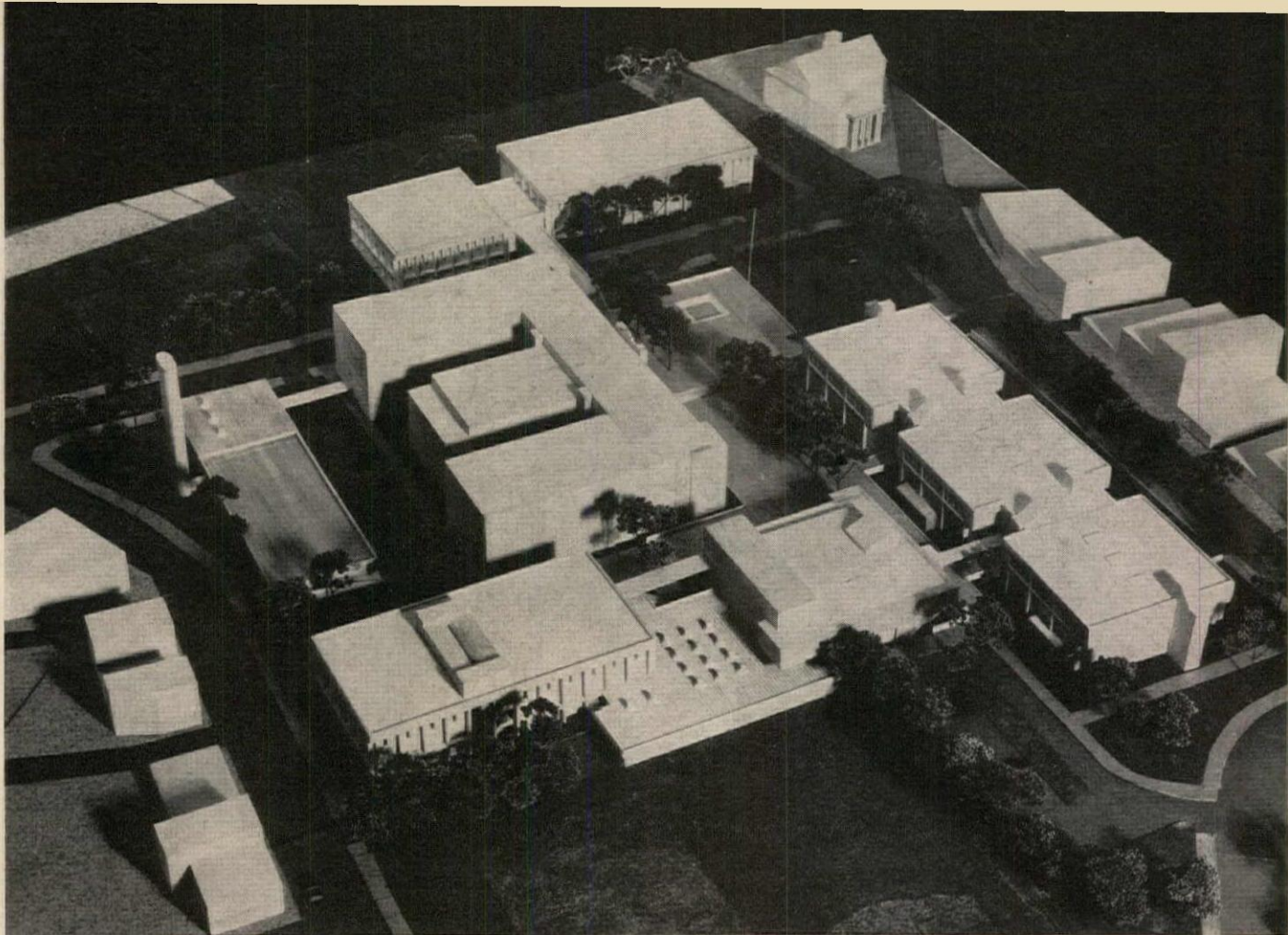
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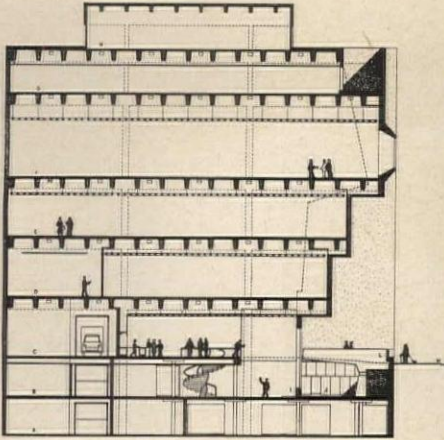


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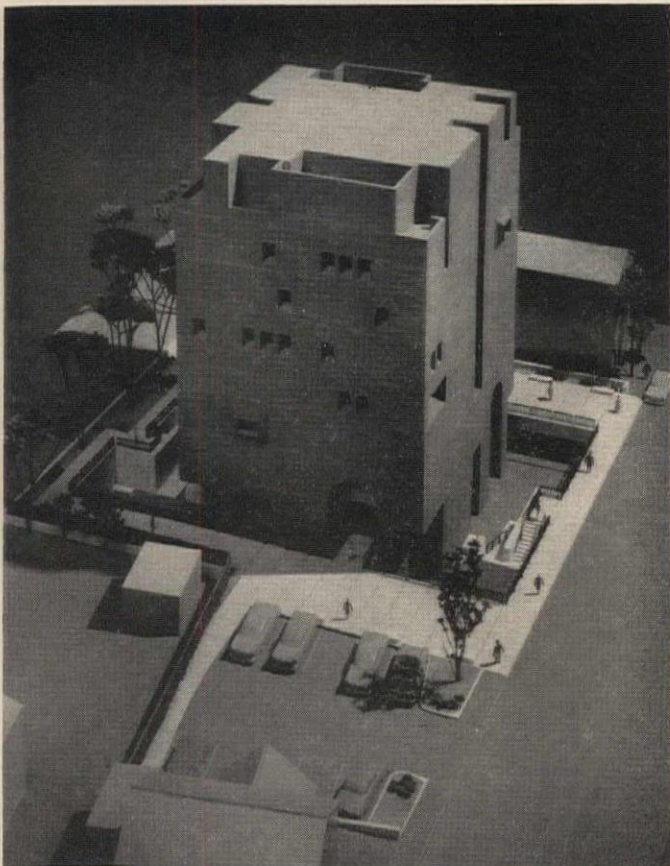
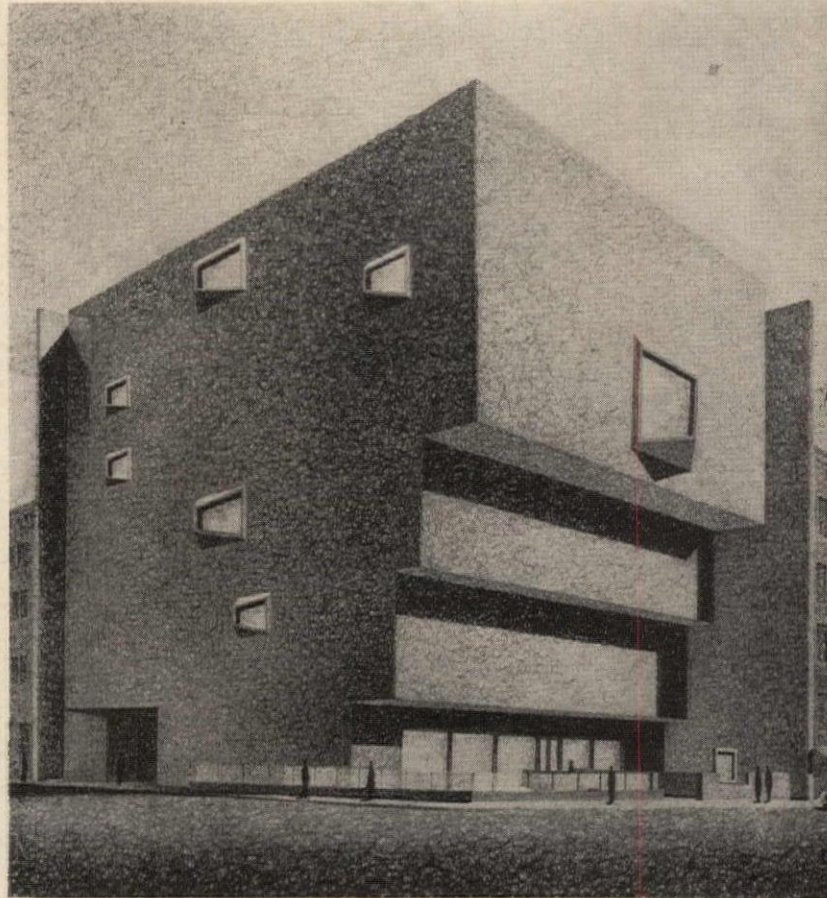
Providence Education Center

In conducting a competition for a Classical-Central Education Center, Providence, R.I., simultaneously faced its educational and urban renewal problems: its two major high schools, Classical and Central, needed, respectively, replacement and addition; and one of its major downtown areas, Weybossett Hill, was scheduled for urban renewal. The first award in the competition, carrying a prize of \$25,000, was presented to the entry of architects Albert Harkness and Peter Geddes and The Architects Collaborative (*above*). Second prize, of \$5,000, went to Fenton G. Keyes Associates (*left, top*); and third prize, of \$2,000, to David Aldrich and Geometrics Inc. (*left, bottom*). Monetary awards (not shown) were given to entries from MacConnell, Davies, Wolf and Flansburgh; from Edward O. Ekman and Associates; and from Percival Goodman, F.A.I.A. Honorable mentions were awarded to Robinson, Green and Beretta, and to Perkins & Will and Kent, Cruise & Associates. Professional adviser was Walter F. Bogner, F.A.I.A.



Another New Whitney

Having sold its eight-year-old home to the Museum of Modern Art, New York's Whitney Museum of American Art plans new quarters at 75th Street and Madison Avenue. Particular effort has been made by architects Marcel Breuer and Hamilton Smith to welcome passers-by into the museum by taking the museum half-way to meet them. Passers-by will look from the street down into a sculpture garden; visitors will enter by a bridge. The inverted ziggurat shape was chosen to "receive the visitor before he actually enters." Gallery space was designed for flexibility of display and lighting; the windows are merely to preserve some psychological relationship of inside and outside. Facing will be polished dark gray granite.



Harvard School of Education

Harvard University's Graduate School of Education, until recently scattered around the campus in nine buildings, is being consolidated in the school's existing Longfellow Hall and in this new research and teaching center. Architects Caudill, Rowlett, Scott have used red brick, the prevalent material on the campus, for the exterior. Otherwise, the new building bears little resemblance to the neo-Georgian Longfellow Hall which it faces. The decisions to build high and to set the center in a landscaped moat were made to leave ground space and preserve the almost residential feeling of the site. Construction, scheduled to begin early this year, will cost an estimated \$1,600,000. The builder is the Wexler Construction Company.

FHA AWARDS RECOGNIZE ARCHITECTURAL MERIT

To promote good design in Federally guaranteed construction, the Federal Housing Administration has announced the winners of its 1963 Honor Awards for Residential Design. The winners in three categories—single-family housing, multi-family housing, and housing for the elderly—were buildings completed since January 1, 1958, with FHA commitment before construction.

Advisory panels made recommendations to FHA Commissioner P. N. Brownstein. Members of the panels were: for single-family houses—Francis C. Lethbridge, Robert M. O'Donnell, James Landrum, Carl Mitnick and Edith Brazwell Evans; for multi-family housing—Norman J. Schlossman, Thomas Coogan, Arthur Rubloff, Harold Hauf, Paul R. Williams and Carl Feiss; and for housing for the elderly—George E. Kassabaum, Leonard G. Haeger, William H. Scheick, Ralph Rapson and Mother Bernadette.

Merit Award winners not shown here include: House in the Pines, Easton, Md., Edward H. Noakes & Associates, architects; Barrington Terrace Nursing Home, Orlando, Fla., Broleman & Rapp, architects; housing for the elderly, Sylvania, Ohio, Samborn, Steketee, Otis & Evans, architects; Mt. San Antonio Gardens, Pomona, Calif., Kenneth Lind Associates, architects; and Hillcrest Homes, Bozeman, Mont., O. Berg Jr. & Associates, architects.

Also: Capehart housing, Kirtland Air Force Base, Albuquerque, Flatow, Moore, Bryan & Fairburn, architects; Werny House, Tacoma, Wash., Harris, Reed & Wilson, architects; and, for community planning only, Greenhaven, Sacramento, Calif., David B. Whittet, architect.

Multi-family winners are shown on pages 154-162.

First Honor Awards, Elderly



Presbyterian Manor, Boulder, Colo.
Architect: Hobart D. Wagener
Owner: Boulder Presbyterian Housing, Inc.
Contractor: Brown Schrepferman & Co.

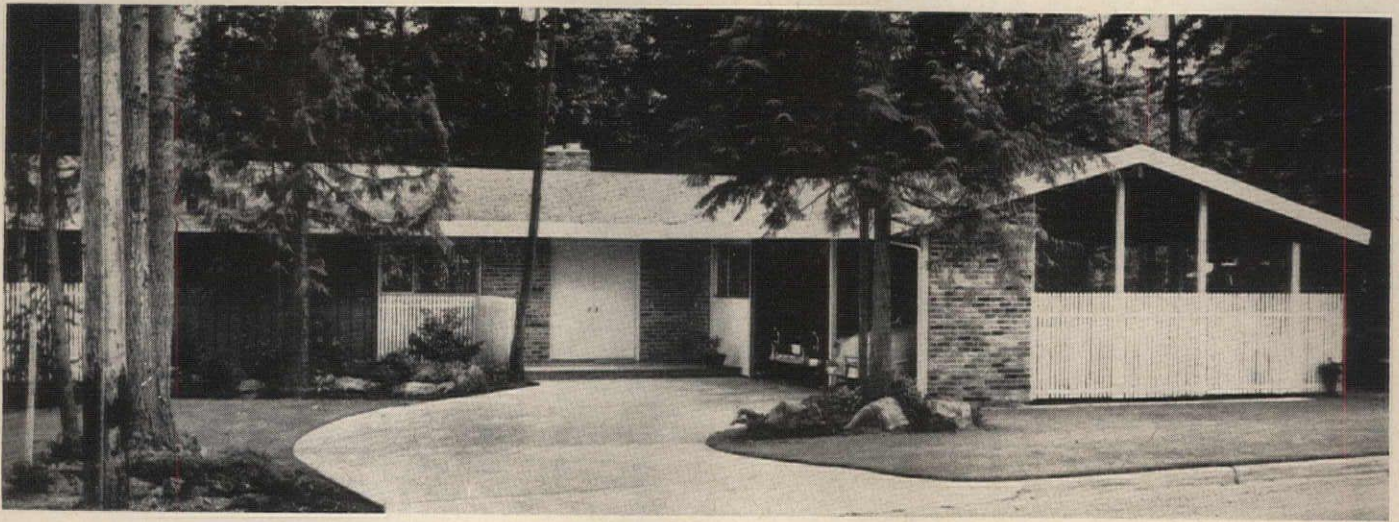


Pilgrim Manor Home for Senior Citizens, Grand Rapids, Mich. Architects: Wold & Bowers, Architects
Owner: Pilgrim Manor, Inc. Contractor: George Datema & Sons

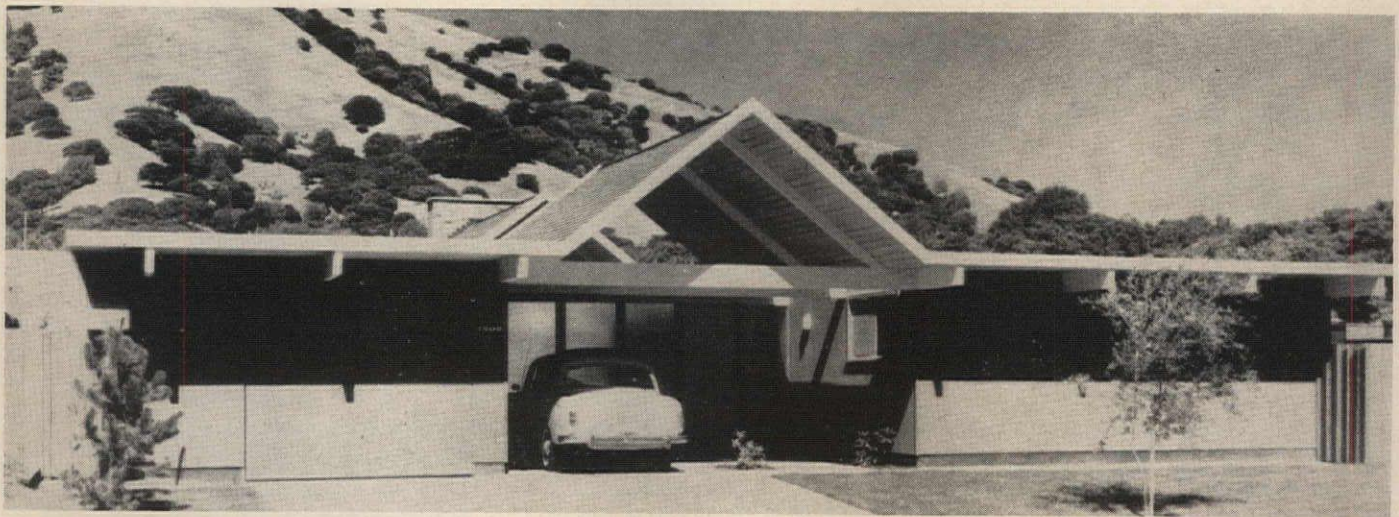


Orangewood, Phoenix, Ariz. Architects: Allan & Olsson, A.I.A.
Owner: American Baptist Estates, Inc. Contractor: The Edward Gray Corp.

First Honor Awards, Single-Family



Owen F. McCusker House, Bellevue, Wash. Architects: L. S. Higgins, A.I.A., & Assoc.
Contractor: Hebb and Narodick Construction Co.



Charles Lembo House, San Rafael, Calif. Architects: Jones & Emmons. Contractor: Eichler Homes, Inc.

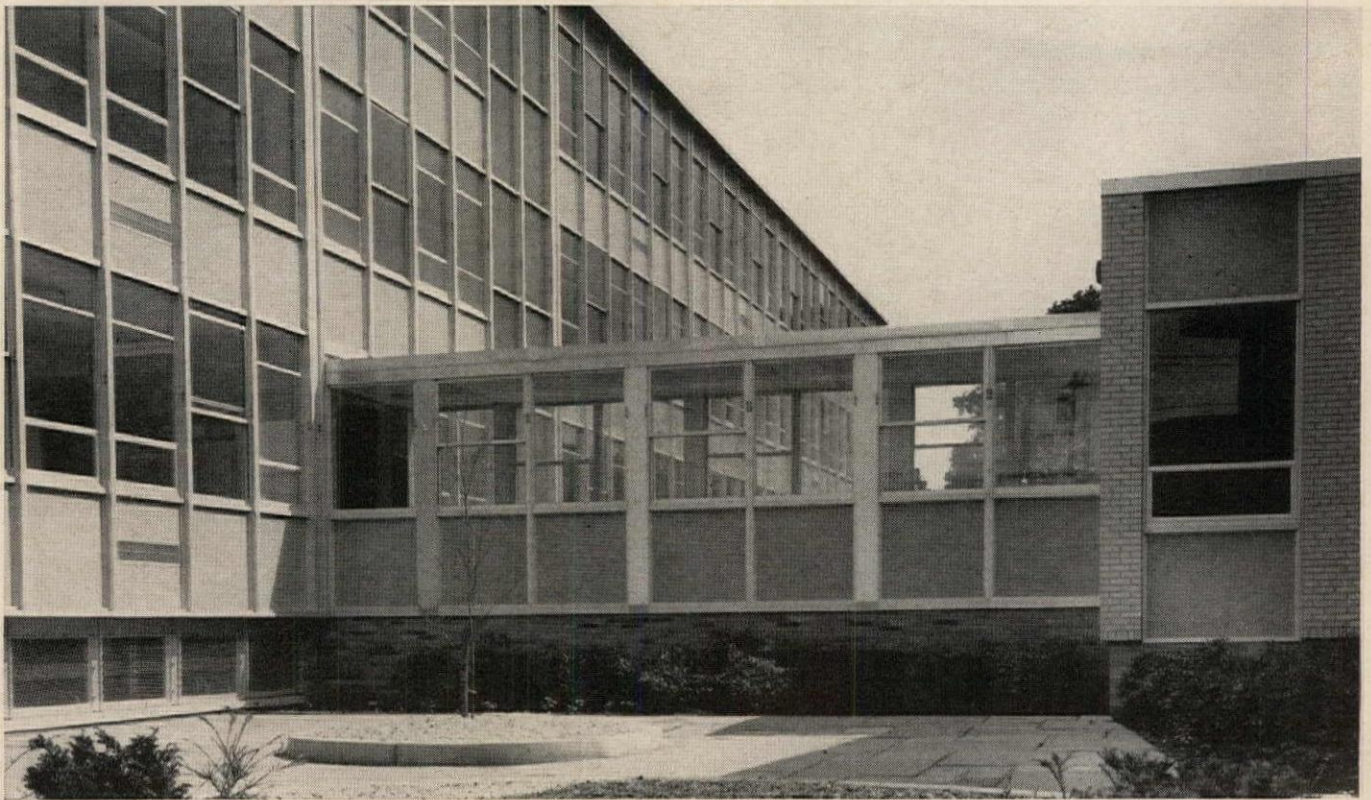


Capehart Housing, McClellan Air Force Base, Calif. Architects: A. Quincy Jones-Frederick E. Emmons
Contractors: Sun Gold, Inc., L. E. Dixon Co. and American Pipe Construction Co.



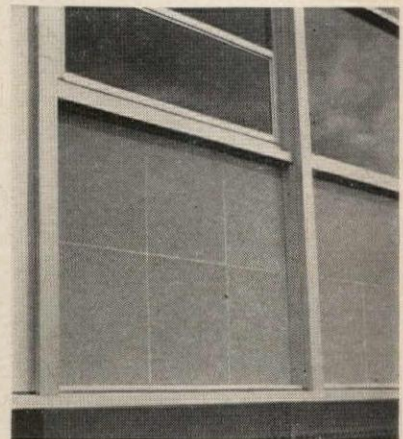
Public School No. 40, Jersey City, N. J. Valdemar H. Paulsen—architect. B. J. Builders, Inc.—builders. CV Durathin Sandwich Panels in bright mottled blue provide a cheerful and dominant color. All panels are 1 $\frac{7}{8}$ " thick with Foamglas insulation. Specified widths vary from 52 $\frac{1}{16}$ " to 59 $\frac{3}{4}$ " while specified heights vary from 17 $\frac{3}{8}$ " to 82 $\frac{5}{16}$ ".

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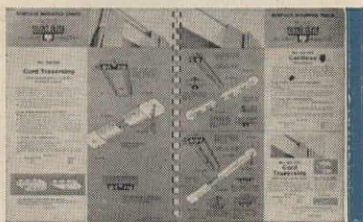
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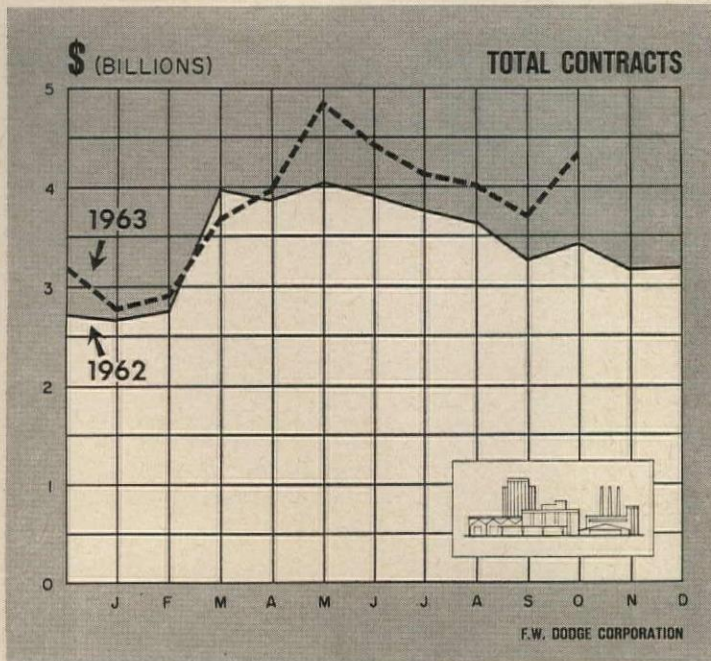
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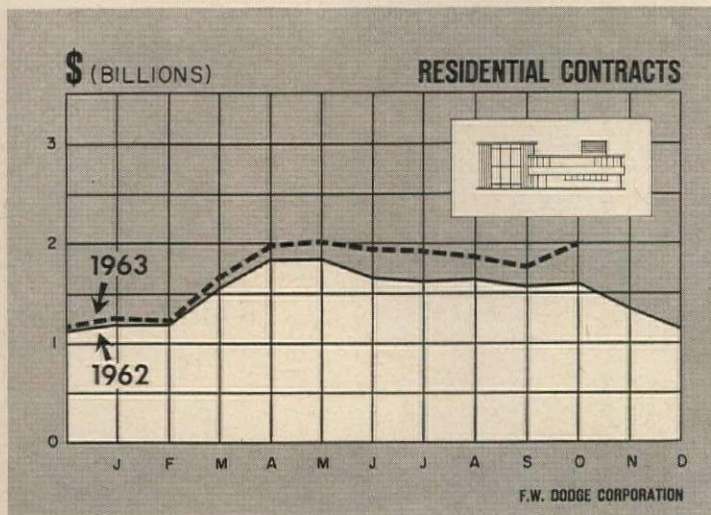
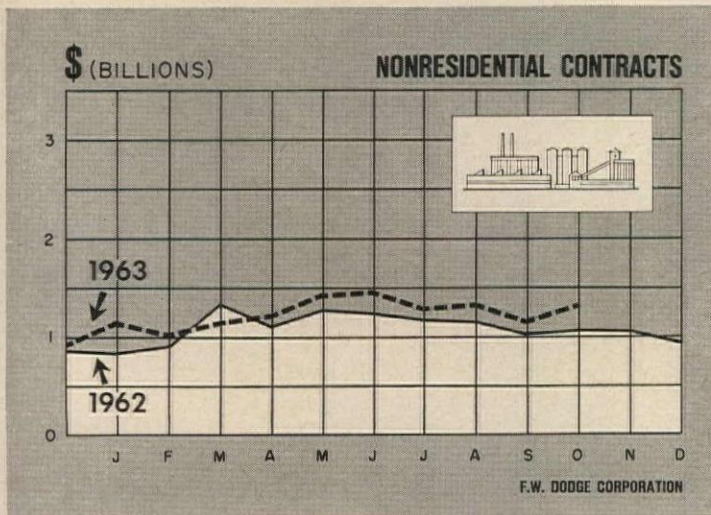
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REGIONAL CONSTRUCTION TRENDS



Total contracts include residential, nonresidential and non-building contracts



The construction industry, unlike most other large industries is made up of so many small, independent contractors operating on a local or regional basis. Because of the local nature of this business, national totals often hide offsetting changes in the various regions of the United States. By examining Dodge contract data for each of eight major geographic regions, this difficulty can be surmounted.

The table below shows how each region's construction trend from 1957 to 1963 stacked up against national performance.

New England	Above	Equal to	Below
Middle Atlantic			
South Eastern			
Ohio Valley	Above	Equal to	Below
North Central			
East South Central	Above	Equal to	
West South Central	Above	Equal to	
West	Above	Equal to	

It must be stressed that the table indicates differences in rates of growth; all eight regions have posted gains in the dollar volume of construction over the seven year period.

Of the regions whose trends have been above the nation's, contract value in the West has been increasing the fastest, spurred by the rising volume of residential contracts. Paced by California, the rate of population growth in the Western states has been increasing at more than twice the national average, creating a huge demand for housing.

However, population isn't the whole story of housing demand. The relatively low-income South Eastern states have had an above-average rise in the number of its inhabitants; but residential construction activity only paralleled the national trend until 1963, when contract value began to climb more rapidly. Until last year, it was nonresidential building, boosted by the movement of businessmen south to take advantage of natural resources, markets and lower comparative costs, that kept contract value above the national trend.

The East South Central states also have been beneficially affected by business migration. Construction activity grew from 1957 to 1959, then faltered for two years, dropping back to the 1957 level. Since 1961, however, rapid percentage growth in both residential and nonresidential contract volume has pushed total contract value up at a rate that is even faster than the West's.

In the nation's "Industrial Heartland"—Ohio Valley and North Central regions—much of the below-average construction activity is traceable, directly and indirectly, to lagging durable goods output. During the last several years, heavy industry has been plagued by sluggish markets and excess capacity which has curtailed nonresidential construction. On top of this, the regions' relatively slow growth in population and income dampened residential building.

Construction in the remaining three regions has just about stayed even with the United States trend. Nonresidential contract value in the New England states was slightly above the national trend, balancing off a small relative decline in residential building. In the Middle Atlantic region, the moderate upward trend in residential contracts was offset by a drop in non-building construction; nonresidential contract value followed the national trend. Finally, in the West South Central section, both residential and nonresidential construction closely paralleled the United States trend.

Henry C. F. Arnold, Economist
F. W. Dodge Company
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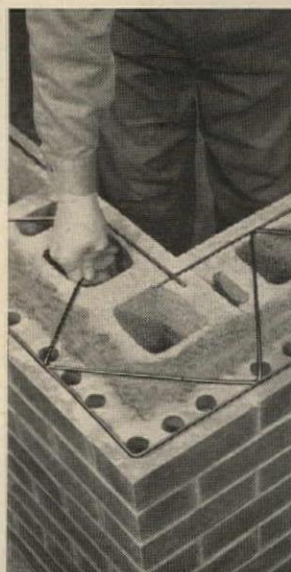
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Building Construction Costs

By Myron L. Matthews

Manager-Editor, *Dow Building Cost Calculator*,
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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—DECEMBER 1963
1941 Average for each city = 100.0

Metropolitan Area	Cost Differential	Current Dow Index		Per Cent Change Year Ago Res. & Nonres.
		Residential	Nonresidential	
U.S. AVERAGE—21 Cities	8.5	261.7	278.8	+2.35
Atlanta	7.1	293.1	310.9	+2.30
Baltimore	8.0	264.7	281.6	+1.65
Birmingham	7.4	242.6	260.9	+2.88
Boston	8.4	234.8	248.5	+1.95
Chicago	8.8	291.6	306.7	+2.51
Cincinnati	8.8	252.8	268.7	+1.92
Cleveland	9.3	264.4	281.0	+2.48
Dallas	7.8	248.4	256.5	+1.60
Denver	8.3	270.0	287.0	+3.20
Detroit	8.9	263.5	276.6	+2.32
Kansas City	8.3	238.3	252.3	+3.06
Los Angeles	8.4	265.2	290.1	+1.04
Miami	8.4	260.9	273.9	+3.28
Minneapolis	8.9	263.1	279.7	+2.29
New Orleans	7.9	238.6	252.8	+1.55
New York	10.0	269.8	290.2	+1.61
Philadelphia	8.7	262.5	275.6	+2.75
Pittsburgh	9.1	246.7	262.3	+2.41
St. Louis	8.9	253.1	268.2	+2.96
San Francisco	8.5	330.8	361.9	+1.96
Seattle	8.5	240.4	268.7	+2.63

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

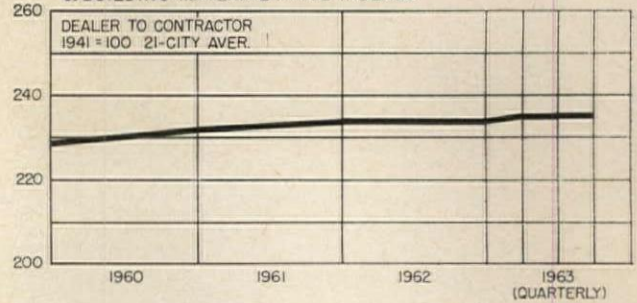
1941 average for each city = 100.0

Metropolitan Area	1947	1952	1957	1958	1959	1960	1961	1962 (Quarterly)				1963 (Quarterly)			
								1st	2nd	3rd	4th	1st	2nd	3rd	4th
U.S. AVERAGE	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	

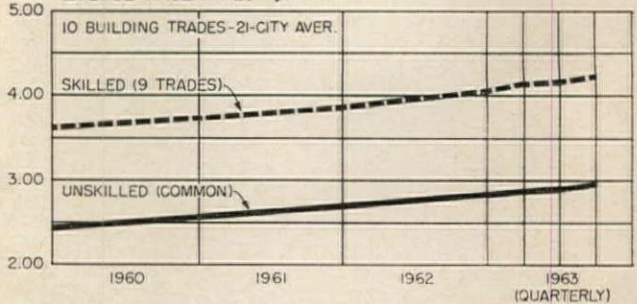
HOW TO USE TABLES AND CHARTS: Building costs may be directly compared to costs in the 1941 base year in tables A and B: an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

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 ($8.0 \div 10.0 = 80\%$) or 20% lower in the second city.

1. BUILDING MATERIAL PRICE INDEXES



2. BASE WAGE RATES \$/HR.



3. MONEY RATE & BOND YIELDS %

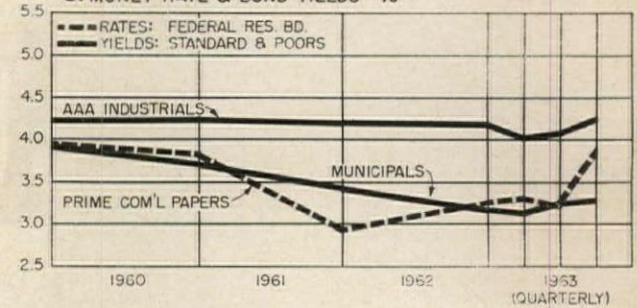
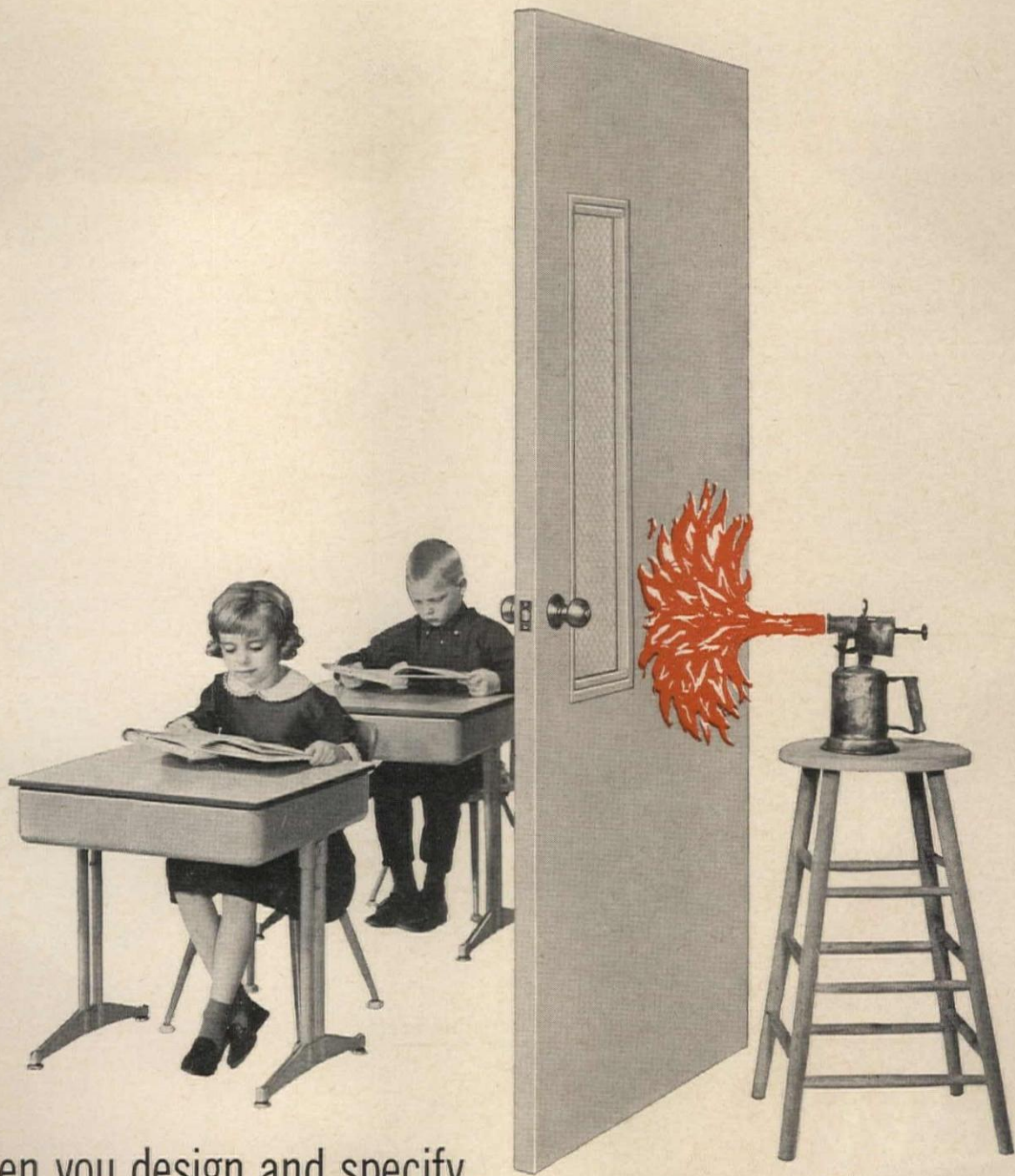


TABLE B. Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other: if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. Also, second period costs are 75% of those of the other date ($150.0 \div 200.0 = 75\%$) 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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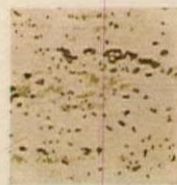
ET-202 GREIGE



SAMPLER



ET-201 IVORY



ET-203 NATURAL CREAM

For more data, circle 8 on Inquiry Card



—Drawn for the RECORD by Alan Dunn

“But Paul Rudolph would have to be ‘explained!’”

PHA AND DESIGN: COMMISSIONER OUTLINES AIMS

“PHA is not afraid of good architecture,” Marie C. McGuire, Commissioner of the Public Housing Administration assured listeners at The Architectural League in an address read December 5 in New York. What PHA would like, she said, is good architectural help in attacking the broad problems of urban design and in fitting public housing into a pattern of total civic excellence.

At the same time, the Commissioner suggested that physical design was not the only, or even the most important, factor in the success of public housing developments. Social and economic factors, especially in the postwar years, have assumed an importance at least as great as physical design. Architects designing public housing, then, must now be prepared to deal with questions of providing for the elderly, and for social services, educational programs, recreation and health clinics.

Housing and the City

Mrs. McGuire more than once indicated PHA's concern with public housing's role in the development of the entire urban complex. “The fu-

ture development of metropolitan areas and public housing projects are and should be virtually indivisible, if for no other reason than the fact that population shifts which have today placed eight out of every 10 Americans in urban areas will continue rather than diminish. Many of these people will be from rural areas attempting to adapt to urban. This transition cannot be achieved by expanding the unimaginative, dull structures on ill-conceived sites which contribute little to community, to livability, and continues clearly defined economic identification and economic segregation.”

PHA, said the Commissioner, is conscious of earlier shortcomings in site selection. “[In the late thirties], too often we sought a cheap site, hopefully away from industrial fumes, but we didn't always mind the tracks or the lack of facilities for opportunity and healthful living.”

The Commissioner further made two specific suggestions for better site design.

For one thing, she said, “What is missing is what Albert Mayer calls ‘the magnetic center’—a center that

attracts people to mingle socially, to promenade, to see and to be seen, to have local and community meetings, dances, concerts and theatrical performances.”

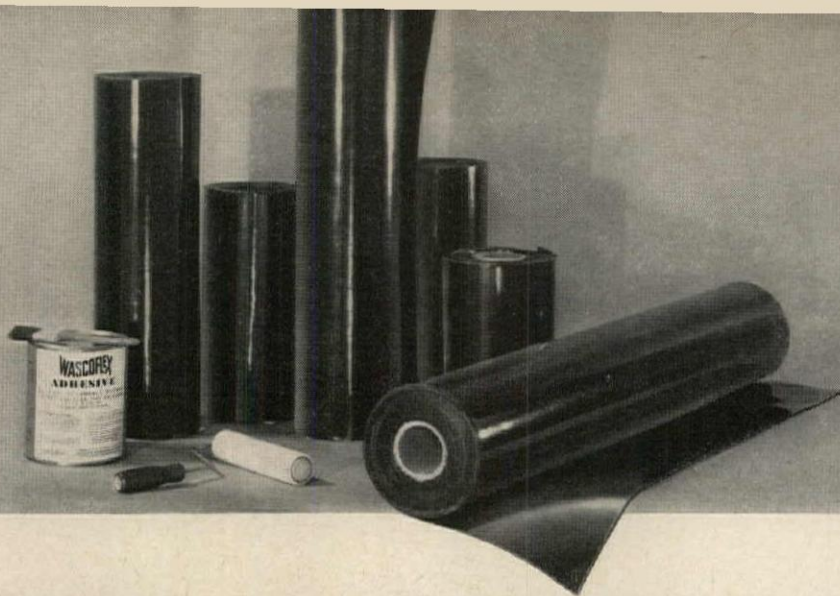
For another, public housing developments should be designed with due respect for their neighborhoods. “Too often in cities around the country, public housing facilities have been so designed that, instead of blending with the architectural patterns surrounding them, they stick out like sore thumbs, creating a sense of pride neither in the occupant nor in the community.”

PHA Programs

Mrs. McGuire went on to outline some of the steps taken by PHA during the past two years “in the pursuit of civic excellence”:

“1. We have selected and established a group of architect-consultants in each region to be called on by the regional director to assist his design staff. These consultants are also available to the local housing authority architect to assist in achieving the best possible solution of spe-

continued on page 59



FROM THE MAKERS OF FAMOUS WASCO FLASHING
CYANAMID ANNOUNCES WASCOFLEX®

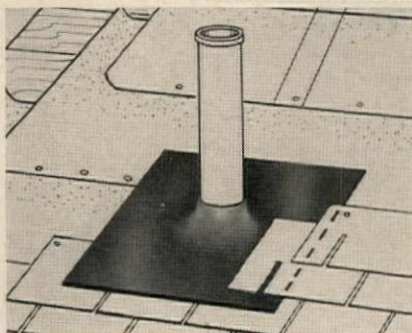
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**withstands greater extremes of temperature... is much tougher
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NEW WASCOFLEX ELASTIC ROOF FLASHING won't get soft and baggy in a heat wave, or get brittle and break up when the thermometer hits bottom. In 500 hours of tests* under the worst of weather conditions, Wascoflex proved its serviceable temperature range is from -30F to 180F. Name another plastic flashing that can equal this performance!

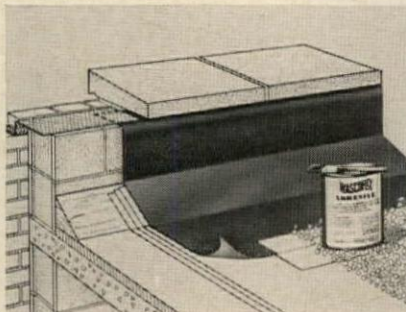
Wascoflex is three times stronger too. Even stretched as much as 50%, it did not break at stresses as high as 3000 psi.

*ASTM Method E-42-57 Type E, Fed-Test Standard 601 Method 4111



Stretches over projections

NEW WASCOFLEX ADHESIVE— in the same test series* — proved itself just as tough as Wascoflex elastic roof flashing. This new, one-step adhesive not only bonds the flashing to itself, but to other materials as well. It holds tight when other adhesives won't, and spreads over twice the area, for real economy.



Shapes easily

WASCOFLEX®

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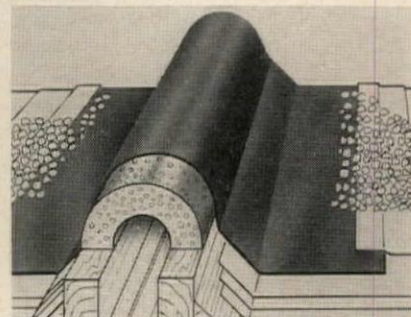
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5 BAY STATE ROAD, CAMBRIDGE 38, MASS.

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NEW WASCOFLEX ROOF EXPANSION JOINT combines all the advantages of Wascoflex with built-in insulation. Prefabricated with an outer layer of Wascoflex and an inner center of flexible foam, it provides expansion up to 4½", and is fast and economical to install.

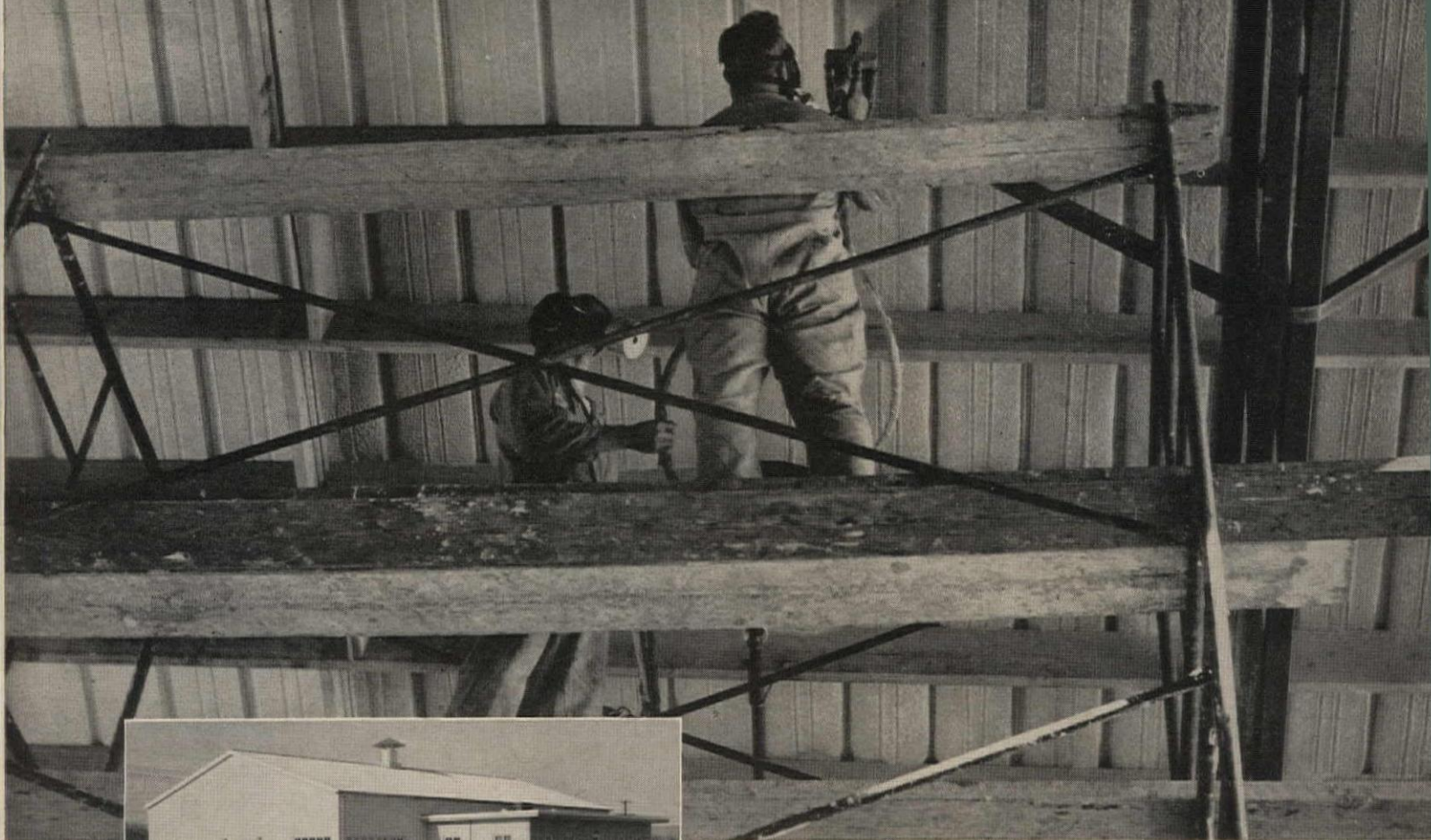
Write for a Wascoflex sample and details of all Wascoflex products. Meanwhile see the complete line of Wasco flashings for every building application in Sweet's Architectural File, 8g/Am or Sweet's Industrial Construction File, 8c/Am.



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Coverage: 10,000 sq. ft.

Time: three men, two days.

The new Carwin applications laboratory building, 7000 square feet with a 20 foot center height, presented an extreme heat loss potential. Insulation could only be applied during the relatively short interval after channeled steel panels had been placed, and before special wiring and piping began. Enjoying a unique opportunity of spraying PAPI one-shot rigid foam insulation on the very building they were to occupy, Carwin's own laboratory personnel laid it on lightly — it didn't take much — to produce the most efficient insulation at minimum cost. Come and see for yourself, or write us for the whole story on PAPI polymethylene polyphenylisocyanate.

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BOSTON'S STATE GOVERNMENT CENTER APPROVED

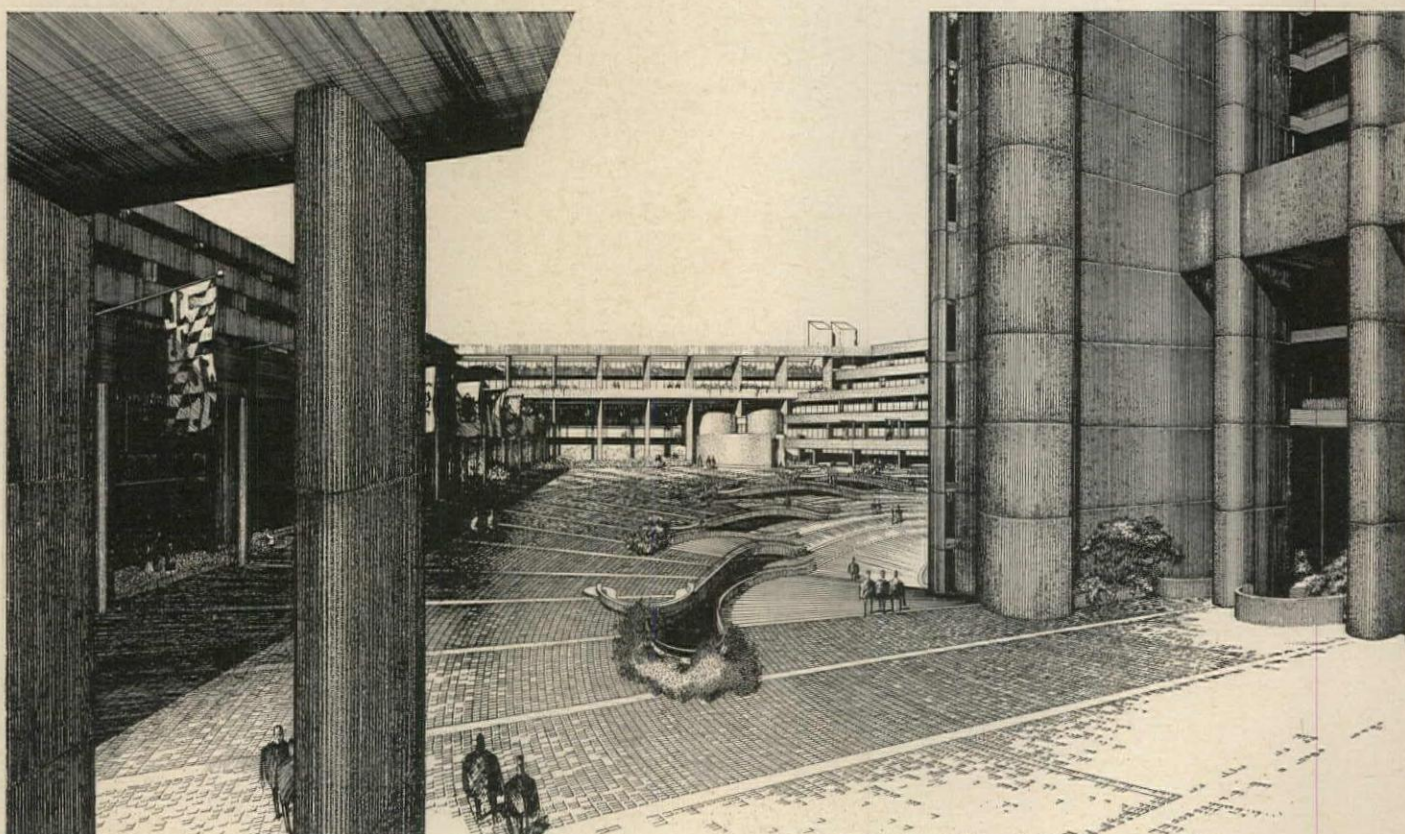
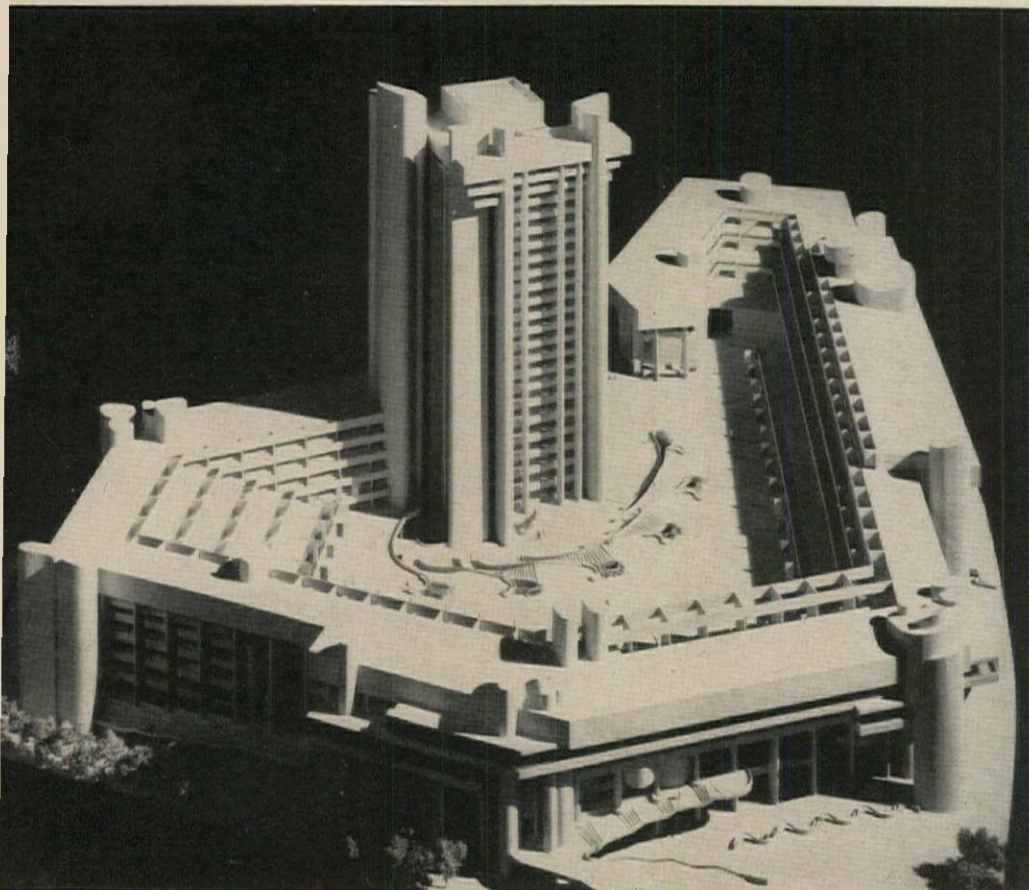
The denizens of Boston's old Scollay Square would scarcely recognize it in the Siennese piazza surrounded by the State Government Center.

The design, which was under the direction of coordinating architect Paul Rudolph, was accepted recently by the State Government Center Commission.

The three new approved buildings include a 23-story tower for the State Departments of Health, Welfare and Education, M. A. Dyer Company, architects; a five-story building, with a partial sixth story, for the Division of Employment Security, Shepley Bulfinch Richardson and Abbott, architects; and a five-story Mental Health Center Building, Desmond & Lord, Inc., architects.

A State Office Building is already under construction.

Steps taken to integrate the design of the three buildings include the repeated massive columns, which functionally house services and which esthetically convey a deliberate monumentality. The exterior, however, strives for a smaller scale, in conformity with existing buildings.



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about narrow washrooms*

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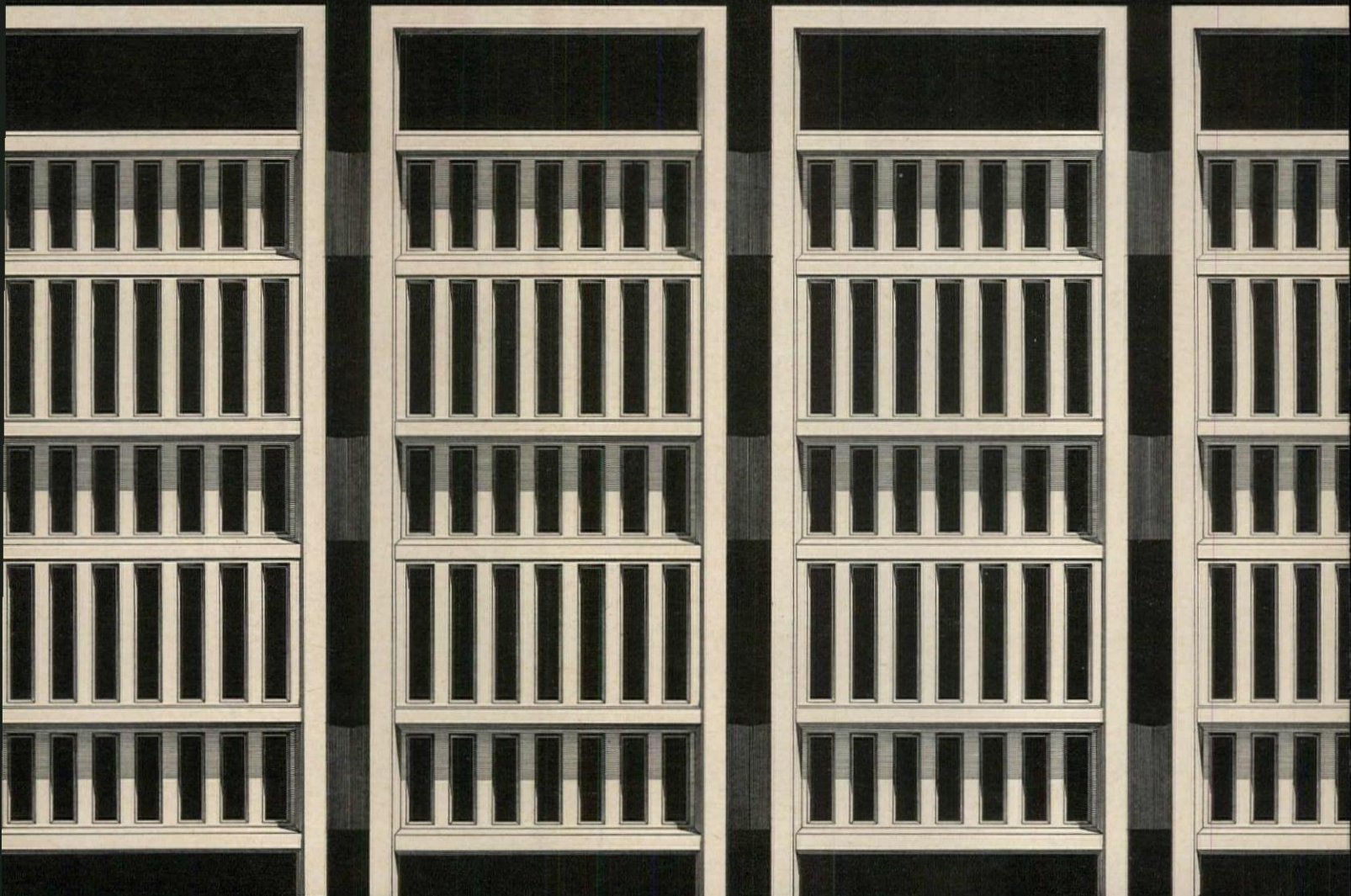
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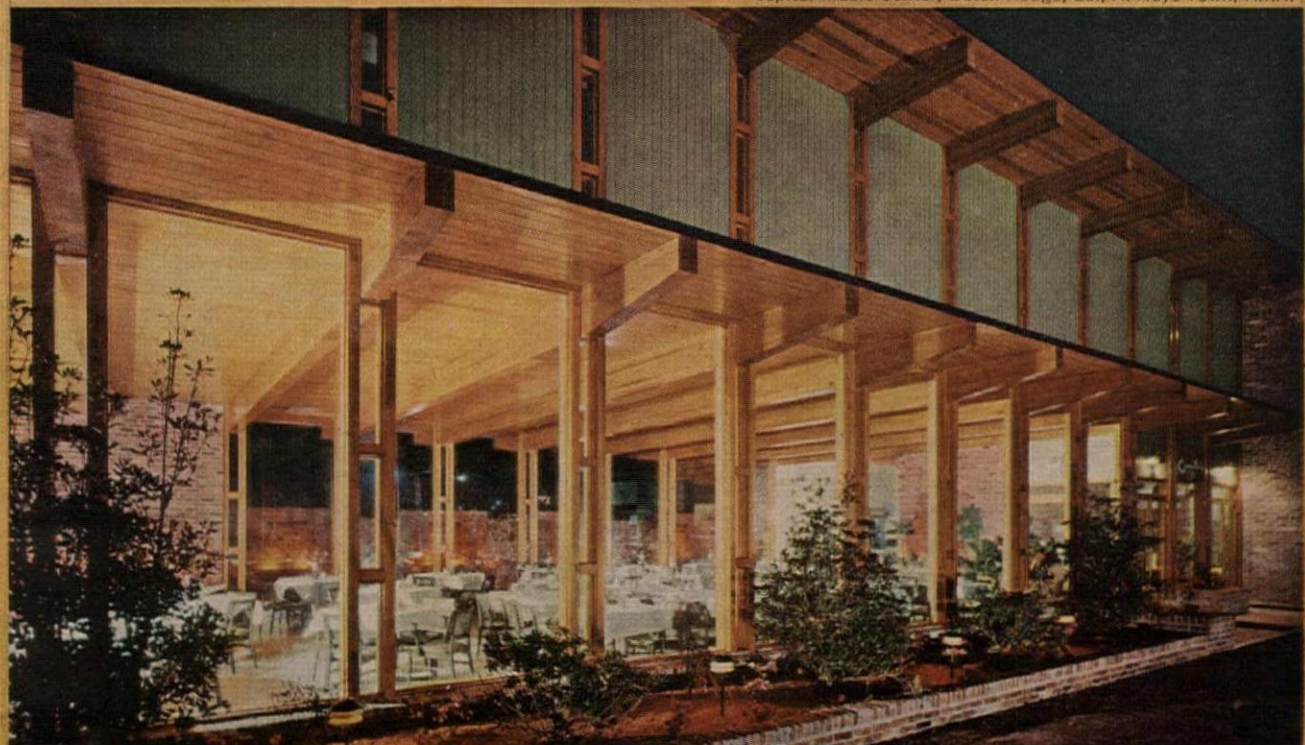


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Camillo's Restaurant, New Orleans, La., Paul J. Moutan, Architect

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Architect: Dalton-Dalton Associates

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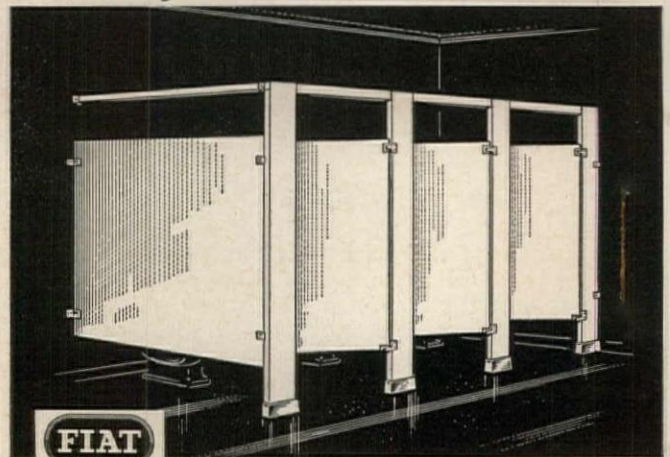


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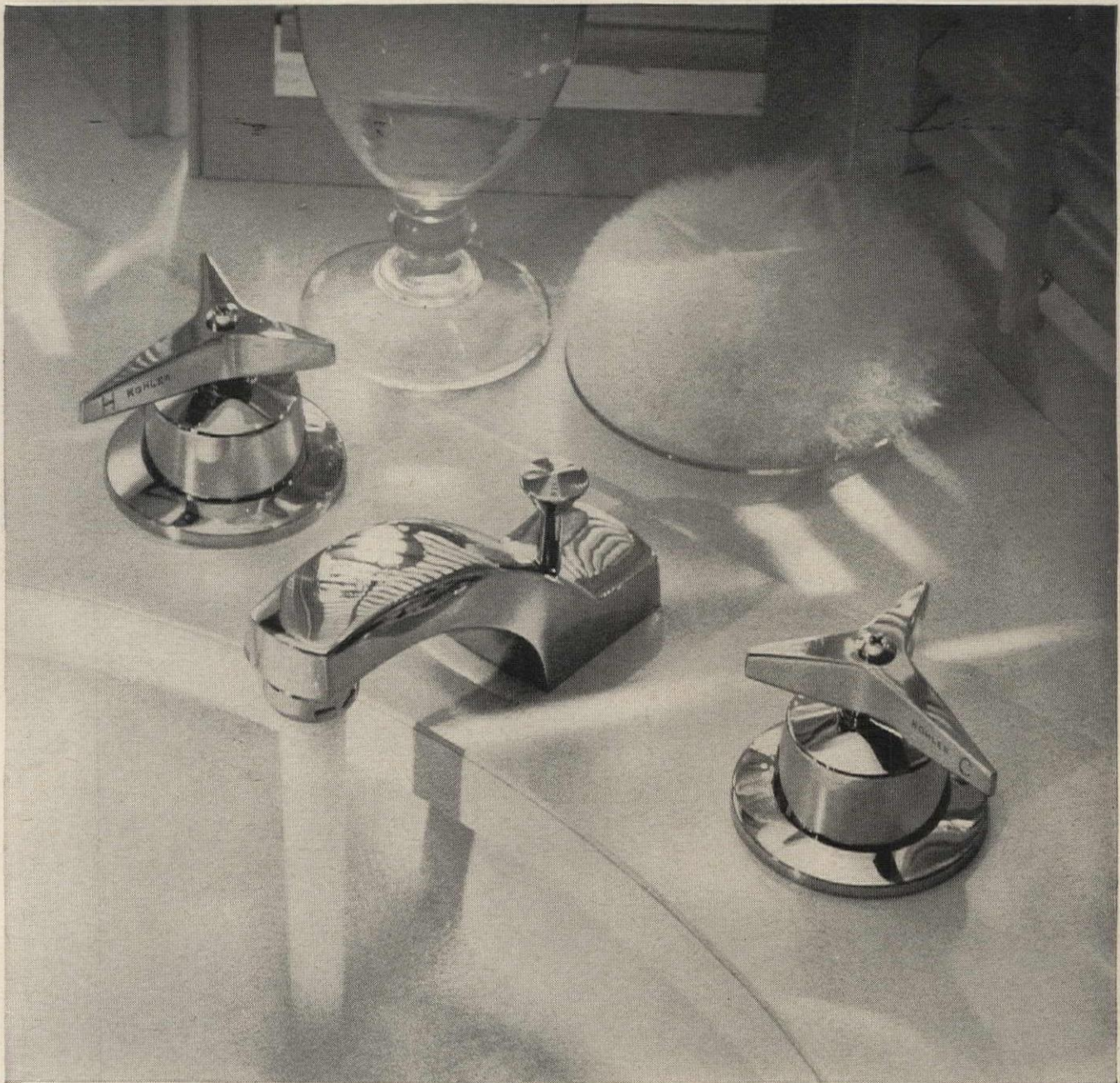
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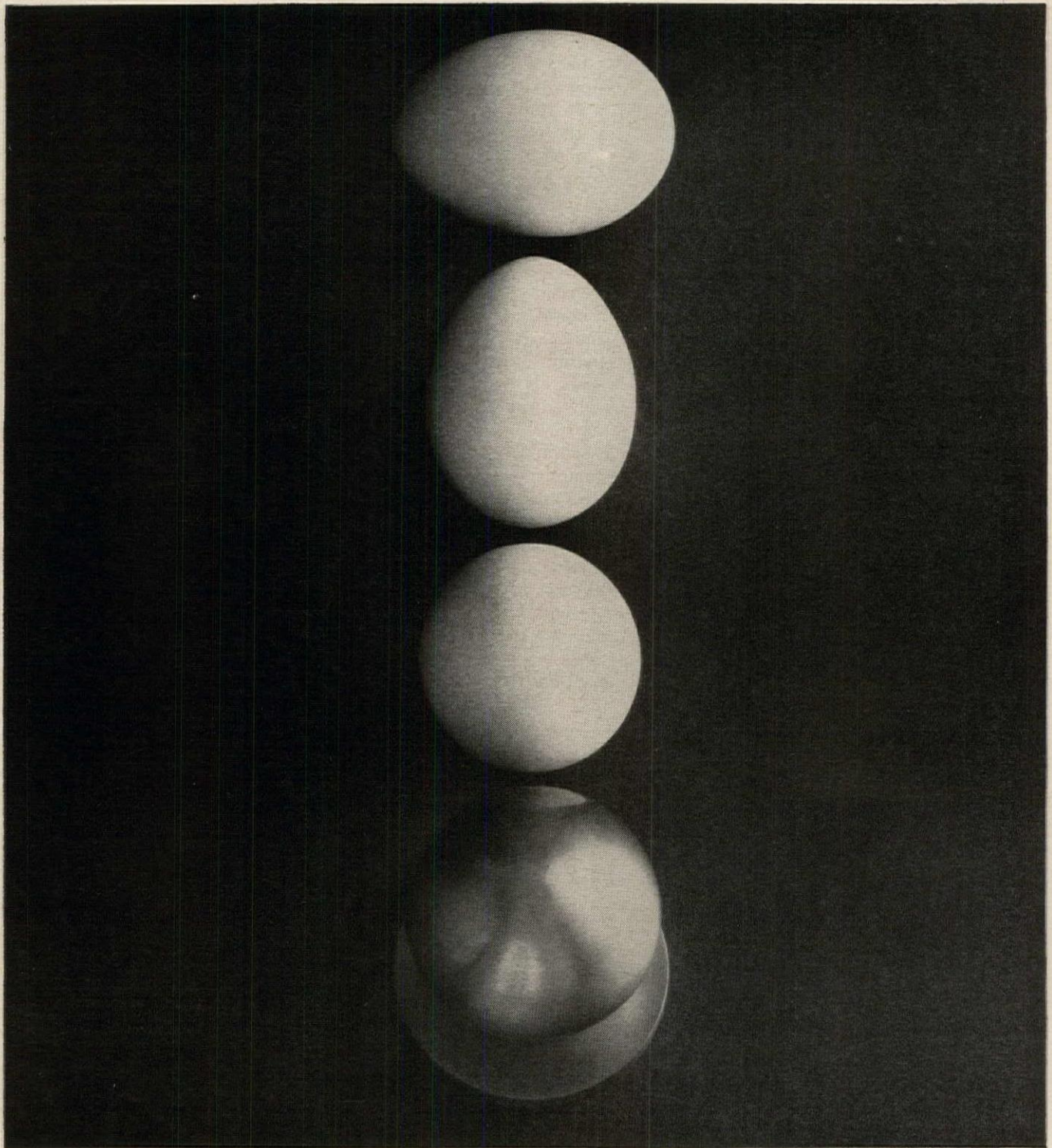
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PHA and Design

continued from page 23

cific architectural problems. . . .

