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THIS MONTH IN P/A

Progressive Architecture, September 1965

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COVER

On temporary display in the Seagram Building Plaza, this striking Olmec head sits in ageless splendor among his aluminum-and-glass neighbors on Park Avenue (p. 50). Photo: Maude Dorr.

VIEWS

Our readers' comments on the architectural scene.

45 NEWS REPORT

Our news staff reports on the latest developments in significant new projects and personalities in the architectural world; plus round-ups of what is new in the area of Products and Manufacturers' Data.

123 TITLE PAGE

This month's quote is taken from an editorial that appeared in *The New York Times*, August 12, 1965.

124 FRONTISPIECE

Detail of building by Rudolf Steiner shows the imaginative detailing and the plastic, sculptural quality that characterizes his work (p. 146). Photo: Clemens Kalisher.

125 EDITORIAL

P/A's Editor stresses that the architect's role in creating "aesthetically pleasing" design is meaningful only to the extent that it is expressive of a way of life, of commonly shared values.

EDITORIAL FEATURES

126 **SHRINE OF THE BOOK:** An appraisal of the controversial museum that houses the Dead Sea Scrolls, including an interview with Kiesler in which he speaks feelingly about the Shrine and his design philosophy in general. FREDERICK J. KIESLER AND ARMAND BARTOS, ARCHITECTS.

134 **EXCURSION RESTAURANT:** A distinctively designed Swiss restaurant that offers visitors a point of arrival on summer outings. FOERDERER & ZWIMPFER, ARCHITECTS.

140 **THE HILLEL SCHOOL:** A building created as a "monument to learning" whose religious nature is quietly reflected in the building design and the surrounding environment. RAYMOND & RADO, ARCHITECTS.

146 **STEINER'S GOETHEANUM AT DORNACH:** De-

signed 40 years ago by Rudolf Steiner, an amateur architect, this massive structure of poured concrete is an offbeat and fascinating example of architectural expressionism.

- 154 **BRONX BRIGADOON:** Sited on the waterfront in New York, and once almost condemned as a slum, this self-contained little "village" is an object lesson to city planners on ways of injecting human scale and a countrified atmosphere into an urban setting.

INTERIOR DESIGN DATA

- 160 **LIBRARY RENOVATION FOR MARITIME CADETS:** A good example of straightforward thinking in the "design" of a building to be preserved and restored.

MATERIALS AND METHODS

- 166 **TWO POST-TENSIONED HIGH-RISERS COMPARED:** Structural analysis of two buildings designed by Welton Becket & Associates that take maximum advantage of precasting and are the first segmented, post-tensioned concrete high-rise buildings in the U.S.

- 172 **ARC-WELDED RECTANGULAR TUBING:** Discussion of roof-framing system consisting of arc-welded rectangular steel tubes.

- 174 **SELECTED DETAIL:** Balcony, Warren Weaver Hall, New York University, New York City, N.Y.

PAPERBACK PROSPECTUS

A special survey of architectural paperbacks currently on the market.

P/A OBSERVER

- 180 **ACROPOLIS IN JERUSALEM:** Observations on the New Israeli Museum—by its creators and an American architect and an American writer.
- 188 **INSURING PLANNING DIVERSITY:** The Dudley Heights proposal for Albany, N.Y., marks a healthy development in urban renewal planning.
- 190 **INVITING VIRGIN:** A new, 50-unit resort on one of the Virgin Islands offers an ingratiating architecture for low-key vacationing.

MECHANICAL ENGINEERING CRITIQUE

William J. McGuinness discusses advantages of using a suspended flush ceiling, as compared to an exposed ceiling, in a one-story industrial building.

SPECIFICATIONS CLINIC

Harold J. Rosen examines methods of preventing the etching and staining of tinted window glass during the construction process.

IT'S THE LAW

Bernard Tomson and Norman Coplan discuss a recent case in which a contractor was prematurely discharged for default in performance of the construction contract.

BOOK REVIEWS

A cross-section of significant new books.

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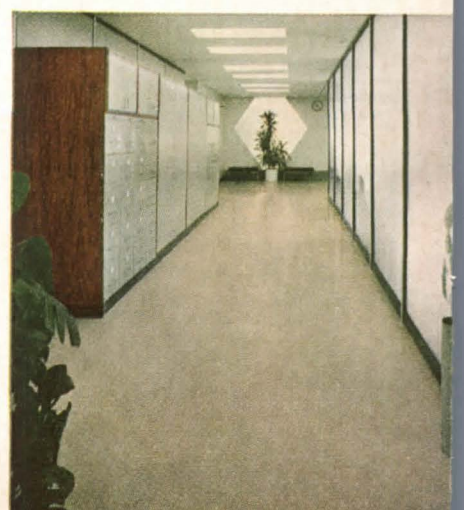


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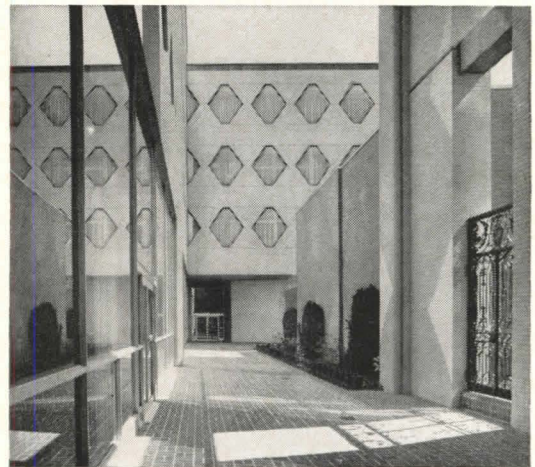
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H. H. Richardson and the Image of the Architect

Dear Editor: Bravo and hurrah for your July Editorial.

This neurotic concern over "images" is an example of the destructive self-attention that pervades our whole society and effectively interferes with our attending to our work, whether we be architects or doctors or businessmen. No wonder triviality is our hallmark.

E. V. LOFSTROM
Minneapolis, Minn.

Dear Editor: Congratulations on your JULY 1965 P/A cover.

PIERCE KING
Muscatine, Iowa

Dear Editor: In my opinion, the relationship that the July cover of H. H. Richardson bears to the content of an architectural magazine is almost entirely obscure. Many of your covers in the past have been able to stand by themselves as architectural statements, even when they were not always pictures of buildings. Pictures of materials or site elements are still valid, and very often clever too. February and July 1965 have been low points in P/A covers.

R. J. WISNIEWSKI
Windsor, Conn.

Dear Editor: Your cover astonishes me. It intrigues and compels me. It even excites me. So much that I must share these responses with you.

The July cover is probably the most provocative and memorable of all your recent covers because it is entirely unexpected, and a departure from the graphic presentation of architecture.

I do hope you will continue to diversify, to imagine, and to dare. I dig your book and your effortless, rather sage-seeming Editorials.

JAN ORTH
Charlotte, N. C.

Dear Editor: I was very pleased to see the excellent portrait of Henry Hobson Richardson reproduced on the cover of the July issue. The photograph was apparently a favorite of Richardson's. He had it rather elegantly framed on his library table.

I was disappointed, however, that you

did not give credit to the photographer. The portrait was made by George Collins Cox, who had his studio at 825 Broadway, New York City, from 1883 to 1897. Cox was born at Princeton, N.J., in 1851 and had removed his studio to South Orange, N.J., when he died in 1903. He was an exceptional portrait photographer. His sitters included the leading literary and artistic personalities of his day: Whitman, Duse, Booth, Modjeska, Joseph Jefferson, Peter Cooper, Edward Everett Hale, Richard Watson and Jeannette Gilder, William Merritt Chase, Walter Shirlaw, Augustus Saint-Gaudens, George Gray Barnard, Frank Stockton, William Dean Howells, etc. Among the architects he portrayed were Stanford White, Charles Platt, and George L. Heins.

I am presently engaged in a study of Cox's life and work.

MARCHAL E. LANDGREN
New York, N.Y.

Dear Editor: I wish to congratulate you on your expression of concern as to the image of the architect in your recent Editorial. However, are you really not dealing in absurdities when you indirectly allude to a comparison between the recent efforts of the pitifully weak AIA and the immensely more powerful AMA? Although one may criticize the AMA, there is at least one function this organization ably performs: It spares no effort in lobbying for its own self-protection. Is this not a major function of a professional organization in today's competitive society, and one directly related to image building?

The NAHB *Journal of Homebuilding* goadingly reported in its June issue (p. 89) the signing of a law in Florida that eliminates the compulsory use of architectural services on all one and two-family homes. Where was the AIA, P/A, the architects—busy tying their tassels?

JEROLD L. AXELROD
Brooklyn, N.Y.

Dear Editor: Your Editorial and July cover have given me considerable joy. Thanks for stating a great thought so well.

Architecture has always been the mother, not the business manager or rich uncle, of the arts. What mother ever

conceived or gave birth in a button-down shirt at a press conference?

The great man's work will always transcend his title. Only a small man with nothing to say need concerns himself with his personal image.

May the respectable spectacles be turned from the mirror toward life and more abundantly thereof.

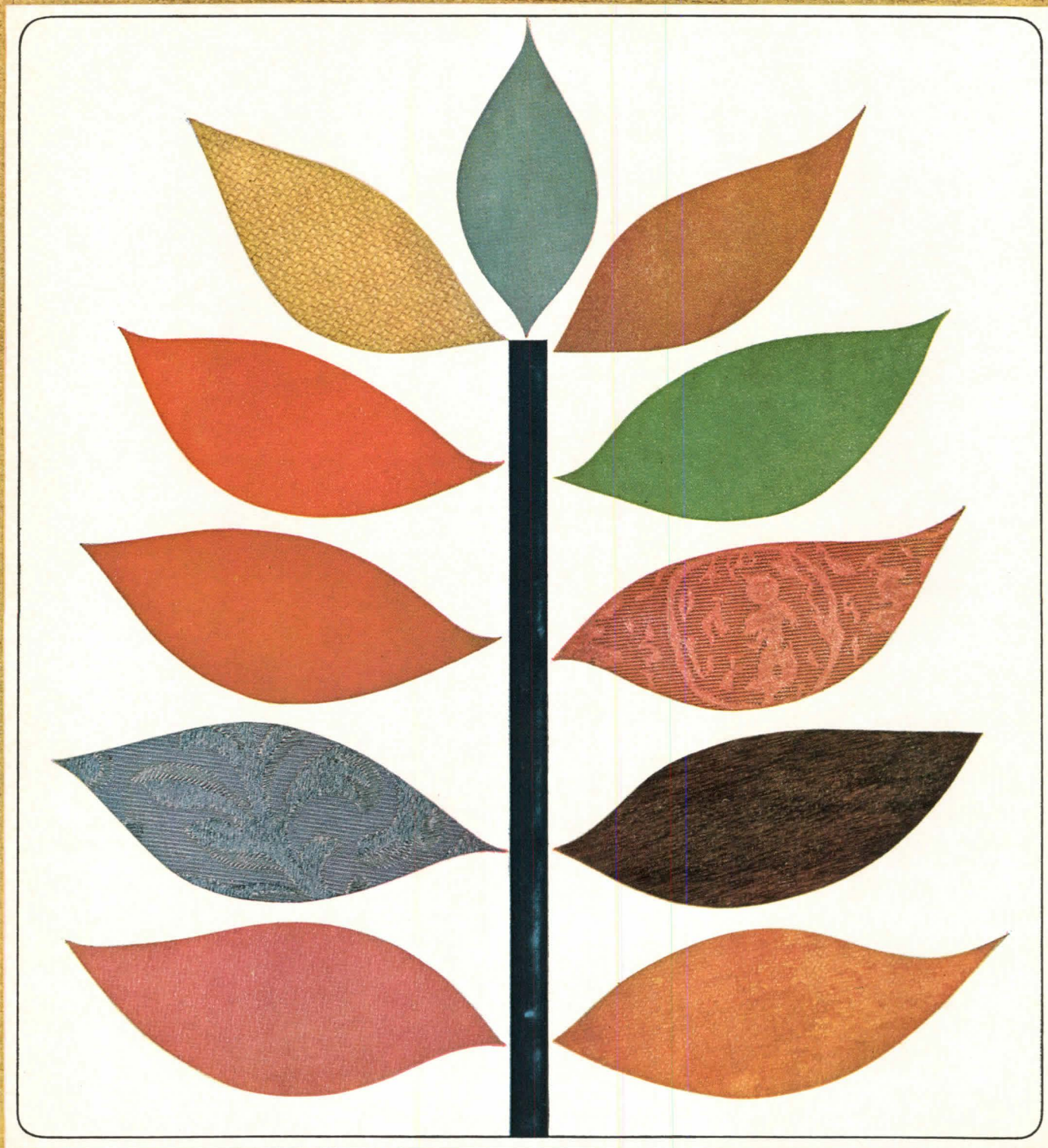
Viva Richardson—the architect and man. Viva joy. Viva P/A!

LARRY A. BERNSTEIN
Carmel Valley, Calif.

Dear Editor: The image of H. H. Richardson, and your Editorial, prompt me to express the following thoughts.

I admire the honesty of your opinion about Philip Johnson. But why, if you find him making "wild statements for the sake of shocking people," do you quote him like the Delphic Oracle itself, in your issue on "The Major Space." Perhaps this involves your own image, and what appears to be a wish on the part of the press to be clever on the surface, however many contradictions lie underneath. But isn't this contemptuous to the reader, in the same way that Philip Johnson's pose is contemptuous to everyone who might want to know, in all seriousness, what architecture is all about? One of his most arrogant recent statements, in fact, was in your own magazine—in the historical section of the report on The Major Space, where he says that he'd like to live where everyone gets together to build something grand, even a pyramid. Is it perhaps possible that he imagines those Egyptians eagerly getting together in free and democratic fashion, with duly elected officials, etc., etc.? There is a hint that you aren't quite that glib, with your suggestion that despotism may have been behind many of the major spaces. I'd like to give you the benefit of the doubt, even though you don't make the connection explicit. But with the Johnsons of this world, one can't be too generous. Next they'll be telling us about the pride in their handiwork felt by people in former times—for instance, the Egyptian slave and his sense of fulfillment as he stood back to survey the fruit of his labors. If any

Continued on page 8



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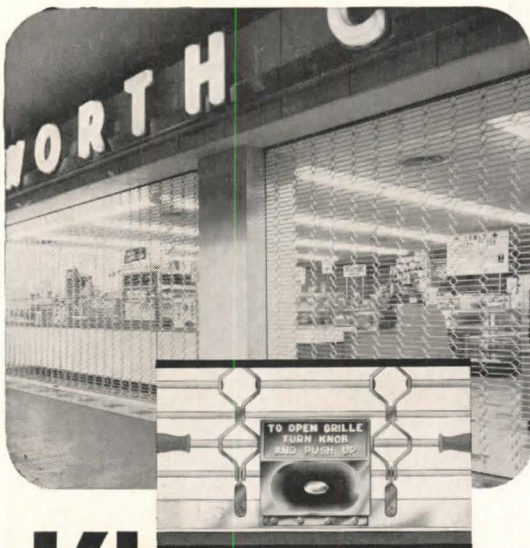
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Continued from page 6

architect interviewed by P/A should ever say this, please spare us from seeing it in print. It would be rather like seeing a technical explanation of the mechanical equipment of a Nazi gas-chamber, or a measured drawing of the Black Hole of Calcutta. Given the architectural criticism of the present, though, and its lack of involvement in human considerations, this is perhaps not beyond the realm of possibility.

In architectural criticism today, there is an unrestrained emphasis on form to the exclusion of almost all other realities (with the possible exception of technique). From the issue on The Major Space, it would seem that the aesthetic result matters more (to your informants and your staff) than the social means by which that form is obtained, or than any human purpose which the form is intended to serve.

Like Philip Johnson, I, too, am impressed by the pyramids, Chartres, and Penn Station. But they are simply not relevant today, much as it may pain people to admit it. Our world is simply not the world of those times. There are millions of people today who are poor, exploited, and dispossessed, and who are demanding a better time of it for themselves. It is arrogant and foolish to think that Chartres or Penn Station, or a modern Chartres or Penn Station, will in any way compensate people for their deprivation, or give answer to their demands.

There are many truly relevant problems today that could concern the architect, if he would choose to be concerned. But it is too easy for an architect to stay within the image that the AIA (and the architectural journals and the popular press) carves out for him. The education that an architect receives is also preparing the student for "a lifetime of looking the other way." (This was a statement made recently about nonarchitectural education at one of this city's largest institutions. It seems, to me, very apt.)

When are architects going to stop "looking the other way"? A few of the problems they are not facing:

(1) Housing for the anonymous poor. How many architects devote any energy whatsoever to interpreting physical form for just plain people? Everything in our system makes an architect prefer lavish budgets and interesting ("important") clients. Architects, for all their talk about serving humanity, really mean only that part of humanity that can pay

Continued on page 10

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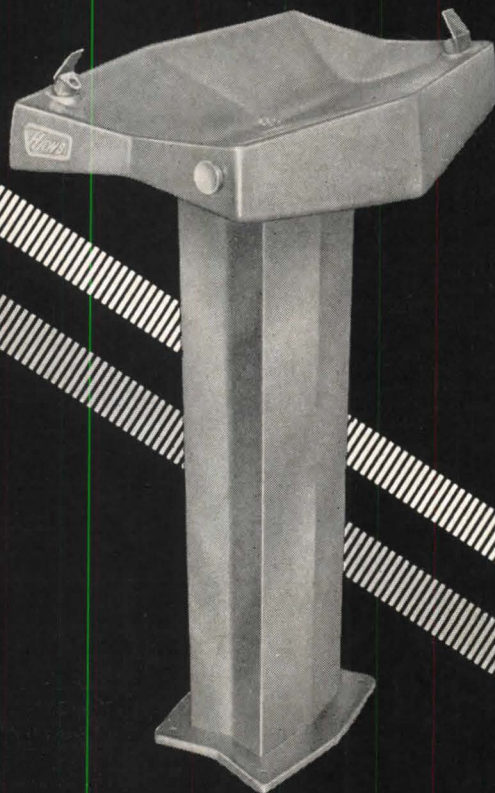


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Continued from page 8

6 per cent, or 10 per cent or 15 per cent, or whatever the going rate is. Medicare is about to be instituted, in the face of massive AMA resistance, and there is already legal aid for those who cannot otherwise afford it. When will architectural services be available to any and all?

(2) Rationalization of the building industry, toward a fuller utilization of the methods of modern industry. Why is standardization so feared? Because the architect is afraid he'll become obsolete? If this is his main worry, then he is already obsolete.

(3) Nonarchitecture, and what goes on apart from "buildings." In our system, it is difficult to become involved in design until it gets within four property lines or within four walls. This unfortunately leaves out many of the realities—realities that are not shown in a magazine like P/A.

(4) Buildings by nonarchitects. How many architects know how to work with the real-estate interests and the builders who are putting up the vast bulk of buildings today? Why be so scornful of the package dealer? Is the "package dealer" any more interested in money, or any less enlightened than the average architect (or the average magazine)? If the architect truly has something to offer, why can't he put himself in a position to offer it?

(5) Space, but Minor Space, the place for Everyman in his most Everyday requirements. This is more important today, by far, than the Major Space that you wrote so many words about in the June issue. Does it matter that there is a Taj Mahal, when millions of Indians may have no place to live, and die, but the streets?

These are tough problems, and it is easier to talk about them than to do anything. But most architects, I suspect, aren't even talking—or magazines. The image most architects have of themselves, I would guess, is a combination of gentleman-businessman and gentleman-artist. P/A's view is simply closer to one end of this than to the other. But I would suggest that this whole image is neither relevant nor reasonable, and not even respectable, given the tasks at hand.

ELMIRA GALE
New York, N.Y.

The Pentagon: A Good Place To Work In

Dear Editor: As a fond former resident of the nation's capital, I thoroughly en-

Continued on page 12

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Continued from page 10

joyed your Vade Mecum to Washington in the JUNE 1965 P/A. Forrest Wilson's sketches were great, and the descriptive paragraphs for each point of interest were right on the nose.

But as a nonarchitect (not in the J. George Stewart tradition, I fervently pray), I always wonder about criticisms about the Pentagon Building. Regardless of what the building is or is not architecturally, it is a good building in which to work. No office is more than a few minutes from any other. It is almost completely self-sustaining, so that the

30,000-plus employees do not need to travel across the river to the District to shop. Because of its concentric rings, its top security spaces may be blocked off without causing any particular inconvenience to others traveling the corridors.

As a massive bulk on the northern Virginia skyline, the Pentagon's five floors actually are quite unobtrusive, something that can't be said for the multitudinous high-rise apartments that have sprung up on the surrounding hills.

Lastly, and certainly not least, that patch of grass that Professor Forrest Wilson shows as something from the

Federal Prisons design Handbook is actually the very best, top-quality girl-watching spot in the entire city.

I'm sure the delegates to the AIA convention enjoyed the capital just a little more because of your superb guide.

JAMES W. PLUMB
American Plywood Assoc.
Tacoma, Washington

Most Provocative Issue

Dear Editor: The JUNE 1965 P/A is the most provocative issue of an architectural magazine I have ever read. It should be required pondering for all architects—and students.

G. E. KIDDER SMITH
New York, N.Y.

Dear Editor: Please accept my congratulations on the excellent documentation of urban spaces provided by the JUNE 1965 P/A.

ALEXANDER E. RATTRAY
Director of Project Planning and Design
Worcester Redevelopment Authority
Worcester, Mass.

The Hartford Pavilion

Dear Editor: I believe that Central Park should stand inviolate as one of the few monuments in the heart of New York to foresight and planning. The southeast corner of the park, where the Huntington Hartford Pavilion is to be situated, is certainly one of the most restful and charming spots in the city. I am opposed to this attempt to alter its basic nature (p. 51, JUNE 1965 P/A).

As you may have read in the newspapers, I recently made a helicopter tour of the city with Philip Johnson and Robert Zion. The trip was both distressing and exciting for what it revealed about the city's present condition and its potential for the future.

JOHN V. LINDSAY
Member of Congress
New York, N.Y.

Dear Editor: Your nicely handled remarks and photos about Frederick Law Olmsted, Jr., in the June issue are refreshing; your lengthy castigation of the Hartford Pavilion and its potential damage to the forthright principles of Frederick Law Olmsted, Sr.'s, Central Park concept is exhilarating; and your spelling of the Olmsted name properly in both cases is astonishing. Bravo, P/A!

One name is omitted from your roster: John Charles Olmsted, Fred's half-brother and Senior's stepson. Poor John, the forgotten member of a bright team, is constantly brushed aside as non-existent, when in actual fact he contributed mightily to the growth of the profession and to the extension of the firm's serv-

Continued on page 16

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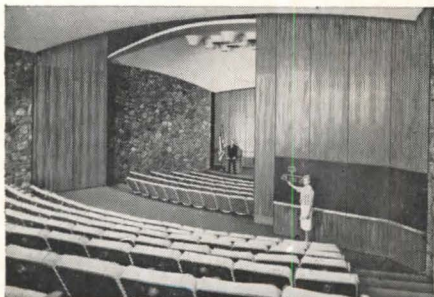


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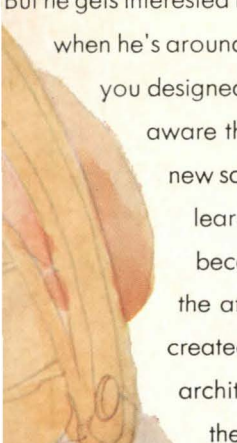
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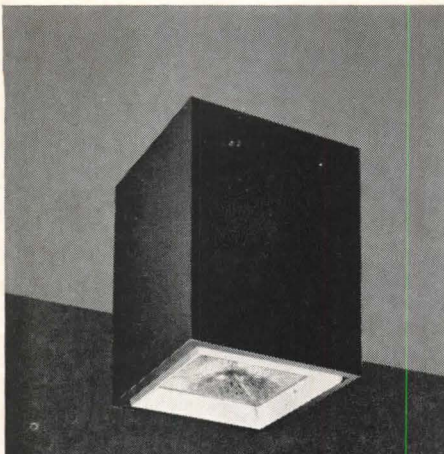
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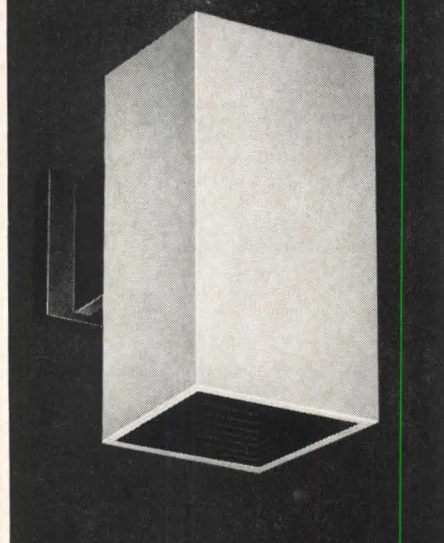
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Continued from page 12

ices until his death in 1920. We think he could use a little recognition.

As with any member of a team, John's actual contribution in any specific category of landscape design would be cumbersome to pinpoint; yet he was active and engrossed throughout his long association. It may be that there had to be a gap of public appreciation between father and son so that both could fully be seen in proper perspective. John was there all the while, though.

JOSEPH HUDAK

Vice-President, Olmsted Associates, Inc.
Brookline, Mass.

Dear Editor: I read with interest your article on the Hartford Pavilion. It was a dreadful distortion of the design by Stone, but we have complete freedom of expression guaranteed by the Constitution—so there is not much I can do about it. I could have someone design a rendering of the proposed Hartford Pavilion that would give you a feeling of utter beauty, surrounded by twice as many trees as exist there now. I am sure that when the structure is completed, it will be admired by our fellow citizens and visitors to this city alike.

NEWBOLD MORRIS

Commissioner, Department of Parks
City of New York

Computers and Hospital Design

Dear Editor: We wish to assure your readers, as well as John Eberhard, that we do *not* "tend to assume that we can solve any problem . . . by a single brilliant effort" and that we do *not* "tend to design buildings that way" (p. 14, JUNE 1965 P/A). On the contrary, we follow Edison's example of "10 per cent inspiration and 90 per cent perspiration." We have, in fact, been doing this for over 43 years, and have come to some tentative conclusions and principles about hospital planning based on hard study, practice, and observation, but have not used the computer to prove our hypotheses. We have no objections to the use of computers, but have so far found them not to be a prime necessity. We should guard against the assumption that it is all gold which glitters with computers.

We agree with Eberhard that we are in need of much serious disciplined research, but, as explained in our book review, we do not think Messrs. Souder and Clark's effort, using computers though it does, was particularly fruitful.

We hope that many other efforts will follow, and perhaps through the exercise of patience and careful preparation.

Continued on page 20

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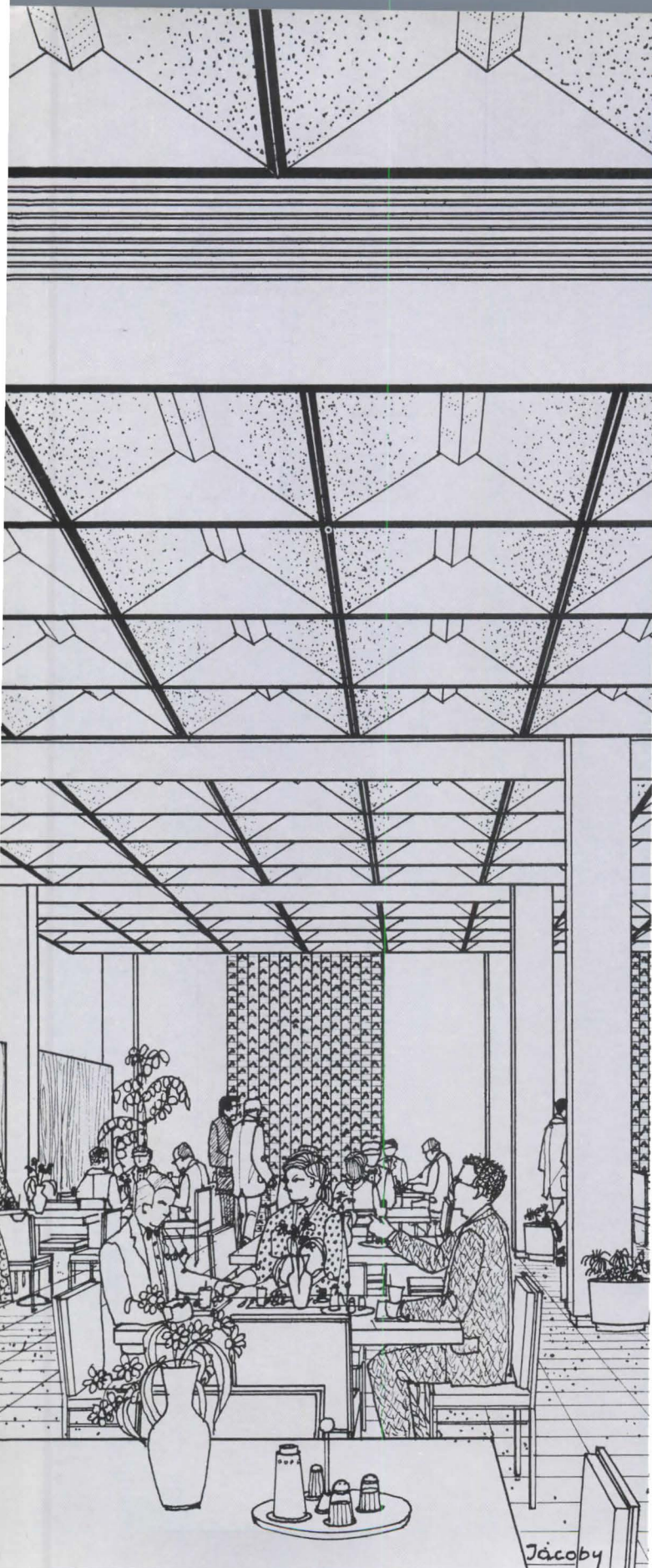
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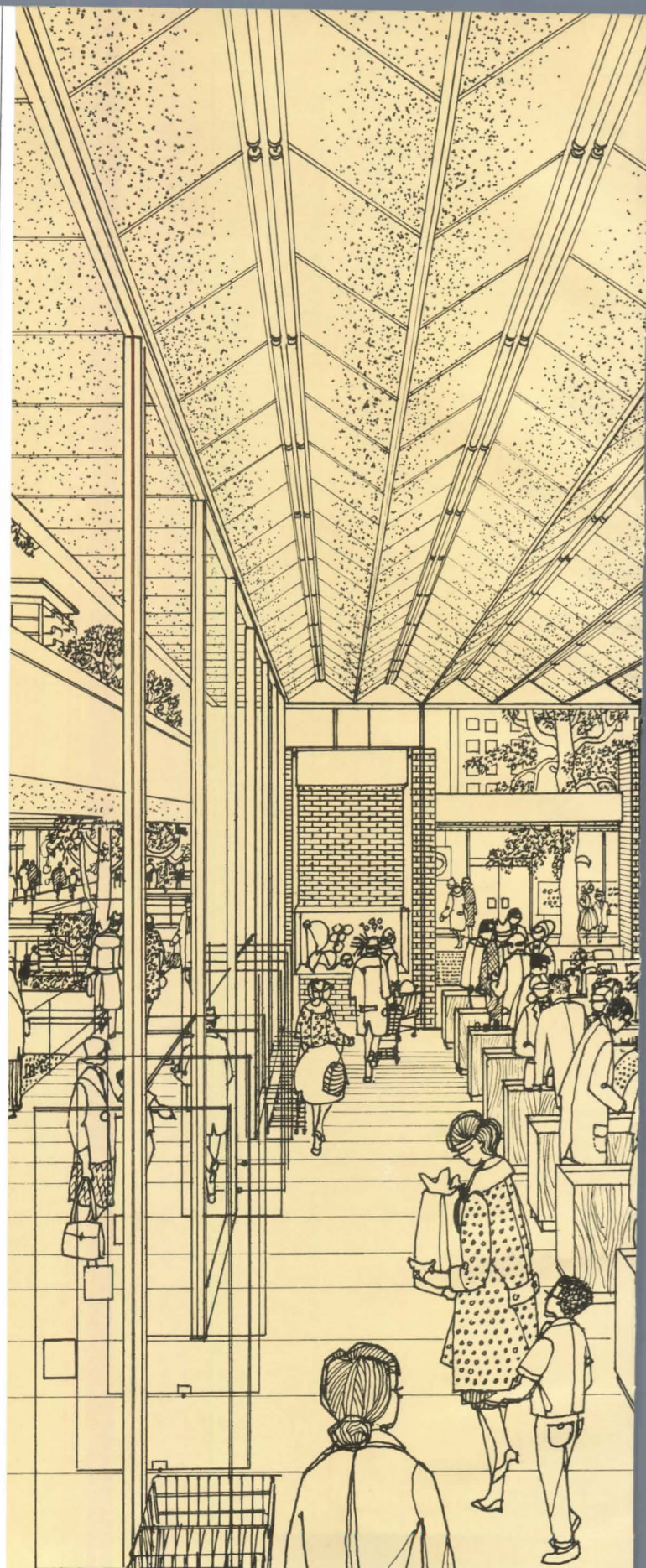
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Continued from page 16

based on insight, experience, and even old-fashioned intuition, new truths pertinent to hospital planning will be uncovered.

ISADORE and ZACHARY ROSENFELD
New York, N.Y.

Commending CBS

Dear Editor: I have been very favorably impressed with this handsome structure [the New CBS Building: p. 187, JULY 1965 P/A] and feel that it is a distinct asset to the midtown area.

CBS is to be commended for encouraging the design of a building, which is

both elegant and modern, and, at the same time, original enough to avoid stereotyped "modernity."

DAVID ROCKEFELLER
President, The Chase Manhattan Bank
New York, N.Y.

Diamond Head: The Current Problem

Dear Editor: It is encouraging to find an expression of interest in our local problems from such an important professional publication as P/A (p. 59, JULY 1965 P/A).

A brief survey of the current problem is as follows:

On May 6, the City Planning Commission met, and, in a highly controversial manner, voted to recommend a rezoning of 14 lots on the beach fronting Diamond Head, and also recommended rezoning approval in two other areas. All three actions were contrary to the wishes of most local citizen's groups that have an interest in orderly growth and planning, such as the AIA, Chamber of Commerce, etc. These groups had all voiced their opposition at previous Planning Commission public hearings.

Following this, a great deal of public reaction occurred, almost all of it highly critical of the Planning Commission. Between May 6 and May 26, a group formed of representatives of 18 community and civic organizations was organized by me, including the AIA, AIP, ASLA, League of Women Voters, Outdoor Circle, and others. These groups met with the mayor and presented their views to him. The statement, a vote of "no confidence" in the Planning Commission, carried the endorsement of the AIA, ASLA, and AIP, among others.

The result of all this time-consuming activity was a complete whitewash by the mayor, who has a difficult time understanding what planning, architecture, and ethics in government are all about.

It is expected that the City Council will approve the Planning Commission's recommendations, in order to make it clear to the architects, planners, and others just who runs things at City Hall.

This is expected to set off a chain reaction of rezoning in the Diamond Head areas. There is already a new application for an amendment to alter the General Plan in this area, which would rezone a long strip of waterfront at the base of Diamond Head from residential to apartment-hotel use. The developers' petition to the planning director carries several photos showing 20-story buildings in the area, which is now "cluttered" with coconut trees, banyans, monkeypods, and a dozen stately old homes.

They argue that aesthetics is a matter of opinion and that the proposed buildings planned will enhance and frame the view of Diamond Head. One of the developers, Mr. Chinn Ho, recently enhanced a good portion of the "Waikiki View" with a building designed for him by John Graham & Company, Architects and Engineers. It is the world's largest three-sided apartment building.

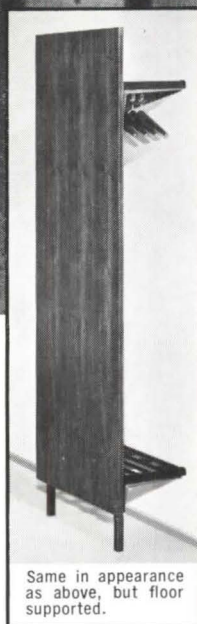
At this time, it appears that a lawsuit, recall of the mayor, or perhaps intervention by the state government might be possible courses of action.