"2. We are conducting a series of seminars primarily for the training of our regional development staffs, but also aimed at local housing authority architects involved in preliminary planning stages of low-rent developments. These seminars are jointly sponsored by the American Institute of Architects, the National Association of Housing and Redevelopment Officials, and the PHA. . . .

"3. We have streamlined many of our procedures to encourage greater flexibility of local architect judgment.

"4. We are using consultants in our Washington Central Office for specific design problems inherent in the new programs being launched. One example: group residences, including congregate eating facilities for the elderly and other special features required for independent apartments to serve this growing group of tenants.

A second program: conventional public housing is underway in some 34 localities on Indian Reservations. . . . During the past year, we have developed guidelines for rehabilitation of existing housing. . . .

"5. We have improved our relationships with other housing agencies to bring our procedures into line with one another in all areas where programs are related. Public housing on urban renewal sites has greatly expanded, and this is an opportunity for the 'blending' principle to work.

"6. Emphasis on housing for the elderly (nearly half the 100,000 units in the 1961 Act will be for the elderly) has focused attention on the design of community centers. . . .

"7. PHA has undertaken two studies on density, and Elisabeth Coit of New York has conducted both: one, density's impact on families and the offsetting effects of thoughtful design; another, with 'planning out' the elements that make vandalism easy and costly. We are concerned that high-rise apartments be more livable

since it is evident that the vertical scheme will be the environment for more families in the years to come. We are questioning the validity of our 'midtown' concept for low-rent housing: the 'moving out' of industries; the impact of automobile ownership in living locations; the advantages to be derived from well-planned open spaces.

"8. The PHA has cooperated with the low-income demonstration projects underwriting by HHFA and the agency's experience helps provide guidance in assessing or implementing new approaches. Also, we are on the lookout for the appearance of new structural and design techniques.

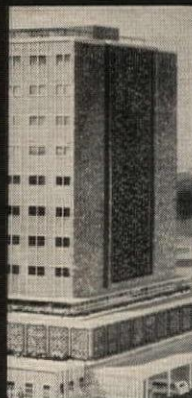
"9. We are encouraging the use of smaller sites in large cities. There are examples of success, but the effort to bring density ratio into a more human scale has been often beyond the cost limits.

"10. Finally, we do recognize the need for a revised architects' contract and a corresponding fee adjustment. . . ."



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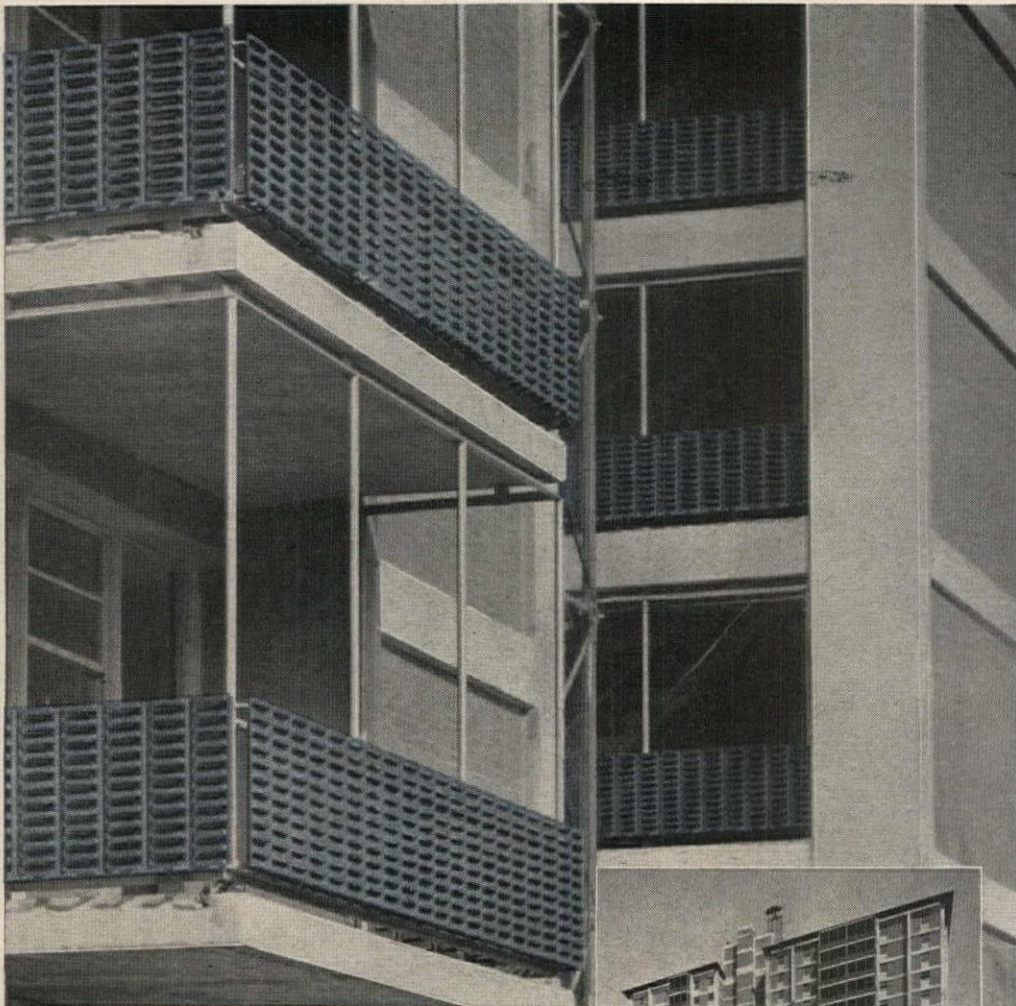
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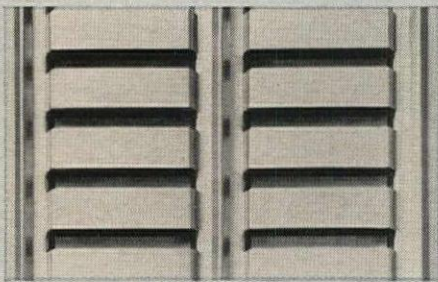
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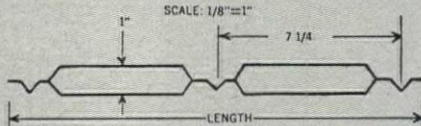
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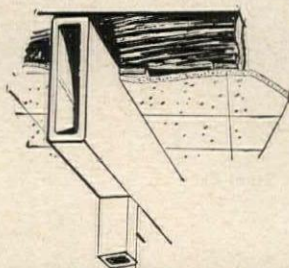
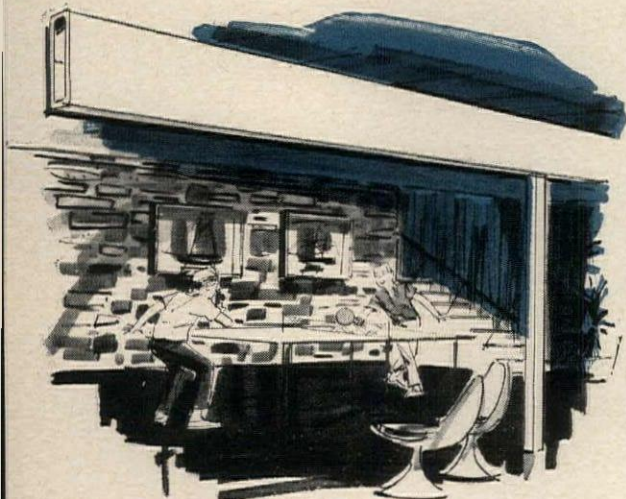
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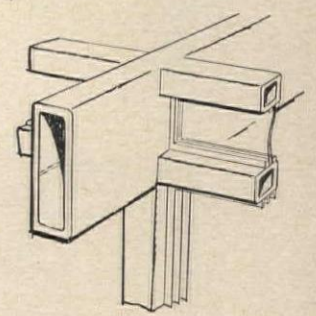
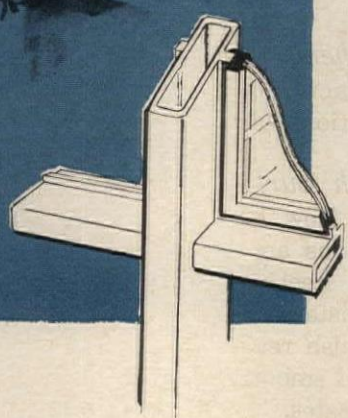
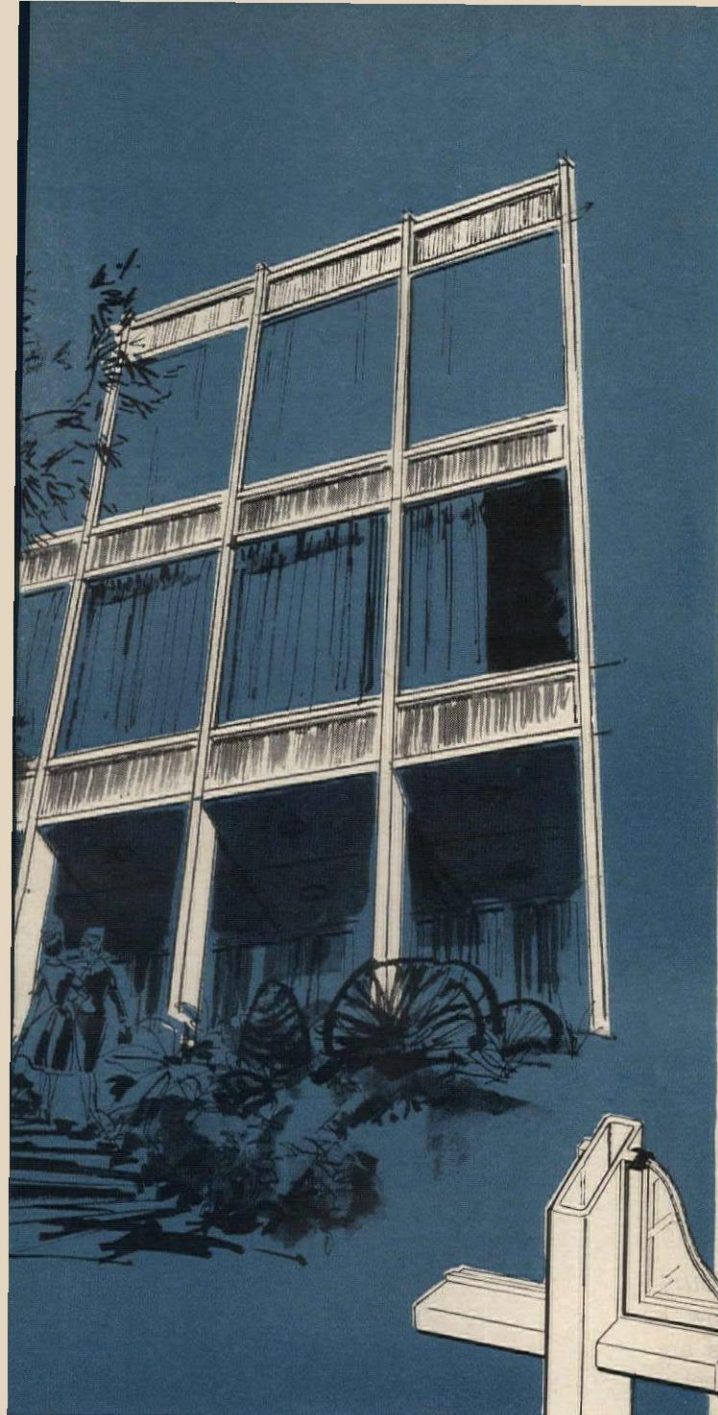
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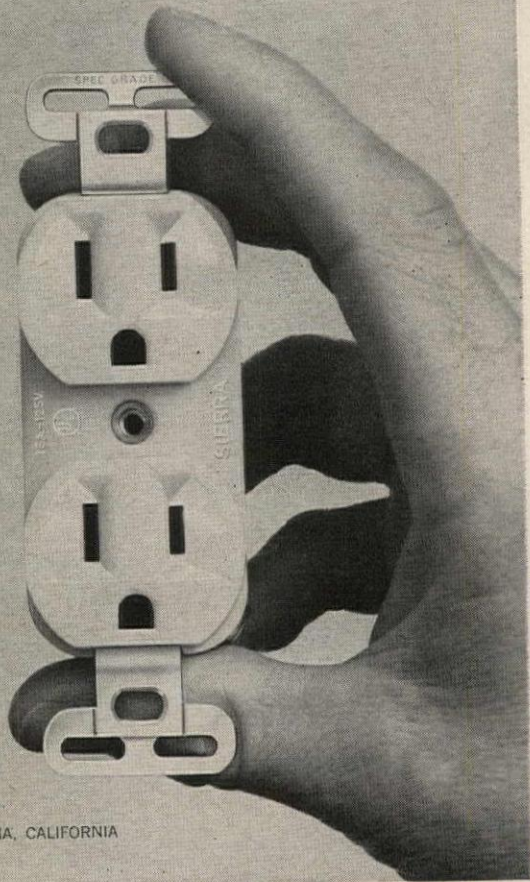
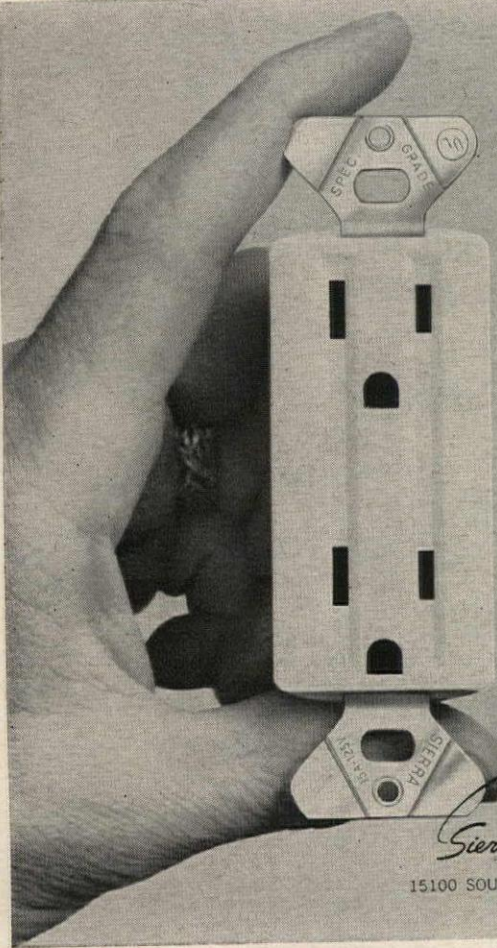
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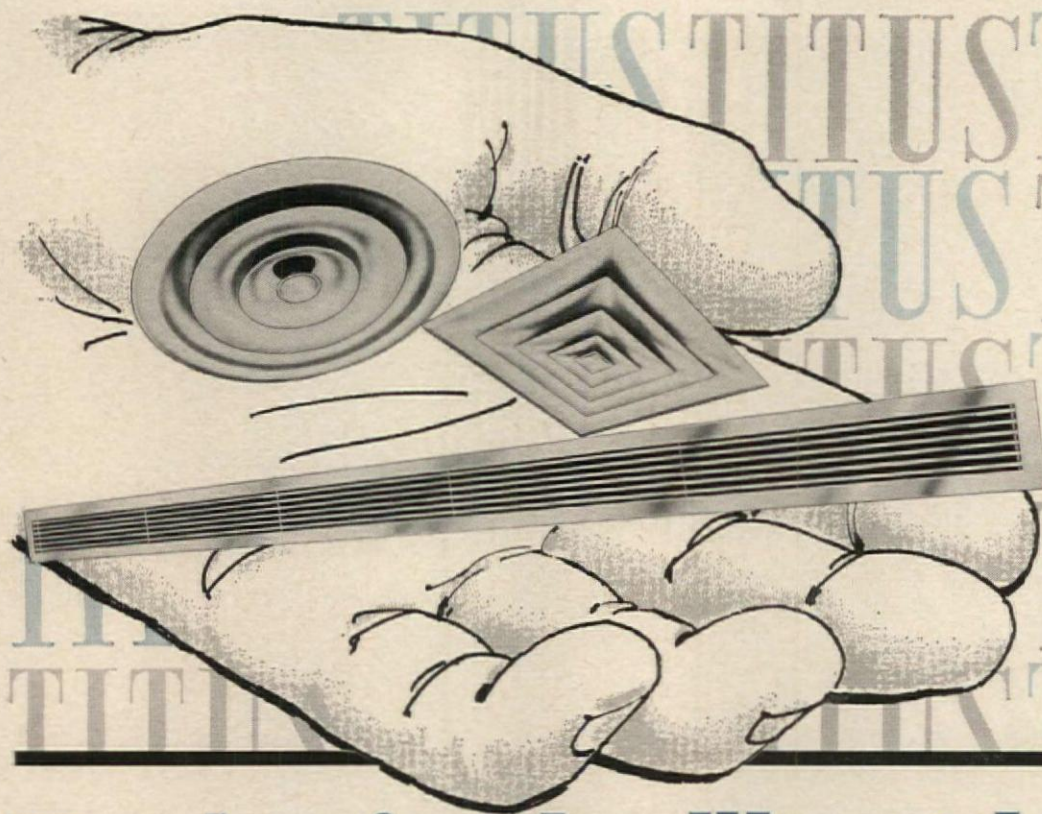
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PACIFIC RIM CONFERENCE MEETS IN MEXICO CITY

The Second Pacific Rim Architectural Conference, under the aegis of the California Council, The American Institute of Architects, met October 12-18 in Mexico City.

A distinguished roster of speakers addressed itself to the question of the "Consequences of Design." The speakers included J. Kenneth Hull, consultant, Lockheed Aircraft International, "Economic Consequences of Design"; Daniel G. Aldrich Jr., Chancellor of the University of California at Irvine, "Social Consequences of Design"; Allan Temko, architectural critic of the San Francisco Chronicle and Architectural Forum, "Cultural Consequences of Design"; and Wilson Wyatt, Lieutenant Governor of Kentucky, "Political Consequences of Design." John A. Kouwenhoven, professor of English at Barnard College, Columbia University, delivered the summation address.

Mexican architecture and the relations of Mexican and United States architects also occupied the attention of the delegates. Robert Alvarez Espiona, Hon. F.A.I.A., read a brief history of Mexican architecture, and Guillermo Rossell, Hon. F.A.I.A., spoke on "The Political and Economic Consequences of Design in Mexico."

At the California Council luncheon, J. Roy Carroll Jr., national president of the A.I.A., spoke warmly of the "Cooperative Relationships Between Mexican and North American Architects," citing particularly their joint efforts to improve the quality of planning and architecture in border towns. The program, suggested in the forties by Carlos Contreras and supported by the International Border Planning Commission, of which Mr. Rossell is chairman, has received encouragement recently from both governments, he reported. The Mexican government has commissioned private architects to design redevelopment plans for more than 10 Mexican border towns; these designs have been completed. And Federal and local urban renewal funds have been allocated to four United States border towns, to be used for the redevelopment of areas adjacent to correspondent Mexican towns: San Diego-Tijuana, Calexico-Mexicali, Laredo-Nueva Laredo, and Eagle Pass, Texas-Piedras Negras.

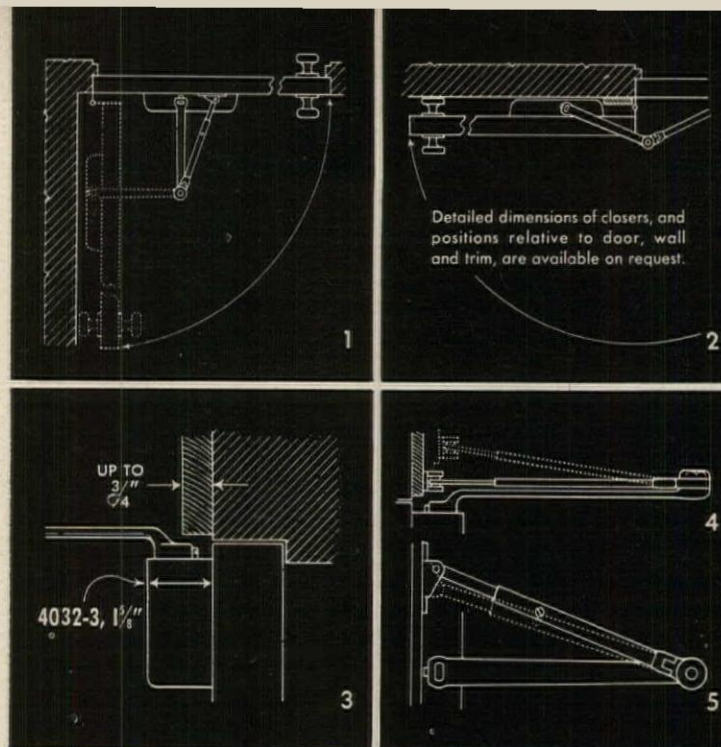
Honors

The California Council awarded its Distinguished Service Citation, the council's highest honor, to William Stephen Allen, F.A.I.A., for his "diplomacy and leadership, both personal and official, which has brought a new and constructive recognition of the architectural profession by government agencies of the State of California."

A special citation was awarded Malcolm D. Reynolds, F.A.I.A., in "grateful acknowledgment of his three years of service to the architectural profession" as regional director of the C.C.A.I.A. from 1960 through 1963.

And two special citations were awarded to Mexican architects. Ramon Corona Martin, Hon. F.A.I.A., was cited "in recognition of his important services to the profession of architecture in all nations" as vice president of the Union Internacional des Architectes. Carlos Contrearras, Hon. F.A.I.A., was recognized "both for the honor that his distinguished career has brought to the profession of architecture everywhere, and for his valued services to the C.C.A.I.A. throughout many years."

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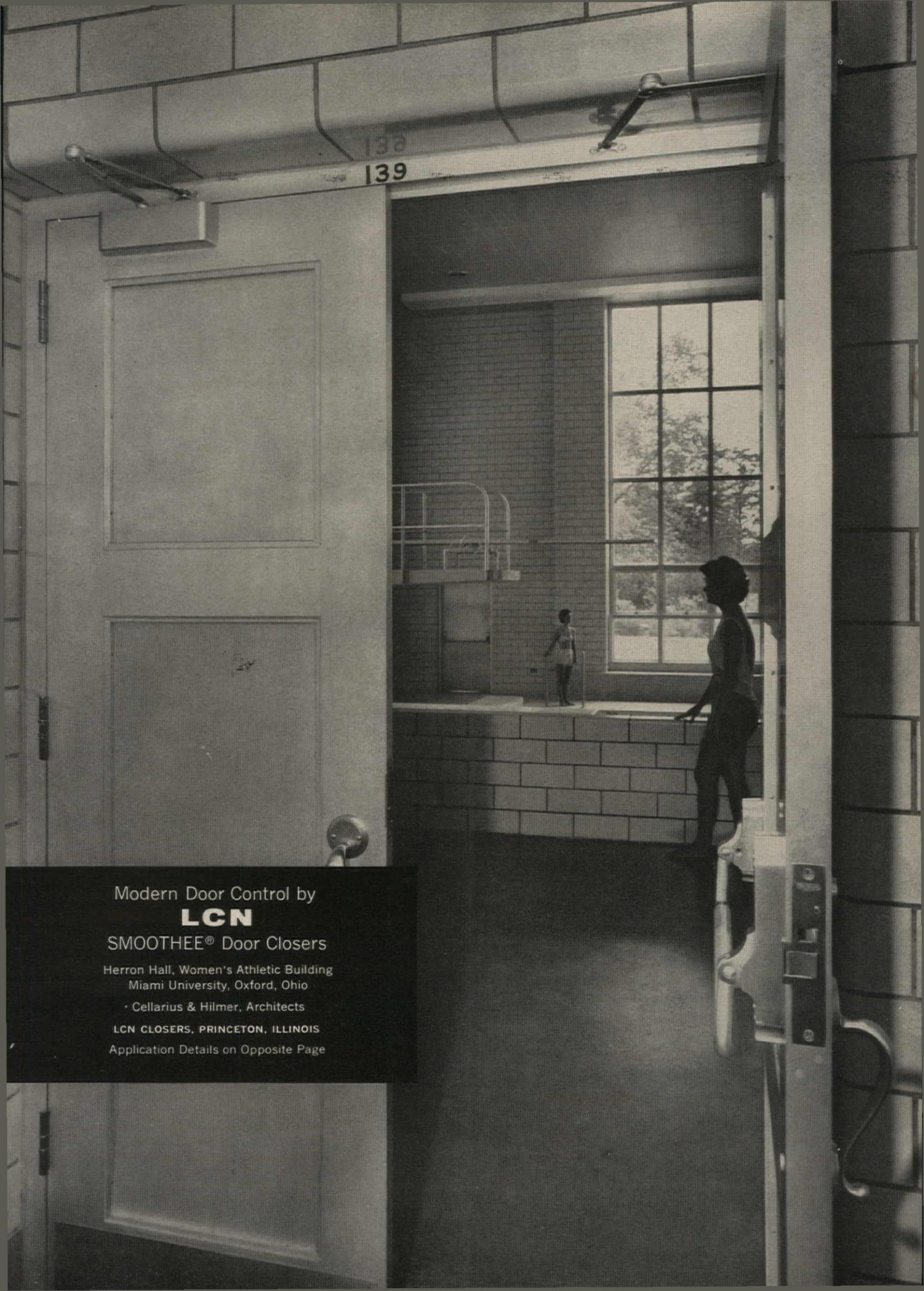
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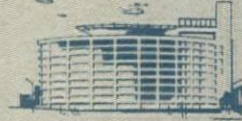
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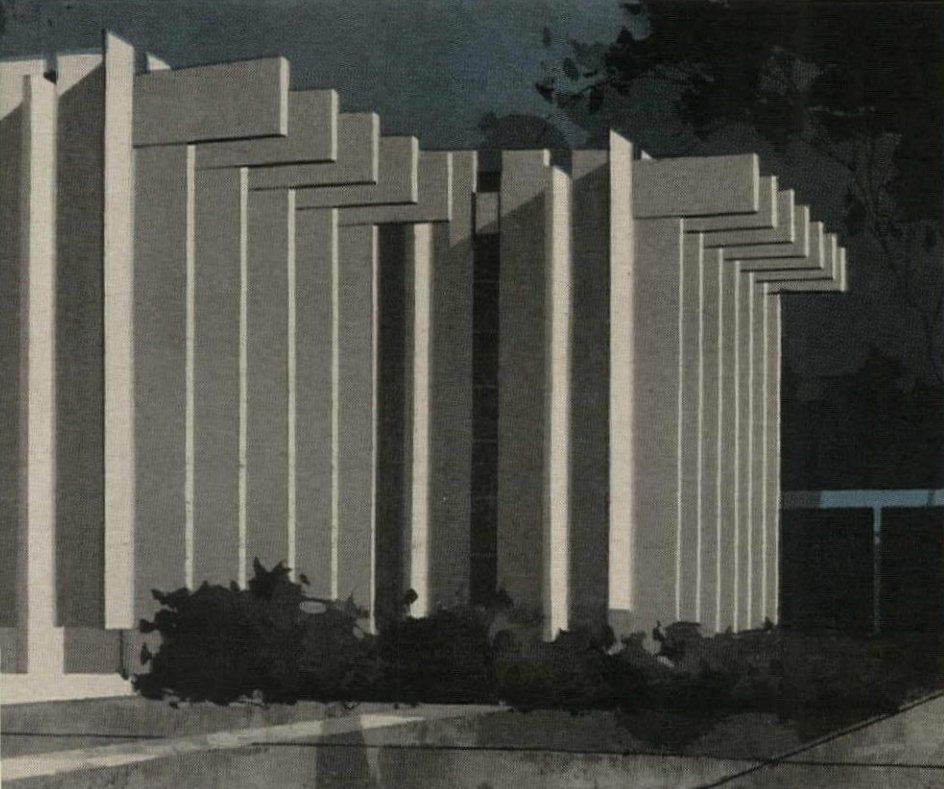


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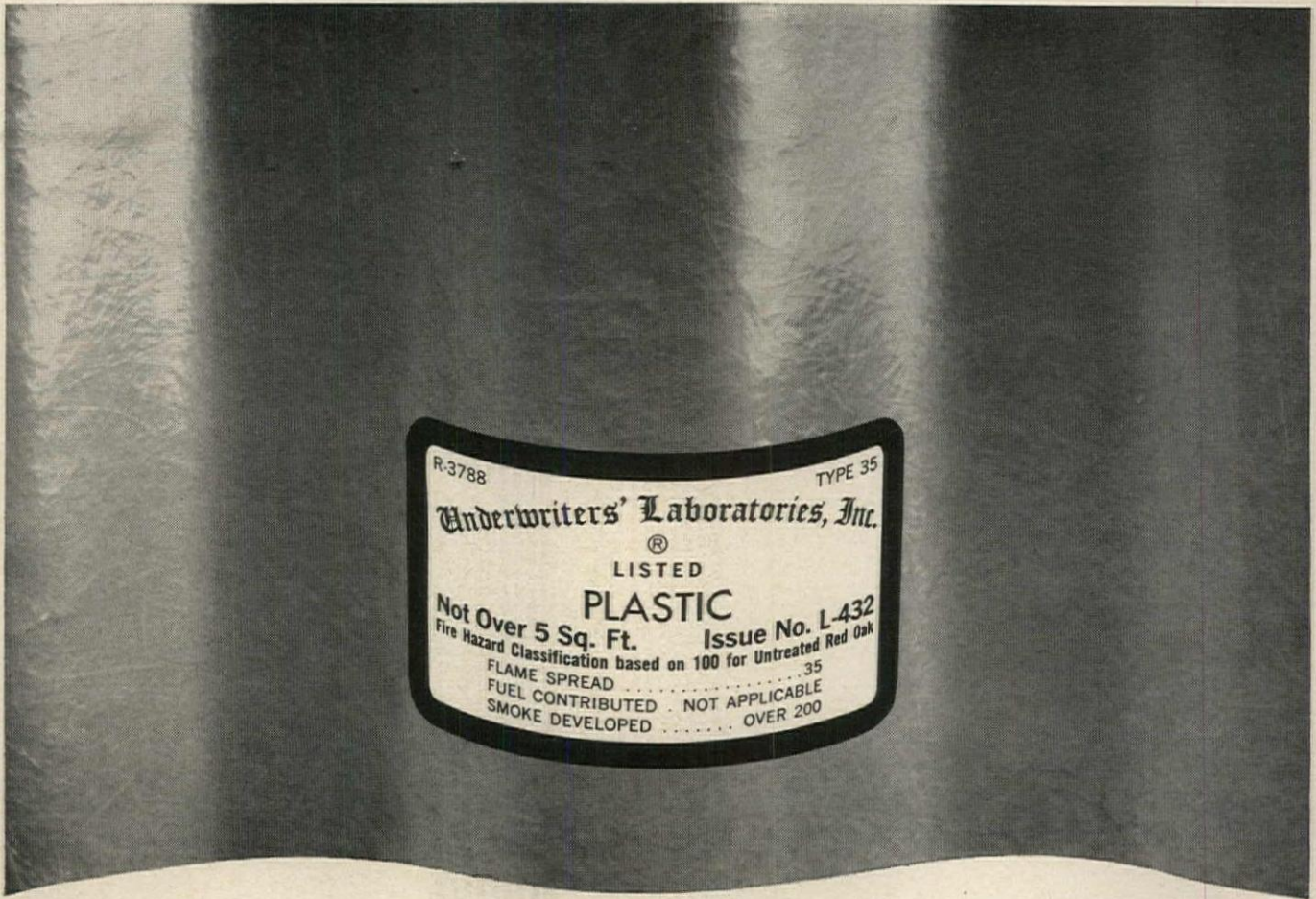
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R-3788 TYPE 35
 Underwriters' Laboratories, Inc.
 LISTED
 PLASTIC
 Not Over 5 Sq. Ft. Issue No. L-432
 Fire Hazard Classification based on 100 for Untreated Red Oak
 FLAME SPREAD35
 FUEL CONTRIBUTED . NOT APPLICABLE
 SMOKE DEVELOPED OVER 200

Fabricator: Resolite Corp.

New Hetron® panel with "Tedlar"* coating has A U/L FLAME SPREAD RATING OF 35 3 TIMES MORE WEATHER RESISTANCE

This panel refuses to spread a blaze.

Its U/L label tells you this Resolite "Fire-Snuf 35" panel has a flame-spread rating of 35. This is the first structural weight panel with a rating under 50.

The "Tedlar" surface gives the panel improved color stability and control, and three times the weather resistance.

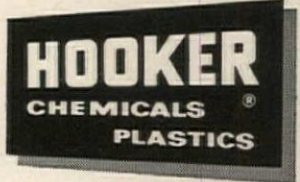
3700 hours in a weatherometer had almost no effect on a Hetron panel coated with "Tedlar," while the same test did considerable damage to the gloss of an uncoated polyester panel.

These weather-stable panels are constructed by reinforcing Durez® Hetron fire-retardant polyester resin with glass fibers and bonding it to "Tedlar" PVF film.

Outdoor testing and the EMMAQUA machine show that surfaces remain good and there is no weakening of the bond.

You can order these new panels in white or green. For further information, write Durez Plastics Division, Hooker Chemical Corporation, 8001 Walck Road, North Tonawanda, N. Y. 14121.

*Du Pont registered trademark for its PVF film



DUREZ PLASTICS DIVISION

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Memorial Hospital of Long Beach

chose Remco Casework

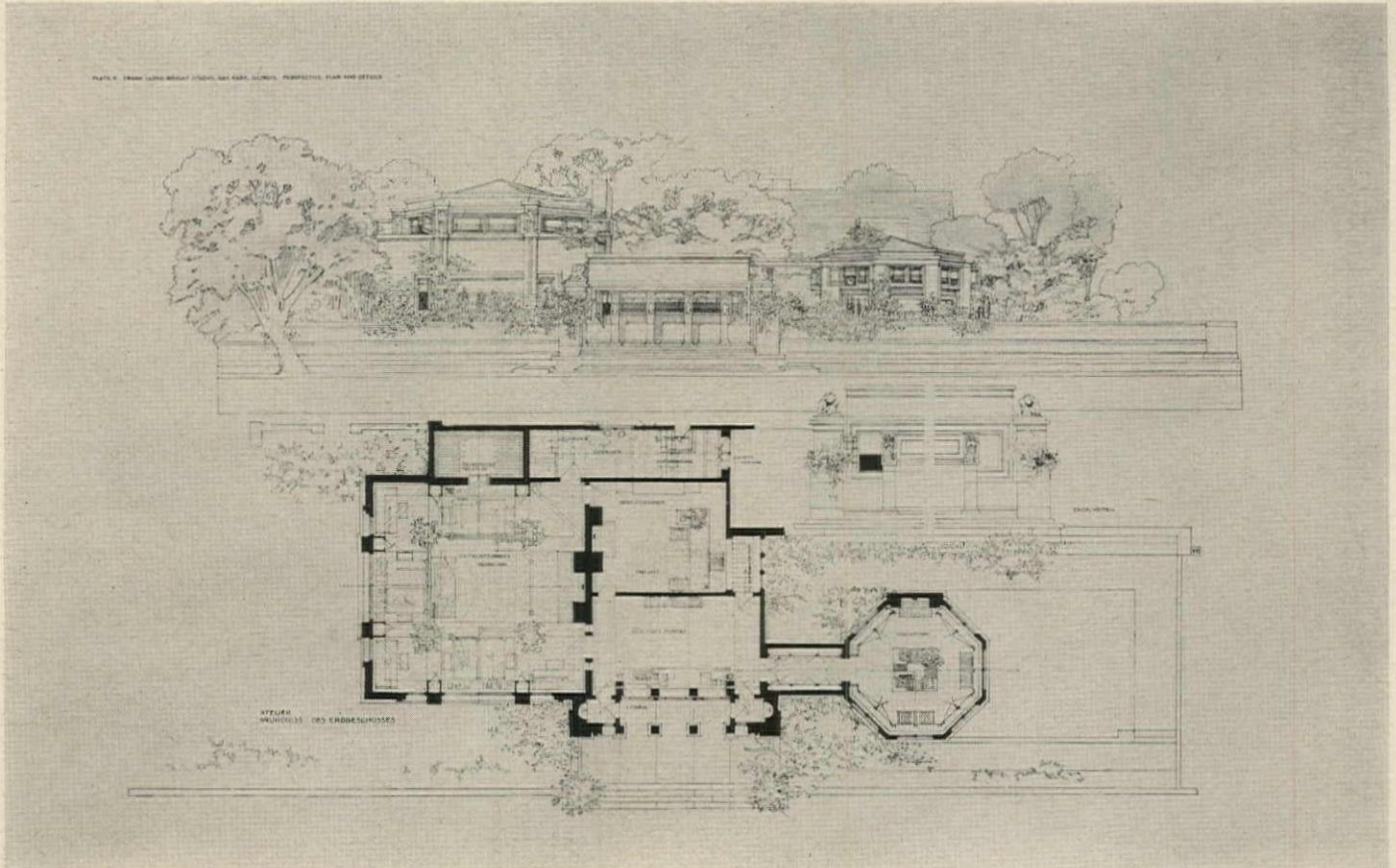
- for its long life
- functional design
- good looks
- and they liked the job-site services that the Remco people always give.

Remco

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Wright's studio (*above*) in Oak Park was permanently closed in 1910, the year that the publication of the Wasmuth monograph brought his work to the attention of Europe

Wasmuth's Great Portfolio on Wright Reprinted

BUILDING PLANS AND DESIGNS BY FRANK LLOYD WRIGHT. *Horizon Press, 156 Fifth Ave., New York 10. 100 plates, plus descriptive material. \$75.*

At the Avery Library in the School of Architecture at Columbia University is a single very worn set of the original two volume Wasmuth monograph in German, "Ausgeführte Bauten und Entwürfe" published in Berlin in 1910. Since most of the copies set aside for distribution in the United States were destroyed in the first Taliesin fire in 1912, it is a rare book, one of the treasures of Avery's collection. That edition was widely seen in European architectural circles. It was published by the younger Wasmuth at the instigation of the critic Kuno Francke who had seen Wright's work when he came to the United States as a visiting lecturer at Harvard. It profoundly influenced the work of such men as Berlage, Gropius, Mendelsohn and Mies van der Rohe at a time when new design currents were stirring in Germany and Austria. The Interna-

tional Style which had crystallized in Europe by about 1925 was rooted in the ideas of Wright, although Le Corbusier claims never to have heard of him or his portfolio in the seminal years of the movement.

The 1910 Wasmuth monograph put a period after Wright's Oak Park years, marked his 40th birthday and coincided with his flight to Europe in the company of Mrs. E. H. Cheney, the wife of one of his Oak Park clients. It consists of 100 plates measuring 16 by 26 inches which include drawings of Wright's completed buildings and projects from 1893 to 1909. The great prairie houses for the Winslows, Hickeys, Danas, Martins, Coonleys and Robies are all present in the form of beautifully drawn plans, elevations and perspectives. Less celebrated houses are shown, and the monograph also includes all of Wright's nonresidential work of the period, notably the Larkin building of 1904 and Unity Temple of 1906. Most of the drawings were made by Marion Mahony Griffin, Wright's leading assistant during

the Oak Park period.

Wright's abrupt abandonment of his wife and family and flight to Europe ended his role as architect and cultural mentor to upper middle class Chicagoans in Oak Park and effectively closed the first major phase of his career. Had he done no more work, his accomplishment to 1909 would have secured his reputation as a master.

In Europe he went first to Berlin to supervise the printing of the Wasmuth portfolio and then to Fiesole to write his introductory text. This was included in the original monograph as an exquisitely printed square booklet. As a statement of Wright's ideas it ranks with the ARCHITECTURAL RECORD articles of 1908 and 1914. This new American edition of the Wasmuth portfolio is the loving work of Ben Raeburn of the Horizon Press. It was made from the one whole copy only which stayed in Wright's possession after the fire. Of 2600 hand-numbered copies, 2500 are for sale. Differing from the original in a few minor particulars (Wright's

continued on page 90



Shown Here: DECOR PANEL COLUMNS

BORDEN ARCHITECTURAL DECOR PANELS

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

The new Architectural Decor Panels by Borden are an extremely flexible medium, allowing the architect a rare freedom of expression in designing facades to blend with the nature of the building, its setting, and the preferences of his client. The dramatic effects achieved with

this new material are being discovered daily; additionally, these panels are unexcelled for sturdiness, economy, ease of handling and installation, and ventilation.

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

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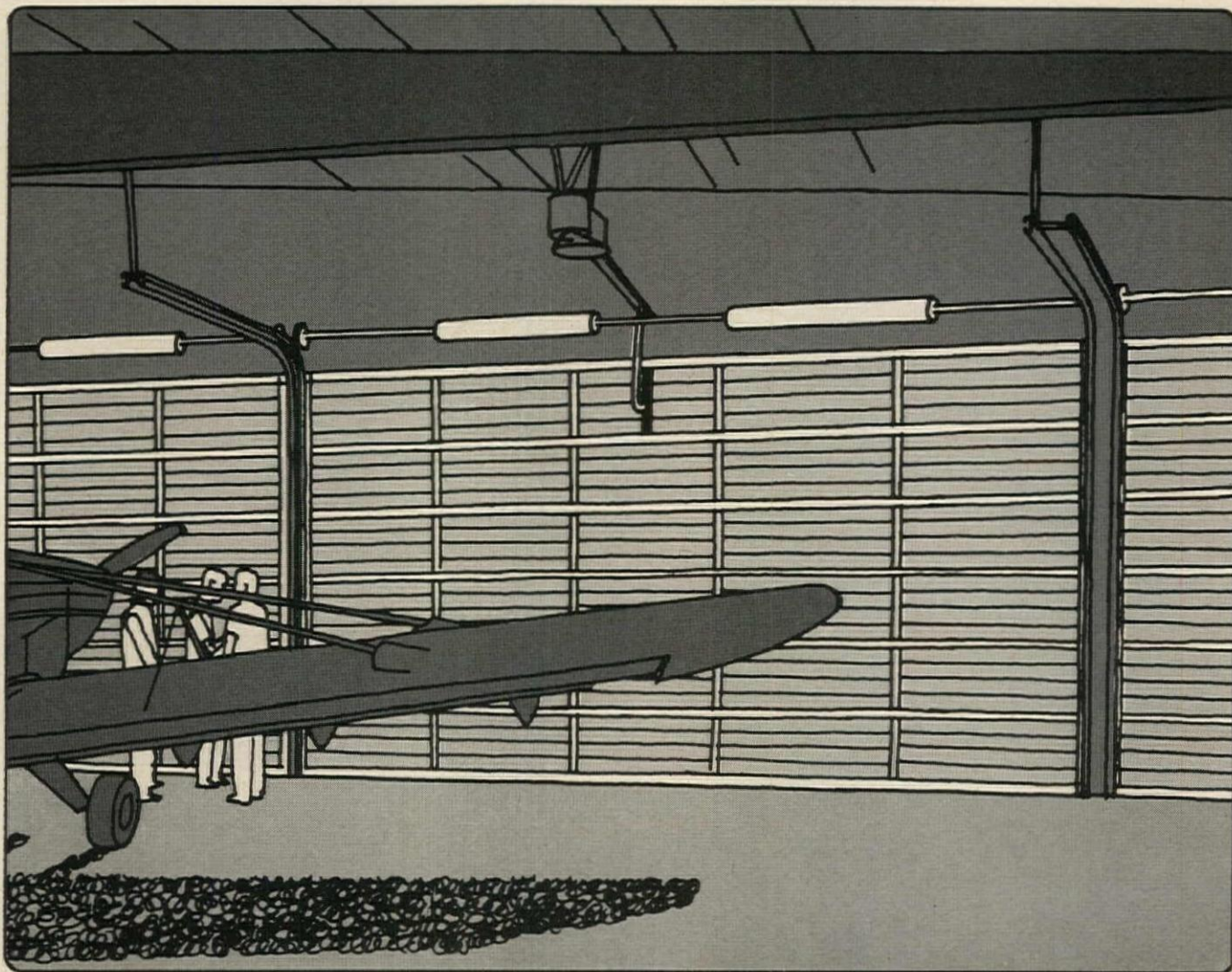
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PLANTS AT: LEEDS, ALABAMA; UNION, NEW JERSEY; CONROE, TEXAS

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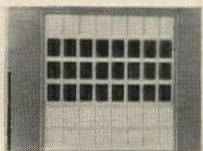
building
design
bright spot

Now you can make single industrial door openings up to 24 feet wide . . . up to 20 feet high . . . and beautiful, too, with the Frantz Filuma translucent fiberglass/aluminum industrial overhead door. And the new Frantz track-hung removable center post lets you design opening widths to infinity. Filuma's exclusive sculptured design lends handsome horizontal shadow lines while providing structural strength . . . fiberglass panels are pressure sealed into the aluminum frame. Four clear-through colors are available for a dash of exterior flair . . . interiors are flooded with cheerful diffused light. Special hardware makes installation a breeze . . . maintenance, nil. Put a design bright spot in your next building with confidence . . . specify Filuma by Frantz.

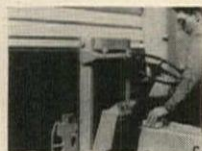
Filuma Garage Doors Are Fully Protected Under U. S. Patent Nos. 194094, 3104699



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Frantz also makes wood doors in all sizes



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of Minneapolis

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Music by Muzak plays an important role in First National's operations. Scientifically arranged and recorded Muzak selections are heard on all banking floors. Never blaring or distracting, Music by Muzak is a valuable First National asset, providing a pleasant and stimulating atmosphere for both employees and customers.

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To save time and expense, specify Muzak in early planning stages. Full information in A.I.A. Files 31-1-7 and Sweet's Catalog 33a/Mu, or write Muzak, Dept. A-1.

music by Muzak[®]

Muzak[®]—A Division of Wrather Corporation 229 Park Avenue South, New York 3, N. Y.

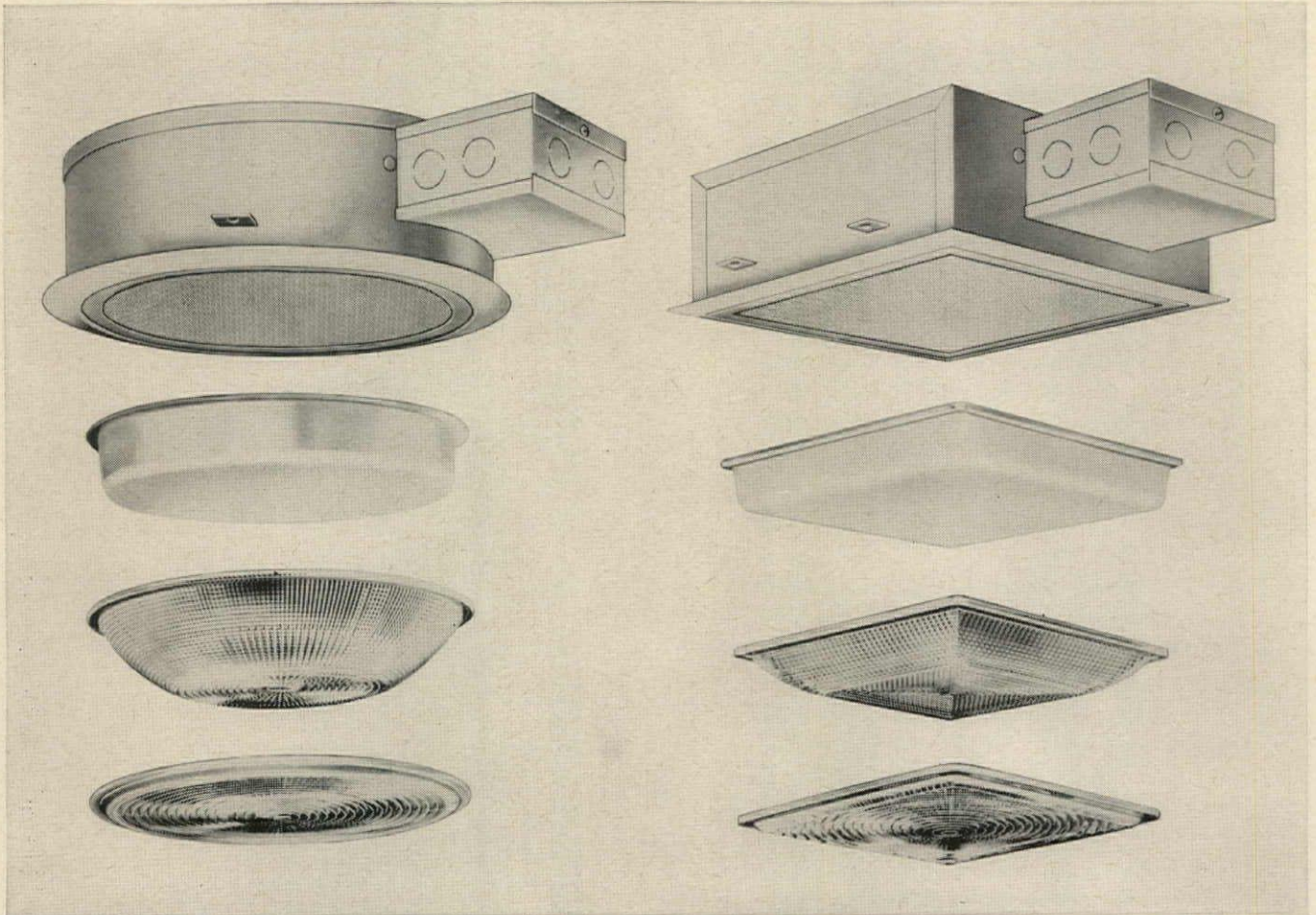
Argentina • Australia • Belgium • Brazil • Canada • Colombia • Denmark • Finland • Great Britain • Israel • Mexico • Peru • The Philippines • Switzerland • United States • West Germany

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"We've managed to eliminate the formal atmosphere usually associated with banking, create an aura of friendliness and make First National a more pleasant place to work, with the help of Music by Muzak," notes Mr. Fred H. Waterhouse, Vice President of the bank.

Things to note about Art Metal's
NEW SHALLOW RECESSED
ROUNDS and SQUARES
for **POURED CONCRETE**



NOTE: housings require only 3½" recessing depth. This applies to rounds as well as squares.

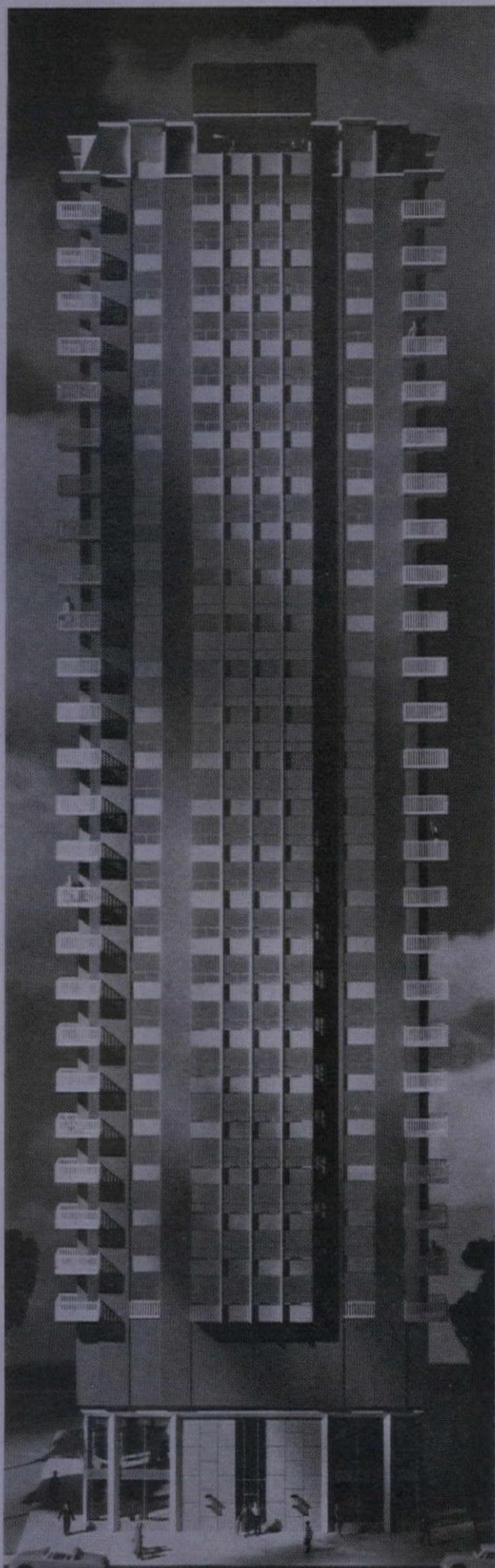
NOTE: fronts are all aluminum (not a rusty steel one in the lot!) in three finishes: white enamel, anodized aluminum and anodized brass.

NOTE: Drop Symmetric Amcolenses and drop Amtex glass are U. L. listed for use with 200W lamps. (Maximum available elsewhere for 3½" unit is 150W.)

Available also are both round and square units with flat Amtex glass and flat Symmetric Amcolens. Other good features: prime coated white enamel 18 gauge steel housing; hinged doors with spring-lock safety catch; listed for use with 60° building supply wire; UL/CSA-IBEW/AFL labels. Bulletin No. PC 2-863 contains all details. Write for your copy.

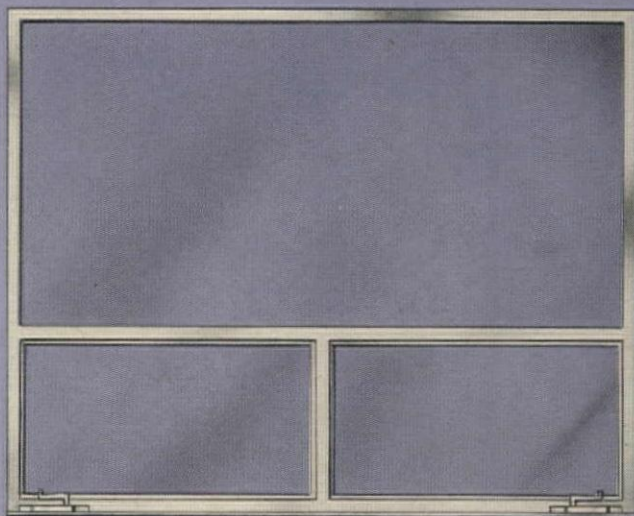
ART METAL **W** **WAKEFIELD CORPORATION**
 Lighting Division 1814 E. 40th St., Cleveland 3, Ohio
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HOW LONG WILL THESE WINDOWS LAST?

A window should last the life of the building. Adlake windows in the James Whitcomb Riley Center will. And with only routine maintenance. This is true economy—call it the economy of quality. Something to think about when you plan your next fenestration. What can Adlake do for you? Call your nearest Adlake representative — or Adlake direct.



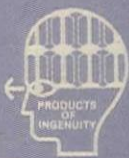
Illustrated: one of the window units custom-made by Adlake to architect's specifications. Top portion is fixed. Vents at bottom swing outward, awning fashion. Design permits draft-free ventilation and interferes least with drapes and hanging blinds.

Aluminum balcony railings seen here were also custom-built by Adlake.

Crown Tower, James Whitcomb Riley Center, Indianapolis.

Architects and Engineers: PERKINS & WILL

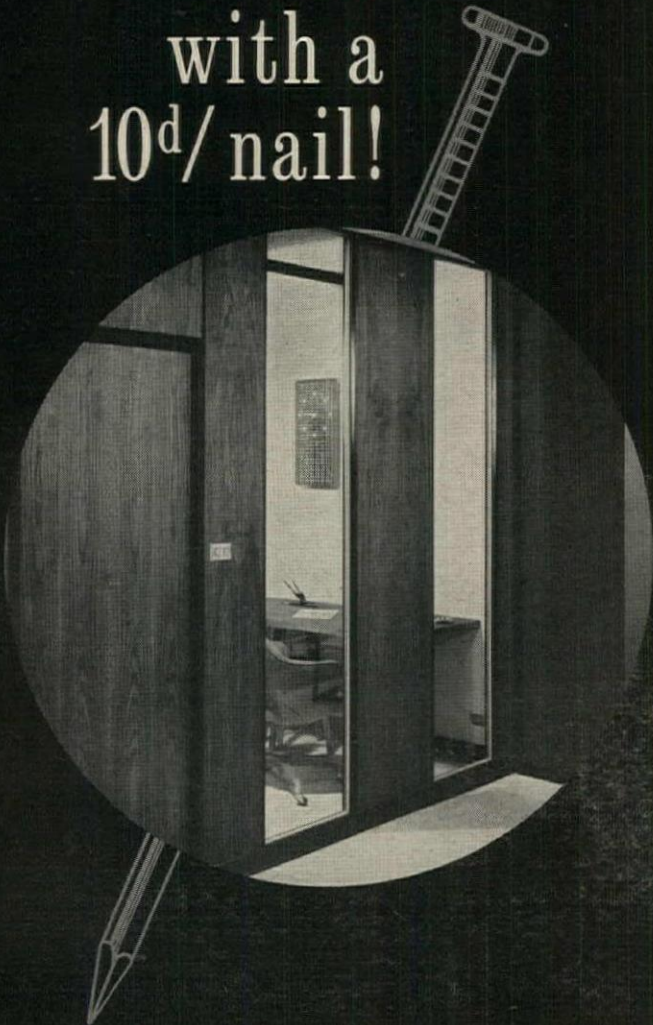
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MOVABILITY and simplicity is the Donn concept of hollow-core, movable partition systems. Radically few components permit movability, accessibility and changeability with ease and efficiency. The result? — a low cost system — so simple you can even disassemble it with a 10^d/nail.

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Required Reading

continued from page 84

colophon, an embossed square on each plate, is missing in the new edition), it is nonetheless a publication of inestimable value and great beauty. Architects, architectural historians and students who have had the opportunity to finger the lovely brown tissues, now fragile with age, of the Berlin monograph, will see the practicality in the fact that all the drawings are now printed on a fine heavy stock (120 pound) in various colors of inks to match those of the German edition. The new portfolio is sturdy enough for reference. It includes Wright's original introductory text in a different and less elegant typographic format, a table of plates with dates where available, and happily, a list of translations into English of the German designations on the plans.

—Mildred F. Schmertz

History

THE ART OF THE WEST IN THE MIDDLE AGES. *By Henri Focillon. Phaidon Publishers, Inc., London; dist. in the U.S.A. by New York Graphic Society, Greenwich, Conn. Vol. I, Romanesque Art. 310 pp., illus. Vol. II, Gothic Art. 381 pp., illus. Each \$7.95.*

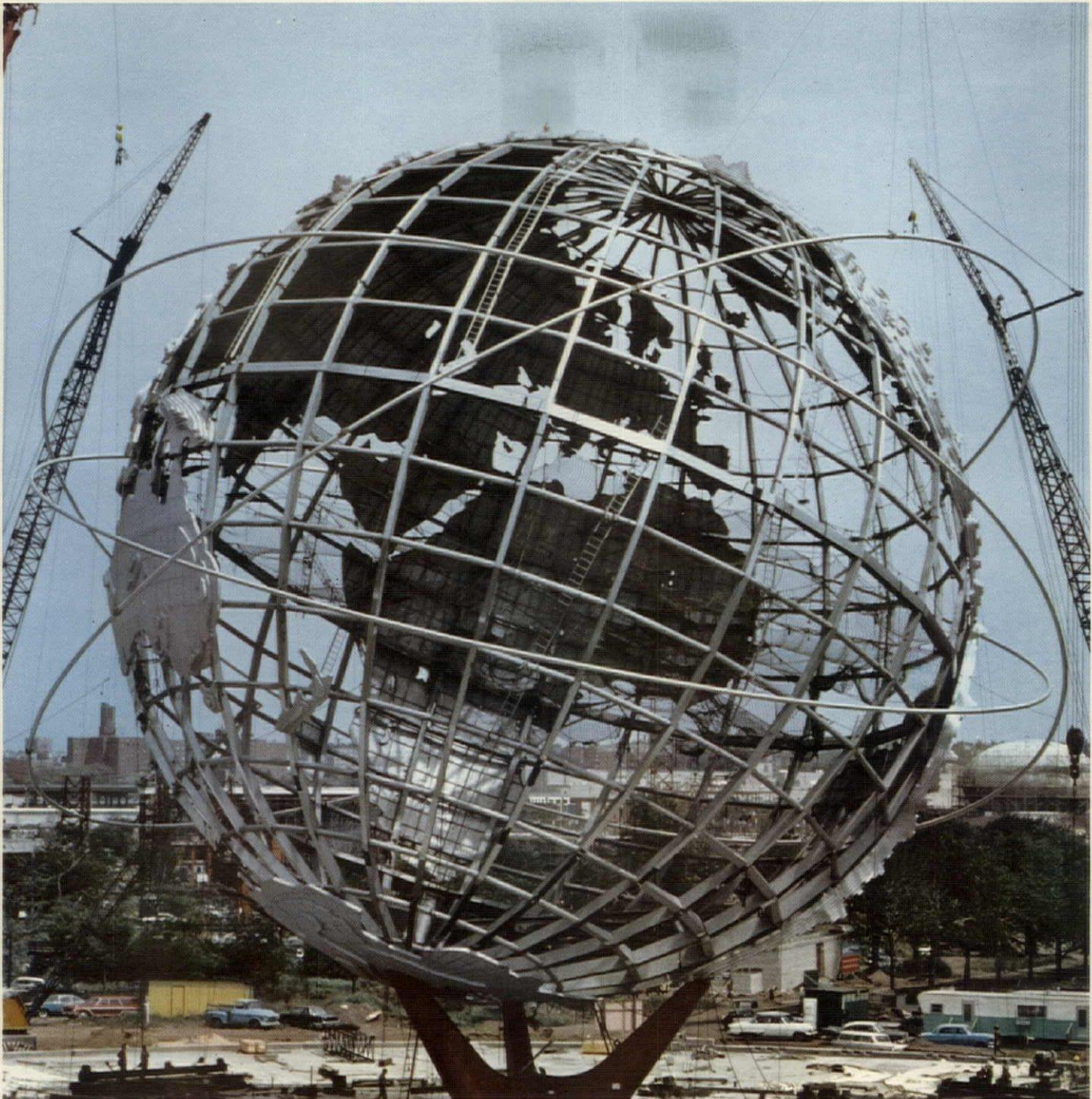
In this enormously detailed and rewarding study of medieval art, architecture assumes a position of command supported by painting and, especially, sculpture. Perhaps the reader's only complaint would be that Focillon's erudition supplies so many illustrations of his points that even a liberal editor, supplying more than 300 plates, cannot provide visual evidence of everything.

THE ART OF THE ROMAN EMPIRE. *By Heinz Kähler. Crown Publishers, Inc., 419 Park Ave. South, New York 16. 263 pp., illus. \$6.95.*

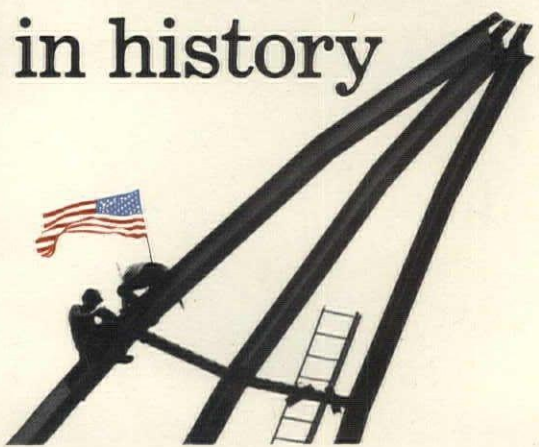
In this readable history of Roman Imperial art, Mr. Kähler has paid considerable attention to architecture as the more original contribution of the Romans, as the art most clearly distinguishable from its Greek models. Although not primarily a picture book, the number and excellence of the color plates are unusual in a reasonably priced book.

continued on page 104

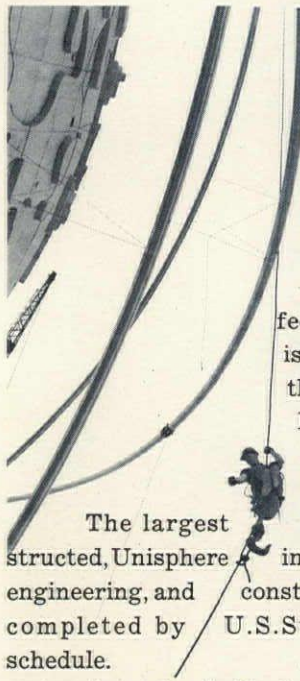
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How U. S. Steel innovated the largest earth model in history



When the final section of Unisphere was hoisted into place, a "shelf man" shouted good news from his perch on the equator: the giant pieces of this twelve-story stain-



The largest constructed, Unisphere involved unprecedented design, engineering, and construction problems; yet it was completed by U.S. Steel five months ahead of schedule.

A mile and a half of meridians, parallels, and orbit rings frame this stainless steel planet and support its continents. All told, more than 500 major structural pieces were assembled to mount a 120-foot diameter armillary sphere on a 20-foot base, at a total weight of 900,000 pounds.

All this stands as an open sculpture with virtually every part exposed: exposed to view, and exposed to rain, ice, salt-laden dampness, and the stiff gales that sweep across Long Island.

For permanent, weatherproof beauty, the designers chose USS 18-8S stainless steel (AISI 304). The three-point base that supports the sphere is USS COR-TEN Steel, a low-alloy high-strength steel that has unusual corrosion resistance. Each corner of the base is anchored to the foundation with ten 2¾-inch diameter bolts of USS "T-1" Steel, the remarkable constructional alloy steel with a minimum yield strength of 100,000 pounds per square inch that can create up to 50 per cent savings in weight.

Structural support presented unusual problems. The spherical shape would impose enormous loads on curv-

less steel "world" fit precisely as planned.

The pieces *had* to fit: there wasn't a replacement part on earth, because this was the first time in history that anything like Unisphere had been attempted.

Unisphere, which towers 140 feet over a circular reflecting pool, is being presented by U.S. Steel to the 1964-1965 New York World's Fair as the symbol of the Fair and as a permanent monument for Flushing Meadows Park.

replica of the earth ever constructed, Unisphere involved unprecedented design, engineering, and construction problems; yet it was completed by U.S. Steel five months ahead of schedule.

ing structural members. Yet these members could not be thick and could not be cross-braced without detracting from Unisphere's beauty. To fulfill the design concept, slim meridians and parallels had to be spaced according to map-making custom rather than engineering expediency and had to carry irregularly shaped, irregularly spaced land masses. Even the pedestal that would support the entire sphere had to be gracefully slender.

But the most formidable problem was wind load. In shaping convex land masses to fit the curvature of the earth, U.S. Steel knew that concave inner surfaces would trap wind like the spinnaker of a sailboat. Wind tunnel tests of a scale model confirmed the enormity of this problem: at wind velocity of 110 miles per hour, there would be a total drag of 396,000 pounds.

All of these wind and weight factors had to be translated into a stress distribution pattern that would indicate what structural strength each section would require: a computation so complex that 670 simultaneous equations had to be solved for just one of three sets of calculations. U.S. Steel called on advanced computing equipment to supply the answers in a matter of weeks; without high-speed computers, it would have taken years.

In its final design, Unisphere has ample strength and stability to stand up in a hurricane.

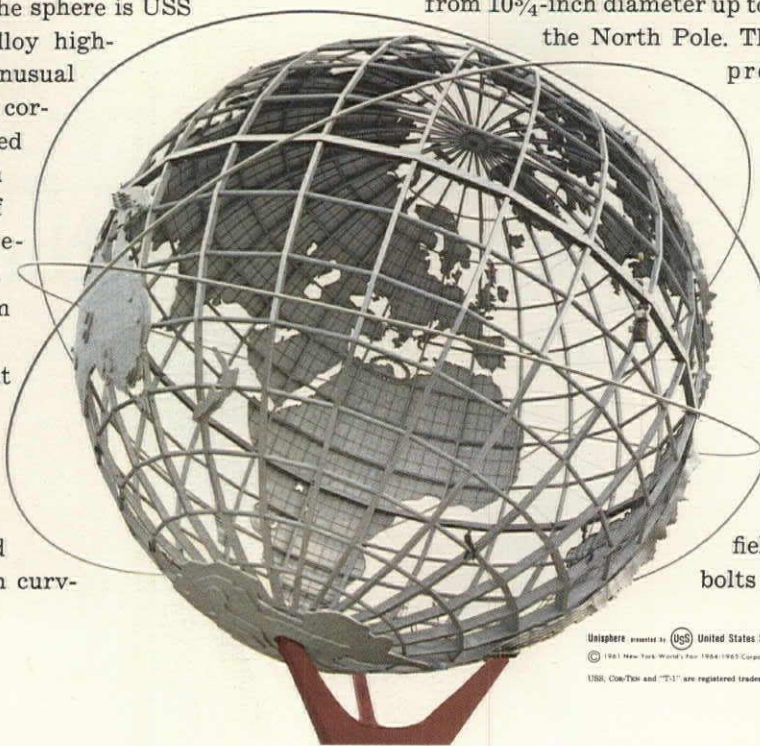
North-South meridians are hollow rectangular sections, 6 inches wide and 12 inches deep above the Equator, and 10 inches wide by 14 inches deep below the Equator. Parallels are round tubes from 10¾-inch diameter up to the Equator, to 6-inch near the North Pole. The Equator is an H-section



prestressed by 15/16-inch stainless steel guys connected to a floating tension ring at the center of the Unisphere.

In the area surrounding the main supports, both meridians and parallels are heavy box sections which taper to meet the normal size members.

In the Northern Hemisphere, connections of parallels to meridians are field bolted with stainless steel bolts through shop-welded cap





plates. All connections for the Southern Hemisphere are field welded. Three stylized orbit rings that circle Unisphere are anchored by thin stainless steel aircraft cable, barely visible from the ground.

These structural sections were fabricated by U.S.Steel at Ambridge, Pa. Meridian pieces were butt-welded together in the shop, and each meridian quadrant—the quarter circle from equator to pole—was shipped in two sections. Already installed inside these members were tubular and plate diaphragms positioned for the 360 intersections of meridian and parallel.