JOHN TATOM
Honolulu, Hawaii



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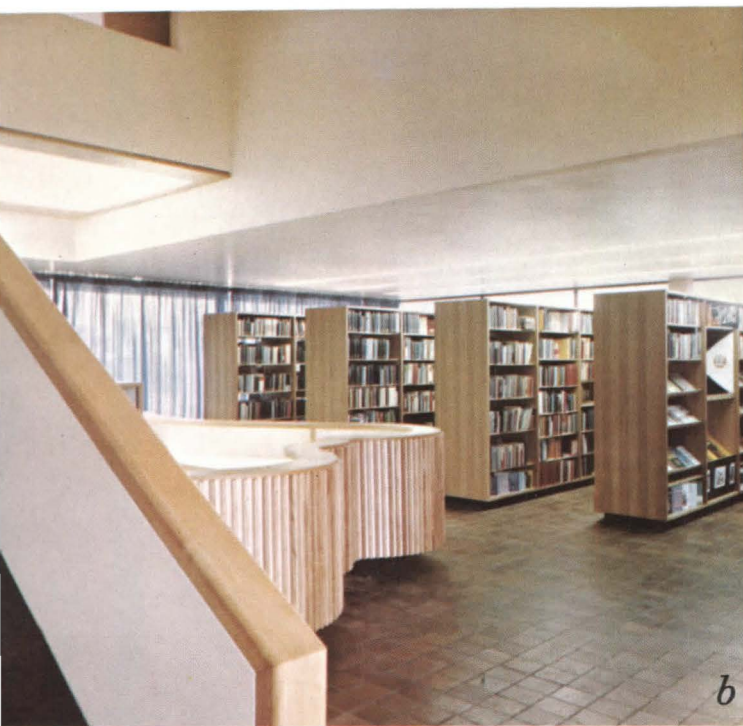
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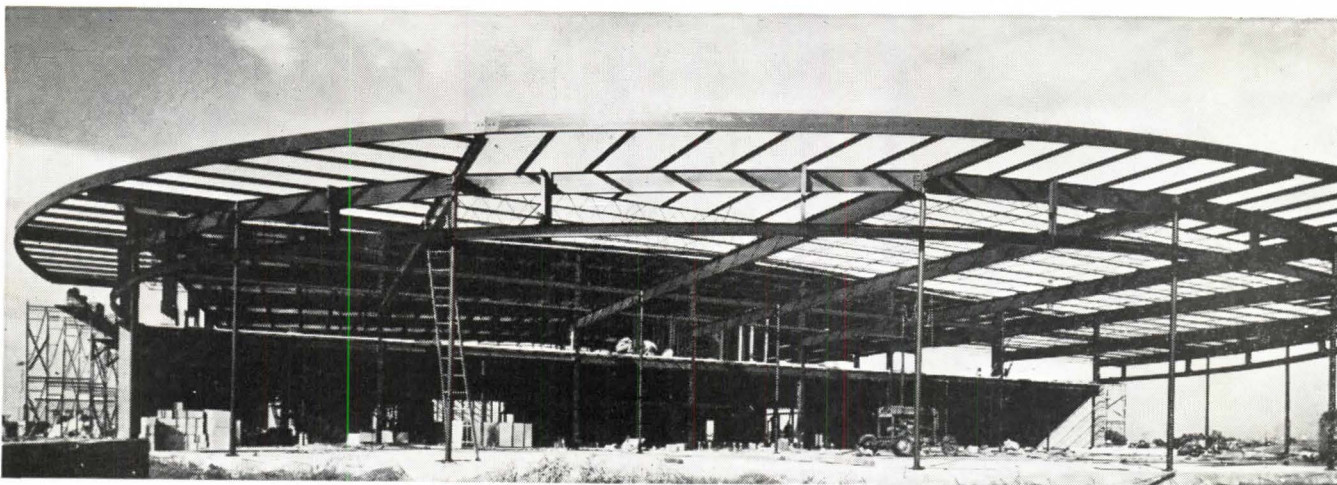
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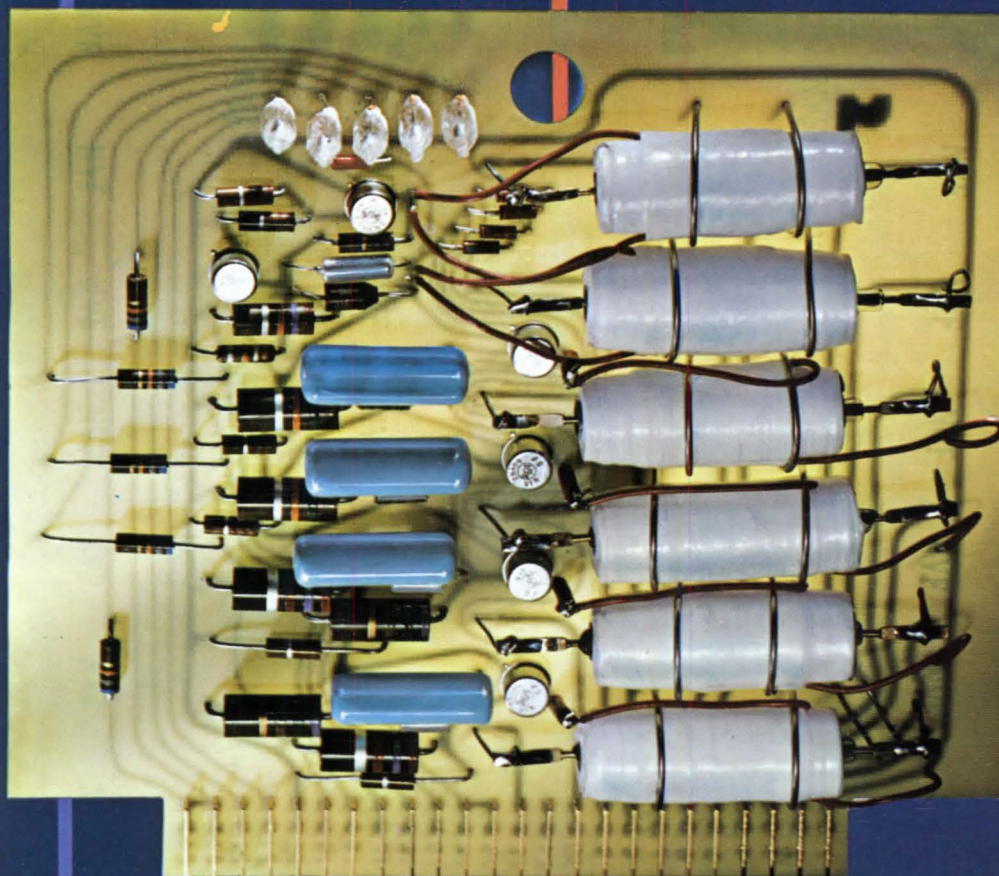
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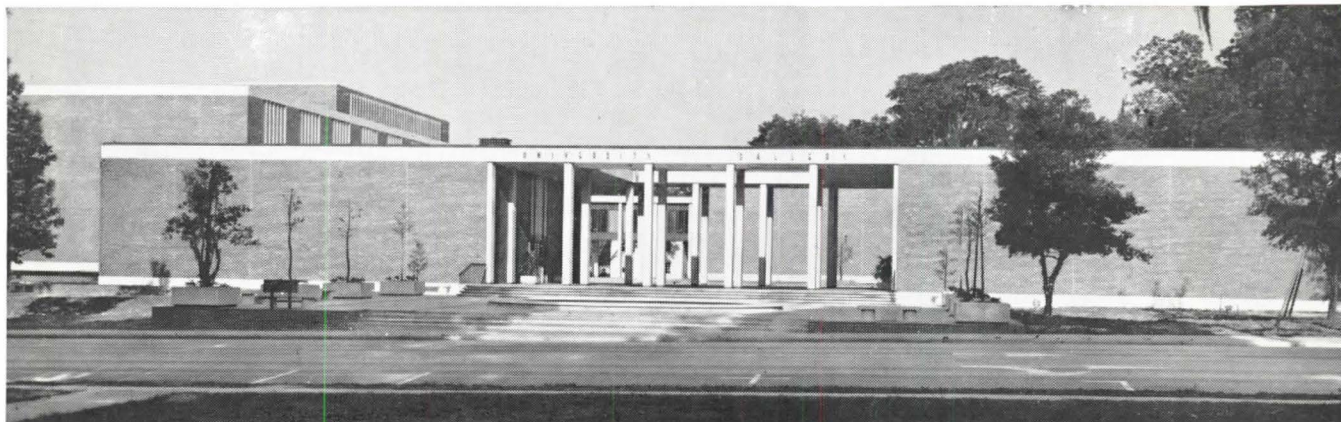
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RICHARD NEUTRA

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STARRY NIGHT—IF
YOU LOOSE A
FIREWORK, YOU
MAY NOT EVEN
NOTICE THAT THE
MOON IS OUT."

"THE OUTSIDE COMES IN AND THE INSIDE GOES OUT."



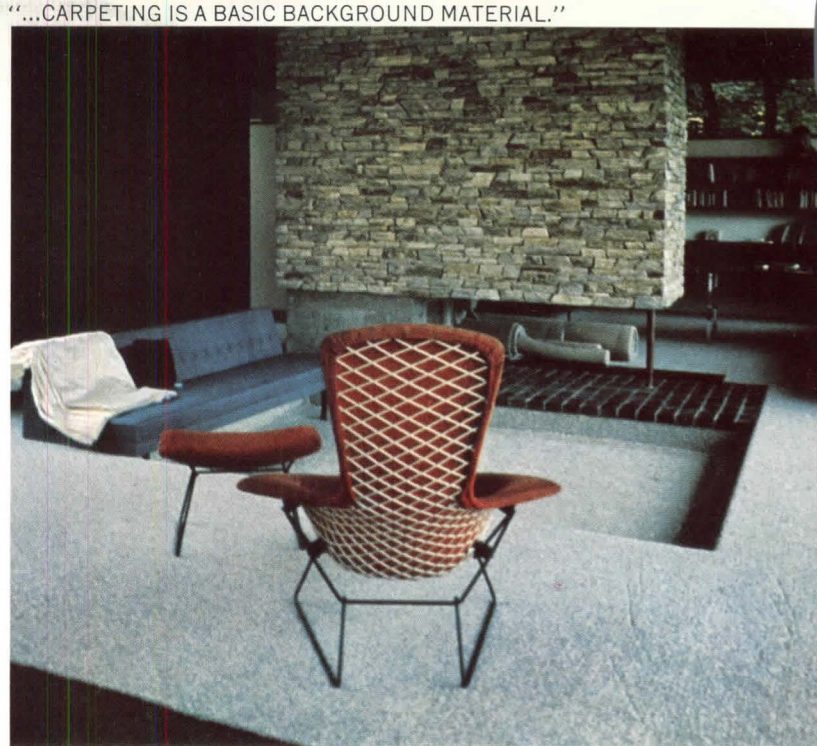
THE NEUTRA HOUSE, LOS ANGELES, CALIFORNIA



"WHEN I USE LARGE GLASS
TO BRING THE OUTSIDE IN, THE
REVERBERATION MIGHT BE



THE OYLER HOUSE, LONE PINE, CALIFORNIA



THE RANG HOUSE, FRANKFORT, WEST GERMANY

Though architects are just beginning to become involved with carpeting, we feel that one day they will specify carpeting as automatically as they now specify wood, stone, and glass. We'd like to hurry that time along. Not only because our business is carpet fibers, but also because we think architect, client, and structure will be better off.

We talked to Richard Neutra about carpeting in relationship to his basic philosophy of architecture well-based biologically. Now 73, Neutra is a vital, imaginative, demanding, gentle man. And, we are glad to say, he felt like talking. (He says it helps him think.)

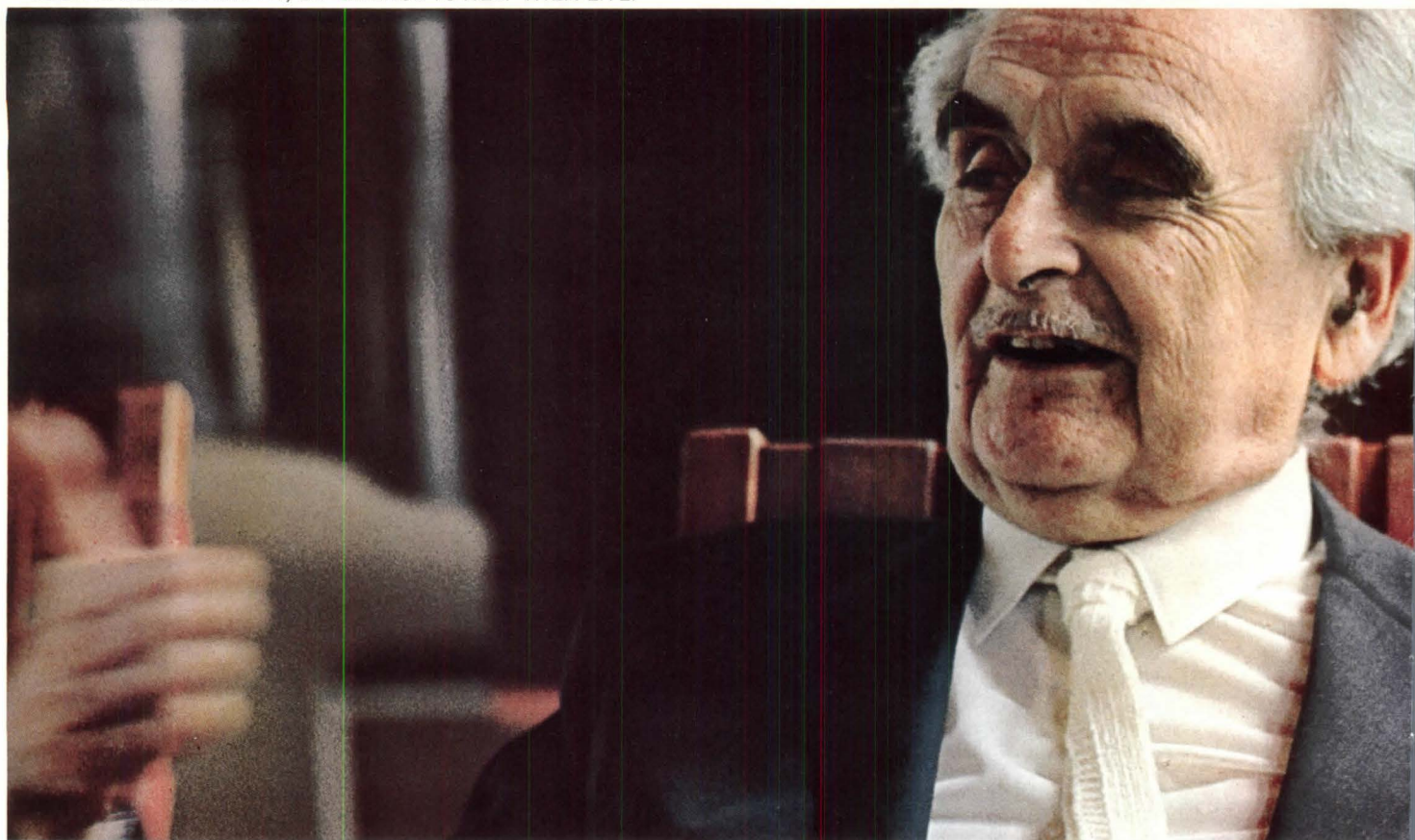
He began by saying that the womb is man's first home and his most important mould. But right after that comes the home of his childhood, shaping him in many ways as a man.

Neutra said the best an architect can do for a client is to respect his mind-and-body. He made dashes in the air to describe how mind-and-body should be written. They are *one* to Mr. Neutra. So are house-and-site. And all make up the whole—"Nature within us, or around us, which is the same thing. Our skin is only a permeable membrane."

The serenity which is always Neutra's goal comes from wedding a house to outer nature and from respect for man's own inner nature.

And even when the serenity is inherent in the house, it can be lost by obtrusive, unfunctional fixtures and foreground furnishings if an architect does not involve himself with these, too. "On a wonderful starry night—if you loose a firework, you may not even notice that the moon is out."

"CLIENTS SEEK SYMPATHY, EXPERIENCE TO HELP THEM LIVE."



"There is a problem today," he said, "that inventiveness could run away with us. But 'nature comes back, even if you drive her out with pitchfork'—a practical Roman proverb."

Neutra said he considered carpeting a fundamental background material based on "biological values of the prehuman scene from which we stem and in which we remain anchored, if we do not want to wither."

"Man first walked over meadows in an equatorial country at the end of the Pleistocene Age," he said. "Carpets are similar to the natural resiliency that gave shape and tactility to our foot soles."

He went on. "When walking on a carpet, the whole human being is extremely integrated. All kinds of things are happening in the middle brain and endocrine system. This is measurable, not just speculation. Serenity has something to do with sole pleasure and an even warmth, and carpet is a wonderful insulator against losing heat through your feet."

Then he said that carpeting gives the impression of reaching right through the sliding glass panels of modern houses and becoming part of the garden outside. "Yet when I use glass to bring in the outside, the reverberative quality is colossal. Therefore, I need an antidote, and I need carpeting."

"The amount of resiliency in a carpet has something to do with our lifelong relationship to the gravitational pull of the earth.

You are balancing on merely a few square inches and you transmitting your whole weight, you see, onto the floor. Naturally resiliency is the thing."

Here Neutra had some things to say about New York cocktail parties where everyone stands, glass in hand, often on hard floors. "If the floors were carpeted, guests could sit or lounge on the floor and have as enjoyable a time as the Zulus do at the cocktail-party equivalent when they lie on the grassy ground. Those people have a good time."

This seemed Neutra's final word on carpets and their place in biological architecture.

But we have more to say. About carpets and acoustics; the warmth and resiliency of carpets; carpets in schools, offices, churches, restaurants, hospitals; area carpets—and many other things you may want to know. Won't you write us? Carpets for Architects, Chemstrand, 350 Fifth Avenue, New York, N.Y. 10001.



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Statement:

MOOD

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This is the chapel of St. Gabriel's Hospital, Little Falls, Minnesota. It's the center of devotion and meditation for the hospital staff of the Franciscan Sisters of the Immaculate Conception. With color and brightness and openness, the chapel is neither somber nor secluded. Yet, the mood is peaceful.

The Sisters wanted the new chapel to be modern and yet compatible with other structures on the grounds. The architects, Bettenburg, Townsend, Stolte and Comb, of St. Paul, conceived a solar screen that would admit light and color, but not distract worshippers. They chose PC Glass Blocks in clear and colored designs.

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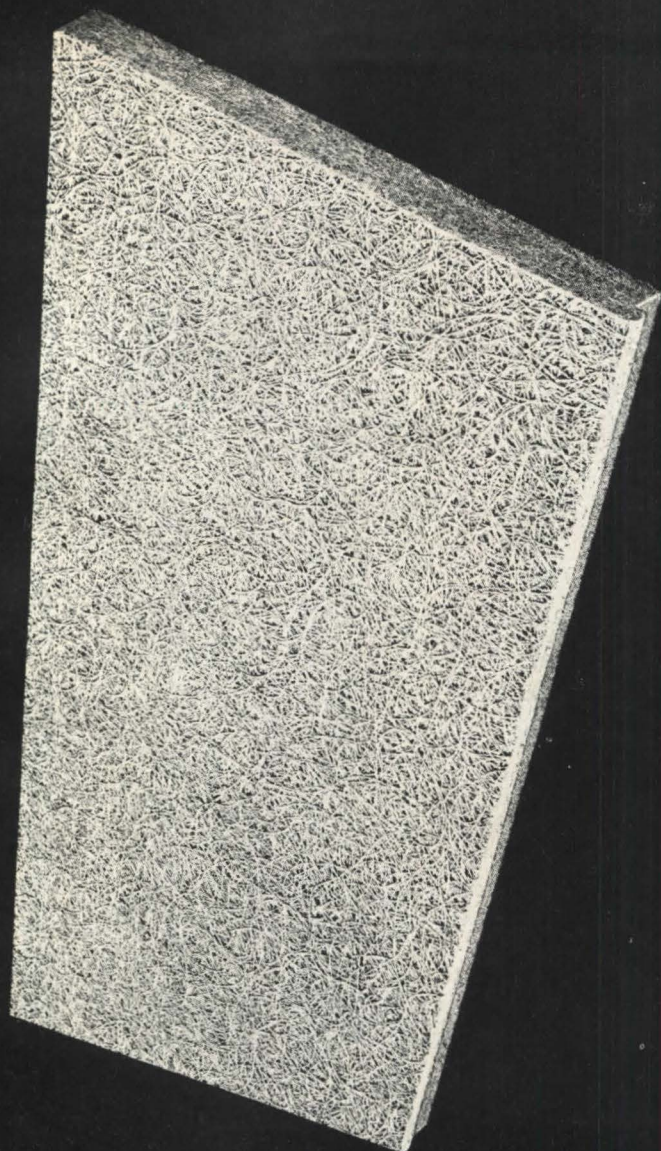
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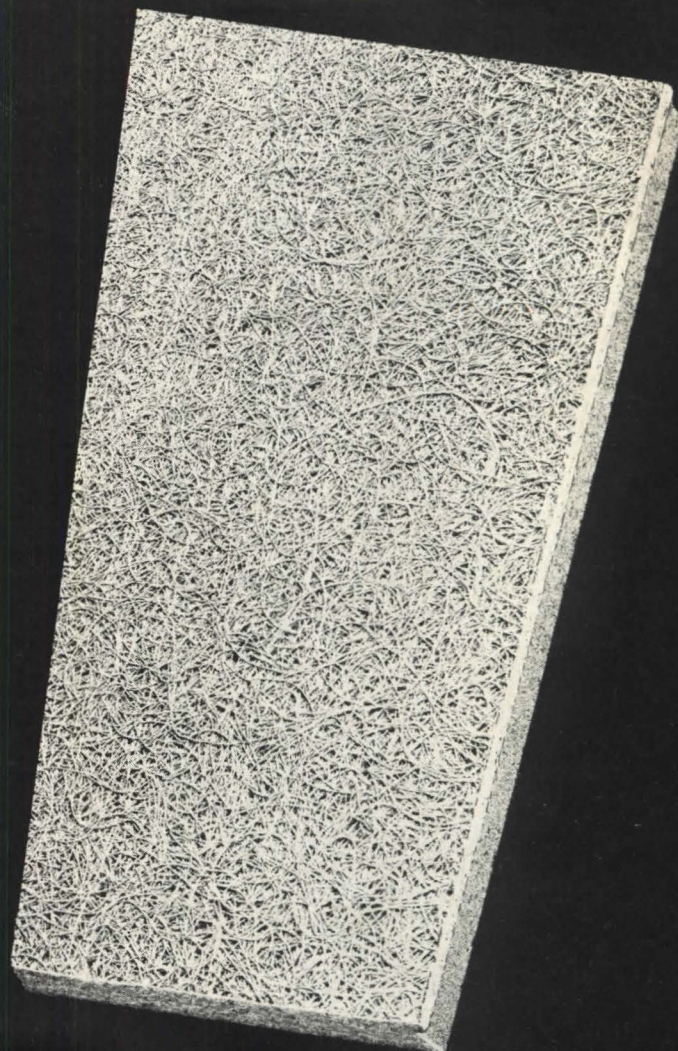
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1. Perfect color match: That's because finishes of Kynar 500 are liquid . . . can be roller coated on to flat metal stock and post formed . . . the same color finish can be sprayed on to metal parts. You can now color-match mullions, trim and curtain wall.

2. Long life: Tests by Pennsalt and leading paint manufacturers project 30 or more years of useful, maintenance-free life for finishes of Kynar 500 on architectural metals. This performance is comparable to that of porcelain enamel and high-performance anodized protection.

3. Complete range of colors: Paint manufacturers offering finishes of Kynar 500 have white and standard colors. Custom colors to fit your requirements can be formulated depending on the size of the job.

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Take full advantage of the long life and new flexibility in design provided by finishes of Kynar 500. Write today for details plus names of fabricators supplying building components protected by finishes of Kynar 500. Plastics Department, Pennsalt Chemicals Corporation, 3 Penn Center, Philadelphia, Pa. 19102.

*Kynar is a registered trademark of Pennsalt Chemicals Corporation. Kynar 500 is the fluorocarbon resin used by leading paint manufacturers in new long-life finishes.





KNOW YOUR KALCOLOR® LICENSEES From among the nation's leading fabricators and finishers of architectural aluminum, certain companies have been selected by Kaiser Aluminum to produce the remarkable architectural material—KALCOLOR aluminum. Just as Kaiser Aluminum has established rigid quality standards for its production of KALCOLOR alloys, so too, do these companies adhere to equally rigid standards also established by Kaiser Aluminum for the anodizing process that creates the superior finishes of KALCOLOR aluminum. Below is a list of these licensees, who are capable of providing KALCOLOR finishes for almost any aluminum building product.

ALUMINUM FINISHING, INC.

P.O. Box 87, Terrell, Texas—Telephone: 214/JO 3-4431—Division of Texas Aluminum. Complete facilities available—Engineering, extrusions, mechanical finishes, Kalcolor, store front and entrance doors, commercial and residential windows and sliding doors.

ALUMINUM FINISHING CORPORATION OF FLORIDA

14565 N.W. 26th St., Miami, Florida—Telephone: 305/688-6561. Serving south-east area aluminum users with complete aluminum finishing facilities including clear and Kalcolor anodizing, mechanical polishing or buffing, chemical brightening, and conversion coatings.

ALUMINUM MANUFACTURING CORP.

2118 Parkside, Irving, Texas—Telephone: 214/BL 3-5111. Kalcolor and other anodic finishing, custom aluminum monumental windows of all types, store fronts, curtain and window walls, custom architectural aluminum accessories.

ALUMTREAT INC.

1455 South Monterey Pass Rd., Monterey Park, California—Telephone: 213/AN 9-7481. Alumtreat can integrate procurement, heat treating, fabrication, polishing, lacquering, and anodic finishes as you require.

AMARLITE

Division of Anaconda Aluminum Co. Main Office: P.O. Box 1719, Atlanta, Georgia 30301—Telephone: 404/DI 4-2750. Warehouses and district sales offices in Atlanta, Chicago, Cleveland, Dallas, Montebello (California), and Paramus (New Jersey). Manufacturers of aluminum entrances, store fronts, curtain walls, sliding doors.

THE WILLIAM L BONNELL CO., INC.

25 Bonnell St., Newnan, Georgia—Telephone: 404/AL 3-2020. Bonnell offers a complete package, Kalcolor in sheet and extrusions to 38 feet long. Call for quotation and engineering including extrusions, fabrication, and anodizing.

THE CECO CORPORATION

General Offices: 5601 West 26th St., Chicago 60650—Telephone: 312/TO 3-4000. Sales offices and plants in principal cities. Manufacturers and erectors of a full line of metal building products, including projected, casement, double-hung and sliding windows; curtain walls, and accessories, all available with Kalcolor finishes.

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620 S. Belmont Ave., Indianapolis, Indiana—Telephone: 317/632-6591. Fabricators of monumental custom curtain wall, projected, reversible, top hung and sliding windows, entrances, sun control grilles and other architectural metal products.

ELECTRO-COLOR CORP.

Subsidiary of the Seagrave Corporation, 62-35-30th Ave., Woodside, New York—Telephone: 212/RA 6-3100. Custom monumental windows and curtain walls in Kalcolor. Designed to meet the exacting standards of the discriminating architect. Technical data and service on request.

ENGINEERED CURTAINWALL, INC.

1000 Mason St., Schofield, Wisconsin—Telephone: 715/359-4214. Manufacturers of monumental custom curtain wall, projected, and reversible aluminum windows.

FENTRON INDUSTRIES, INC.

2801 N.W. Market St., Seattle, Washington—Telephone: 206/SU 2-2000. Fabricator and erector of aluminum curtain wall systems, windows of custom design, fascias, railings, column covers, coping, spandrel panels, solar screens, all available in Kalcolor; also Kalcolor finishing of products fabricated by others.

FUL-TRIM

600 North Third Ave., P.O. Box 349, Covina, California—Telephone: 213/ED 9-6211—Division of Texas Aluminum. Curtain wall and window wall, store fronts and entrance doors, commercial and residential sliding doors, commercial and residential windows.

HANKINS & JOHANN, INC.

P.O. Box 7147, Richmond, Virginia 23221—Telephone: 703/266-2421. Manufacturers of architectural aluminum products for the commercial building industry, including curtain walls, solar screens, entrances, grilles, letters, louvers, moldings, railings, display cases, fascias, and coping. Established in 1919, the company primarily serves the eastern seaboard.

KAWNEER CO.

Division of American Metal Climax, Inc., Offices in: Niles, Michigan—Telephone: 616/683-0200. Richmond, California—Telephone: 415/BE 2-1821. Atlanta, Georgia—Telephone: 404/478-8841. Products in Kalcolor: Duty-rated entrances, narrow

line framing, unit wall systems, custom curtain walls, extruded store fronts, Seal-air windows, railcraft, sliding doors.

THE H. A. LEED CO.

1685 Dixwell Ave., Hamden, Connecticut—Telephone: 203/248-6367. Manufacturers of architectural aluminum, store fronts, doors, entrances, with complete finishing and fabrication facilities for contract work directed to the aluminum industry.

MILLER INDUSTRIES, INC.

Reed City, Michigan—Telephone: 616/832-4911. Manufacturers of Tubelite standard and custom entranceways, flush panel doors, and commercial sliding doors.

NAARCO™ (formerly Modu-Wall, Inc.)

NORTH AMERICAN ALUMINUM CORP. 5575 North Riverview Dr., Parchment, Michigan—Telephone: 616/349-6626. Manufacturers of aluminum curtain wall complete with insulated Kalcolor or exposed aggregate panels.

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SOULE STEEL CO.

1750 Army St., San Francisco, California—Telephone: 415/824-4141. Manufacturers of a complete line of monumental aluminum windows, custom window and curtain walls, "Golden Gate" custom sliding doors, aluminum expanded metal, handrails, solar screens, and "Arctic-Wall" insulated walls.

SOUTHERN EXTRUSIONS, INC.

P.O. Box 750, Magnolia, Arkansas—Telephone: 501/CE 4-4260. Quality extrusions and sheet in Kalcolor and other anodized finishes. Engineering, design and custom fabrication services available.

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For more information on KALCOLOR or other architectural aluminum, contact any of the above companies or your nearest Kaiser Aluminum architectural sales office: □ ATLANTA 404/451-1342 □ CHICAGO 312/679-4100 □ DALLAS 214/254-4251 □ DETROIT 313/272-5525 □ LOS ANGELES 213/685-4181 □ NEW YORK CITY 201/926-5911 or 212/964-9560 □ OAKLAND 415/271-3170 □ or write: Kaiser Aluminum, 2047 Kaiser Center, Oakland, California 94604.

**KAISER
ALUMINUM**

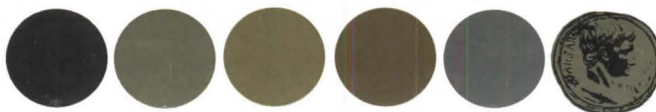


MCA Tower, Universal City, Calif.; Architect-Engineer: Skidmore, Owings & Merrill, San Francisco; KALCOLOR® aluminum fabricator: Fentron Industries, Inc.

THIS MOVIE STAR WEARS DARK GLASSES—WITH RELIABLE BLACK KALCOLOR® ALUMINUM FRAMES

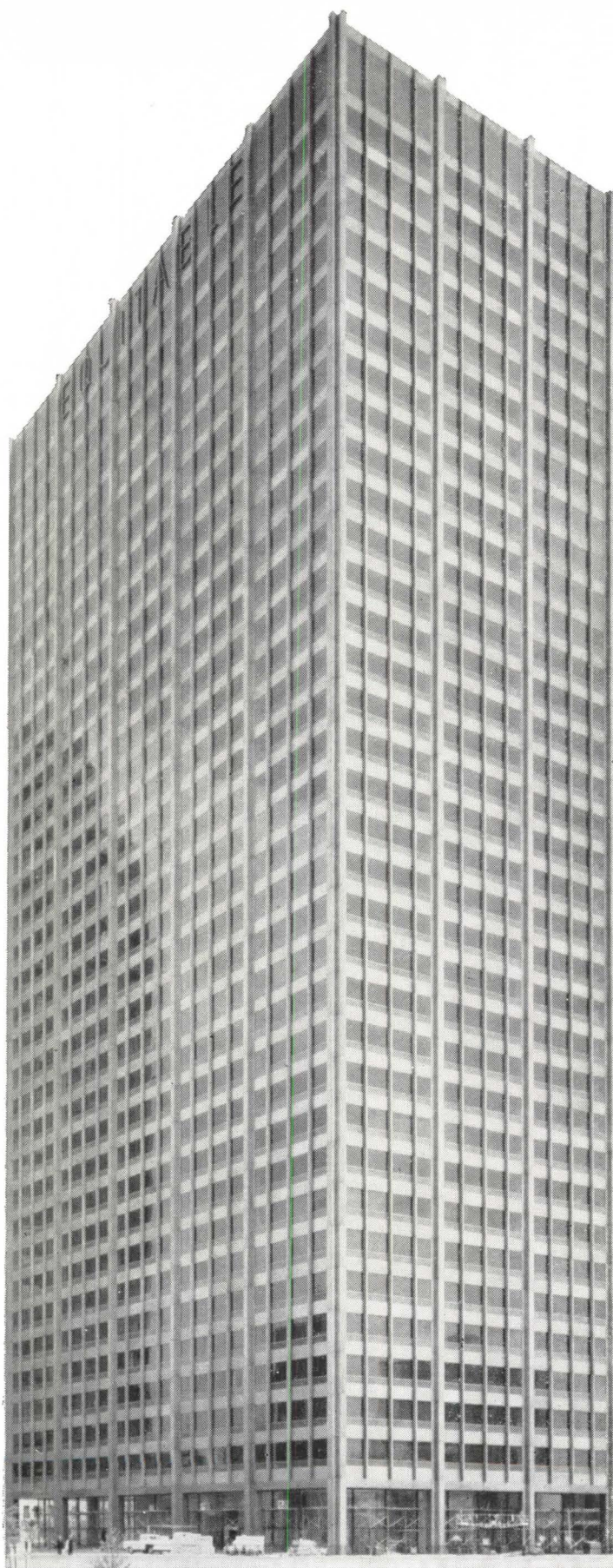


MCA's new tower at Universal City, California, has giant solar gray glass windows of record size for the Los Angeles area. Other than that, the entire exterior is rich, black KALCOLOR anodized aluminum—frames, column facings, doors, railings—chosen for superior color-uniformity and resistance to weather. KALCOLOR is sunfast, highly corrosion resistant, twice as resistant to abrasion as ordinary anodizing and may be applied to almost any aluminum building product. Most important, only KALCOLOR can be specified in ten color values—in the wide range represented by the circles below. See Sweet's File 6a/Ka for technical information on KALCOLOR aluminum. To locate KALCOLOR products of our fabricator customers, call Kaiser Aluminum in your city...or write Kaiser Aluminum, Dept. 845i, Kaiser Center, Oakland, California 94604.



COLOR IN ARCHITECTURE...ACHIEVED WITH ALUMINUM

KAISER
ALUMINUM



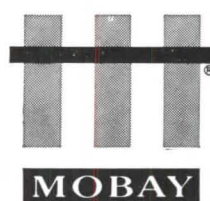
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water
pipes?**

**... up
the
outside
of a
building?**

**in
Chicago?**

Yes. The new 35-story Equitable Building was built this way—with more than 13,000 linear feet of pipe installed in the mullions of the marble-and-glass walls to supply chilled (52°F) water in summer or hot (156°F) water in winter with minimal heat loss or gain. Only a super-efficient insulant like pour-in-place urethane foam could make this design innovation practical in the cold-hot-and-windy city. If this much of the latest success story

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Architects/Engineers: Skidmore, Owings & Merrill
Foam Applicator: Vierling Steel Works
Foam System: Phelan's Resins & Plastics Company



If you think our Russet Quarry Tile harmonizes,
you should see our Navajo, Oriental, Cinnamon, Egyptian,
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With Carlyle Quarry Tile, the harmony always remains the same.

Only the colors change to suit the designer's mood. Or needs.

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In its own quiet way, our Russet actually tells our color-compatibility story better than we ever could.

For instance, notice above how it harmonizes with the wall colors (background, 6448 Parchment; with subtle

vertical abstract, in 6449 Spice Mocha, 6451 Fawn Beige and 6447 Gold Dust). Convincing?

Like we say, you should see the rest of our palette.

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Or, write The Carlyle Tile Company, Ironton, Ohio. For availability of Carlyle Quarry Tile on the Pacific Coast, write to The Mosaic Tile Company, 909 Railroad Street, Corona, California 91720.

**CARLYLE
QUARRY
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What Mo-Sai's quarter-century experience means to you

Before the introduction of Mo-Sai, concrete had generally been limited to utilitarian functions. Concrete had many of the qualities of a desirable architectural material, but its monotonous appearance held it back.

The Mo-Sai process imparted new color, texture, and beauty to con-

crete, and now it is recognized as one of the ideal architectural materials of our time.