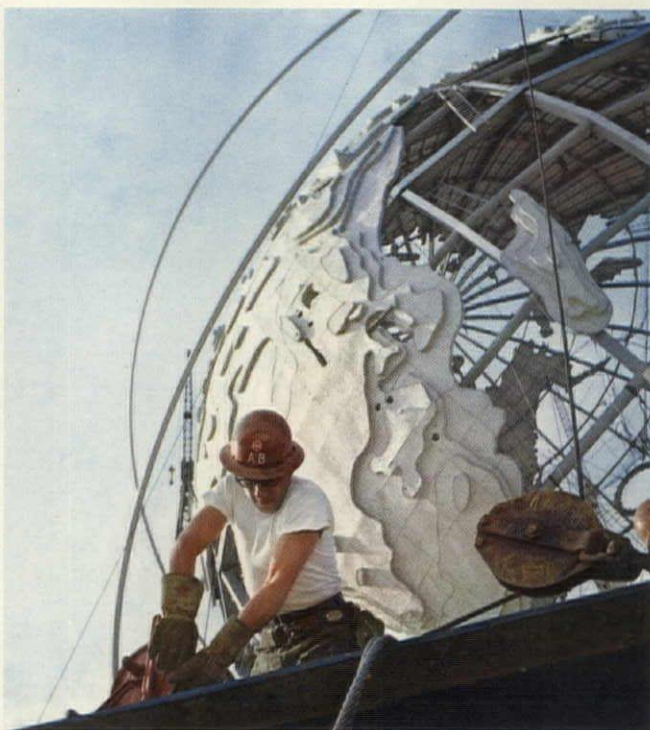
Land masses were fabricated by U.S.Steel at Harrisburg, Pa., after careful studies to find what surface texture would look best at viewing distances of 90 feet and more. Continents and major islands are made of textured stainless steel sheets, mounted on a framework of channels and angles. Land elevations are built up in layer cake fashion, like a huge contour map. Since every coastline and contour line is irregular and every land mass must fit the earth's curvature, fabrication became a highly complex task in which no section was square in any plane.

From beginning to end, Unisphere demanded entirely new techniques to solve entirely new problems, even after the unprecedented design and engineering questions had been settled. A few examples:

Standard bending equipment wouldn't curve the orbital rings without crimping or defacing them, so U.S.Steel engineers designed a die that would do the job. Meridian sections had to be welded together *after* they were polished, so the engineers worked out a method to remove discoloration caused by welding. Working with polished sections during fabrication also required a whole new

system of materials handling, using vacuum lifting equipment, protective tapes, and nylon slings.

After tests of various surface materials including stainless steel mesh, land masses were made of a new non-directional patterned stainless steel sheet designed especially for Unisphere. In construction, meridians and parallels were connected by what is probably the first application of inert gas shielded short-circuited arc welding to heavy stainless steel structural members in the field. And U.S.Steel construction engineers had to invent some new hoisting techniques: to raise large curved sections of the continents into place, they made a lift from a thirty-foot piling section, angles, clamps, and a rolling hitch; to position the huge orbital rings aloft, they welded each ring completely together, surrounding the sphere on the ground, then used four cranes to lift it in one piece and hold it until anchor cables were placed.



At no point could U.S.Steel engineers go to the book for their answers. There wasn't any book. But when the time came to put the pieces together, they fit. They fit each other, they fit the theme of the New York World's Fair, and they fit the modern notion that no structural design problem is too tough to solve, given the right technical know-how, the right facilities, and the right steels.

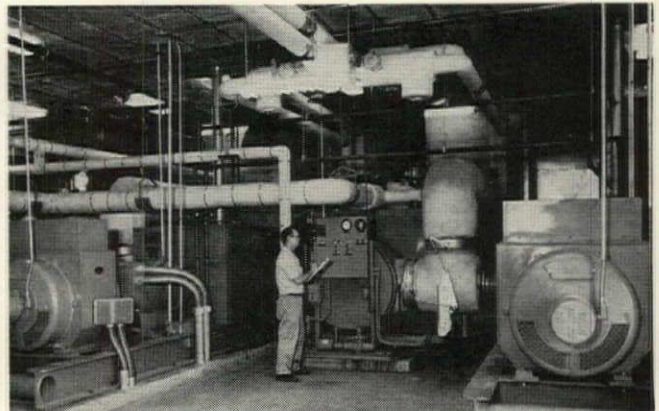
“To quote Mr. Robert Moses, president, 1964-1965 New York World's Fair: What stronger, more durable, and more appropriate metal could be thought of than stainless steel? And what builder more imaginative and competent than United States Steel?”

United States Steel

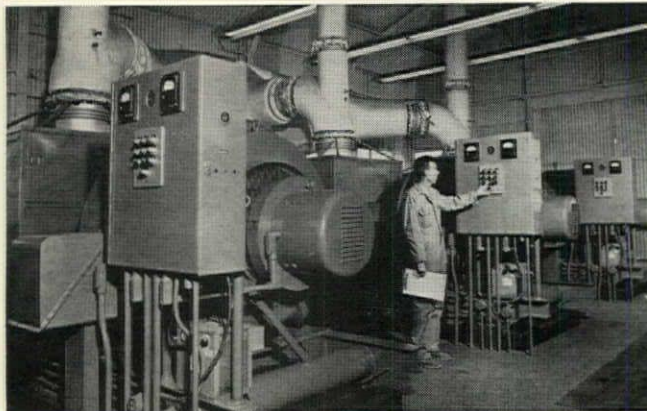




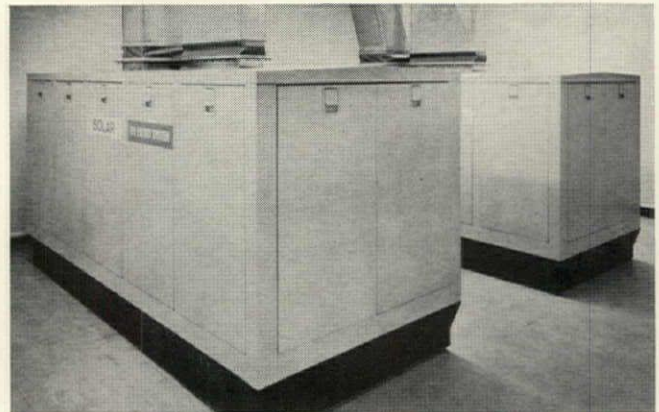
Washington Natural Gas Company office in Seattle



Gas turbine energy system at McAllen High School



Warren Petroleum Corp. refinery, Monument, N. M.



T-350 gas turbine energy system for Standard Pipeprotection, Inc.

These companies get high thermal efficiencies with Solar gas turbine energy systems

The Solar gas turbine energy system concept of employing both the shaft horsepower and the exhaust heat of a rugged, dependable Solar gas turbine can achieve thermal efficiencies over 70 per cent. Significant savings in power costs are currently being realized in a wide variety of uses. Here are four typical applications that demonstrate the versatility of Solar gas turbine energy systems.

Washington Natural Gas Company

Washington Natural Gas Company's new four story Seattle office building is air conditioned by a Solar T-350 gas turbine energy system. The turbine drives a centrifugal vapor cycle refrigeration compressor, while exhaust heat is recovered to run an absorption air conditioner. The system provides 320 tons of air

conditioning at full load. Fuel consumption is reduced with a recuperator.

McAllen High School

Two 1100 hp Solar Saturn® turbines are in operation at McAllen, Texas, high school. Shaft power is used to generate 60 and 840 cycle electricity, and exhaust heat is used to make steam for heating and 467 tons of absorption air conditioning. All of the 2400-pupil school's high frequency lighting, cooling and electrical needs are supplied by the system.

Warren Petroleum Corporation

Three Solar Saturn 1100 hp gas turbines driving 700 kw generators provide all of the electrical power used at Warren Petroleum Corporation's Monument, N.M., natural gasoline refinery. Exhaust heat is ducted from the

turbines into a boiler, which produces 17,350 lbs of steam per hour at 65 psig for plant processes.

Standard Pipeprotection, Inc.

Exhaust heat without processing of any kind is used to dry pipe at Standard Pipeprotection's new Houston, Texas, plant. Two Solar T-350 gas turbine energy systems drive 60-cycle, 200 kw generators to supply electrical power in the plant.

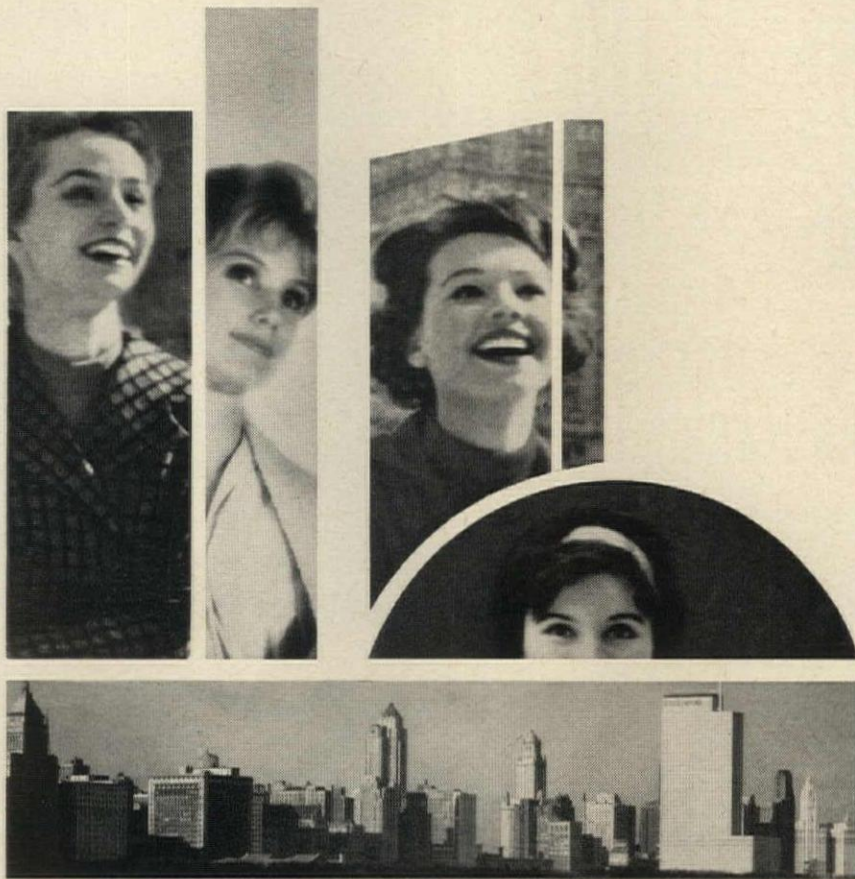
Write for Information

For more information about Solar gas turbine energy systems, write Solar, Dept. L-217, San Diego, California 92112.



For more data, circle 62 on Inquiry Card

For more data, circle 63 on Inquiry Card ➤

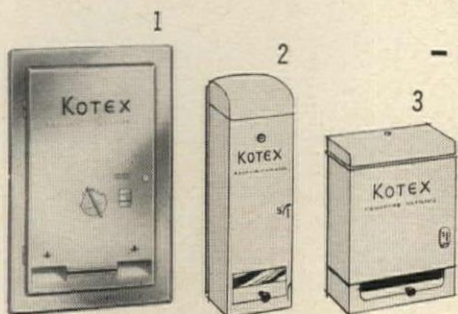


What do most women prefer in buildings? It's a fact. Most women prefer modern, spacious washrooms equipped with vending machines for Kotex feminine napkins. It's a fact—because most women prefer Kotex to all other brands! When you make provision for vending machines for Kotex, you add a greatly appreciated thoughtfulness—and help to eliminate unnecessary embarrassment and absenteeism.

Only Kotex offers three separate machine designs. Each is easily installed and is available in your choice of white enamel, bright or satin chrome finish. (The Kotex recessed model is also available in stainless steel.) All three vending machines are made of 18 and 20 gauge steel, with trouble-free, long-wearing, cold-rolled steel mechanisms. (Five-cent, ten-cent or free vending

mechanisms are available for all models.) 1. **Model R-63** (Recessed)—Dispenser can also be surface mounted. Holds 63 individually boxed Kotex napkins. 2. **Model MW-15** (Surface mounted)—Dispenser holds 15 individually boxed Kotex napkins. 3. **Model R-25** (Surface mounted)—Dispenser holds 22 envelope-wrapped Kotex napkins.

More women choose Kotex feminine napkins than all others combined



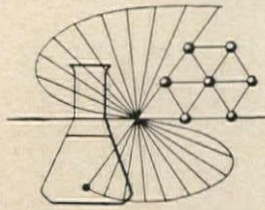
Kotex is a trademark of Kimberly-Clark Corporation, Neenah, Wisconsin

Kimberly-Clark Corporation, Department Number **AR-14**, Neenah, Wisconsin
Gentlemen: Please send complete information on vending machine service for Kotex feminine napkins.

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 Organization _____
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 City _____ Zone _____ State _____

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FRESH!



IMAGINATIVE USE OF STIMULATING MATERIALS

You can select distinctive Haws fountain designs that keep pace with your own architectural ideas. They're fresh! Here are a few for your appraisal: detailed specs are yours for the asking.

Fiberglass

HDFC electric water cooler, AIR COOLED! Semi-recessed wall model, molded in strong fiberglass. In 3 colors or white.

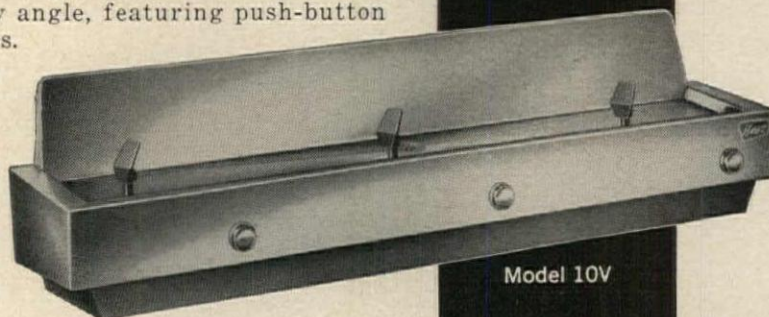
Hard Anodized Aluminum

7L wall fountain in cast Tenzaloy aluminum, hard anodized to rich bronze finish that stands up under rough usage. Here's a real beauty: and practical, too!

7J wall model with same hard anodized finish as 7L, above. Features Haws easy-action push-button valve.

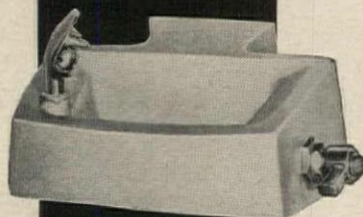
Stainless Steel

10V multiple wall fountain, new from every angle, featuring push-button valves.

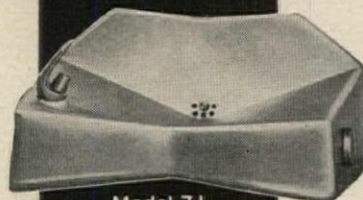


Model 10V

Model HDFC



Model 7L



Model 7J

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Required Reading

continued from page 90

A HISTORY OF ENGLISH ARCHITECTURE. By Peter Kidson and Peter Murray. Arco Publishing Company, Inc., 480 Lexington Ave., New York 17. 256 pp., illus. \$5.95.

Compressing a great many facts into relatively small space, this history, ranging from Saxon times to the present, is an introduction to English architecture. Since the authors have selected as examples only buildings still accessible to the public, it should also serve as a convenient refresher course for prospective travelers. It must be said, however, that modern architecture is relegated to a mere half-page.

MEETINGHOUSE & CHURCH IN EARLY NEW ENGLAND. By Edmund W. Sinnott. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36. 243 pp., illus. \$10.

Mr. Sinnott, a botanist by profession and an architecture buff on the side, "collects" New England meetinghouses. Here he accompanies his collection with an appreciative and often entertaining text on "The Puritan Tradition as Reflected in Their Architecture, History, Builders & Ministers." He has also included a check list of 509 extant meetinghouses built before 1830.

Of Interest

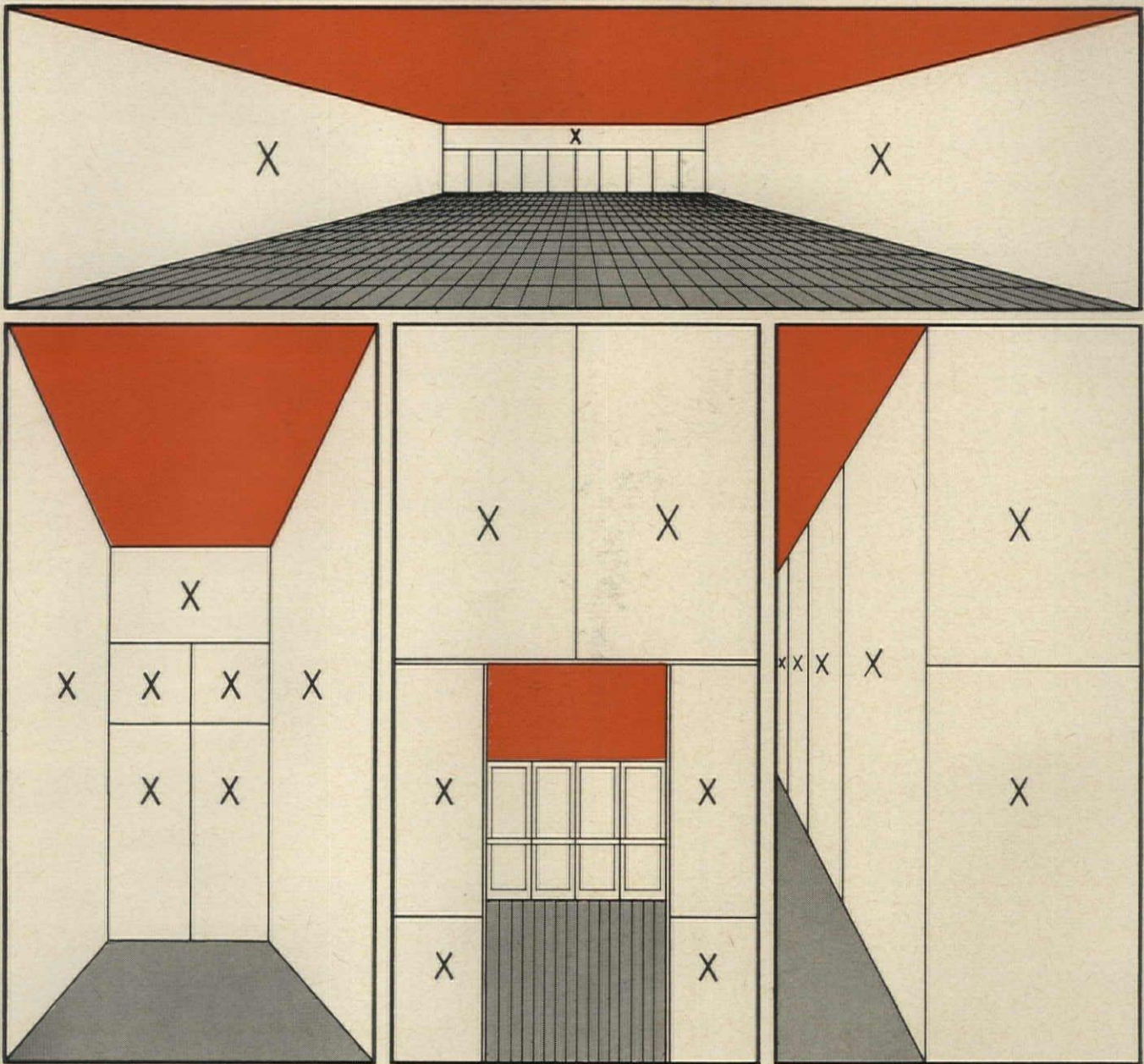
ARCHITECT'S HANDBOOK OF PROFESSIONAL PRACTICE, 1963 EDITION. The American Institute of Architects, 1735 New York Ave., N.W., Washington 6, D.C.

BULLDOZERS AND BUREAUCRATS. Cities and Urban Renewal. By Wolf Von Eckardt. The New Republic, 1244 19th St., N.W., Washington 6, D.C. 65 pp. Each \$1; bulk rates.

A reprint of Mr. Von Eckardt's six part series written for The New Republic.

COLOR: A GUIDE TO BASIC FACTS AND CONCEPTS. By R. W. Burnham, R. M. Hanes, and C. James Bartleson. John Wiley & Sons, Inc., 605 Third Ave., New York 16. 249 pp., illus. \$9.25.

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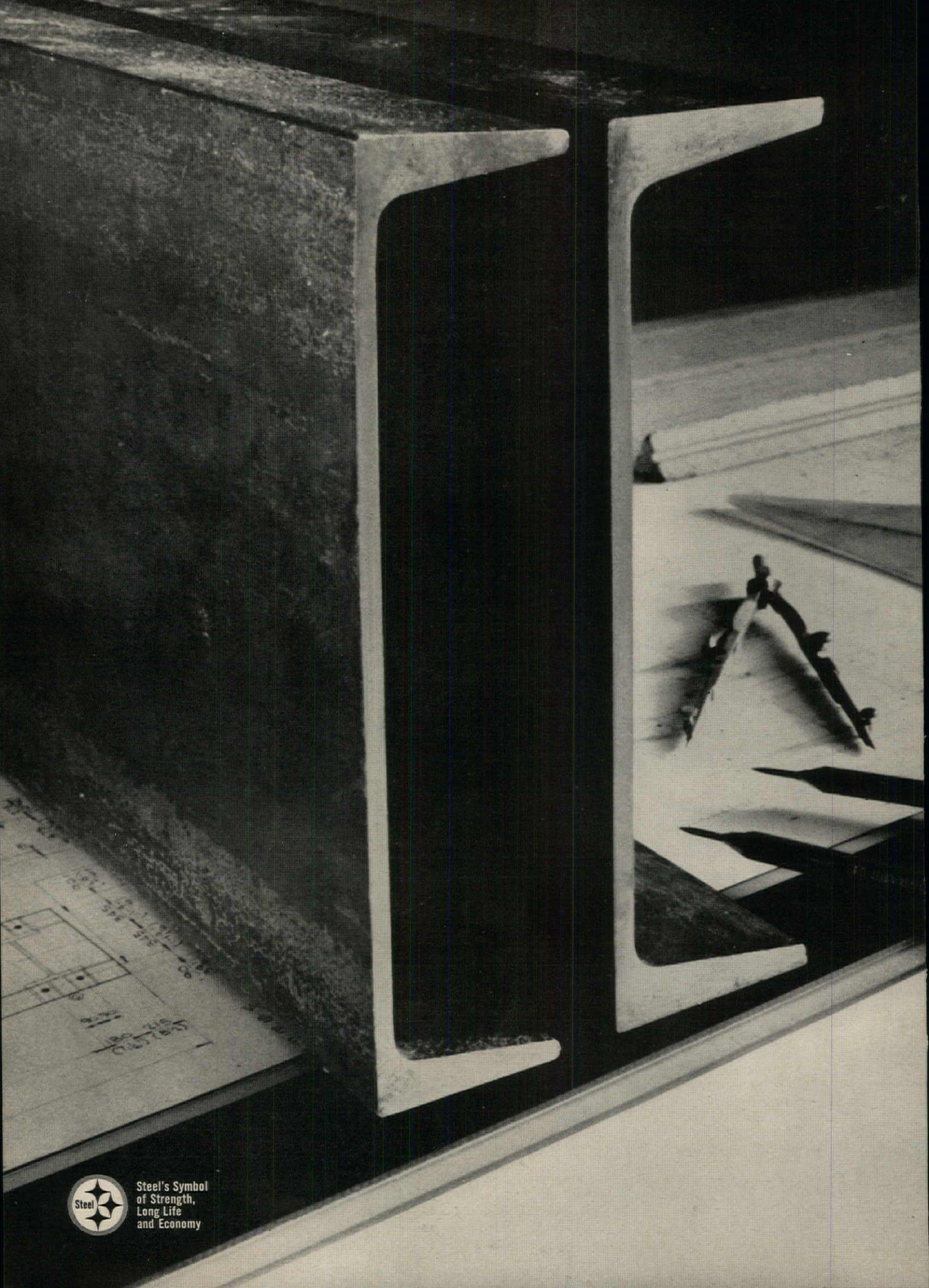
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in.	lb.	in. ²	in.	in.	in.	in.	in. ⁴	in. ³	in.	in. ⁴	in. ³	in.	in.
8x1 $\frac{7}{8}$	8.5	2.49	8.00	1.875	.321	.180	23.6	5.9	3.08	.65	.45	.51	.45

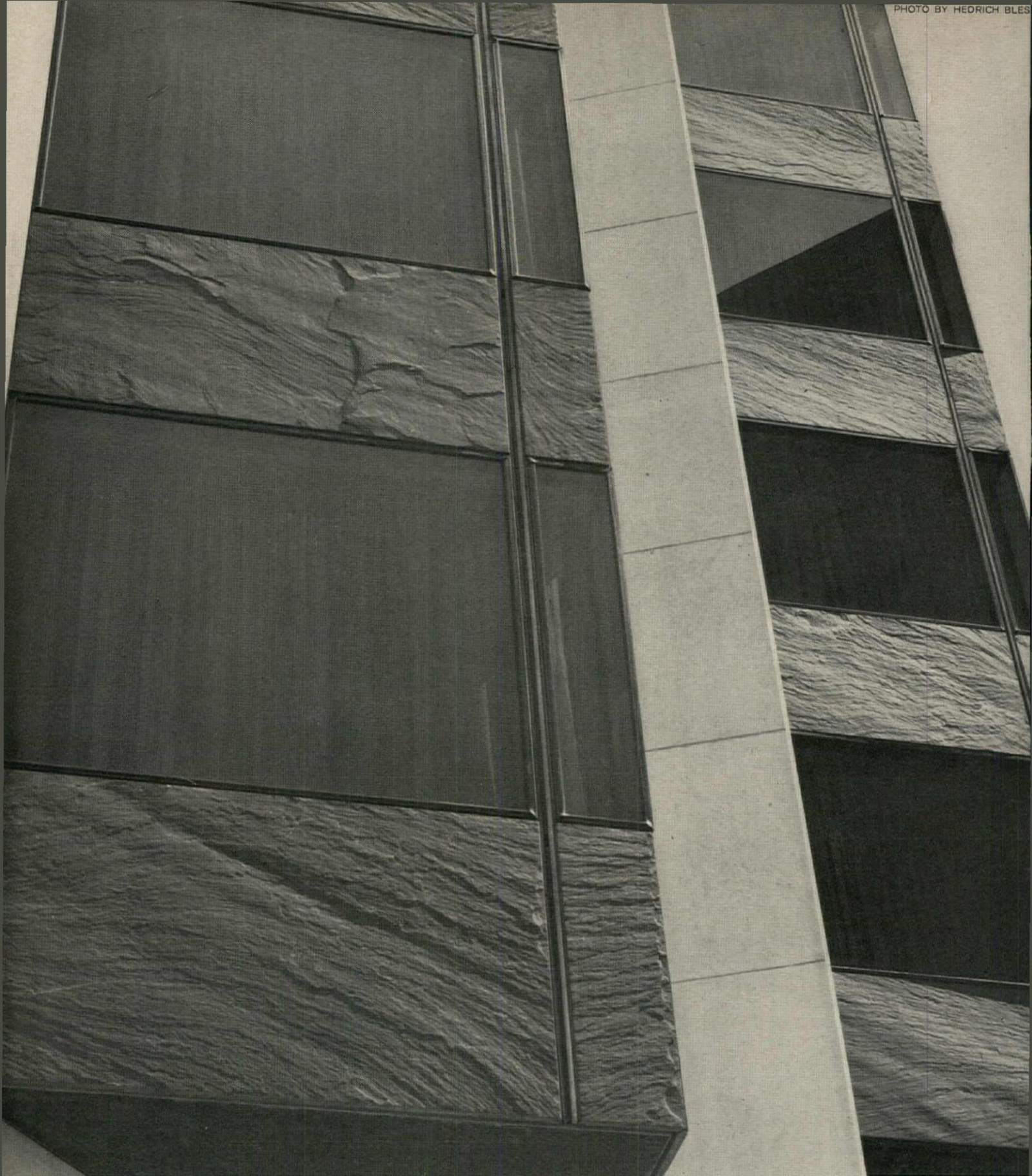
STANDARD CHANNEL

Depth of Section	Wt. Per Foot	FLANGE		WEB		DISTANCE					Grip	Max. Flange Rivet	Usual Gage	
		Width	Mean Thick-ness	Thick-ness	Half Thick-ness	a	T	k	gl	c				
in.	lb.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
8	8.5	1 $\frac{7}{8}$	$\frac{5}{8}$	$\frac{3}{8}$	$\frac{1}{8}$	1 $\frac{3}{4}$	6 $\frac{1}{2}$	$\frac{3}{4}$	2 $\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{5}{8}$	1 $\frac{1}{8}$	

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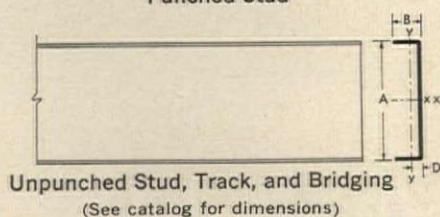
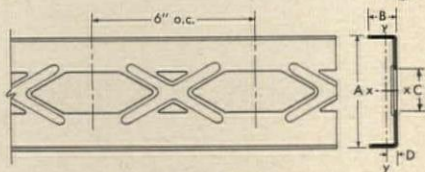
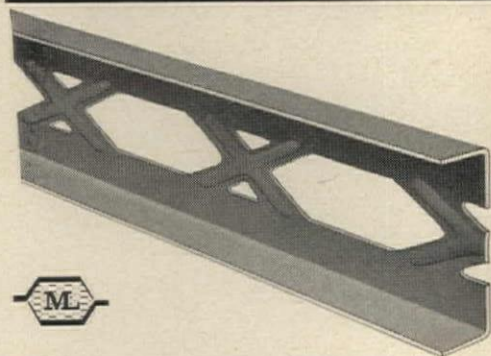
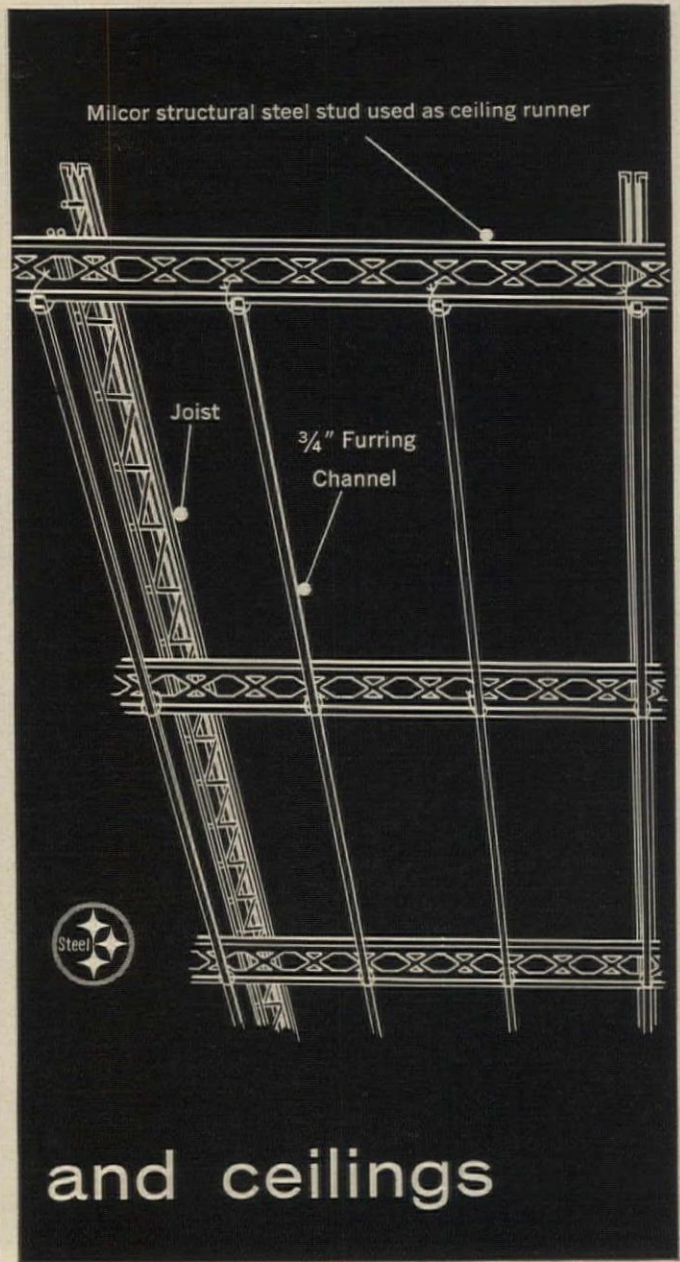
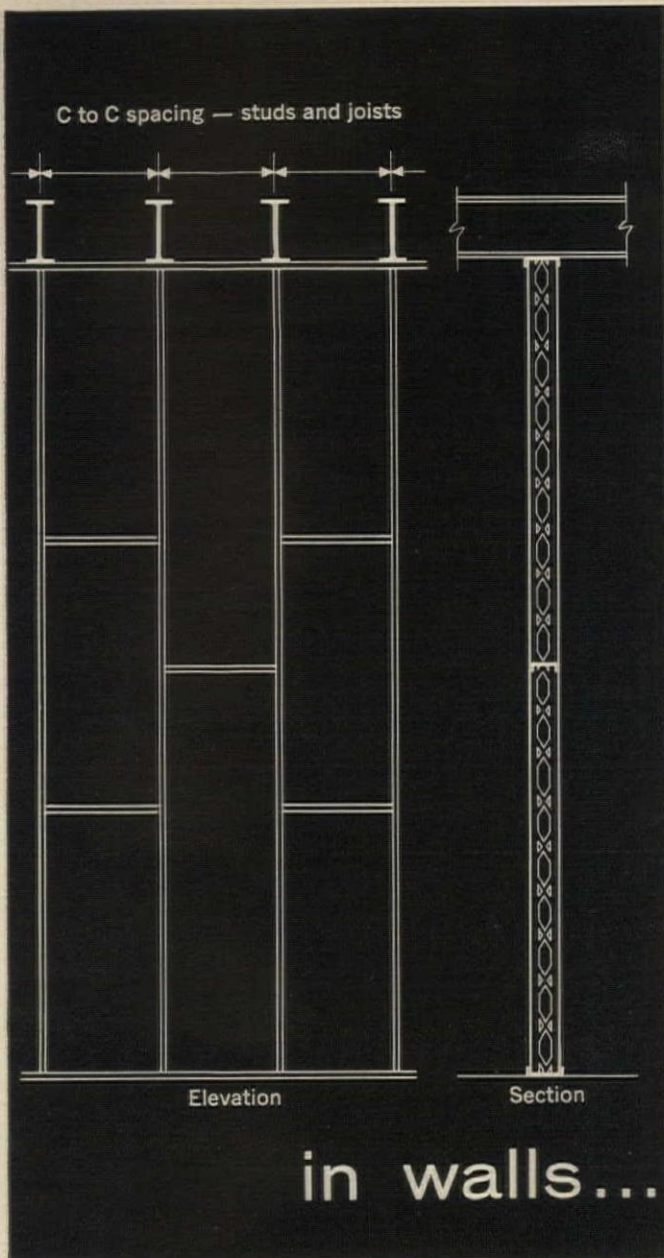


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Right top: Van de Velde: Initial for Van Nu En Straks. 1893
 Right bottom: Josef Albers: Seclusion. 1942. Lithograph

The great historic quarrels between the classicists and the romanticists, between the conservatives and the innovators, have been fruitless, because both parties in the past ignored the common foundations that set their problem: the technical innovations brought by the machine, the new arts of engineering and hygiene, and the new patterns of social life. Each party sought to establish a common goal without accepting a common point of departure: they divided over little details like columns and acanthus leaves, at the very time that the whole ground of traditional architecture was being swept from under them. This does not say that the symbolic interests they showed, their concern over "ornament" or "style" were meaningless: it would be more accurate to say that they were ill-timed. The problem of style was insoluble until the new architecture had made a beginning. Whether a formalized classic capital is superior to a naturalistic Gothic capital or to a free modern one is a meretricious question once modern methods of construction have made the stone column itself an anachronism.

Looking back over the 19th century, one finds little to choose between the work of the classicists, the medievalists, and the eclectics or the originals; or, rather, the best that can be said for the latter is that they were as much alive to the problem of form, the technical problem, as they were to that of symbolic expression. Hence an eclectic architect like John Root, deliberately modeling his Monadnock Building after an Egyptian pylon, remained close enough to his materials and functions to create a strong and fresh work of the imagination, and did not let himself be prevented by stylistic considerations from creating those well-conceived bays which were necessary to bring sufficient light past the thick masonry walls. The same was true of Louis Sullivan. He prided himself on his original ornament, those snowflakes and lacy flowers that his teeming hand so easily turned out; but one of his greatest steps forward was in the Schlesinger and Meyer Building in Chicago, where the unbroken horizontal window, later to become the happy cliché of modernism, was first achieved in a business building; and where the surviving ornament was plainly indifferent.

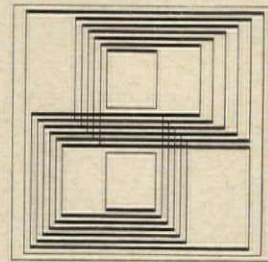
Now that the fundamental technical problems of building have become a little more clear to us, we are perhaps at last ready to approach those ultimate questions of expression which were unfortunately put first during the battle of the styles. Let us consider the two fundamental stylistic movements of the last 30 years: both of them were modern, both of them were anti-traditional; but they differed in every other particular. Using one of the battle-cries of the early 1900's, one may call the first the school of the wavy line, the second the school of the cube.



The Wavy Line versus The Cube

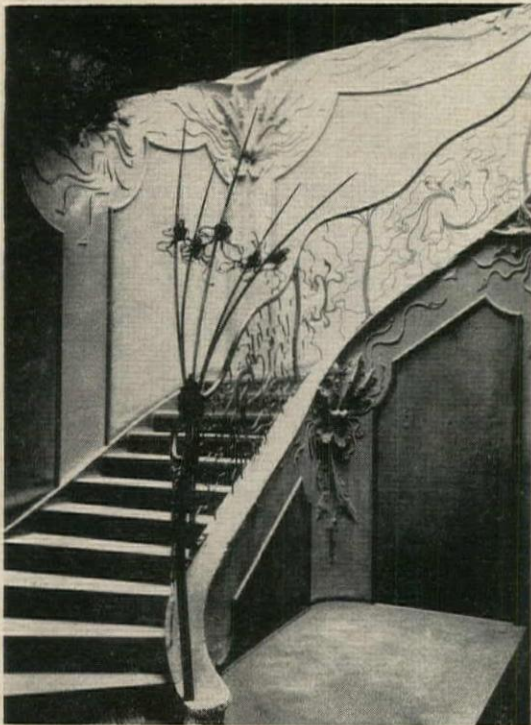
By Lewis Mumford

from *Architecture* December 1930



Thirty-three years ago Lewis Mumford looked back upon the preceding thirty years and concluded that L'Art Nouveau and Cubism were the significant artistic movements of that period. Looking forward he predicted that the spirit of these styles would be a strong influence upon the architecture to come. From the vantage point of today the contemplation of our immediate architectural past affirms Mumford's prophecy and suggests its continuing relevance for the future.

EDITORS



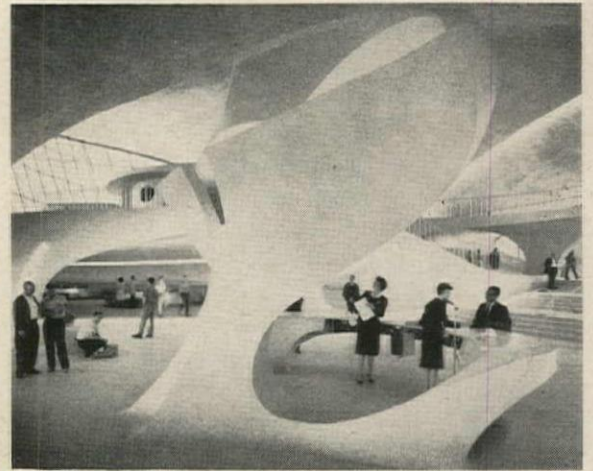
August Endell: *Atelier Elvira, Munich, 1897*
Courtesy Museum of Modern Art

“. . . but [L'Art Nouveau] was capable of sinking to such depths of absurdity as a balustrade falling in a metallic cascade, and breaking at the bottom of the stairway into a spray of electroliers.”

II

The romantic architects, under Ruskin's lead, had popularized the notion that the living flower or animal or fruit was preferable, in art, to any abstract form or stylization. Ruskin himself was not altogether of one mind about this; for, after “Modern Painters,” he recommended abstract forms and colored tiles as the one possible fruitful form of modern ornament; but the belief in nature remained with his followers, and toward the end of the century it received a fresh sanction in the work of a new school of architects and decorators, under the talented Dutch architect, Van de Velde, and under the industrial leadership of the firm of Bing in Paris.

This school established the dogma of the living form as the source of ornament and design, and the wavy line as its characteristic expression: “nature never geometrizes.” The fixed, the static, the hard line, the unbroken surface, the right angle, the geometrical emphasis of structure, all these were anathema to it. Not merely must decoration use flowers and leaves, vines and tendrils, human figures and



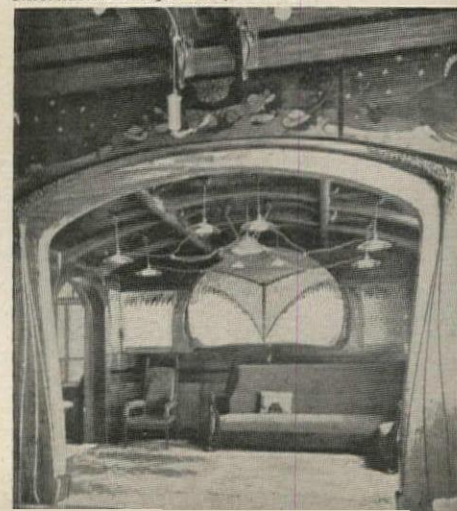
TWA Flight Center



Van de Velde: *Tropon, c. 1899.*
Poster, Adolph Studly photo

[L'Art Nouveau designers] “also sought freedom in the sense of being unconditioned by their material, and in making the symbolic exuberance of their imagination dominate the problem of form.”

Pankok: *Smoking room, International Exposition, Paris, 1900*

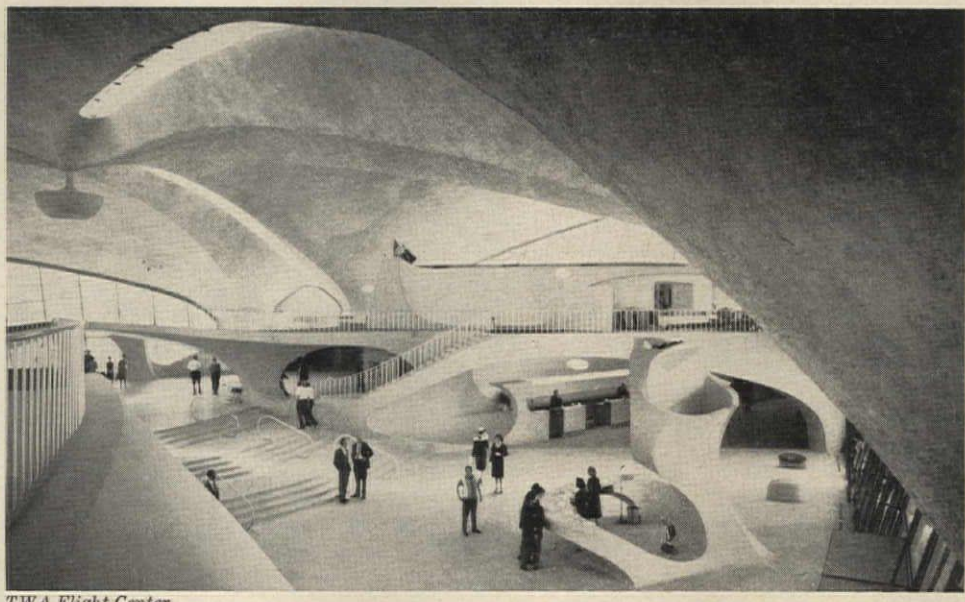




Eero Saarinen Associates: TWA Flight Center, Idlewild, New York International Airport, N.Y. 1962. © Ezra Stoller Assoc's. photos



Grasset: Typographic ornament. 1898

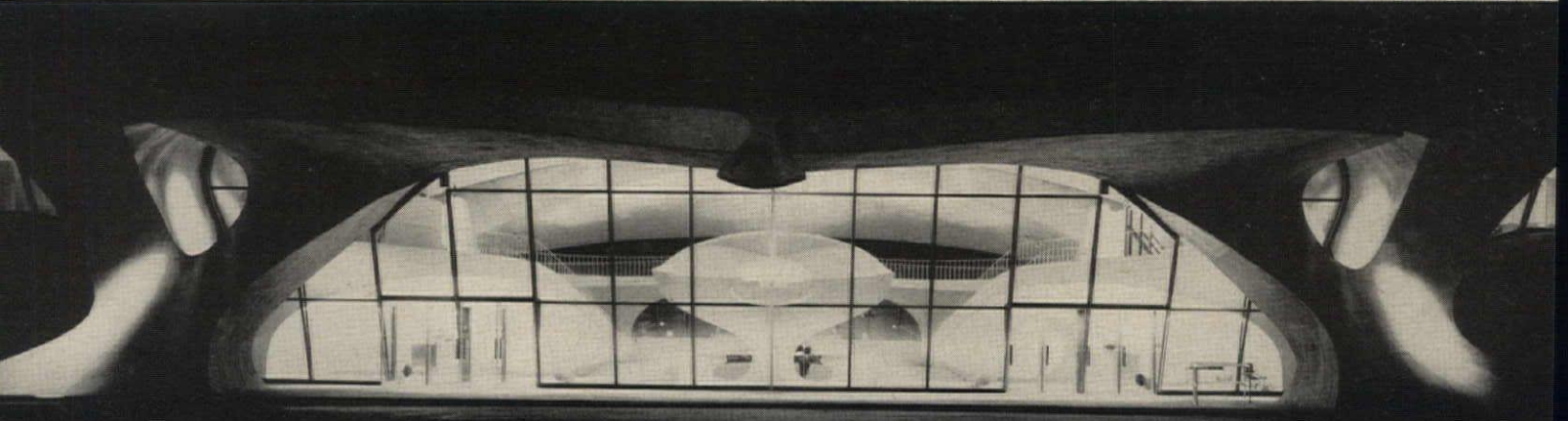


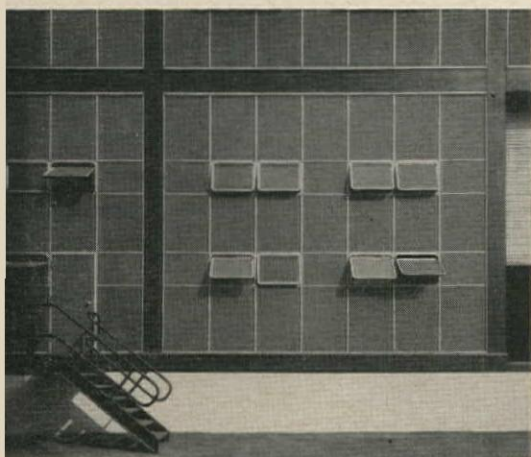
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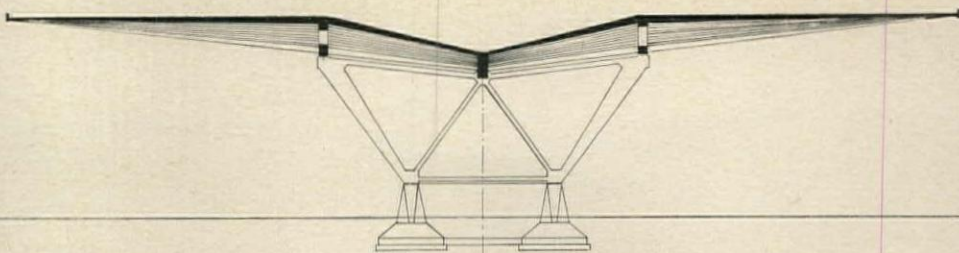
Van de Velde: Angels' Guard. 1898

TWA Flight Center





Skidmore, Owings & Merrill: Warehouse and Vinegar Plant, H. J. Heinz Co. Pittsburgh, Pennsylvania. 1950-52 © Ezra Stoller Assoc's. photo

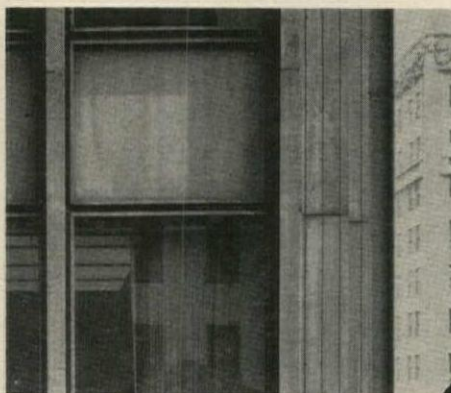


Nervi: Canopy Support. Fiumicino Intercontinental Airport Project, Rome. 1957

"Beneath the appearance of things the Cubist sought for structure . . . the essential of art was no longer to represent or interpret living nature, but to embody the mathematics of spatial order . . . this respect for the object, this interest in its mechanical components . . . leads to an interest in new materials, new methods of construction, new processes, as such . . . concrete and steel and fabricated wall compositions suggest new forms."



Paul Rudolph: Endo Laboratories, Long Island, N. Y. Under construction. David Attie photo



Mies van der Rohe and Philip Johnson: The Seagram Building, New York City. 1958. © Ezra Stoller Assoc's. photo

"Most of the best [Cubist] sculptors now take delight in the refractoriness of the material . . ."

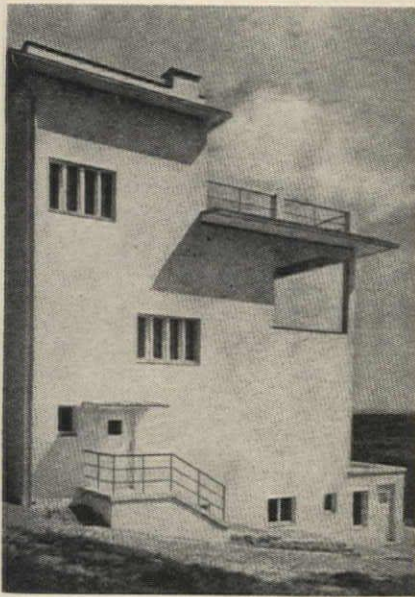


Philip Johnson: Glass House. New Canaan, Conn. 1949. © Ezra Stoller Assoc's. photo



Skidmore, Owings & Merrill: Office building, Connecticut General Life Insurance Company, Bloomfield, Conn. 1954-57. © Ezra Stoller Assoc's. photo

A 1930 Mumford prophecy: "Once the background is stripped clean of every piece of meaningless ornament, the foreground again becomes prominent; and in this foreground one may reinstate once more the living form . . . valuing the living line, we will find it rather in flowers, pictures, sculptures, . . . and in a relevant relation to these elements our austere mechanical forms will come finally to life."



House in Czechoslovakia, c. 1930

"The [Cubist] building not only becomes rationally simple, which is all to the good; it becomes irrationally simplified too, by reason of considerations which have nothing whatever to do with functional requirements. . . ."



Louis Kahn: Richards Medical Research Laboratories, University of Pennsylvania, Philadelphia, Pa. 1960.
Joseph Molitor photo

Mumford predicted that the functionalist concept would expand: "Once the creative effort of the new architecture becomes centered in our life as a whole, not alone in its mechanical performances, its dogmas will be modified, and its merely empty restrictions will be removed."

swirling draperies, in preference to any other emblems; but the building itself, the chairs and desks and tables, must exhibit these flowing lines. Even in the new type of suburban city planning, partly through a misreading of Camillo Sitte, the accidental contour lines of nature became a law, and the palpable fact, which every one may read in the snow, that one naturally chooses the easiest and not necessarily the shortest distance between two points, led to an exaggerated respect for useless deviations.

Through continued experiment, this movement finally reached such well-considered expressions in architecture as Van de Velde's theater for the Werkbund Exhibition in Cologne in 1914; but it was capable of sinking to such depths of absurdity as a balustrade falling in a metallic cascade, and breaking at the bottom of the stairway into a spray of electroliers. In its application to the other decorative arts, the wavy line would even disregard the objective form of a china plate, which is determined by the physical properties of clay and the potter's wheel; no form remained as it was, if there was any possibility of torturing it into a leaf, a flower or an abstract swirl.

L'Art Nouveau enthusiasts not merely demanded freedom from the conventions of the past, freedom to express the conditions and interests of their own times; this, indeed, was a necessary condition of experiment. They also sought freedom in the sense of being unconditioned by their material, and in making the symbolic exuberance of their imagination dominate the problem of form. In this their point of view was no different from that of the revivalists, except that the latter chose to apply dead patterns to the new problems and conditions: the design and the ornament, instead of being developed in continuous interrelation with the new forms, was deliberately imported. Aside from an occasional subway kiosk—the best being those of the Paris Metro—L'Art Nouveau had very little relation to the typical problems of the new age: in architecture it confined itself largely to the monumental and the luxurious, to problems where a rigorous facing of actual conditions was not essential. Its pinnacle in the crafts was the jewelry of Lalique; and it had by good fortune the independent support of a sculptor of genius, Auguste Rodin; but outside these departments its work lacked logic and conviction—and even Rodin's best pupils departed from his fluid and impressionistic use of marble.

This movement had almost spent itself before the war; and it had called forth its antithesis, Cubism. A new set of dogmas came into existence. Beneath the appearance of things the Cubist sought for structure; and Cezanne's chance remark, that everything in nature was either an egg or a cube, was

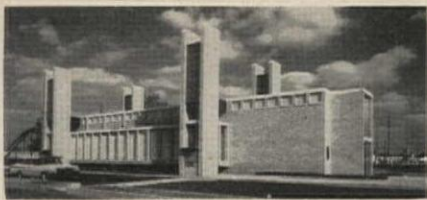
narrowed into the observation that only cubes were significant. In the graphic arts, the static and geometric aspect of things preoccupied the artist; and before the war had come in Europe this influence had made itself felt among the younger architects, like the Dutchmen of De Stijl group. The essential of art was no longer to represent or interpret living nature, but to embody the mathematics of spatial order, to reduce the living object to its mechanical components. Duchamps-Villon converts a horse into a mechanical model; Brancusi takes the trunk of a tree with two branches, and prides himself upon creating, by the smallest possible transformation of the material, the torso of a young man. Most of the best sculptors now take delight in the refractoriness of the material; they use the chisel on stone and the buffer on bronze, to bring out the grain or the surface of their medium, as well as the character of the object they are representing or symbolizing.

This respect for the object, this interest in its mechanical components, carries over into architecture; it leads to an interest in new materials, new methods of construction, new processes, as such; and, being indifferent to traditional requirements, it is as much at home in the design of a factory as traditional architecture felt in the erection of a church. Concrete and steel and fabricated wall compositions suggest new forms: the cantilever takes the place of the post, and makes possible the unbroken expanse of horizontal window. This movement in architecture, which was a necessary answer to that complete deliquescence of forms brought in by L'Art Nouveau—as Cezanne was a necessary answer to the dissolution of the impressionists like Monet—this abstract symbolism of the cube sought to justify itself also on more rational grounds; it professed to be in harmony with modern industrial conditions and to express the Machine Age. By a curious transposition, the cube was made the equivalent of the machine; and the machine took on a symbolic function. The gas tank, the factory, the grain silo became the embodiment of our current mechanical and financial ideal. Instead of making a schoolhouse look like a medieval college, the architect now sought to make it look like a factory; the symbolism changed, but the inherent form was still far to seek.

If L'Art Nouveau was marked by a meaningless stylistic exuberance, the *Neue Sachlichkeit*, as it is called in Germany, or the work of the New Pioneers, as Mr. H. R. Hitchcock has called it in America, is marked at first by an equally meaningless sense of restriction. There is first of all a limitation of materials to concrete and stucco; there is further, during the early experiments, a limitation as to color—only “industrial” colors, white, gray, black, may be used—and there is finally an abolition of any form

of ornamental enrichment, even that derived directly from the material itself. The building not only becomes rationally simple, which is all to the good; it becomes irrationally simplified too, by reason of considerations which have nothing whatever to do with functional requirements: questions such as the amount of sunlight necessary for a particular kind of room or choices like that between a flat and a gabled roof are solved by dogma, not by a reference to realities. This sort of architecture has a powerful symbolic effect, as any thoroughly logical design must have in a world filled with slipshod compromises and ineffectual reminiscences; but to an alert mind it conveys two contrasting meanings: one is the cool excellence of many of our mechanical utilities; the other is the meagerness of a system of life and thought that is entirely bounded by them.

Both L'Art Nouveau and Cubism sought in their applications to architecture to interpret modern life. One emphasized its plasticity and fluidity, the other its rigor and restraint; one prided itself upon its variations, the other upon its curt acceptance of monotony; one sought to be unique and the other to be completely standardized. An adequate symbolism, a really comprehensive interpretation of modern life, must, I think, get beyond the dogmas of both schools and yet retain the element of truth that gave each of them a career. From those who have sought to embody the strict mechanical requirements of modern building, we achieve that fundamental respect for function which leads to such humanly desirable qualities as sunlight, cleanliness, efficiency, space, absence of servile labor, hygiene, play, order, composure. These are precious gifts. Once the background is stripped clean of every piece of meaningless ornament, the foreground again becomes prominent; and in this foreground one may reinstate once more the living form. We will not ask the wall-paper to dance or the furniture to swoon; such agility has nothing to do with their proper functions: valuing the living line, we will find it rather in flowers, pictures, sculptures, above all in people, and in a relevant relation to these elements our austere mechanical forms will come finally to life. From the very economies and rigors of the new architecture we will obtain the leisure and the extra means necessary to cultivate the landscape and to proceed with the fine arts. Once the creative effort of the new architecture becomes centered in our life as a whole, not alone in its mechanical performances, its dogmas will be modified, and its merely empty restrictions will be removed. This is already happening in Europe; and in the work of Mr. Frank Lloyd Wright, who began 30 years ago at the point where the Europeans found themselves in 1914, it has already prophetically happened in America.



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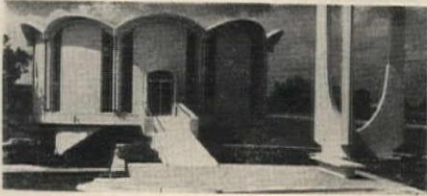
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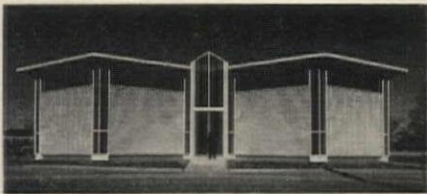
ARCHITECTS: *Wilson, Morris, Crain & Anderson*

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STRUCTURAL ENGINEERS: *S. S. Kenworthy & Associates*

STRUCTURAL CONSULTANT: *Henry A. Pfisterer*

MECHANICAL AND ELECTRICAL ENGINEERS: *Flinn & Humphrey*

GENERAL CONTRACTOR: *Dougherty-Liddell Construction Co.*



DEFT, ECONOMICAL REMODELING

Warren Bank, Branch Remodeling, Warren, Michigan

ARCHITECTS & ENGINEERS: *Linn Smith Associates*

Linn Smith, Almon Durkee, Gordon Hoyem, Richard Albyn

STRUCTURAL ENGINEERS: *R. H. McClurg Associates*

GENERAL CONTRACTOR: *A. J. Etkin Construction Company*



PRESTIGE BRANCH BANK WITH AN ATRIUM

Bank of America, A. P. Giannini Branch, San Mateo, Calif.

ARCHITECTS: *Wurster, Bernardi and Emmons; Miller and Steiner*

ENGINEERS: *Gilbert-Forsberg-Diekmann-Schmidt*

INTERIOR DESIGN CONSULTANT: *Maurice Sands*

GENERAL CONTRACTOR: *Stevenson-Pacific*



COMPLETE BANK PLUS RENTAL SPACE

First National Bank, San Angelo, Texas

ARCHITECTS: *The Office of George Pierce—Abel B. Pierce; Edwin J. Goodwin Jr., partner in charge of design; J. Robert Deshayes, project architect*

ASSOCIATE ARCHITECTS: *Lovett & Sellars*

LANDSCAPE ARCHITECTS: *Robert F. White & Associates*

STRUCTURAL ENGINEER: *Walter P. Moore*

MECHANICAL ENGINEERS: *Bernard Johnson & Associates*

GENERAL CONTRACTOR: *Templeton-Cannon*



SUBURBAN BRANCH LARGELY OF BRICK

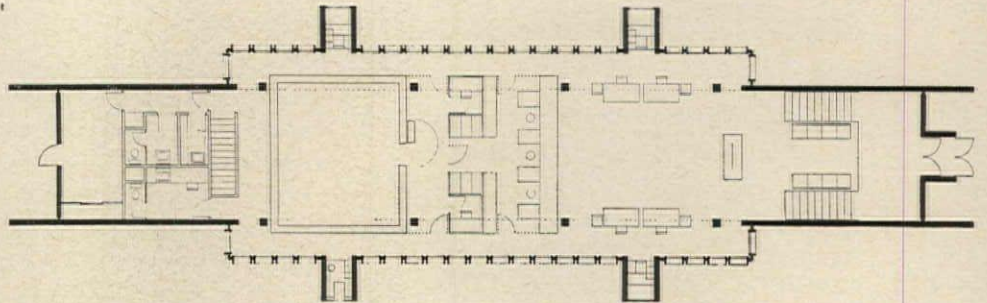
The Connecticut Savings Bank, North Haven Office, North Haven, Connecticut

ARCHITECTS: *Office of Douglas Orr, de Cossy, Winder and Associates*

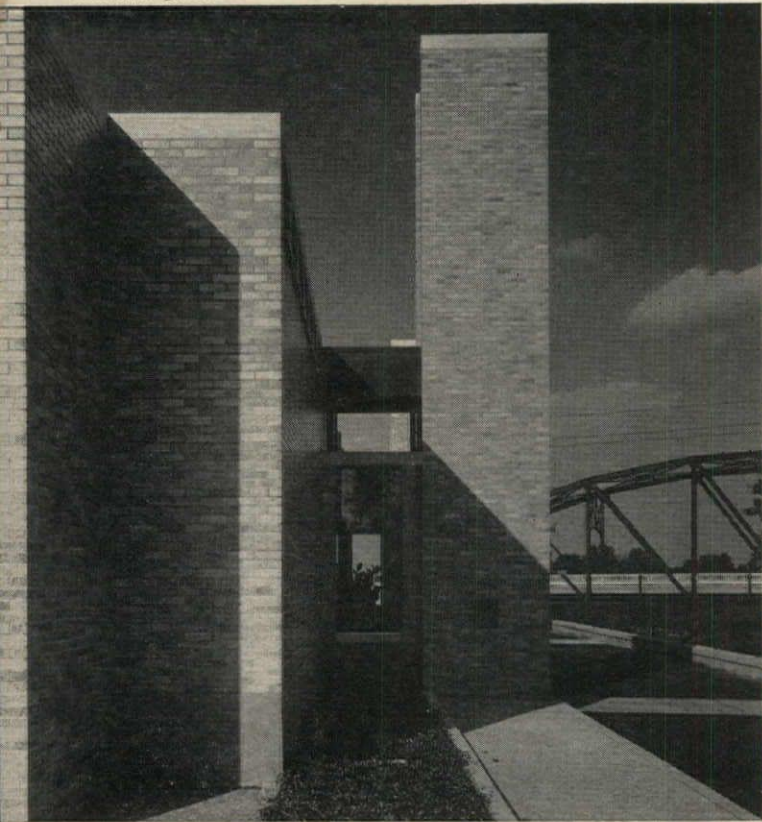
STRUCTURAL ENGINEER: *Henry A. Pfisterer*

MECHANICAL ENGINEERS: *Hubbard, Lawless & Blakely*

GENERAL CONTRACTOR: *Chapel Construction Company*



Balthazar photos



INDIANA BANK IS AUTOMOBILE ORIENTED

*Irwin Union Bank, Everroad Branch
Columbus, Indiana*

ARCHITECT: *Harry Weese & Associates*

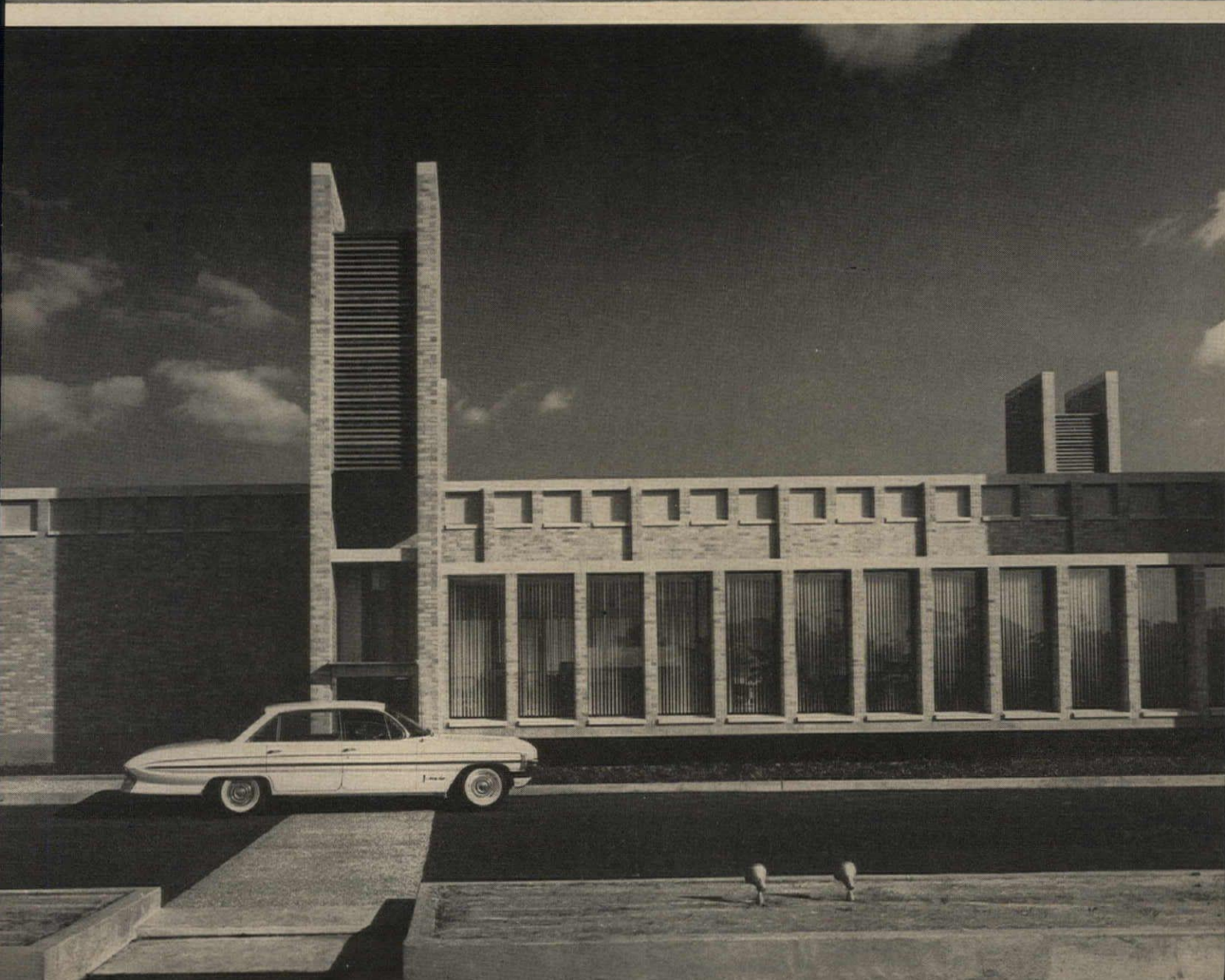
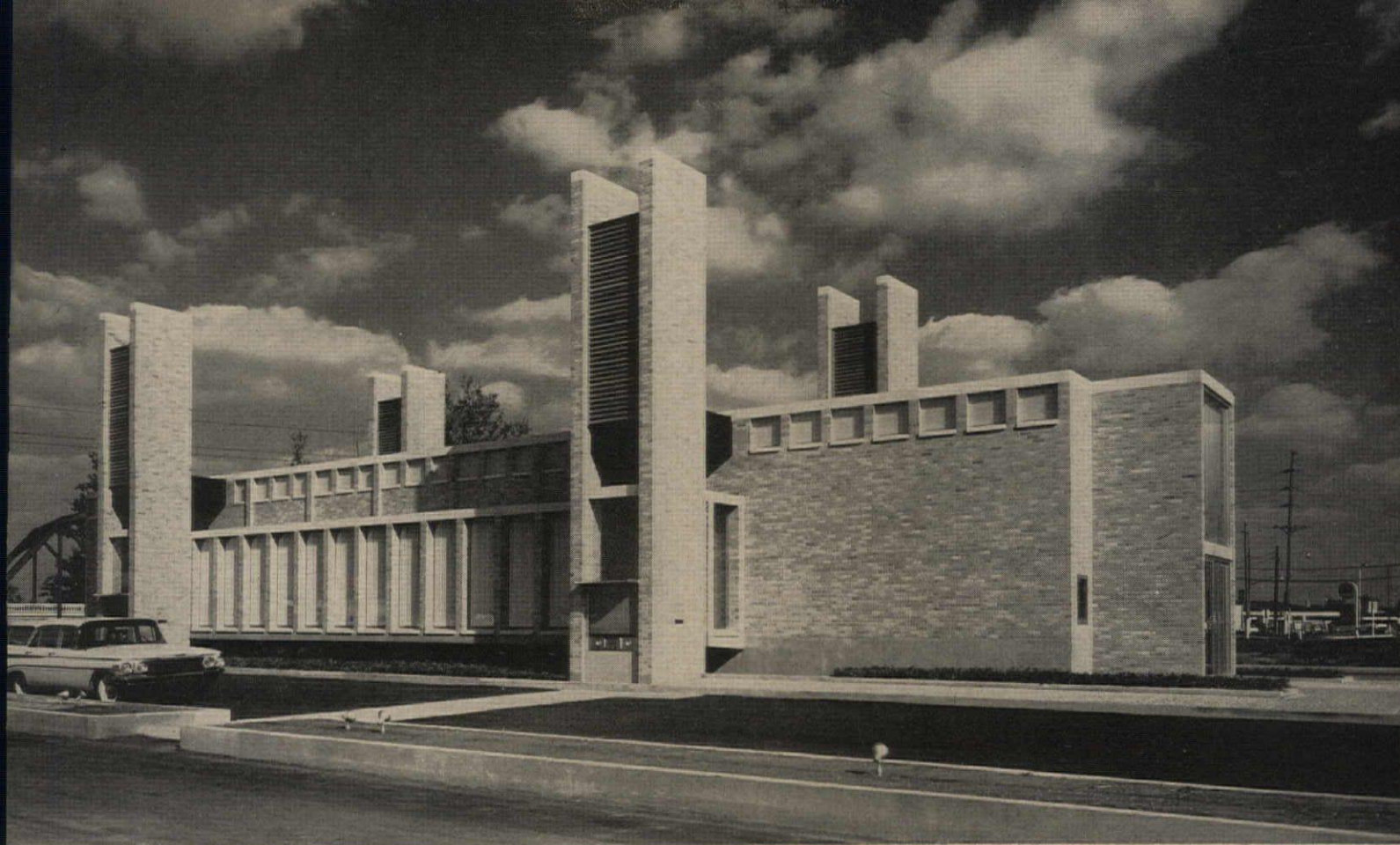
Architect Harry Weese explains: "Being a small service operation and located in a shopping center, this branch bank is without any question oriented to the automobile. The approach, the use, and the spirit of the design accepted that fundamental fact. Therefore, the drive-up window has been made the key element; everything stems from it.

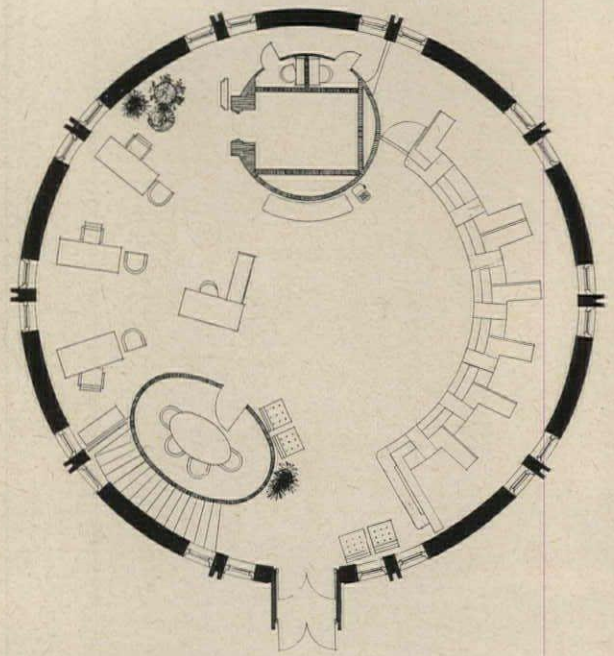
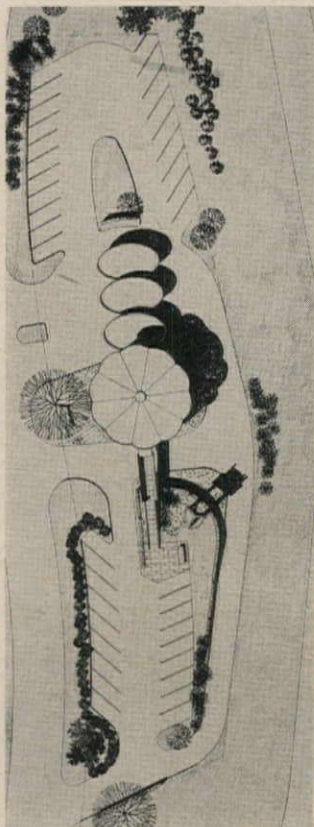
"The rectangular site faces a creek on one side and a shopping center parking lot on the other. By raising the banking floor above the sea of cars and placing it upon a podium, better outlooks as well as see-throughs were obtained. The island site permitted a maximum of three drive-up windows, with the fourth station serving as a night depository.

"The drive-up windows are at ground level and are reached by steps from the main floor. This has advantages in both visibility and separation. The approach to the bank can be made from either end, and a sufficient traffic reservoir is provided.

"The construction consists of reinforced concrete slabs, combined with brick bearing walls. The plan is simple, straightforward, and reduced to its essential terms. The resulting building is designed to establish the essence of drive-up banking in three dimensions."







CIRCULAR BANK FOR A TRAFFIC ISLAND

*Trust Company of Georgia, Northeast Freeway Office
Atlanta, Georgia*

ARCHITECTS: *Abreu & Robeson*

Alexandre Georges photos



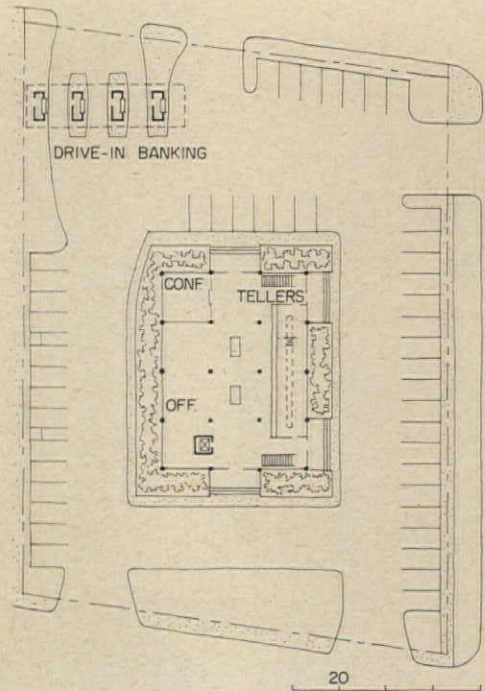
Speaking for his firm, architect Henri Jova says: "When we were asked for our suggestions for this site, we pointed out the difficulty of orienting a conventional building with 'front and back' on a site completely surrounded by busy thoroughfares; in effect a large traffic island. We advocated a circular building, and this concept eventually was adopted.

"Although designed primarily as a solution to a difficult site, the fact that it would inevitably attract attention was one of the arguments in favor of the scheme. As it neared completion, the owners realized it was indeed such a conversation piece that they wanted to capitalize on that fact. To do so they increased the size of the sign—possibly too much—so there is no doubt that the bank is getting full publicity mileage."

The structure of the bank and its three outrigger drive-up booths is of coated concrete; the base of the cylinder and the drive-ups are finished with blue-black glazed brick; the body of the bank is finished with white brick; the main banking room has plaster walls and ceiling, painted white, a floor of flame-red carpeting, an ebony conference room, while the vault is finished with gun-metal vinyl.



zra Stoller Assoc. photos



PAVILION OF GLASS AND CONCRETE TREES

*Heights State Bank
Houston, Texas*

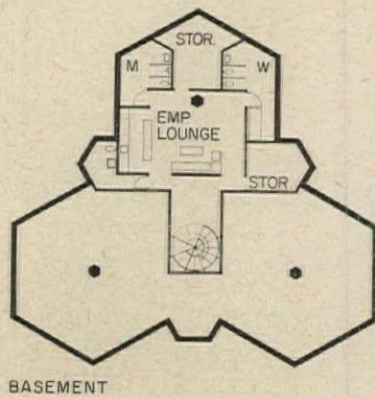
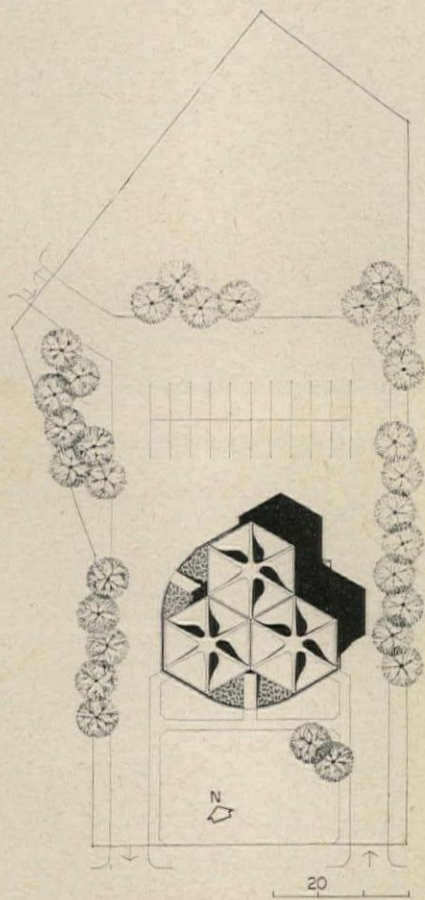
ARCHITECTS: *Wilson, Morris, Crain & Anderson*

Architect Ralph Anderson says: "The problem was to provide a dignified home for a neighborhood bank in an unattractive area cluttered with used car lots, industrial plants and blue collar enterprises. We elected to design a building that would frankly express its structure, in the same fashion as its industrial neighbors.

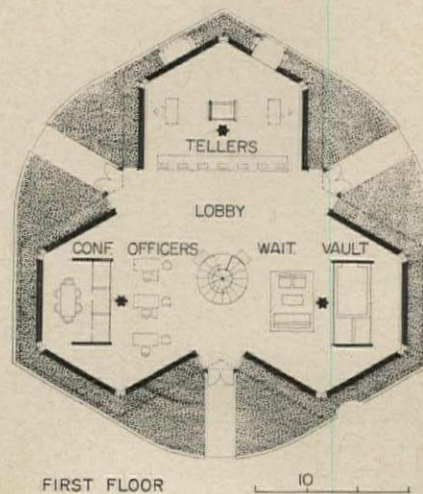
"A pavilion of concrete trees, enclosed with glass, was placed on its site in a manner that permits access from the three bounding streets, provides on-site auto circulation, parking and drive-up facilities. The ground floor is raised above grade upon a landscaped podium.

"The 'tree' columns were cast in place up to the spring line, but the spreading caps were precast on the ground, lifted into place, and secured to each other. The roof slab was then poured in place, and its under-side finished with sprayed-on acoustical plaster. For sun control, the 7-foot overhang is supplemented by vertical blinds. The ground floor has a terrazzo finish; the building is air-conditioned."





BASEMENT



FIRST FLOOR

BANKING FUNCTION DETERMINES FORM

*Leader Federal Savings and Loan Association
Lamar Branch, Memphis, Tennessee*

ARCHITECTS: *Office of Walk C. Jones Jr.*

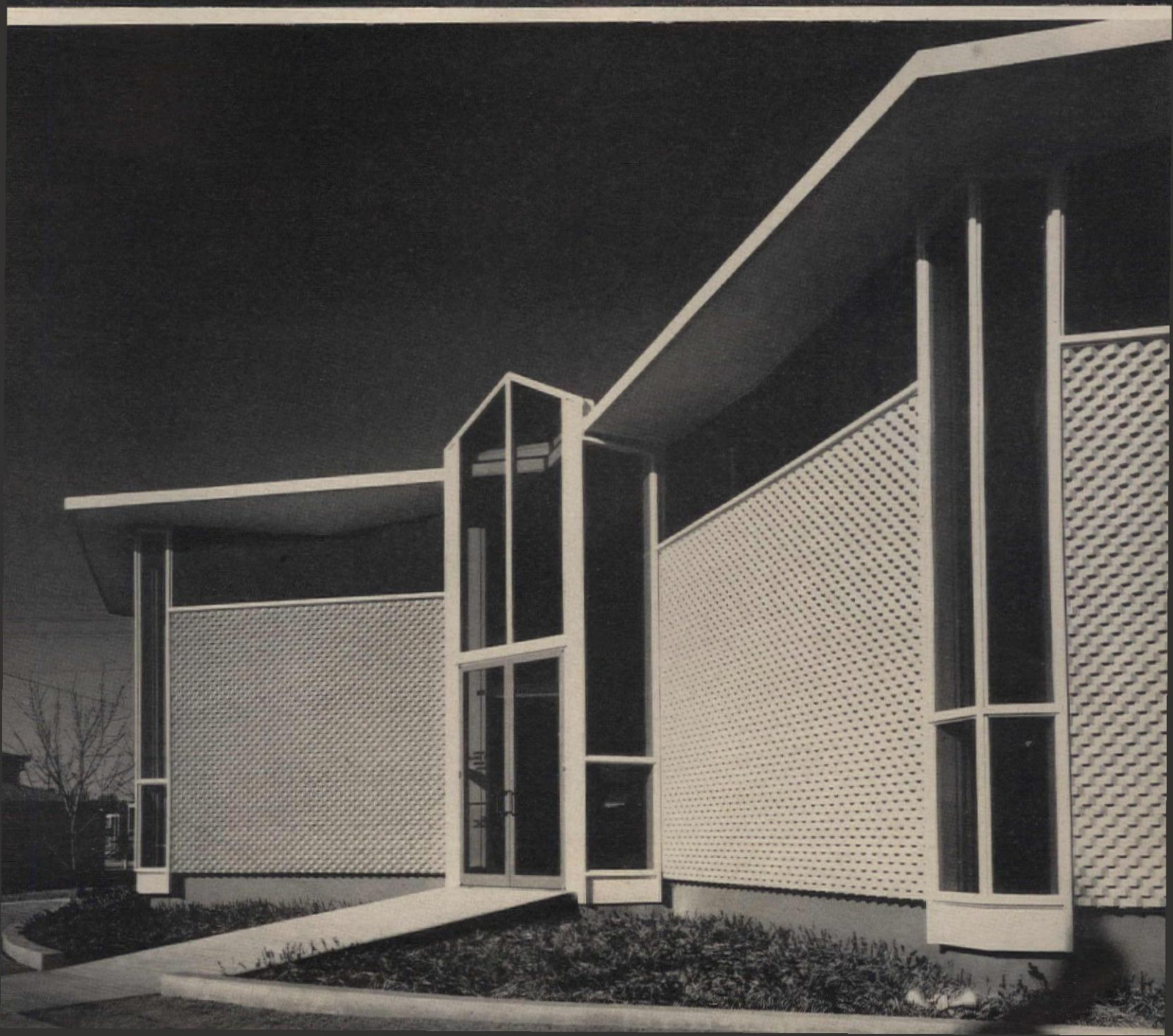
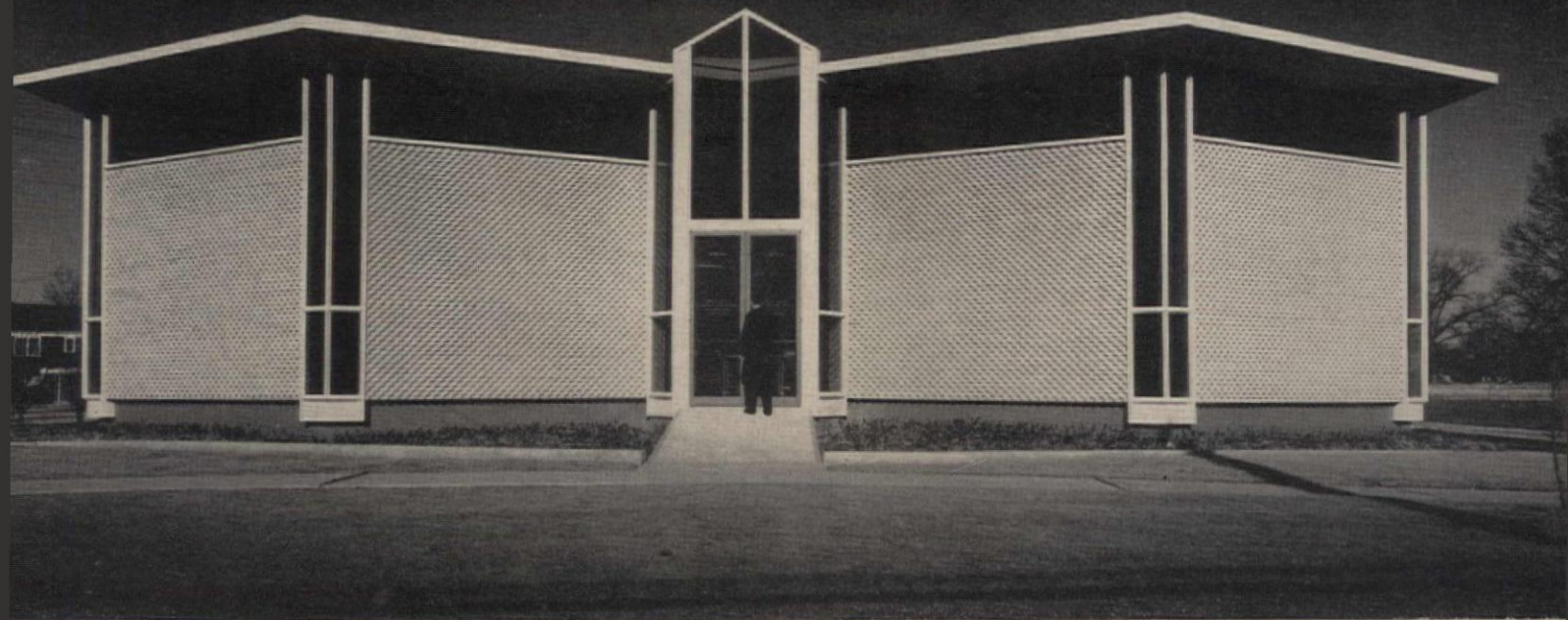
Walk C. Jones Jr., Francis Mah, Walk C. Jones III

The three major banking activities—officers' space and conference area; tellers' and work space; and bank fixtures such as a vault, night depository, etc.—were here each enclosed in a hexagonal structure with an umbrella roof springing from a central serrated column. These three elements were brought together to form a central lobby, entered from three directions, since the site lies between two major highways and has no 'principal' side. This relationship and organization of parts thus states, in visual terms, the total banking service to the community.

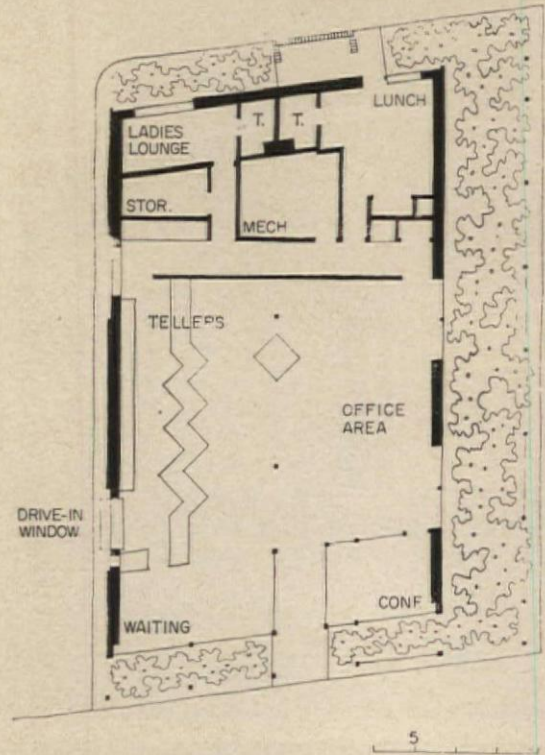
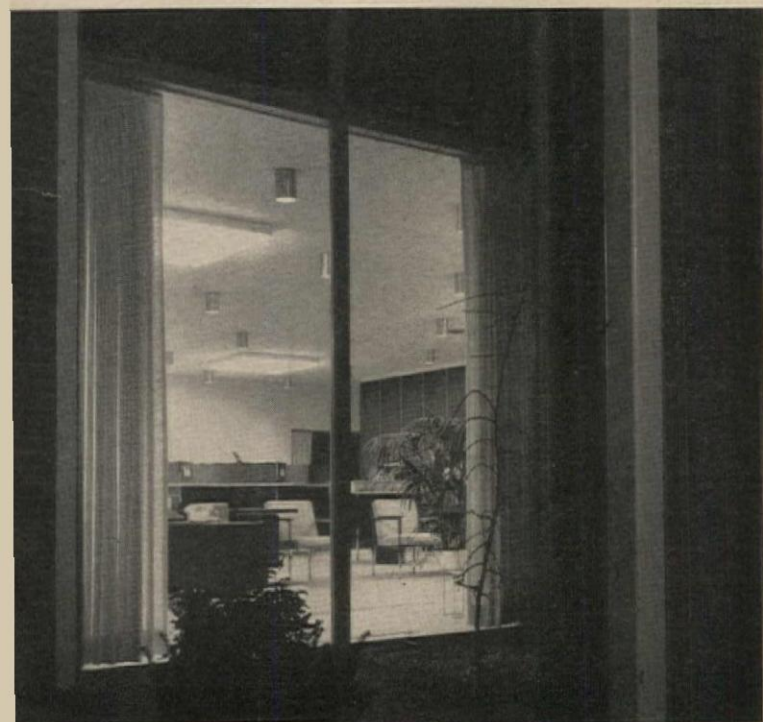
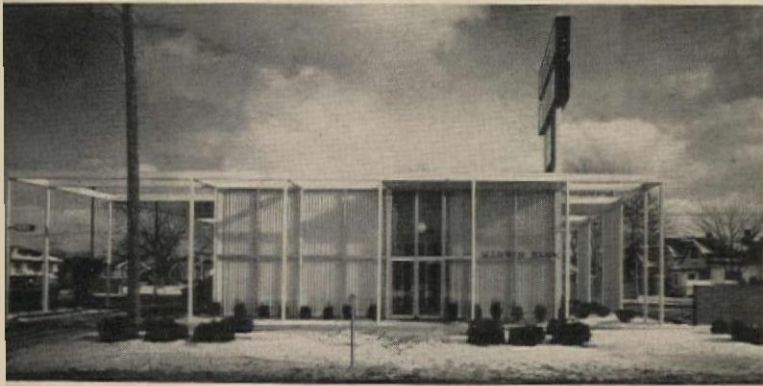
Each column supports segments of a hyperbolic paraboloid, which taken together form the total concrete umbrella, which has no further beams or supporting members. The size of the horizontal tinted glass strips was determined by the natural light; indirect artificial lights further accent the structural system of the three-part roof. The exterior walls are of concrete brick, laid in a saw-toothed pattern to create an over-all chiaroscuro pattern.

Alexandre Georges photos





Lens-Art photos



DEFT, ECONOMICAL REMODELING

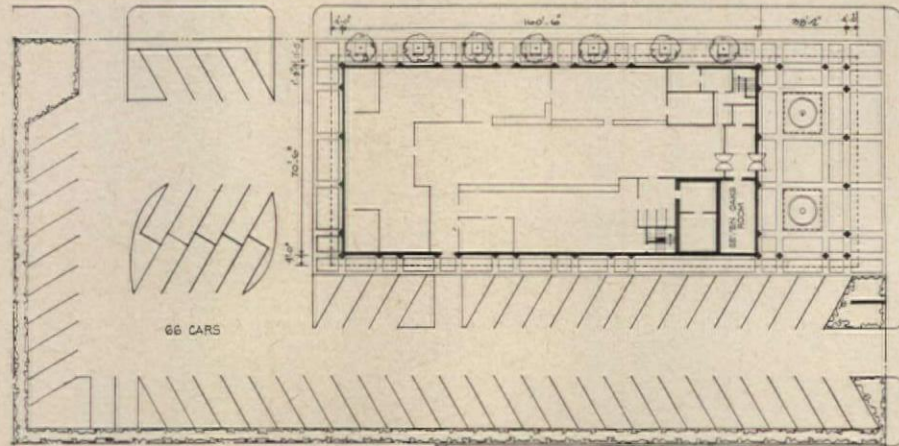
Warren Bank, Branch Remodeling
Warren, Michigan

ARCHITECTS & ENGINEERS: *Linn Smith Associates*
Linn Smith, Almon Durkee, Gordon Hoyem, Richard Albyn

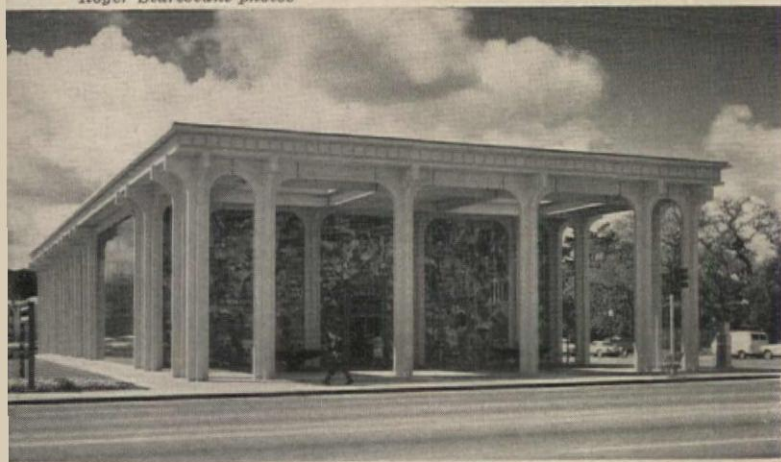
Architect Linn Smith explains how the renovation of the old bank—a nondescript, masonry block store building—was accomplished: “A freestanding structural steel frame of tubing was designed to straddle the existing building and extend beyond it. Roofed at entrances and over large glass areas, this frame—which was painted white—produced the appearance of a much larger structure without the cost of finished interior space. The scheme was based upon a desire for a clean, precise, thin-line verticality to effect a light, airy feeling to override the forbidding heaviness of the original building. The entire aim was to create a contemporary look which would set the mood for an alert, up-to-date banking organization.

“No shutdown of banking operations was necessary at any time, since structural connections could easily be made by the use of light equipment. Structural costs were low, since the frame supports merely itself and light steel decking at the roofed areas, so that only minimum foundation work was necessary.”





Roger Sturtevant photos



PRESTIGE BRANCH BANK WITH AN ATRIUM

*Bank of America, A.P. Giannini Branch
San Mateo, California*

*ARCHITECTS: Wurster, Bernardi and Emmons
Miller and Steiner*

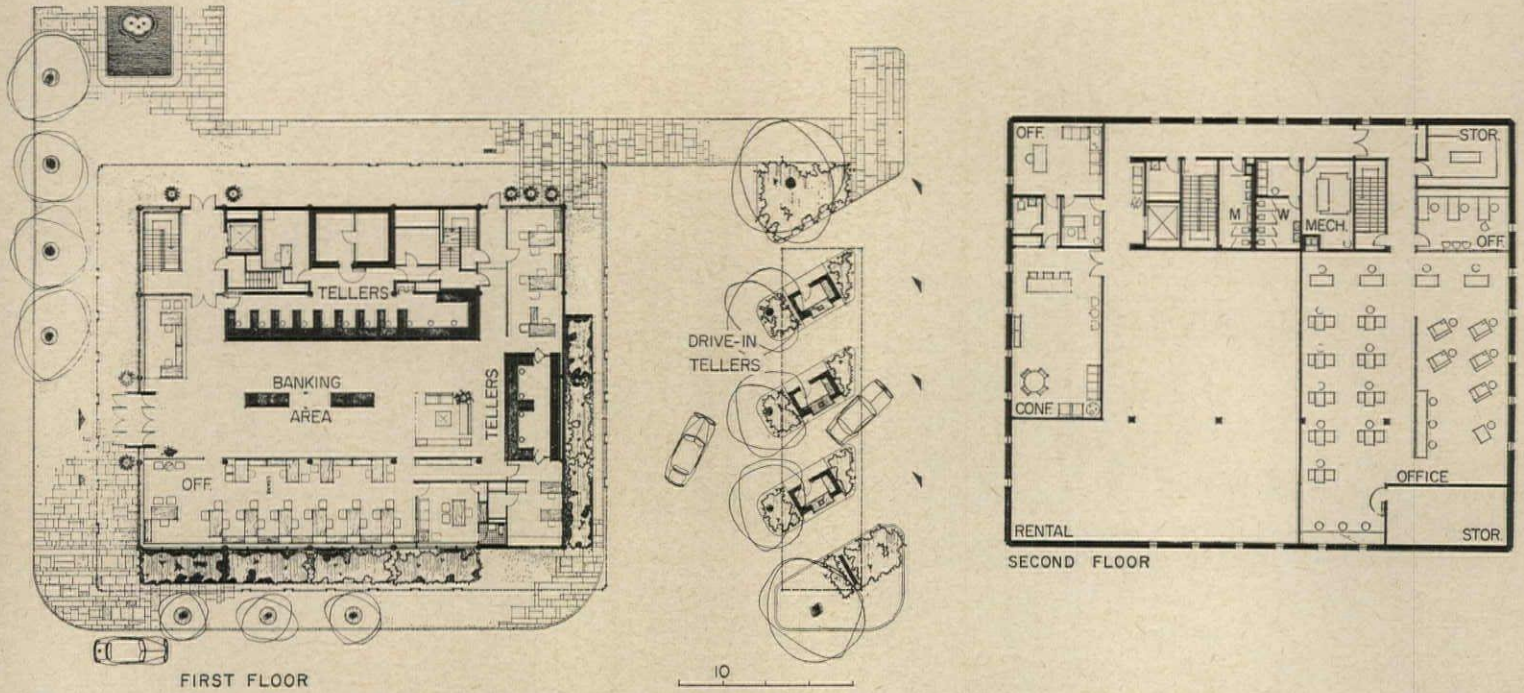
This branch bank was designed to have strength and dignity, without ostentation, to symbolize the life of the founder of the parent bank, A. P. Giannini. The corner lot on a busy intersection created problems: undistinguished buildings nearby, and a clutter of utility and traffic equipment at the corner.

The bank is set well back on its site, entered by a deep plaza, much of which is taken up by a large formal atrium including a pair of granite fountains set in the brick paving. The front of the building is decorated by 25-foot-high mural panels, executed in mosaic tile. There is an 11-foot setback on the side street to permit additional planting and fine paving.

The columns and cornice are of precast white quartz aggregate concrete; exterior walls are faced with dark granite; the windows are gray glass in bronze frames; interior walls are teak paneled, floor to ceiling; floors are marble in public places, carpet and vinyl for offices and in work areas; the ceiling is a bronze egg-crate with lighting tubes above.







COMPLETE BANK PLUS RENTAL SPACE

First National Bank, San Angelo, Texas

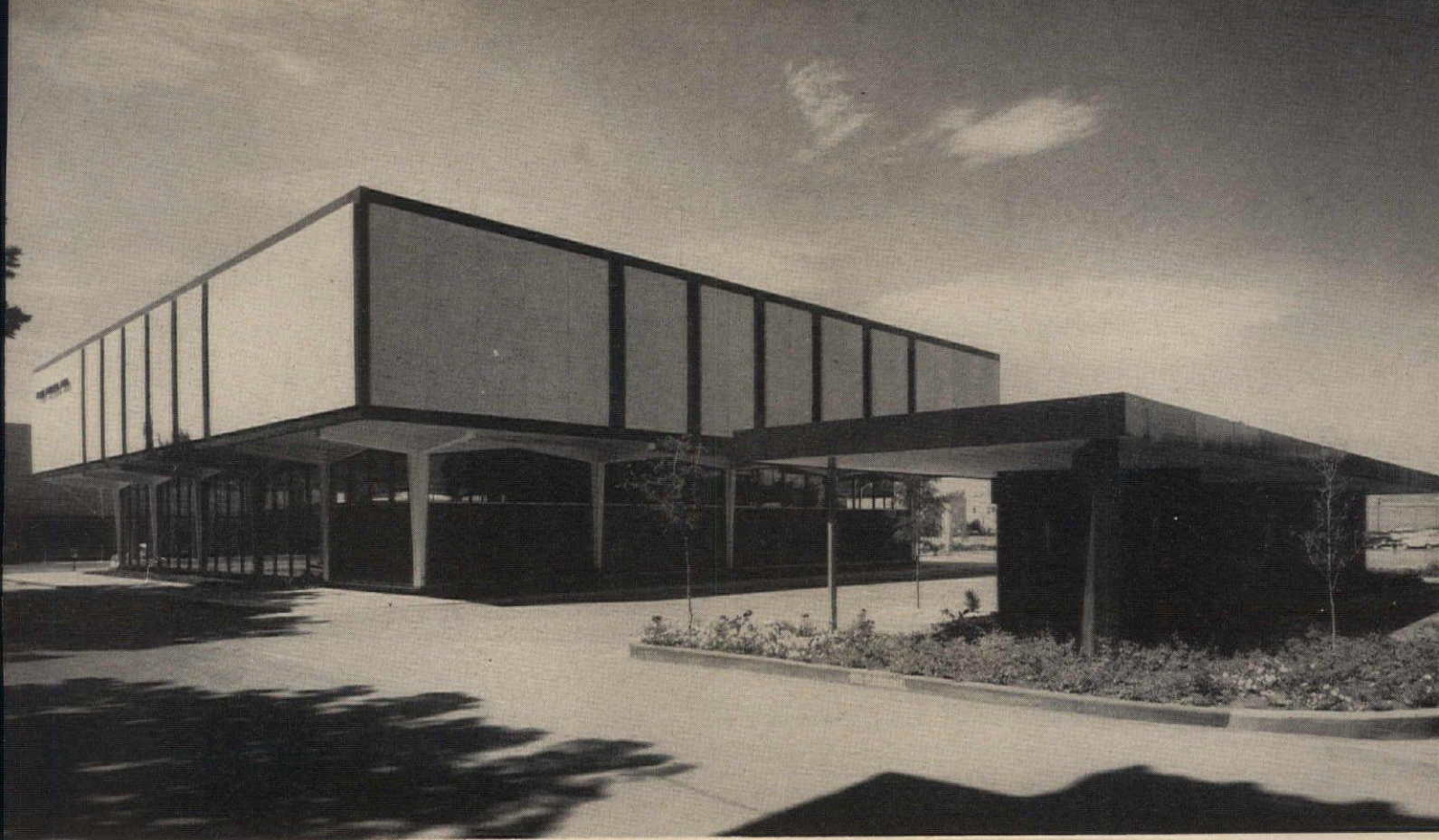
ARCHITECTS: *Office of George Pierce—Abel B. Pierce*

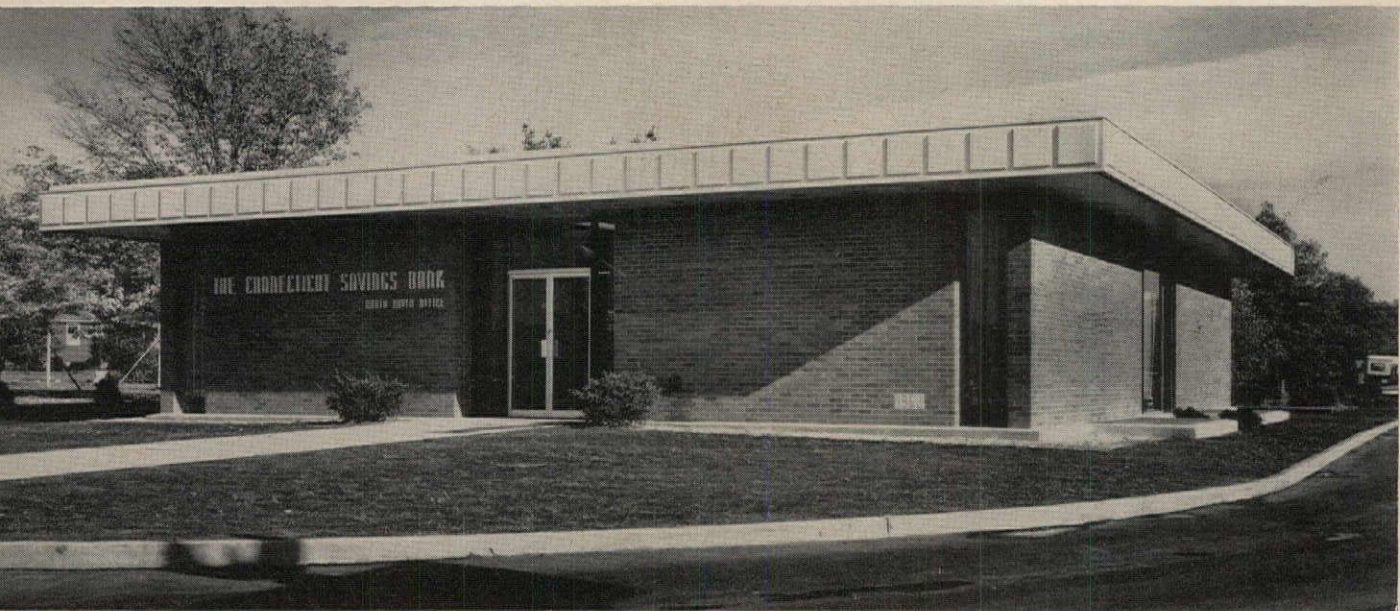
Edwin J. Goodwin, partner in charge of design

J. Robert Deshayes, project architect

The site made available for this bank is fortunately situated, facing upon a main thoroughfare and the permanent openness of the nearby county courthouse front lawn. The final design—produced after careful study of space requirements and inner traffic flow—is in the form of a square, block-like, second floor mass on tapered columns sheltering a glass enclosed banking room at ground level. The second floor contains bookkeeping, board room and rental areas. A safe deposit vault, public meeting rooms, snack bar, and service areas are located below grade. The rental area and public meeting rooms are accessible after banking hours by way of a public lobby on the main floor.

The structure is of reinforced concrete, exposed in the case of the open columns and spreading beams over the ground floor. The second floor is faced with precast white quartz aggregate panels and charcoal gray porcelain enamel trim; glazing is set in aluminum; acoustical tile is used on all ceilings; interior trim and furnishings are in cherry; partitions are of painted plaster.





Malcolm Smith photo

SUBURBAN BRANCH LARGELY OF BRICK

The Connecticut Savings Bank

North Haven Office

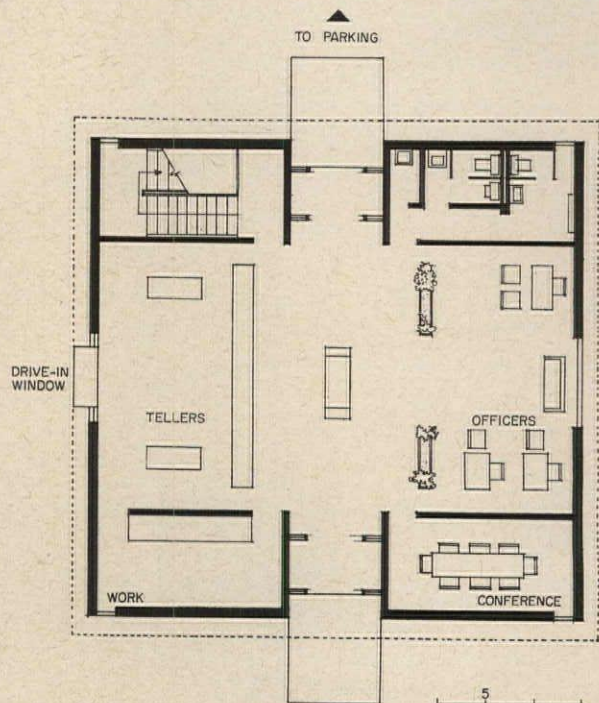
North Haven, Connecticut

ARCHITECTS: *Office of Douglas Orr,
de Cossy, Winder and Associates*

This bank is located on a busy thoroughfare in an area in which nearby buildings are not particularly attractive, so it was decided that a simply stated building with a quiet air of repose would offer the best solution. Such a building would seem to advertise itself by contrast, and might perhaps have an influence on future building in the neighborhood. These considerations led to a simple, square structure, faced largely with brick, and capped by a horizontal roof.

To avoid the cluttered, "highway" look, parking was removed to the rear. Those who prefer can be served at a drive-up window on the side of the building.

The walls are finished with a thin brick on the exterior and with stack-bond painted block inside. The central interior space serves as a banking room, flanked on one side by the tellers' counter and on the other by the officers' platform. The full basement contains an employe's lounge, in addition to storage and service areas.

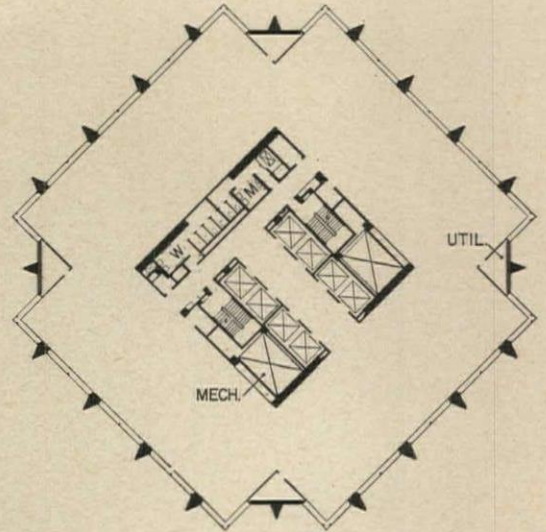
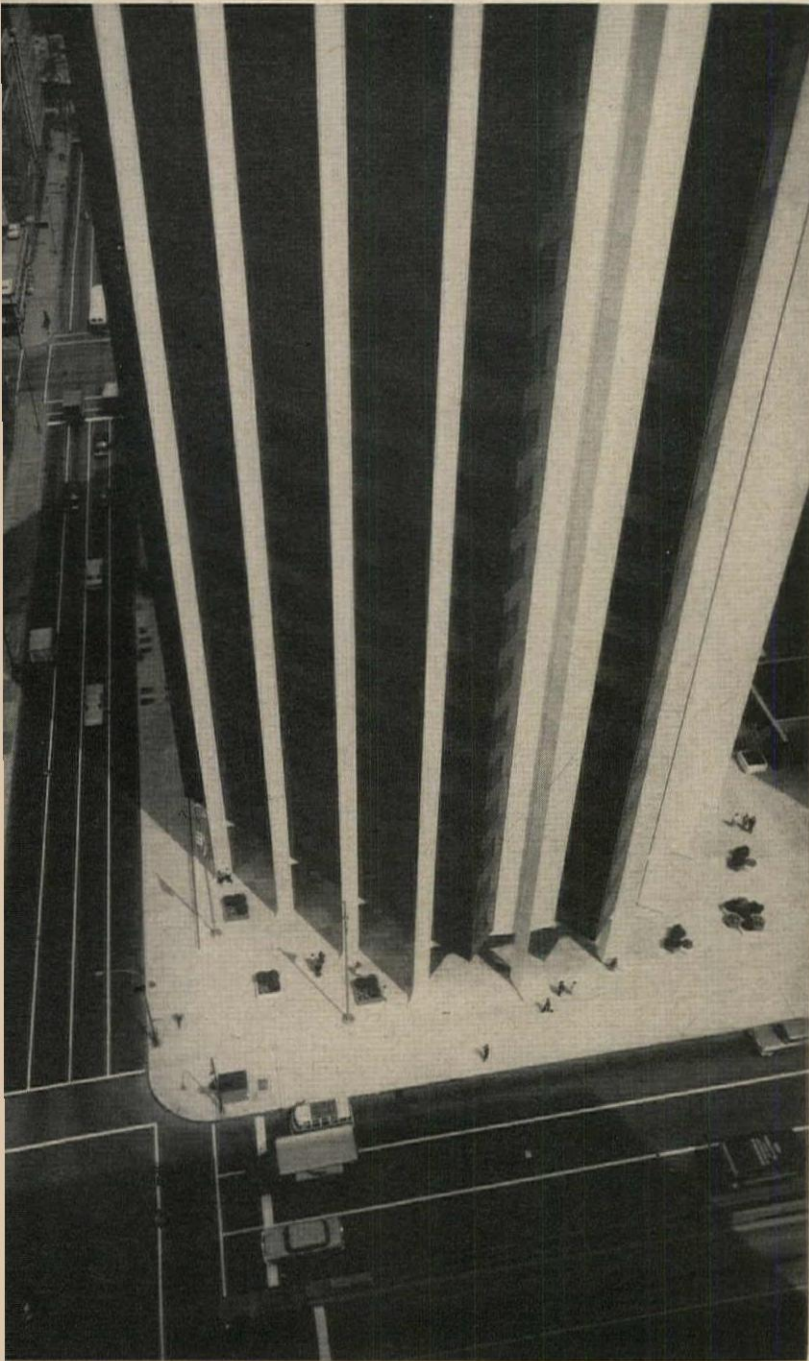


Hedrich-Blessing photos

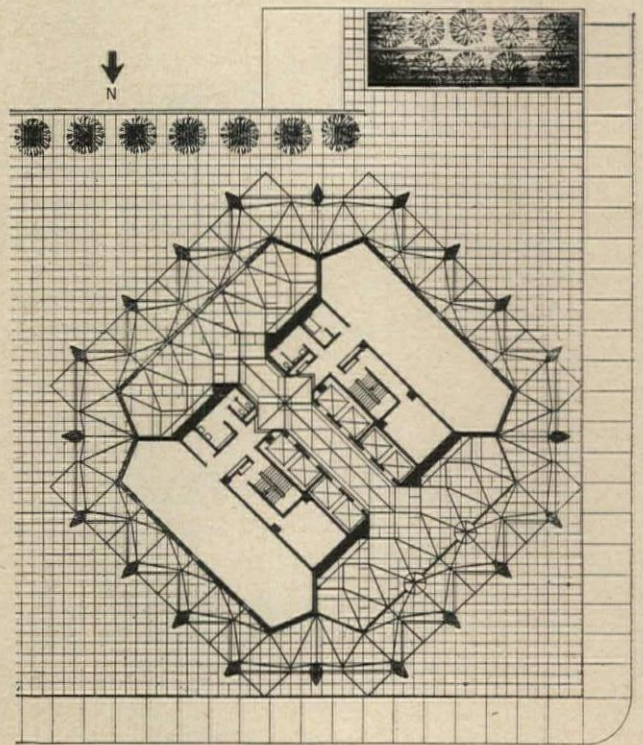


INNOVATION IN CHICAGO

Perkins & Will design a faceted, eight-cornered tower
—turned at a 45-degree angle to the street—
for United States Gypsum's new headquarters in Chicago



TYPICAL OFFICE FLOOR



*United States Gypsum Company Building
Chicago, Illinois*

ARCHITECTS: *The Perkins & Will Partnership
Philip Will Jr. and John E. Starrett, partners in charge
Albin Kisielius, project architect
Raymond Ovresat, designer
Edward Colin, structural engineer
Hem Gupta, mechanical engineer
Dean Morgan and Don Wolfe, electrical engineers*

INTERIOR DESIGN: *Maria Bergson Associates*
LANDSCAPE ARCHITECTS: *Franz Lipp and Associates*
GENERAL CONTRACTOR: *A. L. Jackson Company*

This office tower asserts its verticality by contrasting its exterior, faceted white columns against the grays of the recessed slate and glass curtain walls. This quality is further stressed by the vertical forms of the re-entrant corners, which create a modified octagon of the basically square plan. At the top, the eye is both arrested and led on by a strong cornice, which is pierced by a series of pinnacles carrying the column lines beyond the roof. The entire design, from plaza to cornice, is interlaced with angular, geometric forms, which combine to give the building a very individual and even romantic appearance. In discussing the structure and its relationship to the site, architect Philip Will Jr., says:

"The most unusual item is the placement of an es-

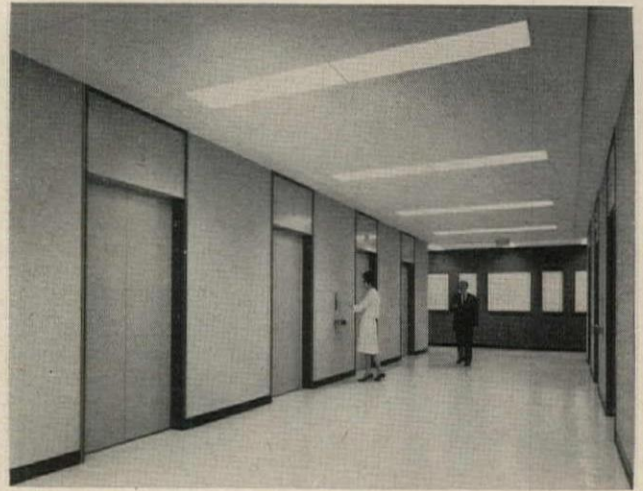
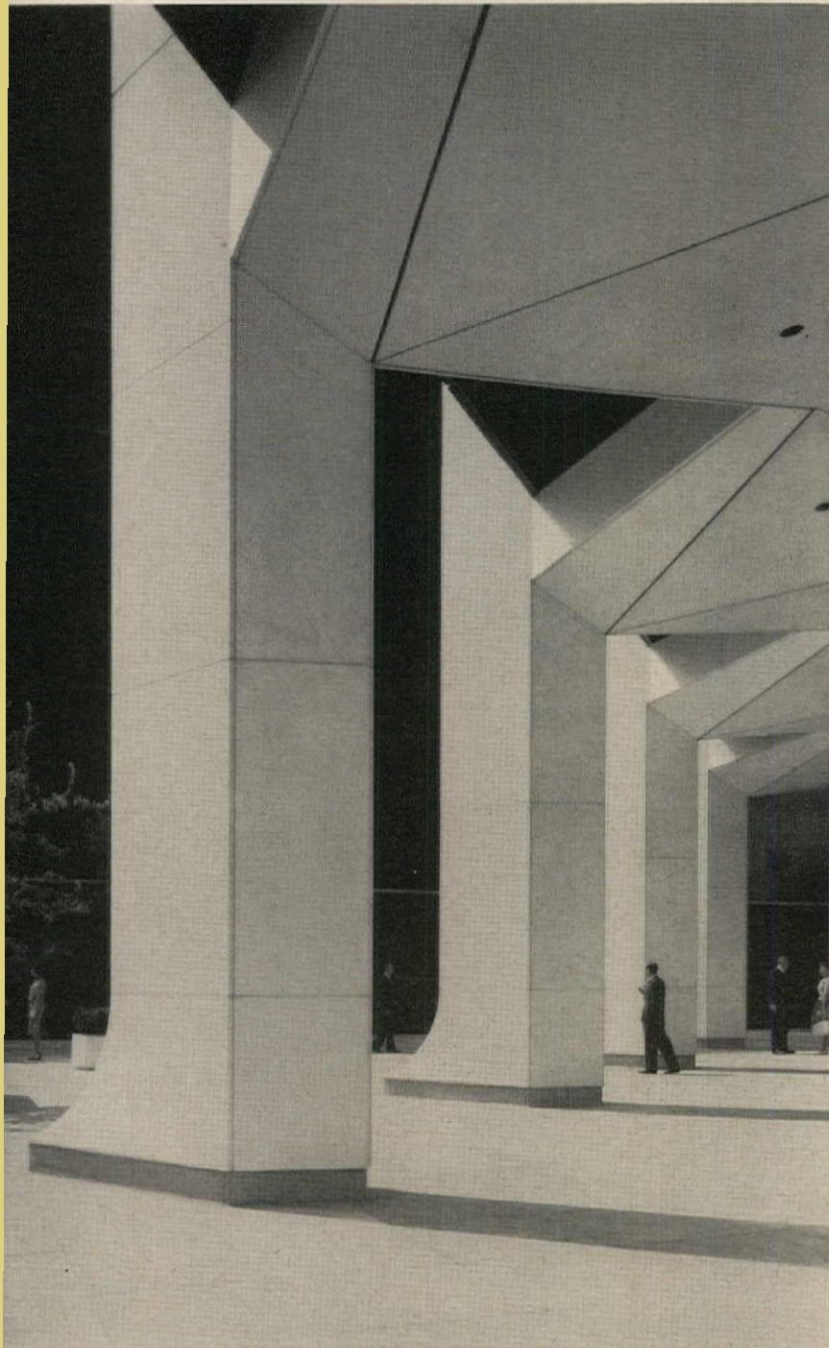


essentially square tower at 45 degrees to the insistent 90 degree grid of the city. In theory it appears to be a self-serving stunt devised to demand attention by creating disorder in an otherwise disciplined setting. In practice, and from the pedestrian's eye level, the building anchors itself firmly to the street corner and transforms what would otherwise be just another traffic intersection into a place pleasant to be in as well as to pass by. Also of surprising importance in relating the building to the site is a detail: the four beveled surfaces which occur at the re-entrant corners and which are reassuringly parallel to the curbs and sidewalks.

"Eight corner offices per floor is a well-liked feature, the absence of corner columns plus the angled

placement of the building producing unusual views of the surrounding city. Placing the building at a 45 degree angle to the adjacent streets offered the gift of light and air to both tenants and neighbors. Thus, the company has benefited not only itself but the entire area; evidence of good citizenship.

"The romantically inclined may find inspiration for the crystalline forms of columns, faceted soffits, and the crown of the building in the gypsum crystals the company mines. These forms are enhanced by the flush detailing of the slate and gray glass curtain wall. The glass is set in extruded neoprene almost in plane with the spandrel. The only metal noticeable on the shaft of the building is the vertical stainless steel mullion which divides both glass and



spandrel at the middle of each bay. The net effect is crisp and tailored.

"Because the materials selected for the exterior are without hue but range from the white of the marble to the neutral dark gray of the slate spandrels, form and surface texture become important. As the sun moves around the building, shadows cast by the deep triangular columns rake the glass and spandrels, the texture of the split face slate becomes rich and rugged or disappears entirely, and the faceted planes of the soffits interact in graded tones of light and changing color. At times the surface sheens are such as to reverse the darks and lights completely. The building tells its story best to an observer in motion, and over a period of time. The

building is a sculptured form in natural materials taken from the earth, as are the company's products.

"In economic terms, the USG building survives analysis. The typical floors are relatively small (14,718 square feet gross with 85 per cent efficiency), but well suited to the departmental structure of the company.

"The desire for column free general office space suggested the use of a structural steel frame. Columns are located only on the perimeter of the building and in the core area. The floor deck over steel beams is cellular steel, which provides ductwork for high and low tension electric service to individual desks. A lightweight concrete fill covers the top of the cellular deck. Certain columns in the lower floors

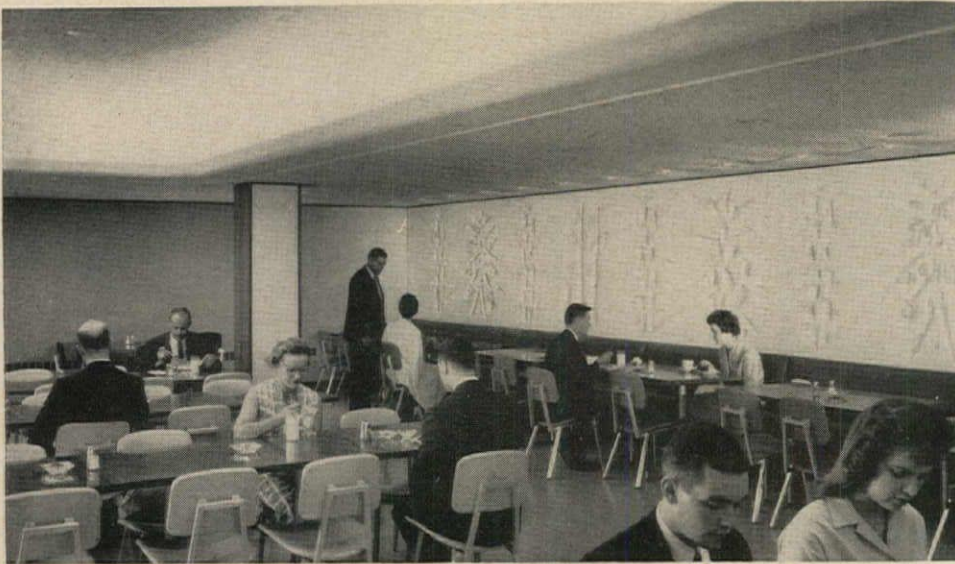


of the structure were specified to be of high strength, low alloy steel, ASTM A-440, in order to maintain a constant finished column dimension for the full height of the building. Structural steel members throughout the building are fireproofed by direct spray application.

"Recessed fluorescent lighting fixtures produce an average of 90 footcandles maintained. Fixture design and circuit capacity permit the addition of a third lamp to increase the average to 125 footcandles. This has already been done in certain special areas where the higher lighting level was desired. Another interesting feature is the area control of the lighting, which is obtained from the four corner service closets for the mechanical facilities. Each of

these areas contains split service cabinets which, through simple contractor switches, permit each one-eighth of the total floor area to be controlled from switches located conveniently for department use. The power system together with telephone service is available over the floor through the metal deck.

"The air-conditioning for the building is accomplished in all perimeter areas by means of high velocity induction units serviced by a three-pipe heating and cooling system. Interior zones throughout the office floor areas are serviced by a double duct system for positive temperature control. Eight mixing boxes for this double duct system are located in about eight areas on each floor, eliminating ceiling obstruction and assuring uniform distribution."



The employees' cafeteria is on the first of two sub-levels



An executive reception area off the elevator corridor



Seventeenth floor office of the Chairman of the Board



Roger Sturtevant photos

A town house for Mrs. Lolita Evans, San Francisco, California

A TOWN HOUSE AND A COUNTRY HOUSE BY WURSTER, BERNARDI AND EMMONS

Unaffected warmth and simplicity pervade the designs
for both a compact, economical town house and a
large, spacious country home

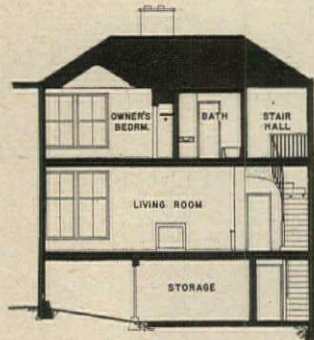
A country house for Mr. and Mrs. C. J. Roush, Portola Valley, California



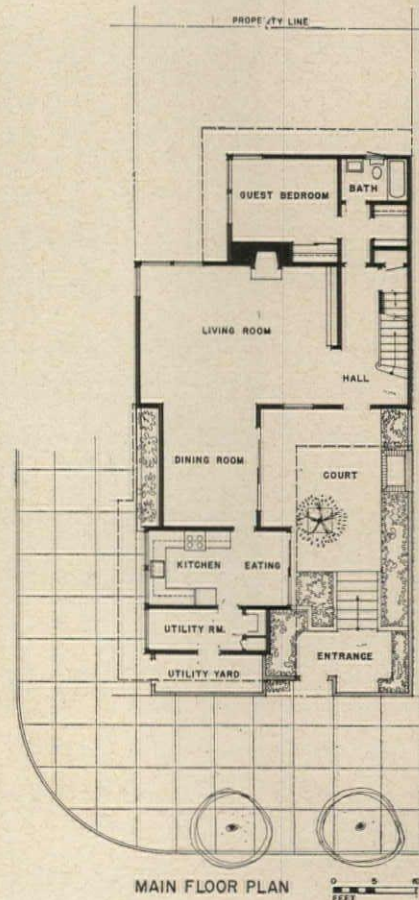
A Town House for Mrs. Lolita Evans

A sense of quiet, uncomplicated elegance, which has become a hallmark of Wurster, Bernardi and Emmons' designs, is readily apparent in these two houses of diametrically opposite programs.

The Evans house was planned for a small, 33- by 80-foot lot, on an exposed and busy city corner, and with a fairly steep hill on one side. The owner, who lives alone, wanted privacy, an outdoor living area, and an economical house compact enough to manage without servants. The plan was arranged on three levels, with the main rooms on the center level. Garage and storage are below, a bedroom and bath above. The house was built to the property lines, with the entry through a walled court. Except for back corner windows, which look out to San Francisco Bay, all windows at street level are placed high enough to give light, yet preserve privacy. Materials are kept simple: exterior walls of cedar shingles and black-brown trim; interiors of painted plaster board. Floors are oak or vinyl.



SECTION LOOKING NORTH



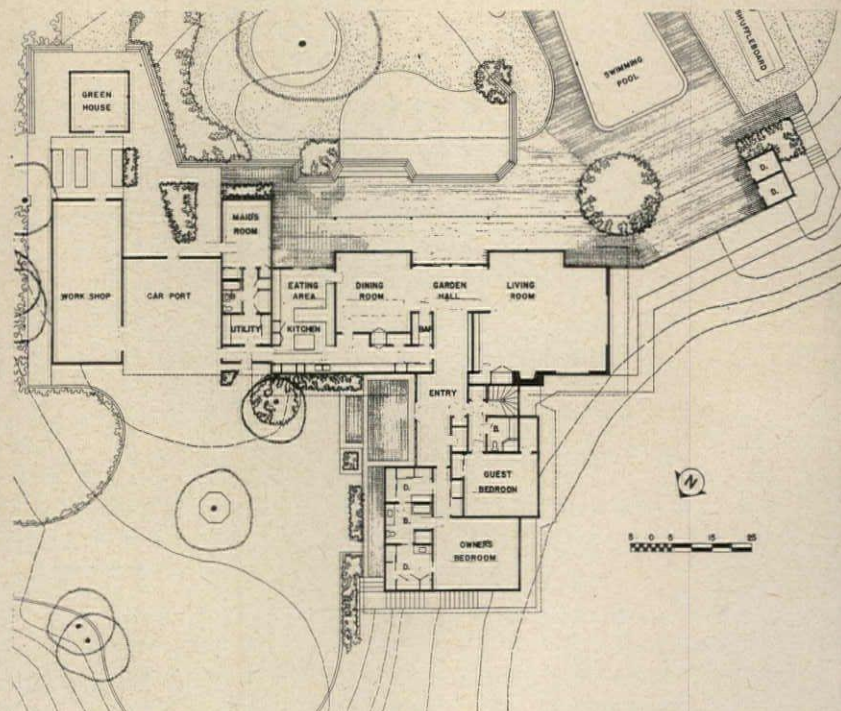
MAIN FLOOR PLAN

A Country House for Mr. and Mrs. C. J. Roush

A dramatic, windy hill, bare except for an occasional large oak, is the site for this big, family home. The structure was placed on the far edge of a ridge, so that the long, low lines of the main floor blend with the contours of the land. A lower bedroom floor, and the terrace and pool are stepped down on the far side of the hill to give wind protection.

The owners wanted a house spacious enough for generous hospitality—indoors and out. Thus, the main rooms are big and flow together so that large groups can easily be accommodated.

Natural redwood boards, waxed, are used on the walls of the living areas. The exterior is cement plaster on a wood frame, with a built-up tar and gravel roof. Ceilings are plaster; floors are terrazzo, carpet or vinyl. Shoji screens, which slide into pockets, are used to shade the big windows in the living room. Daylighting is augmented by clerestories and skylights. Lower floor can be shut off if not in use.





Outdoor living is provided on both city and country sites



The Evans house gains outdoor living space on its small city lot by the use of a multi-purpose entry court. A high wall and gate give privacy from the street; rooms which open on the terrace have walls of fixed or sliding glass. The kitchen also opens directly on the terrace for outdoor dining. A separate utility yard is off the laundry

ARCHITECTS: *Wurster, Bernardi and Emmons*
ENGINEERS: *Gilbert-Forsberg-Diekmann-Schmidt*
CONTRACTOR: *Hugo Muller Jr., Inc.*
LANDSCAPE ARCHITECT: *Thomas Church*



The Roush house has a big main terrace, of natural brick laid in sand, which extends the full width of the rear of the house and continues around the pool area. A broad loggia provides shelter, and links the house with the dressing pavilion for the pool. Most rooms are provided with direct, easy access to the outdoors; even the maid's room has a terrace

ARCHITECTS: *Wurster, Bernardi and Emmons*
ENGINEERS: *Gilbert-Forsberg-Diekmann-Schmidt*
CONTRACTOR: *Delano Large*
LANDSCAPE ARCHITECT: *Thomas Church*
INTERIOR DESIGNER: *Beth Armstrong*

APARTMENTS

The Building Picture

George A. Christie*

If the much anticipated "soaring sixties" have so far been a mite reluctant to soar, it's certainly not the fault of the apartment building market. With less than half the decade of the sixties used up, there have already been as many new apartment units built—just short of a million and a half of them—as in the entire decade of the fifties.

For all its recent growth, soaring is not the appropriate term to describe this \$5 billion-a-year market. In fact, "mushrooming" describes the current apartment boom a lot better—close to the ground, and popping up everywhere.

A special tabulation by F. W. Dodge of apartments built so far in 1963 shows that the garden variety is by far the most common. This category (five or more units, maximum three stories) includes two of every three apartment units built this year.

Of course, it makes a lot of difference where you look. In the West apartment building almost equals, unit for unit, the volume of single-family home building. And in this apartment builder's paradise it is the garden-type, so well suited to the roomier metropolitan areas like Los Angeles and Houston, which is being built almost exclusively.

By contrast, the high-rise apartment still remains the heavy favorite in the densely settled cities of the East where, for obvious economic reasons, land is lived *over* rather than *on*. Yet, even there, once you get out of the central city—out to the growth ring—there is a blend of both high-rise and garden apartment building. And under a sort of residential Gresham's law, single family building is being pushed further and further from the city, limited only by commuting facilities.

Supporting this biggest-ever apartment building spree is a structural change taking place in our population. This change gives every indication of a need of even greater concentration on multi-family construction in the balance of this decade.

Between 1960 and 1970 the two age groups which represent the prime market for rental housing will be expanding sharply. Young adults in the highly marriageable age group of 18 to 24 numbered 16 million in 1960; by 1970 there will be almost 25 million of them. The 16½ million persons over 65 will grow to nearly 20 million over the same period. And the biggest part of this change will take place after 1964.

During the fifties, the residential building market was totally dominated by the one-family house in the suburbs; in the sixties, the dynamic element is clearly the apartment.

* Senior Economist, F. W. Dodge Company, a Division of McGraw-Hill, Inc.

FIRST UNITS OF INDIANAPOLIS RENEWAL READY

Here is a large project designed so that each phase of its construction will provide living facilities for a complete neighborhood. Each planned step consists of a cluster of towers grouped about a parking garage, along with town house units and special commercial or recreational facilities. The first construction phase of the large James Whitcomb Riley Center—a 20-acre downtown redevelopment in Indianapolis—is finished, and further building is under way.

The plan and model photograph on the facing page show how the irregular site will be developed; identify and locate the facilities provided. Phase one includes all of that area below Alabama Street (see plan); and includes two Crown Towers, one Twin Tower, and the low-lying ancillary facilities. When the project is completed, it will provide 1,842 living units of seven types.

Apartment floors in all high-rise buildings begin above either two floors of shops and professional offices or above three-story garden apartments; the latter overlooking private, enclosed terraces. Such a scheme raises living units for better outlook and less noise.

The exteriors of the building are of face brick; spandrel panels are of the insulated sandwich type; sash are of anodized aluminum; concrete columns and beams are coated with plastic; outside rooms are air-conditioned by fan coil units, controlled by individual thermostats.