Mo-Sai has been used for curtain walls, windowwalls, sun screens, copings, walkways, monuments, statues, sculptures, murals, pools, fountains, planters, grilles, and, more recently, Mo-Sai has been used in creating some unusual and dramatic structural units. Mo-Sai can be made in practically any color or color combinations. It is beautiful, enduring, and requires little or no maintenance.

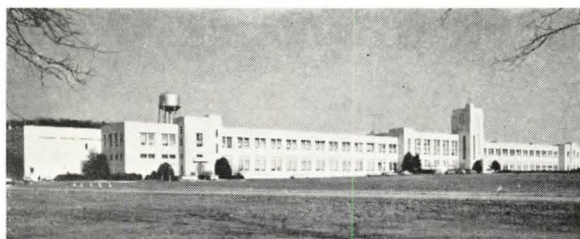
Mo-Sai has been copied and simulated, but



Another early Mo-Sai structure is the Prudential Insurance Building, Los Angeles, California, constructed in 1947. Architects: Wurdeman & Beckett.

there is **no** substitute for genuine Mo-Sai. The background, technical know-how, and quality control of the franchised Mo-Sai manufacturer cannot be duplicated.

Imagine it—and then let your local Mo-Sai manufacturer reproduce it in the timeless material... Mo-Sai.



The Naval Testing Basin at Carderock, Maryland, designed by Rear Admiral Ben Moreell, U.S.N., was the first significant Mo-Sai building. It is as beautiful today as when it was completed in 1938. Two years later the Mo-Sai Institute was founded.

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WAILES PRECAST CONCRETE CORP.

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POOL COVER ENGINEERED AND CONSTRUCTED BY MULTIPLASTICS DIVISION, CURD ENTERPRISES, INC., ADDISON, ILL.

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GIVES YOU
THE LATEST
WEATHER
COVERAGE



Lightweight properties of ACRYLITE permit dome to open wide with minimum mechanical and power apparatus.

(Below): At night, clear ACRYLITE dome coupled with dramatic lighting presents an inviting scene.

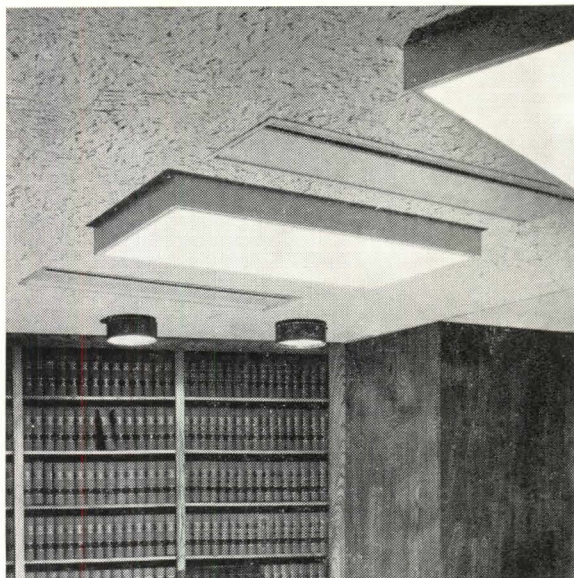


And the Sheraton Hotel in French Lick, Indiana is glad it does. By using ACRYLITE in their hemispheric swimming pool enclosure, they extended their resort season to a full twelve months. Glazed with optically clear, heat-formed ACRYLITE acrylic plastic, the dome seals heat in, lets sun's rays through, keeps wind, rain, snow and spoil-sport weather out (much to the delight of guests).

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AMERICAN CYANAMID COMPANY, BUILDING PRODUCTS DIVISION, DEPT. 2JY, 595 NORTH AVE., WAKEFIELD, MASSACHUSETTS 01881



Ceiling of law office library,
United Founders Life Tower, Oklahoma City, Oklahoma.
Architect/Engineers: Hudgins, Thompson, Ball & Associates.
Consulting Engineer: William J. Collins & Associates.
Mechanical Contractor: Kay Engineering Company.

You're looking at a new perspective in automatic climate control!

Here two new Carrier Moduline® air terminals have been combined with rectangular and circular surface-mounted fixtures to provide a pleasing ceiling in an irregular space.

Moduline terminals serve all the interior space of this office building, a modern 20-story circular structure. Exterior offices are served by Carrier Bypass Weathermaster® units.

Is Moduline design flexible?

Very! The unit's 1' x 4' face dimension coordinates with standard light fixtures, tiles and panels.

Units may be installed as random singles, linked in pairs, or coupled in lines of any length.

With planned integration of lights and units, zones of any size or shape can be designed to assure flexibility of space usage.

These units make possible the use of a very simple variable-volume single-duct air conditioning system that helps reduce mechanical chaos above the ceiling. Yet they maintain accurate room-by-room temperature control in spaces of any size. And do it automatically

with quiet air delivery at all volumes. No drafts, no stratification!

Our new brochure illustrates many of the attractive arrangements already achieved by architects using Moduline. Examples include ceilings of all types—acoustical tile, exposed T-bar, concealed Z-bar and plaster.

For a copy—"Carrier puts climate control into a new perspective"—call your Carrier representative. Or write Syracuse, New York 13201. In Canada: Carrier Air Conditioning (Canada) Ltd., Bramalea, Ontario.

Carrier Air Conditioning Company

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

Put Parquet Beauty in Every Room...



DINING... Scandinavian



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...Economically with Prefinished *Hartco* Wood FLOR-TILE



OAK



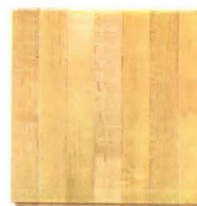
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For information on fine stainless for doors or any other building product, let us refer you to our Architectural Services.

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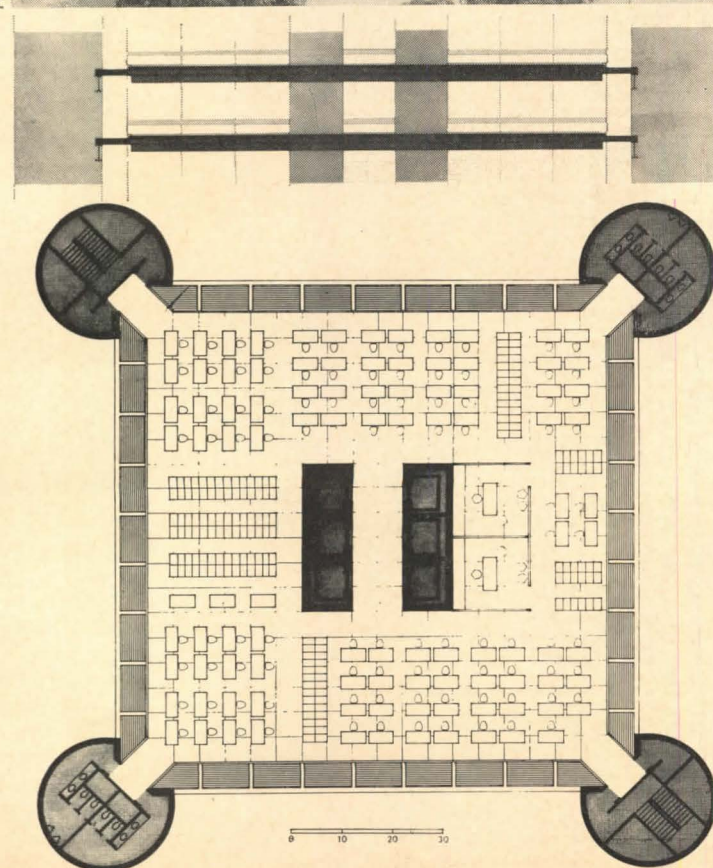


NEWS REPORT

Architecture's Monthly News Digest of Buildings and Projects, Personalities, New Products



Photos: Ezra Stoller Associates



LE CORBUSIER IS DEAD

AUGUST 27. As we go to press, word has just reached us from France that 78-year-old Le Corbusier died today of a heart attack while swimming at Roquebrune on the Riviera. A woman on the beach saw him in distress in the water and called for help. Two men pulled him unconscious from the sea, but efforts to revive him were to no avail and one of the greatest architects of all time was no more.

In *When the Cathedrals Were White*, Corbu wrote: "In the course of years, I have felt myself become more and more a man of everywhere with, nevertheless, one strong root: the Mediterranean, queen of forms under the play of light; I am dominated by the imperatives of harmony, beauty, plasticity." Thus, in the end, the master of harmony, beauty and plasticity was reclaimed by the sea whence sprang his strength.

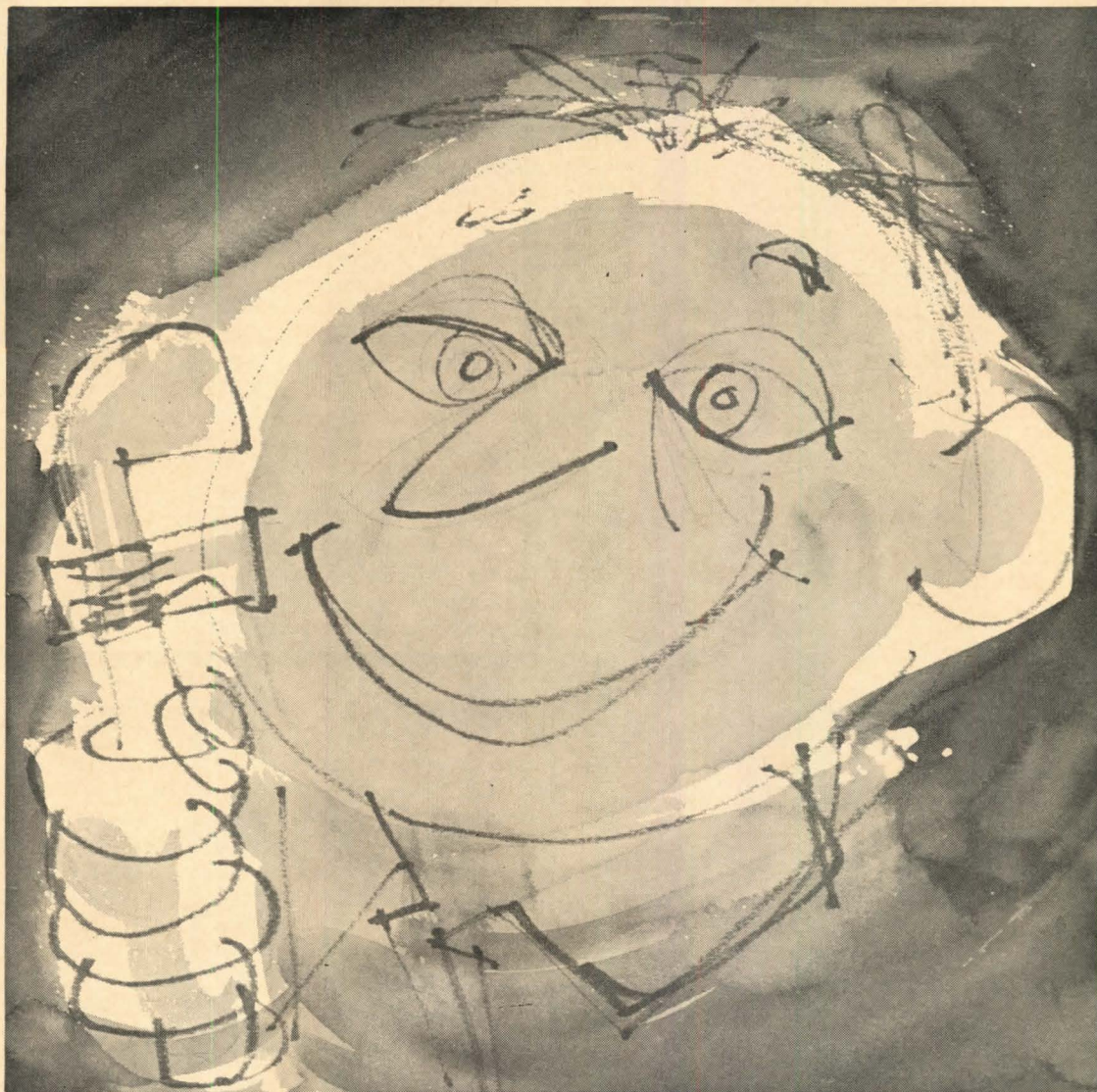
Exciting Tower Design for New Haven

NEW HAVEN, CONN. This New England pinacotheca of contemporary architecture has still another major exhibit forthcoming: the Knights of Columbus International Headquarters by Kevin Roche of Eero Saarinen & Associates. Also in the works are designs by Pei (an office tower), Mies (apartments), and Rudolph (an old-age complex).

The Knights of Columbus building will be New Haven's highest, out-topping Philip Johnson's Kline Science Tower (322 ft high, including its hill) by 38 ft. It will stand on one of the city's most important sites—Church Street at the entrance from the Oak Street Connector (which links New Haven and the Connecticut Turnpike). Thus, it will be the first building experienced by the traveler as he enters downtown New Haven. In recognition of this "gateway" nature of the building, Roche has placed it at an angle to Church Street, "creating a more inviting entrance from the Connector, and at the same time establishing a visual bridge with the city grid on the other side of the Connector." The building will be surrounded by a landscaped open space, perhaps the first major civic open space in New Haven since the Green was completed a few blocks away on Church Street. A 1000-car municipal parking

garage (not yet designed) will be provided on the site, intended to be connected by a bridge to another municipal parking garage across the street in the future.

Roche's concept for the tower is as stunning in its simplicity as Saarinen's CBS Building. Four round, slip-form concrete corner towers and the elevator core will support the building. Exposed, 80-ft-long horizontal girders of CorTen steel will bridge between the towers to support the steel floor structure (see section detail). The towers, which will contain stairs, toilets, and mechanical shafts, will be finished in dark brick. Between the outer girders and a mullionless glass wall (epoxy will be used) will be a horizontal sun grille. The system of exposed beams still has to be approved, though Roche feels it should satisfy fire regulations, since the retardant qualities of the glass walls would protect the steel. Mechanical equipment will be housed in two floors at the top of the building. The three lower levels will be recessed, providing a lobby and a ground floor and two mezzanines for a bank. The rest of the building will be devoted largely to the insurance activities of the order (see typical plan), with administrative and membership offices taking a



I do the maintenance on DURCON[®] sinks

But my tools are all getting rusty because there is no maintenance on DURCON sinks. They're corrosion resistant all the way through, not just a coating; and they'll probably still be here when the building is torn down. I like DURCON sinks . . . and DURCON undertable piping. I'm sure glad they're installing DURCON sinks and undertable piping in the new building, too.



THE DURIRON COMPANY, INC. DAYTON, OHIO



relatively small amount of space.

Mies's apartment buildings are scheduled to rise across the Oak Street Connector from

the Knights of Columbus, and are planned to be angled in a similar manner. An impressive entrance indeed to this architectural treasure house.

THE AERIAL SEWER



New York

"This most excellent canopy, the air, look you, this brave o'erhanging firmament, this majestic roof fretted with golden fire, why, it appears no other thing to me than a foul and pestilent congregation of vapours."

SHAKESPEARE

At dusk, one day in October 1948, John West was walking home from work in Donora, Pa. Suddenly he saw coming toward him an enormous "black cloud." As it descended, hovering near him, he gasped for breath, his head aching and his eyes smarting. "It's going to kill me," he told his wife later. And it did. Nearly 6000 of the 13,839 people in Donora became ill and 20 died.

In New York City several weeks ago, as warm, sunlit summer air silently paraded its cargo of fly ash, soot, sulphur dioxide, carbon monoxide, and nitrogen dioxide into Council Chambers at City Hall, a Special Committee on Air Pollution was listening to experts report on the dangers, causes, and cures for the "aerial sewer" that pervades this city and the entire urban world. Here are a few other stories and facts that came to light:

- In London, in December 1952, 4000 people died from polluted air. In a similar occurrence 10 years later, 340 more Londoners died, most of them over 55. In February 1963, New York City's normal haze refused to float out to sea; it killed hundreds within a week.

- Asthma, bronchitis, pulmonary emphysema, and lung cancer are on the rise from one end of the country to the other—partly because of the black clouds.

- New Yorkers take in enough benzopyrene every day to equal two packs of cigarettes a day. Benzopyrene is used in laboratories to induce cancer in mice.

The Price Is Wrong

Speaking to the New York committee, James Quigley, Assistant Secretary of Health, Education and Welfare, called the "pall of filth" prominent in every large city in the U.S. an "unnecessary anachronism." While mastering huge technological problems, we have created another—air pollution. He estimated that the national cost resulting from the deterioration of buildings, rusting metal, shortened life of paint



Denver

Photo: by C. E. Grover, Courtesy U.S. Public Health Service



San Francisco

Photo: Courtesy San Francisco News-Call Bulletin

coatings, and increased taxes for repairs to public buildings totals \$11,000,000,000 a year. The cost, like the amount of pollution, increases annually, and, needless to say, does not include noneconomic costs like those resulting from illness and aesthetic blight.

Ultimate Determinant

Architects are, of course, concerned about the situation because of their partial responsibility for the quality of the urban environment. That environment is determined as much by cars, buses, subways, zoning, the width of sidewalks, and the existence of pleasant green parks and sitting places, as it is by the appearance and efficiency of individual buildings. And increasingly, it is becoming dependent on the smell and the texture of the air. Clean air, like a ready supply of clean drinkable water, is the

ultimate determinant of any city's livability.

Frithjof M. Lunde, Chairman of the New York Chapter AIA Committee on the Natural Environment, reported on a survey taken by the Regional Plan Association in 1962-63. It revealed that clean air ranked second only to good public schools in a list of 35 desirable qualities of urban life—and that was two years ago. Clean air was ranked as more important than personal safety, privacy, and quiet by the 5600 persons in the metropolitan region covered by the sampling.

New York Air Pollution Control Commissioner Arthur Benline reported on the causes of pollution. These include fuel combustion, automobile exhaust, incinerators, open burning, a variety of industrial operations, and pollution wafted from one place to another

by the wind. In New York fuel combustion pollutants are created, mostly by electricity-producer Con Edison, which is responsible for much of the sulphur dioxide in the air. (New York City air has the highest concentration of sulphur dioxide of any city in the U.S.)

The combustion of refuse causes one-third of the air pollution in the U.S.; 520,000,000 lbs of refuse are produced in our cities every day.

Worst Fumers

Automobiles and buses, however, are the worst polluters of all; their fumes produce 50 per cent of the nation's air pollution — a problem that spreads daily as the miles of roadways grow and as the number of cars increases. Some 65,000,000,000 gals of fuel are burned by our 4-wheel servants every year (using 94,000,000,000 cu ft of air to do so) producing 14,000,000 tons of hydrocarbons, 4,000,000 tons of nitrogen oxides, and over 75,000,000 tons of carbon monoxide that are eventually absorbed by innocent lungs, swallowed by drinkers of "fly-ash cocktails," and dimly viewed by art-lovers and building gazers on begrimed surfaces. Airliners have collided, some authorities feel, because of the murky, soot-filled air above our cities.

A Most Hideous Spectre

The giant spectre of air pollution comes into focus with statistical help: 60 per cent of the U.S. population lives in air-polluted areas. Every major city in the world today has an enormous pollution problem; the only cities that have even begun to fight are Pittsburgh and Los Angeles, and the only reason they fight is that they would be largely uninhabitable if they did not. Studies show that, as population grows, pollution grows too. Today, over half the population of the world is concentrated on 1 per cent of the land area. By 1980, the world's population will have increased from 3,000,000,000 to 4,500,000,000 people, all of whom will eventually demand the so-called amenities of civilization, most of which pollute the air. Space heating requirements, electricity production, and disposal of refuse for the present popula-

a worldwide tragedy—not even considering the pollution caused by industrial operations and automobiles. And the amount of oxygen available, which all on earth must breathe, stays constant, like the supply of all natural elements.

Pathetic Proposals

Most of the solutions offered are skimpy ones. What Congressman John Lindsay, Commissioner Benline, and Traffic Commissioner Henry Barnes are trying to do in New York is to make all the streets one-way, so that cars will not have to start and stop so often (because that is when they spew out most fumes). If New York adopts this put-off-facing-the-problem solution, it will be offering the worst imaginable one. Making it easier for cars to get about in the city will obviously attract more of them. The ideal remedy for air pollution woes is cities without cars, cities for people—not automobiles. Every dollar spent to improve mass-transportation facilities helps air pollution, because, as Frithjof Lunde said, it is a "well-established fact that, passenger for passenger, the private car is a much worse offender than any other form of transport."

Among the other solutions recommended by his committee were more research into means of improving solid-waste disposal, the preservation of every green, open space within New York's air-shed, the covering of construction scars, sanitary landfills, and highway embankments with grass, a conference of all professions concerned to help channel research efficiently, and the enlargement of the Department of Air Pollution.

Only More Means Less

Even if all of these proposals were acted upon immediately, air pollution would still not be under control. Other, more drastic, measures are needed. Several are offered by New York's current mayoralty candidates: a block-by-block survey of pollution sources, coupled with stiffer fines for violation of air pollution codes; the conversion to natural gas for heating; a complete renovation of mass-transportation facilities coupled with stricter enforcement of no-parking laws. These moves would begin

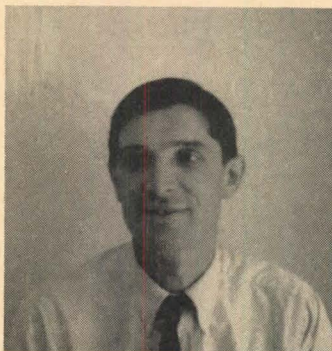
ing and electricity needs could be filled by nuclear generating plants, and cities could be planned to exclude automobiles from their centers.

In the meantime, clouds descend darkly over blighted cities. "Urbanized" man is emerging, unchecked, bringing with him a deepening haze that can slowly kill those who dare to breathe.—RHC

The awful shadow of some unseen Power Floats though unseen among us—visiting.

SHELLEY

New P/A Associate



This month, Peter M. Green joins PROGRESSIVE ARCHITECTURE as Associate Editor in charge of the Materials and Methods section of the magazine. Born in England, he graduated in structural engineering from the Hammersmith School of Building, then worked as a structural engineer with Walter C. Andrews in London and Northern Electric Company in Montreal. For the past four years, he has been an Associate Editor of *Engineering News-Record*. Green's experience and talent will give significant strength to the technical pages of P/A.

Tortured Tower



Photo: Lawrence S. Williams, Inc.

PHILADELPHIA, PA. "Let's get it built and stop hickering about

dent Paul D'Ortona. "We need a new Federal courthouse to get rid of the case backlog. It is more important that the building have efficiency on the inside than that it have good looks on the outside."

"It looks like a fat politician," protested Senator Hugh Scott (R.-Pa.), "with homely protuberances in the front and rear."

"It looks like him," snapped D'Ortona. "He's built that way. I guess when he looks in the mirror, he's afraid he'll remind himself of the building."

Such was the tone in Philadelphia last month when plans for a Federal courthouse and office building were released by John E. Byrne, Director of the Government Service Agency. The GSA, responsible for all Federal office construction and operation, has planned a structure that would house the employees of some 27 separate Federal agencies and provide room for 21 Federal courtrooms, plus office space. Jointly designed by three Philadelphia firms—Carroll, Grisdale & Van Alen; Stewart, Nobel, Class & Partners; Bellante & Clauss—it would fill the area bounded by Market, 6th, 7th and Arch Streets on Independence Mall.

Unusual pressure from Pennsylvania Congressmen and Senators had convinced GSA Director Byrne to release the plans ahead of schedule, with the comment: "We think the architects have come up with a good functional building. . . . Our people here are satisfied it's the best building they can get to do the job it has to do."

Clutching at the fact that the plans had not been officially approved, hopeful protestors flooded the GSA with complaints. As a result, GSA administrator Lawson B. Knott promised that, if the dispute continues, he would appoint "an outstanding panel of architects" to review the design and make recommendations. Philadelphia's Mayor Tate, watching the dispute burgeon, finally asked Knott to honor his pledge. Nonetheless, Philadelphia officials (especially the city's architectural consultants and members of the planning commission) who have been objecting to the scheme for a year, have a sinking feeling.

At press time, the \$40,000,000 controversy consists of a

office structure of red brick spandrels, separating large office windows. The second structure, placed at a right angle to the first, is three stories high. Also of glass and red brick, it holds dining facilities for employees and serves as main entrance to the U.S. courthouse.

Above the three-story structure, rising near its south end, is a 17-story tower to accommodate district and circuit court facilities, judges chambers, offices, jury rooms, law libraries, and eating facilities for judges. Each courtroom is two stories high.

The building's opponents, unlike those who rallied against the Rayburn House Office Building (p. 62, MAY 65 P/A), have not argued that the building's interior is poorly conceived. Quite the opposite. It has been called "an ingenious interior arrangement to satisfy every last need (and whim) of the Federal judges." But there have been objections to the use of red brick facing (even though the old buildings in the area, including Independence Hall, are red brick); some Philadelphians insist that the structure should be prestressed concrete, gray brick, granite, limestone, or white marble.

The most violent objections have been aimed at two protuberances, or what GSA refers to as "ears" (housing two main courts) that bulge from the office tower (see photo). "The effect," read an editorial in *The Evening Bulletin*, "is that of an old general hospital burdened with many additions, all of them financed by under-subscribed fund-raising drives. They [the architects] have for-

gotten their larger duty to art—and to the public that must look at the outside of their tortured tower."

Former Judge Edwin O. Lewis, past president of the Independent Hall Association, Inc., who has for more than 20 years been the prime mover in the beautification of the Independence Hall area, sadly said, "I thought of taking scissors and cutting off the ears. Then I placed my hands over the ears to see how it would look without them. It still is nothing wonderful."

Sadly for Philadelphia, which has recently been so carefully mindful of its civic architectural image, it's true.

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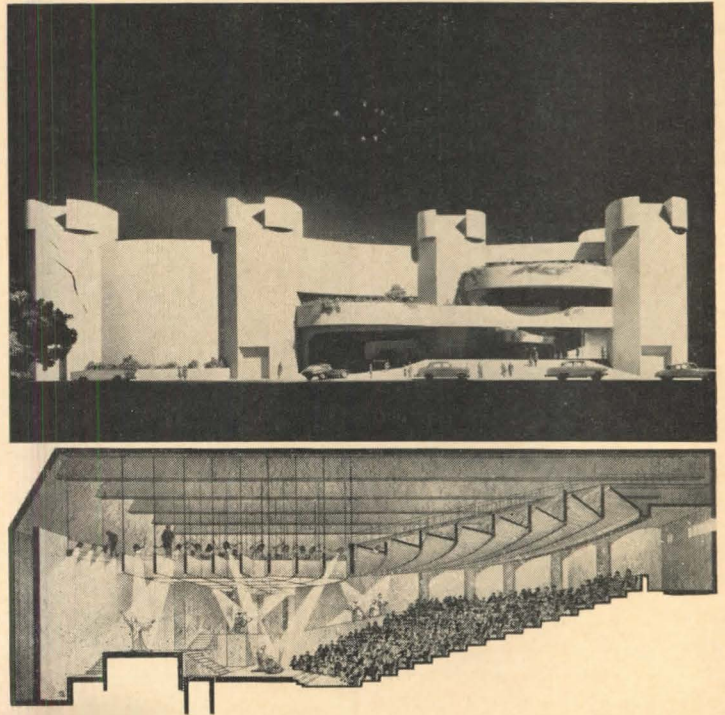
NEW YORK, N.Y. In New York, GSA's Federal Building was also still under fire—mainly from the Architects Council of New York City that has as "constituent organizations" the Brooklyn, Bronx, Queens, and Staten Island AIA chapters, the New York Society of Architects, and the Brooklyn Society of Architects. The group has incessantly petitioned the President, GSA, and many members of Congress to halt what it considers a disruptive element in the New York Civic area (pp. 180-183, JAN. 1965 P/A). Recently, the scope of the New York Federal Building was just about doubled with the addition of another high-rise structure. The AC-NYC is now pressing for the inclusion of the Customs Court building presently designed to jut into Foley Square, in this new building. Washington has so far proved intransigent on the whole matter, but the batlers still think they can win.

columns. It is this innovation that the P/A Design Awards jury lauded when it gave the State Office Building a Citation last January (p. 146, JANUARY 1965 P/A).

Since then, the original plan has been revised to include a look-alike but quieter sister (\$1,921,400 cheaper and five stories shorter). The Shelby County Administration Build-

ing has borrowed the secondary column and spandrel system of her sibling. The raised podium on which the two will stand serves to level the sloping site, provides a three-level garage for 500 cars, and offers an opportunity for a possible future raised "super-block" at this level—part of the original Memphis Civic Center design that has not yet materialized.

Step Into The Alley



HOUSTON, TEX. Lagging behind organized baseball—but only slightly—the legitimate theater will soon also have a permanent home in Houston. Called the Alley Theater because the repertory group that it will house started in a dance studio at the end of an alley, the building will house both a classic proscenium stage and an arena theater. The two will share backstage facilities, but it will be possible to put on two performances at the same time. The former will seat 800 in seating that spreads fan-like in front of a stage reaching out on either side of the seats in a 90° arch, embracing them much the way a politician's gesture embraces the multitudes. Directly above the stage will be a light grid (replacing out-front lighting) beaming across the auditorium. The smaller arena stage will seat 300 in seats rising on four sides of the rectangular stage.

Designed by New York architect Ulrich Franzen, one

of New York's 10 most fascinating men (see following article), whose first theater this is, the Alley will have eight neomedieval towers, or turrets, which will house the machinery that services the building. One hopes they will be topped by flags on performance days. The turrets give a vertical accent to the curved horizontal spread of the theater, which is only six stories high at its highest point. Franzen plans to use a tawny concrete made partly from a local stone. "As ancient as stone, as modern as Houston," Franzen says of his theater, which will open in the fall of 1967.

Although the exact building budget is not yet known, the theater's development fund currently holds \$3,000,000. The Ford Foundation put up \$2,100,000 and the rest was contributed by 15,000 Houston residents.

Next month's P/A will report comprehensively on the design of the Alley.

Tennessee Twins

MEMPHIS, TENN. Two sisters will make their bow to society here in June of 1967. Their dress of exposed concrete and granite aggregate was designed by Gassner, Nathan, Browne (Haglund, Venable, Architects Associated).

The two buildings are very much in the currently prevalent "style" of exposed exterior concrete columns. (See American Dental Association Headquarters, p. 43, JANUARY 1965 P/A; Virginia National Bank, p. 62, MAY 1965 P/A; Los Angeles Trade Mart, p. 55, JUNE 1965 P/A.) Yet the twins have a certain distinction, too.



Photo: Lawrence S. Williams, Inc.

The State Office Building—13 stories for \$4,421,400—uses two structural systems: the exterior bearing wall plus a super-frame that intervenes at every fourth floor and transfers the load to the eight exterior

Fascinating Architect

NEW YORK, N.Y. The July issue of *Ladies' Home Journal*, evidently in a bid to become to women (pardon us—ladies) what *Playboy* is to gentlemen, has a feature entitled "The Ten Most Fascinating Men in New York." And, lo, amongst them is an architect complete with John Wayne-type photograph and the purplest prose since the novels of Ouida, to wit: "Ulrich Franzen is a gifted architect and a successful business man who manages a staff of 20 in his own busy office. After hours, he is Ricky, the possessor of a dramatic East Side apartment and 'a remodeled shack' on Long Island; a sailing enthusiast; an accomplished raconteur; and, at a very handsome 43, one of the most sought-after escorts and dinner partners in town. Having fled the Nazis and his native Europe in the '30's, he has become thoroughly at home in this country, whose vast, open spaces he finds incomparably well suited to modern architecture. He is currently at work on a home for the legitimate theater in Houston, and finds Texas energy stimulating, but also loves walking about New York on Sunday to inspect its older architectural treasures. ('I'm an admirer of Trinity Church and the old Federal Treasury,' he explained. 'Just approach the latter from the water and see for yourself.')

"Basically a noncommercial thinker who considers architecture more an art than a craft, he looks at women with an artist's eye as well. ('Beautiful women,' he said firmly, 'are an essential part of the New York ambience.') One divorce hasn't dimmed his optimism: 'It is the woman who is the great, wonderful, rhythm maker of life; I believe in the old saying that "a man does, a woman is." ' He is a modern man in more ways than his work. The new music and craze for dancing, for instance, he finds 'good for the eyes and good for the body, and great for getting lost in some kind of frenzy.' At six feet two, blond and green-eyed, he is rarely at a loss for a dancing partner, and his partners range from movie stars to lady art critics."

This kind of rhapsodizing might do as much for archi-

Berkeley Architecture Chairman

BERKELEY, CALIF. Claude Stoller has been appointed chairman of the Department of Architecture, College of Environmental Design, University of California at Berkeley for 1965-1966, by Acting Chancellor (and Whilom Dean of the Environmental Design College) Martin Meyerson. Stoller, partner in the San Francisco firm of Marquis & Stoller, was a vice-chairman of the department from 1964-1965; his vice-chairmen will be Donald E. Olsen in charge of curriculum and R. C. Peters in charge of student affairs.

A Major Competition

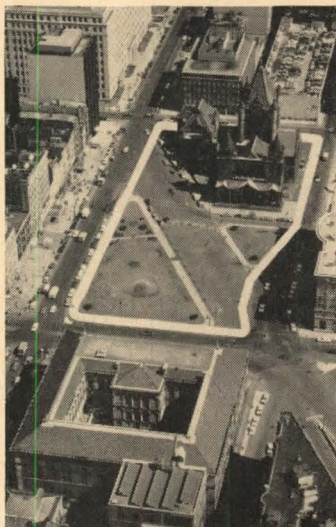


Photo: New England Survey Service Inc.

BOSTON, MASS. Copley Square, in the heart of Boston's Back Bay, will be the site of a one-stage national design competition. Jointly sponsored by the City of Boston, the Boston Redevelopment Authority, the Back Bay Council, and the Back Bay Planning and Development Corporation, the competition will offer awards of \$5000, \$2000, and \$1000 to the three top design solutions in March 1966. The setting for the design (shown here outlined in white) is distinguished by two outstanding buildings: Richardson's Trinity Church and McKim, Mead & White's Boston Public Library. Members of the 10-man jury are architects Pietro Belluschi, José Luis Sert, Hugh A. Stubbins, Wilhelm von Moltke, Sidney Shurcliff, and landscape architect Daniel Kiley. Also included are four lay members: Asa Knowles, president of

National Bank of Boston; Bryan Smith, chairman of the board of the Liberty Mutual Insurance Company; and Russell Beatty, an engineer and president of Wentworth Institute. Registration forms must be submitted by October 15. Interested architects, landscape architects, city planners, civic

and urban designers, engineers, and sculptors are invited to request a preliminary announcement and registration forms from: Mr. Charles G. Hilgenhurst, Professional Advisor, Copley Square Competition, Boston Redevelopment Authority, City Hall Annex, 10th Floor, Boston 8, Mass.

The Great Stone Face



Photo: Maude Dorr

NEW YORK, N. Y. This month's cover shows everything but the pageantry. Towering above the heads of the girls in white dresses who stood in neat rows beside it, this 9-ft basalt head gazed serenely across the plaza of the Seagram Building and down New York's Park Avenue. Although several thousand miles from its normal resting place, the Mexican jungle, and 25 centuries from the probable date of its creation, the head seemed excitingly appropriate in its 20th-Century urban surroundings. The girls were part of a welcoming ceremony, formally marking the head's arrival in New York, and although from a distance it looked as if the ritual were religious—as if paganism had returned to Manhattan Island, spurred by an emotional reaction to the phalanxes of scientifically arranged steel and glass—it was only bureaucratic.

The head was shipped to New York to be displayed at the Mexican Pavillion at the New York World's Fair, but it was put up first for a two-week visit in the Seagram's Building Plaza. So enthusiastic was its welcome that it was held over for an additional four weeks.

Carved by the Olmecs, the

for sure. Or it may be a representation of a ritual ball player, carved in honor of a particularly fine feat on the playing field, or of a particularly memorable game. It's as if Bobby Thompson were honored in stone for his pennant-winning home run in 1950.

Whatever its origin, it seemed particularly appropriate on Park Avenue. Its weathered, pitted stone complexion contrasted nicely with the sleek skins of the steel-and-glass office buildings that line the avenue. Besides providing a contrast, it served as a point of transition between the McKim, Meade & White-designed Racquet and Tennis Club, directly opposite, with its cloister-fronted balcony and its stone façade. The Racquet Club's arches are the only curved architectural shapes on that section of Park Avenue, and the oval head seemed to blend them with the linear formality of the Seagram building to the east and the First National Bank and Lever House to the north.

In a recent Editorial in *Interiors* magazine, Editor Olga Gueft pointed out that the head belonged there—on the Seagram Plaza: "No doubt we could find a block of stone of similar mass and weight and



6541

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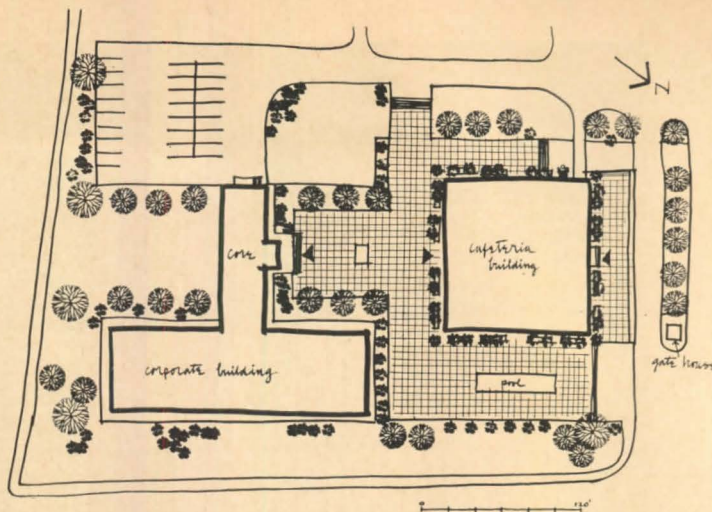
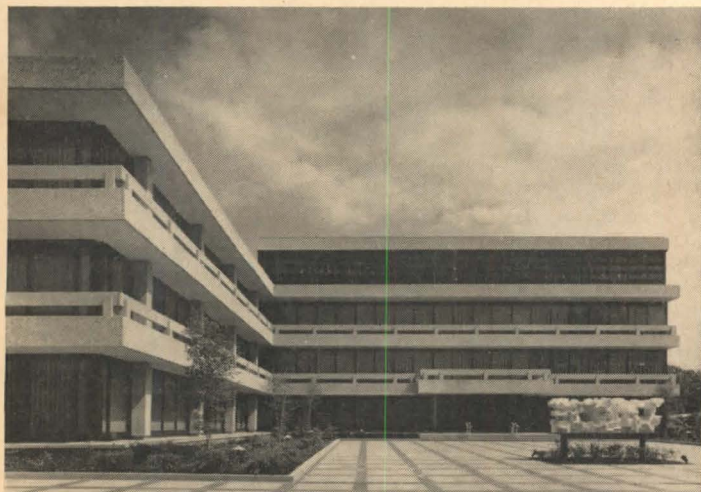
other face. But we could not make *his* face again. And no one who saw him at the Seagram Plaza can doubt that *that* is what he was meant for when

he was carved about two thousand years ago. His stone age face was more valid in our space-age city than our own images—sacred or profane.”

CIBA at Summit

SUMMIT, N. J. Although rain dampened the dedication ceremonies of the CIBA Corporation's new headquarters, it failed to dampen the enthusiasm of the New Jersey chemical company's employees, who are justly proud of their new facilities. New York architects Eggers & Higgins designed a two building complex—a four story administrative building and a two-story cafeteria—integrated by a bluestone terrace which winds between them. Façades are of sand-colored, mosaic-faced concrete panels with windows of solarbronze

glass, and the angularity of both the buildings and the terrace are offset by an abstract sculptured white concrete fountain, designed by Henri Nechemiz Azaz, and two other pieces of his abstract sculpture.



tain, designed by Henri Nechemiz Azaz, and two other pieces of his abstract sculpture.

Constructed at a cost of \$4.6 million, the complex includes

48,000 sq ft of office space in the administration building and dining facilities for more than 400 persons. An underground tunnel connects the buildings.

Erratum

E. Sharon is one of the architects working on the design of the Tel Aviv Air Terminal in Israel. His name was inadvertently omitted from our report (p. 60, JUNE 1965 P/A).

Obituaries

JAMES F. LINCOLN, Chairman of the Lincoln Electric Company, died in Cleveland, Ohio on June 23, 1965.

WILLIAM GRAY PURCELL, who began his career working under his future partner George Grant Elmslie in the office of Louis Sullivan, died on April 11. Born in 1880, Purcell was one of the last survivors of the "Prairie School" of architects, who graced the American Midwest with distinguished residential and small commercial buildings in the teens of this century. He had lately lived in California.

SIMON RODIA, creator of the three controversial Watts Towers in Los Angeles, died on July 19 at the age of 90.

ANDREW THOMAS, designer of housing projects and creator of the garden apartment, died in New York City at the age of 90.

JUST LUNNING, president of Georg Jensen, Inc., died recently at the age of 55. Together with his father, who founded the Fifth Avenue store and named it after Denmark's famous silversmith, Lunning educated the Ameri-

Calendar

October 6-10 are the dates for the meeting of the California Council, AIA, in Yosemite National Park. The theme will be "The Architect and the Land—1965". . . A few jumps away, the University of California (Berkeley) and the Artists and Art Directors Club of San Francisco will co-sponsor a conference on color. The theme will be "Eyes West 1965." The dates are October 8-10 and the place is Squaw Valley. Information is available from Letters and Science Extension, University of California, Berkeley, California 94720 . . . November 17, 18, and 19 at the Shoreham Hotel in Washington, Reynolds Metals and ACTION Council for Better Cities will sponsor a symposium on the problems of social and economic imbalance in relation to the environment of American cities. For information, contact Dave Loye or Jack Steinberg, Cunningham & Walsh, Inc., 260 Madison Ave., N.Y., N.Y.

Personalities

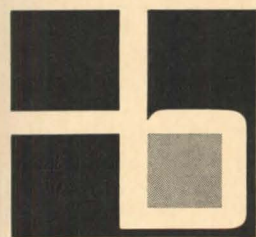
The Construction Specifications Institute named eight new Fellows at their recent convention. Cited were: John C. Anderson, John Russell Birchfield, Sr., Herman H. Boisclair, Francis L. Frybergh, Harold E. Keller, Joel E. Stegall, Jr., Paul H. Tiffin and Franklyn E. War-

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iii or are they?

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Auburn University's School of Architecture and the Arts will gain **Edward E. Pickard** as an assistant professor and **Ralph K. Morrill**, **Newton LeVine**, and **Adnan S. Taspinar** as associate professors . . . **Herbert M. Franklin**, formerly legal advisor in the Urban Renewal Administration in Washington, will join ACTION as director of the Urban Redevelopment Division . . . Awarded certificates of fellowship in the American Society of Landscape Architects were: **Edward B. Ballard**, **Newton Dean Glick**, **Earl C. Crever**, **Lynn M. F. Harriss**, **Laval S. Morris**, **Cary Millholland Parker**, **William C. Pauley**, and **Jane Silvester Ries** . . . **George D.**

Brown, partner in the firm of **Brown, Guenther, Battaglia, Galvin**, has been made a member of the New York Board of Higher Education . . . New officers of the Western Red Cedar Lumber Association were announced recently, with **M. J. Butler** of Aberdeen, Washington, **Joseph O. Haas**, of Vancouver, B.C., **Jack Biggs** of New Westminster, B.C., and **T. C. Boyle** as president, vice-president, treasurer, and secretary respectively . . . The concrete Reinforcing Steel Institute has also announced its new officers: **Frederick H. Wadley** of Denver, president, **Ted Sams** of Memphis and **Robert T. Stafford** of Chicago as vice-presidents.

Fanning the Arts

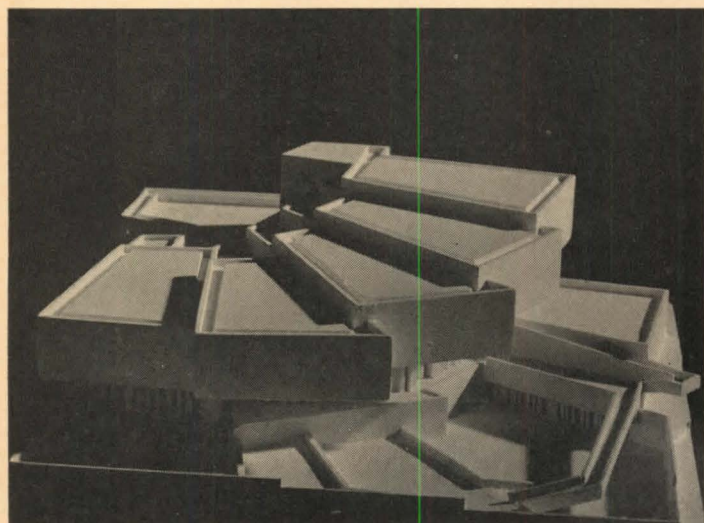


Photo: Karl H. Riek

BERKELEY, CALIF. Spilling fan-like down a gentle slope at the University of California, this proposal for the University Arts Center won a nationwide design competition this summer. The architects were **Mario J. Ciampi**, with **Paul W. Reiter**, Associate Architect, and **Richard L. Jorasch** and **Ronald E. Wagner**, Associates. Their design, with its distinctly articulated units arranged around a pivot, is faintly reminiscent of Aalto's stepped, fanned lecture halls in his cultural center for Wolfsburg. In the University Arts Center, the pivot point is the lobby from which each gallery and its attendant sculpture terrace radiates. Each gallery will form a separate alcove about 60 ft deep and will be open to a great central space so that a visitor will be continually aware of his orientation. Also included in the 90,-

facilities, music and art studios.

According to the jury: "There are some practical questions that can be raised. One needs to be sure that the ramps connecting the gallery levels will be ample enough for the transport of bulky objects on dollies. Sky lighting of the upper tier of galleries does not seem adequately studied, since day lighting is confined to the periphery. The administrative offices lack an outlook. The jury believes these and perhaps other points can be resolved without major change in the design. The areas shown in the plans are correct and the jury foresees no great structural difficulty. . . . The richness of this building will arise from the sculptural beauty of its rugged major forms and will not require costly materials or elaborate detail. We believe this design not only meets the prac-

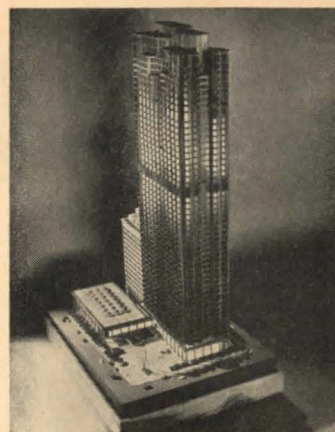
become one of the outstanding contributions to museum design in our time."

Total cost of the project including landscaping and furnishings is expected to be \$4,000,000, which will be raised from non-tax sources.

Members of the jury were: Chairman, **Lawrence B. Anderson**, who is chairman of the Department of Architecture at M.I.T.; architects **Gardner A. Dailey** and **Ralph Rapson**, dean of the School of Architecture University of Minnesota; and University of California regents **Dorothy B. Chandler** and **Donald H. McLaughlin**.

High Sierra on the Street

SAN FRANCISCO, CALIF. By the end of the decade, if all goes according to plan, the Bank of America will have a new corporate headquarters that is already being billed as the tallest building in the West. The 750-ft, 52-story granite tower may well be the tallest, even if it doesn't "recall the towering rock formations found in California's High Sierras," as the poets of press agency put it. Designed by **Wurster, Bernardi & Emmons**, with **Pietro Belluschi** and **Emery Roth & Sons** as consultants, it will rise from a landscaped plaza (215' x 140') at the corner of California and Kearny Streets. By using bronze-tinted bay windows set in bronze-tinted aluminum mullions and frames, the architects hope to give the building scale, provide a strong vertical sense, and multiply the views from the offices within.



Adjoining the tower will be a two-story banking building. In all, there will be 1,900,000 sq ft of floor area, and parking space beneath the plaza for 500 cars. Cost is expected to be \$85,000,000, including land.

Awards

Thirty-one architecture students and graduates at the Columbia University School of Architecture have been awarded **William Kinne Fellows Memorial Traveling Fellowships** and **Scholarships** this summer. . . **Walter M. Kroner** of the University of Colorado and **Stephen J. Sawyer** of Arizona State University have won \$500 **Monarch Tile** scholarships . . . The **Desco International Association** scholarships went this year to **W. P. Dinsmoor White** (North Carolina State), **Donald Craig Morris** (University of Kansas) and **Earl H. Bouillon U.S.C.** . . . Winners of the 1965 Thesis Awards sponsored by the National Institute for Architectural Education (NIAE) are: **Arthur Klipfel** (Yale) and **Larry Keller** (Columbia).

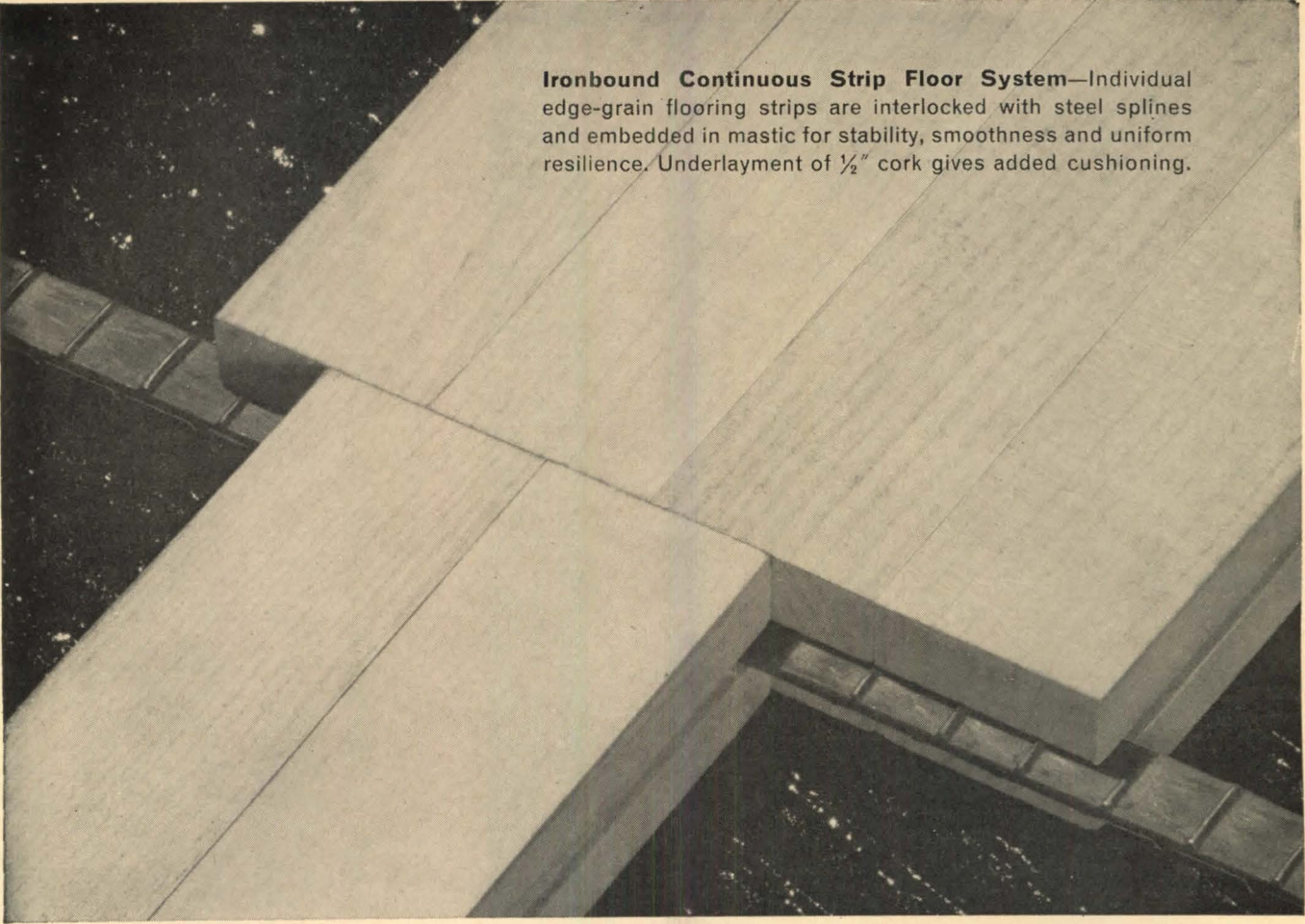
WASHINGTON/FINANCIAL NEWS

BY E. E. HALMOS, JR.

Nobody seems to have paid much attention to the development, but architects and architect-engineers doing business with any branch of the U.S. armed services are now selected under the formal provisions of the Armed Services Procurement Regulations (ASPR).

You may recall that there was a considerable fuss over this idea a couple of years ago, when Defense Secretary Mc-

February 1965, when the new revisions went into effect—A-E procurement was handled individually by the three principal branches (Army, Navy, and Air Force) under specific Defense Department directives, which recognized the special nature of A-E contract work. Many architects felt that shifting such procurement procedures to ASPR auspices might lead to situations where purchasing officers more fa-



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Architects: Chas. H. McCauley and Assoc., Birmingham, Ala.
Installer: E. P. Cuthrell Flooring Co., Birmingham, Ala.

In gymnasiums, auditoriums and many other areas, the Robbins IRONBOUND floor system gives maximum satisfaction. Installation of MFMA Northern Hard Maple edge-grain flooring by this superior method (see photo above) is made and guaranteed by experienced, franchised applicators, and backed by Robbins.

From coast to coast, Robbins IRONBOUND Floors give trouble-free service and low-cost upkeep in schools, colleges and other institutions with exacting floor requirements. For detailed data on floor systems and name of nearest authorized Robbins installer, write: Robbins Flooring Company, Dept. PA-965, White Lake, Wis. 54491. See our catalog in Sweets.

MAIL
FOR DATA

ROBBINS FLOORING COMPANY
Dept. PA-965 White Lake, Wisconsin 54491
☐ Send complete information
☐ Advise name of authorized installer in this area

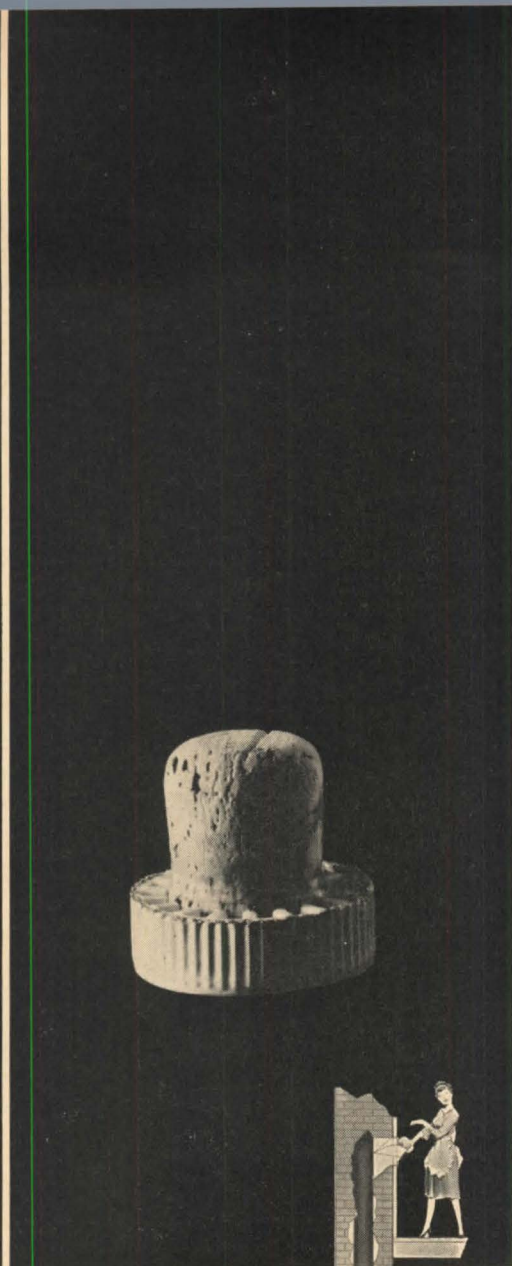
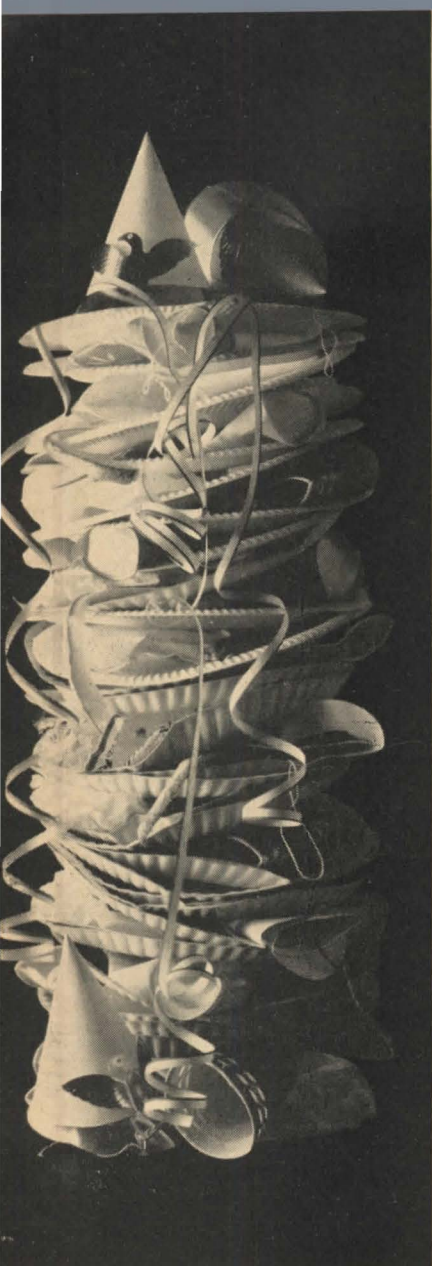
Name _____

Firm _____

Address _____

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flooring company
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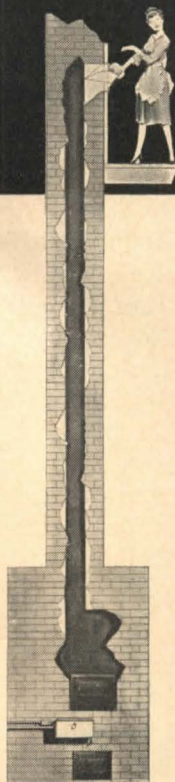
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For large or little loads . . .

SPECIFY DONLEY PRE-ENGINEERED SUCCESSFUL INCINERATORS

In apartment houses and other buildings, rubbish and garbage are burned under different conditions, varying with the day, even the time of day, the season, and the number of people being serviced. □ To help you select the correct incinerator for the specific application, Donley provides a neat, complete package—a simple-to-use Selector Chart, Catalog, and then dimension drawings, parts, burners, doors, grates, etc., and detailed instructions for installation by local masons. □ Depend on Donley. Write today for Selector Chart and new Incinerator Catalog.



THE DONLEY BROTHERS COMPANY
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Donley

position of selecting A-E's.

There was also a further fuss: Original DOD directives stated that if an A-E firm had contracts calling for total fees of more than \$25,000 in the continental U.S., it could not receive additional contracts from the same agency office without approval of higher headquarters.

After strenuous protests from engineering and other groups, this limit was raised to \$100,000.

The inclusion of A-E procurement in the ASPR system now supersedes the former directives, makes handling of these contracts uniform for all of the services, and, so far, has allayed the fears of detractors.

The limitation on fee totals (\$100,000 in a single year from a single field activity of any service) remains in effect (unless further contracts are okayed by higher echelons); selection of the A-E firm after negotiation is made the responsibility of boards that must have at least three members who are qualified A-E's themselves, or their equivalents from the armed forces. (If your attorneys want to check, the new revisions are contained in Section 18, Revision 9, Part 4, of ASPR.)

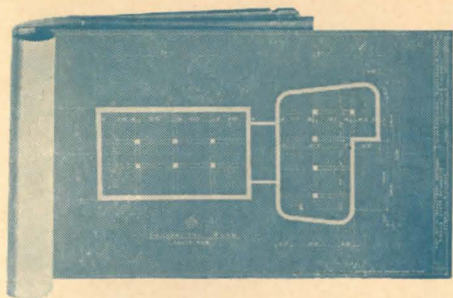
Federal Funds For Construction

Aside from some controversial matters, such as rent subsidies for low-income families, that \$7.5 billion "Housing and Urban Development Act" sent to the President late in July contains a lot of money for construction.

Specifically, it authorizes \$125 million for urban planning grants; \$2.9 billion for urban renewal work; \$235 million for "open space" grants (purchase of areas for future parks etc.); \$955 million for college housing; \$150 million for housing for the elderly; \$50 million for public works planning; \$5 million for low-income housing demonstration programs; money for 60,000 units a year of public housing.

Public Projects Approved

The Senate's Public Works committee has approved \$129.3 million worth of new projects that include a huge, \$37 million new Court of Appeals building for New York City;

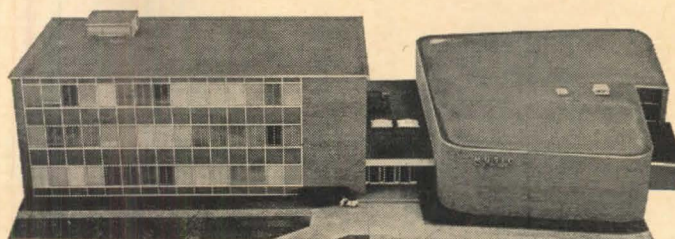


Remember Styrofoam.

(If you're not using it for roof insulation now, you probably will in a few years. So why wait?)

We've talked to architects and they've told us they think Styrofoam® RM brand roof insulation is the material of the future, the near future. And we believe them. Styrofoam RM roof insulation is the new and better way to insulate built-up roofs. It has proved itself superior to other well-known roofing products. Matter of fact, can you name any other insulation that matches the advantages of Styrofoam RM? That can't absorb water? Acts as its own vapor barrier? Won't rot? Can't collect mold? Has a low "k" factor? Won't lose its efficiency? Is liked by roofing contractors because it's so light, non-irritating to the touch, and easy to install? No names come to mind? All the more reason for remembering that Styrofoam RM is the roof insulation of today—and tomorrow. Want to know more? You'll find it in Sweet's Architectural File 10a/Do and 8a/Dow. Or write us. The Dow Chemical Company, Plastics Sales Department **1312EB9**, Midland, Michigan. *Styrofoam is Dow's registered trademark for expanded polystyrene produced by an exclusive manufacturing process. Accept no substitutes . . . look for this trademark on all Styrofoam brand insulation board.*

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OK. Now forget it.

(Only until your next job, that is.)





In Structural Reinforcement

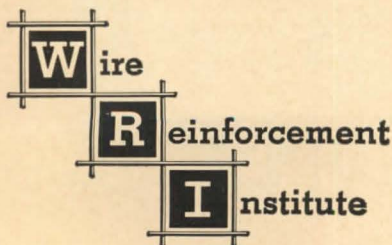


WRI

is service

Phil Weisz, structural engineer of WRI—the Wire Reinforcement Institute, serves the building construction industry by assisting engineers, architects, and contractors in selecting **welded wire fabric** for efficient reinforcement designs. Mr. Weisz, M.ASCE, M.ACI, is a registered professional engineer with extensive field and office experience. Part of his duties includes serving on the WRI Technical Committee, which recently prepared the 52-page Supplement to the 1960 WRI Building Design Handbook. Making Mr. Weisz available to the industry is another service of the Institute, whose members produce most of the **welded wire fabric** used in the United States and Canada.

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Washington, D.C. 20016

emy, on a site at Quantico, Va., to cost \$15.7 million; and a \$12.4 million courthouse and office building at San Juan, Puerto Rico.

The list, submitted by the General Services Administration, and now approved for planning and construction, comprised some 16 new buildings and 4 major modification and repair projects.

Financial

With the Federal appropriations bills rolling out of Congress this year well ahead of the pace in previous years, there was little doubt of continuing ample public funds for construction work. Most appropriations for construction agencies carried slight increases over budget requests; these, plus the huge new money bills (like the urban development program, Appalachia package, and others) run the total Federal contribution alone to about \$10 billion for the new fiscal year.

If you add this figure to the roughly \$16 billion a year (according to the Census Bureau) now spent yearly by state and local governments for new construction, the figures add up to well over a third of the total expected dollar volume for the industry for the current calendar year.

The size of the Government's share of the industry's volume is further confirmed by monthly construction put-in-place figures. In June, the total was \$6.3 billion—up about 2 per cent over a year before. Of the total, \$1.9 billion was Government work.

But the housing sector of the construction industry continued weak. In June, it was operating at an adjusted annual level of 1.531 million units, 6 per cent below June, 1964.

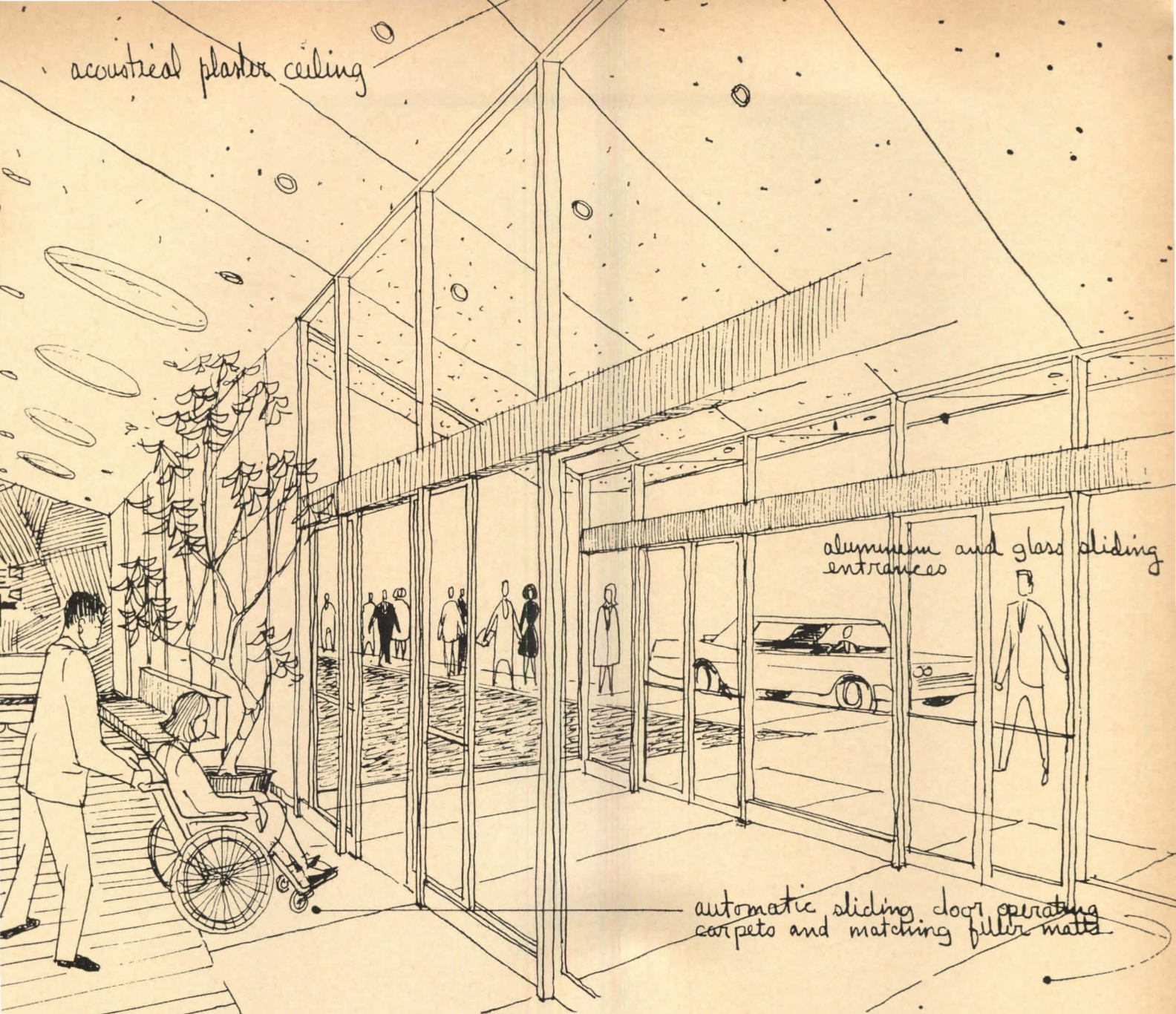
And construction costs, spurred by added wage demands, continued to inch upward. In July, the Public Health Service's construction cost index (for sewage treatment plants) edged upward by .72 per cent.

There was no evidence of tightening in the supply of money, however. FHA reported that average secondary market price of new-home mortgages held steady—for the seventh consecutive month—at \$98.6 per \$100 of outstanding



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Automatic doors by Stanley reduce hospital operating costs

Approximately 70% of hospital cost dollars go into labor . . . people. You can move more than three times as many people through automated doors as you can through manually operated doors. Automated doors also assure more efficient use of personnel. For example,

only one orderly is needed to push a stretchered patient through automatic doors. Moving more people more efficiently through doorways means reduced operating costs. Stanley offers the most complete line of operators (pneumatic, hydraulic, electric), controls and accessories for all hospital doors that swing, slide or fold.

Write for our Magic-Door Specification Guide for Hospitals (No. M67-H0S), or look us up in Sweet's or the Yellow Pages for more information on MAGIC-DOOR® equipment, including the new Stanley

Model 1000, AUTO-SLIDE. This sliding entrance saves space and allows two-way traffic through a single opening. Doors swing open for emergency use to meet exit code requirements. STANLEY DOOR OPERATING EQUIPMENT, Division of The Stanley Works, New Britain, Connecticut.

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MAGIC-DOOR MAINTENANCE SERVICE
ANY TIME • ANY PLACE

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a specification from Hillyard . . .

for a TERRAZZO SEAL that
penetrates, protects, beautifies

PRODUCT NAME: *SUPER ONEX-SEAL®*

DESCRIPTION:

An ester-type penetrating sealer that may be buffed to provide a hard wear-resistant lustrous finish on terrazzo and other masonry surfaces.

SPECIFICATION AND HOW TO APPLY:

Floor must be thoroughly cleaned and free of stains. Agitate material until uniform. Apply in thin even coat with lamb's wool applicator. Let dry, not to exceed 20-30 minutes until pressure of the fingers pulled across the surface produces a squeaking sound. Buff each coat after application to provide greater lustre. Apply second thin coat and buff.

COVERAGE:

600 square feet per gallon first coat, 900 square feet per gallon second coat.

TECHNICAL DATA:

NVM-10.5% minimum. Film properties: Drying time-45 min. maximum; Appearance-free from particles—semi-transparent; Tackiness-none; Water resistance-no loosening of film, no removal of gloss. General Appearance: Color-light, shall contain no pigments or dyes; Odor-non-objectionable at any time; Viscosity-heavy-bodied liquid mixture.

GUARANTEE:

When applied in accordance with manufacturer's directions, it is guaranteed to meet all claims made for it in the proper sealing and finishing of terrazzo floors.

MAINTENANCE:

Sweep daily with a Super Hil-Tone treated dust mop (do not use an oily mop dressing). Buff periodically. When floor is soiled, clean with Super Shine-All, a safe neutral chemical cleaner. Traffic lanes may be patched in and buffed to blend in with the rest of the floor. Reseal as needed depending upon traffic and kind of use.

APPROVALS:

This is the type of a penetrating seal recommended for use by the National Terrazzo and Mosaic Association. U/L listed relating to fire hazard and slip resistance.

REFERENCES:

Hillyard A.I.A. File No. 25G.
A.I.A. Building Products Register
Sweets Architectural File

A trained professional Hillyard Architectural Consultant will demonstrate SUPER ONEX-SEAL for you, at no obligation. He serves "On Your Staff-Not Your Payroll". Write, wire or call collect.



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Since 1907

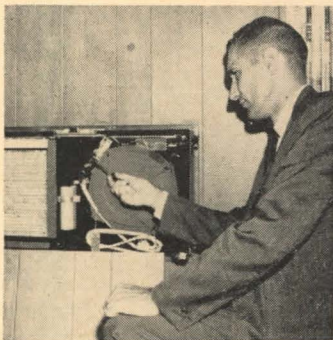
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Approved Treatments For Every Surface

NEW PRODUCTS

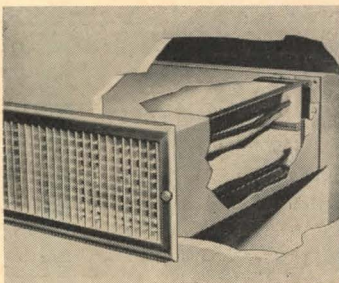
Air/Temperature Through-Wall A/C



Eight models have been added to "Zoneline" through-wall air conditioners. They have special operating features including a built-in option of 230-v or 208-v power system; remote control units for hotel, motel, office building, and apartment applications; and three-speed fan on electric heat models. These Zoneline models are available in three types: cooling only, cooling/electric heat, and heat pumps. All chassis fit a standard case (42" wide, 16" high, and 13 3/4" deep) with 8000, 12,000, 15,000 Btuh cooling capacities. Two heat pump units are rated at 9500/10,000 and 14,000/15,000 Btuh heating/cooling capacities. General Electric, 750 Lexington Ave., New York, N.Y.