*The James Whitcomb Riley Center
Indianapolis, Indiana*

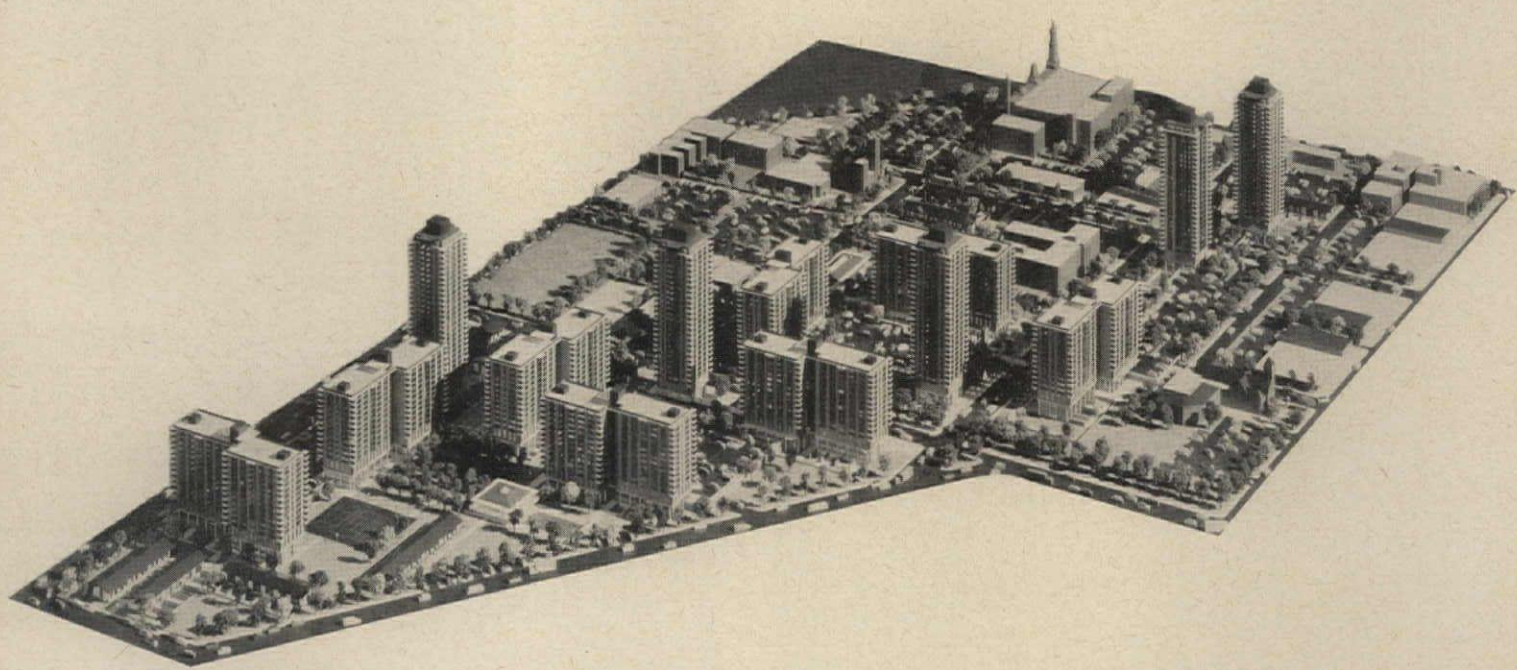
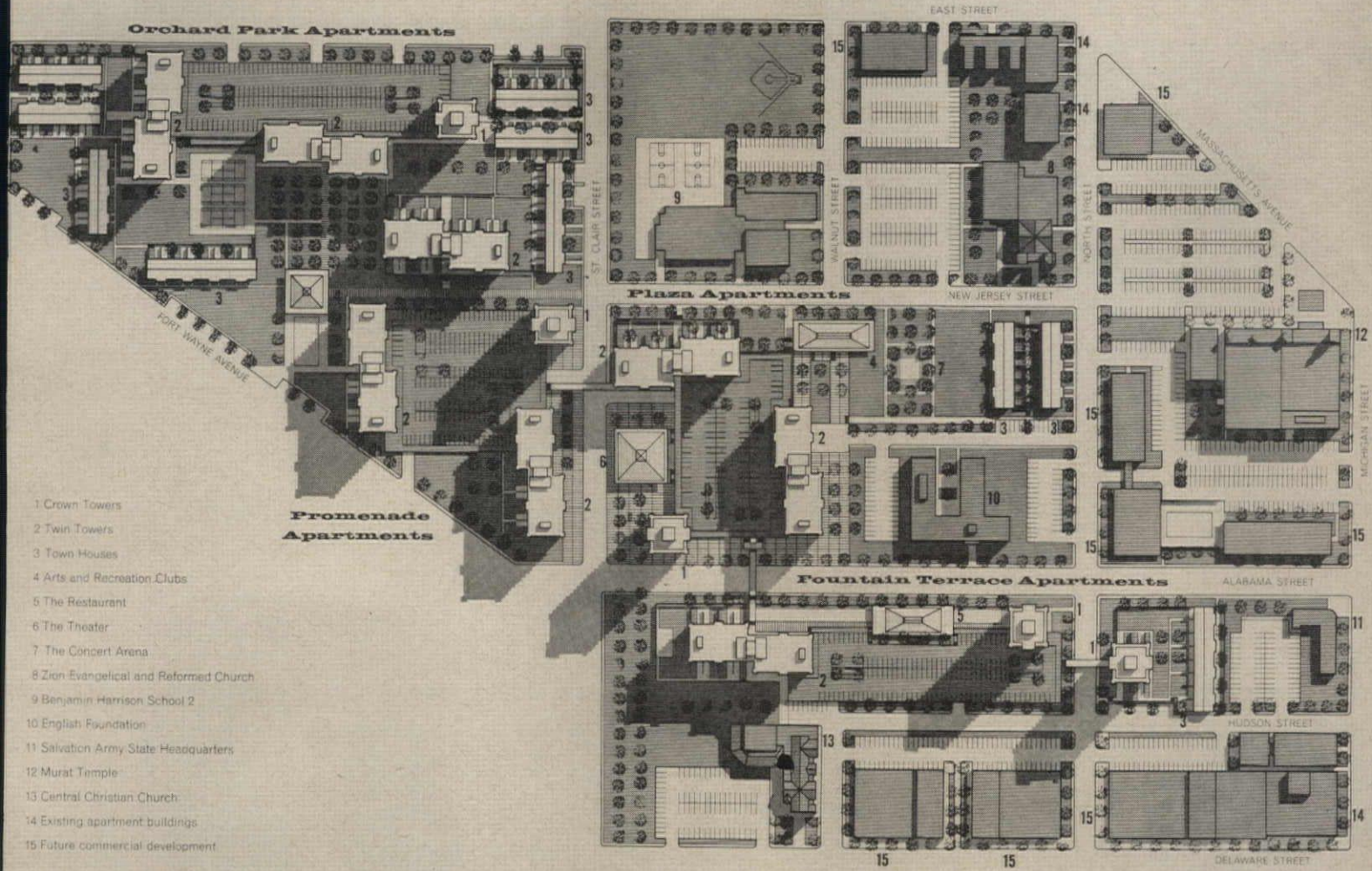
ARCHITECTS: *The Perkins & Will Partnership
Wilmont Vickery, partner in charge
Ray Ovresat, designer*

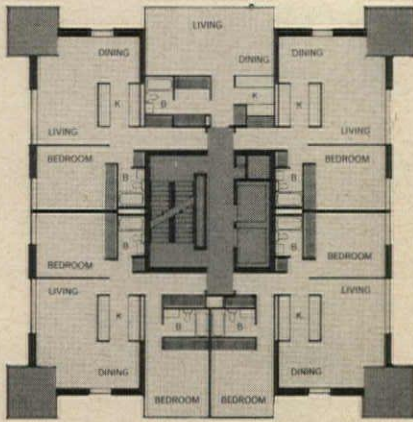
George Darrell, project architect

GENERAL CONTRACTOR: *Huber, Hunt & Nichols*

Hedrich-Blessing photos







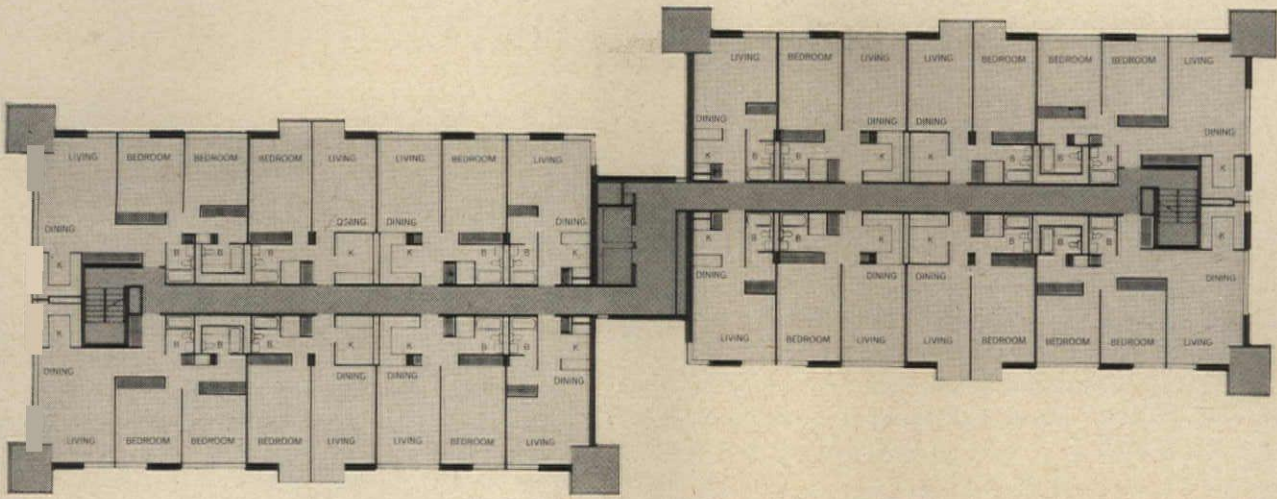
CROWN TOWERS

Shown in plan (*left*) the two slender, 24-story high-rise structures feature balconies on the outer corners. Each tower contains 36 studio apartments, 72 one-bedroom apartments, 26 two-bedroom apartments, and 2 three-bedroom garden apartments. The bay windows are cantilevered from concrete slabs spanning between 10-inch bearing walls. The 6-inch-thick balcony slabs are cantilevered from the corner columns

TWIN TOWERS

Shown in plan (*right*) this 12-story high-rise structure also features balconies on the outer corners, and bay windows for many living units. This building houses 60 studio apartments, 96 one-bedroom apartments, 48 two-bedroom apartments, and 8 three-bedroom garden apartments. All of the towers are of reinforced concrete construction; slip-forms were used for the cores; 12-inch walls around the cores provide wind bracing





MEWS TYPE PLAN FOR TEXAS DEVELOPMENT

Of this appropriately scaled and appealing project, architect Howard R. Meyer says: "The problem was to provide attractive garden apartments of one- and two-bedroom units in a high density pattern for an expensive piece of land.

"Our solution was a mews type of site plan of two-story studio apartments. Units are entered from private streets, and open at the rear to individual fenced-in gardens or the swimming pool court. Although this apartment type was nearly unknown in Dallas, the scheme appealed strongly to young tenants. The provision for parking in front of each door has proven to be popular, as has the open informality of the one-bedroom units with their balcony-bedrooms. The city requires on-site parking for one and one-half cars per living unit.

"The roof structure is of prefabricated molded plate composed of 3-inch planking. The second floor is of 4-inch planking. The undersides of the roof and second floor planking are left exposed and stained. Bedrooms have the peaked roof as their ceilings; a device that lends apparent spaciousness to their comparatively small volumes.

"The stairs in the apartments consist of 2-inch oak planks suspended on metal rods supported by the second floor structure. The effort here was for open unobtrusiveness."

Turtle Creek Village, Dallas, Texas

ARCHITECT: *Howard R. Meyer*

STRUCTURAL CONSULTANT: *Frank W. Chappell*

ELECTRICAL ENGINEERS: *Leo L. Landauer & Associates*

ACOUSTICAL ENGINEERS:

Acoustics Division, Texas Research Associates

LANDSCAPE ARCHITECTS:

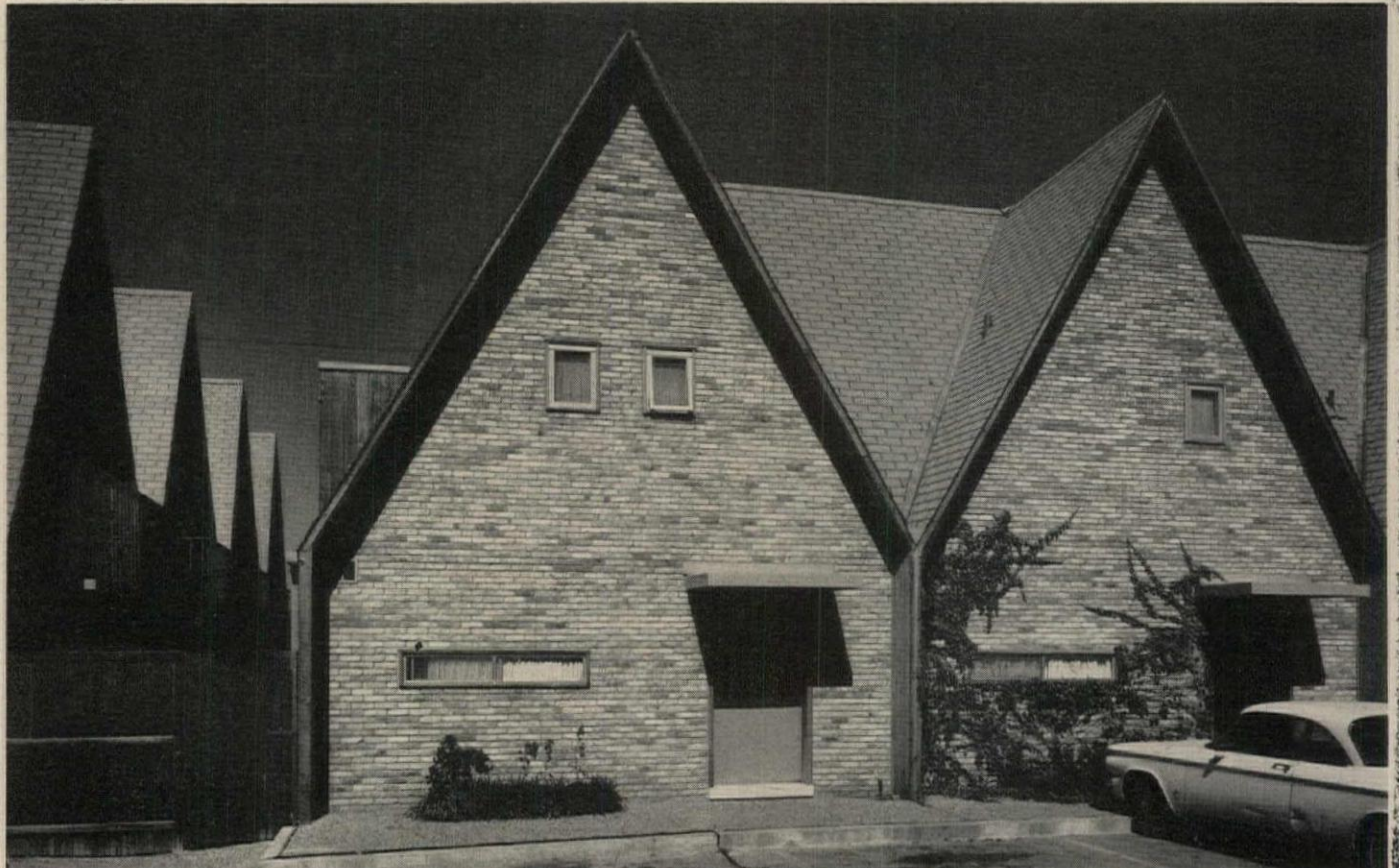
Lambert Landscape Company

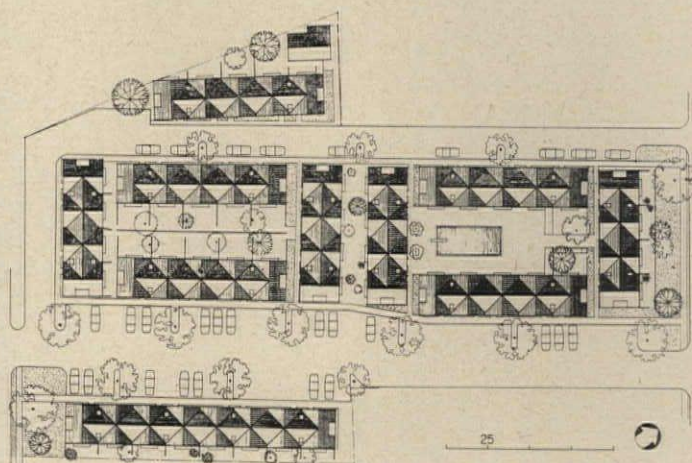
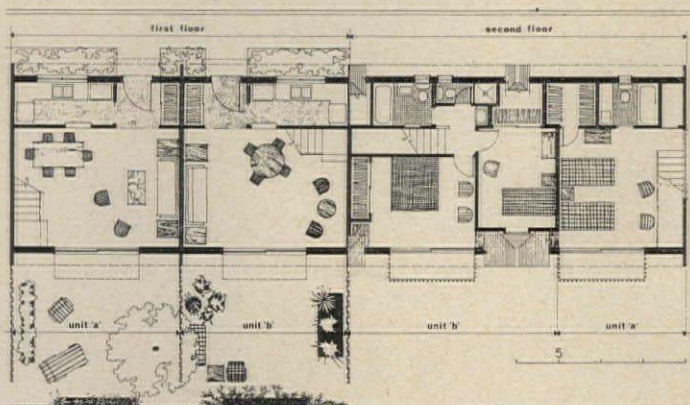
SOILS CONSULTANTS: *Mason Johnston & Associates*

GENERAL CONTRACTOR:

Jerome J. Frank and Associates

Wm. Langley photos





ON A WOODED CALIFORNIA SLOPE WITH A VIEW

Of these apartments on a difficult, steeply sloping hillside in Sausalito, architect Campbell says: "Stated simply, the problem was to place 20 living units and 30 cars on a steep hill with a frontage of more than 300 feet, bounded by an ancient and handsome stone wall. Our effort was to save as much of the wall and as many of the trees as possible, and provide each apartment with a view of the water. The variety of the slope made it possible to create a building that is not one large, forbidding block, but an arrangement of four elements moving up and down over the hill. One of these elements was projected at right angles to the slope in order to reach a view of San Francisco. This wing contains two larger apartments and is topped by the owner's penthouse. The area is most suitable for one-bedroom units, since the steep slope will discourage tenants with children.

"Another dominant factor in the design was the city of Sausalito requirement of parking for one and one-half cars per living unit. Dealing with this factor was the most difficult part of the design. Although the lot area would have permitted 24 units, it was found impossible to provide the necessary parking for 36 cars. So the number of units was reduced to 20. The site offers a spectacular view of San Francisco Bay, including Belvedere and Angel Islands."

*Smith-Taylor Apartments
Sausalito, California*

OWNERS: *Harry V. Smith Jr. and Frank E. Taylor*

ARCHITECTS: *Campbell & Wong & Associates*

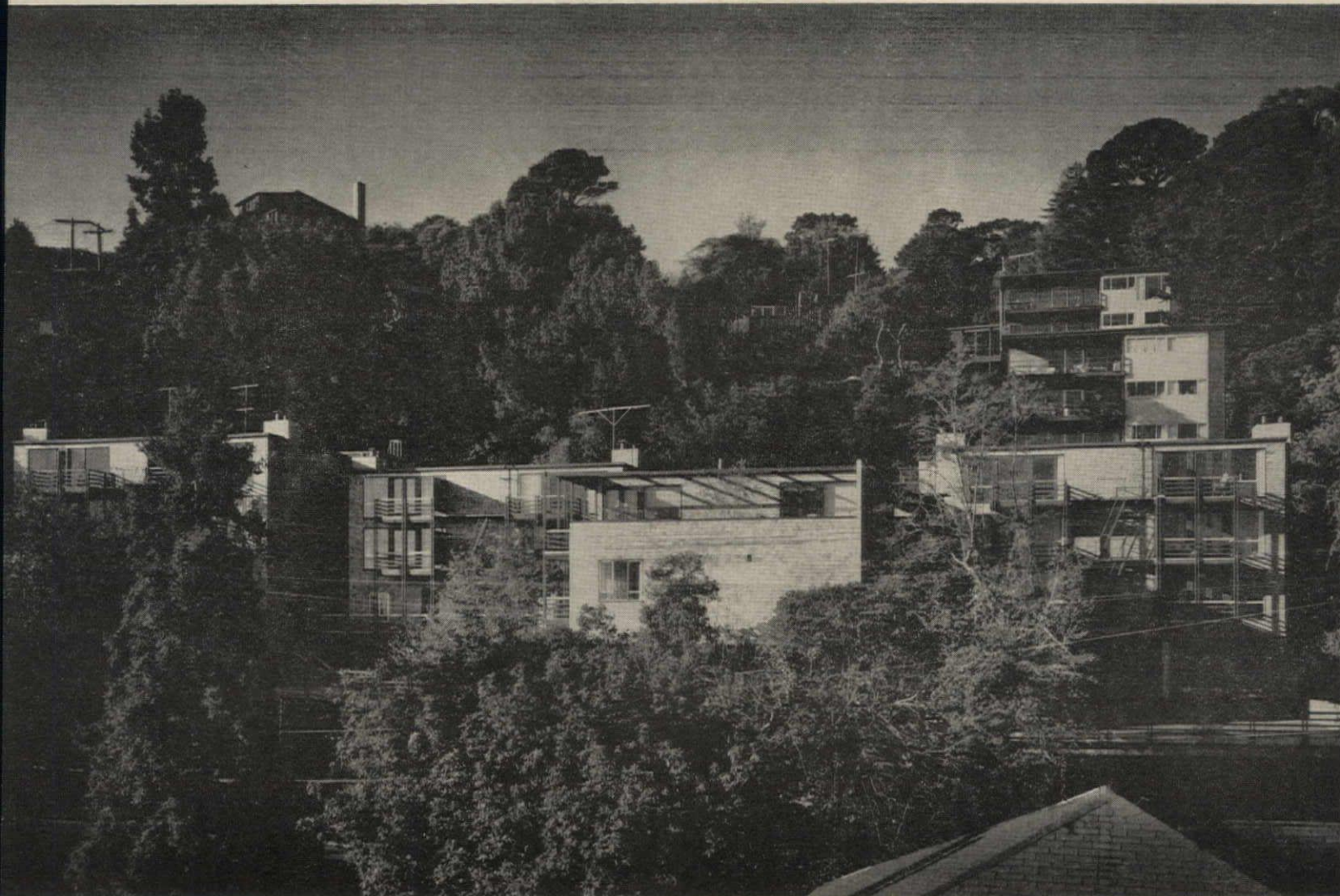
STRUCTURAL ENGINEERS:

Gilbert-Forsberg-Diekmann-Schmidt

INTERIORS: *Rocchia-Pfister*

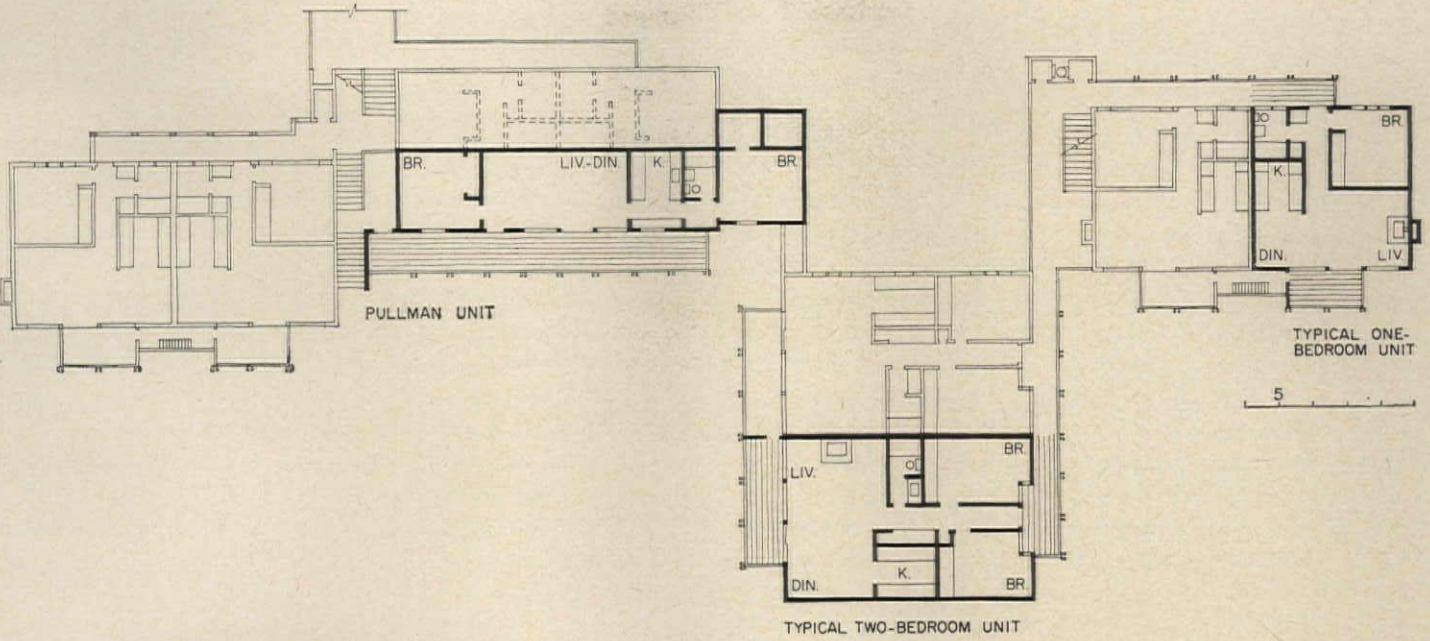
Morley Baer photos





The spatial arrangements of the three typical apartment types are shown in the plans (*right*). The two photos (*below*) show how parking on the hillside is taken care of, and the way the living areas open up to a balcony and the view. The materials for the exterior are natural shingles, stucco and concrete block. Stucco is used for soffits; shingles finish all exterior walls; charcoal gray concrete block is used for the underpinning walls. The trim repeats the charcoal gray color; the stucco is a golden yellow color; the shingles will age to a silvery gray. Shingles were used because of their low maintenance factor. Each apartment has its own deck, fireplace and electric kitchen. Floors are soundproofed by a thin concrete slab; heating throughout is electric





FHA HONOR AWARDS FOR RESIDENTIAL DESIGN

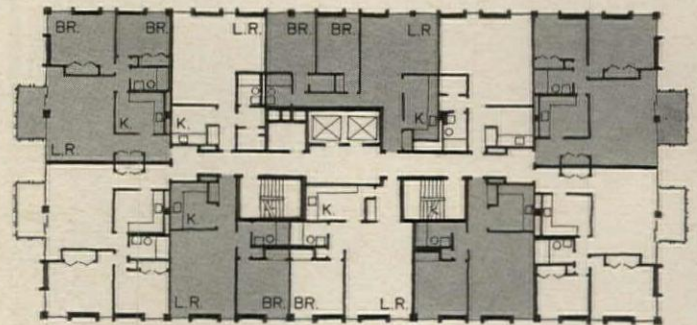
The FHA Award winners offer a kaleidoscopic view of the general level of competence in apartment design across the country—and the view is not unattractive. The winning designs in the multi-family dwelling category are shown on this and the following eight pages. They are interesting for their variety of situation, program and approach; and for their generally good quality of design. This first competition by FHA has produced encouraging results; the contest appears to be one that will grow in importance. In the multi-family category, there were eight first honor awards and five awards of merit; entries were required to be projects completed

after January 1, 1958, and having had FHA commitments before construction was begun.

The competition, which included also categories for single-family houses and nursing homes or housing for the elderly, was set up "to give recognition to superior design, to promote wider understanding of the principles of good design, and to carry out the National Housing Act objective of encouraging improvement of housing standards and conditions."

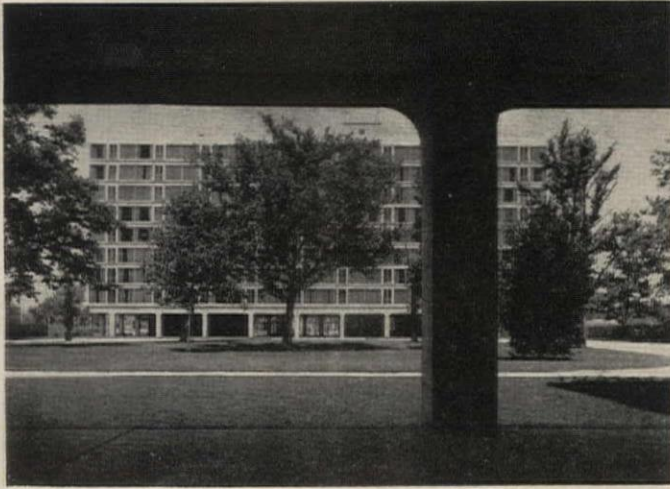
The jury was made up of the following six members: Thomas Coogan, Carl Feiss, Harold Hauf, Arthur Rubloff, Norman J. Schlossman and Paul R. Williams.

Balthazar photos



TYPICAL FLOOR

FIRST HONOR AWARD: Nelson Towers, Jackson, Michigan. ARCHITECTS: King & Lewis; LANDSCAPE ARCHITECT: Don C. Geake; BUILDER: Bentler Construction Company. Reinforced concrete structure with flat slab floor and roof construction. Faced with precast panels of exposed quartz aggregate concrete. The jury: "Should be commended for its domestic feeling and scale appropriate to the residential area about it."

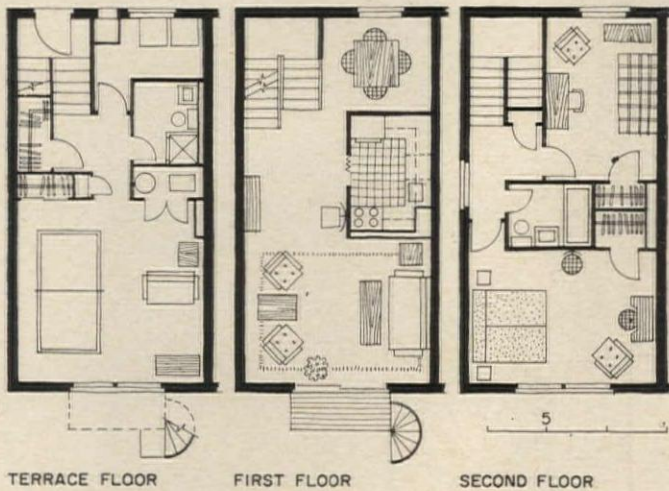
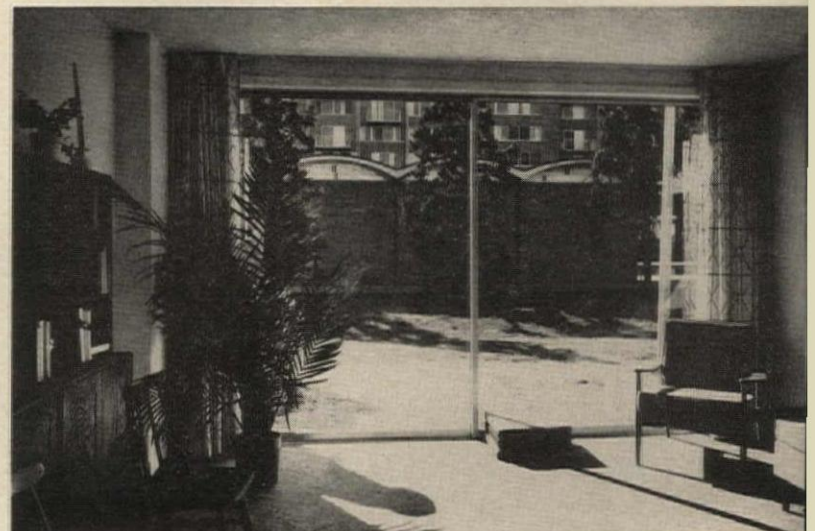


FIRST HONOR AWARD: Town Center Plaza, Washington, D.C. ARCHITECTS: I. M. Pei & Associates; BUILDERS: Blake Construction and Webb & Knapp Construction. Exposed reinforced concrete structure with aluminum windows. Fan-coil air-conditioning units with central plant. The jury: "Impressed by the straight-forward design, the dignity of the building, the feeling of quality it evokes, and the use of concrete as exterior finish."

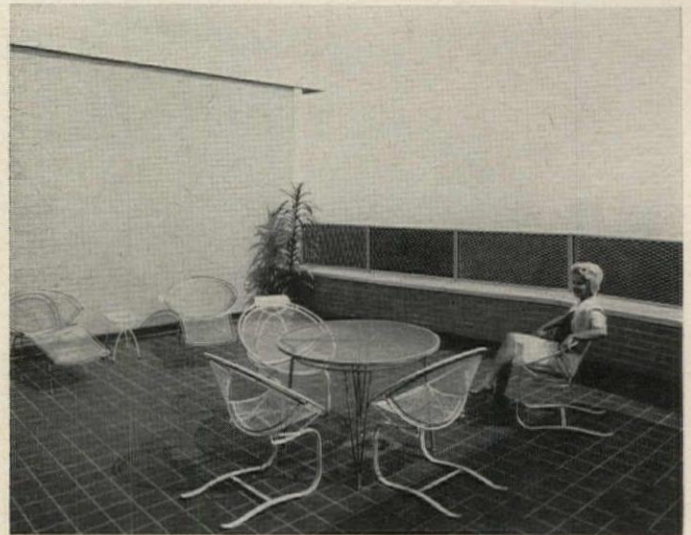
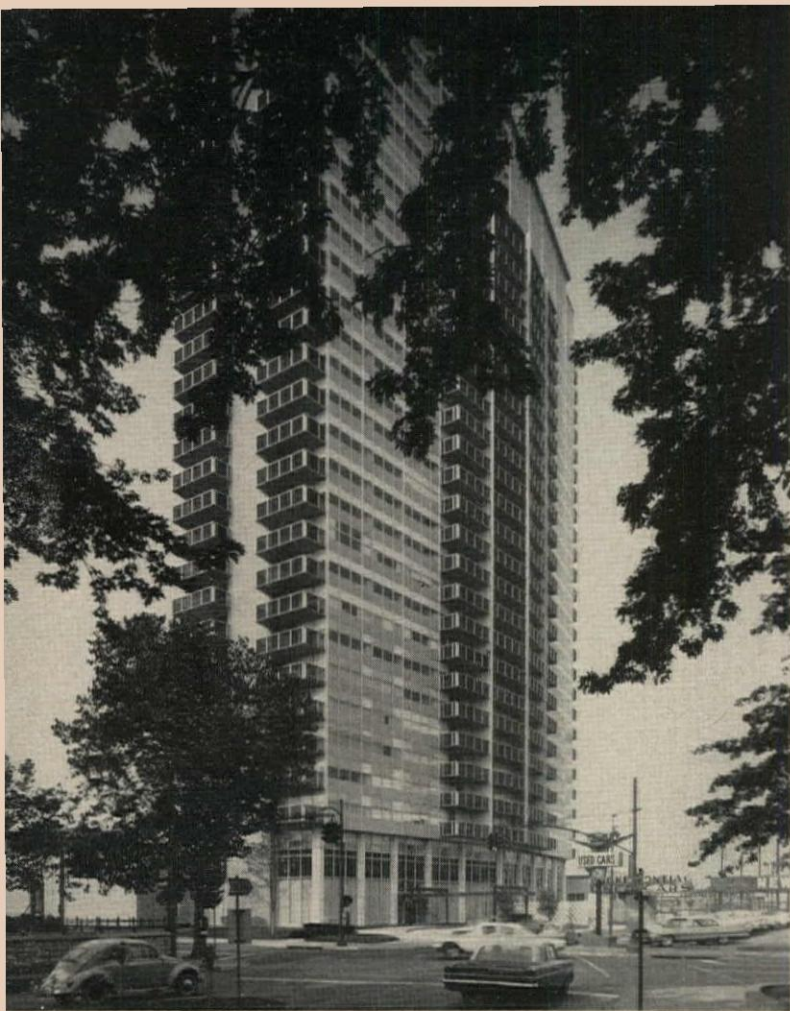


George Cserna photos

Frederic A. West photos

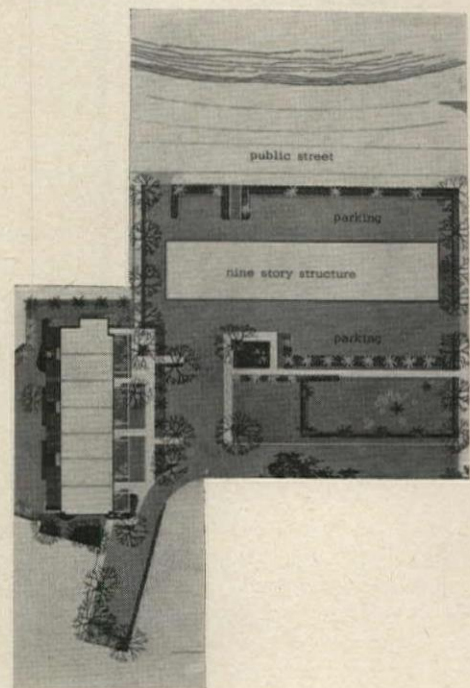
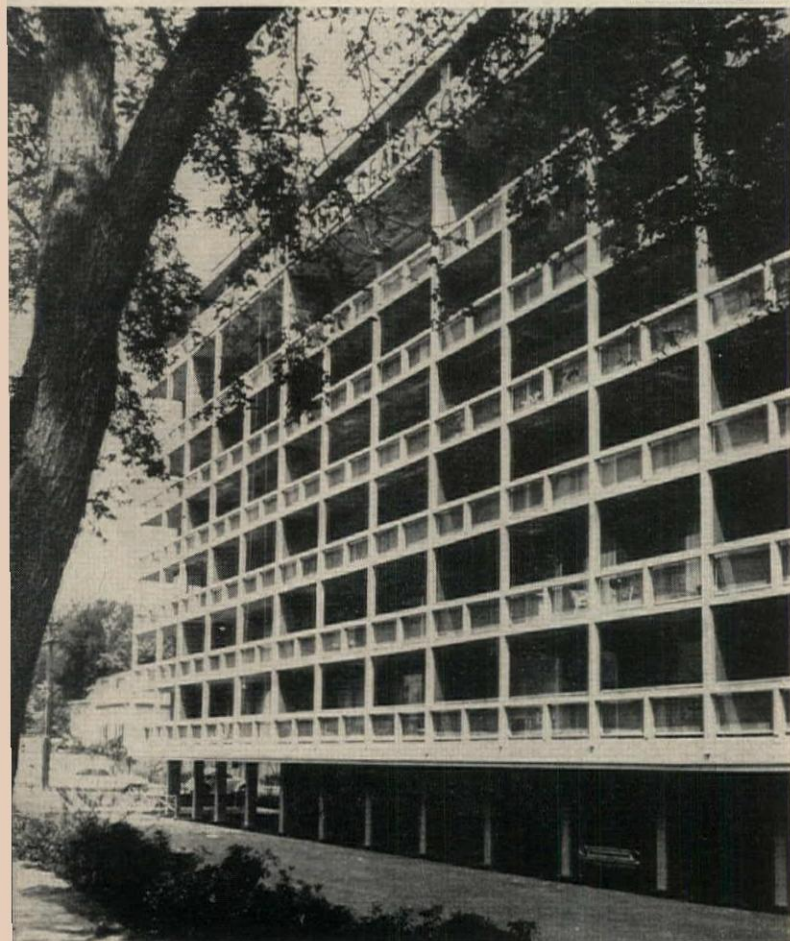


FIRST HONOR AWARD: The Capitol Park, Section 2. ARCHITECTS: Chloethiel Woodward Smith & Associates; LANDSCAPE ARCHITECT: Dan Kiley; BUILDER: HRH Construction Corporation. Structure is light wood framing and masonry bearing walls with painted brick exterior and horizontal sliding aluminum doors and windows. The jury: "This is an unusual garden apartment grouping in which exterior color is used to very good effect."

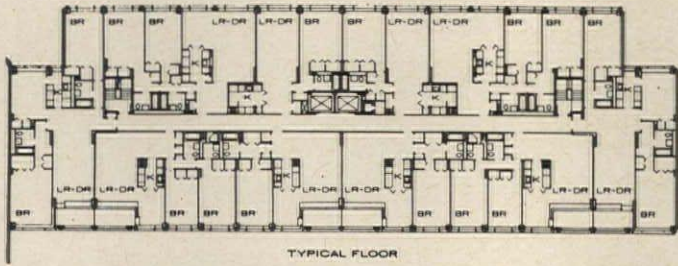


FIRST HONOR AWARD: 800 South Fourth Street, Louisville, Kentucky. ASSOCIATED ARCHITECTS: Loewenberg & Loewenberg and W. S. Arrasmith; LANDSCAPE ARCHITECTS: Miller, Whihry & Brooks; BUILDER: Robert E. McKee General Contractor, Incorporated. This high-rise structure—which includes a 150-car garage—is notable for its variety of apartment types and rentals. The jury: “An outstanding high-rise in a city lacking them.”

Jim Hughes photos



FIRST HONOR AWARD: Riverview Apartments, Cambridge, Massachusetts. ARCHITECTS: Harris and Freeman, Incorporated; LANDSCAPE ARCHITECTS: Robert L. Mackintosh; BUILDER: First Realty Builders Company. A two-element project comprising a nine-story high-rise and a group of seven town houses. The jury: “An imaginative solution, residential in character even though it is a high-rise building containing a large number of units.”

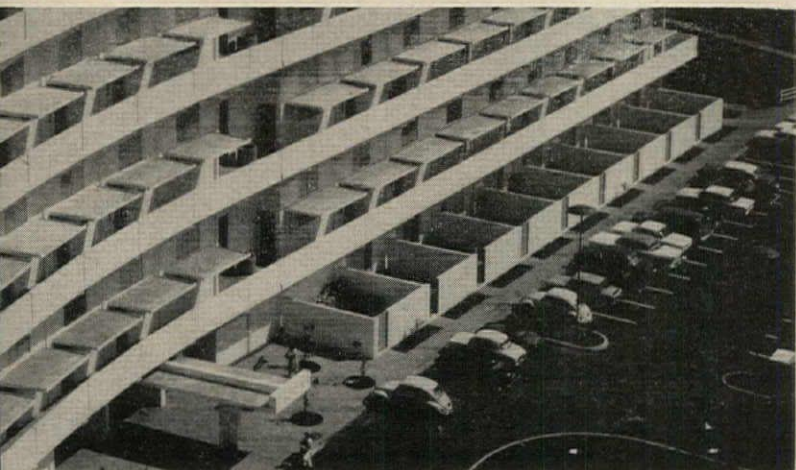
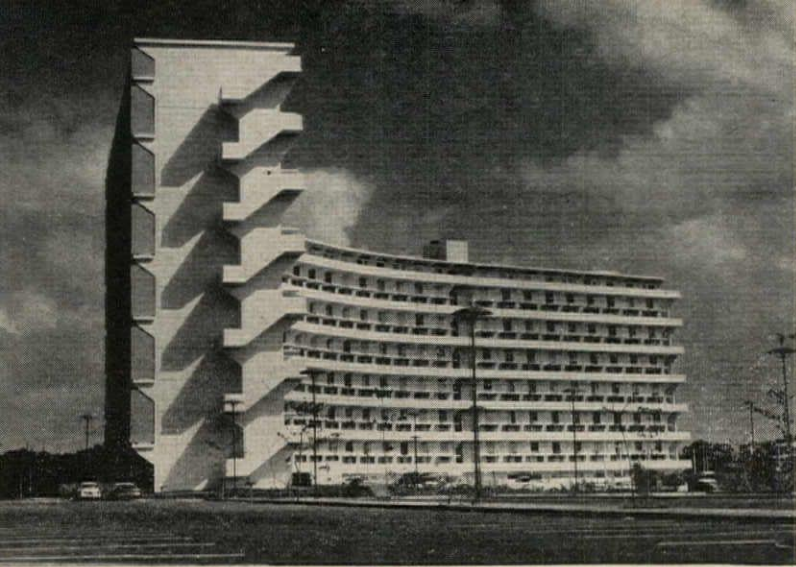


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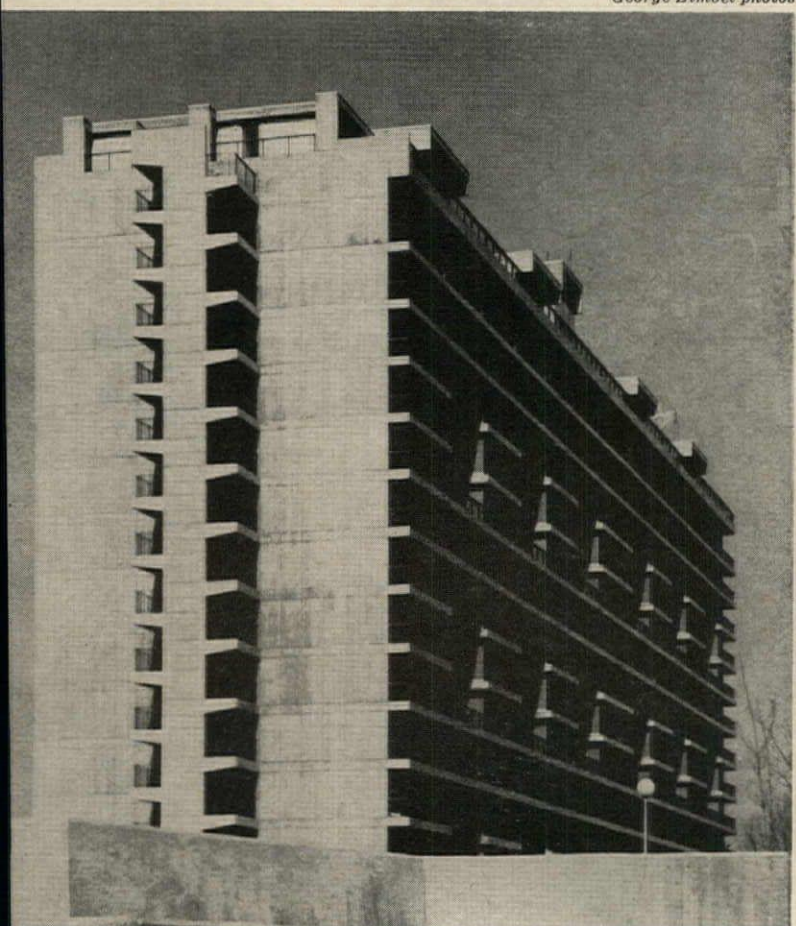


FIRST HONOR AWARD: The Premier, New York City. ARCHITECTS: Mayer, Whittlesey & Glass; BUILDER: 333 East 69th Street Corporation. Reinforced concrete plate structure, 8-inch-thick brick and concrete block exterior walls furred and plastered inside. Steel windows and railings. The jury: "An exceptionally well planned and designed building with crisp details and good handling of a narrow, shallow lot."

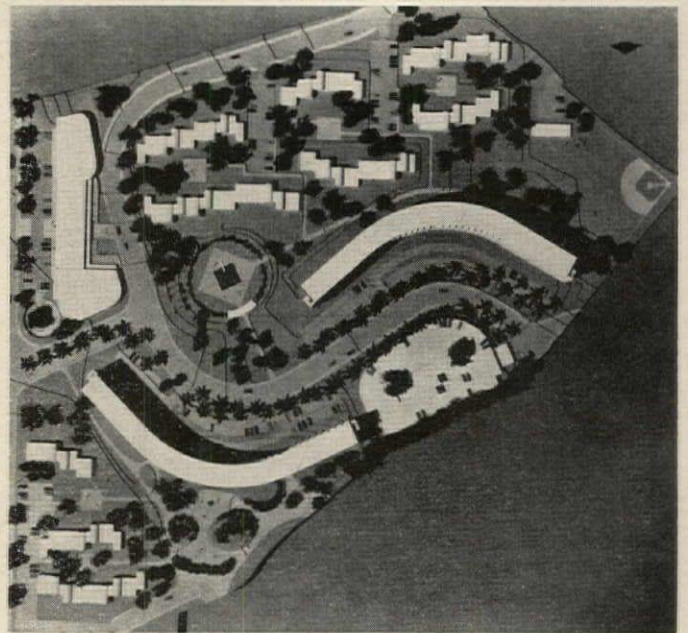




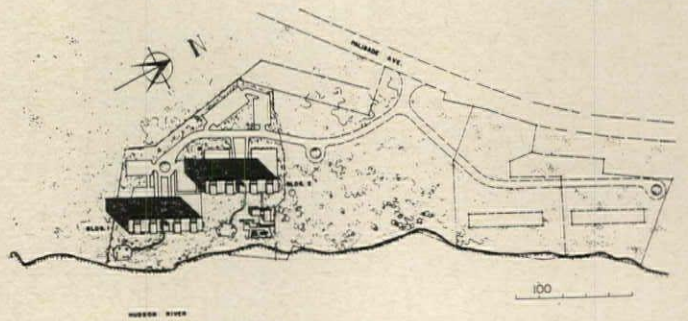
Richard R. Moger photos



George Zimbel photos



FIRST HONOR AWARD: El Monte, Hato Rey, San Juan, Puerto Rico. **ARCHITECTS:** Edward L. Barnes and Reed, Basora, Menendez; **LANDSCAPE ARCHITECT:** Hideo Sasaki; **BUILDER:** HRH Construction Corporation. Concrete construction, with vertical shear walls extending the full height of the building. Puerto Rico's first planned community. The jury: "A dramatic, exciting solution. Use of curved shapes give it a quality of its own."



FIRST HONOR AWARD: Horizon House, Fort Lee, New Jersey. **ARCHITECTS:** Kelly & Gruzen; **LANDSCAPE ARCHITECT:** Michael Burris; **BUILDER:** Tishman Realty & Construction Company. Structural system on a 24-foot module utilizes 8-inch concrete bearing walls and 8-inch flat slabs to provide clean, unbroken walls and ceilings throughout. The jury: "Imaginative use of concrete as exterior finish—direct, handsome."



MERIT AWARD: 101 Monmouth Street, Brookline, Massachusetts. **ARCHITECT:** John Hans Graham and Associates; **LANDSCAPE ARCHITECT:** Toshiyuki J. Maeda; **BUILDER:** S & A Allen Construction Company. Flat slab concrete construction with columns concealed within the exterior cavity walls. Gray brick, black wrought iron railings, aluminum windows. The jury: "Ingenious solution for a high-rise unit on a narrow property."



Louis Reens photos





Tony Rose photos

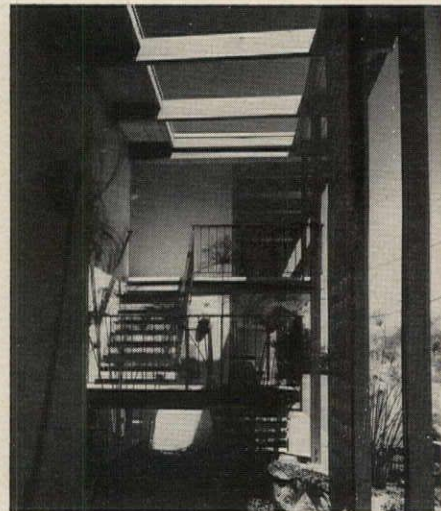
© Ezra Stoller Assoc's. photo



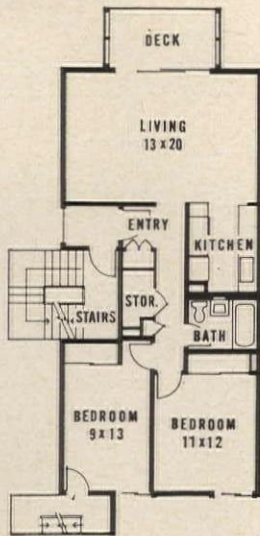
Frederic A. West photo



AWARD OF MERIT: The Capitol Park, Section 3, Washington, D. C. ARCHITECTS: Chloethiel Woodward Smith & Associates; LANDSCAPE ARCHITECT: Dan Kiley; BUILDER: HRH Construction Corporation. A group of three buildings together with garage. Reinforced concrete structure with 7-inch slabs. Exterior of hexagonal brick with concrete block backup. The jury: "Brilliant use of interior—as well as exterior—balconies."

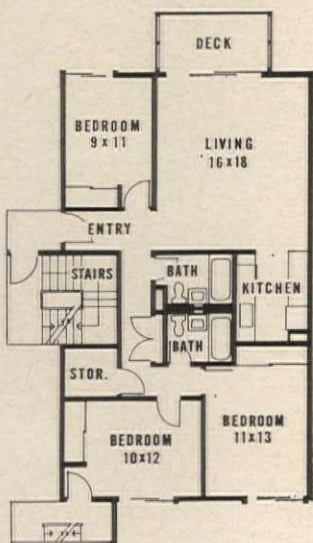


AWARD OF MERIT: La Palma Apartments, Santa Clara, California. ARCHITECT: Fred Marburg; LANDSCAPE ARCHITECT: Kay Tanouye; BUILDER: Oscar Liebert. Wood frame construction on a concrete slab at ground level. Exposed concrete block firewalls. The jury: "Exterior treatment is well handled; the roof line is interesting, and for a long, narrow courtyard area there is a surprising amount of pleasant open space created."

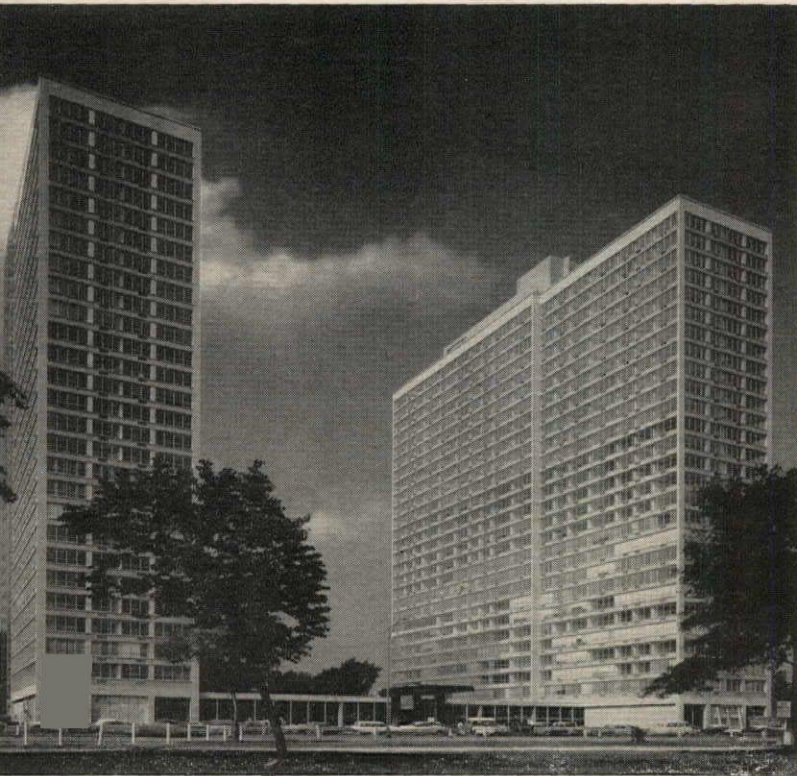


Richard F. Conrat photos

AWARD OF MERIT: St. Francis Square Community Apartments, San Francisco, California. ARCHITECTS: Marquis and Stoller; LANDSCAPE ARCHITECTS: Lawrence Halprin & Associates; BUILDER: Jack Baskin. Three-block redevelopment on a severely sloping site; solution combines all into one large superblock. Stucco exterior on wood frame; redwood balconies. The jury: "An inexpensive approach that makes a handsome addition to the area."

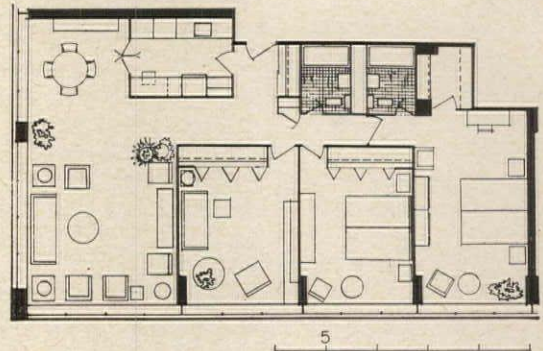


Karl H. Beik photos



Hedrich-Blessing photos

AWARD OF MERIT: 4800 South Shore Drive Building, Chicago, Illinois. ARCHITECTS: Loewenberg & Loewenberg; LANDSCAPE ARCHITECT: Stephanie S. Kramer; BUILDER: Gust K. Newberg Construction Company. Two high-rise units with an excellent view of Lake Michigan. Reinforced concrete frame, brick walls, stone trim, individual air-conditioners. The jury: "Well planned, high density housing that leaves large open areas at ground level."



Architectural Engineering

Plastics in Building

Growth of plastics in building has more than kept pace with the growth of the plastics industry, particularly in such utilitarian applications as high-pressure laminates, vinyl-chloride-based flooring, plastic piping, flashing, foam insulation, and many others. But many of the major problems involved in applications of plastics in building, surveyed by a plastics and building industry conference nine years ago, are still with us today and promise to be for some time to come. Professor Albert Dietz of M.I.T. stated last November in a report presented before the Society of the Plastics Industry. Some of his observations were:

In one aspect of building—the building structure—plastics have made only modest headway. Although there have been some dramatic instances of structures built entirely or in great part of plastics, and plastics constitute major components of some composite structures like building sandwiches, the proportion of total structure has been small. The lightness, strength and flexibility of form made possible by high-strength plastics have yet to be translated into large-scale structural use. This is to be expected. The competition with other structural materials is great, the requirements of structural safety are severe, and hasty, ill-considered applications must be avoided. The forthcoming World's Fair will make extensive use of structural and semi-structural plastics, and this may point the way to its greater use in the future.

Reliable prediction of performance under long-continued exposure of various kinds constitutes another major challenge to the plastics and building industries. Not only is there lack of long-time case histories, but what constitutes weathering has not been studied to provide a comprehensive understanding.

Human Light Meter

Some rather pertinent observations concerning the human being's responses to various lighting environments have been interspersed among quantitative considerations in a new book, "Architectural Physics: Lighting," by Dr. R. G. Hopkinson, who is in charge of lighting research at Britain's Building Research Station.

"The pattern of light and shade in a room affects attentiveness, alertness and both short- and long-term fatigue. Some arrangements of lighting are certainly soporific. A lecture hall lit from a luminous ceiling draws the eyes upwards to just that position which they occupy in sleep . . . On the other hand teachers are convinced that the new schools, with their general air of light, color and brightness contribute to the feeling of alertness and of freshness at the end of the day which were absent from the old dull buildings from which they came." The book is available from British Information Services, 845 Third Avenue, New York 22, New York for \$10.

Connection Details for Precast-Prestressed Concrete

As more and more precast concrete structures have been built, the methods of connecting the various elements have grown in sophistication and efficiency. Structural designers have recognized that precast concrete has peculiar characteristics of its own in contrast to structural steel or poured-in-place concrete. Because of the importance of connections in the structural integrity of a building, the Technical Activities Committee of the Prestressed Institute initiated a survey of details used in American practice, the best of which have now been published in a new loose-leaf book. The details schematically represent details which have been most successful under field conditions. The book is available from P.C.I. at 205 W. Wacker Dr., Chicago 7, Illinois for \$4.50.

This Month's AE Section

LOW-COST GARAGE SHOWS DESIGN FINESSE, page 164. *COMPONENTS DESIGNED FOR CALIFORNIA SCHOOLS*, page 167. *HEAT PUMP, RADIANT PANELS CONDITION ELECTRONICS PLANT*, page 170. *THICKNESS OF LARGE GLASS LIGHTS CRUCIAL*, page 172. *BUILDING COMPONENTS: Fluid Roofing Systems*, page 177. *Products*, page 179. *Literature*, page 180.

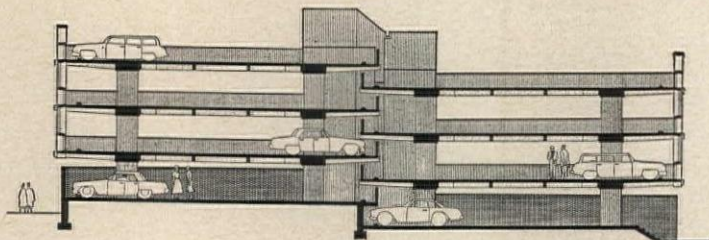
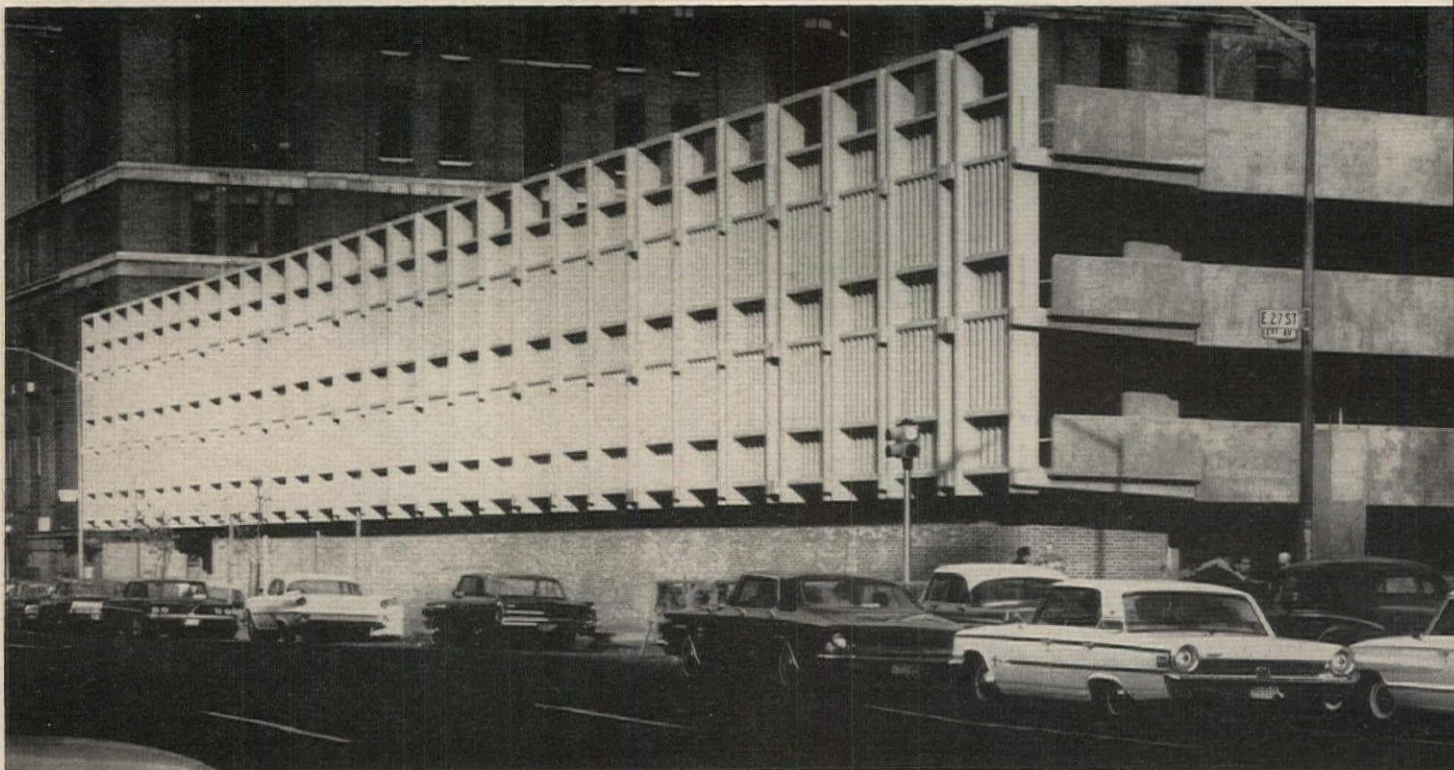
LOW-COST GARAGE STRUCTURE SHOWS DESIGN FINESSE

Design of an efficient, easy-to build structure permitted use of high-quality precast screens and facing brick within a strict budget

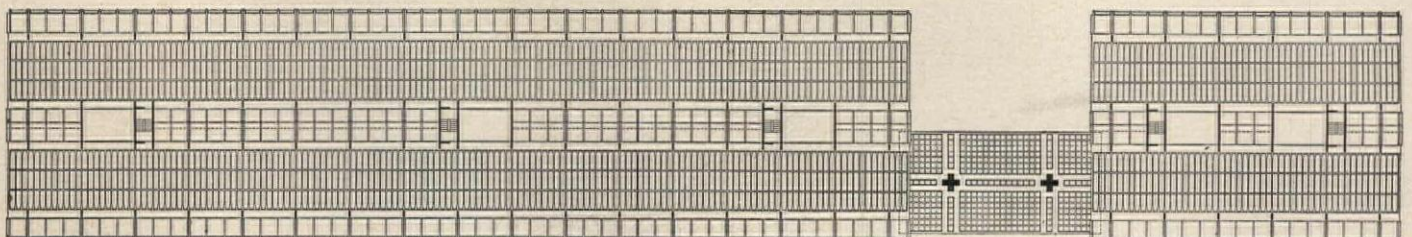
The uncluttered, forthright lines of this city parking garage evince a structure notable for its logic and efficiency. The structural simplicity of the building allowed the designer, John Stonehill, not only to keep within a strict budget but also to use high-quality materials for the facade, important in implementing several design considerations. All in all, this self-parking garage represents a logical integration of structural, economic and esthetic considerations.

As part of the planned New Belle-

Robert Galbraith photos



Precast screens of "shocked" concrete, each nearly three stories high and one-car wide, were formed and erected in one piece. Haunches on the sides of the screens rest on cantilevered beams and are secured by simple steel angles and bolts. Each structural bay is the width of three precast screens. Cantilevers are expressed visually by means of projecting sections of end walls. The garage had to serve functionally not only for parking but as a low "fence" and pedestrian entrance for the planned New Bellevue Center. *Below:* reflected ceiling plan of the garage as complete. *Left:* garage section

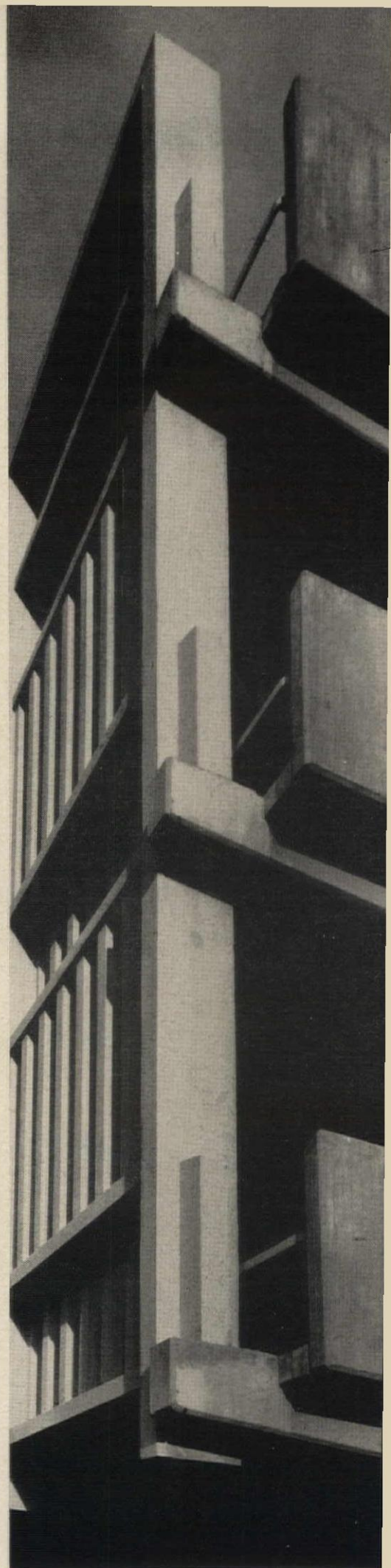
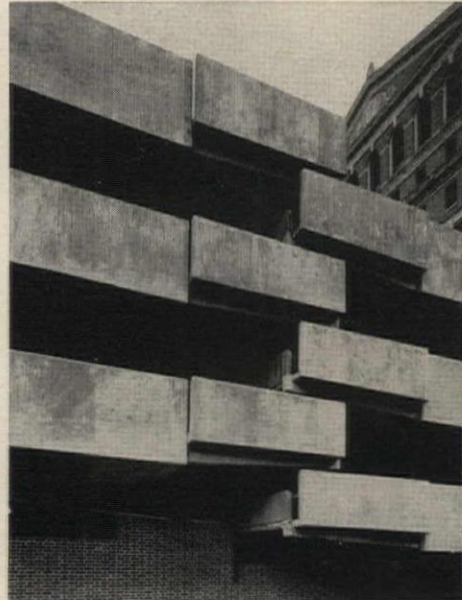
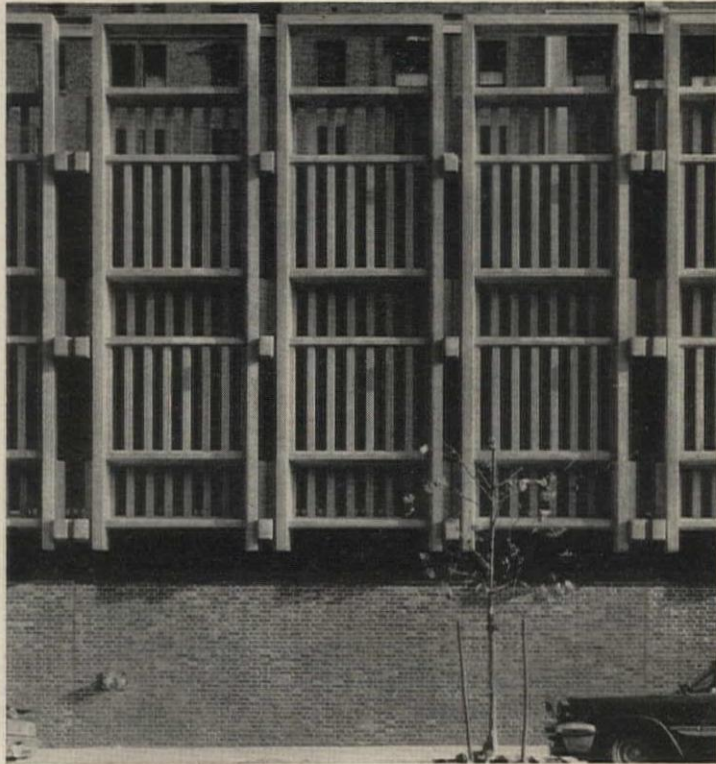


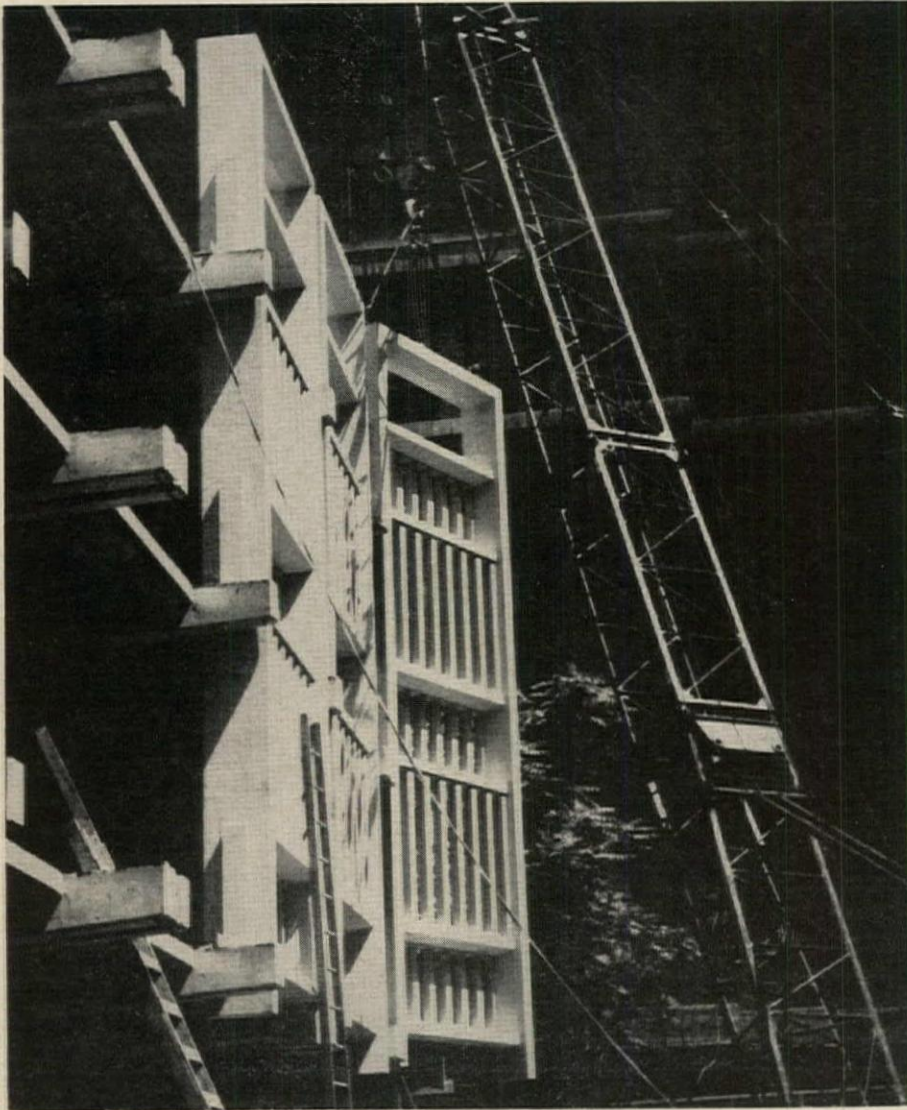
vue Hospital Center, this garage accommodating 388 cars has a second major function: to serve as a low wall or "fence" for the existing administration building and for a new 25-level hospital building to be erected nearly a block behind the garage. (The garage will be extended on both sides, and a major pedestrian entrance will pierce the resultant three-block-long garage.)

Both the over-all structure (as shown in the drawings) and the structural details of this garage have been deftly executed. The can-

tilevered slab projects 9½ ft from the columns, enhancing the efficiency of the floor slabs. A further example is the simple, one-piece construction of the precast concrete screens which permitted their easy erection with a crane. A second interesting feature of the screens is their exposed haunches which rest neatly upon cantilevered beams, making only a simple bracket-and-bolt connection necessary to secure the screens.

Two major design considerations for the garage were: (1) relating

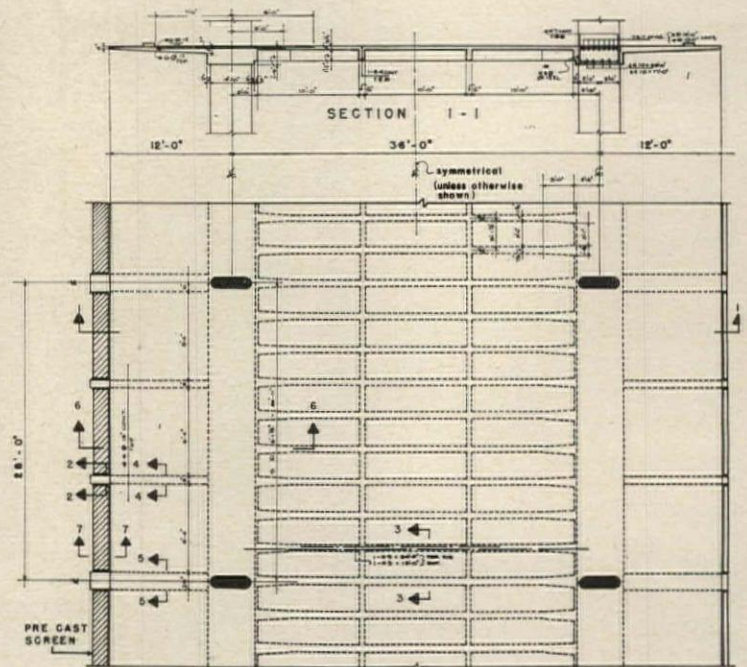
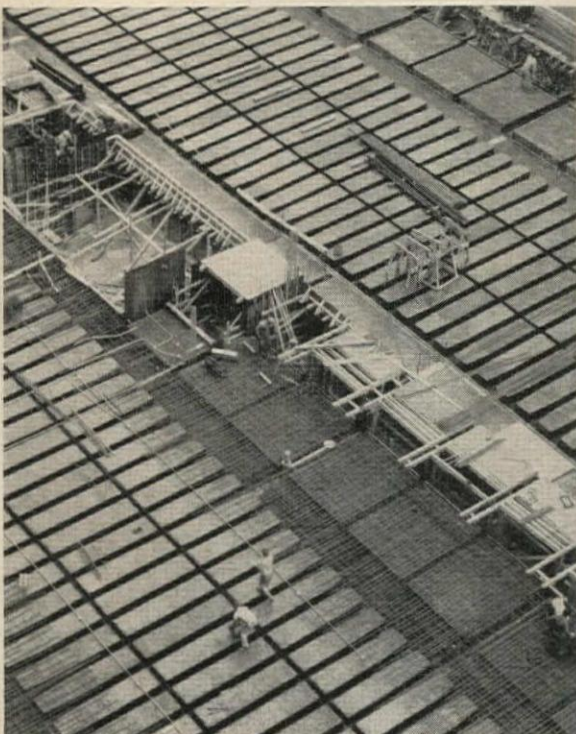




Peter Alan Pownier

the structure to the existing buildings behind it, and (2) creating an interesting, handsome garage which would express rather than deny or mask its function and/or structure, on a scale comprehensible to the pedestrian. (More than half of the hospital patients come on foot.) To achieve the first objective, a wall of hand-cast brick was used for the base of the garage—the same brick as that in buildings in the rear. One means of expressing the structure is the projecting portions of the side-walls defining the cantilevered sections. The screen design provides passers-by with an index of space. The width of one screen designates a car bay, and three screens represent a structural bay. Moreover, the horizontal strips are at car-bumper level and floor lines.

DEPT. OF HOSPITALS, NEW YORK CITY, N.Y.: *Ray E. Trussell, M.D., Commissioner*; THE DEPT. OF PUBLIC WORKS: *Peter J. Reidy, Commissioner*; BUREAU OF BUILDING CONSTRUCTION: *Albert B. Bauer, Director*; *Senior Architect, Hospitals*; *Alexander W. Beresniakoff*; *Project Architect*: *Nathan Gapin*; ASSOCIATED ARCHITECTS & ENGINEERS: *Pomerance and Breines*; *Katz Waisman Weber Strauss*; *Joseph Blumenkranz*; *Feld and Timoney*; *Project Administrator*: *Lewis Alan Berne*; *Chief Designer*: *John Jay Stonehill*



CONCRETE SLAB BAND & ONE WAY JOIST SLAB (3 1/2" x 14")
scale 1/4" = 1'-0"

COMPONENTS PROGRAM FOR CALIFORNIA SCHOOLS

Multi-million dollar bids for components comprising structure, mechanical system, lighting and partitions are now being evaluated by the School Construction Systems Development project

Both the school design field and manufacturers of building products have their eyes on the School Construction Systems Development project in Palo Alto, California this month. One of the measures by which success of the California experiment on large-size school building components is to be judged will be evident shortly. The big question is this: how will the cost of a system of standardized, coordinated components for structure, mechanical system, lighting-ceiling system and partitions compare with conventional school construction? Manufacturers' lump-sum bids for these components based on a minimum commitment of 1,400,000 sq ft of secondary schools were due December 3, and are now being evaluated by the staff of the School Construction Systems Development project and its advisers.

Design of the large-size components must conform to carefully detailed performance specifications prepared by S.C.S.D. and issued to potential bidders last July by the First California Commission on School Construction Systems, the legal agency representing 12 school districts, ranging geographically from Sacramento to Los Angeles, which expect to use the building system components. The total worth of the schools, which are to be ready for occupancy between September 1966 and December 1967, may run as much as 25 million dollars.

The size of this commitment favors two major objectives of S.C.S.D. The first is to cut cost of school components through large-scale purchasing within a definite period of time. The second is the encouragement of new product development in the school field. Early last fall nearly 50 different manufacturers expressed interest in bidding the various components.

Organized two years ago, the School Construction Systems Development project has been carried out

as a joint activity of the School Planning Laboratory of Stanford University and the Department of Architecture of the University of California under a grant from Educational Facilities Laboratories, Inc. of the Ford Foundation.

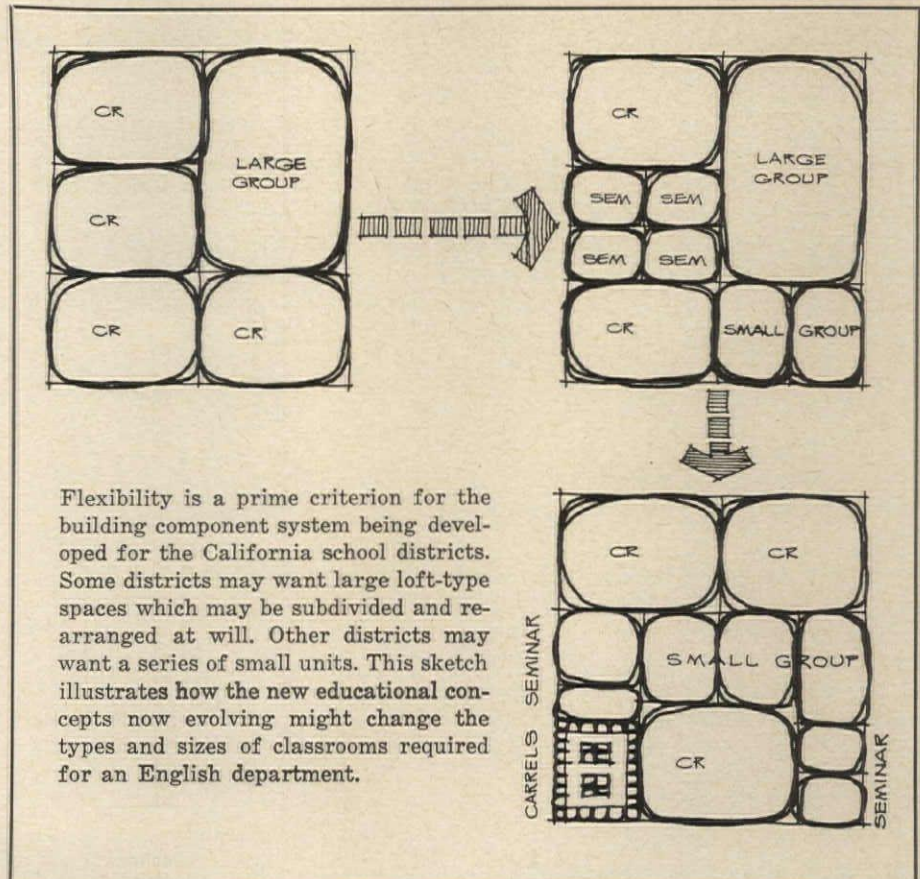
S.C.S.D. has a staff of seven with James D. Laurits, a school administrator, serving as project coordinator, and Ezra D. Ehrenkrantz as project architect. Three architects, an architectural assistant and secretary complete the staff. In addition, S.C.S.D. is using the consulting services of five specialists in the areas of acoustics, mechanical and electrical systems, lighting systems, structural systems and color. A nine-man advisory committee of well-known architects, educators and school planners also is working with the staff.

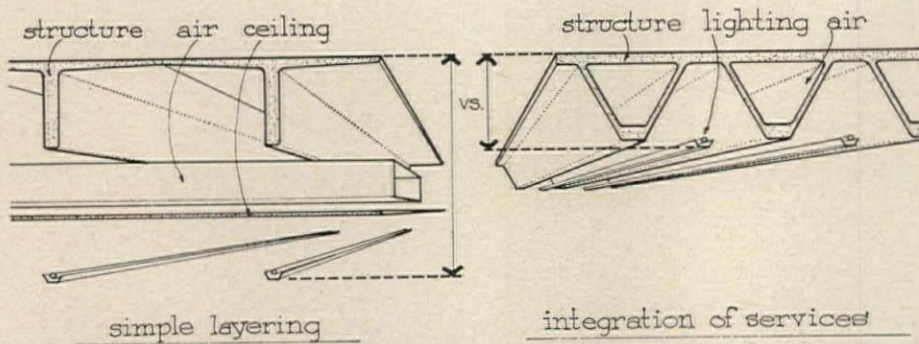
Objective of the experiment is to

develop an integrated system of standard school building components which will: (1) offer the architect design flexibility in meeting the changing program needs of individual schools; (2) reduce the cost of school construction and give better value for the school building dollar in terms of function, environment, first cost and maintenance; and (3) reduce time needed to build a school.

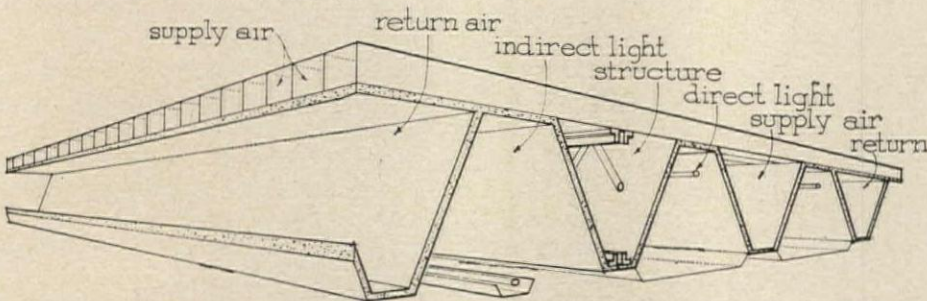
In order to meet these three objectives, the S.C.S.D. staff felt that the performance specifications perforce must encourage the development of new products not now in existence.

The schools themselves will be designed by individual architects and their consultants responsible to the various districts. Effect of the system of components as it is envisioned by S.C.S.D. will be to reallo-

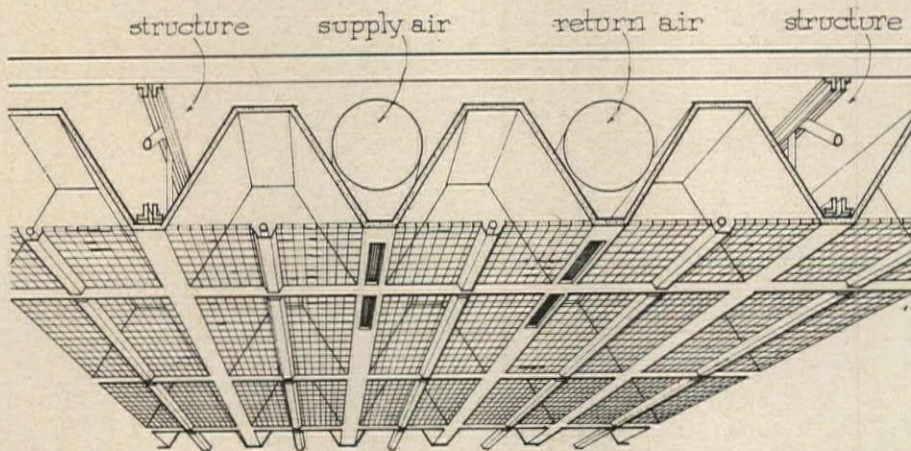




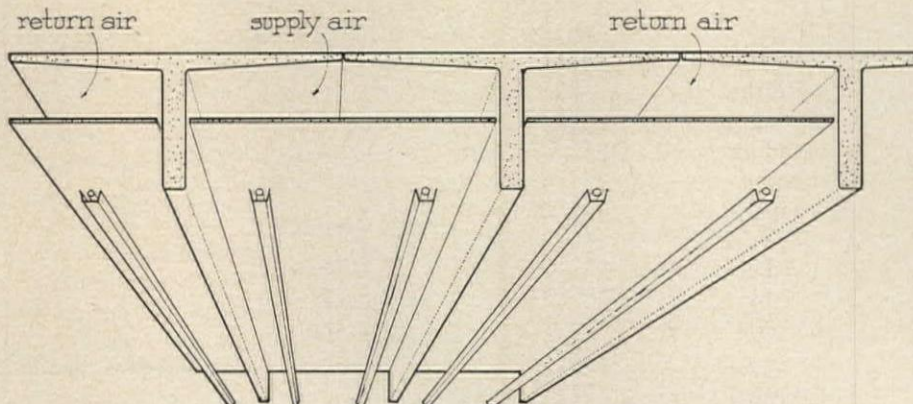
To compensate for extra costs of long-span structures and flexibility requirements, the research staff urged manufacturers to design multi-functional integrated components for the ceiling "service sandwich." The sketches in this column indicate possible approaches, but not prescribed techniques. While all were permissible under the performance specifications, the total depth could not exceed 3 ft



Folded ceiling serves three functions in this example: (1) supply and return ducts; (2) reflector for light fixture; (3) fire protection for steel joist structure. If exposed lamps are used, then diffusing media could be installed below them



This approach is similar to the one above, except that separate ducts and a louvered ceiling plane have been used. Partitions could run up to ceiling runners



Flat panels provide light reflector and form plenum spaces for carrying air

cate the architect's and consulting engineer's time on a project. Time which is now spent choosing structural and mechanical systems, and much of the time spent on working drawings could be devoted to programming, more detailed preliminary design and other planning work.

Consulting structural, mechanical and electrical engineers would still be responsible for the specific engineering of individual schools, choosing from a range of components selected by competitive bidding.

Basis for Criteria

Criteria for the component categories were derived from educational requirements as stated by school officials and architects for each of the California districts involved. Three principal types of space requirements were indicated: (1) some districts might prefer one or two very large loft-type structures, while others might favor a large number of small buildings; (2) the building system must make it simple and economical to plan rooms of many different sizes and to arrange space in new ways depending on the individual preferences of the districts and their architects; (3) the building system must be able to accommodate changes when they arise.

If large-group instruction is desired, a maximum group size of 150 students generally will need to be accommodated, according to S.C.S.D.'s evaluation. This means that academic areas of the school buildings should be able to provide column-free spaces of approximately 3,600 sq ft.

Minimum-size spaces of approximately 450 sq ft will be needed for small-group instruction, say many educators in the California member districts. Partial-height partitions may be used to subdivide the 450 sq ft in various ways. These 450 sq ft areas will need their separate sources of light and ventilation.

Based on this kind of space planning, S.C.S.D. researchers have reasoned that the next logical structural advance over present-day 28- to 30-ft spans is a basic 60-ft clear span. The 60-ft length will span two regular classrooms and provide clear space of 3,600 sq ft.

Component Integration

S.C.S.D.'s investigation of educational requirements for California

schools thus indicated four definite component criteria difficult to meet within today's school budgets: (1) long-span structures; (2) varied movability of partitions; (3) full environmental control with ability to adapt to changing plan configurations; and (4) an efficient and attractive low-brightness lighting system which also adapts to changing plan configurations. To meet these criteria, S.C.S.D. suggests that an integration of components is necessary, particularly of the mechanical services in the ceiling and the structural members supporting roofs and floors.

In components making up the "service sandwich"—the space between ceiling and roof (or floor) structure, three orders of coordination are possible:

1. Coordination by architects and engineers of components performing separate functions which have not been designed with reference to each other.

2. Coordination by architects and engineers of components performing separate functions which have had some coordination at their design stage.

3. Coordination of components at their design stage between architects, engineers and industry in which components become multi-functional. Thus structure may form or contain air ducts and act as a light reflector. A long-span beam which may be too costly used solely as structure, may become economical when it also is designed to carry air. The depth needed for long spans, sometimes a liability in a conventional building, may be an asset when it is exploited to carry air or act as a light reflector for the fixtures.

Ceiling "Service Sandwich"

To promote this third order of coordination, the S.C.S.D. performance specifications list four different methods to meet minimum standards for an integrated ceiling "service sandwich," which can be no deeper than 3 ft from the roof or floor structure to the ceiling.

In the first method the structure forms the duct space. The structure must be capable of being penetrated for air distribution and control, and for access to parts of the mechanical system.

The second method is a structure

which permits duct penetration within the structural depth.

The third method is a structure which permits ductwork to pass beneath it, but with total depth kept within the 3-ft maximum.

The fourth method is any combination of the first three.

In addition to the requirements of integration of structure and air distribution, the specifications state that the ceiling sandwich shall provide an acceptable minimum ceiling, even though a hung ceiling is used. The surface of the sandwich on the room side also must act as a reflecting surface for the lighting fixtures. It must be possible to locate these fixtures within the sandwich so as to produce a low-brightness lighting system.

Thermal, Visual Environments

The thermal environment must remain comfortable as room sizes change and partitions shift. The smallest area to be served by a single unit of air treatment equipment has been set by S.C.S.D. as 3,600 sq ft. Zone control must be feasible, however, for areas as small as 450 sq ft. The system must be designed to permit rearrangements without disturbing finished surfaces and equipment. At the same time the system should not require extensive layout of various equipment, conduits and accessories which are not needed initially, but would be required for future changes.

The low-brightness lighting systems for academic areas described in the performance specifications are of three types, used in the percentages listed: (1) semi-indirect luminaires no more than 8 in. below the nominal plane of the ceiling (40 per cent); (2) illumination by a horizontal luminous plane (20 per cent); (3) direct luminaires (40 per cent).

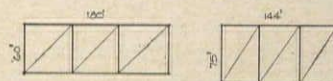
Interior Partitions

For subdividing interior space three types of partitions will be used: (1) fixed partitions for enclosing spaces such as toilet and mechanical rooms; (2) demountable partitions, providing chalkboard and tackboard areas, which can be moved easily by school custodians; and (3) operable partitions capable of immediate operation by hand, yet possessing good strength and acoustical qualities.

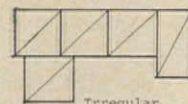
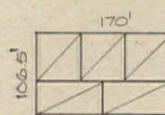
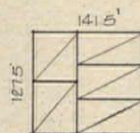
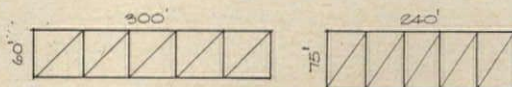
Mock-Ups

Early this year after the successful bidders have been announced, a rough working mock-up will be built to check the relationships of structure and equipment, to solve detail problems, to provide an opportunity for testing and possible redesign, and to assess efficacy of system integration.

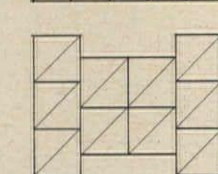
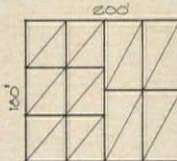
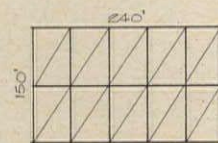
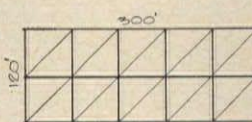
A second mock-up will be erected as a 4,200 sq ft finished building on the Stanford University campus to check the component system in detail at a prototype level and to provide a structure for exhibiting the system.



10,800 sq ft school; three modules



18,000 sq ft school; five modules



36,000 sq ft school; 10 modules

Schools involved in the project will be of 10 sizes, ranging from 7,200 to 39,000 sq ft. The diagrams here illustrate three of these, with several possible configurations. The plans are divided into 3,600 sq ft areas which indicate mechanical service modules.



George C. Bradbury photos

HEAT PUMP, RADIANT PANELS CONDITION ELECTRONICS PLANT

High efficiency operation of heat pump is achieved through use of well water as a heating and cooling source teamed up with a large area radiant panel ceiling in offices

A high degree of operating efficiency was achieved for the heat pump system installed in the Schweber Electronics office building and factory in Westbury, Long Island through utilization of well water as a heating and cooling source and a large-area radiant panel ceiling to maintain thermal comfort for office personnel.

As engineers well know, the heat pump is most efficient when there is the smallest differential between temperature of the external source of heating and cooling effect (well water in this installation) and the

temperature at which the heat pump must supply heating or cooling to indoor spaces (the radiant ceiling in this installation). Since the radiant panels occupy a large portion of the ceiling, their temperature need not be as low in summer or as high in winter as the water used to heat supply air in air-type systems.

With constant-temperature well water being the external source for the heat pump, only a single-stage compressor was required. In zero-degree climates, outdoor-air-source heat pumps may have to be connected in tandem for double-stage opera-

tion in order to get high-temperature water efficiently.

Another reason why mechanical engineers Benjamin & Flack favored the metal pan radiant ceiling system was its efficiency in compensating for the high lighting levels in office areas: 6 watts per sq ft in the book-keeping and sales areas and 4 watts per sq ft in general office space. Naturally in an air-type system, the higher the lighting level, the greater the amount of air necessary to cope with the heat given off by the lamps.

In the example being discussed here the major portion of the heating and cooling is accomplished by the aluminum pan radiant ceiling which is attached to pipe grids circulating either warm or cold water depending on the weather. By virtue of this method, the engineers state, the air supply could be reduced merely to that required for ventilation, with the result that supply ducts could be made smaller.

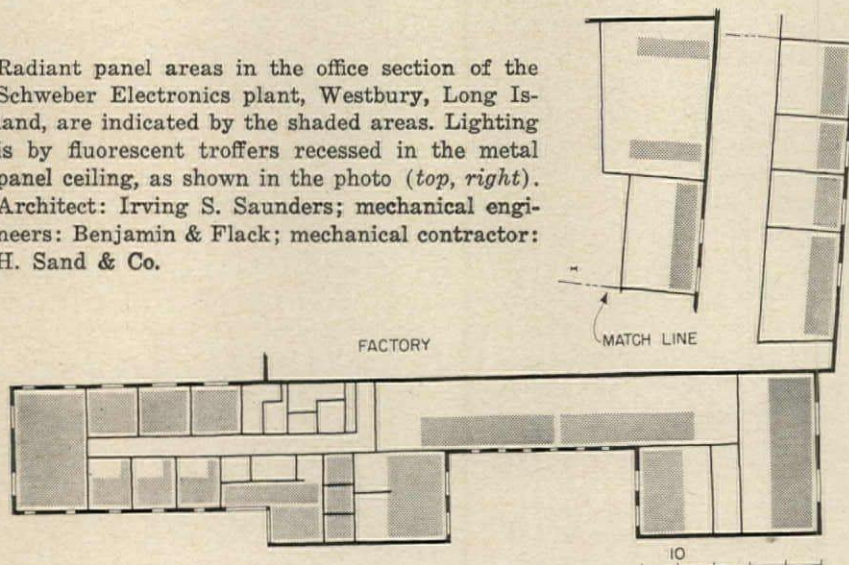
Two architectural design considerations favored a heat pump system: the use of small glass areas and the esthetic objections to a cooling tower and chimney.

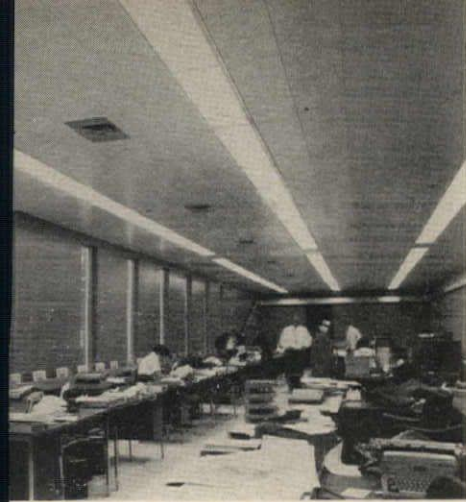
Other factors influencing the decision to use the heat pump, radiant ceiling system were the client's desire to provide a thermal environment free from cold drafts, and his desire to have a building whose systems would reflect the research nature of the electronics field.

In their preliminary analysis, Benjamin and Flack considered four alternate systems: (1) air heating and cooling; (2) air cooling and hot water heating; (3) dual-duct high velocity air cooling and hot water heating; (4) heat pump with radiant ceiling heating and cooling.

The engineers' study of relative system costs indicated that although the heat pump had a higher initial

Radiant panel areas in the office section of the Schweber Electronics plant, Westbury, Long Island, are indicated by the shaded areas. Lighting is by fluorescent troffers recessed in the metal panel ceiling, as shown in the photo (top, right). Architect: Irving S. Saunders; mechanical engineers: Benjamin & Flack; mechanical contractor: H. Sand & Co.



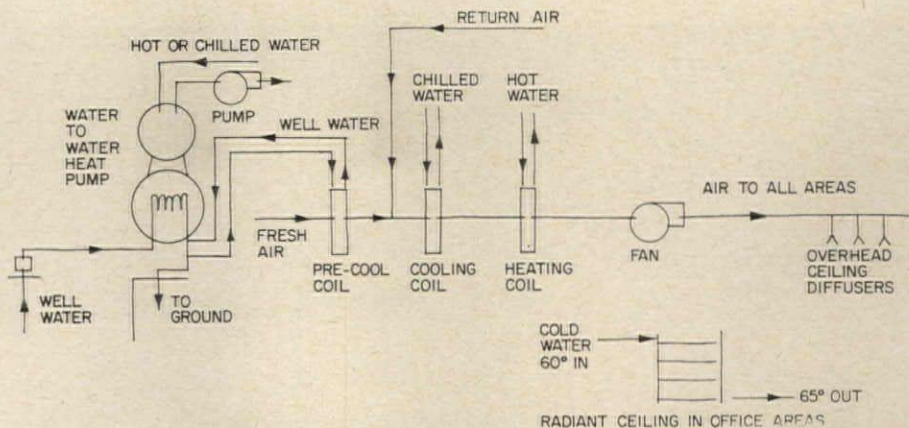


cost, it was lowest in annual owning and operating costs, based on savings in fuel, interest charges, depreciation, chimney, boiler plant and fuel storage facilities.

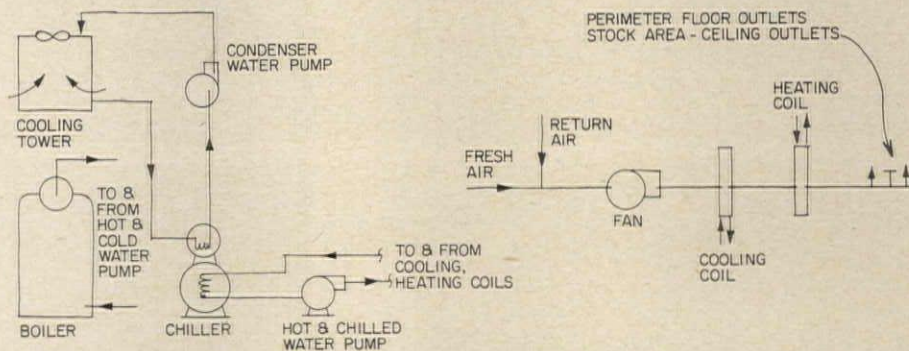
A water-source heat pump was chosen over an air-source type since well water in sufficient quantity was available at a year-round temperature of 54 F at a depth of 150 ft.

During the summer, well water is drawn at a rate of 150 gallons per minute with 108 gpm first passing through precooling coils (see top diagram) and then mixing with the remaining 42 gpm in the condenser of the heat pump, removing heat from refrigerant. The heated well water is returned to the ground via two diffusion wells placed in a completely different ground stratum from the supply well at a 60-ft depth. From the heat pump's evaporator, chilled water is delivered at a rate of 186 gpm and a temperature of 45 F. Part of this water mixes with return water from the radiant panels so as to maintain an entering water temperature of 60 F. At maximum load, 174 gpm of the 45 F water goes through the cooling coils on the air units to provide ventilation and humidity control in the office areas and to provide both sensible cooling and humidity control in the factory.

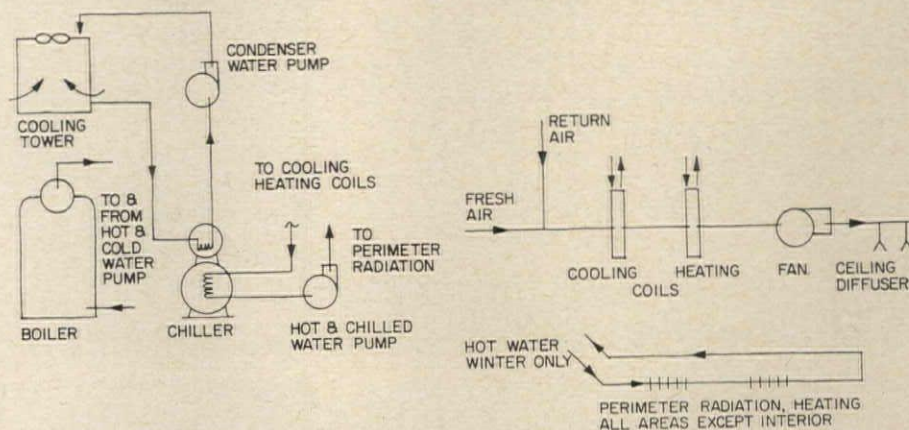
In winter, the well water goes first to the heat pump's evaporator where heat is extracted by the refrigerant. Water circulating through the condenser picks up heat from the refrigerant, reaching a temperature of 115 F. After heat is extracted from the well water it is rejected to the diffusion wells. Of the 138 gpm of 115 F water available, 25 gpm is used in unit heaters in the factory, 51 gpm is used in the radiant system, and the balance of 62 gpm is used by air heating coils.



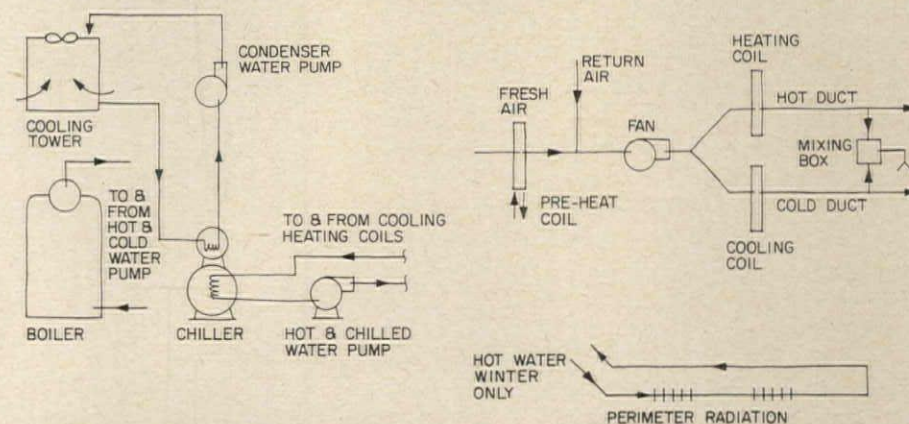
System actually installed—a water-to-water heat pump serving a radiant ceiling. Ceiling diffusers supply ventilation air to offices and condition factory areas



One alternate studied was air heating and cooling which required not only a refrigeration system, as with the heat pump, but boiler and cooling tower as well



Second alternate was air cooling and hot water perimeter radiation for heating. Same equipment was required as in the one above plus perimeter heating units



Third alternate was high velocity dual-duct air system plus hot water radiation. While this system permits maximum control flexibility, more ductwork is needed

THICKNESS OF LARGE GLASS LIGHTS CRUCIAL

The thickness of large lights of glass rather than the ratio of width to length is the most important factor governing its strength in withstanding wind. This finding was made by the research department of Libbey-Owens-Ford Glass Company in its test program for developing empirical glass strength data on the larger, thicker lights of glass now being used in high-rise office buildings and other structures.

The range of sizes tested ran from 72 by 72 in. to 120 by 240 in., in thicknesses of $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ in. So far, 25 or more lights of each thickness in each of 10 sizes, or 1,000 lights, have been put under pressure to the point of failure in this first test series—a sufficient number of lights to permit a statistical analysis to be made. Applying a safety factor of 2.5 to this data, the possibility of breakage is less than 1 per cent.

In the actual tests, a specially designed test strength chamber of steel construction is used. Glass to be tested is taken at random from the production line and is glazed using neoprene gaskets.

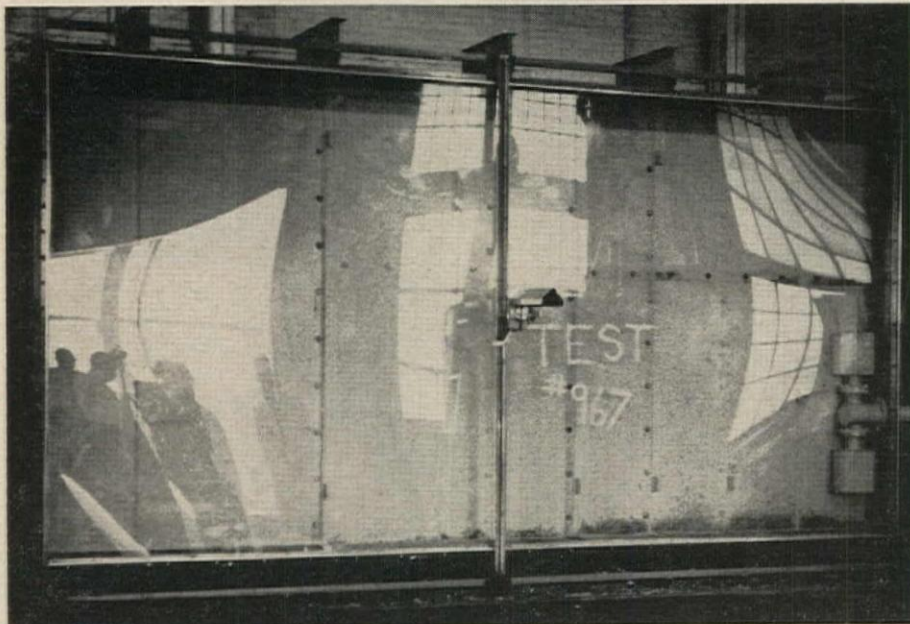
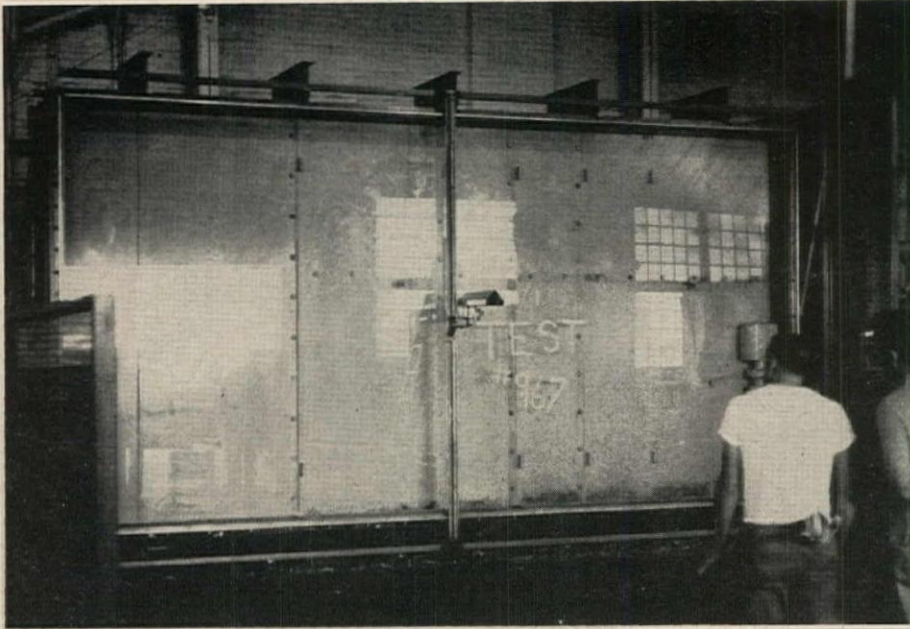
The break pressure is determined by applying a vacuum to the chamber. A gage is used to determine the deflection, and a manometer permits the operator at the controls to determine the extent of pressure.

L.O.F. has published a design load chart for glass areas from 36 to 200 sq ft based on these tests.

Top: True reflection of windows may be seen in the 10- by 20-ft light of $\frac{1}{2}$ -in.-thick heavy duty plate glass as glass strength test gets under way.

Center: Break pressure is determined by applying a vacuum to the strength test chamber. Extreme distortion of window reflection is seen just prior to point of glass rupture. Deflection of glass at this stage is slightly more than 2 in.

Bottom: Break pattern is shown radiating from point of rupture. One research staff member watches break through protective panel while second takes reading of pressure gage



FLUID ROOFING SYSTEMS OF SYNTHETIC RUBBER

Part 1: Characteristics and applications

Since the first application of fluid "HYPALON" roofing to the vaulted concrete cheels of a Puerto Rican church in 1957, over 18 million square feet of neoprene and/or "HYPALON" synthetic rubber fluid roofing have been applied. Properly stalled, the material can be used over thin-shell concrete, level and sloping concrete slabs, lightweight concrete fills, wood plank decks, plywood roofs and metal decks.

Particular care should be taken in specification of the system since a successful job depends on selection of the right formulation, careful design of the roof deck to minimize cracks and provide the proper surface, and correct field application.

Questions architects should ask are:

1. What satisfactory formulations are there?

2. What are the desired characteristics for each acceptable substrate?

3. What are the limitations?

4. How can it be determined that a coating has the right physical properties?

5. What kinds of reinforcing media can be used?

6. What flashing details are compatible with each roof system?

7. What equipment can be used to apply it?

8. Under what job conditions will the system not be applicable?

9. How is the roofing repaired?

The fluid elastomeric roofing system is formed by applying several layers of synthetic rubber in solution form with roller or spray gun to the roof deck. Layers of liquid neoprene are covered with one or more finishing coats of Hypalon. These layers air-cure into a homogeneous membrane varying from 6 to 30 mils in thickness depending on the

type of roof deck. Initial layers can be reinforced to provide greater resistance to differential movements and to increase membrane strength. This solution-type roofing can be applied to surfaces of any form or shape.

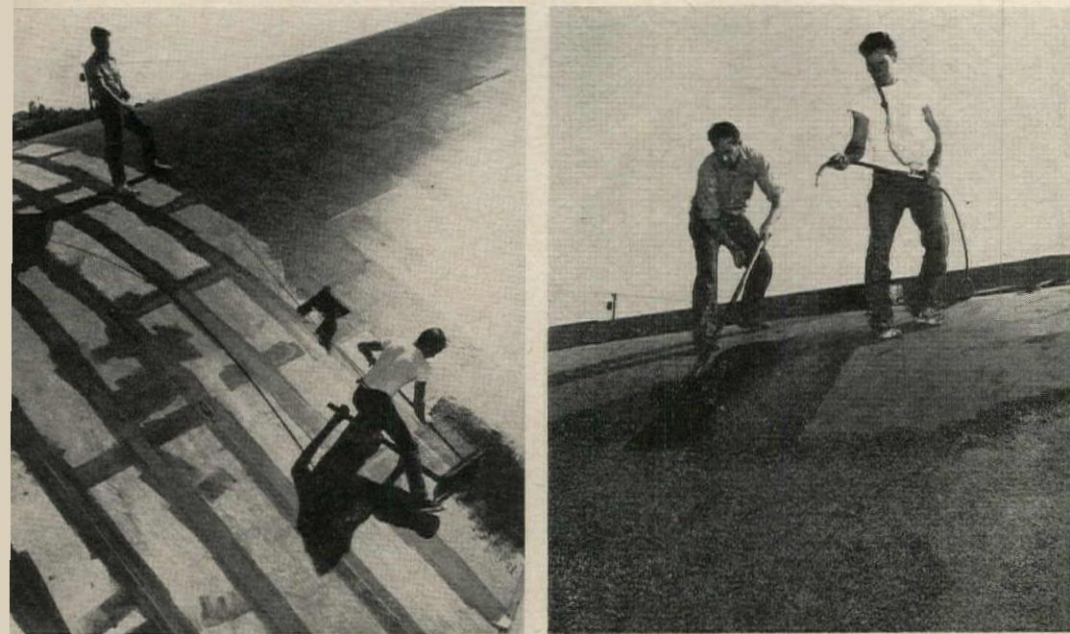
The neoprene solution is a one-part compound consisting of a chloroprene polymer combined with non-staining ingredients such as pigments, extenders, stabilizers, antioxidants, dispersion aids and



Above: Fluid roofing can be reinforced with chopped glass fibers blown on the wet neoprene film. Below: Light colored top film of Hypalon has been partly finished



This article is based on technical information developed by the Elastomer Chemicals Department, E. I. du Pont de Nemours & Company



On plywood roofs, joints are caulked and then reinforced by tape covered with neoprene solution. Textured roof finish can be made by spraying on neoprene granules

solvents. Since the basic polymer is adversely affected by ultraviolet light, only pigments having a dark color or other characteristics that screen out ultraviolet light such as carbon black and iron oxide can be used.

Hypalon roofing solution is a one-part synthetic elastomer compounded of a cholersulfonated polyethylene polymer mixed with the same types of ingredients as the neoprene solution. Whereas neoprene is available only in dark colors, Hypalon can be compounded in a large range of color-stable pigments. Thus Hypalon usually forms the finishing layer.

Properties commending these materials to roofing application are high resistance to the deteriorating effects of ozone, sunlight, heat, oxidation, oil and chemicals. They can be

used over a wide temperature range and are classified as self-extinguishing. They resist wear and erosion from wind-blown abrasives and can withstand light foot traffic when applied to a hard deck; membrane reinforcement is required for heavy traffic. Neoprene has good adhesion to concrete, metals, wood and fabrics. Hypalon has good adhesion to wood and fabrics and excellent adhesion to concrete and metals.

While the soiling resistance of Hypalon is good, the rate and degree depend on air pollution and roof slope. If excessive soiling does occur, the membrane can be scrubbed with a detergent. Anti-soiling properties can be improved by application of a colloidal silica to the newly finished roofing membrane.

Architects desiring independent

verification of product quality can have samples of roofing solution checked by independent testing laboratories against performance specifications and industry proposed standards. These standards cover solution, characteristics, physical performance properties and preparations of test specimens.

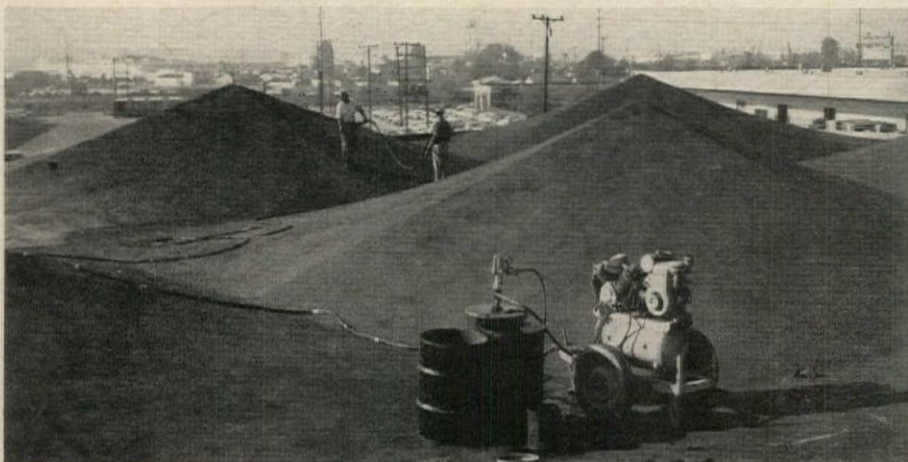
A damaged neoprene/Hypalon membrane can be restored through application of solvent, roofing solution and reinforcing fabric.

When adequately reinforced, the synthetic membrane serves well as flashing. Corner-reinforcing fabric is necessary, however, to improve and maintain integrity under differential movements. When flashing is being installed against masonry walls and parapets, through-wall metal or neoprene sheet counterflashings should be used.

While the neoprene/Hypalon systems can be applied to most poured concrete decks, including lightweight concrete fills, three basic requirements must be met: (1) deck cracking must be prevented or controlled; (2) a suitable roof deck finish must be provided; (3) the deck must be dry and clean.

If cracks greater than hairline size develop, the neoprene/Hypalon membrane can rupture despite its favorable elongation characteristics (400 per cent without rupture). The reason for this is that the thin membrane over the crack does not provide enough volume to permit adequate elongation. If adhesion to the deck is good prior to and during crack development, the volume of the membrane directly above the line of cracking is extremely small. As a crack opens, the membrane must neck down. To illustrate the condition, assume there is zero volume of material over the developing crack. The 400 per cent elongation possible means nothing because 400 per cent of zero is still zero.

The texture of the concrete deck surface is very important in obtaining adhesion. In order to achieve good mechanical bond, the primer coat of neoprene must be able to penetrate the deck's surface slightly and enter the pores. A slight sandy surface works well but may be difficult to achieve. A practical method of achieving the desired finish is to float the surface with wood floats which is then followed by light steel troweling.



Fluid roofing is sprayed on with compressed air unit for this pyramidal roof

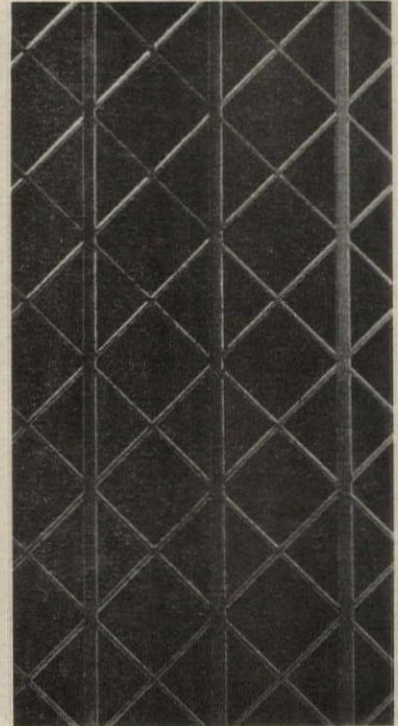
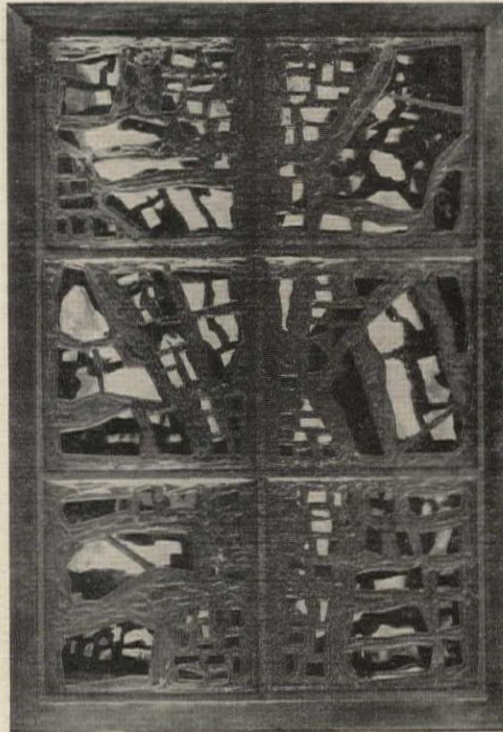
For more information circle selected item numbers on Reader Service Inquiry Card, pages 205-206

METAL PATTERNS APPLIED ON WOOD, GLASS, TILE

A new method of creating designs in metal which can be applied to many types of substrate materials such as wood solids, veneers and plywood, enameled steel, ceramic tile and glass, has been developed by Ceragraphic, Inc. Various metals, including copper, brass, silver and bronze, in various amounts and thicknesses, are possible. The unique process can simulate intricate multi-metal castings and also inlaid metal inserts.

Among the uses of this medium are plaques, crests, lettering, trademarks, decorative repeat patterns and pictorial treatments. Architecturally, metal designs have been applied to interior walls, dividers, screens and glass blocks (*near right*). Stock designs are available and, of course, custom designs can be produced. Base material should be supplied. *Ceragraphic, Inc., 171 Newman St., Hackensack, N.J.*

CIRCLE 300 ON INQUIRY CARD



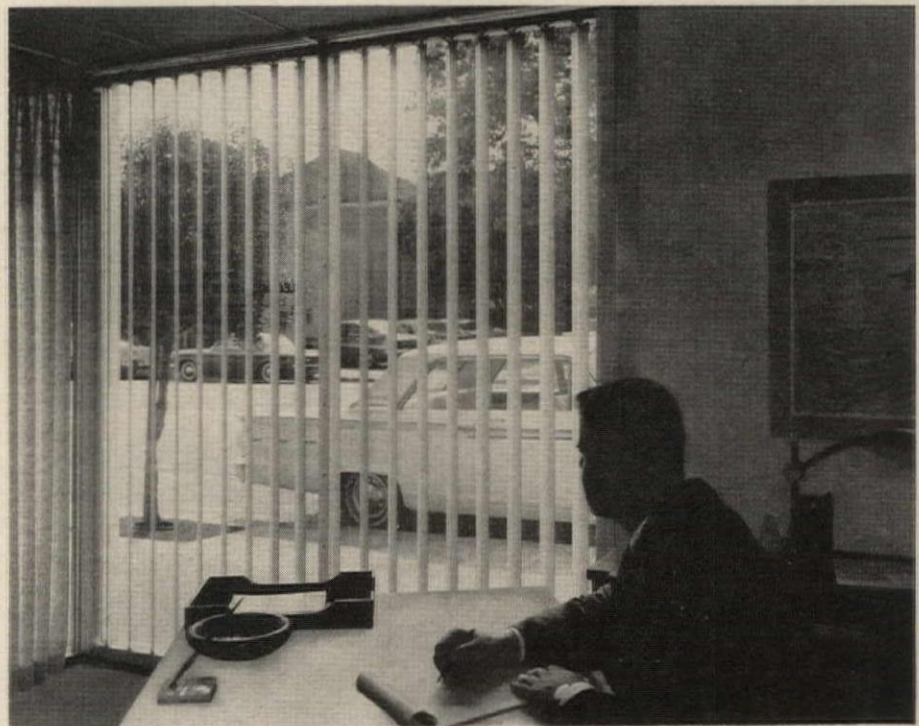
LOUVERS CIRCULATE WATER TO NEUTRALIZE HEAT, COLD

Hydroshade, an interior climate control system which neutralizes heat gain or loss in glass wall buildings, is now being produced by Radiant Hydronics, Inc.

Similar in appearance to vertical venetian blinds, the system consists of hollow aluminum louvers, with cool or warm water circulating to absorb or reflect heat or cold. In hot weather the louvers remain cool, eliminating uncomfortable heat; in cool weather, warm water in the louvers prevents heat loss. The system thus reduces cost of heating and cooling.

The louvers also provide lighting control, from full daylight to black-out. For decorative purposes, *Hydroshade* may be furnished in anodized colors or with vinyl, paint or flex-wood finishes to meet specifications. *Radiant Hydronics, Inc., 467 Hamilton Ave., Palo Alto, Calif.*

CIRCLE 301 ON INQUIRY CARD
more products on page 188



Office Literature

For more information circle selected item numbers on Reader Service Inquiry Card, pages 205-206

ALUMINUM WINDOWS

The company's 25 series of aluminum windows are described in terms of full and half-size details, specifications, wind load charts and installation photos. *Valley Metal Products Company, Plainwell, Mich.**

CIRCLE 400 ON INQUIRY CARD

DUCT SYSTEM

All relevant information on the *G-B Duct* system, including its properties, performance data, installation techniques and design concepts, makes up this 36-page brochure. *Gustin-Bacon Manufacturing Company, 210 W. 10 St., Kansas City, Mo.**

CIRCLE 401 ON INQUIRY CARD

CONCRETE FLOOR DESIGN

A discussion of the design of concrete floors on ground for industrial and commercial buildings by the Portland Cement Association covers the classes of floors, floor requirements, joints and details, and examples of slab design. *Portland Cement Association, Structural Bureau, 33 W. Grand Ave., Chicago, Ill. 60610*

CIRCLE 402 ON INQUIRY CARD

FIRE DETECTION

The latest methods of fire and smoke detection for electrical power equipment, as used in electrical generating stations, substations and in-plant power and electrical equipment, are described in a brochure. *Pyrotronics, 10 Empire St., Newark, N.J.**

CIRCLE 403 ON INQUIRY CARD

BEVERAGE DISPENSERS

A 32-page catalog of photographs and specifications for food and beverage dispensing equipment, together with a price list, supersedes all previous Kenco literature. *Kenco Products Corp., Englewood, N.J. 07631*

CIRCLE 404 ON INQUIRY CARD

EXPANDED METAL PRODUCTS

Featuring small mesh and decorative expanded metal products, this brochure has a striking graphic product layout as well as specifications. *United States Gypsum Company, 101 S. Wacker Dr., Chicago, Ill. 60606**

CIRCLE 405 ON INQUIRY CARD

WIRING THROUGH HOLLOW PRECAST CONCRETE SLABS

A completely revised manual explains the use of hollow core precast concrete floor and roof slabs for electrical wiring. *The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio**

CIRCLE 406 ON INQUIRY CARD

INORGANIC PIGMENTS

The physical properties and advantages of ceramic inorganic colorants reduced to an extremely fine particles size, are discussed in an illustrated brochure. *Ferro Corporation, 4150 E. 56 St., Cleveland 5, Ohio*

CIRCLE 407 ON INQUIRY CARD

WATER-TUBE PACKAGED BOILERS

A presentation of engineering data, Bulletin 32W-105 serves as a guide to water-tube packaged boiler evaluation. The booklet is amply illustrated and contains a 32-factor check-chart. *Superior Combustion Industries, Inc., 30 E. 42 St., New York 17, N.Y.*

CIRCLE 408 ON INQUIRY CARD

PARTITIONS

A 16-page catalog describing their complete line of free standing steel *Partitioners* and desk partitions gives full details on design, construction, color stylings and installation. *Rockaway Metal Products Corp., 175 Roger Ave., Inwood, L.I., N.Y.*

CIRCLE 409 ON INQUIRY CARD

STACKING CHAIRS

Seven styles of steel stacking chairs for office, hotel and institutional use, are shown in a color folder. *Horness, Inc., Dept. K, Three Oaks, Mich.*

CIRCLE 410 ON INQUIRY CARD

PREFABRICATED CABINETS

A comprehensive manual on unique modular wood storage cabinets includes suggested unit arrangements for applications ranging from dormitories to kitchens. Besides data files and clothing wardrobes, laboratory furniture, sinks and drinking fountains are described. *Storagewall, Boyd-Britton Associates, 1406 N. Sandburg Terrace, Chicago 10, Ill.**

CIRCLE 411 ON INQUIRY CARD

STEEL JOISTS

Prepared as a permanent reference work, a manual of 68 pages contains complete coverage of open-web steel joists, bridging, steel roof decks, and accessories used in joist-type roofs. *Ceco Steel Products Corp., 5601 W. 26 St., Chicago, Ill. 60650**

CIRCLE 412 ON INQUIRY CARD

DRINKING FOUNTAINS

Haws newly revised 64-page catalog provides indexed photographs, dimensional line drawings and specifications of their complete line of drinking fountains. *Haws Drinking Faucet Co., Page and 4th Sts., Berkeley, Calif.**

CIRCLE 413 ON INQUIRY CARD

FIRE EXTINGUISHERS

A new 24-page fire equipment guide illustrates and lists latest specification data on the complete line of modern hand-portable and wheeled fire extinguishers produced by Fyr-Fyter for industrial, commercial, institutional, marine and household protection. *The Fyr-Fyter Company, Customer Services Department, 221 Crane St., Dayton 1, Ohio**

CIRCLE 414 ON INQUIRY CARD

PLYWOOD COMMERCIAL STANDARDS

The 154-page "Plywood Commercial Standards Handbook" is a vest-pocket-size publication that has been revised to include a complete index. A separate section explains manufacturing specifications and specifications for specialty siding-sheathing plywood panels. *Douglas Fir Plywood Association, Tacoma, Wash. 98401**

CIRCLE 415 ON INQUIRY CARD

GRID SYSTEM FOR INDIRECT LIGHTING

A new concept in "over-all" ceiling lighting based on an interlocking grid system of inverted triangles allowing for coverage of any ceiling area, is explained in a six-page folder. *Morris Kurtzon, Inc., 1420 S. Talman Ave., Chicago 8, Ill.*

CIRCLE 416 ON INQUIRY CARD

*Additional product information in Sweet's Architectural File

more literature on page 224



TORGINOL DURESQUE

SEAMLESS-RESILIENT FLOORING

CONTINUOUS FLOW OF SEAMLESS-RESILIENT FLOORING WITH PERMANENT BEAUTY

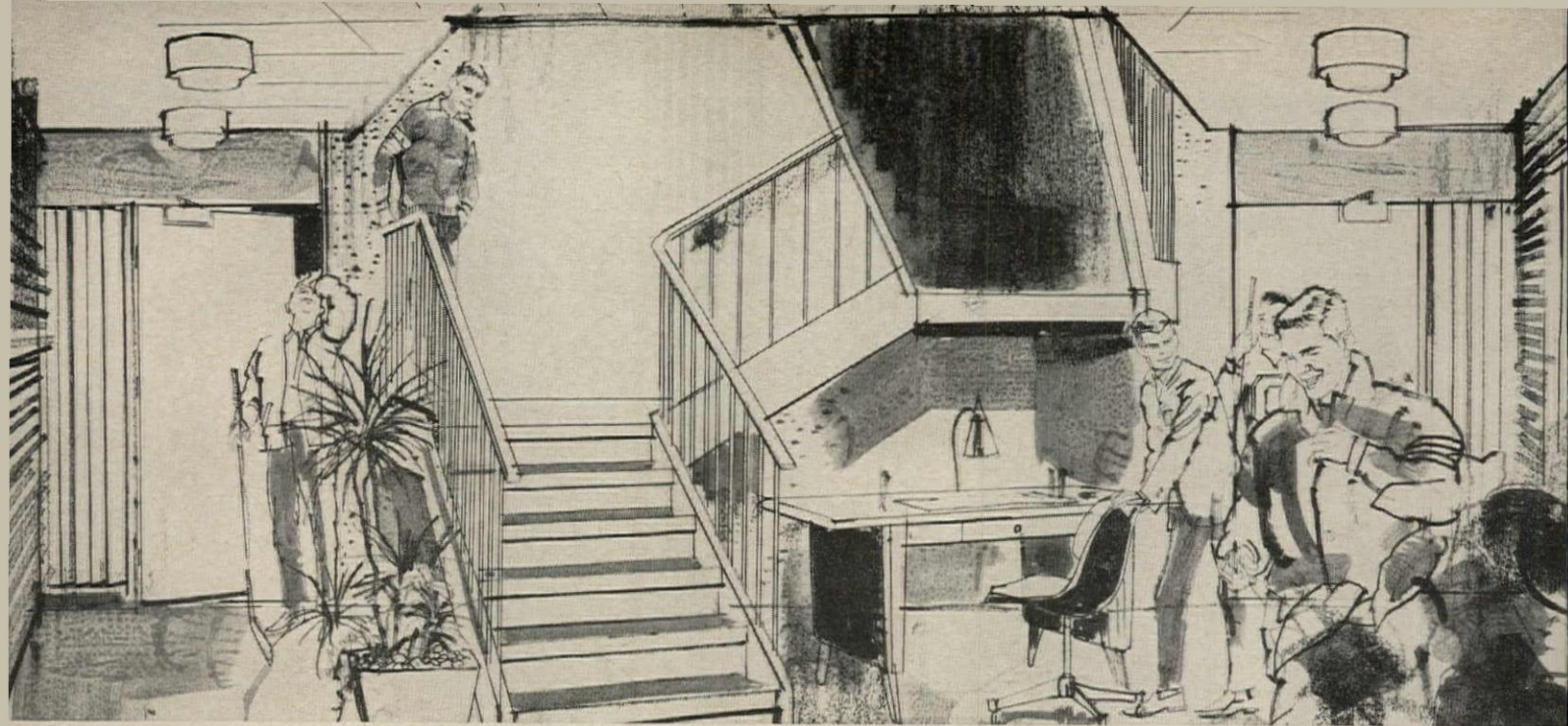
Recreational centers, office, apartment buildings, and homes now can be beautified with a permanent flow of wall to wall seamless beauty that will not collect dirt, moisture or germs . . . Torginol Duresque is a combination of scientifically prepared colored chips and liquid glaze that can be solidified over new or existing floors of wood, concrete, and most other firm surfaces. Torginol Duresque can be applied to exteriors as well as interiors and utilized as a coving and wainscot providing a monolithic tough thin wearing surface not attacked by most acids, alkalies or hydrocarbon solvents. Exterior Duresque is cushioned with Torginol's rubber-like substance, "Torga-Deck" that waterproofs and furnishes elaborate elongation characteristics.

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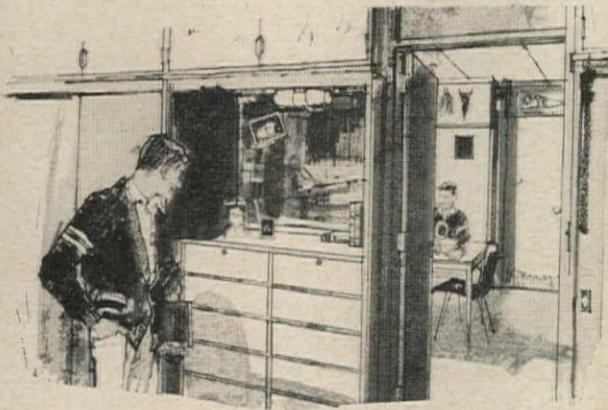
For further information, check the Yellow Pages for your nearest Torginol Dealer or write:
Customer Relations Department, Torginol of America, Inc., 6115 Maywood Avenue, Huntington Park, California.



For more data, circle 75 on Inquiry Card



North Hall, Oberlin College, Oberlin, Ohio; design and construction by The Austin Company, Cleveland, Ohio; Painting Contractor: Broadway Decorating Co. Inc., Cleveland, Ohio



Inventive color use matches spirit of new college dormitory



The Man from Devoe works directly with designers to insure perfect color planning and color matching. L. A. Heininger is The Man from Devoe who serves architects throughout Ohio.

Since its completion, North Hall—new men's dormitory at Oberlin College—has established itself as an outstanding residential hall. It was designed to serve successfully as a place of modern collegiate living today . . . designed, as well, to absorb the anticipated expanding needs of tomorrow. Aesthetically, it was designed to dramatically complement a lovely campus—a result achieved throughout with the help of coordinated color schemes.

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Photograph by William Wollin

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Burgess-Manning/Inland Radiant-Acoustic Ceilings provide comfort and quiet in Milwaukee Children's Hospital. There are no "cold spots", "hot spots" or drafts to aggravate the condition of patients. Wards and therapy rooms stay warm and cozy when winter winds howl outside — stay cool on hot summer days. The acoustical properties of the ceilings help keep noise levels low. ■ There are other advantages that make Burgess-Manning/Inland ceilings ideal for hospitals —and other buildings: Ease of housekeeping. Low maintenance requirements. Flexibility of layout. Adaptability to lighting. ■ For a description of heating and cooling principles, along with performance curves, design procedure, and other data see Sweet's Architectural File, section 11a/In, or write for Catalog 250.

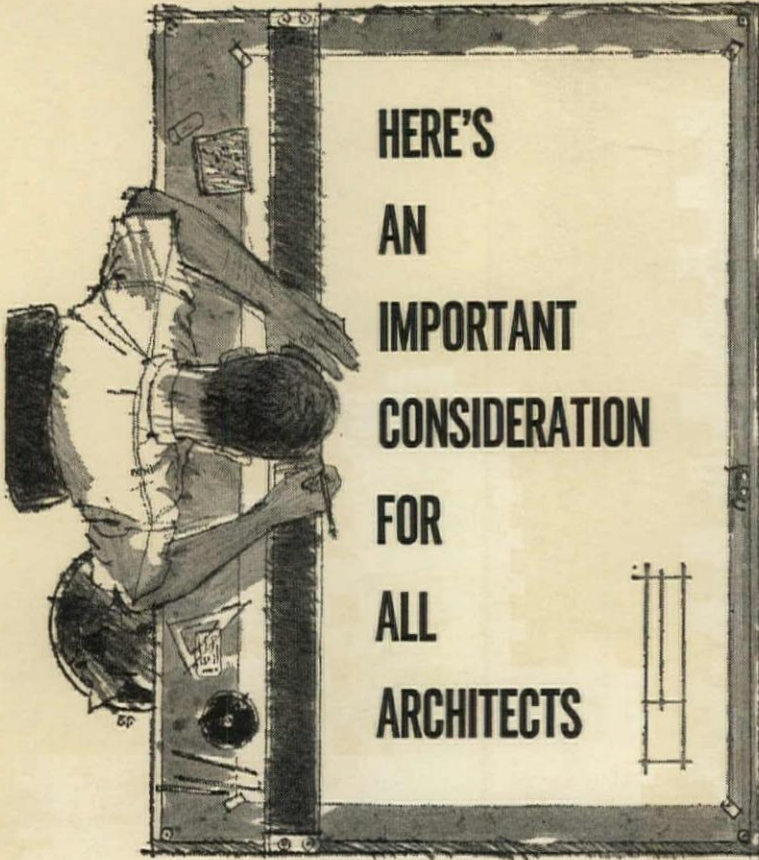


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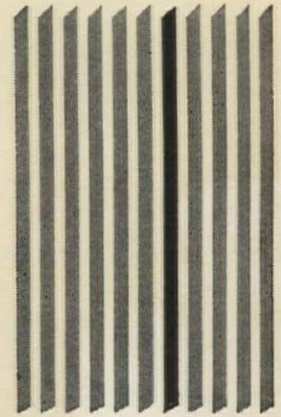
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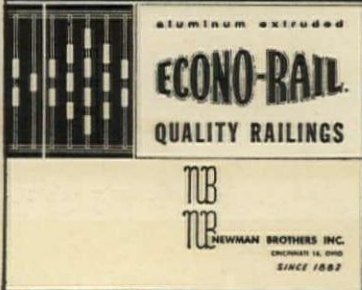
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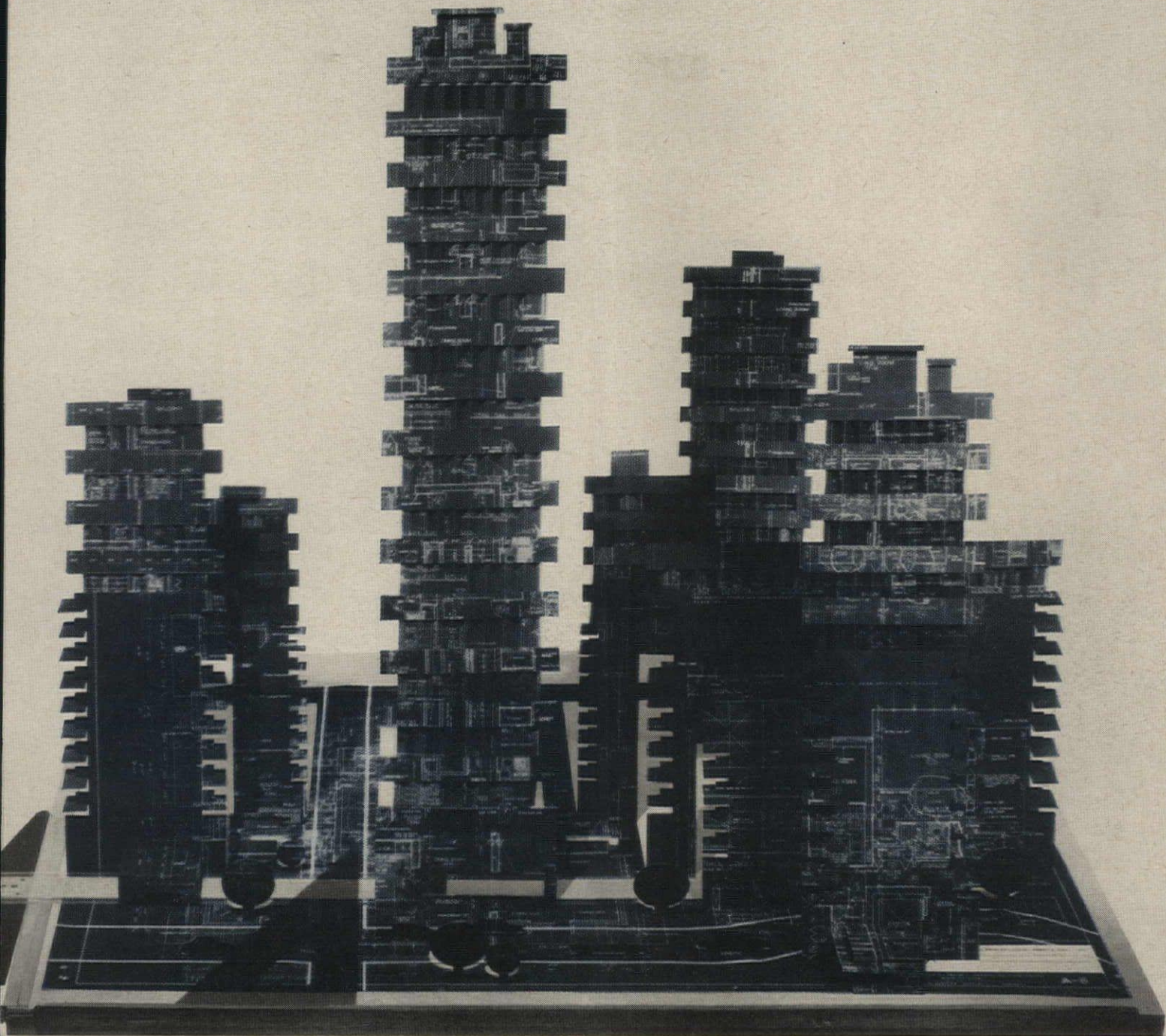
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reliability, control methods...all factors affecting materials handling, labor, housekeeping maintenance and other building operating costs. ■ This plan justifies initial cost of door equipment . . . identifies penalty your client will pay with inefficient, inferior quality doors . . . determines a firm, accurate budget figure at preliminary planning stage. Write us or ask the BARCOL dealer in your area for more details on OVERdoors and Door System Analysis.