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Hospital Air Filter



Air filter delivers clean air in critical hospital areas, regardless of the efficiency of existing air-filtration systems. "Terminal Filter Unit," installed in existing duct work immediately behind the room outlet grille, is said to prevent airborne contaminants from entering operating suites, nurseries, postoperative rooms, and other areas. Unit has adapted high-efficiency, nonsupported filter ("Dri-Pak") that is 98.2

per cent efficient on bacteria, according to U.S. Public Health Department. American Air Filter Co., Louisville, Ky. On Readers' Service Card, Circle 101

Construction

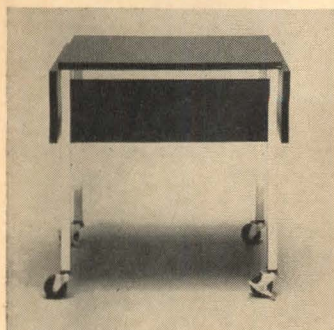
A-490 Bolt has 22,550 psi

Recently improved high-strength structural bolt called "A-490" "can save more than \$100 per connection, even though the cost of the bolt itself is 25 to 30 per cent more than A-325 bolt." A-490 has 22,500 psi allowable design

Plate Girder Splice-A36 steel
Web 70 x 1/2 Flange 24 x 1-1/8

7/8-in. dia. A325	7/8-in. dia. A490	1 in. dia. A490
25-1/2 in. dia. x 2 1/2" - \$28.88	25-1/2 in. dia. x 2 1/2" - \$31.50	25-1/2 in. dia. x 2 1/2" - \$31.50
18-1/2 in. dia. x 2 1/2" - \$21.00	18-1/2 in. dia. x 2 1/2" - \$21.00	18-1/2 in. dia. x 2 1/2" - \$21.00
12-1/2 in. dia. x 2 1/2" - \$13.50	12-1/2 in. dia. x 2 1/2" - \$13.50	12-1/2 in. dia. x 2 1/2" - \$13.50
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4-1/2 in. dia. x 2 1/2" - \$4.50	4-1/2 in. dia. x 2 1/2" - \$4.50	4-1/2 in. dia. x 2 1/2" - \$4.50
2-1/2 in. dia. x 2 1/2" - \$2.50	2-1/2 in. dia. x 2 1/2" - \$2.50	2-1/2 in. dia. x 2 1/2" - \$2.50
2 plates 24 x 1/2 x 2 1/2" - \$12.00	2 plates 24 x 1/2 x 2 1/2" - \$12.00	2 plates 24 x 1/2 x 2 1/2" - \$12.00
4 plates 12 x 1/2 x 2 1/2" - \$12.00	4 plates 12 x 1/2 x 2 1/2" - \$12.00	4 plates 12 x 1/2 x 2 1/2" - \$12.00
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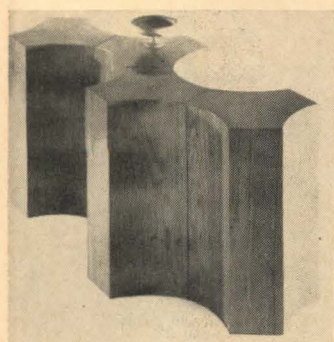
Typing-Display Table



When the leaves of this unusually trim typing table are up, the surface measures 16" x 40"; when they are down, the surface is 16" x 24". The table is 26" high and rolls on hard rubber casters with opposing brakes. Top and leaves are covered and self-edged with black plastic laminate; the legs, of 1" square steel tubing, have a bright chrome finish. Howe Folding Furniture, Inc., 360 Lexington Ave., New York, N.Y. 10017.

On Readers' Service Card, Circle 107

Clustering Pedestals



A cluster of Probbor's "triad" pedestals form a coffee table (shown); used singly, the new pedestals make chairside cigarette tables. Made of teakwood veneers by a new laminating press recently installed at the Probbor factory in Fall River, Massachusetts, each unit is 19" high. Harvey Probbor, 155 E. 56 St., New York, N.Y.

On Readers' Service Card, Circle 108

Leather, Walnut, and Steel

Under the direction of architect William Armbruster, Edgewood has been producing architectural furniture since 1947. Their newest collection includes leather-covered desks and credenzas, stools, and tables, and lounge chairs with

chair on a spring steel sled base. A buffet (shown) has a tambour slide center section of dark walnut; the case and side doors are leather-covered. It

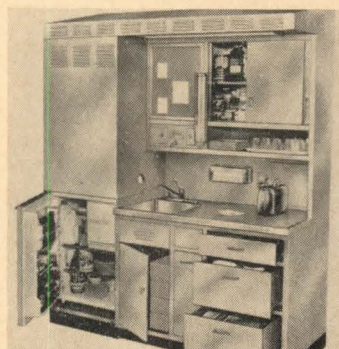


comes with either a stainless-steel or a dark walnut base. Edgewood Furniture Co., Inc., 208 East 52 St., New York, N.Y. 10022.

On Readers' Service Card, Circle 109

Special Equipment

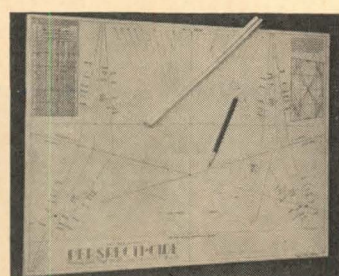
Prefab Kitchen



"Supplemental Feeding Unit" includes ice maker, refrigerator with frozen food keeper, instant water dispenser, hot plate that folds away when not in use, and waste receptacle. Stainless-steel unit is delivered assembled, ready for open or recess mounting. There are no venting problems and service connections to hot and cold water, drain, and electricity are accessible from the front of the unit. American Sterilizer Co., Erie, Pa.

On Readers' Service Card, Circle 110

Perspective Drawing

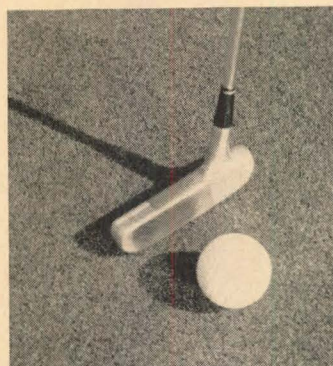


"Accumetric Perspecti-Gide" is

lines and used under a floating tracing paper drawing. Charted project set-up dimensions are based upon true perspective geometry for views up to 36" wide. Protractor shows full range of object viewing angles, which may be drawn above or below the horizon. All points in the drawing may be determined with precision by any selected scale. Perspective layouts are said to uncover orthographic errors of interference, fairing, and placement. Perspective plate, together with instruction booklet, is available in one package for \$35. Penberthy & Miller, 5800 S. Boyle Ave., Los Angeles, Cal.

On Readers' Service Card, Circle 111

For Winter Golf



All-weather carpeting, called "Tartan," is made of synthetic fibers embedded in a flexible plastic base material. It is available in grass green, red, and black. Tartan can be bonded to any hard surface with the proper adhesive. Fibers and backing are said to be waterproof and weatherproof. Over-all thickness is 1/4", with fibers rising 1/8" above the backing. Tartan is used for porches, patios, and even for putting greens for all-weather golfers. 3M Co., 2501 Hudson Rd., St. Paul, Minn.

On Readers' Service Card, Circle 112

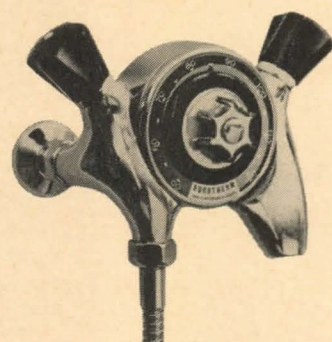
Concrete Fountain



depth and is made of precast concrete with reinforced steel. Unit has stainless-steel receptor and angle-stream bubbler activated by a chrome-plated brass, vandal-proof push button on the side of the pedestal. Three finishes are used: light sandblast that shows the aggregate; smooth finish; and exposed aggregate showing 1/4" gravel. Fountain is available in natural gray and other colors. Other heights and optional freeze-proof valve system for subfreezing climates are available. Haws Drinking Faucet Co., Fourth & Page Sts., Berkeley, Calif.

On Readers' Service Card, Circle 113

Regulated Shower Mixer



Automatic water mixer has fingertip-control temperature dial and easily adjustable safety lock for presetting any maximum temperature. Water fluctuations are automatically controlled. Automatic shut-off valve protects against a break in either the hot or cold water supply. Stainless-steel parts consist of a body, a mixer, and a temperature selector. Mixer can easily be removed for cleaning of screens that are on the outside of the mixer. Chromed flexible hose is 4' or 5 1/2' long. Several models are available. Shown is "Model 3931." Transglobal Enterprises Ltd., 15 Park Row, New York, N.Y.

On Readers' Service Card, Circle 114

Surfacing

The Solid Gold Tile

Series of vitreous tiles in gold, brass, or silver has been added to "Venezio" line. Shades of gold range from "Plain Gold," "Old Gold," and "Antique Gold" to a combination of all these shades called "Antique



This will roof nine squares



... so will this

It's BFG ONE-PLY, a complete self-flashing roofing system from B.F. Goodrich. ONE-PLY is made of Hypalon* synthetic rubber backed with neoprene-bound asbestos. Black or white. It's rugged, durable, quickly and easily applied. For roofs of nearly any shape. Lightweight? Nine squares of 4-ply, gravel-surfaced conventional roofing, in place, weighs nearly three

tons. Just 365 pounds of ONE-PLY will cover the same area. And ONE-PLY offers big savings in on-site handling and installation costs. Performance? So good it's guaranteed watertight... free from leakage... for five full years under normal conditions. Want complete information? Just write Building Products Department PA-21, The B.F. Goodrich Company, Akron, Ohio 44318.



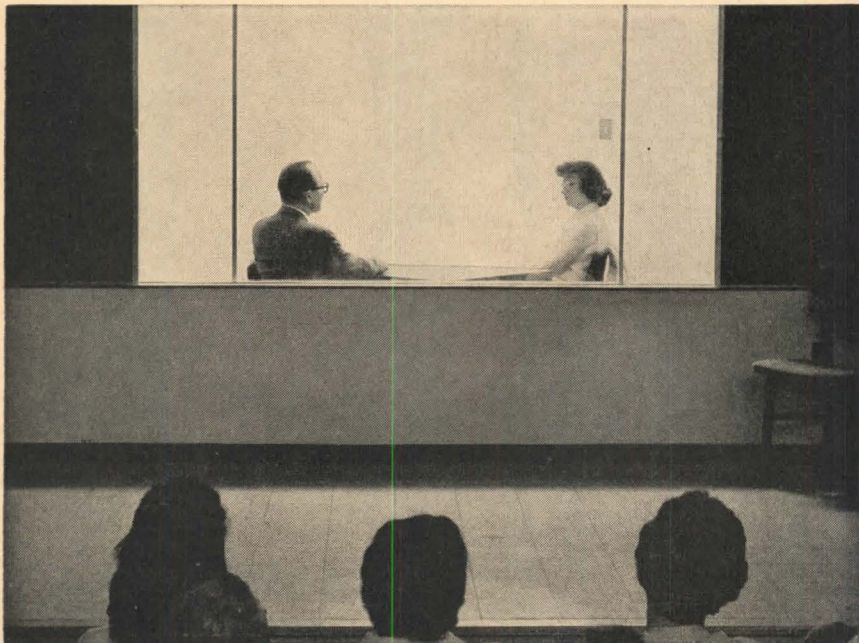
*Du Pont's Registered Trademark

On Readers' Service Card, circle No. 362

It's a Mirror.. (from the brighter side)



It's a Window.. (from the dimmer side)

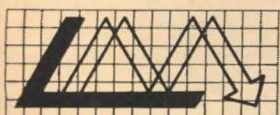


"See-thru" mirror lets students observe patients at Houston State Psychiatric Institute for Research Training, Houston, Texas. Architects: George Pierce — Abel B. Pierce, Houston.

It's Mirropane®.. (the "see-thru" mirror)

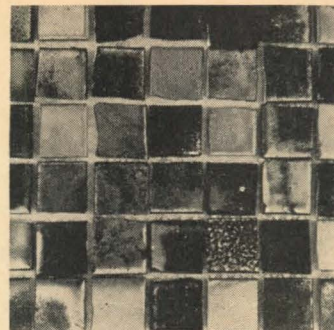
Mirropane lets you observe without being seen. It's now available in *Parallel-O-Grey*® plate glass to work satisfactorily with only a 2-to-1 difference in illumination. For more facts, phone your L·O·F distributor or dealer, listed under "Glass" in

the Yellow Pages, or write



LIBERTY MIRROR

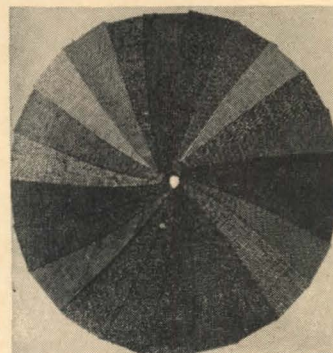
A DIVISION OF LIBBEY-OWENS-FORD GLASS COMPANY
6795 L·O·F Building, Toledo, Ohio 43624



used for interior or exterior applications and are impervious to all types of weather conditions. Each 12" x 12" sheet is mesh-mounted for easy application. Latco Products, 3371 Glendale Blvd., Los Angeles, Calif.

On Readers' Service Card, Circle 115

Scintillating Sisals



Unika Vaev has a new collection of sisal carpetings in a variety of colors—both solids and mixtures. Reportedly color-fast and water-resistant, they are woven in widths from 26" to 118", and as area rugs, from 5' 3" x 7' 11" to 9' 10" x 13' 2". Unika Vaev, 305 East 63 St., New York, N.Y.

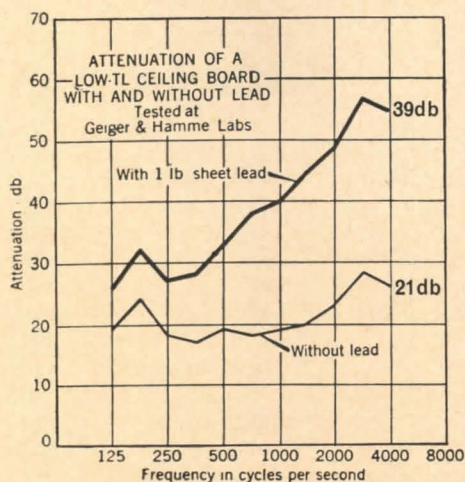
On Readers' Service Card, Circle 116

Ye Olde Irish Road



"Irish Cobblestone" embossed vinyl tiles are used for installation on suspended flooring. They are small, irregular-shaped cobblestones available in "Bronze Green," "Beige," and "Terra Cotta." Tile sheet is made in 6' widths only. Sandura Co., Benson East, Township Line & Old York Rd.,

“Aw, shut up!”



The roar of the machine shop across the hall . . . the irritating clatter of the typewriter next door . . . the growl of the nearby air conditioning machinery . . . all foreign sounds invading your privacy.

Today, these conditions need not be tolerated. Thin-sheet lead used as a plenum or over-ceiling barrier effectively cuts outside noise to a murmur. Tests have confirmed that sound attenuation has been improved 18 db (see chart) through the use of thin-sheet lead barriers between hung ceiling and slab.

And thin-sheet lead is economical too. It cuts easily, simplifying installation around lighting fixtures, sprinkler heads, piping and conduits. For more information write for our "Practical Lead Sound Barriers" brochure. Lead Industries Association, Inc., Dept. N-9, 292 Madison Avenue, New York, New York 10017.



LEAD INDUSTRIES ASSOCIATION, INC.

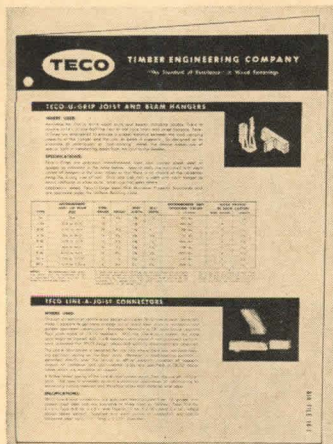
Look Ahead with Lead

5

MANUFACTURERS' DATA

Construction

Wood Fasteners



1965 edition of "Condensed Products Catalog" presents full line of structural wood fasteners. Products include a one-piece cap; an adjustable post anchor; "all-purpose" framing anchor formed in the fields for use in floor, wall, and roof construction; "Trip-L-Grip" and "Du-Al-Clip" framing anchors; "U-Grip" joist and beam hangers; "H-Clip" plywood supports; "Fas-Lok" floor bridging; "Wedge-Fit" split rings; shear plates; truss plates; utility angles; "Line-A-Joist" connector for cantilevered floor framing; and "Ty-Down" roof anchorage device. Timber Engineering Co., 1619 Massachusetts Ave., N.W., Washington, D.C.

On Readers' Service Card, Circle 200

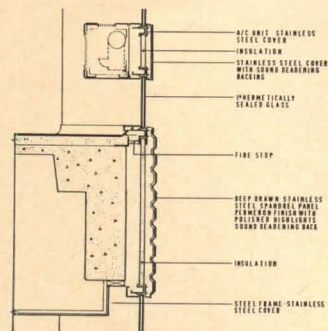
Expanded Polystyrene Core Building Panels

"Dylite" structural, modular panels are of sandwich-type construction. Each panel uses conventional facing material and rigid core of expanded polystyrene. "Heavy-Loading" panels can be used in long spans without intermediate supporting members. Plywood facings are permanently bonded to the Dylite core and wood rails to form a stressed-skin sandwich panel. Panels are available in modular dimensions up to 4' x 24' for roofs and walls and up to 4' x 20' for floors. They have a built-in cam locking device, which permits faster erection "than any other panel or conventional construction method."

the enclosure for later relocation. "Heavy-Loading" panels are used for large and small environmental enclosures. "Medium-Loading" panels are used as insulated curtain walls for storage rack systems, as liner panels for masonry structures, and as small, free-standing enclosures. They are available in 4' widths and up to 27' lengths. Charts, details, and specs are included. Koppers Co., Inc., Panel Dept., Detroit, Mich.

On Readers' Service Card, Circle 201

Stainless-Steel Storefronts/Spandrels



Two booklets, "Data Sheet No. 11 and 12," describe use of stainless steel in spandrels and storefronts. Details are given on fluted spandrels of natural stainless steel, spandrels of color-coated stainless, spandrels with a deep-drawn pattern and highlighted finish, and a functional spandrel that doubles as a hurricane screen. Photos and sections are included. American Iron and Steel Institute, Committee on Stainless Steel Producers, 633 Third Ave., New York, N.Y.

On Readers' Service Card, Circle 202

Plywood Specs

Short-form and long-form specs are given for plywood con-

struction (subfloors, combination subfloor underlayment, and underlayment), and walls and soffits (wall sheathing and siding). Also covered are specs for plywood concrete forms and for various finishing methods. American Plywood Assn., 1119 A St., Tacoma, Wash.

On Readers' Service Card, Circle 203

Precast Panels

Brochure describes precast concrete insulated panels and integrated window walls. Panels can be fabricated in sizes up to 10' x 20'. Photos illustrate different designs that can be achieved with precast concrete members. Specs and details are included. Tecfab Industries, 2 Porete Ave., North Arlington, N.J.

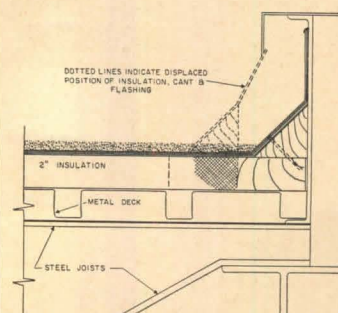
On Readers' Service Card, Circle 204

Curtain Wall Design

"Metal Curtain Wall Design Principles" is a reprint of Section 6 of the *Metal Curtain Wall Manual*. Contents include "The Function of the Wall," "Natural Forces and Their Effects on the Walls: Light, Heat, Water, Air, Sound, and Gravity," and "Considerations Affecting Design: Appearance, Structural Capacity, Provision of Movement, Control of Thermal Transmission, Control of Leakage, Water Vapor and Condensation, Joints, and Seals." Details aid in explaining the text. National Association of Architectural Metal Manufacturers, 228 North La Salle St., Chicago, Ill.

On Readers' Service Card, Circle 205

Built-Up Roof Failure



"Effects of Thermal Shrinkage on Built-Up Roofing," National Bureau of Standards Monograph 89, by William C. Cullen

up roofings to fail. Data is given on reducing maintenance, repair, and replacement costs that result from premature roof failure. Surveys conducted by the author in both hot and cold climates indicate that many of the flat roofs failed before the termination of their 20-year guarantee. Cullen has devised a laboratory test method for determining the amount of such movement. Discussed are several precautions that can be taken to avoid or reduce the number of premature failures of built-up roofing due to thermal shrinkage. Booklet is available at 10¢ per copy. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Steel Design Winners

AISI has recently published a 52-page booklet that describes and illustrates the 10 award-winning designs of the Institute's Design in Steel Award Program (see p. 64, APRIL 1965 P/A). Also featured are 28 designs cited for excellence. Among products and structures included are kitchen ranges, furniture, houses, churches, skyscrapers, and bridges. American Iron and Steel Institute, 633 Third Ave., New York, N.Y.

On Readers' Service Card, Circle 206

ASTM Publication List

American Society for Testing and Materials has published a 38-page booklet containing all their available publications. Comprehensive list includes over 500 publications on materials, materials evaluation, and standardization of methods of test and specs for materials. Available are standards, standard adjuncts, standards compilation, indexes, symposiums, manuals, data compilations, charts, and photographs. American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa.

On Readers' Service Card, Circle 207

Insulated Metal Panel

Insulated metal curtain walls, UL fire-rated walls, and single-sheet siding for walls and interior partitions are described



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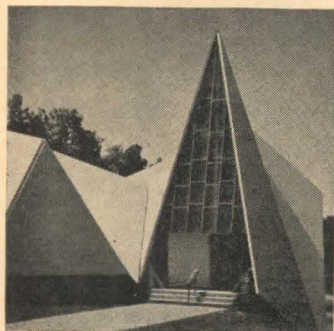


On Readers' Service Card, circle No. 435

clude aluminum, stainless-, galvanized-, prime-painted-galvanized-, and prime-painted, cold-rolled steel. Aluminum wall is supplied in either plain or embossed finish. Insulated panel uses 1½" glass-fiber batts that establish a U-value of 0.15 under standard conditions. By perforating back plate with ⅛" diameter holes on ¾" centers, a noise reduction coefficient of 0.80 is obtained. Details, photos, load tables, and specs for all three types of wall panels are given. R.C. Mahon Co., 6565 Eight Mile Rd., Detroit, Mich.

On Readers' Service Card, Circle 208

Plywood Church Designs



Six types of plywood components are used in several designs of contemporary church architecture. These include folded plates, radial folded plates, curved panels, stressed skin panels, box beams, and space planes. Photos not only show how a particular plywood component system is applied to the structure but also the completed design. Brochure, 32 pages. American Plywood Assn., 1119 A St., Tacoma, Wash.

On Readers' Service Card, Circle 209

Circular Glass

"Therm-O-Proof" insulating glass can be produced in almost any irregular shape, including triangles, trapezoids, radius corners or tops, hexagons, parallelograms, and some complete circles. Unit consists of two or more lights of glass separated by a metal spacer, hermetically sealed, and containing a dehydrated air space at atmospheric pressure. Units constructed of two lights of window glass with ⅜", ¼", or ⅛" air space are available in 136 standard sizes from 19" x 15" to 68⅛" x 48¼". According to manufacturer, Therm-

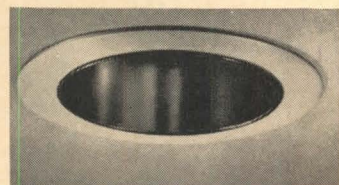
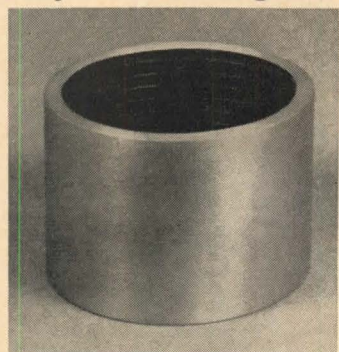


such as Neoprene, can reduce the transmission of sound in a frequency range of 125 to 2000 cps up to 40 per cent, as compared to single glazing with ¼" polished plate glass. Units can be made in over 200 colors, types and patterns as well as in most sizes, shapes, and materials providing that the glass has one flat surface. Specs, dimensions, heat and light transmission chart, and heating/cooling costs are given. Brochure, 8 pages, illustrated. Therm-O-Proof Glass Co., 4815 Cabot Ave., Detroit, Mich.

On Readers' Service Card, Circle 210

Electrical Equipment

Cylinder Downlights



Recently designed line (3-200) of recessed, semirecessed cylinder downlights is used for outdoor/indoor wet locations. Steel housing is 16 gage and has 13 integral cast baffles. Some 20 models are available that have four different types of light control: low brightness open baffle, cast louver guard, reflector intensifier, and symmetric prismatic refractors. Chart shows ft-c distribution using one 150 w Par 38 floor

150 w R 40 floor lamp with 1950 lumens. McPhilben, 1329 Willoughby Ave., Brooklyn, N.Y.

On Readers' Service Card, Circle 211

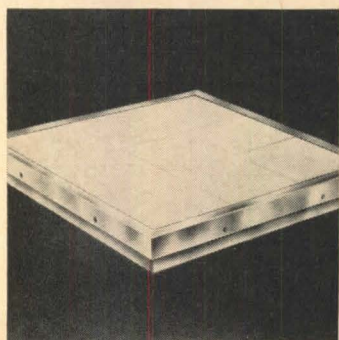
Outdoor Lighting



Outdoor lighting is intended to be used for shopping centers, airports, residential developments, hotels, and other areas. Photographs point up the effects of outdoor lighting installations used with several types of structures. Descriptions of various types of post top and arm-mounting luminaires are given. Standards, posts, davits, and luminaires have a hard-coat anodic finish that produces an oxide coating electrochemically without use of organic dyes or inorganic pigments. Pfaff & Kendall, 84 Foundry St., Newark, N.J.

On Readers' Service Card, Circle 212

Roof-Hugging Skylight



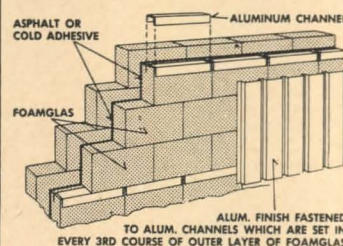
Flat surface skylight called "Acrylite Skypan" consists of outer and inner sheets of acrylic plastic that are chemically welded to reinforcing acrylic plaster ribs. Skypan permits 50 per cent light transmission. At

Unit can support a 70 psf live load as compared with 40 psf load on standard daylighting units. It has a U-factor of .44—about 20 per cent lower than the .55 U-factor on a standard double dome unit. Skypan is assembled with an extruded aluminum retaining and curb frame with a gasket and weepage gutter. It comes in variety of sizes. American Cyanamid Co., 595 North Ave., Wakefield, Mass.

On Readers' Service Card, Circle 213

Insulation

Cellular Glass Insulation



Complete specs are given for "Foamglas" cellular glass insulation in low temperature space construction. Charts, photos, and 30 detail drawings cover all phases of cold storage construction from walls, floors, ceilings, roofs, suspended ceilings, columns and beams, to door bucks. Also included are recommended adhesives, sealers, finishes, paints, and accessories for use in erection of Foamglas. Special section discusses "Envelop" and "Black Box" systems for cold-storage construction in which the interior columns bear on the insulation over specially designed concrete bearing pads. Pittsburgh Corning Corp., One Gateway Center, Pittsburgh, Pa.

On Readers' Service Card, Circle 214

Zone Method of Recovering Roofs

Among the several recovering techniques for roofs are the "Molten Asphalt Method" and the "Zone Method." Former uses mopped layers of melted asphalt as a bedding in which to lay roofing felt topped with pebbles, gravel, or marble chips. Latter utilizes liquid asphalt products made workable by adding solvents that permit its use without heating.

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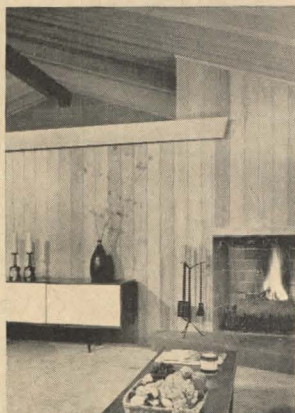


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 Developer: Hanslin Associates, Melrose, Mass.; Cabot's Stains inside and out.

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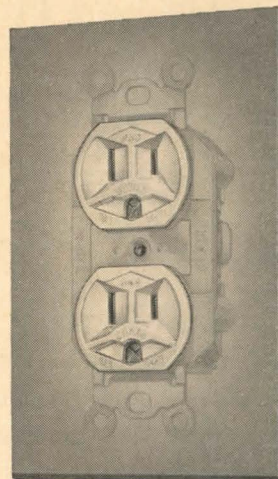
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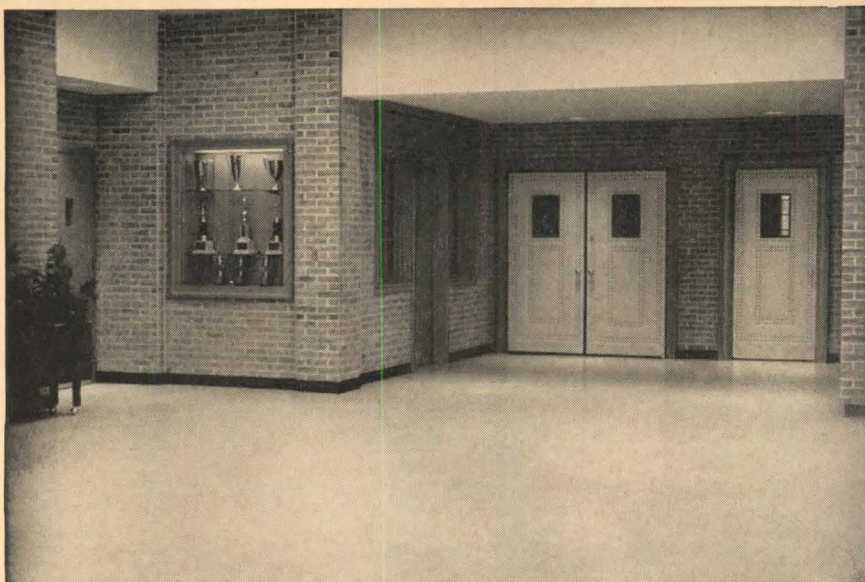
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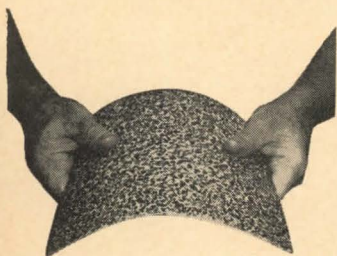
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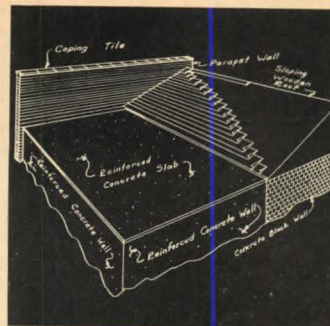
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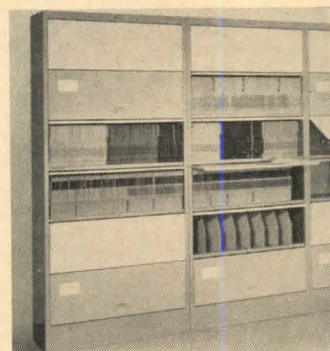
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a 26-page booklet. Among the advantages of using the Zone Method, according to the manufacturer, are: (1) heating damage resulting from the use of Asphalt Method degrades material, even before being placed on the roof; (2) since molten asphalt cools and hardens quickly, workmanship is not as good as that of Zone Method, and (3) uniformity of bonding is not achieved by Molten Asphalt Method. Booklet covers recovering of wood roof deck; recovering of concrete roof deck; recovering and insulating a concrete roof deck; rebuilding a promenade tile roof covering; and roof waterproofing around parapet walls, expansion joints, vent pipes, and roof drains. Southwestern Petroleum Corp., P.O. Box 789, Fort Worth, Tex. On Readers' Service Card, Circle 215

Special Equipment

Space Saving File System



"Spacefinder" steel filing system can file up to 50 per cent more material per sq ft of floor space than with conventional drawer file. All folders are at the front of the cabinets for easy accessibility. File doors can be used as work shelves. Basic Spacefinder file cabinet is 13 1/2" x 36" and provides 204" of filing as compared to conventional four-drawer file cabinet, which uses 15" x 28" of floor space and which uses

quality enamel finish is baked on in a special phosphatizing process that gives good paint adherence and scratch-proof durability. Spacefinder cabinets are available in 12 basic models (optional with doors, individual locking doors, or gang locking doors) and in three standard colors—"Tab Grey," "Mist Green," and "Desert Tan." TAB Products Co., 550 Montgomery St., San Francisco, Calif.

On Readers' Service Card, Circle 216

Prefab Aluminum Pools



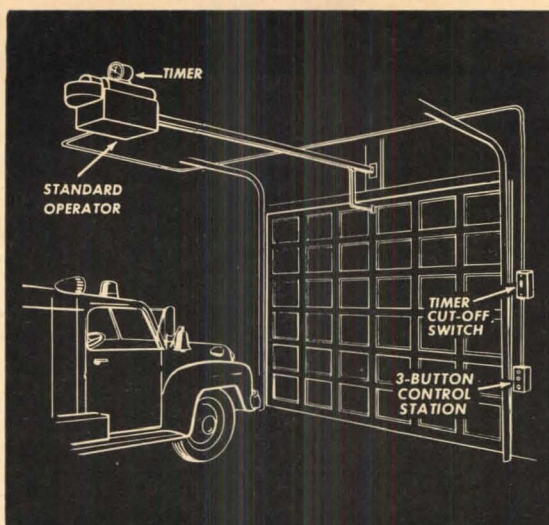
Prefab aluminum swimming pools are used in municipalities and parks, schools, rooftops, and other indoor/outdoor applications. Pools contain polyvinyl chloride finish that eliminates most of the maintenance problems. Self-supporting structure can be installed anywhere, even "hung" between buildings or over parking lots. It has a five-year warranty covering rust, leaks, cracks, or seepage. All piping is built into the wall, which provides an integral recirculating system. "Diavac Filter" is self-housed, prewired, valved, piped, and factory-tested. Brochure shows various installations in both color and black-and-white photos as well as details. Chester Products Inc., Belle Ave. and B. & O. RR, Hamilton, Ohio.

On Readers' Service Card, Circle 217

Surfacing

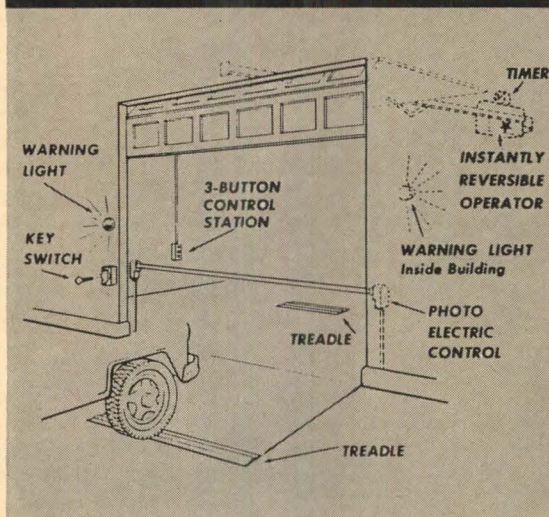
Cost Study On Vinyl Asbestos Tile

Study of maintenance costs of vinyl asbestos tile floors indicates that actual cost is 8.1¢ per sq ft. Study was conducted over a year-long period in a large high school. Study corroborates unofficial cost figures for banks, office buildings, housing projects, hospitals, colleges, and universities. Data



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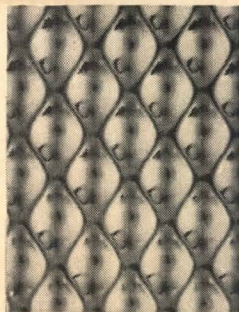


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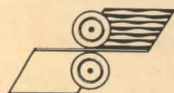
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taken from managers of these structures show that their costs "closely approximate" the 8.1¢ per sq ft of the high school study. Over a 20-year period, the combined costs (installation plus maintenance) make vinyl asbestos tile the "lowest" cost floor covering on the market, as shown by the study. Asphalt and Vinyl Asbestos Tile Institute, 101 Park Avenue, New York, N.Y.