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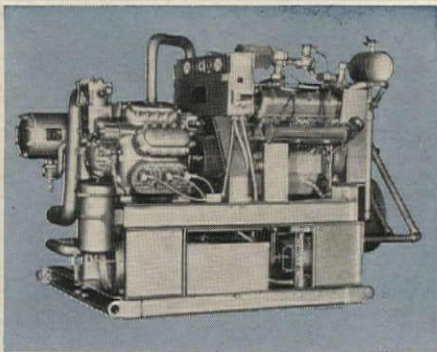
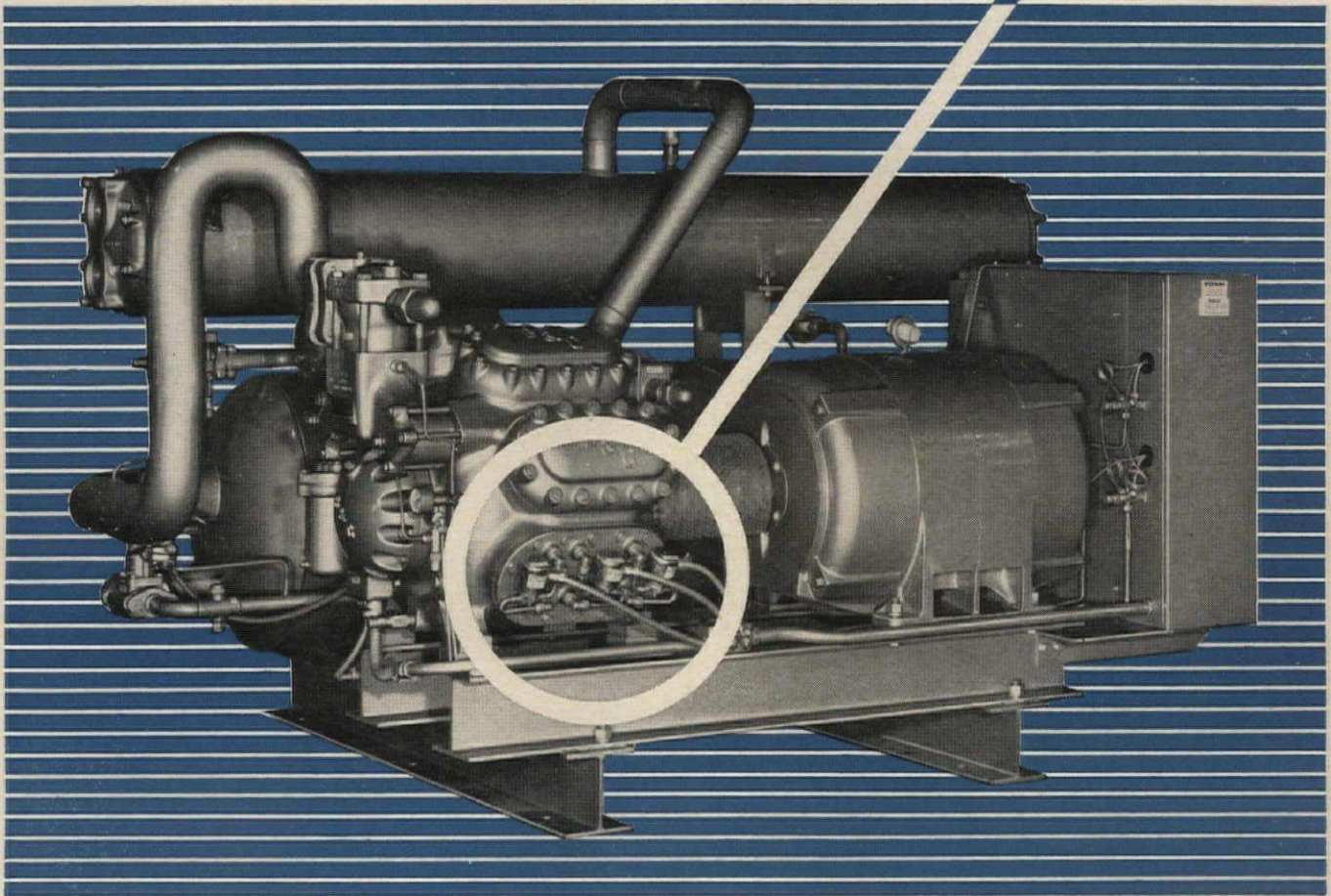
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GAS ENGINE POWERED 100 TON SINGLE UNITS

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Additional operating features include automatic and adjustable engine warm-up...100% no-load start...capacity control effected by automatically varying engine speed in addition to varying the compressor unloading.



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The advantages are twofold. Positive unloading control assures stable operation at each capacity step... prevents "hunting" between steps with attendant problems of excessive wear and breakage of the mechanisms. Second, the necessity to service intricate and sensitive small parts inside the machine is eliminated. The control solenoid valves and temperature controller are located outside of the compressor crankcase and can be serviced without opening the refrigeration compressor.

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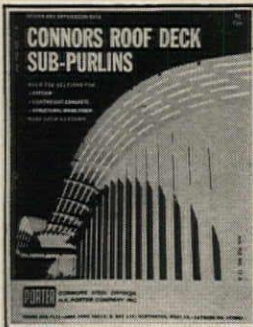
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Product Reports

continued from page 179

EXECUTIVE CHAIRS

The new *Executive Series* feature steel tubing frames and walnut chair shells and armrests. The frame is the first of its kind in the office seating



field. Side chairs come without armrests or casters and with modified frame design. *The Leopold Company, Burlington, Iowa*

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CIRCLE 304 ON INQUIRY CARD
more products on page 192

elevator contractor shall supply and install, complete with all wiring, a triplex selective control system for the automatic supervision and automatic dispatching of the operation of each passenger elevator from the car shall be such that the momentary one or more buttons shall send the car to the designated landing for which the buttons are pressed, in the order in which the landings are reached by the car, irrespective of the sequence in which they have been pressed. The control shall be arranged so that normally one car is parked at the main floor and the other cars are free to answer the landing calls. Should they happen to finish their calls at the main floor, the one that arrived first shall become free to answer subsequent landing calls. An idle free car shall answer any hall calls either above or below where it may be standing. When a free car is answering calls, the other cars parked at the main floor will automatically start to answer landing calls should the following conditions



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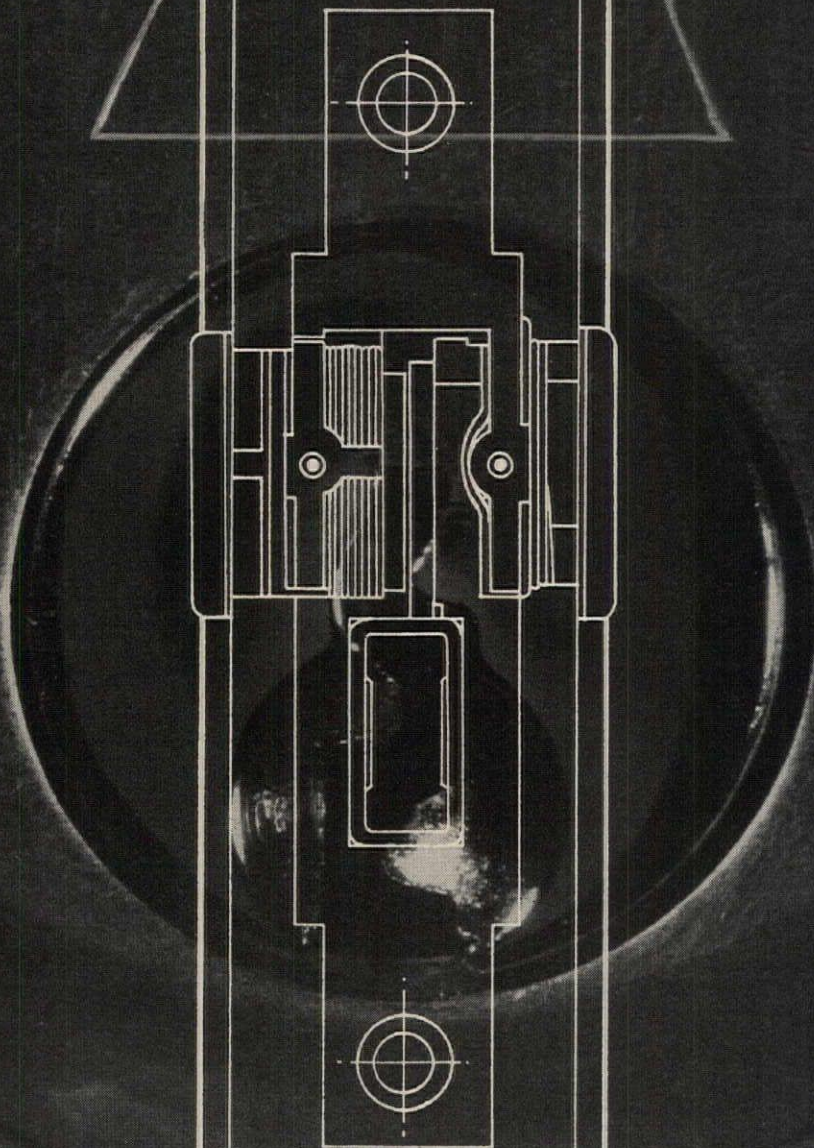
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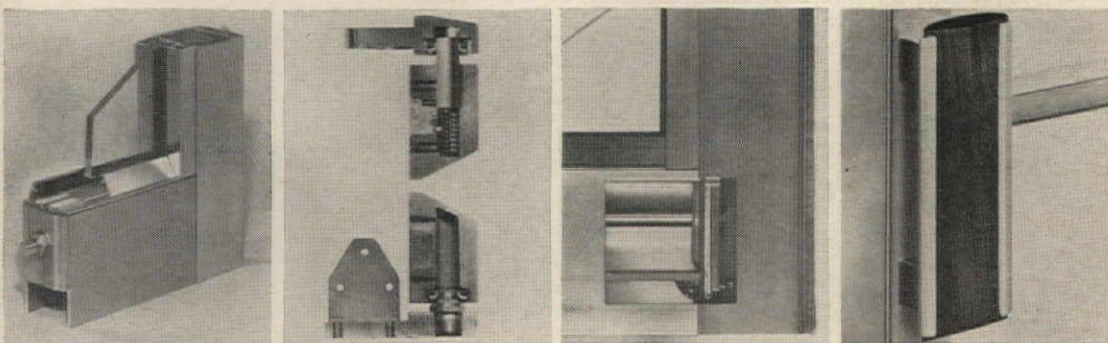
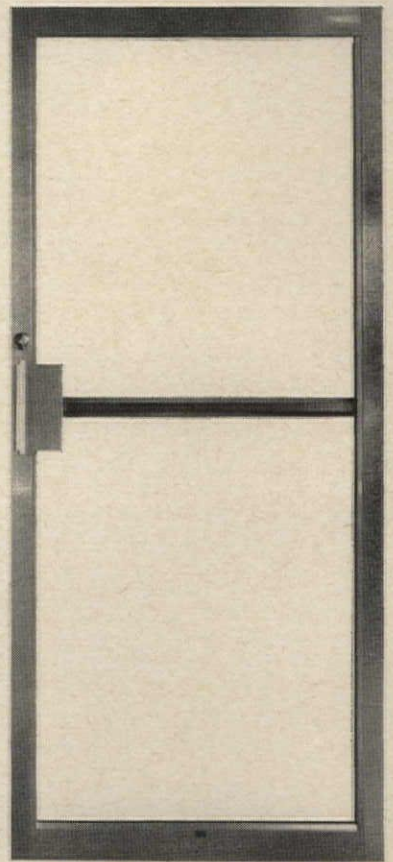
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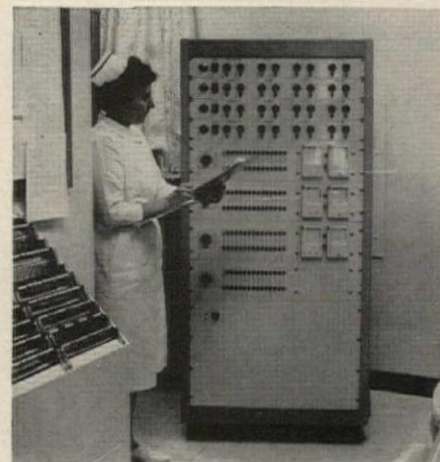
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Product Reports

continued from page 188

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The Executone-Gulton physiological monitoring system includes three portable monitoring units which can be moved to any of 15 beds in a room. Each bedside unit automatically measures pulse, respiration, systolic and diastolic blood pressure and provides readings at 30-second intervals. Readings are shown both at the bedside units and at a central console in the nurse control area. If any param-



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CIRCLE 305 ON INQUIRY CARD

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CIRCLE 306 ON INQUIRY CARD
more products on page 196

98%

mechanized laundry
produces over

66 lbs.

of work per operator
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This type of creative planning by American assures your clients the utmost in efficient, productive laundry facilities

The almost complete mechanization of this laundry operation has so streamlined the work flow that soiled linens are processed and back in the clean linen room in just 63 minutes!

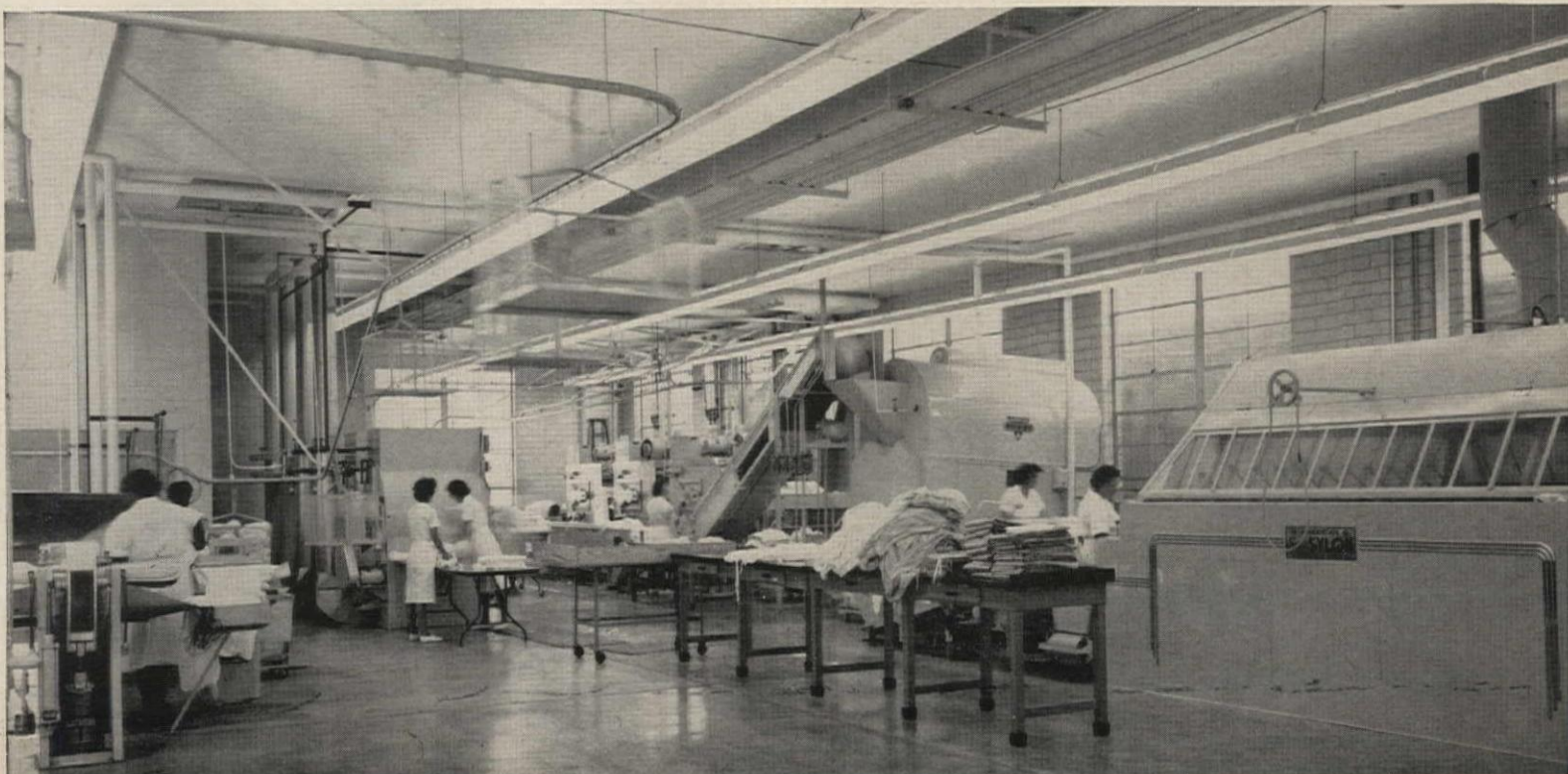
Conveyor systems provide a continuous flow of work to CASCADEX washer-extractors, to ZONE-AIR drying or ROTAIRE conditioning tumblers, to SUPER-SYLON ironers and TRUMATIC folders and to DYNA-PAK apparel press units. There are no delays, no unnecessary and non-productive handling of work. Accurate records indicate that laundry production (including all press work) is averaging more than 66 lbs. per operator per hour.

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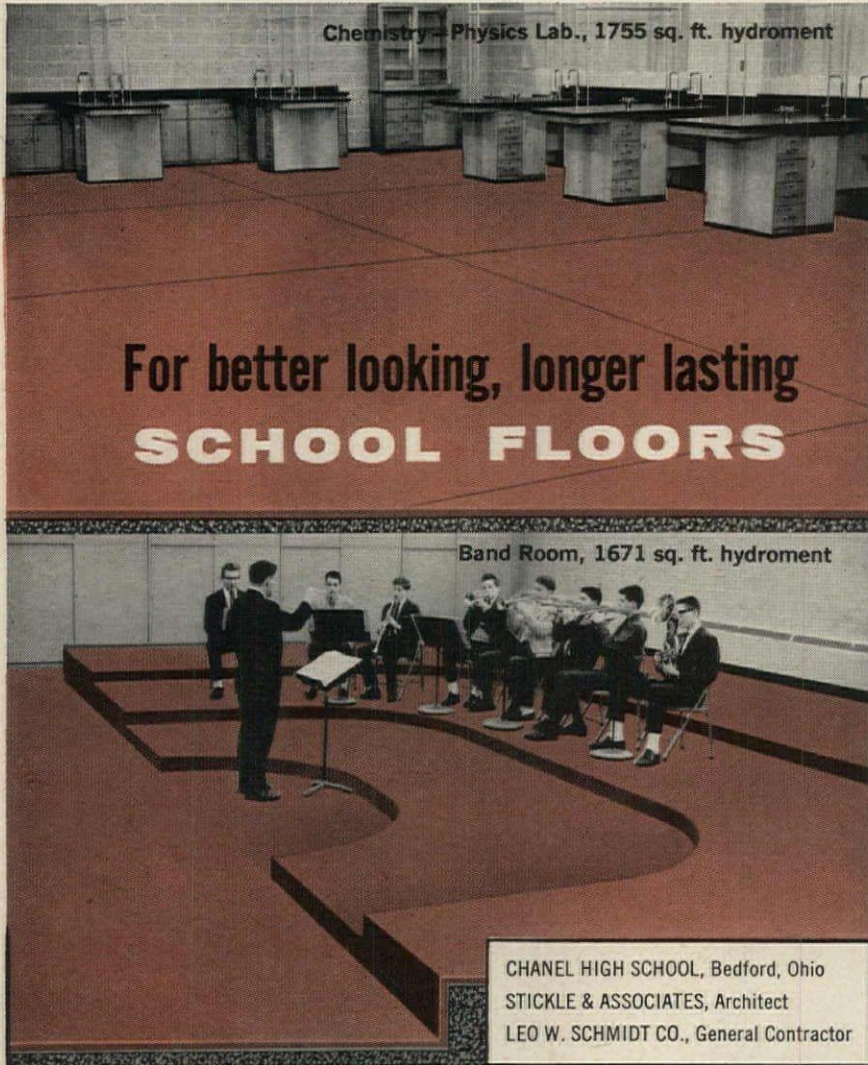
flexibility and high fire rating



National Offices, American Baptist Convention, Valley Forge, Pennsylvania

*Architect: Vincent G. Kling, FAIA
Structural Engineers: McCormick-Taylor Associates
General Contractor: Turner Construction Company*





For better looking, longer lasting
SCHOOL FLOORS

Specify and install

hydroment®

...HARDENS, DENSIFIES and COLORS CONCRETE

IN 9 POPULAR
COLORS:

- TILE RED
- TAN
- TERRA COTTA
- FRENCH GRAY
- GREEN
- BROWN
- GRASS GREEN
- BLACK
- WHITE and NATURAL

Hydroment is a specially formulated cementitious material which imparts hardness, density and corrosion resistance to concrete floors. Applied by the dust coat method when concrete slabs are poured, Hydroment requires no additives or mixing; it is odorless, waterproof and non-toxic. It has been effectively used in hundreds of indoor and outdoor installations, including schools, hospitals, churches, motels, shopping centers and recreation areas. Write for brochure and color card.



Pioneers in Industrial Research Since 1881

4805 Lexington Ave. • Cleveland 3, Ohio

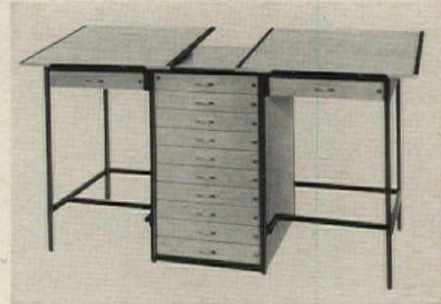
In the West...HYDROMENT, INC., 829 N. Coffman Drive, Montebello, Calif.

For more data, circle 89 on Inquiry Card

Product Reports
continued from page 192

SCHOOL DRAWING DESKS

A new line of school drawing desks for art, mechanical drawing and engineering students consists of basic storage cabinets and drawing space

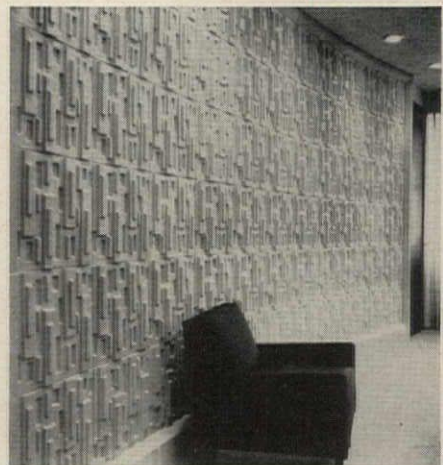


for one or two students. The line is constructed of heavy gage steel panels with 1-in.-square tubular steel frames. Hardwood drawing boards are mounted at 7 deg fixed working angle. *Stacor Corporation, 285 Emmet St., Newark, N.J.*

CIRCLE 307 ON INQUIRY CARD

PRECAST SCULPTURED PANELS

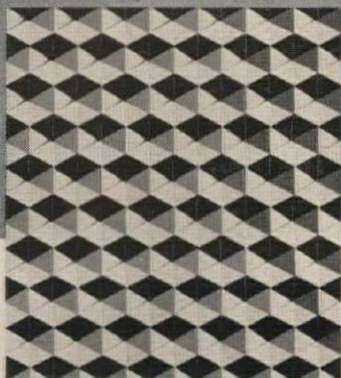
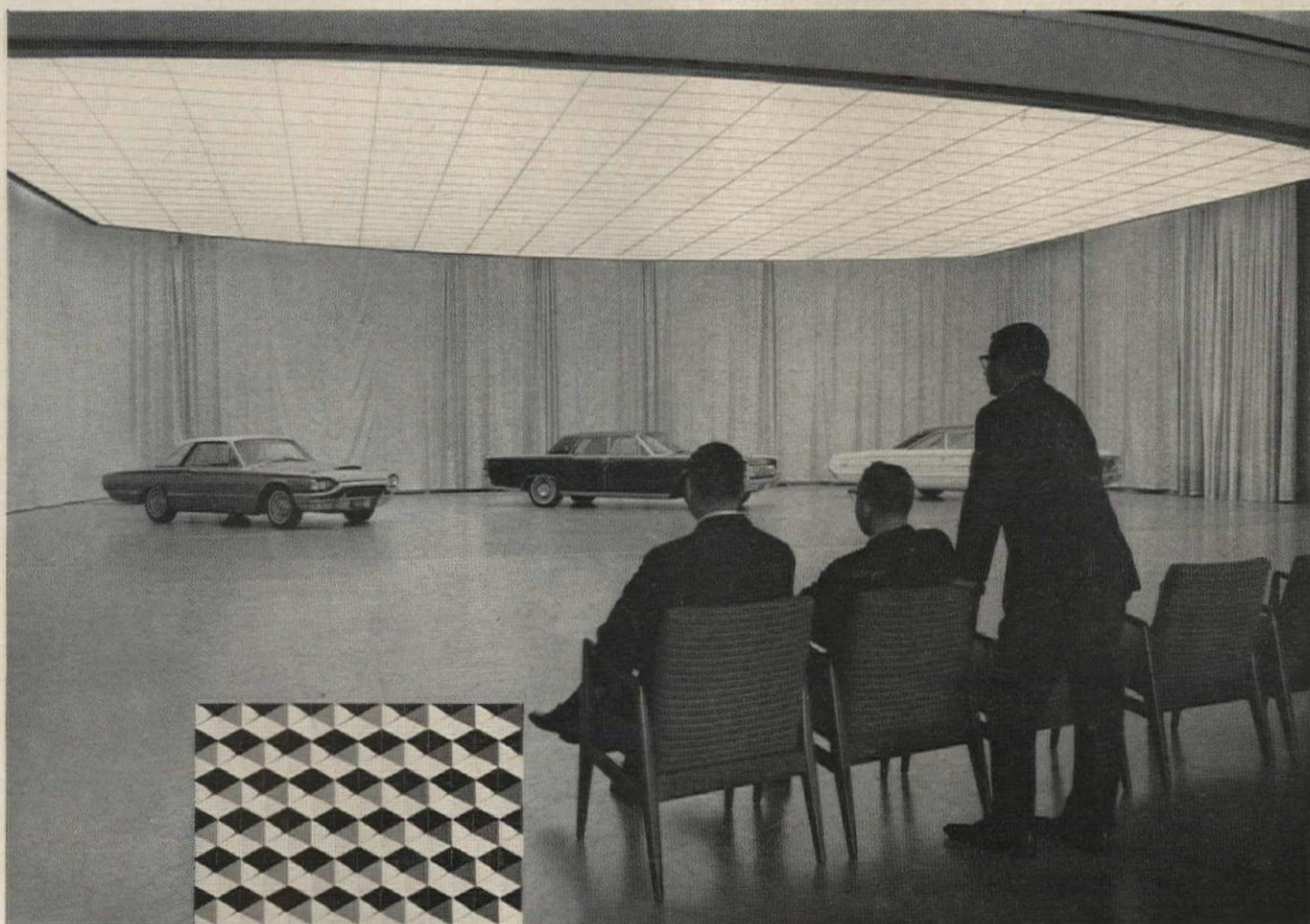
Nicrete modular precast sculptured panels are precast wall facing units designed for exterior and interior applications. The units are precision cast from 4,000 psi air entrained concrete, and reinforced by galvanized mesh. The panels are 15¾ in. square



with a base thickness of 1½ in. Weight per unit is approximately 35 lb. Panels are available in four finishes *Nitterhouse Concrete Products, Inc., Box N, Chambersburg, Pa.*

CIRCLE 308 ON INQUIRY CARD
more products on page 200

in the final analysis at Ford's Styling Center . . .



K-5 PATTERN
ILLUSTRATED

Ford Motor Company
Styling Center,
Dearborn, Michigan



new model proposals at Ford are seen in the best possible light . . . **K-LITE**[®]

When top Ford Motor Company officials evaluate styling, showroom lighting is a critical factor. An artificial light source must approximate natural daylight . . . without streaks, hot spots or shadows.

How do you achieve daylight indoors? At Ford it is accomplished with a luminous ceiling of K-LITE prismatic lighting panels. K-5 in white opal acrylic plastic to be specific.

Whether you're designing a luminaire, or lighting a lyceum . . . there's a K-LITE lighting panel to fit your requirements. Write for information and samples.



PRISMATIC LIGHTING PANELS • K-S-H PLASTICS, INC.
10212 Manchester • St. Louis, Mo. 63122

For more data, circle 90 on Inquiry Card

TERNE, FRANÇOIS MANSART AND THE CONTEMPORARY IDIOM

Few architectural elements are more traditional than the classic mansard roof. Its current adaption to highly contemporary design thus provides a dramatic example—as does Terne metal itself—of “the very old becoming the very new.” And wherever mansard fascia is used, the unique functional characteristics of Follansbee Terne, along with its natural affinity for both form and color, are available at moderate cost.



FOLLANSBEE STEEL CORPORATION

Follansbee, West Virginia

Follansbee is the world's pioneer producer of seamless Terne roofing

For more data, circle 91 on Inquiry Card

Architect:

Harry Weese, F.A.I.A.

Harry Weese & Associates

Chicago, Illinois

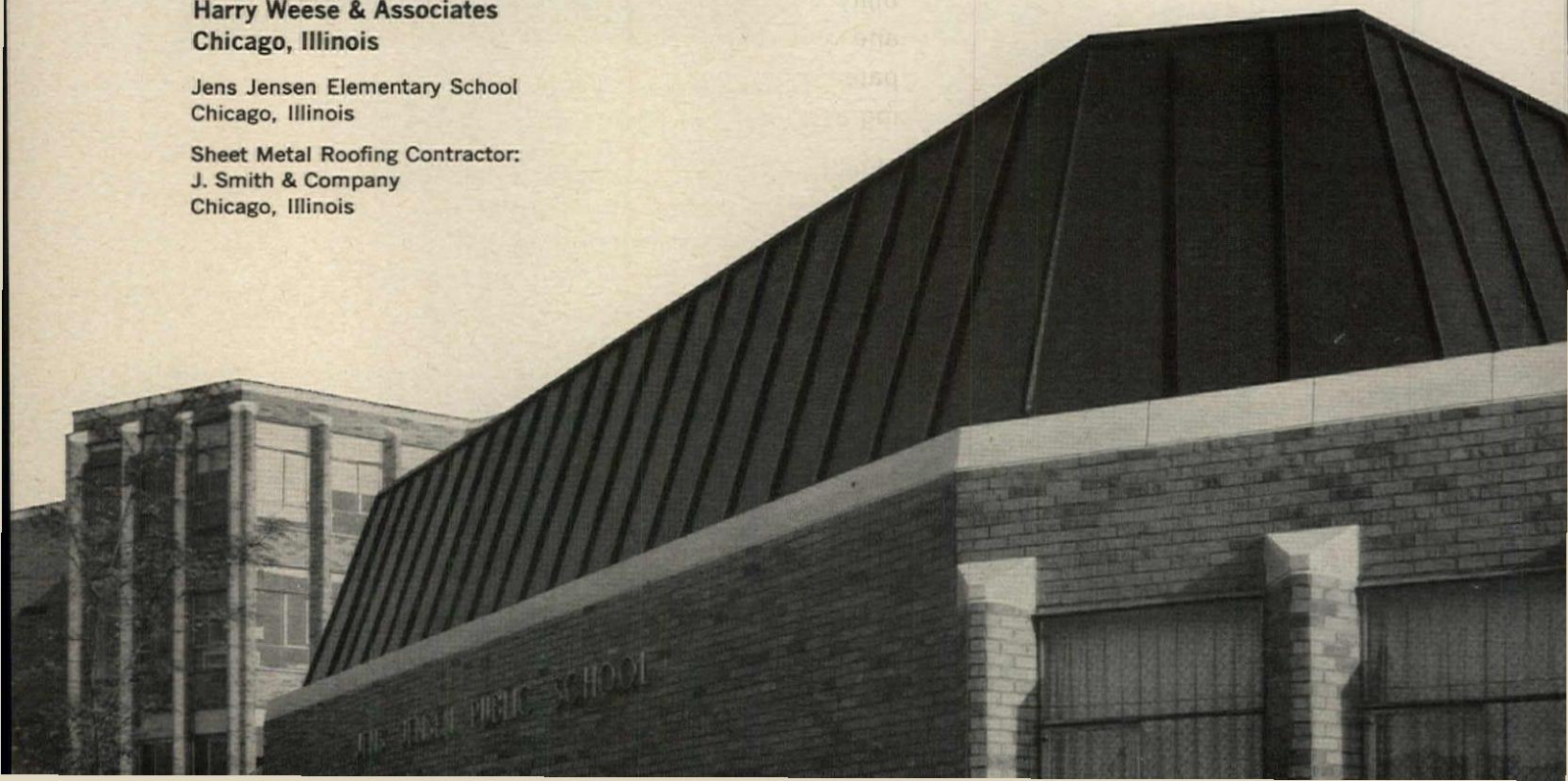
Jens Jensen Elementary School

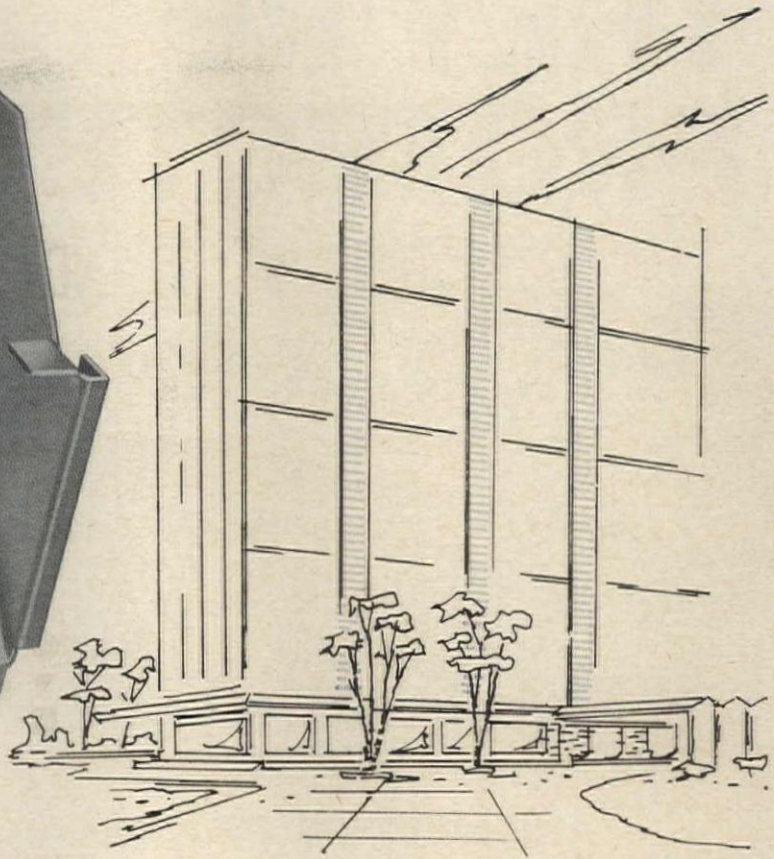
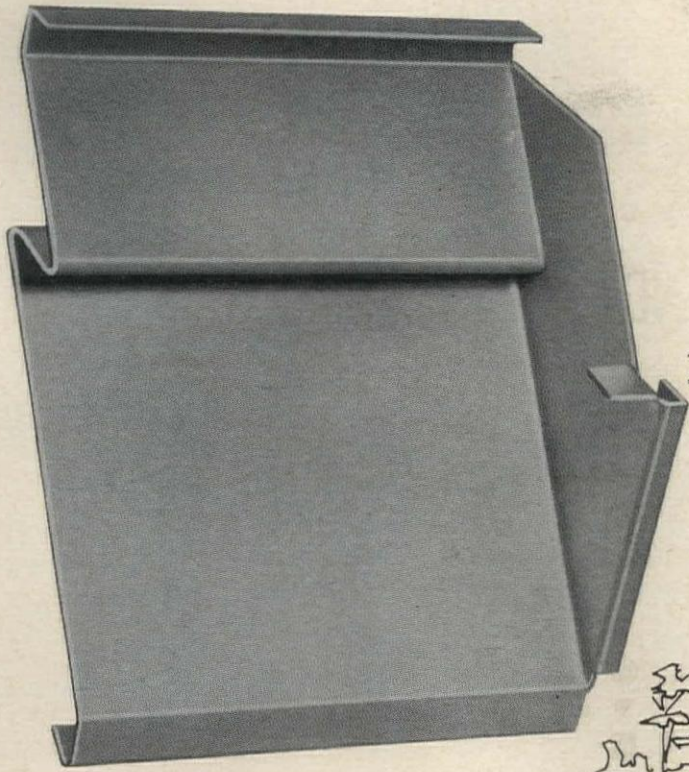
Chicago, Illinois

Sheet Metal Roofing Contractor:

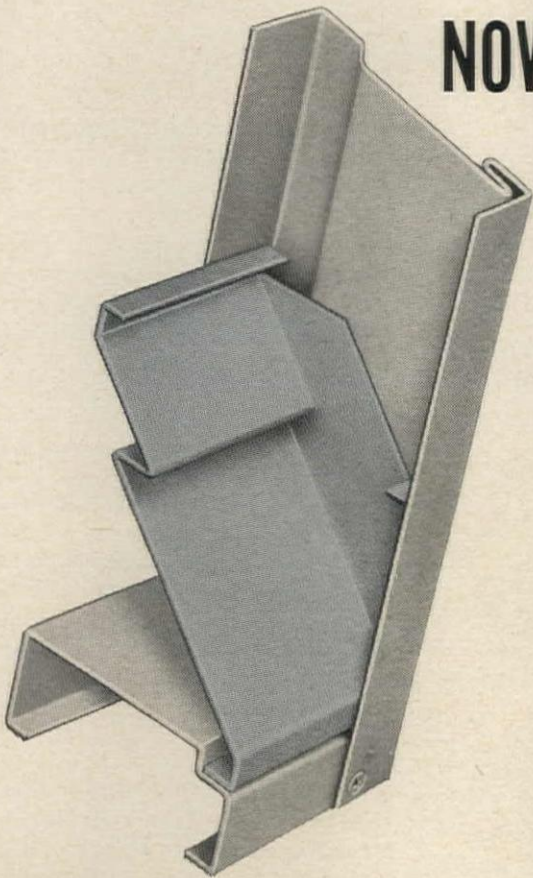
J. Smith & Company

Chicago, Illinois





NOW...a true stormproof louver!



The vulnerable portion of a louver is where the blades connect to the jamb. A leak at this point can mean water in your building.

The illustration at the left shows how Walcon engineers have effectively eliminated the possibility of leakage by turning up the blade ends and interlocking them with the jamb. This patented feature also eliminates costly welding and unsightly riveting.

Quality features such as this one are prevalent throughout Walcon's complete louver line. Further information available upon request.



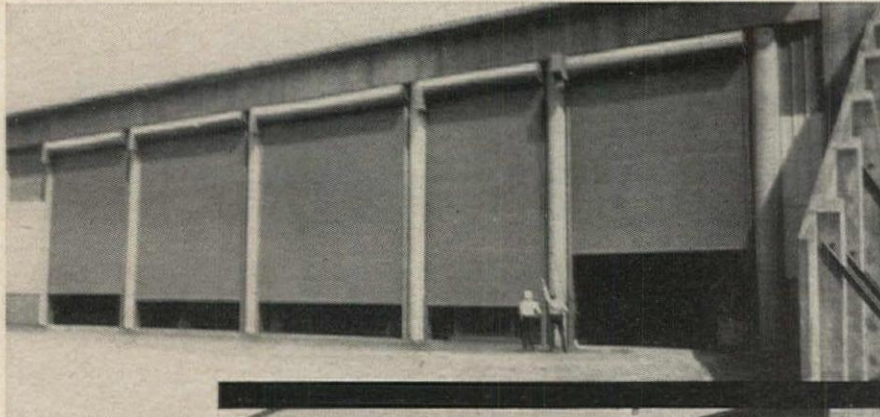
WALCON CORPORATION
4375 SECOND ST. • ECORSE 29, MICHIGAN
REPRESENTATIVES IN ALL MAJOR CITIES

For more data, circle 92 on Inquiry Card

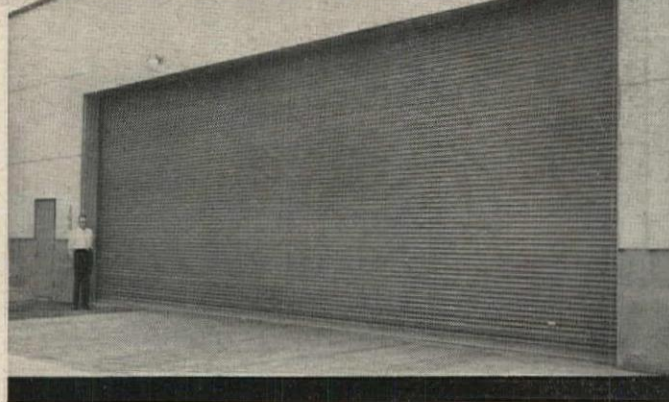
THEY'RE PROTECTED!

(and they're saving money, too)

ARE YOU?



Two recent Kinnear Door installations at Atlantic Cement Company, Ravenna, N. Y. (Top: 14' to 23' widths, all 31' high. Bottom: 14' x 40')



The Atlantic Cement Company chose Kinnear Rolling Doors because Kinnear gives the rugged, efficient door service — plus the overall economy — demanded by the firm's heavy duty operations.

These exceptionally large doors (two of which are motor-operated) travel straight up and coil compactly out of the way, freeing valuable floor, doorway and overhead space inside and outside the building. When closed, their interlocking galvanized steel slat curtain gives maximum durability and protection against fire, intrusion, theft, vandalism, wind and weather. (Also available with aluminum slats.)

Kinnear Doors can be crank hoist, chain hoist or motor-operated. With motor-operation, you get the extra convenience and efficiency of quick opening and clos-

ing to keep heating or air conditioning equipment working effectively. Push-button controls can be located at any convenient location — saving time and labor.

All Kinnear Doors are permanently REGISTERED so that replacement parts are readily available any number of years later.

Send for full details on how you can profit with Kinnear Doors!

The
Kinnear

Manufacturing Co. & Subsidiaries

FACTORIES:

1860-80 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Avenue, San Francisco 24, Calif.
3683 Dundas Street West, Toronto, Ont., Canada

KINNEAR
ROLLING DOORS
Saving Ways in Doorways

Offices and Representatives in All Principal Cities

For more data, circle 93 on Inquiry Card

Product Reports

continued from page 196



PULLDOWN LIGHT FIXTURE

A new pull-down lighting fixture, model M-1500, has a brass and walnut pull handle, black shade, polished brass accents and reel holder and white glass reflector. *Thomas Industries Inc., 207 E. Broadway, Louisville 2, Ky. 40202*

CIRCLE 309 ON INQUIRY CARD

VINYL-CLAD STEEL WINDOWS

A new steel window is finished with a vinyl plastic in a choice of eight colors. Ceco says the *Ceco-clad* finish eliminates corrosion problems and the need for painting. It is especially suitable for industrial, commercial and high-rise apartment buildings in coastal areas and where rapid corrosion develops because of industrial processes. Prices are comparable to galvanized steel or anodized aluminum windows. *Ceco Steel Products Corp., 5601 W. 26 St., Chicago, Ill. 60650*

CIRCLE 310 ON INQUIRY CARD

TRASH-CAN CONTAINER

Trashmaster is a front-opening enclosure of heavy gage galvanized steel for trash cans. Standard units house from two to five 30-gal cans. *The J. G. Wilson Corporation, P.O. Box 599, Norfolk, Va.*

CIRCLE 311 ON INQUIRY CARD

SHOWER FLOOR

A lightweight corner shower floor of reinforced powdered natural stone comes in an off-white, non-slip surface. This new model is 36 by 36 in. nominal size. *Fiat Metal Manufacturing Co., Inc., Michael Court, Plainview, Long Island, N.Y.*

CIRCLE 312 ON INQUIRY CARD

more products on page 212

For more data, circle 94 on Inquiry Card



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:

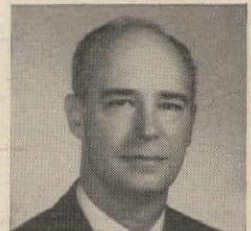
1. Reasonable initial investment.
2. Economical operating costs.
3. Flexibility in performing maintenance.
4. Individual room control for heating and cooling.
5. Wide range of equipment and appliances which can be included as standard equipment in each apartment.
6. Valuable electrical system design counsel.
7. Promotional support to speed rentals.

"We feel that on the basis of economics, tenant appeal

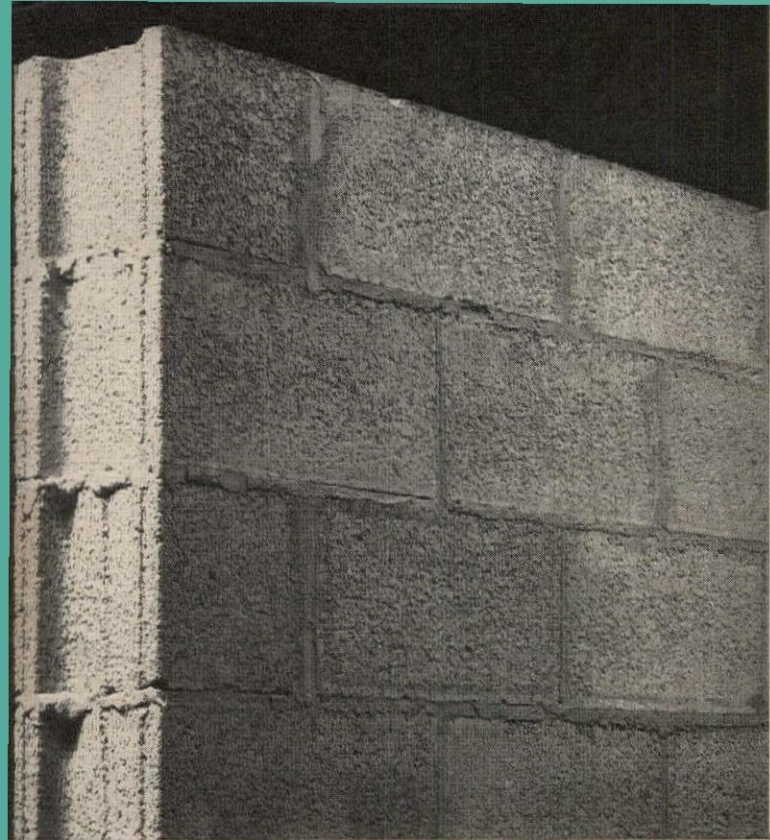
and dependability of performance, the decision to go all-electric was a sound business decision, and we are enthusiastic with the results."

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.

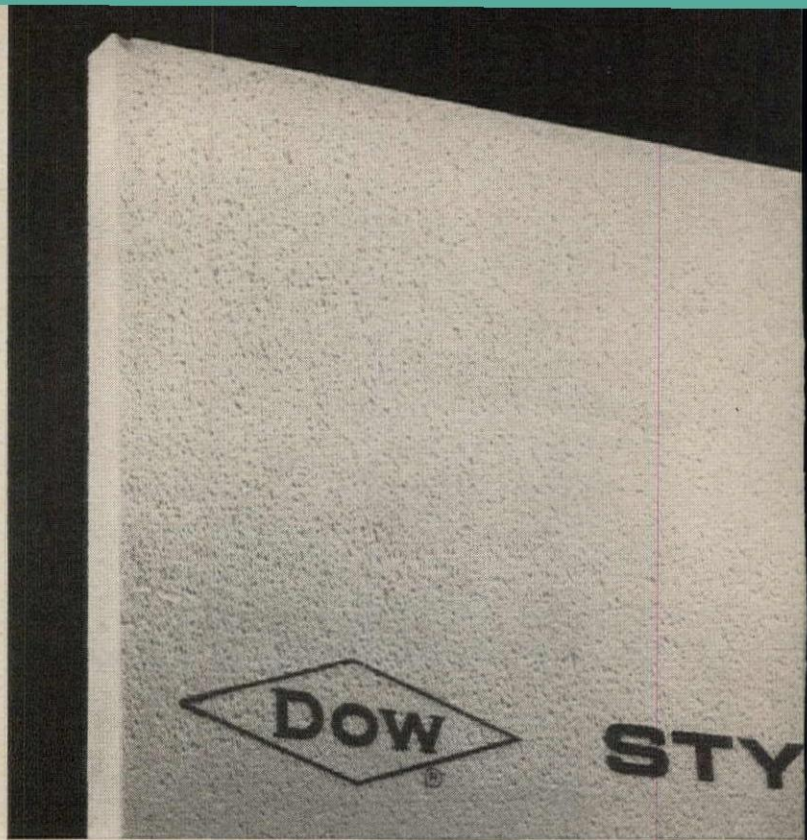
A. B. Simms, the developer of Atlanta Towers, is now building Bay Shore Towers in Tampa, Florida, another total-electric Gold Medallion high-rise apartment equipped by General Electric.



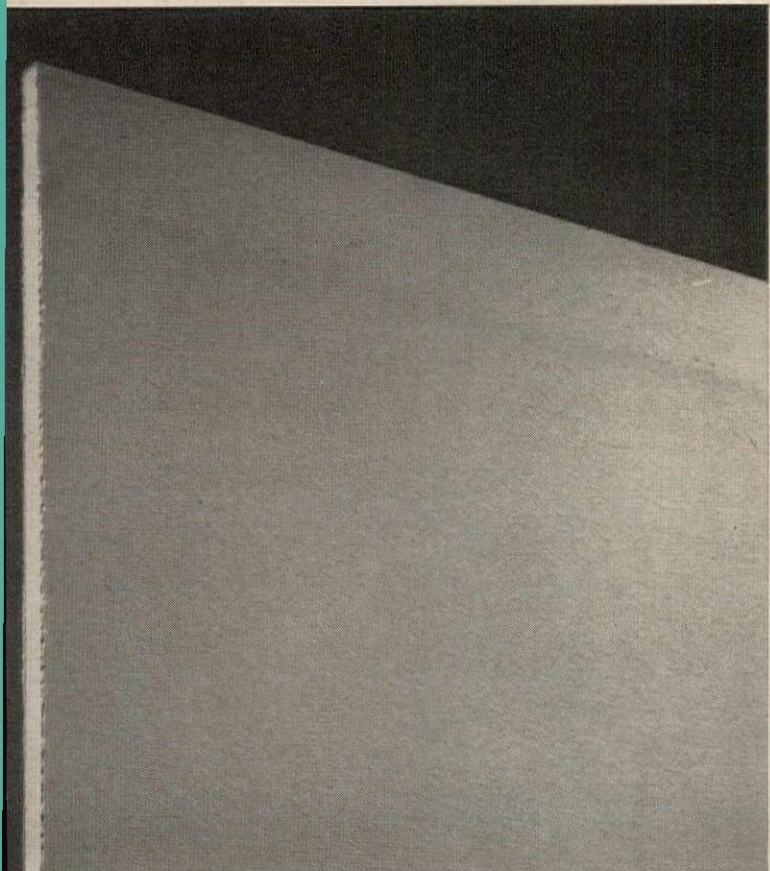
GENERAL  ELECTRIC



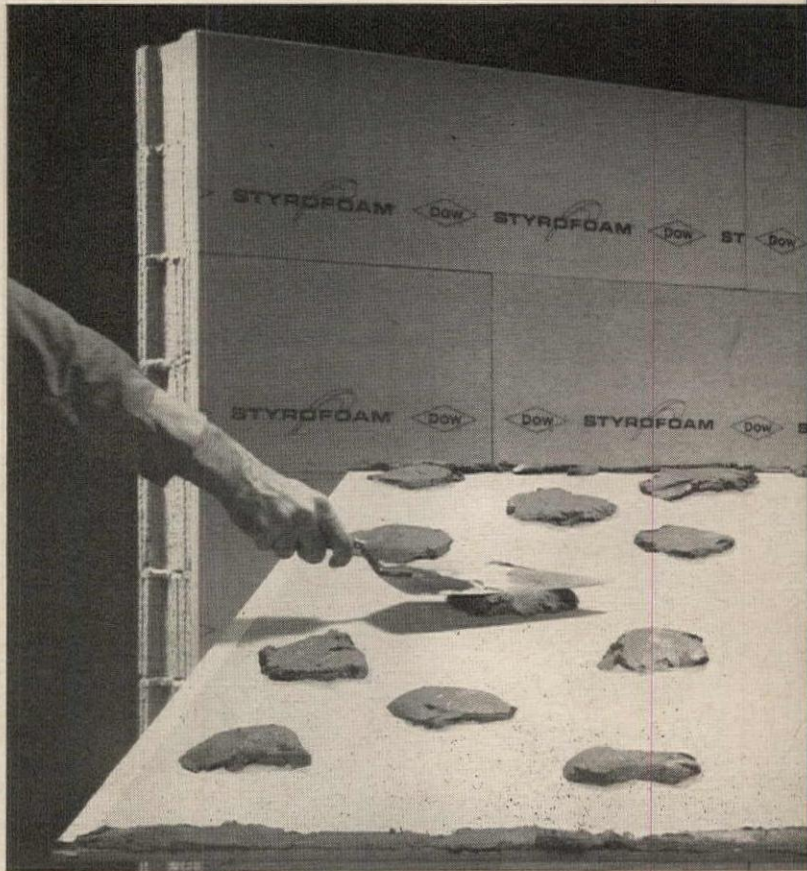
1. To insulate masonry walls economically:



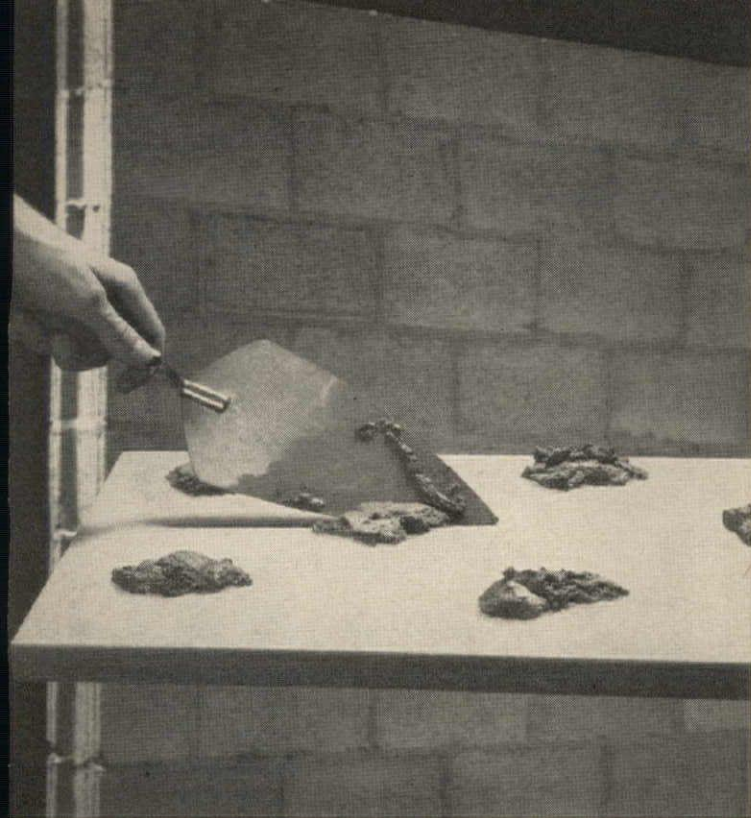
2. Remember Styrofoam® FR insulation board and specify it. It prevents moisture absorption and migration; keeps its low "k" factor (0.26) permanently.



5. Take wallboard. (No vapor barrier, no furring. You get a solid, insulated wall at almost the same cost as a furred, uninsulated wall.)



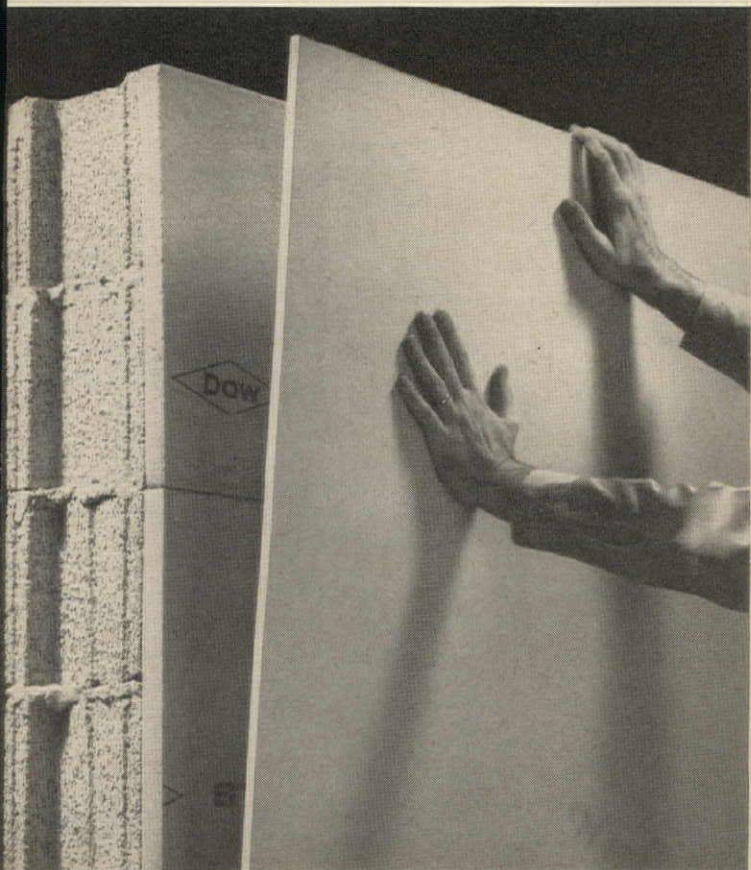
6. Styrotac goes on. Take your last look at Styrofoam FR.



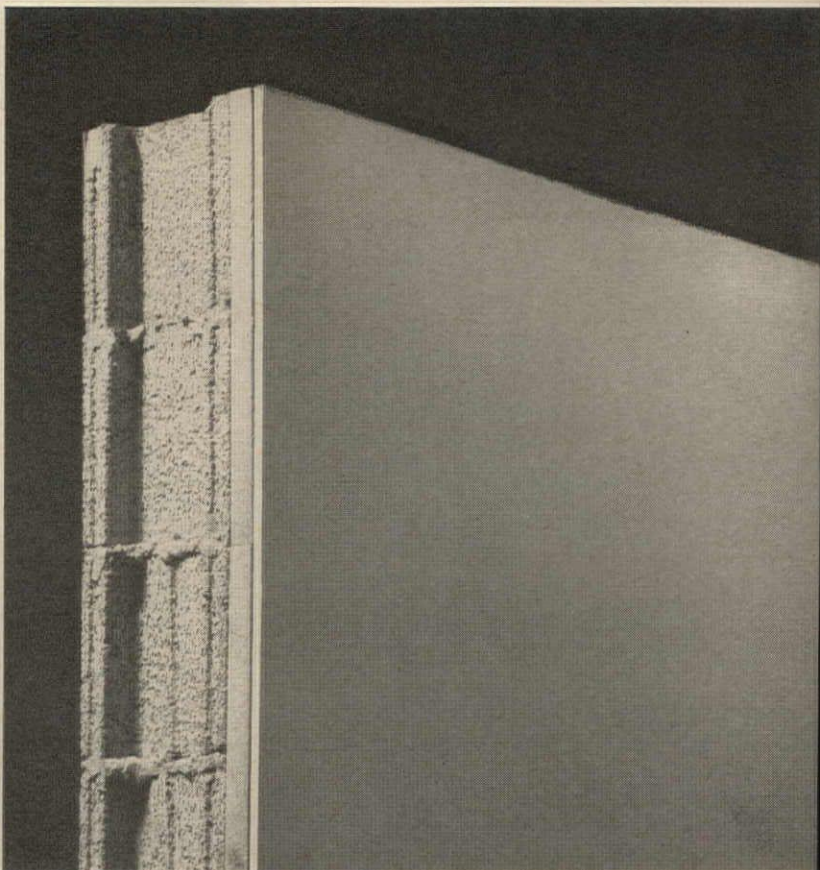
3. Spot-apply Styrotac® bonding adhesive.



4. Press Styrofoam FR into place. It installs fast, stays dry for year-round comfort.



7. Wallboard goes up. Finished wall (8-in. concrete block, 1-in. Styrofoam FR) has "U" factor of 0.16.



8. OK. Now forget it. Styrofoam FR won't absorb water, won't let moisture pass, won't need attention—ever! Any questions? See Sweet's Arch. File 10a/Do. The Dow Chemical Company, Midland, Mich.



For more data, circle 97 on Inquiry Card

**LAUNDRY
IN THE
JOB?**

**CALL
TROY!**

■ Why Troy? 1. Troy can supply *everything* needed to wash, extract, tumble, press, iron, fold and stack every type of washable. 2. No one has been manufacturing power laundry equipment longer than Troy—which explains the superb efficiency, safety, operability and durability of Troy machines. 3. Troy people are expert in preparing operating costs, personnel and floor space requirements, equipment specifications, layout and work flow . . . and servicing what they sell! So when there's a laundry in the job, get Troy on the phone. Or write. Also see the Troy catalog in Sweet's.



TROY LAUNDRY MACHINERY
A DIVISION OF AMETEK, INC.

EAST MOLINE, ILLINOIS

For more data, circle 98 on Inquiry Card

Product Reports

continued from page 200

FOLDING PARTITIONS

Robert Haws Co. has introduced a new panel construction identified as *Type XX*. The company states that



the new panel, combined with their hydraulic perimeter seal feature, provides optimum sound retardant characteristics. *Robert Haws Co., 19400 Allen Rd., Melvindale, Mich.*

CIRCLE 313 ON INQUIRY CARD

VINYL BASEBOARD

A rigid vinyl baseboard for office partitions developed by Goodrich Geon can be snapped into place over the steel base plate of Architectural Systems' partitions. When used over a wireway in the base of the partition, electric power lines and telephone and intercom wires are easily accessible. *Crane Plastics, Inc., 2141 Fairwood Ave., Columbus 7, Ohio*

CIRCLE 314 ON INQUIRY CARD

CERAMIC TILE

Vico Nuvo-Sheen is described by Amsterdam as a multi-colored ceramic tile impervious to water and temperature extremes, making it applicable to exterior as well as interior use. The 1- by 1-in. tiles are mounted on 1-ft-square backing sheets and come in nine color combinations. *Amsterdam Corp., 285 Madison Ave., New York 17, N.Y.*

CIRCLE 315 ON INQUIRY CARD

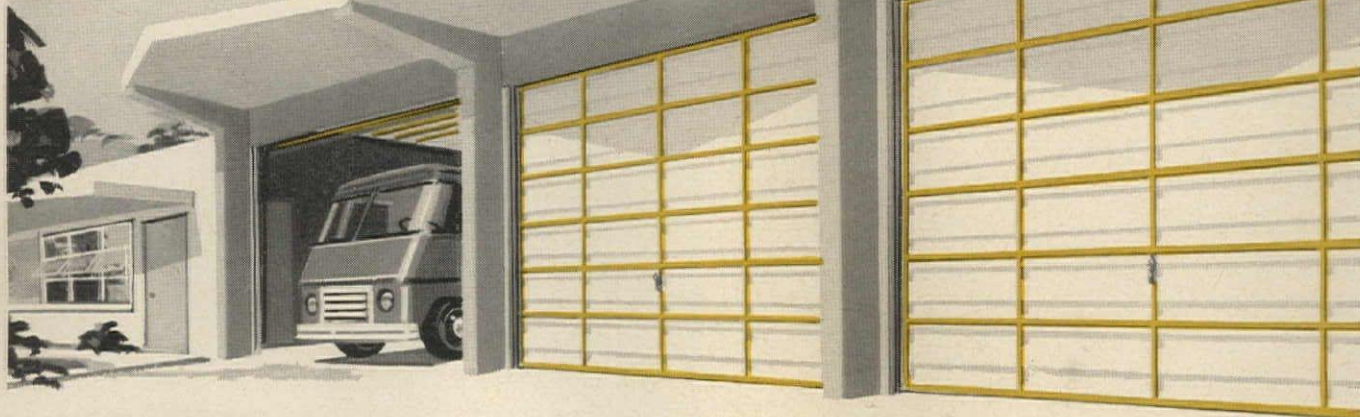
RETURN-AIR GRILLES

A new return-air grill features a washable, snap-out face of white styrene plastic set in an 18-gage frame of vinyl coated steel. High air flow

more products on page 216

RōWay **ALUMALUX**

**industrial-commercial
garage doors to fit in
with any plan
you create!**



Specify **ALUMALUX ... the aluminum-fiberglass door ...
for beauty, easy operation and low maintenance cost**

LIGHTWEIGHT—Easy to operate, weighs only one-third as much as wood or steel doors.

ATTRACTIVE—Corinthian White panels and gold anodized aluminum frame blends and beautifies any style of architecture, any color.

TRANSLUCENT—Lightens and brightens interior of building with soft, natural daylight, yet seals out weather, keeps out intruders.

MODERN MATERIALS—Widely used and accepted construction materials include fiberglass panels framed by sturdy aluminum sections for long wear, long life.

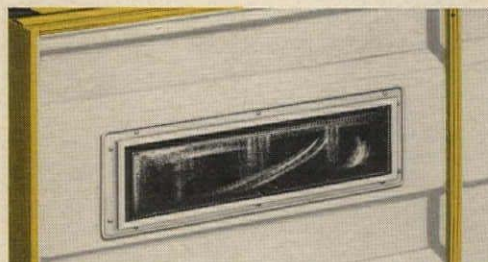
CONSTRUCTION—Panels are a permanent type fiberglass, square-ribbed for strength and rigidity. Box section aluminum frames are of extruded, tempered aluminum, gold anodized for lasting finish.

HARDWARE—Full size hardware used throughout. Heavy gauge steel, galvanized to resist rust and corrosion. Automotive type, automatic latch, key operated with "lock-out" chrome plated handle.

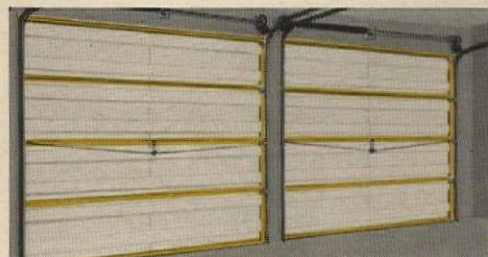
OPERATION—Easy to operate, the AlumaLux door weighs only one-third that of a wooden or steel door. Electric or chain hoist operation optional.

MAINTENANCE—Weatherproof and shrinkproof. No painting or glazing required. Easily cleaned with garden hose. Non-rusting aluminum and permanent-type fiberglass always looks new.

BEAUTY—The attractive appearance of the AlumaLux door adds quiet beauty to any building. Blends equally well with every style architecture, any color. The complete harmony of sparkling gold aluminum frame members set off by the Corinthian White panels provides an attractive appearance that never requires a change.



See-thru panels available if required for clear vision.



Soft, natural daylight illuminates interior of garage with complete privacy.

SIZES—Commercial: any size up to 24' wide by 18' high. Residential: any size up to 20' wide by 7' high. All doors 1 3/4" thick.

COMMERCIAL • INDUSTRIAL • RESIDENTIAL



there's a RōWay for every Doorway!
ROWE MANUFACTURING COMPANY
Dept. AR14, Galesburg, Illinois



For more data, circle 99 on Inquiry Card

For more data, circle 100 on Inquiry Card →

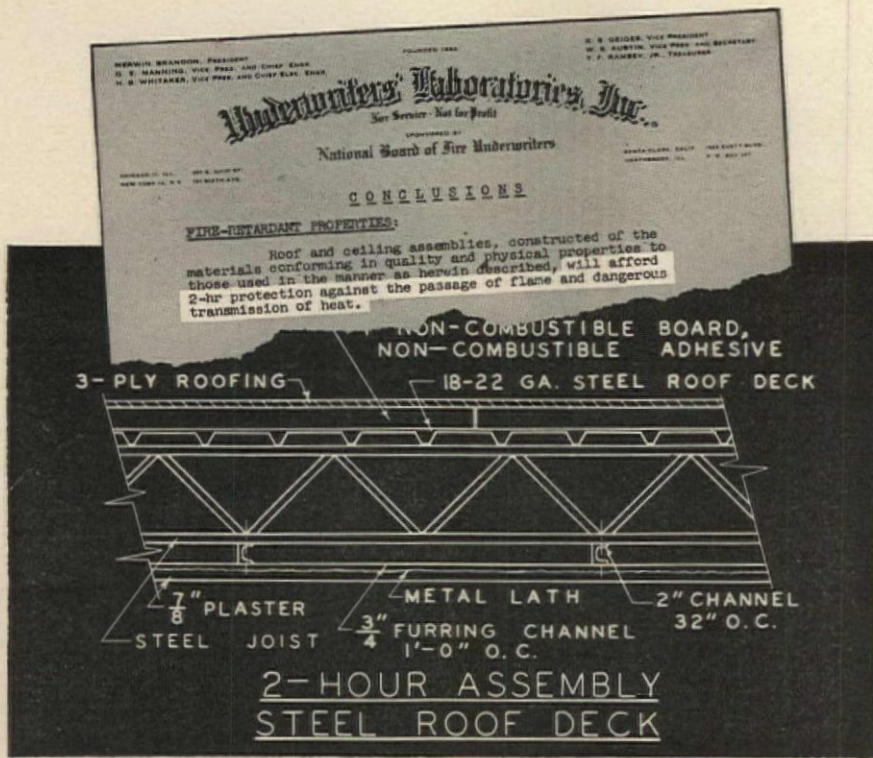


Westinghouse





The fastest passenger elevators on this planet are in this building... Westinghouse Selectomatic Mark IV. They travel 1700 ft. a minute. What else would you expect in the world's largest office building? Westinghouse Elevator Division, 150 Pacific Ave., Jersey City 4, N. J. You can be sure... if it's Westinghouse.



New UL two-hour fire rating for fast, economical steel roof deck construction!

Now you can save as much as *ten to twenty percent* over conventional fire resistive roof construction, where two-hour fire ratings are required!

All the important benefits of steel roof deck—fast, all-weather construction, uniformly dependable quality, strength, durability, lightweight, and economy are now augmented by Underwriters' Laboratories' assignment of two-hour fire ratings. Added benefits will be gained for years to come, in lower insurance premiums.

Get full information, now! Contact your local MRDTI member office or write direct for complete information on modern steel roof deck construction and Underwriters' Laboratories' detailed fire test Report No. B39963.



METAL ROOF DECK TECHNICAL INSTITUTE
53 WEST JACKSON BOULEVARD • CHICAGO 4, ILLINOIS

Airtherm Manufacturing Company • Bowman Steel Corporation • Ceco Steel Corporation • Fenestra, Inc. • Granco Steel Products Company • Inland Steel Products Company • Macomber, Inc. • The R. C. Mahon Company • Plasteel Products Corporation • Republic Steel Corporation, Manufacturing Division • H. H. Robertson Company • Wheeling Corrugating Company

For more data, circle 101 on Inquiry Card

Product Reports

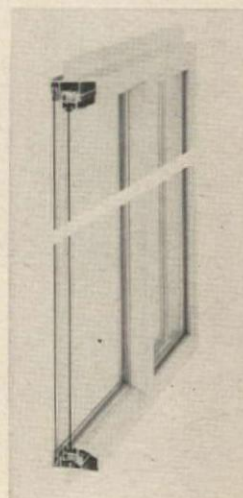
continued from page 212

rates may be used because of the non-metallic construction. It is available in a wide range of baseboard, wall and ceiling types in standard and custom sizes. *Gerwin Industries, Inc., Michigan City, Ind.*

CIRCLE 316 ON INQUIRY CARD

ALUMINUM SLIDING WINDOWS

A new series of horizontal sliding aluminum windows include two basic frame types and three sash types.



Contoured, snap-on cover plates at head and sill hold fixed sash in place and lift out to permit glass cleaning. The sliding panel rolls on pre-lubricated and sealed ball-bearing wheels installed in a nylon combination mounting bracket and guide. The wheels have a grooveless surface so that exterior wind pressure presses the sliding panel against weatherstripping. The series can be integrated with Premiere's window wall system. *Premiere Aluminum Products, Inc., 607 Lairport St., El Segundo, Calif.*

CIRCLE 317 ON INQUIRY CARD

CENTRAL STATION AIR-CONDITIONING

A new line of central station air-conditioning equipment consists of single and multi-zone models. Models are offered in 10 sizes for low and medium pressure, with cfm ratings ranging from 2,250 to 37,800. Both horizontal and vertical discharge styles are available. *Perfex Corp., 500 W. Oklahoma Ave., Milwaukee 7, Wis.*

CIRCLE 318 ON INQUIRY CARD
more products on page 220



AT THE
HONG KONG HILTON,
THEY SAY:

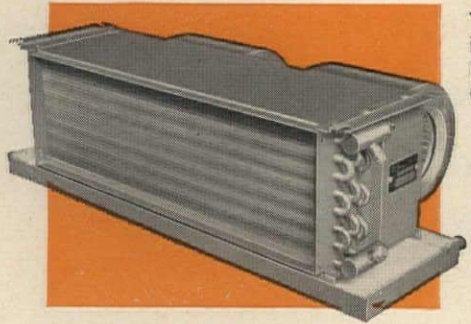
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Architect:
Palmer and Turner,
Hong Kong
Builder:
Paul Y. Construction
Co. Ltd.,
Hong Kong

*
(TRANSLATION: LOOK TO THE LEADER... McQUAY!)

The world's largest hotel outside of North America, the 26-story Hong Kong Hilton presented a tough air-conditioning problem due to the high-ambient climatic conditions. McQuay provided the answer with specially-designed Hideaway Fan Coil Units in each of hotel's 980 rooms. The Hideaway Seasonmaker is efficient, trouble-free and whisper quiet even at peak output. In addition, McQuay Hi-F water coils with famous ripple fin design were specified in the hotel's built-up system.

Perhaps you're not planning to build another Hong Kong Hilton. No matter. We have heating, ventilating, air conditioning and refrigeration equipment for any application—any size, any type. On your next project, move up to McQuay quality.



The McQuay Hideaway Seasonmaker remote air conditioner installs behind wall or in ceiling. It's just 10³/₁₆" high. Three-speed switch controls air flow. McQuay makes Seasonmakers in 5 lines, 13 models, 63 sizes from 150 to 3200 cfm.

McQuay INC.
MEANS QUALITY

1600 Broadway N.E., Minneapolis, Minnesota



For more data, circle 102 on Inquiry Card



Concrete floors last longer, look better

*There are more than 20 Sonneborn
floor treatment products designed
to preserve and protect concrete floors.*

*A Sonneborn specialist will recommend the right
floor treatment based on specific floor uses—
in the planning stage.*



...if they're treated right!

No one product or system can possibly fill the specific needs of all concrete floors without the risk of underdesign or the excessive cost of overdesign.

Because of the growing demand for more specific answers to the tough problems you face in concrete floor treatments, Sonneborn has developed a highly specialized line of products and integrated systems.

Your clients' floors may require liquid chemical hardening, metallic or non-metallic hardening, epoxy sealers, bonding agents, epoxy surfacing and dustproofing compounds.

Our specialists study the needs of the job and give you specific and detailed recommendations. They see to it that only quality-controlled materials are used. If the floor treatment is on contract, they supervise the application of the recommended system.

To complete Sonneborn's custom-designed service, a thorough inspection of the floor is made.

For complete information, consult Sweet's Architectural File, or write Sonneborn Building Products, Inc., 1700 South Mt. Prospect Rd., Des Plaines, Illinois.



Sonneborn Building Products, Inc.

Subsidiary of **De Soto** Chemical Coatings, Inc.

waterproofing • caulking and sealing compounds • protective coatings
concrete floor treatments • concrete and mortar admixtures

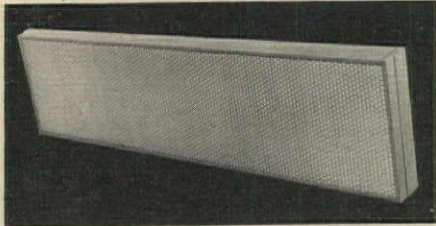
For more data, circle 103 on Inquiry Card

Product Reports

continued from page 216

MODULAR LIGHTING FIXTURES

A new, shallow line of fluorescent lighting fixtures has been designed expressly for use with grid type ceilings. All units in the group may be



either recessed or surface mounted. They occupy $3\frac{3}{4}$ in. of plenum depth when recessed in a grid ceiling. When surface mounted, their modular, 1- by 4-ft and 2- by 4-ft dimensions permit fixtures to be positioned directly over ceiling openings normally occupied by tile. Special clips are provided with the fixtures for attaching units directly to T rails. *The Miller Company, Meriden, Conn.*

CIRCLE 319 ON INQUIRY CARD

SHEAR TRANSFER TIE

An improved shear transfer tie for masonry cavity walls is of special value when the loading is in the horizontal span. Under such loads the new tie developed lateral load strengths of 1.8 to 1 when tested against the conventional $\frac{3}{16}$ Z bar with a type N mortar. When a type S mortar was used and the frequency of use of the ties was increased, the strength of the walls was increased by a factor of 2 to 1 over the conventional $\frac{3}{16}$ Z bar tied wall. *AA Wire Products Company, 714 E. 61 St., Chicago, 37, Ill.*

CIRCLE 320 ON INQUIRY CARD

KITCHEN FIRE EXTINGUISHING SYSTEMS

Custom-designed carbon dioxide fire extinguishing systems utilizing multi-jet nozzles and other Kidde components are completely self-contained. The typical hood and duct system consists of one or more CO₂ cylinders connected by a series of piping leading from these cylinders to discharge nozzles fastened to predetermined locations within the hood and ducts. *Walter Kidde & Company, Inc., Belleville, N.J.*

CIRCLE 321 ON INQUIRY CARD

more and more
great American architects
are using

MARMET

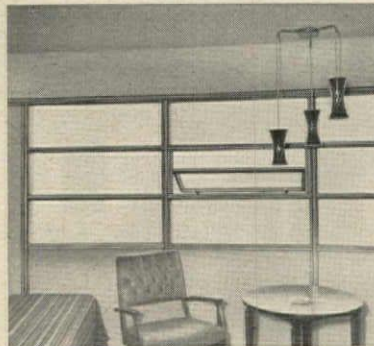
here are a few of the reasons:

SERIES 5212 CURTAIN WALL

With its unusual tower, this impressive motor inn offers weary travelers big city, luxury hotel living in Owensboro. Designed in the round, it permits a full windowed view for every room. Just below the swimming pool deck at the top, a sophisticated cocktail lounge has a spectacular 360° view of the country-side.

■ ■ ■ ■ Glistening exterior sheath, from ground to top, is MARMET's Series 5212 curtain wall. An ideal system for high rise structures, it erects rapidly at lower costs. After vertical mulls are anchored to the building, wall panels and sash are stacked one atop the other and horizontally secured by a clip method that fits any condition. This stacking assembly is done from inside the building and often saves the time and cost of erecting scaffolding.

High rise cabins in Kentucky GABE'S MOTOR INN • OWENSBORO



Guest room fenestration

Each room offers its own panorama through three large lites that contain a projecting window in the center section. This projecting AP is integrally fabricated into the 5212 sash unit at the factory... no separate installation at the job site is necessary.

Full circle fenestration "at the top"

Another example of the flexibility in the 5212 series is the floor to ceiling vista guests enjoy from the cocktail lounge. Each large lite is framed between exterior mulls. Dominant vertical accents on the exterior were obtained from the choice of large dominant mull extrusions MARMET offers in either the 5212 or 5142 series.

MARMET

corporation

SWEETS CATALOG
OR WRITE MARMET

3a
MAR

300-G Bellis Street
Wausau, Wisconsin

For more data, circle 105 on Inquiry Card

ARCHITECT:
R. BEN JOHNSON

Owensboro, Ky.

Curtain Wall
by
MARMET CORPORATION





ROOF DECK

Steel roof deck with rigid insulation offers fast, economical, year-round construction . . . it is the most widely used roof system of our time. Granco Roof Deck provides the extra benefit of a flint-hard enamel finish that resists scratches, prevents corrosion and requires little or no maintenance. Wide rib openings mean faster, easier plug welding. Granco Roof Deck is available painted or galvanized in 18, 20 and 22 gage for purlin spacing up to 10' 0".

A new two-hour fire rating also permits reduced insurance premiums.

A quality roof system begins with a Granco steel deck

Selection of a roof deck assembly is obviously a major decision. It affects heating and air-conditioning equipment, fuel costs, insurance rates and building maintenance.

Many points must be considered in the deck design: structural framing, insulation requirements, vapor barrier, fire resistance, dead load, wind-up-lift, seismic design or framing stiffness, roof slope, type of built-up roof, maintenance, time and money. The Granco family of steel decks, with a wide range of gages and patterns, can give you a roof system to meet all your design considerations at the lowest possible cost.

Granco has pioneered the development of high-strength steels for roof construction. One of the Granco Deck systems will best fulfill your needs and help you make the ideal selection.

For more information, write: GRANCO STEEL PRODUCTS CO., 6506 N. Broadway, St. Louis 15, Mo. A subsidiary of Granite City Steel Company. Our catalogs are filed in Sweet's, 2i/Gr.

GRANCO



DISTRICT OFFICES: Atlanta • Chicago • Cincinnati • Dallas
Detroit • Houston • Kansas City • Los Angeles • Minneapolis
New York • St. Louis • San Francisco • Tampa
DISTRICT REPRESENTATIVES: Greenville, S. C. • Little Rock
Washington, D. C.



For more data, circle 106 on Inquiry Card

Office Literature

continued from page 180

VAULT DOORS

All models in Schwab's line of vault and storage room doors are presented in chart form in a four-page digest. The catalog gives complete specifications, arc and swing for each model and U.L. fire labels, ranging from one-half to six hours, on single and double door models. *Schwab Safe Co., Inc., Lafayette, Ind.*

CIRCLE 417 ON INQUIRY CARD

FOUNTAINS AND GARDEN ORNAMENTS

Many new and unusual lightweight glass-fiber reinforced plastic products are now being offered by a California concern which specializes in the duplication and reproduction of natural and carved stone. The water displays, including waterfalls and wall fountains, are described in the company's detailed catalog. *Jabon Studios, 14847 Bessemer St., Van Nuys, Calif.*

CIRCLE 418 ON INQUIRY CARD

POLARIZED LIGHTING

Contents of an eight-page brochure include a review of the basic advantages of polarized illumination, technical data on the *Polrized* panels, coefficients of utilization, and descriptions and ordering information on all Sunbeam Lighting luminaires available with *Polrized* panels. *Sunbeam Lighting Company, 777 E. 14th Place, Los Angeles 21, Calif.**

CIRCLE 419 ON INQUIRY CARD

TUBE-ICE MACHINES

Bulletin PTI-6 describes two models of Vogt's tube-ice machines by means of photos, diagrams, and details and specifications. *Henry Vogt Machine Co., P.O. Box 1918, Louisville 1, Ky.*

CIRCLE 420 ON INQUIRY CARD

STAINLESS STEEL SINKS, COUNTER TOPS

A 32-page catalog outlines the company's complete line of standard and custom stainless steel sinks, counter tops and drainboards, along with detailed specifications. The catalog compares standard government codes with Z-H specifications on material, thickness of sheet metal, surface finish, construction, dimensions and tolerances, and inspection methods. (The nationally recognized Commercial Standard CS243-62 is printed in its entirety.) *Zeigler-Harris Corp., 11341 San Fernando Rd., San Fernando, Calif.*

CIRCLE 421 ON INQUIRY CARD

MOVABLE WALLS

Kwik-Wall's system of self-storing 48-in.-wide modular moveable wall partitions is explained in a four-page brochure. Panels have aluminum frames and honeycomb cores and are available in a variety of surface finishes. *Kwik-Wall Company, Springfield, Ill.**

CIRCLE 422 ON INQUIRY CARD

UPWARD-ACTING DOORS

Specification and illustrations for the company's upward-acting doors are contained in a 44-page catalog. Models for commercial, industrial and residential use constructed of wood, steel and fiber glass are shown. *Windsor Door Co., Inc., 61 S. Main Bldg., P.O. Box 720, Memphis, Tenn.**

CIRCLE 423 ON INQUIRY CARD

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



An inexpensive way to add a room, upstairs or down. Just install a Sunbrella fabric roof . . . 22% cooler underneath than with others, wonderful air porosity. And none of our 25 gay colors can fade. Will not be affected by rot or mildew. Crack and scuff resistant, too. (Woven of 100% Acrilan* acrylic fiber—that's why it's a miracle fabric.) Matching awnings are smart, too. Marvelous for new homes. Sensational for perking up remodeling jobs. And think what a non-glare, beautiful exterior fabric like this can add to a hotel, motel, shopping center or office building. Shouldn't you investigate? Write for information and design idea booklet. *Reg. T.M. of Chemstrand



Add wings

that are guaranteed 5 years with Sunbrella®

For more data, circle 107 on Inquiry Card



The man with the purple face ...and the bright red penny

He sells PERMALITE[®], expanded perlite roof insulation board. It's the total board. And he proves it with performance—not legerdemain.

PERMALITE is mineral... permanent, moisture resistant, feather-light, dimensionally stable, inorganic. It's anti-rot, anti-rodent, anti-mildew. Twenty years after installation it will still have the same high efficiency.

What about fire? PERMALITE practically ignores it. This man heats a penny until it's flaming hot—right

on a section of rigid, tough PERMALITE, held in his hand. There's no burning, no dissolving. And the underside of the material stays as cool as early morning. (The same penny melts a hole through other insulations.)

The PERMALITE penny-test is a meaningful demonstration. Especially to the professional interested in seeing a client keep a roof over his head.

How incombustible is your favorite roof insulation? Is it approved and

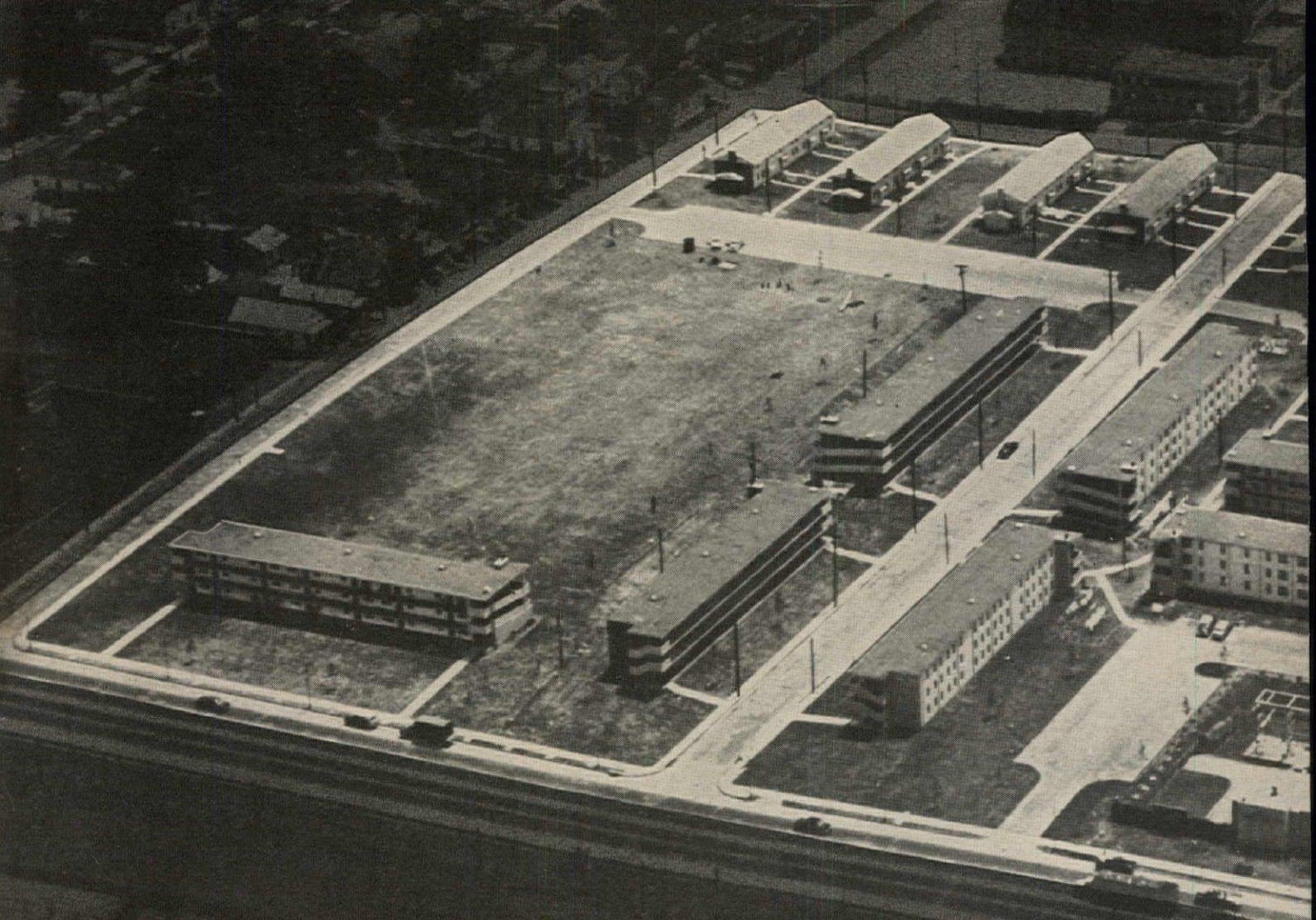
rated for Factory Mutual Class I Construction?

PERMALITE, the extraordinary Roof Insulation Board, can answer your burning questions. Write us for an interesting demonstration.



BUILDING PRODUCTS DEPARTMENT
Great Lakes Carbon Corporation
333 N. Michigan Ave., Chicago, Ill.
Phone FR 2-5445

For more data, circle 108 on Inquiry Card



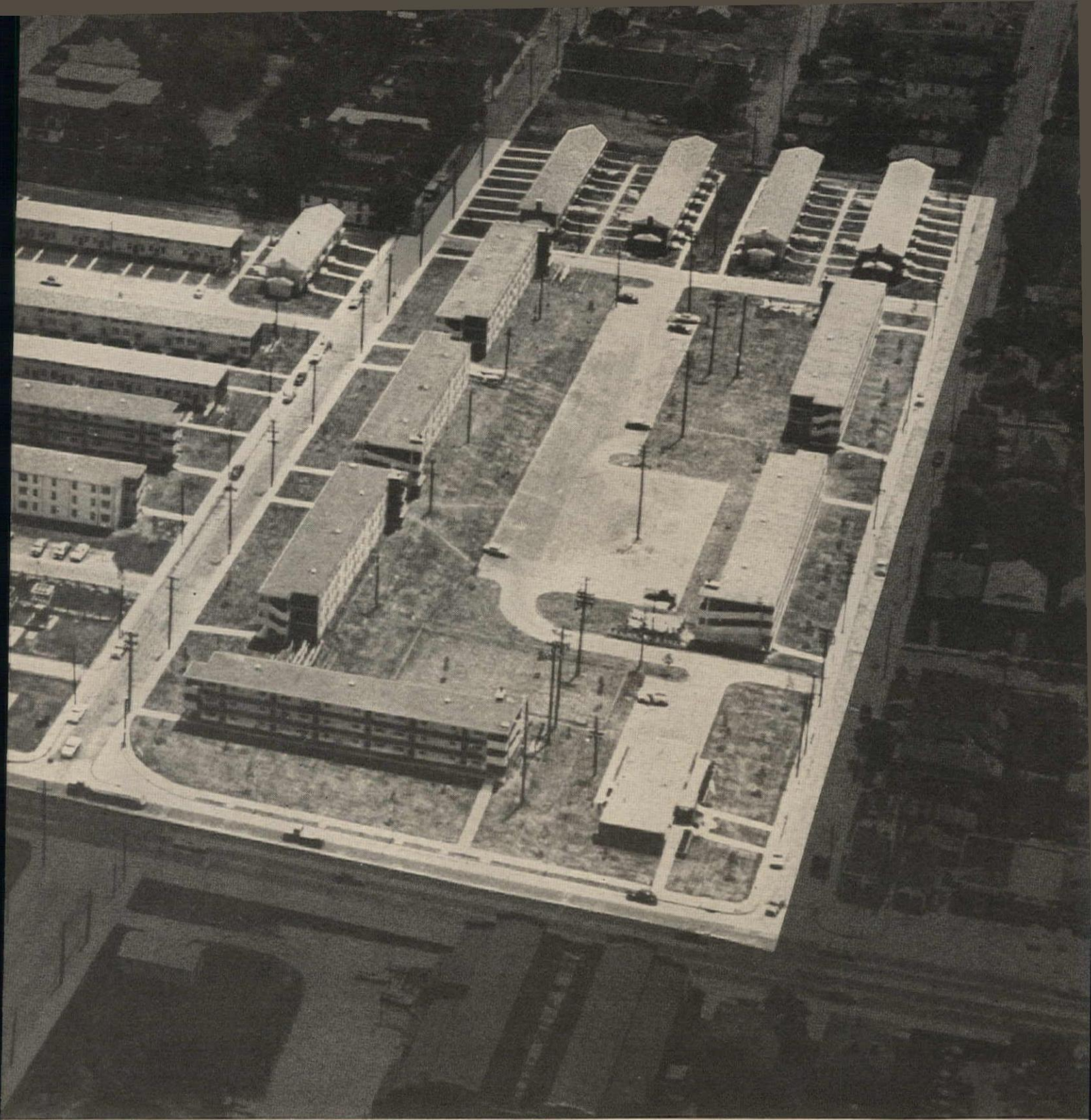
There are 27 buildings in the public housing project, Joseph A. Fowler Homes, Memphis, Tennessee. One is an administration building; the rest residential buildings containing 320 apartments. Walls are of brick veneer concrete block with Keywall in alternate courses, used to control thermal movement and to serve as a brick tie. Interior walls are of rock lath plaster utilizing Keycorner and Keystrip as reinforcement.

ARCHITECT:
Charles S. Peete & Associates, Memphis
GENERAL CONTRACTOR:
McDonough Construction Co.,
of Atlanta, Georgia
MASONRY CONTRACTOR:
Memphis Masonry Company, Memphis
PLASTERING CONTRACTOR:
F. M. Gravier Plastering Co., Atlanta

**WHAT
HOLDS
THE
WALLS
OF THE
JOSEPH A. FOWLER
HOMES
TOGETHER?**

For more data, circle 109 on Inquiry Card

KEYSTONE STEEL & WIRE COMPANY • Peoria, Illinois



Mortar and Keywall

(what else?)

It's a coincidence you should ask about the advantages of Keywall. You can see from the tight pattern that it gives you more mortar locks with block (and/or brick).

Which in turn controls shrinkage and thermal movement better, resulting in greater crack resistance.

And because Keywall comes in rolls, masons lay Keywall in place more easily and quickly.

You might think that you would have to pay more for a masonry reinforcement with such advantages. Not so.



MORE LOCKS TO THE BLOCK with Keywall . . . because of the tight-woven pattern, it is impossible for any one strand of Keywall to be subject to the strain of more than two square inches of a block's thermal movement or shrinkage. By dividing the strain into such small segments, Keywall provides greater crack resistance.

On the Calendar

January

20-23 13th Exposition, Air-Conditioning, Heating and Refrigeration Industry, sponsored by Air-Conditioning and Refrigeration Institute—International Amphitheater, Chicago

28-31 20th annual technical conference, Society of Plastics Engineers, sponsored by Philadelphia Section—Chalfonte-Haddon Hall Hotels,

Atlantic City, N.J.

February

3-7 International Conference on Materials, sponsored by the American Society for Testing and Materials—Sheraton Hotel, Philadelphia

15-19 1964 National Convention, American Association of School Administrators—Atlantic City, N.J.

March

2-5 60th annual convention, Ameri-

can Concrete Institute—Rice Hotel, Houston

Office Notes

Offices Opened

Jan B. Bergendahl III, Architect & Designer, has opened a second office at Taliesin, 1189 Southwest Fifth St., Boca Raton, Fla. Mr. Bergendahl also maintains offices at Valhalla, Kong Trygves Vei 2, Tönsberg, Norway.

Walter Stephen Lincoln, Architect, has announced the opening of his offices at 1190½ Westmoor Rd., Winnetka, Ill.

Dion Neutra, A.I.A., & Associates, Architects and Consultants, have established offices at 2525 Hyperion Ave., Los Angeles 27.

New Firms, Firm Changes

Chaix & Johnson Associates have named their director of design, **Wayne Takeuchi**, an associate in the Los Angeles architectural firm.

Cosentini Associates have appointed **David Michaeli**, **Ava Tinfo**, **Walter J. Brown Jr.** and **Michael A. Marino** associates of the firm. Offices are at Coliseum Tower, 10 Columbus Circle, New York City.

Daverman Associates is the new designation of the former firm **J and G Daverman**. The firm has also announced the opening of a regional office at 5856 N. Port Washington Rd., Milwaukee 17, Wis., where **George H. Hinkens, A.I.A.**, is resident architect. Other offices are maintained in Grand Rapids and Petoskey, Mich., and Miami, Fla.

A new firm, **Enloe, West & Granade, Inc., Architects & Engineers**, has been formed by **Hansell P. Enloe, A.I.A.**, **Walter H. West** and **Joel J. Granade Jr.** Address is DeKalb-Peachtree Airport, Chamblee, Ga.

The George M. Ewing Co., Architects and Engineers, of Philadelphia and Washington, has admitted four new partners: architects **Harry Fox, A.I.A.**, and **M. Paul Brott**, and engineers **William C. Joyce** and **Robertson H. Short Jr.** Simultaneously, the firm announced 12 new associates: architects **Robert H. Day, A.I.A.**, **Joseph P. Kearney**, **Irving Isaacs Jr., A.I.A.**, and **Edgar G. Cross III, A.I.A.**; engineers **Dimitri J. Ververelli**, **Edgar H. Hendler**,

continued on page 232

New TALK-A-PHONE Apartment House Intercom



Provides instant and direct 2-way conversation between any Apartment and Vestibule . . . Greater Performance with these Exclusive Talk-A-Phone Features:

- **Ample Volume**—Whispers, shouts and normal voice are heard clearly without "boom".
- **Automatic Privacy**—On all Apartment Units.
- **Volume Selector**—Each Apartment selects own volume. Concealed yet easily accessible.
- **Built-in Buzzer**—Pleasant sound, in each Apartment Unit.
- **Contoured Push Button**—Operates electric door opener.
- **Fanning Strip-Terminal Block** for easy connection.

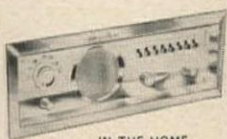
Distinctively styled. Quality Engineered. Built to withstand continuous use.

TALK-A-PHONE . . . "Has Everything. Does Everything." The accepted standard of quality and dependability in Intercommunication for over a third-of-a-century.



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IN OFFICE AND INDUSTRY . . . Talk-A-Phone fulfills virtually every Intercom need. Gives you instant and direct two-way conversation between any two points. Saves thousands of man-hours, simplifies office routine. Distinctively styled, ruggedly built to withstand continuous day and night use. Pays for itself many times over.



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IN THE HOME . . . everyone in the family will enjoy the comfort, convenience and peace of mind this Talk-A-Phone Home Intercom-Radio System provides. From any room you can • Listen-in on baby, children or sick room • Answer outside doors without opening doors 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. Easily installed.

Send for Free Catalogs... Dept. AR-1
TALK-A-PHONE CO., 5013 N. Kedzie Ave., Chicago 25, Illinois

For more data, circle 110 on Inquiry Card

NEW HARTER SQUARE-LINE STYLING ACHIEVES DESIGN IMPROVEMENTS NEVER BEFORE ACCOMPLISHED!

Here, at last, the first and only executive and general office chairs designed from the inside out to provide the world's finest quality in square-lines!

No jutting extensions of exposed metal to mar adjacent furniture; design and function are expressed within the natural limits of good seating. No "hung-on" back support; it's hidden away within the steel framing of the back rest. And the base assembly is recess-mounted within the steel-channel seat framing to accentuate the square-line effect.

The Harter Contemporary Series—in style, in comfort, in long-term economy—is seating's smartest, most perfect complement for the popular H-frame desks!

And you can't afford to risk the purchase of a single chair until you see proof in our beautiful, 28-page full color catalog. Write and ask . . . so you can look and see without obligation in the next few days!



No exposed metal protrusions to mar adjacent furniture!



No "hung-on" back support to scratch walls!

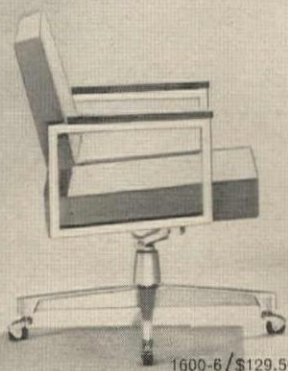


No overhang to restrict movement any way!

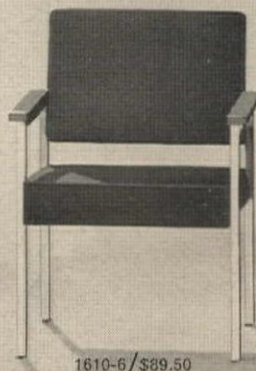
NEW CONTEMPORARY CHAIRS BY HARTER / 1200 and 1600 Series



1650-6/\$144.50*



1600-6/\$129.50



1610-6/\$89.50

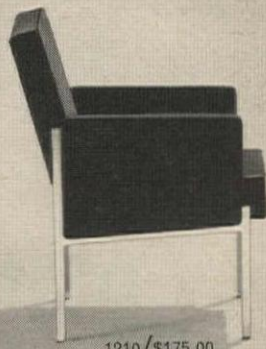


1620/\$78.00

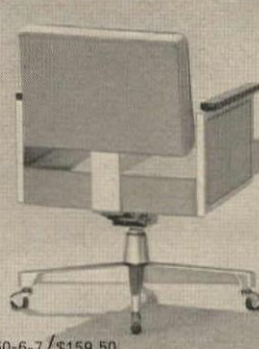
*All list prices in Naugahyde. Slightly higher in the West.



1250/\$195.00



1210/\$175.00



1650-6-7/\$159.50



1600-6-7/\$144.50

Crisp square-line styling combined — at last! — with structural and design improvements endorsed by leading office designers . . . to your complete satisfaction!



HARTER

SPECIALISTS IN SEATING — AND SEATING ONLY — FOR OVER 35 YEARS

HARTER CORPORATION, 105 Prairie, Sturgis, Michigan

Canada: Harter Metal Furniture, Ltd., 139 Cardigan, Guelph, Ontario

Mexico: Briones-Harter, S.A., Lago Iseo 96, Mexico 17, D.F.

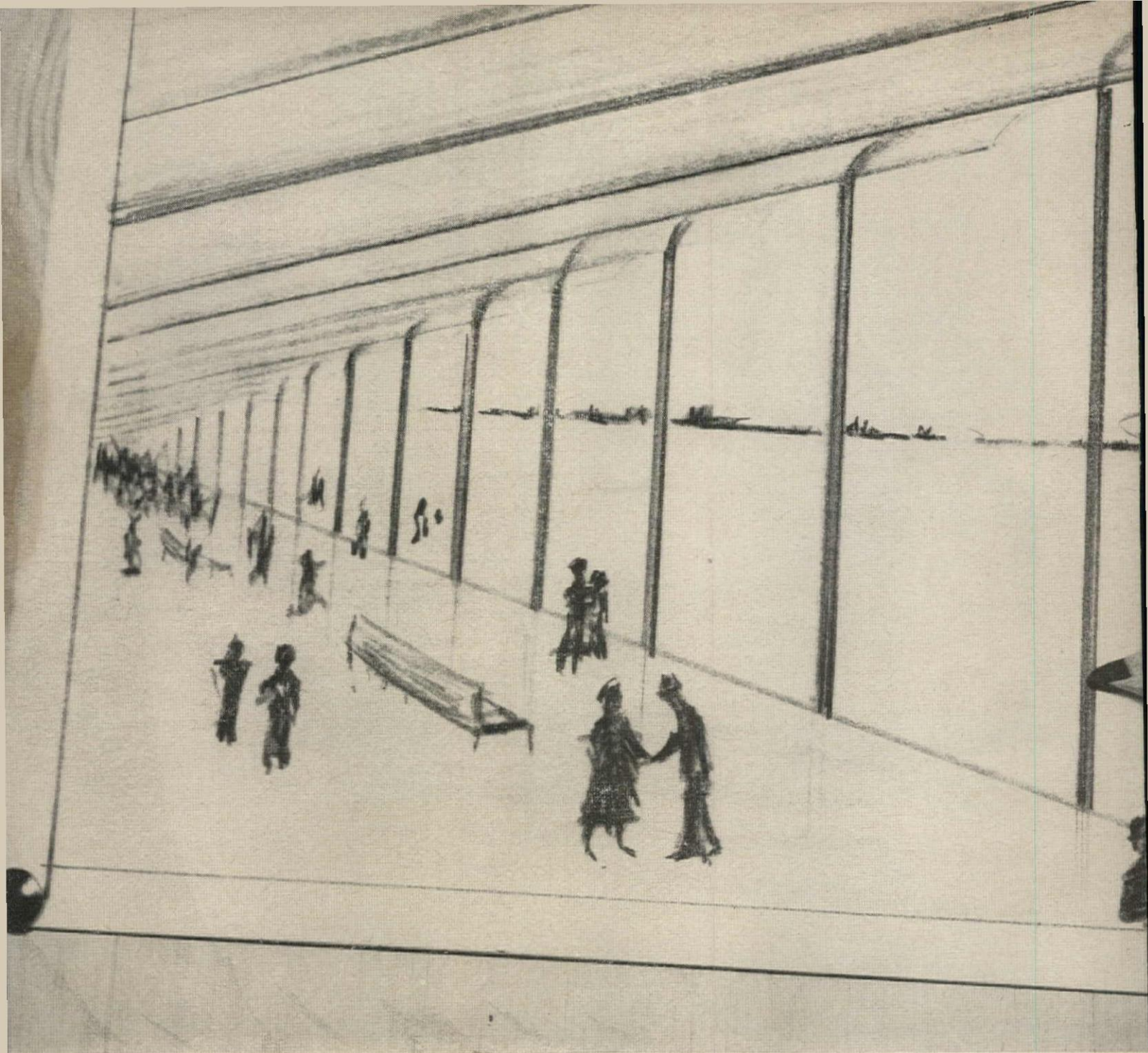
New Zealand-Australia: Morrison Industries, Hastings, N.Z.



FREE CATALOG!

Write for complete 28-page catalog that shows all, tells all — executive, side and secretarial models, plus stacking chairs — in beautiful full color. It's FREE! Write now on your company letterhead!

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Now you can think **BIG...** with heavy-duty plate glass

L·O·F's new performance data on heavy-duty plate lets you use bigger sizes with confidence and safety. L·O·F's new low prices let you use them freely.

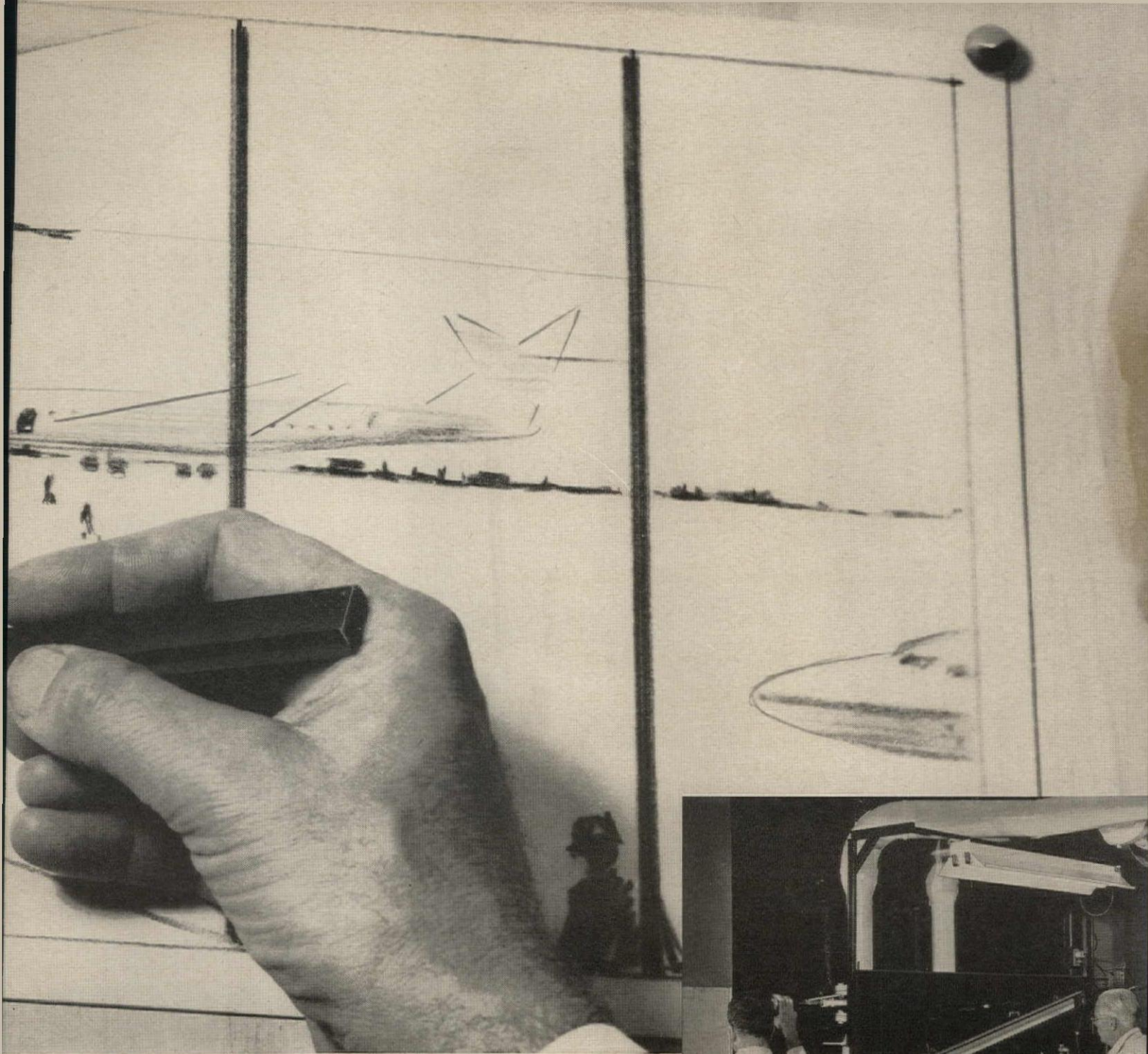
■ Let yourself go. Design freely for bigger expanses of glass. Go ahead with ideas you've never dared try before. L·O·F has conducted exhaustive strength tests

on heavy-duty plate so you can do it safely and with full confidence that you will meet code requirements. And we've lowered the prices approximately one-third so your clients can afford your most creative ideas.

Review the new test data shown here—for $\frac{1}{4}$ " plate (for comparison) and for heavy-duty

plate in thicknesses from $\frac{5}{16}$ " to $\frac{1}{2}$ ", inclusive. *Parallel-O-Plate*® is available in $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and 1"; heavy-duty *Parallel-O-Grey*® and *Parallel-O-Bronze*® in $\frac{3}{8}$ " and $\frac{1}{2}$ ", and blue-green Heat Absorbing in $\frac{3}{8}$ ". See your L·O·F Glass Distributor about the new low costs on heavy-duty plate. And think BIG sizes.

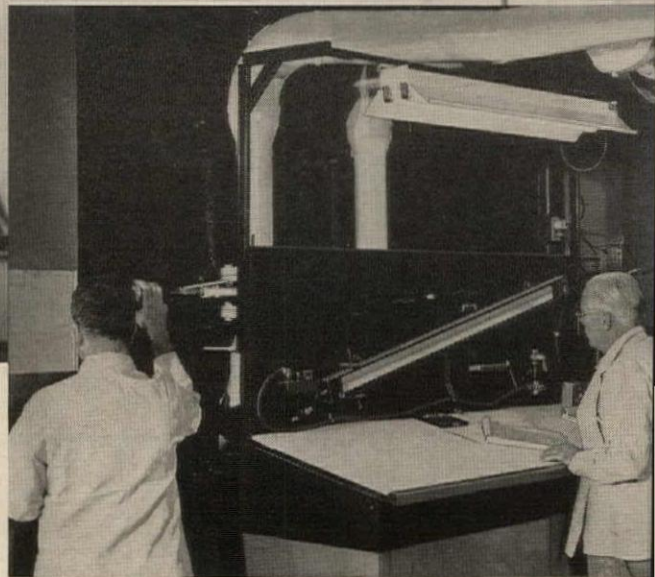
MADE IN U.S.A.
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GLASS



L·O·F Tested Glass to Destruction.

Pressure limits for each size and thickness were actually measured in this pressure chamber—not estimated mathematically. For each size in each thickness, 25 lights of glass—1,000 lights in all—were tested to destruction in order

to provide you with trustworthy p. s. f. data. The design loads shown below include a safety factor of 2.5 and are based on L·O·F's advertised minimum for each nominal thickness given. For data on thicknesses greater than shown below, write to L·O·F Technical Sales Service.



	Sizes Tested P.S.F. Data									
	72x72	48x120	72x96	72x120	96x120	72x168	120x120	96x168	120x168	120x240
1/4"	30	27	23	18	13	13	11	10	8	5
5/16"	43	39	32	26	19	18	15	14	11	8
3/8"	62	56	46	37	28	27	22	20	16	11
1/2"	91	81	68	54	41	39	33	29	23	16

Libbey·Owens·Ford Glass Company

811 MADISON AVENUE
TOLEDO, OHIO 43624

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Office Notes

continued from page 228

Frank Davolos, Francis Riordan and James B. Sullivan Jr.; and Anthony Dilenno, C.P.A., Raymond A. Stanley and Edward J. Portka.

Robert W. Essig, Architect, formerly of the firm Hanes & Essig, has announced the opening of his own practice in offices at 10238 Lakewood Blvd., Downey, Calif.

Robert E. Hamilton has announced the dissolution of his Honolulu practice, Robert E. Hamilton Engineers, Ltd. He will join the New York staff of John Graham and Company, where he will serve as liaison between the firm's New York office and its Toronto subsidiary, John Graham Consultants, Ltd.

Abraham D. Levitt, architect, has joined the firm of Samuel Paul & Seymour Jarmul, Architects, and will head the firm's Manhattan of-

fice at 59 E. 54th St., New York City. Mr. Levitt was formerly Assistant Regional Director of the Federal Housing Administration.

Lane, Riebe, Weiland, Architects, is the new name of the former firm Charles W. Lane Associates, Inc. The principals, Charles W. Lane, Alex W. Riebe and Keith F. Weiland, practice at 3366 Washtenaw Rd., Ann Arbor, Mich., 48104.

New Addresses

Graham Latta, Architect, 3363 Glendale Blvd., Los Angeles 39.

Clifford N. Wright Associates, Architects, 4066 West Maple Rd., Birmingham, Mich., 48010.

Addenda

To the Editor:

In the article I wrote in the October RECORD on "New German Theaters and Concert Halls" it was stated that "The Total Theater project of Gropius, Schlemmer and Moholy-Nagy represented such advance thinking that it is still avant-garde." A kind word from Dr. Gropius points out that "neither Schlemmer nor Moholy-Nagy had anything to do with the design of my Total Theater. I did it in my private office in close collaboration with Erwin Piscator, who had given me the commission to create a theater which would give him all the possibilities of executing his stage ideas."

Incidentally, as many RECORD readers must have observed, a line was inadvertently dropped out of the description of the Gelsenkirchen theater in type-setting. The full text should read: "The walls of the auditorium are particularly fascinating for they were designed to 'disappear' when the house lights go off, and thus to project the brightly illuminated actors into the audience—an effect in part cancelled by the *aluminum insistence of the balconies and boxes. This vanishing act is achieved both by the matte black color of the walls and by their wood strip construction which eliminates reflection.*" The italicized words were those omitted.

—G. E. Kidder-Smith

The RECORD regrets the omission of photographic credit to Harry Groom in its article on the Alaska Psychiatric Institute, Anchorage (November 1963, pages 174-177).



**MORE
SOUND
CONTROL
PER
DOLLAR**

Save 30% to 50% with Super Soundguard X24

The new FolDoor Super Soundguard X24 announces an unprecedented STC rating of 44* . . . highest of any single fabric covered folding partition ever devised.

. . . Yet the X24, installed with FolDoor's new Traveling Chalkboard, offers greater versatility and easier operation . . . plus proven high-level noise control . . . at a cost far below that of heavier-type folding walls with chalkboard surfaces.

And FolDoor vinyl-fabric surfaces are acoustically functional . . . deadening room noise rather than bouncing it off, as do the hard-surfaced panels of other movable room dividers.

Investigate the difference . . . in performance and cost . . . when selecting operable walls. Look for the FolDoor TOTAL EXCELLENCE Seal . . . your assurance of Total Engineering, Total Performance, Total Service. It's backed by FolDoor's extended warranty program



. . . by far the strongest in the industry (write for details).

FolDoor's new Traveling Chalkboard (single or multiple units) can be solidly positioned at any point along its own overhead track and stored along a side wall when not in use. Its 4' x 8'

writing surface is of the finest quality, mounted at NSC recommended heights for respective grades.

See your FolDoor Distributor or contact Holcomb & Hoke Mfg. Co., Inc. for information on the complete selection of FolDoor models.

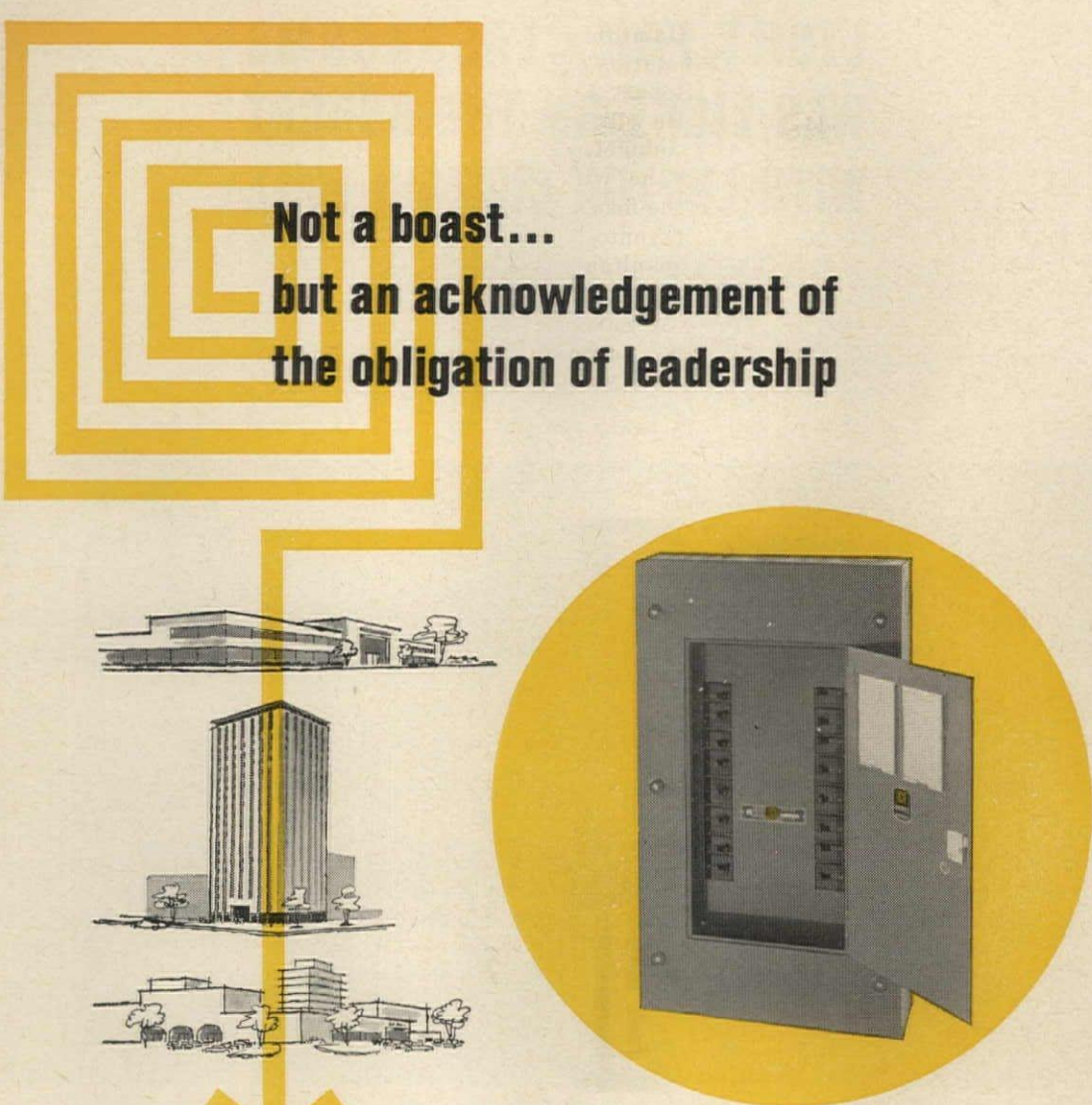
*Sound Transmission Class rating in accordance with ASTM E90-61T; Riverbank Acoustical Laboratory, Geneva, Ill.



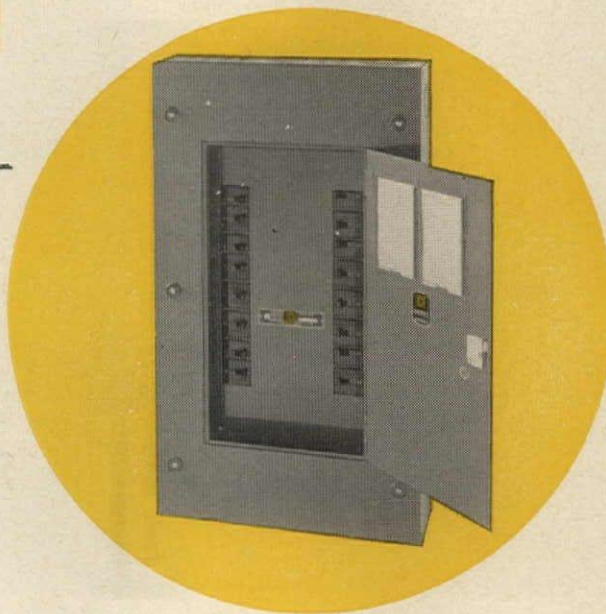
A new concept in decorative styrene grillework for space dividers and screens . . . factory fabricated with customized framing.

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**Not a boast...
but an acknowledgement of
the obligation of leadership**



SQUARE D SELLS MORE PANELBOARDS THAN ANY OTHER MANUFACTURER

• There are three reasons for Square D's predominance in the panelboard field...

First, the line is complete. Whether the requirement calls for AC or DC or both; lighting or power distribution or both; fusible or circuit breaker; plug-in or bolted construction; Square D has the right panelboard for practically any given job.

Even more important is the quality which

is built into every Square D panelboard—difficult to define but a very important combination of many details.

Availability is always an important factor—and here Square D rates especially high. Regional manufacturing and assembly facilities for "specials," combined with a national network of stocking distributors for standard panels, provide exceptional delivery and service.

**write for Bulletin SD-126. It tells the quality story in detail
Square D Company, Mercer Road, Lexington, Kentucky**

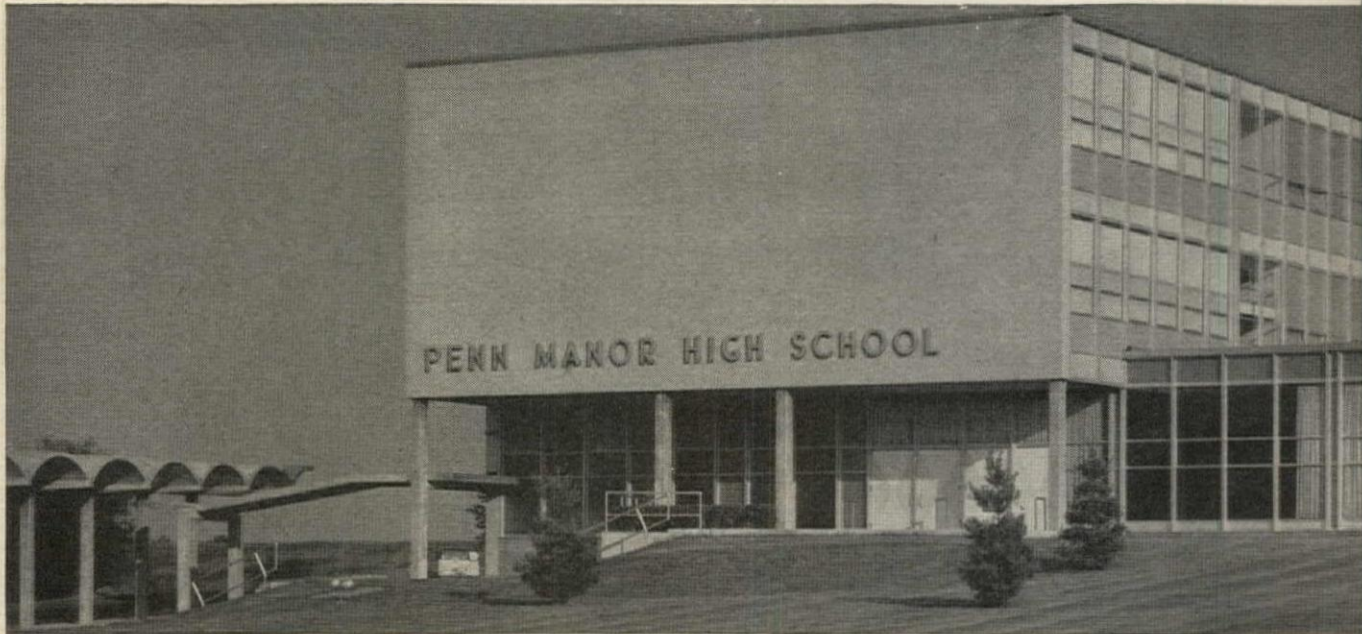


SQUARE D COMPANY

wherever electricity is distributed and controlled

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**LIGHT FOR CLASSROOMS
WAS LIGHT ON THE BUDGET
WITH LUPTON CURTAIN WALL
PENN MANOR HIGH SCHOOL
WAS BUILT FOR A MODERATE
\$17.20 PER SQUARE FOOT!**



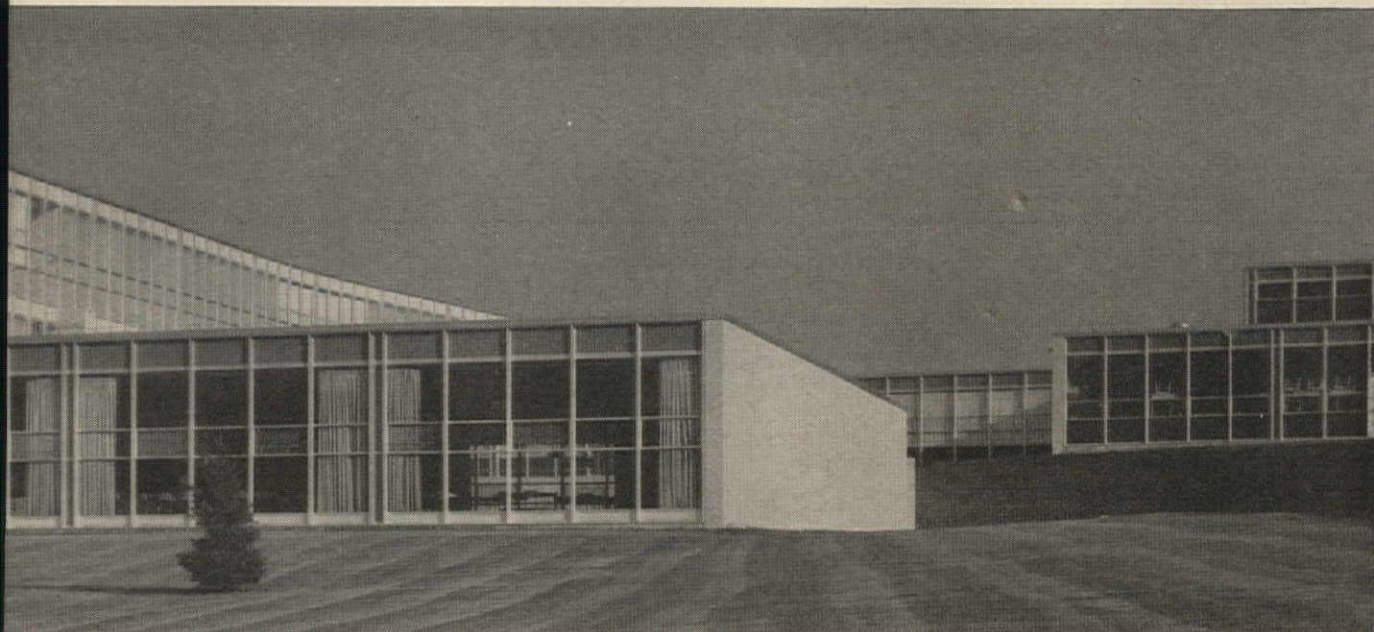
This new high school provides another example of how LUPTON aluminum curtain wall couples practicality with strikingly modern design. Cost stayed well within bounds for a structure that rises handsomely on trim school grounds . . . that admits maximum daylight into airy, pleasant classrooms.

This is a LUPTON curtain wall school—one of hundreds throughout the country to utilize this up-to-date, budget-pleasing construction system. In the initial planning stages, many school administrators and architects have found it helpful to contact qualified building materials manufacturers. These individuals, like the LUPTON man, for example, can be of valuable assistance with regard to specific product applications.

Also, keep these dollars-and-cents factors in mind: LUPTON systems are consistently economical, all parts accurately prefabricated and delivered on schedule for fast, simplified assembly. Lightweight aluminum construction lowers foundation and framework costs. You get more usable floor space . . . there's virtually no outlay for maintenance.

Equally advantageous is LUPTON's dependability. You can rely on us to meet your architect's specifications. You can pinpoint responsibility, because LUPTON handles the entire job, including installation.

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



Penn Manor High School, Millersville, Pa. Architects : Howell Lewis Shay, Philadelphia, Pa. Contractor: John H. Wickersham, Lancaster, Pa. Photograph by Cortlandt V. D. Hubbard.

LUPTON

MICHAEL FLYNN MANUFACTURING CO.

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

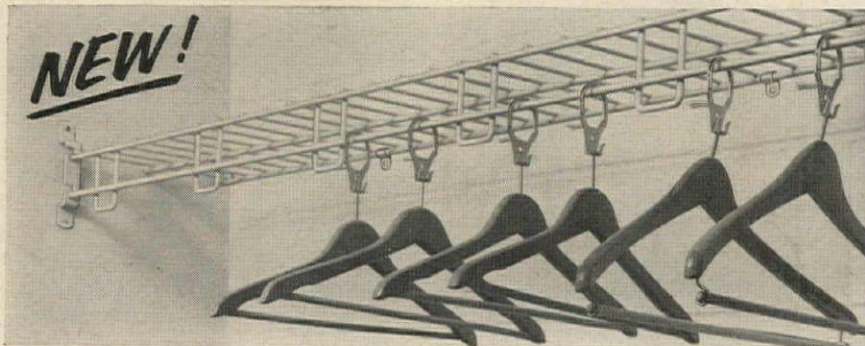
For more data, circle 115 on Inquiry Card

Seminary Planned
By Archdiocese
Of New York

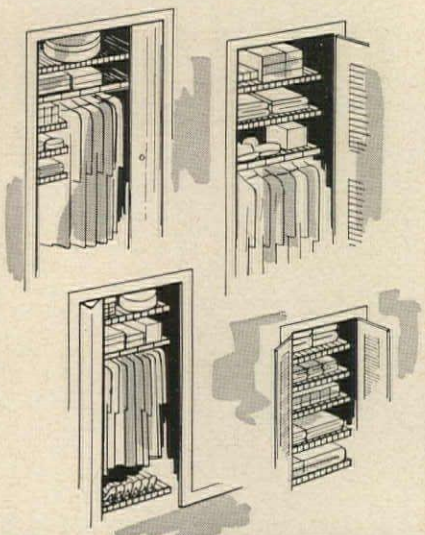


Solve your wardrobe and linen storage problems with...

PEMCO Steel Rod Raks



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St. Patrick's College Seminary, designed by Charles Luckman Associates for the Catholic Archdiocese of New York, is scheduled to open in 1965 at Cornwall, New York.

The plan for the college is for a circular building surrounding a chapel. The outer ring will contain student dormitories, faculty suites, dining facilities, classrooms and library.

The chapel, which will also be circular, will seat 306, with additional space for a choir of 30. An oculus in the spire will focus light on the centrally located altar.

The outer building and the chapel will be connected by four "spokes." Three of these will house dining hall, auditorium and the library. The fourth is the entrance terrace.

Circulation between the various parts of the building can be either outside or internal. In fair weather, visitors can reach any part of the building along the exposed "plaza" level. The lower level provides protected access to all areas.

Spaces between the spokes will be landscaped. Three of the courts will be for the use of students; the fourth will be reserved for the faculty.

The structure of the chapel roof will be folded plate concrete. Its exterior wall will be stained glass.

The exterior wall of the outer building will be a modern adaptation of Gothic, executed in cast stone.

Construction will cost an estimated \$12 million.

The archdiocese also plans to build a small convent on the site. The convent will have its own chapel, but will be connected to the seminary by covered passages.

Charles W. Stanton, of Charles Luckman Associates, is the partner-in-charge; Ronald M. Getty is the project architect, and Salvatore Coco is project designer.

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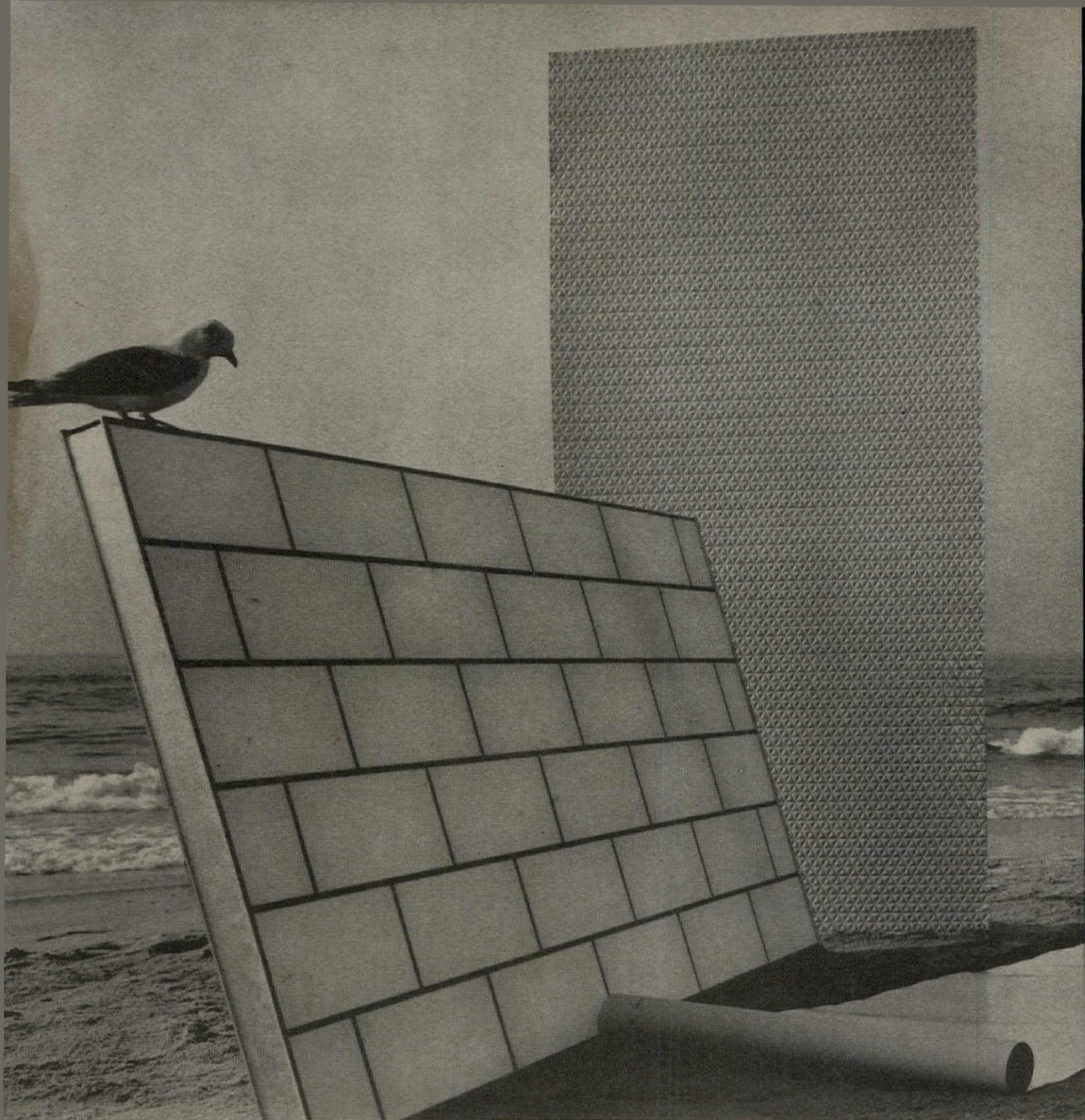
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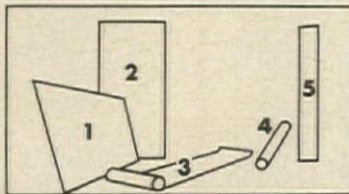
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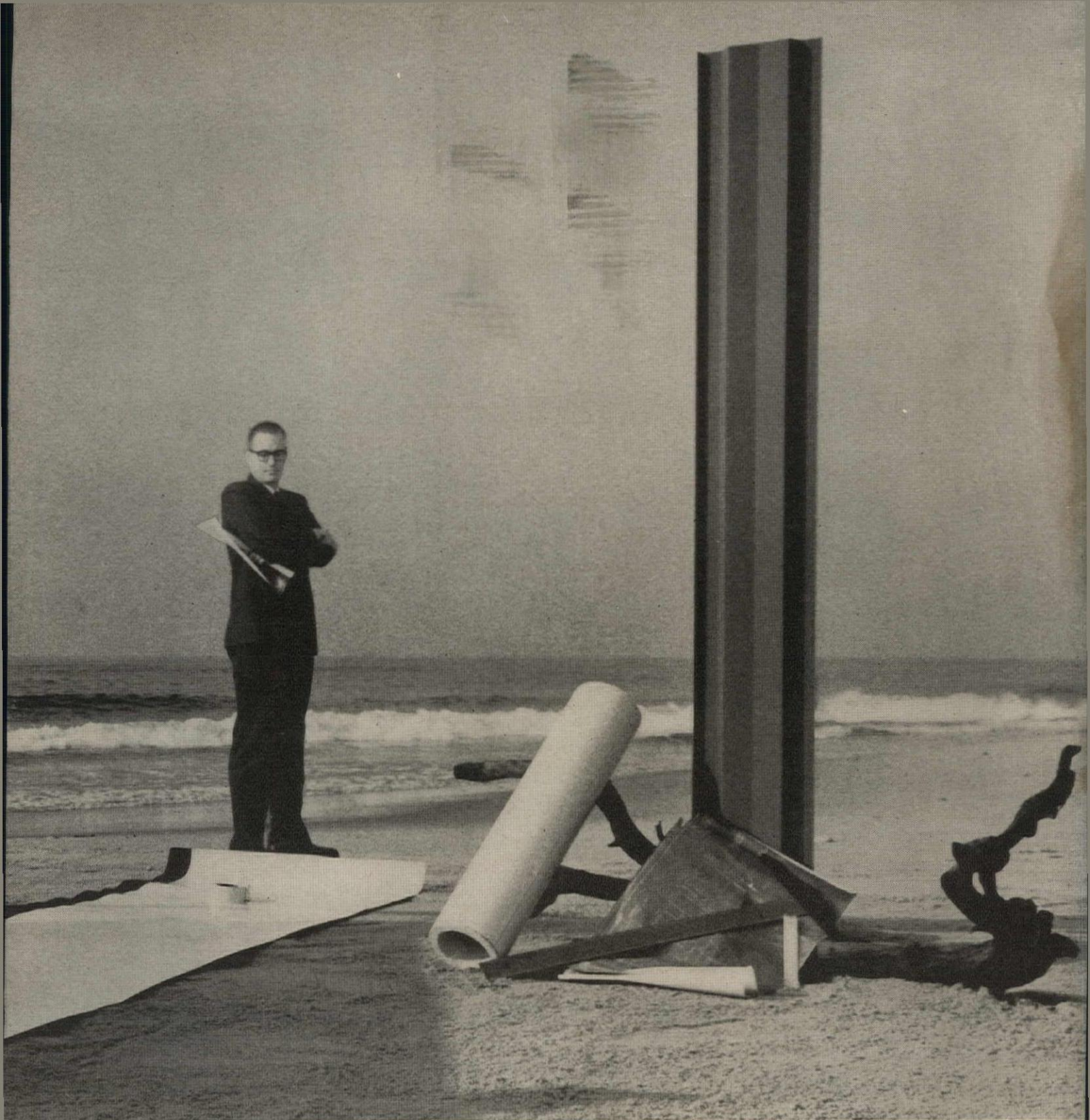
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TEDLAR seals joints. Shown here: rigid pipe insulation.

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240 ARCHITECTURAL RECORD January 1964

TAC Designs New Geology Labs For Harvard

Harvard's new David and Arnold Hoffman Laboratory of Experimental Geology is a considerable step up for the school's geologists, who have been doing research until recently in a wood ROTC building, in a World War I garage, and in the basement of the University Library.

The new building reflects the changing nature and scope of geological research. Once a study in which most research was done in the field, geology now needs elaborate equipment for investigation into geophysics and geochemistry; even field workers need space for analysis and



for construction of survey instruments.

In addition, graduates doing work at Harvard in geology have increased from one a year before 1957 to 35 at present.

The new building provides space for offices, workshops and laboratories for the school's senior geologists and about 60 graduate students and post-doctoral fellows. It is connected to the Geological Museum, which contains classrooms, the library, and a large collection of rocks and minerals.

Designers of the laboratory are The Architects Collaborative. The structure is double beams and columns of reinforced concrete. The exterior panels are brick. Interior planning was designed for flexibility, and both partitions and utility arteries can be changed to accommodate changes in offices and laboratories.

The \$1-million building was constructed with funds donated on a matching basis by the National Science Foundation and with gifts from the Hoffman brothers and others.

The general contractor was Wexler Construction Company.

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Original	30-40	350-850%	34-38	200-250
70 hrs./212°F	40-50	310-560%	54-75	350-375
70 hrs./250°F	50-60	140-220%	41-78	325-375
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