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Roll-On Tile



Line of "Dot" tile includes rolls of mosaics in 2' x 6' sheets and 2' x 10' sheets or longer; wall tiles set in 12-tile sheets (4 tiles by 3 tiles with each tile 4 1/4" x 4 1/4"); and modular conductive mosaic tile in 2' x 1' sheets or 2' x 2' sheets. Tile has permanent back mounting which becomes part of the setting bed. The tile mounting which consists of resin, adheres to the setting bed, thereby producing a monolithic bond. According to the manufacturer, this method can save up to two-thirds of the usual setting time. Dot tile is waterproof and frostproof for use on all exteriors and in swimming pools. Mosaic Tile Co., 540 Brookpark Rd., Cleveland, Ohio.

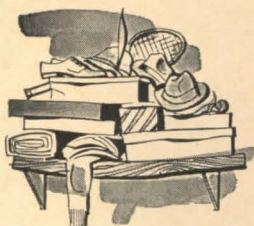
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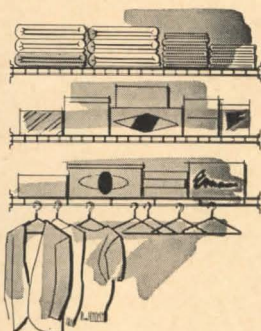
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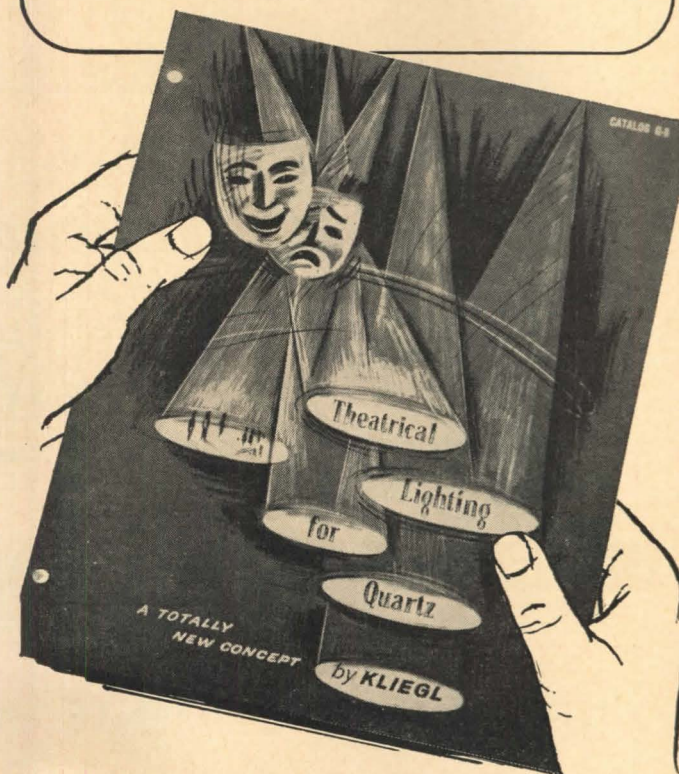
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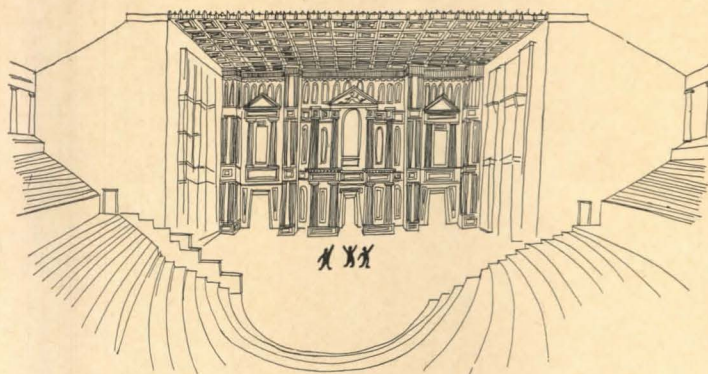
For most people the enduring image of New York - derived from quick visits, picture post cards, and movies - is an imposing but coldly aloof city of towering skyscrapers and anonymous rush hour crowds. It is an image obviously not designed with the human scale in mind - one best observed from a comfortable distance.

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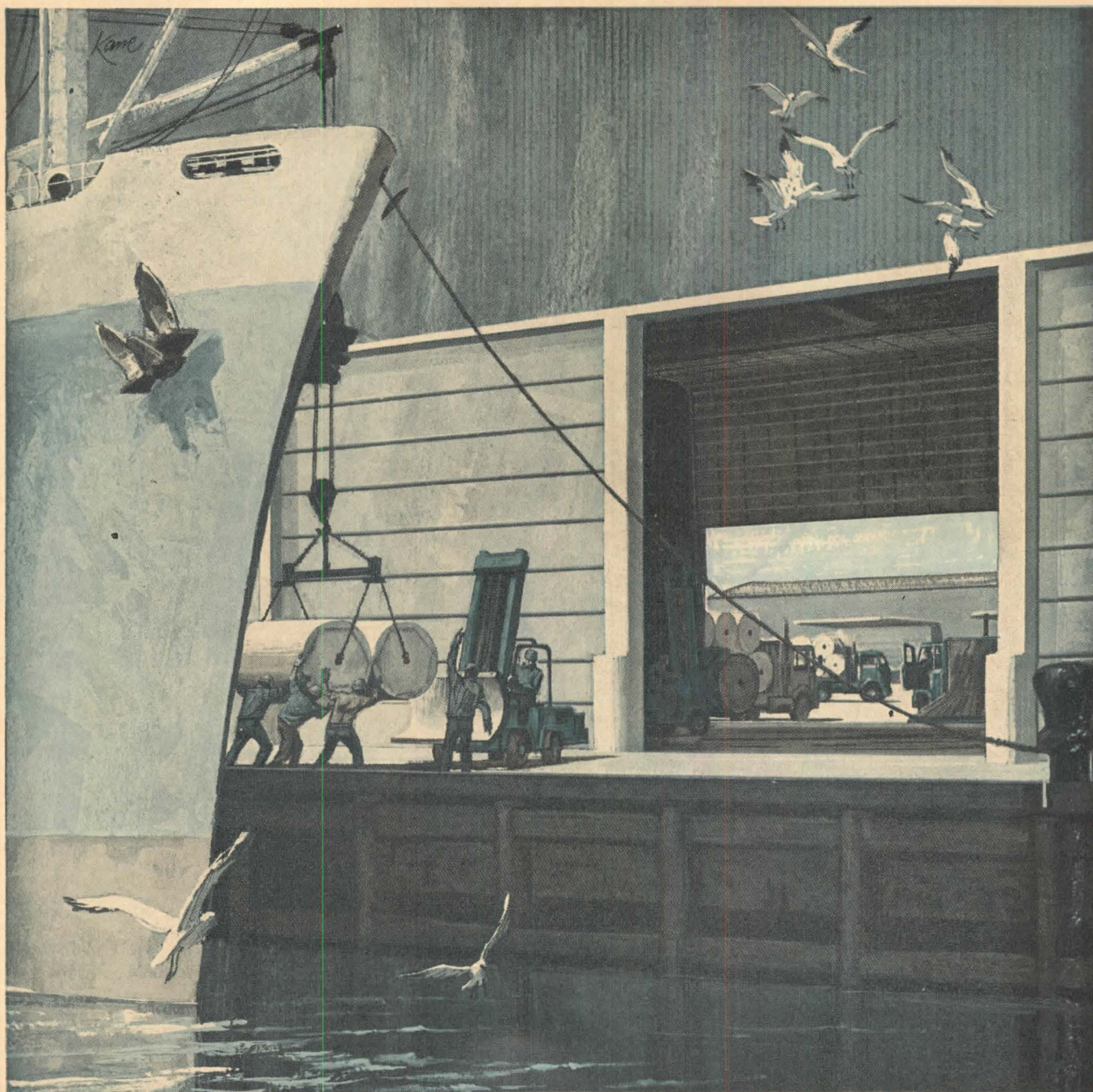


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City of New York Newsprint Terminal. Architects: Tippetts-Abbett-McCarthy-Stratton

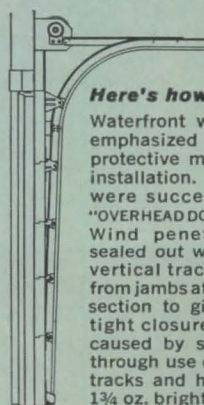
How The "OVERHEAD DOOR" takes the sting out of salt spray and waterfront winds

6 by land. 26 by sea. 32 durable doors in all—specially-fitted to defy the corrosive effects of salt spray whipped by high winds. A big order, but one exactly met with The "OVERHEAD DOOR" for this City of New York newsprint terminal. And, while covering the waterfront may not be in your present plans, you're sure to sail into some stiff closure problems. When you do, our Architect Design Service can help you solve them.

There's no closure problem you can't control with The "OVERHEAD DOOR"

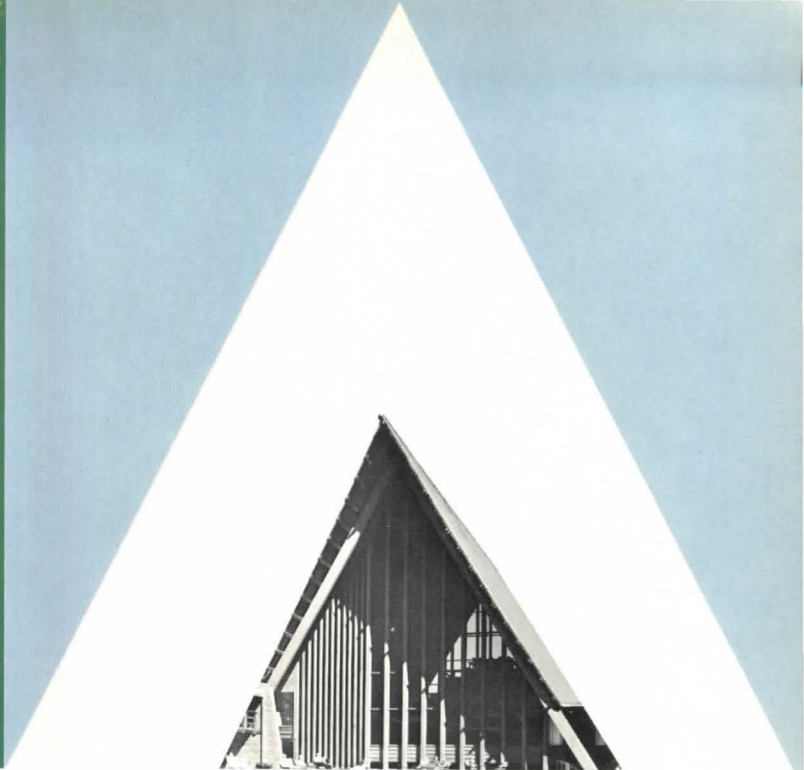


General Offices, Manufacturing Division: Dallas, Tex. Factories: Hartford City, Ind.; Salem, Ore.; Athens, Ga.; Oxnard, Calif.; Cortland, N.Y.; Hillside, N. J.; Lewistown, Penna.; Nashua, N. H. In Canada: Oakville, Ontario.



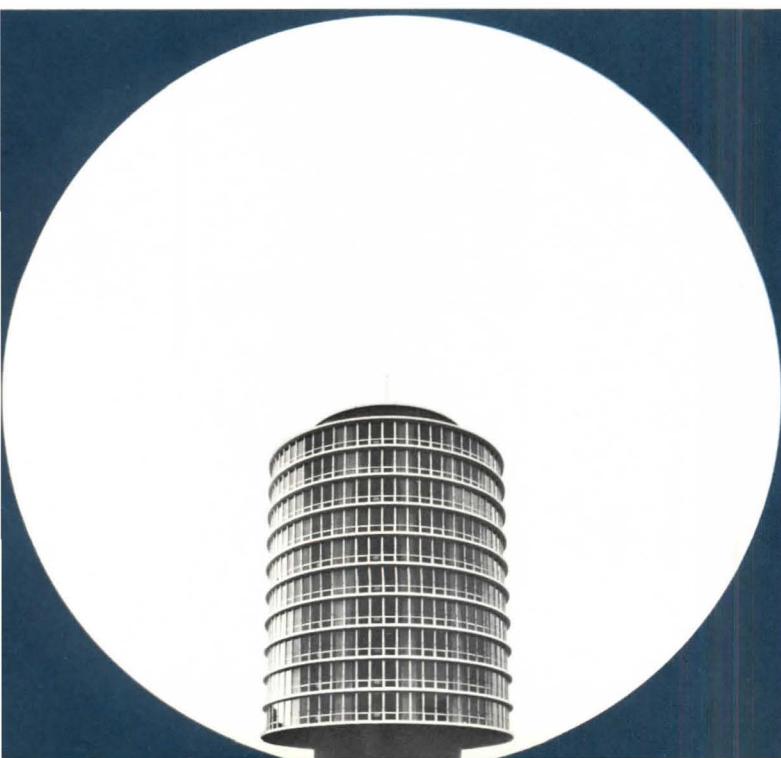
Here's how it was done...

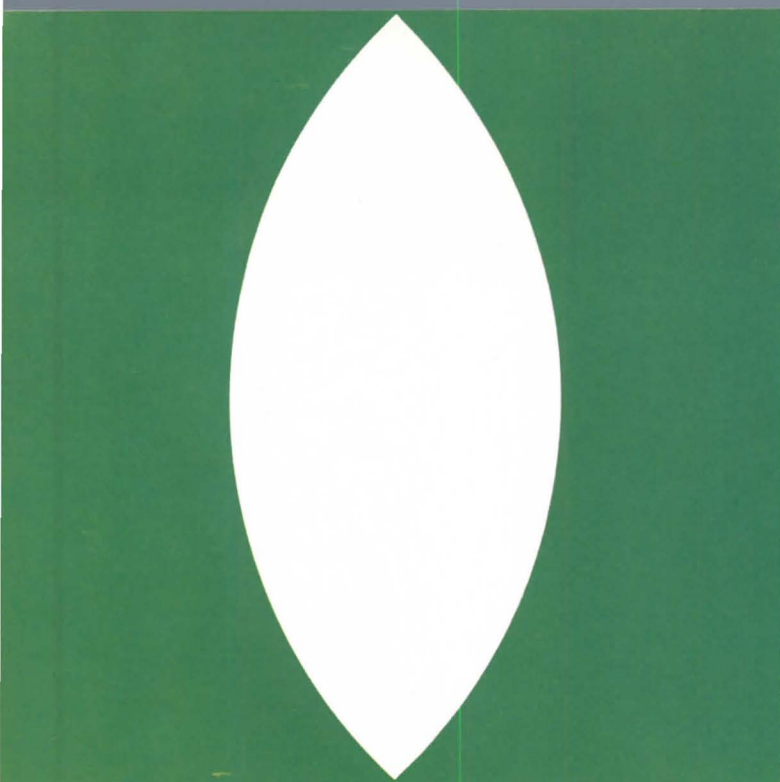
Waterfront winds and salt spray emphasized the need for special protective measures in this huge installation. These requirements were successfully met by The "OVERHEAD DOOR" in 16-gauge steel. Wind penetration completely sealed out with MIRACLE WEDGE®—vertical tracks that incline away from jambs at a pitch of $\frac{1}{4}$ " per door section to give a snug, weather-tight closure. Corrosion damage caused by salt spray minimized through use of Salt Spray Steel®—tracks and hardware coated with $1\frac{3}{4}$ oz. bright zinc per square foot.



Visual Drama With Glass

Four applications
in which the esthetic
and functional qualities of glass
made significant
contributions to design.





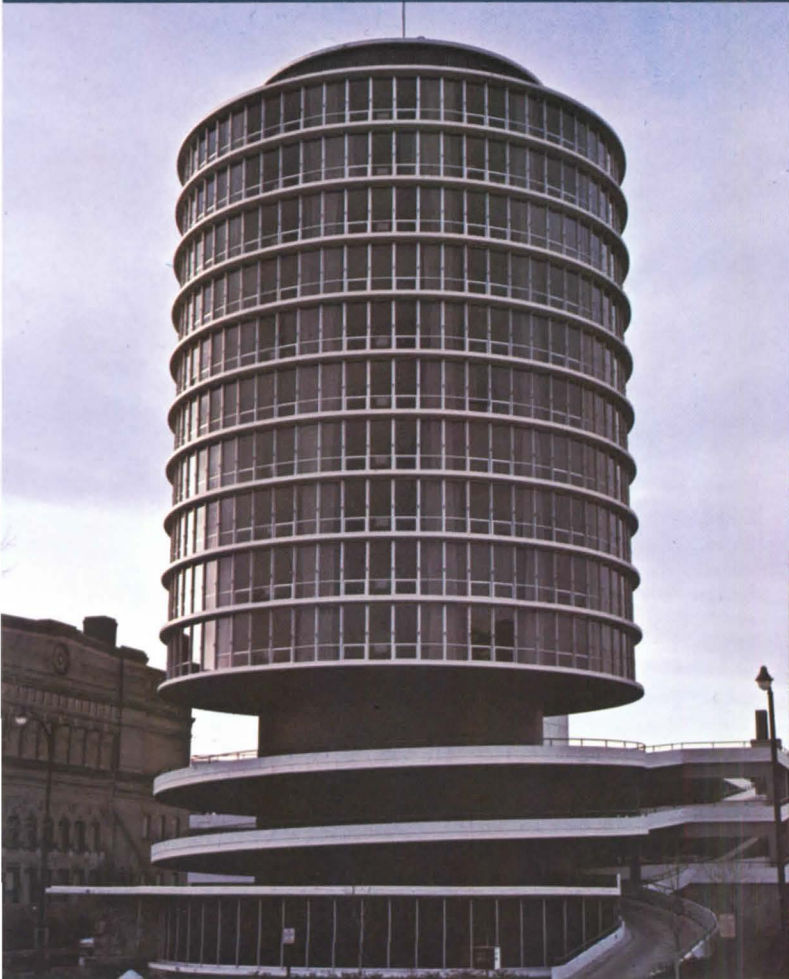
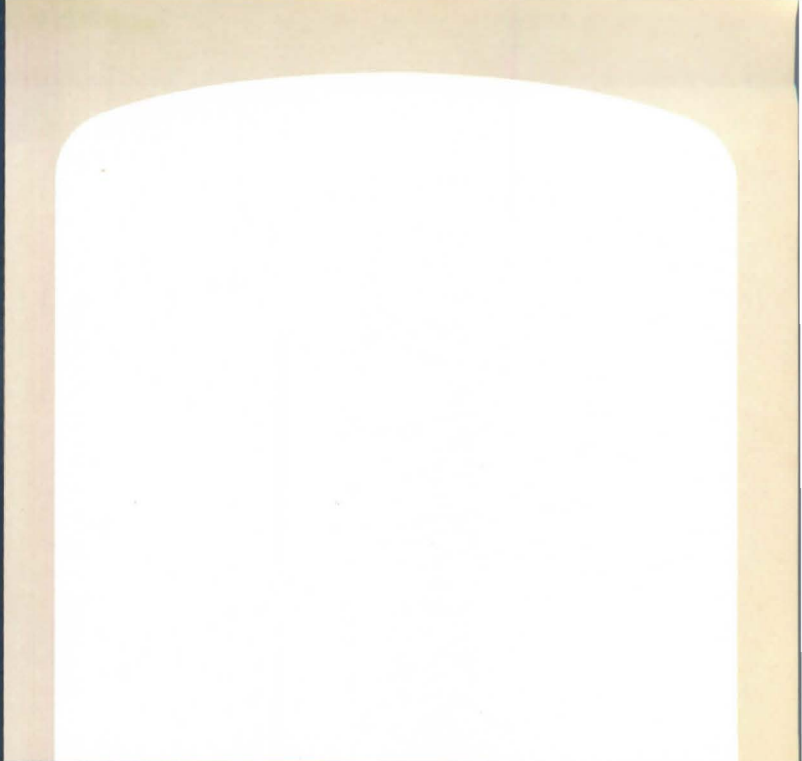
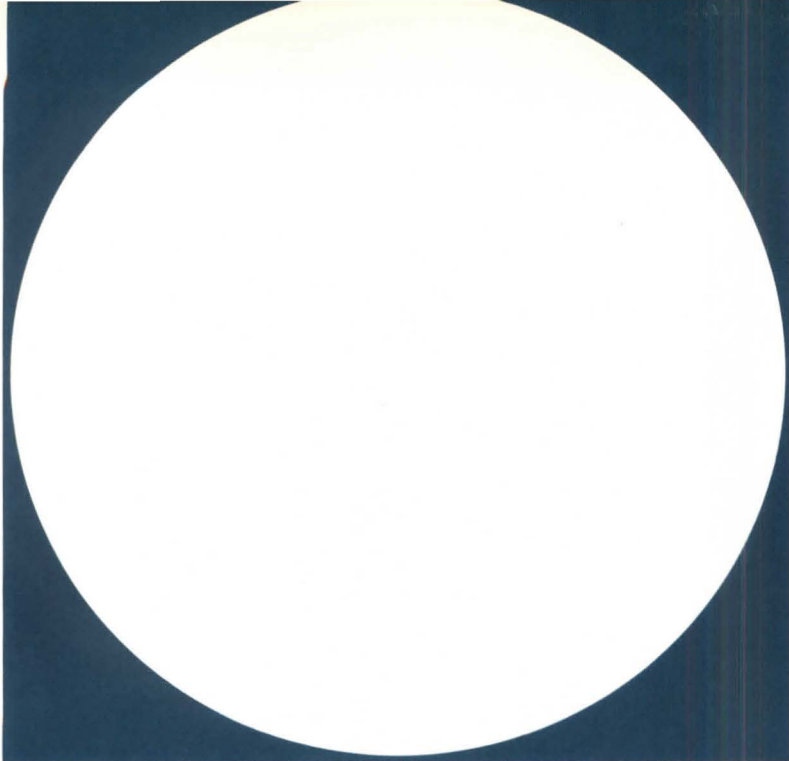
The Phoenix Mutual Life Insurance Building in Hartford, Connecticut, dramatically demonstrates both the beauty and practicality of glass. The unique building design eliminates corner offices and provides maximum usable floor space while glass opens the walls to an unbroken view up and down the Connecticut River.

PPG SOLEX® in the vision areas shuts out much of the sun's heat as the total glass curtain wall presents an ever-changing pattern of reflections to the surrounding buildings.

A towering 80-foot A-frame dominates the front elevation of The Abbey Motor Hotel and Resort at Fontana, Wisconsin. The soft tint of versatile PPG SOLARGRAY® plate glass blends warmly with the rustic timbers—extends an “open” invitation to travelers.

The functional beauty of SOLARGRAY® is that it keeps guests comfortable by reducing the sun's heat and glare.

Architect: A. Epstein and Sons, Inc.,
Engineers and Architects, Chicago



Glass heightens the drama of almost any design, yet does it unobtrusively. A case in point is the Christopher Inn motor hotel in Columbus, Ohio. PPG GRAYLITE™ glass dramatically enhances this simple reinforced concrete structure.

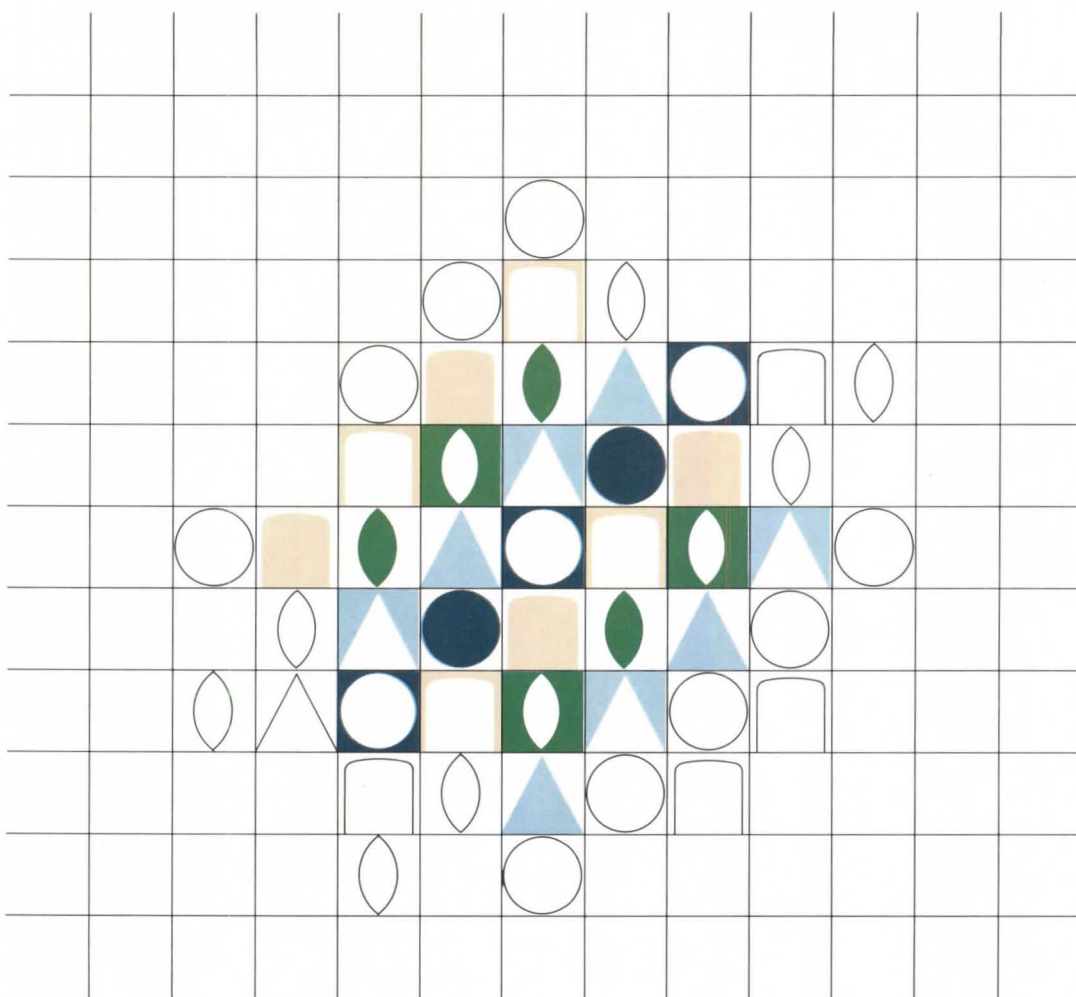
In the guest rooms, floor-to-ceiling glass gives the illusion of greater space. Outside, the soft gray hue of GRAYLITE blends smoothly with the exposed concrete while blocking a good percentage of the sun's glare. The effect is striking.

Architect: Karlsberger and Associates, Columbus

Inwood Manor, a 16-story apartment building in Houston, Texas, demonstrates an imaginative contrast—or visual contradiction—in the use of building materials. The lacelike, delicate white arches are solid concrete, while the dark “substantial” material behind them is glass.

The vision glass, PPG SOLARGRAY® plate, is flanked by “matching” black panels of PPG SPANDRELITE® glass. In addition to its important esthetic contribution to the building, SOLARGRAY handles the practical job of blocking part of the sun's heat.

Architects and Planning Consultants: Neuhaus & Taylor, Houston



These four examples demonstrate how glass brings its brilliance and its contrasts, its color and its transparency, its infinite variety to architectural design. It offers advantages both esthetic and practical, ethereal and permanent. For further information, contact your nearest PPG branch office or distributor, consult Sweet's Catalog file, or write to *Pittsburgh Plate Glass Company, One Gateway Center, Pittsburgh, Pa. 15222.*



PPG makes the glass that makes the difference.

PEOPLE WALK ALL OVER BARWICK



Barwick's "Hawaiian Holiday," a multicolored Colorset carpet with 100% nylon cut pile, available from factory stock

Over 60,000 trod Barwick's Colorset carpet at the 1965 S. E. Flower and Garden Show without damaging its rich appearance.

Despite snow, rain and thousands upon thousands of pedestrian traffics, the yards and yards of Colorset carpet Barwick supplied for the S. E. Flower and Garden Show looked as radiantly fresh at the end of the eight-day show as the day they were put down.

Whatever the wear or weather, you, too, can depend on rugged Barwick carpet to perform beautifully. In heavy traffic or high spillage areas, humid or desert climates, corridors, elevators . . . even in locker rooms, Barwick's deep thick pile of durable man-made fibers gives superior service.

Available in hundreds of luxurious styles and textures . . . enduring colors . . . exciting Colorset patterns . . . Barwick carpet is expressly designed to meet the severe wearability demands of all types of commercial installations. Whatever your carpet requirements, there is a specific quality of Barwick carpet that will do a most satisfying job.

For a full color catalog with specifications and colors of Barwick carpet including Colorset, write:
Contract Division

ET Barwick
mills, inc.
CHAMBLEE, GEORGIA
World's largest maker of tufted carpets and rugs



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for the
better with
Alcoa
Aluminum



The eloquent beauty of the Pacific coast is reflected in Alcoa Duranodic

In the natural order of things, true American architecture is indivisibly joined to its environment... the serene mountains of New England, the tabled plains of Kansas, the blue vision of the Pacific coast.

And it follows that everything which belongs to its surroundings is beautiful... for beauty and fitness are keystones. True design will define the values, not impose them; will emphasize the materials, not overwhelm the landscape; subtly color, not glitter like holiday tinsel.

Such is the nature of Alcoa® Duranodic* finishes for aluminum. They're part of the metal itself. The deep, dramatic colors—bronze, gray, black—are constant, like the ebb and flow of the tide. Invigorating, like the fresh ocean breeze. And the range of architectural applications is practically unlimited—from monumental to residential.

For more information, call your nearest Alcoa sales office or write Aluminum Company of America, 1676-J Alcoa Building, Pittsburgh, Pa. 15219.

*Trade Name of Aluminum Company of America



ALCOA BRINGS YOU ACTION DRAMA AT ITS BEST... "THE FBI," SUNDAY EVENINGS, ABC-TV



Glenbrook North
High School,
Northbrook, Illinois
Architect: The Perkins
& Will Partnership,
Chicago, Ill.

*The beauty of marble,
the durability of concrete*



TERRAZZO keys the decorating theme for a modern high school

In the Glenbrook North High School, terrazzo achieves effective design harmony by recombining in the floor, the colors, patterns and materials used elsewhere in the building. With its almost unlimited array of colors and patterns, terrazzo can be used to apply this basic decorating principle to structures of every type and design.

More and more, architects are returning to age-old terrazzo in modern dress, not only for its esthetic advantages, but for its remarkable practicality. Low-maintenance terrazzo is easy to keep clean, and is unsurpassed for areas

subject to excessive wear. You find it in schools, terminals, public buildings, hospitals, wherever floors must stand up to heavy traffic.

Further demonstrating its versatility, terrazzo is finding extended use out of doors—for decorative plazas, terraces and sidewalks. Everywhere, today, terrazzo goes so well with modern design.

PORTLAND CEMENT ASSOCIATION

An organization to improve and extend the uses of concrete, made possible by the financial support of most competing cement manufacturers in the United States and Canada



Elm with Walnut Inlay

For your most selective clients!

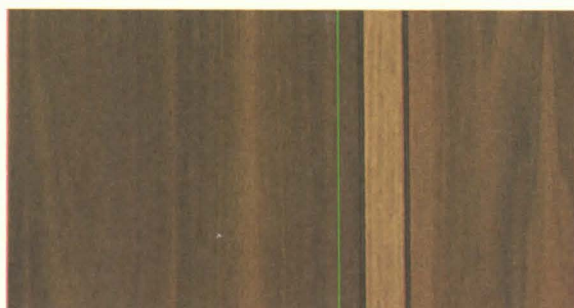
You can now select from 11 elegant Inlaid Panelings!

Here's the decorative flair of Inlaid Paneling! Now available in a wide range of beautiful hardwoods!
At a new low price! Turn the page and see G-P's exciting new panelings for 1965!



See reverse side of this page for color illustration

Four new Georgia-Pacific decorator panelings for 1965!



G-P Inlaid Paneling

The custom look of hand-craftsmanship . . . at a new low price! Only \$24.95 to \$31.95 (retail) for 4' x 8' V-grooved panels. The beauty of the hardwood face veneers and inlays is protected with G-P's Acryglas® catalyzed resin finish. This posh paneling is ideal for both home and institutional installations. Eleven combinations: Pecan with Walnut inlay (as featured on the reverse side of this page), Walnut with Pecan inlay, Elm with Walnut inlay, Distressed Heirloom Cherry with Walnut inlay (antique appearance), Select White Birch with Red Birch inlay, Select Red Birch with White Birch inlay, Inlaid Figured Red Gum, Fawn Amazon Maple inlay, Golden Amazon Maple inlay, Nutmeg Amazon Maple inlay, and Autumn Amazon Maple inlay.



G-P Gold Crest Paneling

Use it the way it comes! Or stylize the panels by filling the half-inch channels with colored tapes and metallic strips. Only \$26.95 to \$29.95 (retail) for 4' x 8' panels. The panels have one-half inch channels spaced between the random planks. You can fill these channels with colored tapes or metallic strips. Metal strips slotted for shelf brackets are also readily available. The extremely rugged Acryglas® finish resists scuffs and stains—and polishes like new with a damp cloth. Veneer patterns available are American Walnut, Distressed Heirloom Cherry (antiqued), Golden Elm, and Pecan.



G-P Chateau Paneling

For walls higher than 8 ft.! The groove patterns run perfectly from floor to ceiling! Only \$13.44 to \$21.44 (retail) for 4' x 8' panels. The vertical grooves on every panel are extra wide—and perfectly matched. Result: You can stack them one on top of another and have a flawless groove from floor to ceiling. G-P's lustrous "Family Proof" multi-coat finish protects the woods against wear. The panels are as easy to maintain as fine furniture. Veneers feature nature's warm and beautiful growth characteristics. Available in Natural or Antique Birch, Select or Knotty Cherry, Select or Knotty Elm, Select or Knotty Oak, Select or Knotty Pecan, Select or Knotty Walnut, and Cypress.



G-P Style IV Paneling

Last year this effect called for hand-made craftsmanship! G-P's new Style IV Paneling is available in elegant American Black Walnut. Only \$29.95 (retail) for a 4' x 8' panel. The panel creates the effect of four-inch planks separated by "V" grooves. This effect used to call for hand-craftsmanship—as each four-inch plank had to be installed individually. But Georgia-Pacific has devised a new production technique that captures this traditional beauty in an easy-to-install regular hardwood panel. And the Acryglas® finish will keep this paneling beautiful through years of hard use.

Send me full information on G-P Panelings

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ADDRESS _____

CITY _____

STATE _____

ZIP CODE _____

All new G-P panelings are 3-ply 1/4" hardwood plywood, conforming to requirements of CS 35-56. Sealed to minimize moisture absorption. You can see Georgia-Pacific's complete line of panelings at your building material dealer or nearby G-P distribution center.



At Concourse Village in the Bronx, Turnbull elevators will provide "street-level" convenience for the 5200 apartments in the six 25-story units of the village. 18 high-speed gearless passenger elevators give individual, no-waiting passenger service to all floors.

For high rise apartment comfort, or efficient skyscraper office service, Turnbull engineering meets any passenger traffic requirement.

Concourse Village—Architect: Harry Prince, General Contractor: Cauldwell-Wingate.



**TURNBULL
ELEVATOR**

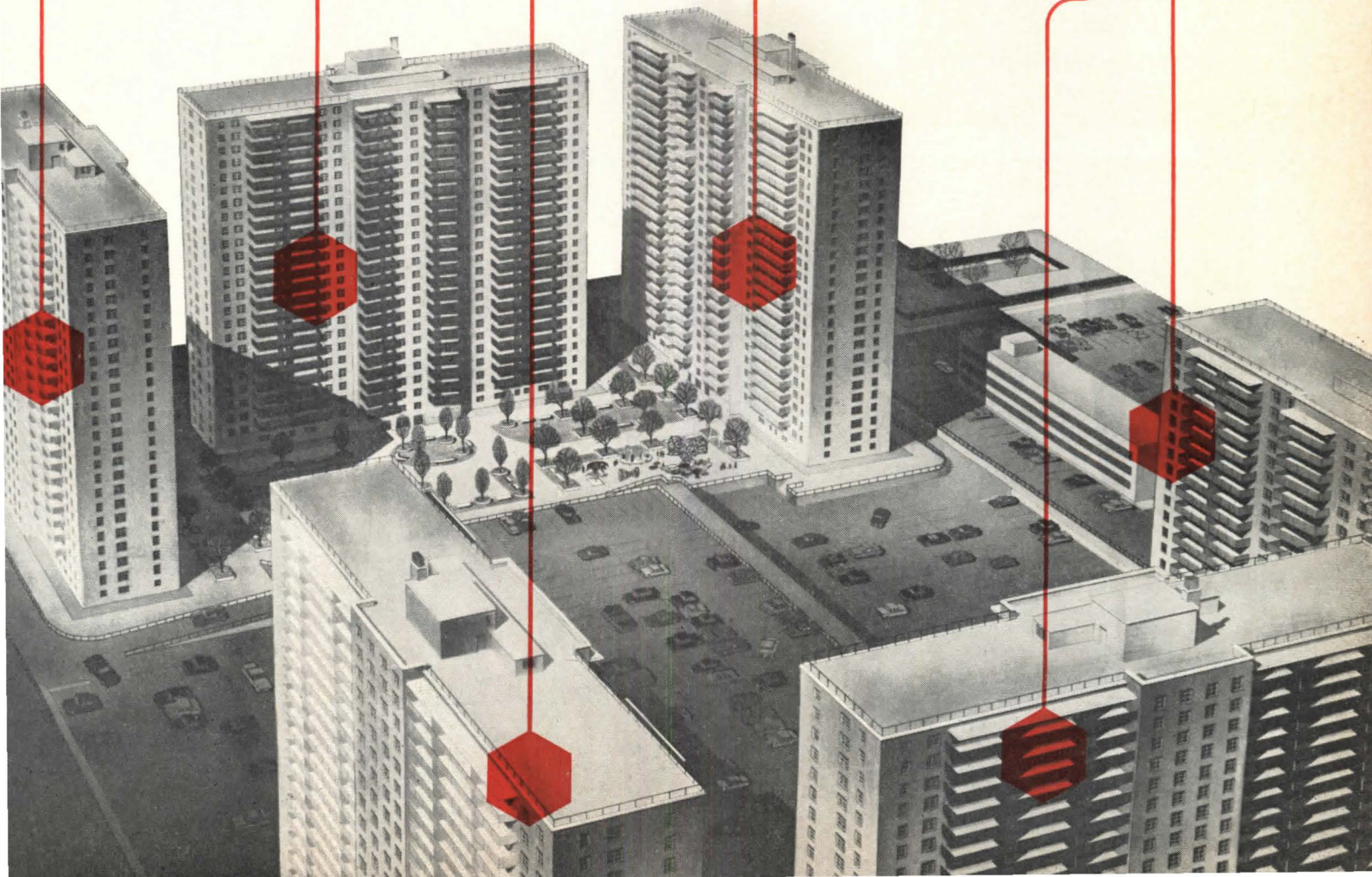
United States: Head Office: New York City
Canada: Head Office: Toronto
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5200

HOMES DEPEND ON TURNBULL

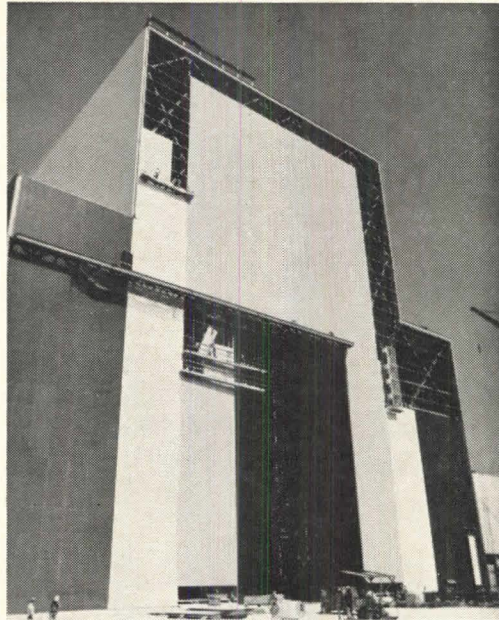
In New York's
newest apartment
community



A black and white photograph showing the interior of a massive industrial building. The structure is composed of a dense grid of steel beams and cross-bracing, creating a series of rectangular bays. The floor is a flat, light-colored surface. In the lower right, a small figure of a person stands on a platform, and a few vehicles are visible in the distance, emphasizing the scale of the building.

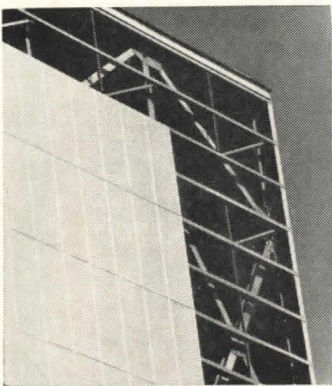
**Free light
for the
world's
biggest
building**

Hetron-based panels protect Saturn V rockets from the elements at the Vehicle Assembly Building on Merritt Island. Architects: Urbahn-Roberts-Seelye-Moran. Filon Corporation produced the reinforced Hetron sheets. Panel Structures Inc. is the fabricator.



**Hetron®-based
hurricane-proof panels
let daylight into
129,482,000 cu. ft.**

A hurricane tearing along at 125 miles an hour won't shatter these Hetron-based translucent panels. Neither will shock waves set up by



rocket launchings at nearby Cape Kennedy.

That's why the architects chose them to let light into the vast interior of the Vehicle Assembly Building.

The big 4 x 12-foot panels are reinforced Hetron polyester resin laminated to aluminum grids. Their fabricator says they "are the strongest ever built." Coated with Tedlar,* they are expected to resist the brilliant Florida sunshine up to six times as long as standard panels.

No glare. You can specify Hetron-based panels for high, medium or low light transmission. Whether you let in a flood or a trickle, it is light without glare and only the softest of shadows.

No flame. Panels made of Hetron polyester resin can't spread a fire. Typically, they test within a range of 35 to 75 in flame-spread rating by VL Tunnel Test. They are qualified to carry the Factory Mutual seal of approval and the U/L label.

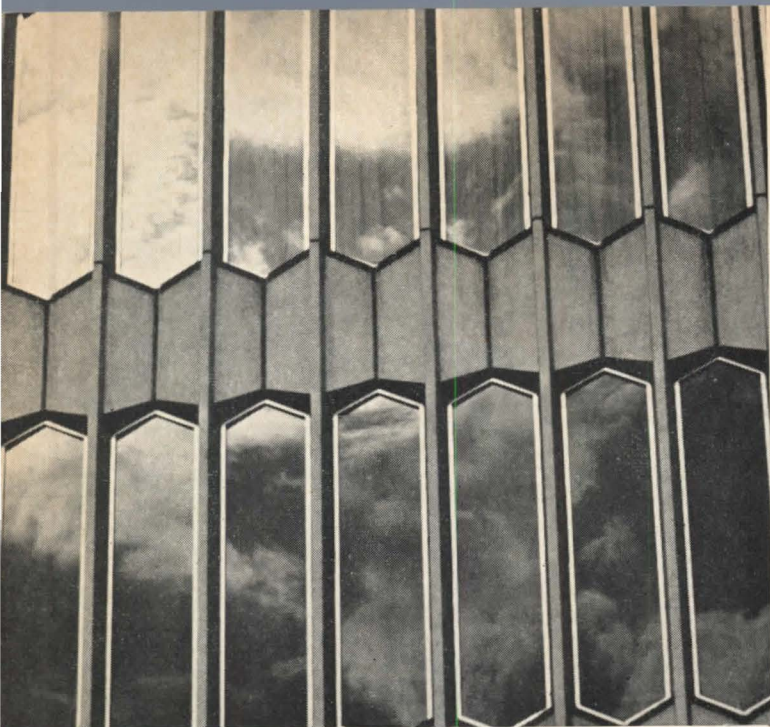
We don't supply these strong, weather-resistant panels—just the Hetron that makes them safer. We'll be glad to send you a list of fabricators. Please write Durez® Plastics Division, Hooker Chemical Corporation, 7709 Walck Road, North Tonawanda, N. Y. 14121.

*Du Pont registered trademark for its PVF film.



DUREZ PLASTICS DIVISION

***Now plan
the windows you
want in nickel
stainless steel.***

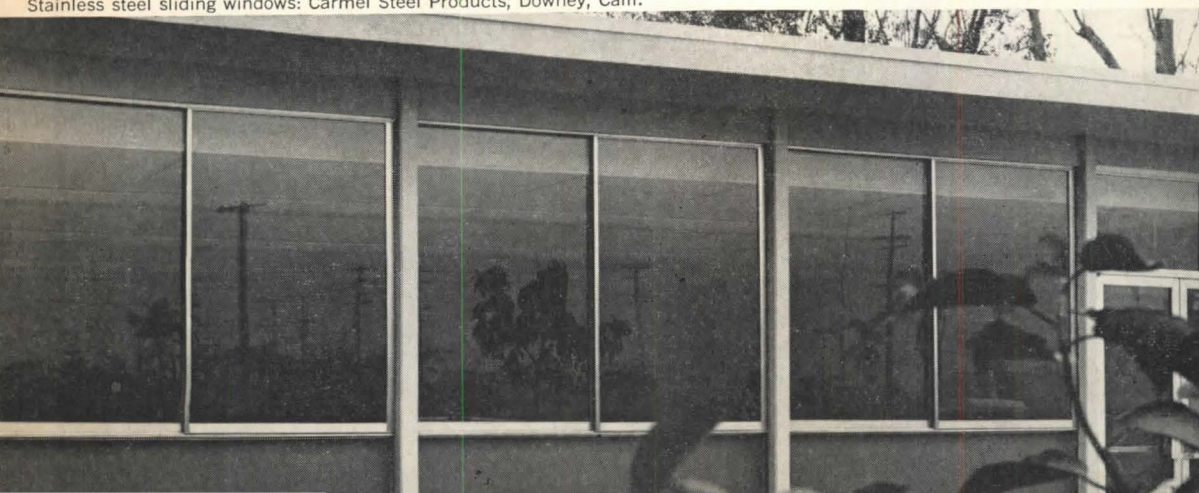


Michigan Consolidated Gas Building, Detroit, Mich.
Architects: Minoru Yamasaki—Smith, Hinchman & Grylls, Detroit, Mich.
Stainless steel fixed windows: Adams & Westlake Co., Elkhart, Ind.



C. I. T. Building, New York, N. Y.
Architect: Harrison & Abramovitz,
New York, N. Y. Stainless steel
reversible windows: General Bronze Corp.,
Garden City, N. Y.

Chapman College, Orange, Calif.
Architect: John Galbraith and Associates, Pasadena, Calif.
Stainless steel sliding windows: Carmel Steel Products, Downey, Calif.




Standard design systems make the cost of excellence lower than ever.

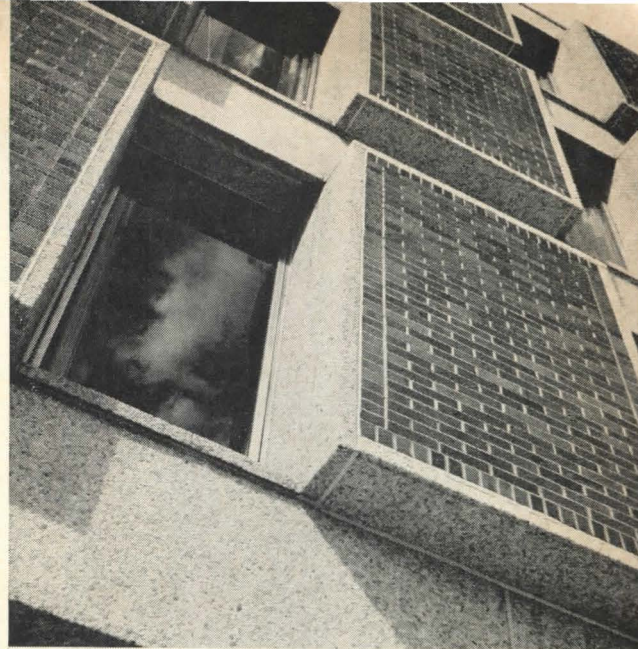
Attractive, long-lasting stainless steel windows are readily available in a variety of design systems—fixed, pivoted, projected, sliding and double-hung. They are competitive in cost with windows of other materials for two reasons. First, design systems are standardized. Second, modern production methods, such as high-speed roll forming, keep fabricating costs down.

Nickel stainless steel has many design advantages. Its high strength permits thinner, more economical gauges; allows slim, strong frames and maximum glass area. Stainless has a soft, permanent luster that accents any structural material, texture or color. It's corrosion resistant in virtually all atmospheres and climates—never streaks or stains adjacent materials such as concrete, granite or marble. And stainless steel windows keep maintenance costs low—frames can be wiped clean when the glass is washed.

The windows shown here, and other attractive designs are readily available. For your next design, consider the advantages of stainless steel for windows—as well as doors, curtain walls, hardware, fascia and flashings. And write for Inco's informative "Suggested Guide Specifications for Stainless Steel Windows." Their format follows AIA Specification Worksheets.

 **The International Nickel Company, Inc.**
67 Wall Street, New York, N. Y. 10005
Nickel... Its contribution is Quality

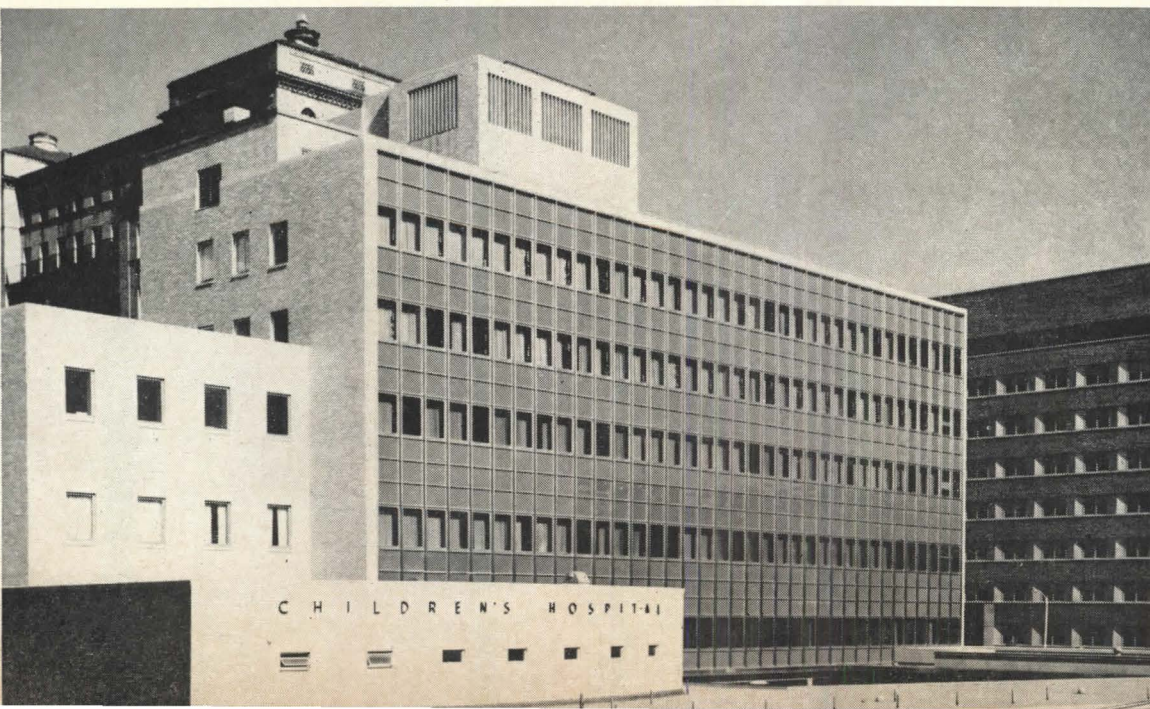
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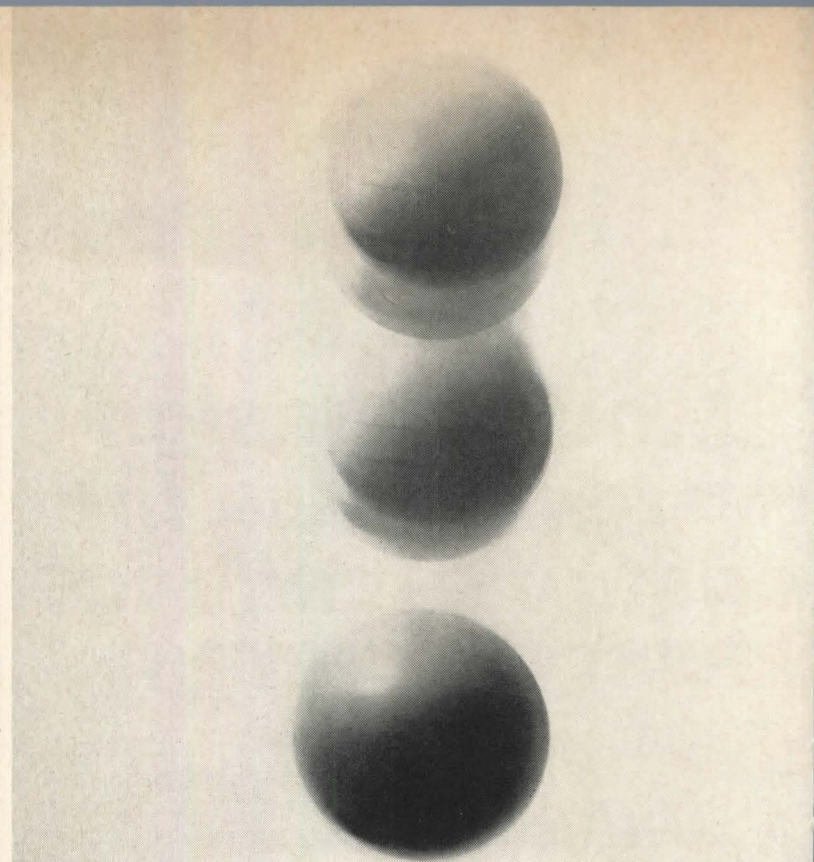
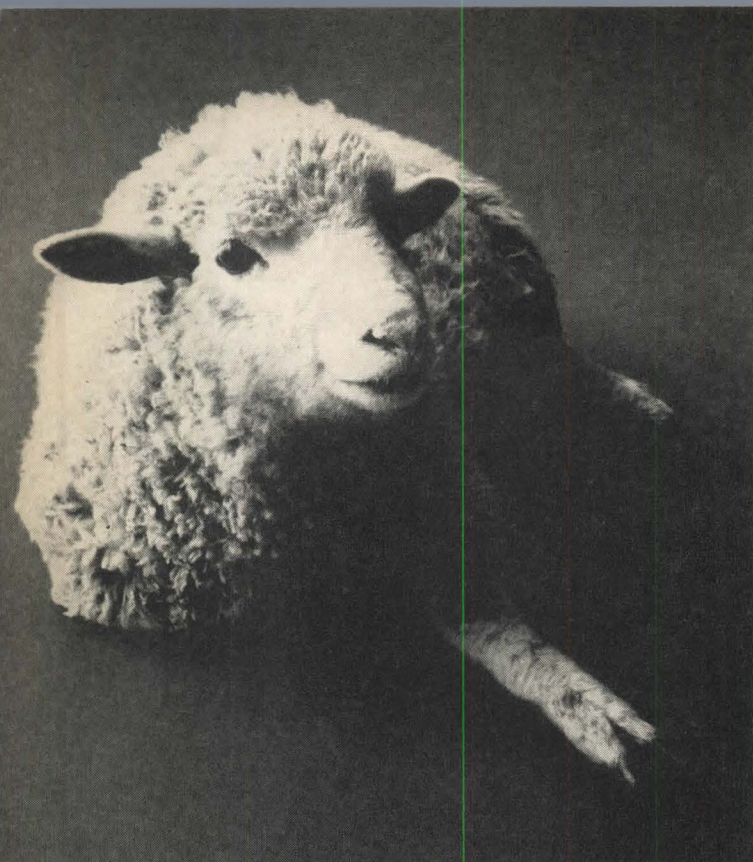
Oil City Hospital, Oil City, Pa. Architect: Johnson, Harrigan & Yapple, Erie, Pa. Stainless steel reversible windows: American Bridge Div. of United States Steel Corp., Pittsburgh, Pa.



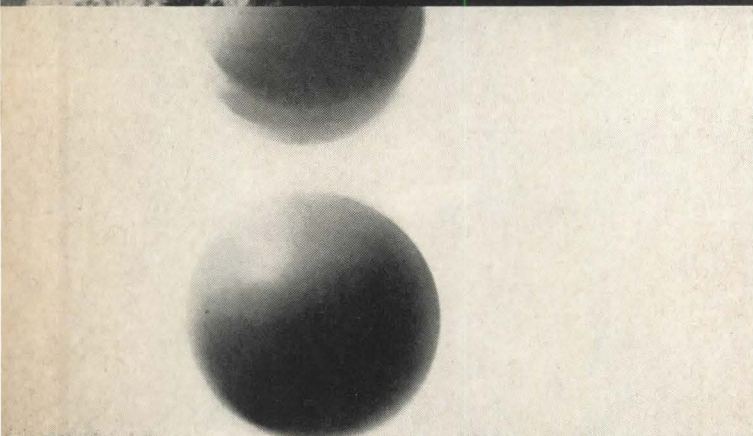
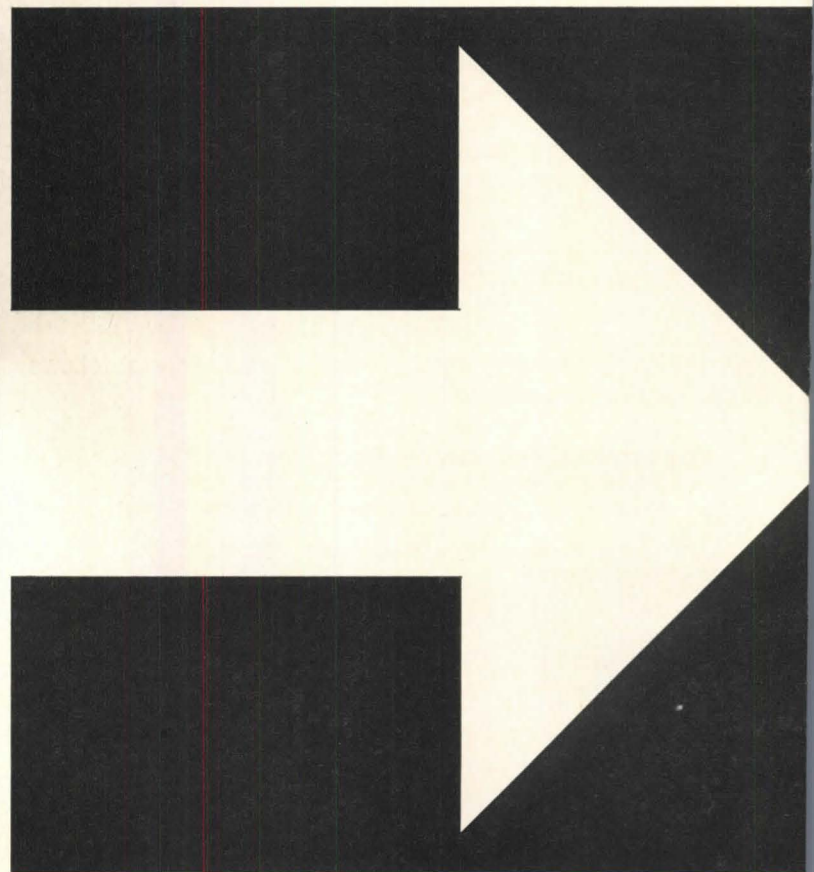
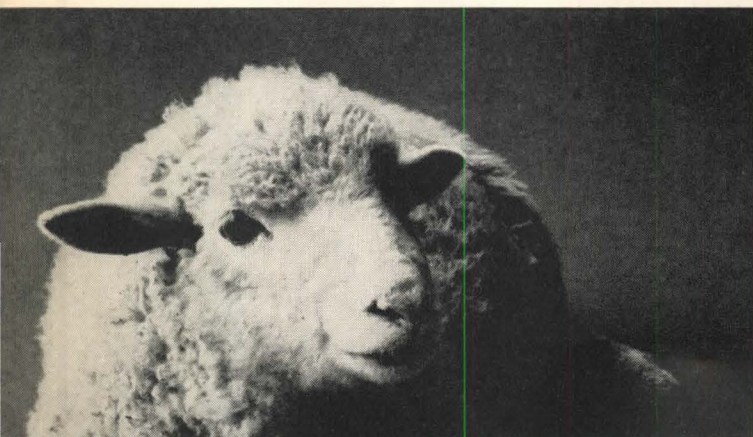
Lexington Tower Apartments, Richmond, Va. by Paul Gordon & Assoc. Architect: Edward F. Sinnot & Son, Richmond, Va. Stainless sliding windows: Republic Steel Corp., Youngstown, Ohio.



Children's Hospital, Pittsburgh, Pa. Architect: Alfred D. Reid Associates, Pittsburgh, Pa. Stainless steel reversible windows: Trio Industries, Inc., Bridgeport, Conn.



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fused them together...and look:



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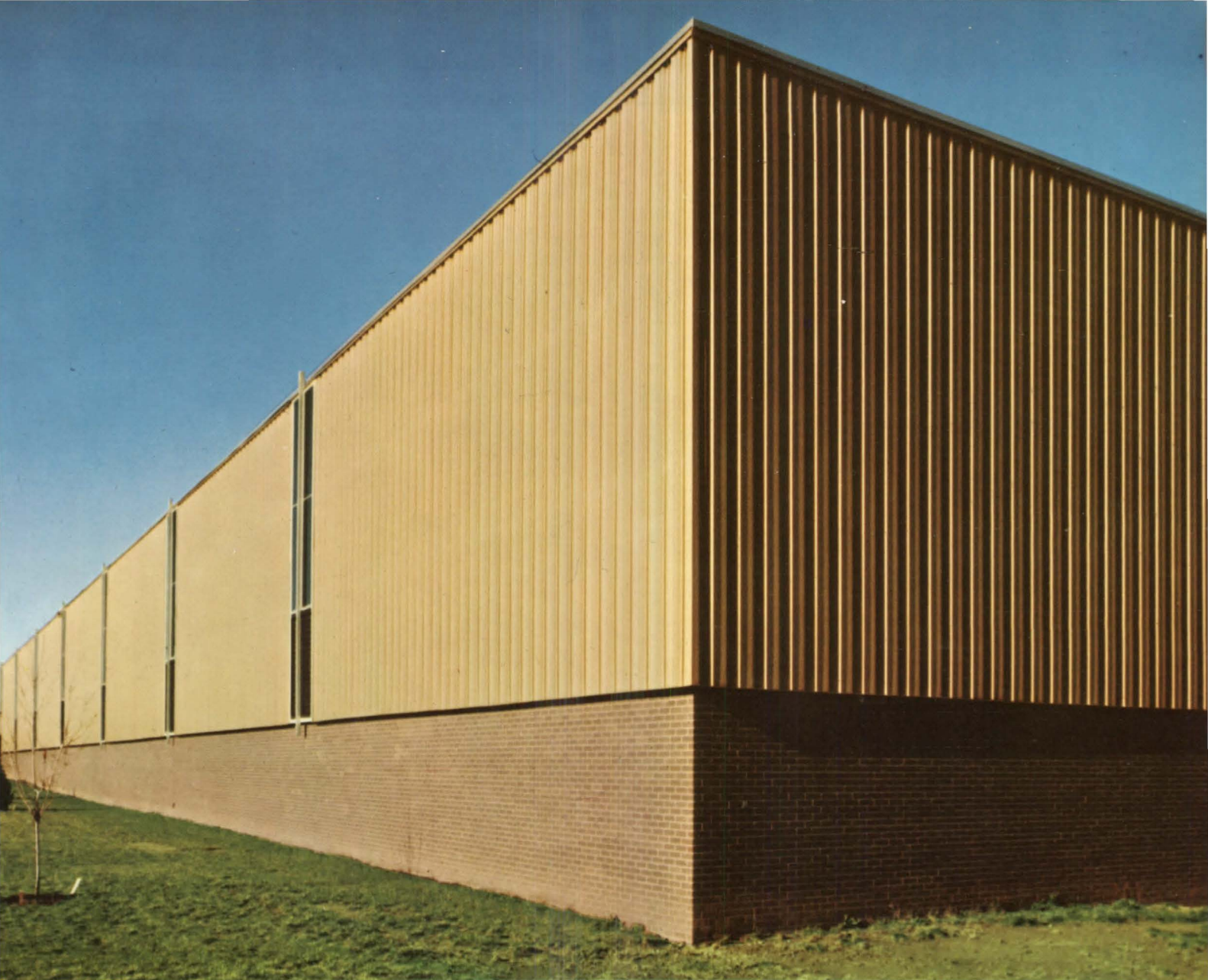
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Ceilings unite! If you know what's best for you, you'll demand HOLIDAY II! Come out of the shadows with its injection-molded acrylic, frameless wrap-around Controlens®. Surround yourself with upward light. No matter what type you are—solid or suspended—you'll become attached to HOLIDAY II. Installs fast, straight and snug! So don't just hang there. Tell the specifier. He'll see the light!

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SMITH WALLS in place...the finishing touch

Structural steel is just a skeleton . . . until the walls are in place. Walls make the structure look like a finished building long before the interior is completed. Walls are the eye-catchers . . . the attention-getters. That's why we go to so much trouble. We have to, because our all-inclusive service covers Smith Walls in place. We're responsible, so it's natural for us to be careful.

This Single Responsibility starts when the contract is signed. Our engineers design the walls to your specifications. The panels are custom-fabricated, delivered and erected by our own personnel. Our expediting coordinators follow the progress of each job closely, scheduling each operation in advance to make certain the contract is completed on time. We insist on this.

Since we are entirely responsible for Smith Walls in place, we can take pride in a job well done. We should . . . the country's largest firms are our steady customers.

Specify Smith Walls for the finishing touch on your next job! You'll find the details in Sweet's Catalog Files 3b/Sm and 8b/Sm. Or better yet, write us.



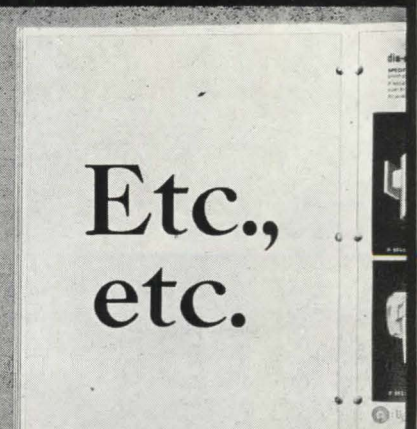
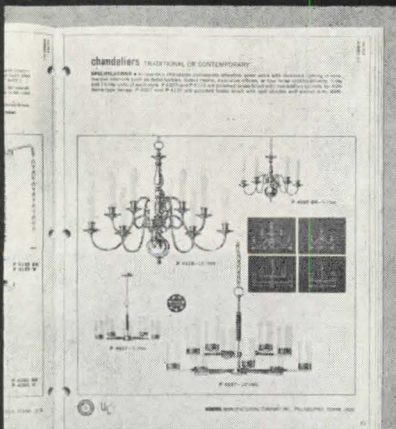
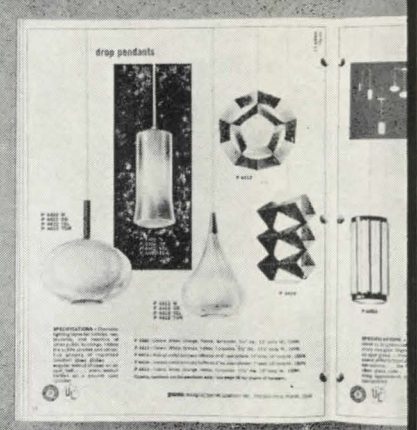
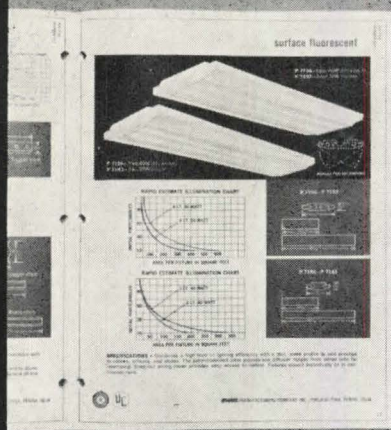
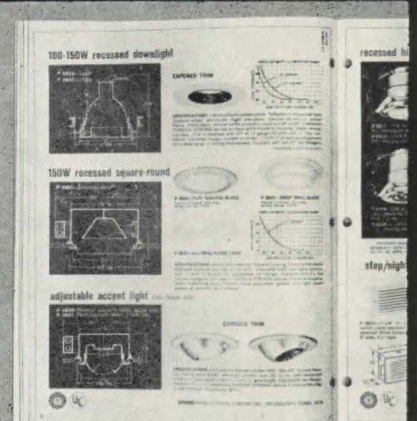
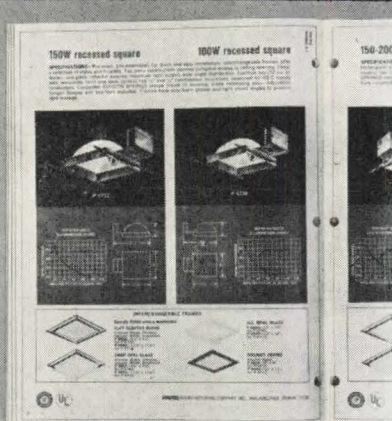
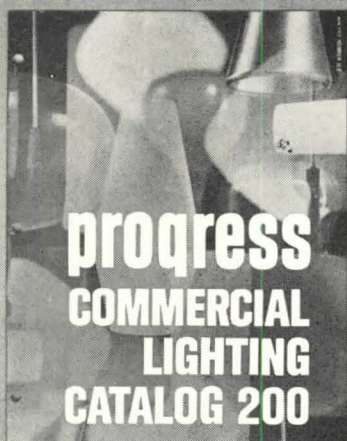
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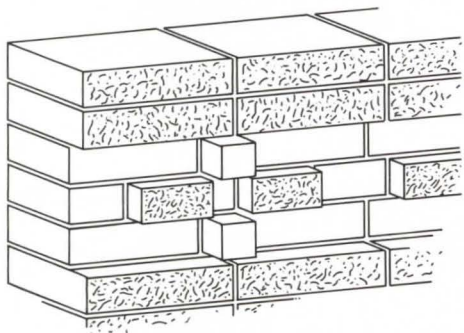


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We gave our all



Etc.,
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SPLIT BLOCK AND 4" HIGH BLOCK

Unusual and exciting wall designs come easy with Q BLOCK masonry. This department store wall combines various split block sizes with smooth faced 4" high block. Joints between split block courses are raked. All others are flush joints.

Architect: Charles Luckman Associates

Q BLOCK wall creations

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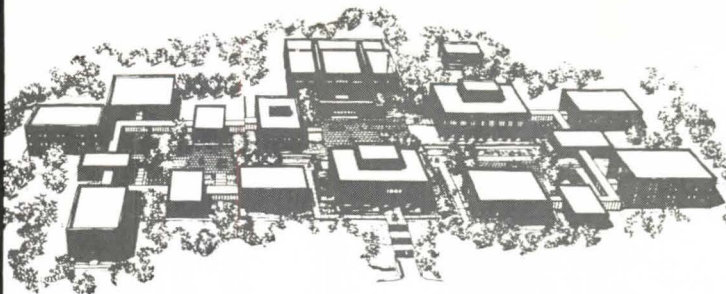
Q BLOCK masonry, as you know, is the new standard of excellence for concrete block established by the National Concrete Masonry Association. Q BLOCK masonry enables you to design and build with new quality and greater confidence. Only NCMA members can make Q BLOCK masonry, and their products are tested at regular intervals by accredited laboratories to assure that Q BLOCK standards are maintained. Write for the name and address of your nearest Q BLOCK producer.

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BELLEVILLE HIGH SCHOOL AND JUNIOR COLLEGE, Belleville, Ill.

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Assoc. Architect: Weisenstein, Rogers & Hausmann
Structural Engineer: John P. Nix
General Contractor: S. M. Wilson Co.



New Product Used For First Time in Big Educational Complex

Here is the first major use of the new Composite Joists introduced recently by Laclede Steel Company. The new "C" type open web steel joists were specified for the sprawling complex of buildings comprising the new Belleville High School and Junior College, Belleville, Ill.

The uniquely designed joists and C-J Form blend the advantages of steel with those of concrete in floor slab construction. Longer spans with less deflection, saving in headroom, reduction in amount of steel needed, and saving in welding time and other labor are some of the benefits provided by these high strength joists.

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Beautiful

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One of the main attractions in the lobby of the 450 Seventh Avenue Building, New York City, is the ceiling of light dramatically transmitted through textured 7/32" BURLAP glass by Mississippi. Kaufman Management Company, builder and owner, wisely selected translucent glass for its lasting beauty and brilliance . . . qualities that are unaffected by time or exposure. For glass possesses the chemical stability, permanence of finish, color, shape, surface hardness and noncombustibility available in no other glazing medium. Specify Mississippi glass. In a wide variety of patterns and surface finishes at better distributors of quality glass.

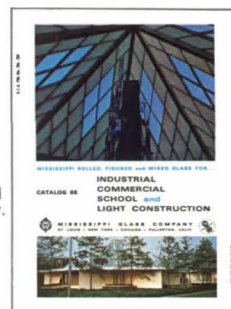
Architect: John J. McNamara, New York, N. Y.

Contractor: M & J Construction Co., New York, N. Y.

NEW CATALOG

Contains pattern descriptions, light distribution charts, transmission data. Send for your free copy today.

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Versatile

**IS THE WORD
FOR GLASS**

Light filtered through patterned glass offers another dimension for achieving exciting beauty as well as functionality, wherever employed. Rolled glass, with its primary functions of diffusion, decoration and protection, along with a secondary function of heat absorption, provides wide scope for creating interiors and exteriors high in interest and utility. See your nearby Mississippi glass distributor.



a.

a. A new peak of practical beauty is achieved with skylight of Polished MISCO wire glass in the "Parisian," Sherman Oaks, Calif., owned and built by E. W. LaTourette and designed by Robert Weaver Stevens.

b. Blue-green 1/4" Luxlite COOLITE MISCO, heat absorbing glass, glazed in terrace railings—175 E. 74th Street, New York, N. Y.

Cohen Brothers
Realty & Construction Corp.,
200 Park Avenue, New York, N. Y.
Glazing: Pittsburgh Plate Glass Co.,
Brooklyn, N. Y.

c. & d. Nighttime and daytime versions of windscreen glazed with lustrous BROADLITE glass in architectural establishment of Thor Hesberg, AIA, Los Angeles, Calif.

Glass: Ful-Trim Division of
Texas Aluminum Co.

Glazing: Giroux Glass Company.



b.



c. d.



MISSISSIPPI GLASS COMPANY


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NEW YORK

CHICAGO

FULLERTON, CALIF.

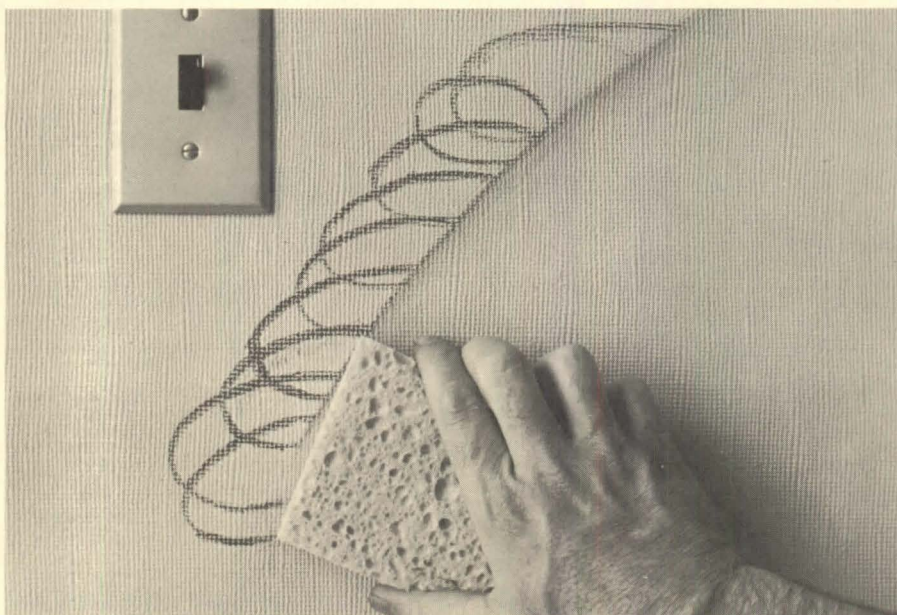
This new vinyl wallcovering is surfaced with TEDLAR®. It is as stainless as ceramic tile. Please try to stain it. Try crayon, mustard, ballpoint pen, iodine, shoe polish, coffee, tar, lipstick—even blood. Then wipe it away without a trace. Use powerful cleaning agents if you like—caustic soda, paint-remover, even MEK. None can harm this new wallcovering. Stain it, if you can.



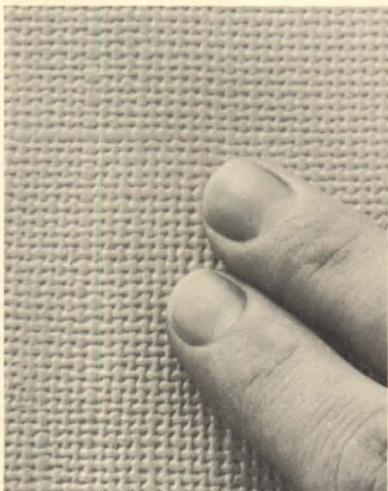
This new vinyl wallcovering is as stainless as ceramic tile. Its surface of Du Pont TEDLAR* PVF film is so inert to chemicals that stains lie on the top, and can be wiped away. This wallcovering will stay new-looking—its colors fresh—for many years. For illustrations and more details, turn the page.

*Du Pont registered trademark.

This new vinyl wallcovering, surfaced with Du Pont TEDLAR®, is as stainless as ceramic tile. Already, it's in wide use.



Even ink lies on face of vinyl wallcovering surfaced with TEDLAR, and can be wiped away. Neither severe stains nor harsh cleansing agents can harm appearance of material.



Surface of TEDLAR gives wallcovering durable, stain-resistant finish, yet preserves warmth and appeal of textured vinyl.



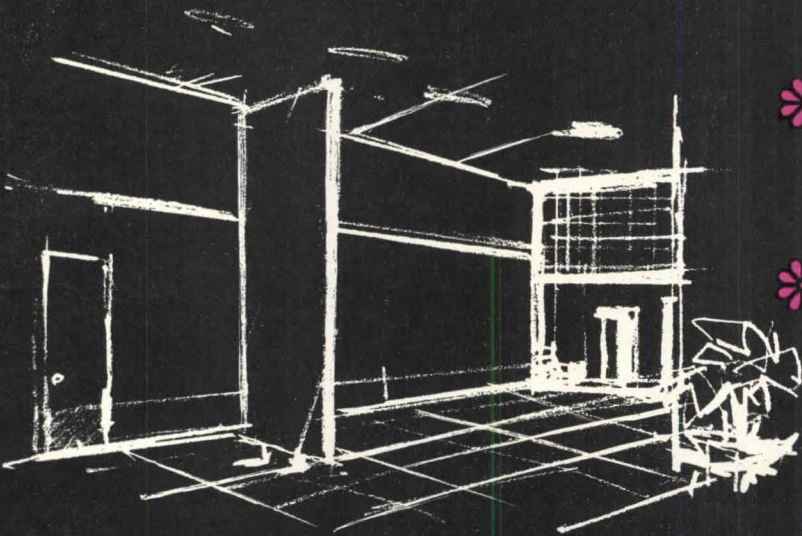
Installed as easily as conventional vinyl wallcovering, products surfaced with TEDLAR provide lasting beauty, easier cleaning and lower maintenance costs.

Vinyl wallcovering surfaced with TEDLAR is now available in many colors, patterns and gauges, from leading manufacturers. For case-history information and samples, write Du Pont Company, Room 2681-A, Wilmington, Delaware 19898.



BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

A GREAT NEW WALL TEAM*



* *high style VICRTEX V.E.F. patterns and colors*

* *low maintenance DuPont TEDLAR[†] surface*

VICRTEX T[®]

*V.E.F. Vinyl
Wallcovering
armored with
stainproof DuPont
TEDLAR[†]*

Now! You choose from Vicrtex' broad range of patterns, textures, and sparkling colors.

... and you get *the added protection* ... as stainproof as ceramic tile ... provided by Vicrtex-T's new surface of TEDLAR PVF film.

Vicrtex-T, like regular Vicrtex, is easily applied to walls, pillars or panels—on wood, plaster or metal. This great new plus-value wall-covering defies the stains and blemishes so common to heavy traffic areas. Ballpoint pen ink, merthiolate, magic marker, lipstick ... even shoe polish ... simply wipe off! And the tough surface of TEDLAR is unaffected by the harshest cleaning agents. Even toluene, acetone or MEK won't affect Vicrtex-T's permanent beauty.

Write or phone today for swatches.



†DuPont
registered
trademark

**NOW
AVAILABLE:**
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patterns, in 42 colors,
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The most exciting concrete is made with **Pozzolith**

Contemporary designers are molding concrete into structures that are exciting, expressive and economical. Structures with sculptured shapes that frankly expose their concrete faces. Structures that soar to new levels of excellence.

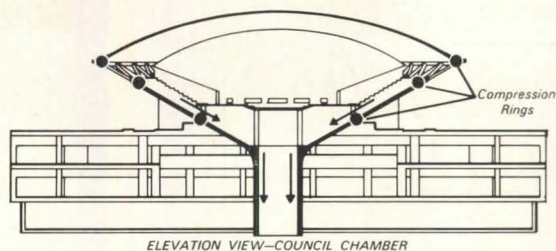
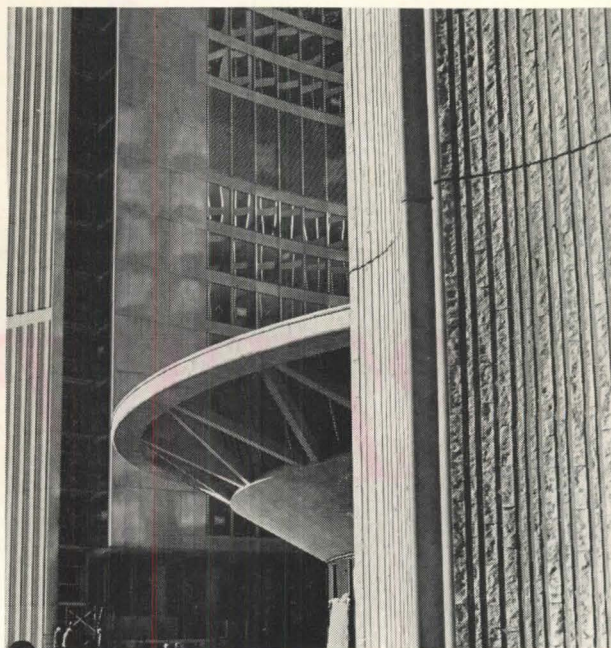
POZZOLITH, water-reducing set-controlling admixture for concrete, helps turn these creative designs into practical results. The new Toronto City Hall is an example. Conceived in concrete, it has been called "the most important new building in North America".

POZZOLITH was selected over all other admixtures because: 1. It produces more uniform concrete with lower coefficient of variation. 2. Provides higher strength. 3. Assures easier placing and finishing. 4. Promotes better finished appearance. 5. Assures greater durability.

These benefits explain why architects and engineers who design in concrete choose POZZOLITH controlled performance concrete. Consult your Master Builders field man for details or write for a copy of our 1965 General Catalog, Section I. Master Builders, Cleveland, Ohio 44118, and Toronto 15, Ontario.

POZZOLITH
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*POZZOLITH is a registered trademark for Master Builders water-reducing, set-controlling admixture for concrete.



"A landmark design" executed in POZZOLITH concrete.

Toronto City Hall expresses the exciting character of concrete. Structure contains 80,000 cu. yds. of cast-in-place concrete and 11,000 precast units in a blend of acid-etched textures, smooth-form finishes and marble-accented concrete panels.

POZZOLITH assured positive control throughout. Example was council chamber dome (drawing), where slump, air content, setting time and strength were precisely regulated during Toronto's variable winter weather.

Owner: The Corporation of the City of Toronto. Architects and Engineers: Viljo Revell—John B. Parkin Associates. General Contractor: Anglin-Norcross Ontario Limited. POZZOLITH Ready-Mixed Concrete: Canada Building Materials and Dual Mixed Concrete and Materials Limited.





Roof-mounted Garrett Gas turbines supply all the cooling, heating and electricity for Florida apartments.

The new 200-unit David-William apartment/hotel is elegant Florida living at its best. What gives the Coral Gables building special distinction is the energy system. All of the electricity, cooling, and heating needs are supplied on-site by Gas.

Two Garrett-AiResearch Gas turbines are the energy source. They drive generator sets to provide electric power. And turbine exhaust heat is recovered and put to work energizing cooling equipment and supplying heat and hot water needs.

What about economy? That's the big reason for a Garrett and Gas total energy system. The building costs less to operate than with purchased power. Learn more about the total capabilities of Garrett and Gas. Call your local Gas Company Sales Engineer. Or write: Garrett-AiResearch Manufacturing Div., 180 North Aviation Blvd., El Segundo, Cal.

AMERICAN GAS ASSOCIATION, INC.



**For total energy...
Gas makes the big difference**

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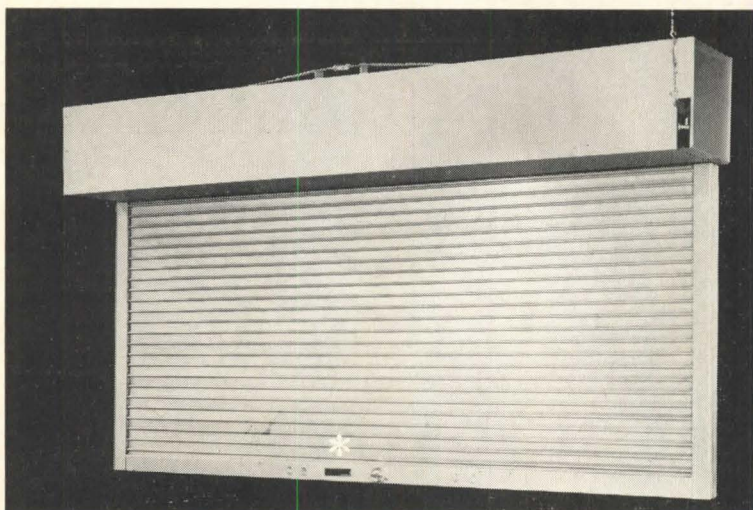
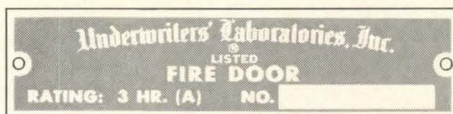
The beauty of Western Red Cedar Siding is that it keeps its good looks and style year after year, after year, after year, after year, after year, after year, after year, after year, after year, after year, after year, after year.

Western Red Cedar siding stands the test of time better than any other wood known to man. Paint it. Stain it. Or let it weather to a natural silver grey patina. Whatever the finish it will add style and distinction to any type of building at minimum cost. The popular 3/4-inch by 10-inch bevel siding is particularly appropriate to contemporary design. You can also specify this beautiful siding in other standard sizes, with a saw textured or smooth surface, and in vertical, V-groove patterns. May we send you a colorful free booklet?



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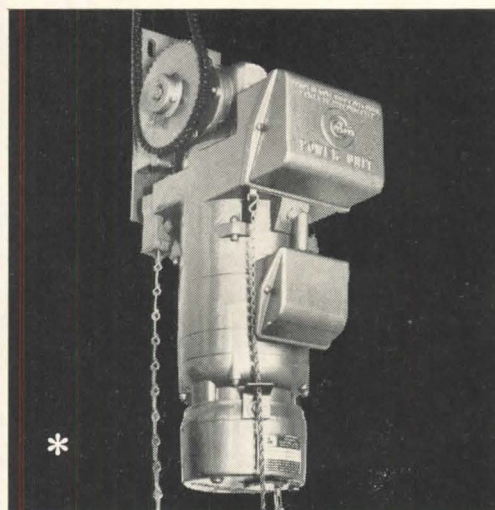


SAFETY with Compact Styling

The FD10 Series Rolling Steel Miniaturized Fire Doors for Counter Closures.

Engineered to provide maximum fire protection with minimum bulk, the FD10 Series fire doors are highly compatible with any modern decor.

For complete information on these new products and on the entire Cookson line, write for our catalog. Or see Sweet's.



SAFETY with Efficiency

A Cookson exclusive! A Motor Operator that has been tested and approved by Underwriters' Laboratories for use with all Cookson Rolling Doors, both for exterior service openings and interior fire wall openings. Designed to meet local electrical codes; easy to wire; provides long-range operating economy.

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Architect solves complex roof problem with

REVERE COPPER

PROBLEM: To find a roof covering . . .

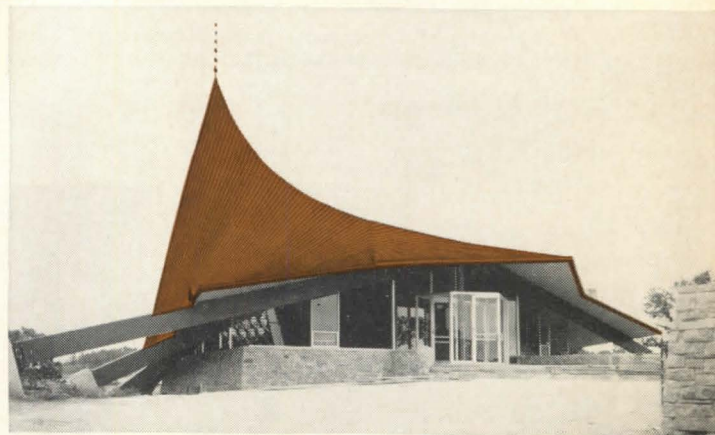
- 1—That must be on a warped surface, with a slope varying from 3/12 to 36/12
- 2—That has a texture and pattern which will complement a dramatic shape
- 3—Whose color will complement a natural wooded surrounding
- 4—Whose nature would be compatible with other permanent materials used, i. e. stone and glass

SOLUTION: COPPER—with standing seam pattern of lines running at right angles to the curving ridge to dramatize the changing slope.

This roof is yet another example of how you have so much more flexibility in expressing your ideas when you "Design with Copper in Mind."

Add to this the appearance of copper, with its distinctive patina, its long, maintenance-free life, and it becomes readily understandable why copper, man's oldest metal, is having a glorious renaissance in modern building construction.

As to the preference for Revere copper, Mr. Leo Muza, Muza Sheet Metal Company, contractor, had this to say, "We specialize in copper work and like to deal with people who know their business. We use Revere copper exclusively, and have had consistently good results. Revere also can provide technical assistance to the architects and to us . . . and they maintain good jobber relations."



ALL-FAITHS CHAPEL, State of Wisconsin's New Kettle Moraine Boy's School, Plymouth, Wisc., where 20,000 lbs. of Revere 16 oz. cold rolled copper were used for the unique, standing seam roof and fascia.

Architect: DAVERMAN ASSOCIATES, INC., Grand Rapids, Michigan. General Conf.: HUTTER CONSTRUCTION COMPANY, Fond du Lac, Wisc. Sheet Metal Cont.: MUZA SHEET METAL CO., Oshkosh, Wisc.



REVERE

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Executive Offices: 230 Park Ave., New York, N.Y. 10017

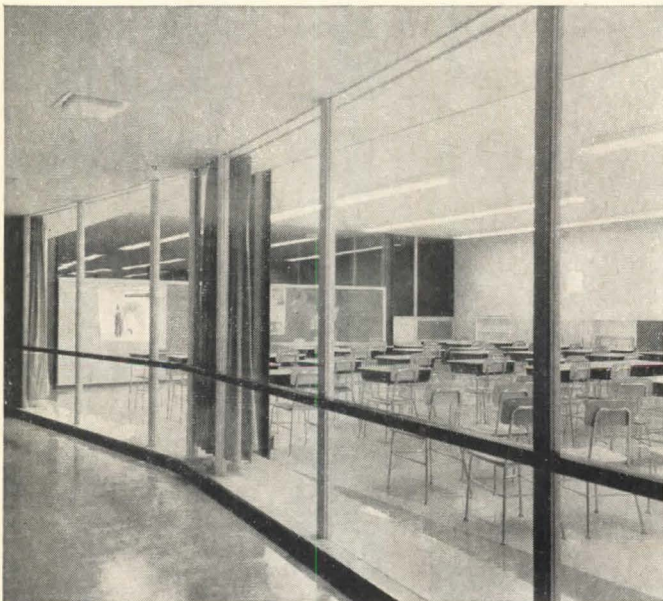
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New interior design freedom in the "Open World" of L·O·F glass



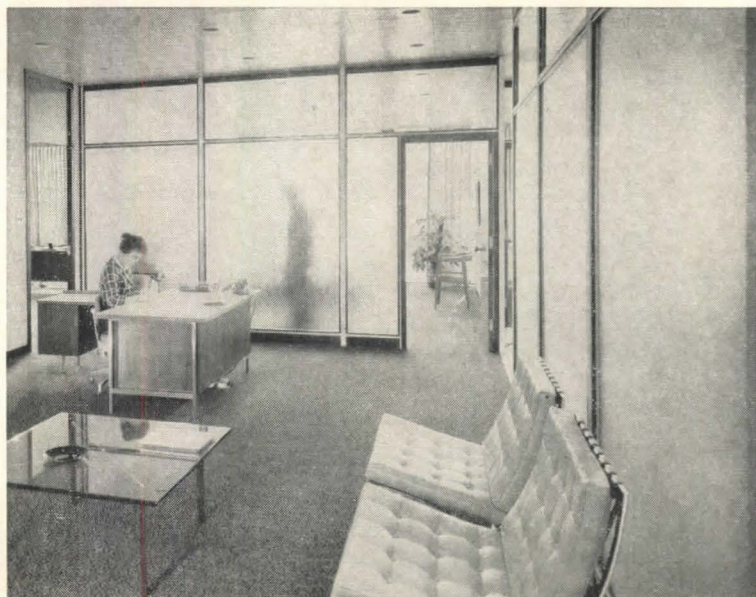
For visual relief. Corridors and classrooms are separated by walls of *Parallel-O-Plate®* Glass. San Angelo Central High School, San Angelo, Texas. Architects: Caudill, Rowlett & Scott, Houston.



For observation. *Mirropane®* (the "see-thru" mirror) is used for observing consumer marketing reaction panels at Fuller & Smith & Ross Inc., advertising agency, Los Angeles, Calif.



For welcoming visitors. *Tuf-flex* Plate Glass doors greet visitors at the Libbey-Owens-Ford Building, Toledo, Ohio. Architects: Skidmore, Owings & Merrill, New York City.



For borrowed light. L·O·F *Rough Plate* Glass partitions let abundant light flow through to daylight the reception area. Seven-Up Bottling Co. building in Chicago. Architects: Naess & Murphy, Chicago.

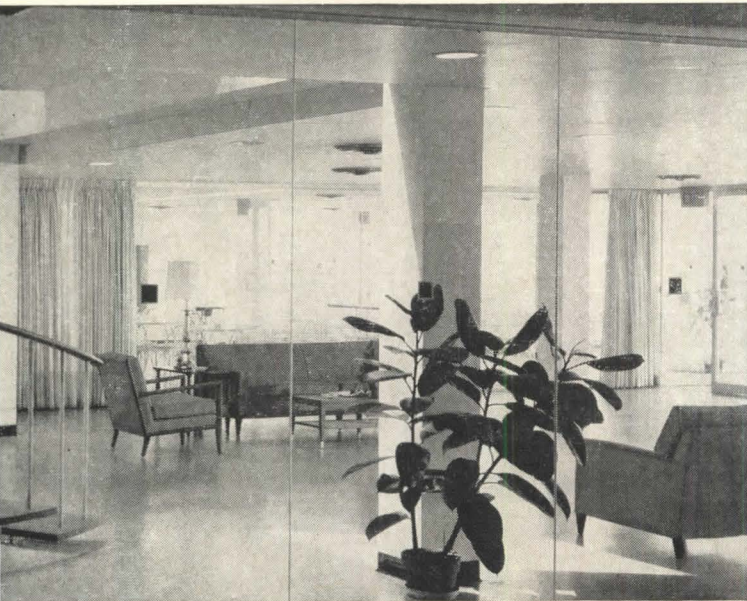
INTERIOR GLAZING. It's great to look out. But you have to look in, too. Why not make it as interesting as possible? Shown here, and described in captions, are a few of the many kinds and uses of L·O·F glass in interior glazing. For more, refer to Sweet's Catalog File 26A. Or call your L·O·F distributor or dealer (listed under "Glass" in the Yellow Pages). Libbey·Owens·Ford Glass Company, Toledo, Ohio 43624.



Libbey·Owens·Ford Toledo, Ohio

Free Glazing Portfolio on 5 Outstanding Buildings

Contains illustrations and exterior glazing details of five buildings designed by such famous architects as Harrison-Abramovitz, Edward Durell Stone and Minoru Yamasaki. For your free copy of HDP-2, write to L·O·F, 4095 Libbey·Owens·Ford Building, Toledo, Ohio 43624.



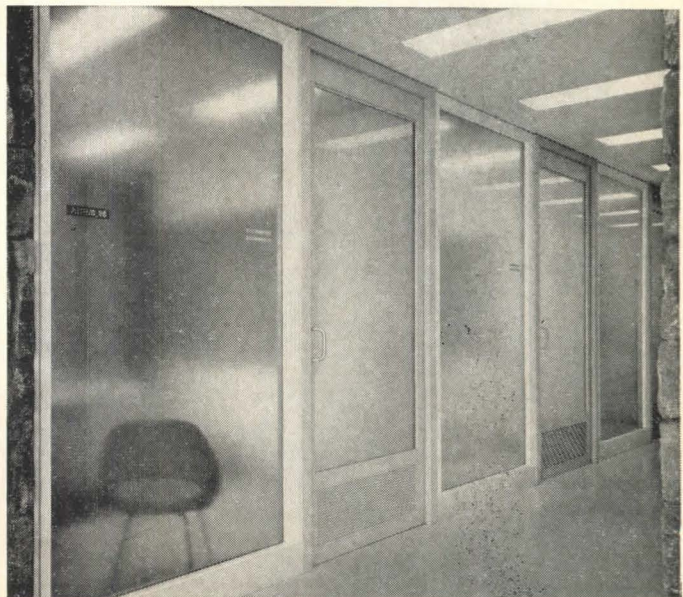
For impact strength. Tuf-flex® Plate Glass is used to separate lounge from an exhibit area in the Lake Meadows Club House, Chicago, Ill. Architects: Skidmore, Owings & Merrill, Chicago.



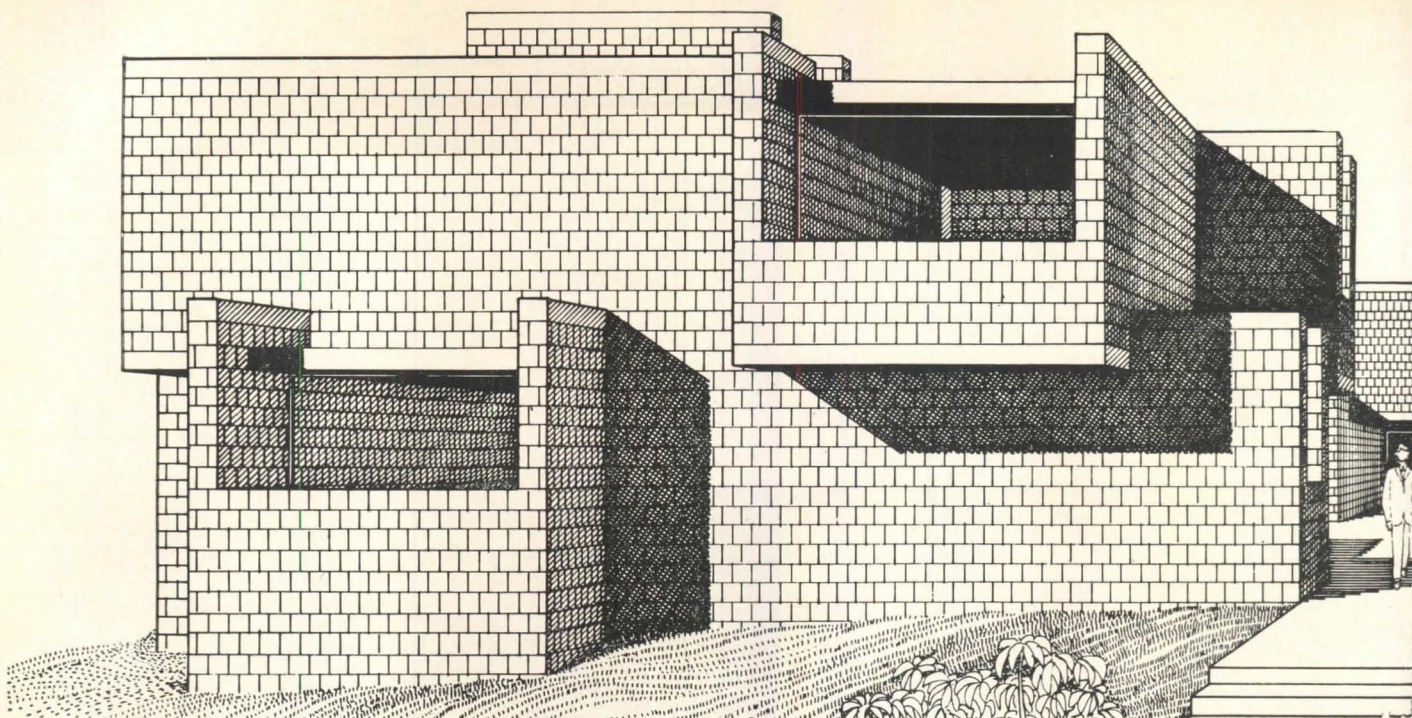
For decor. Mirrors made of Parallel-O-Grey® Plate Glass complement the masculine decor of this restaurant. The Grace E. Smith Co., Toledo, Ohio. Architects: Richards, Bauer & Moorhead, Toledo.



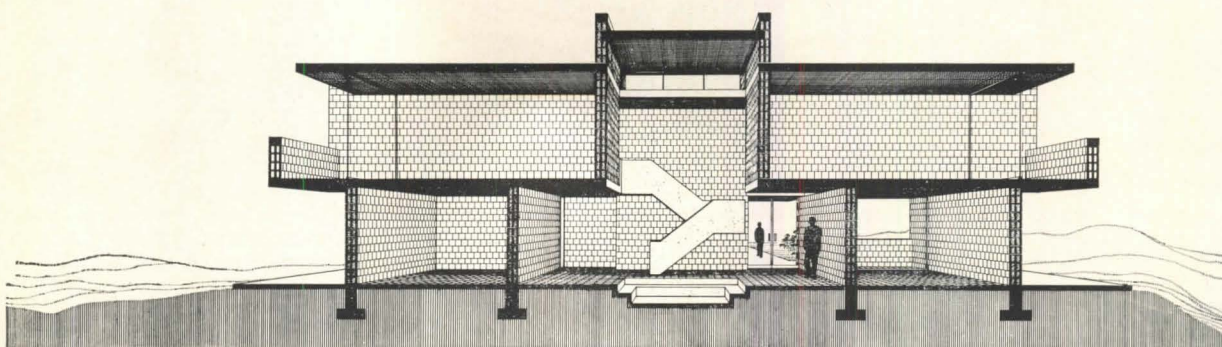
For decoration. L·O·F Patterned Glass not only decorates but provides privacy. Shown here is our new Grassweave pattern at Detroit Bank & Trust. Partitioning designed by Frank P. Farina, A.I.A., of Detroit.



For privacy. Office partitions and doors are glazed with L·O·F Rough Grey Plate Glass to blend with fieldstone facings. IBM — Thomas J. Watson Research Center, Yorktown Heights, N. Y. Architects: Eero Saarinen & Associates, Hamden, Conn.



Architect Marvin Hatami designs a college dormitory



At -10° , indoor wall surface temperature is increased from 50° to 62° by insulating the block walls with Zonolite Masonry Fill Insulation.

The project consists of the first section of a dormitory complex, located on a hilly meadow site, accommodating fifty-two single rooms.

It was designed by Marvin Hatami and engineered by Cator, Ruma & Associates, both of Denver, Colorado.

The rooms are composed around a two story central lounge and every three rooms share common bathroom facilities. Developed modularly,

the second floor is superimposed over the ground floor in a way to express each individual room in an interwoven and interlocking manner.

The structure is composed of $12'' \times 8'' \times 8''$ reinforced lightweight concrete block bearing walls, insulated against thermal and sound transmission with Zonolite Masonry Fill Insulation.

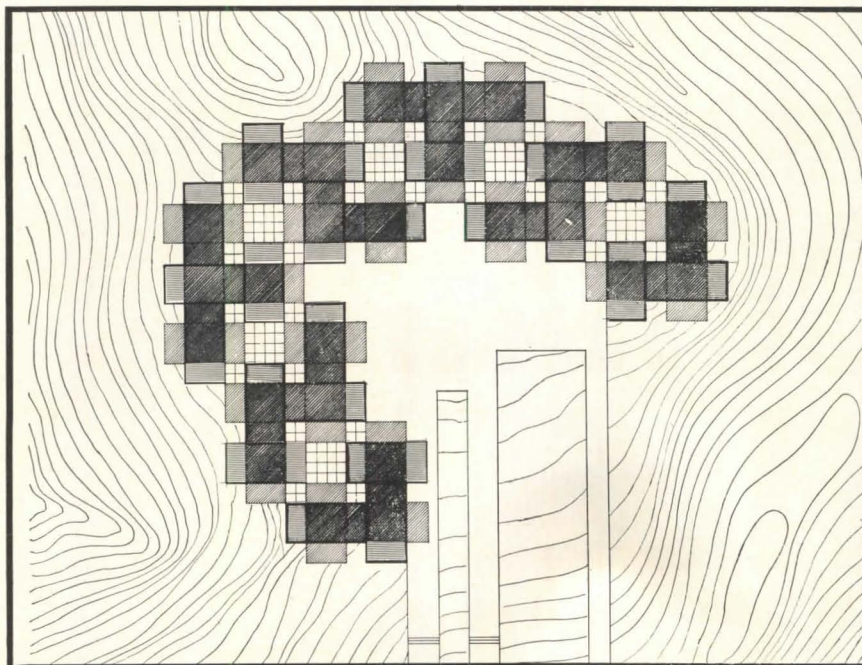
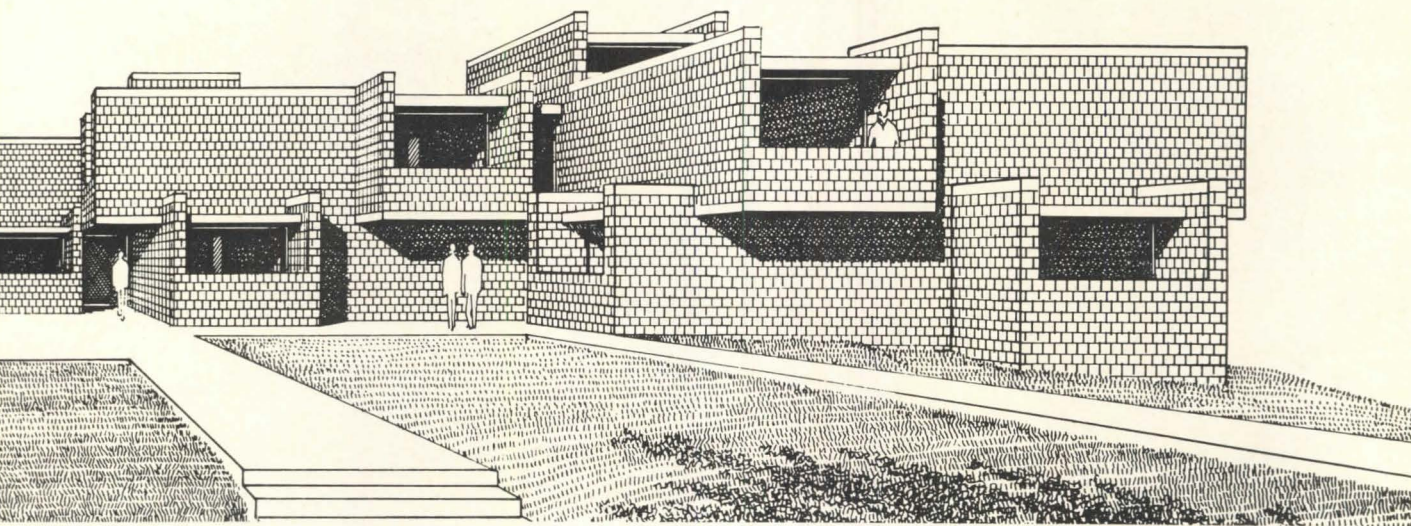
It cuts thermal transmission

through the walls by 50% (see chart), raises the interior wall surface temperature from a miserable 50° to a comfortable 62° , thus reducing heat transfer and convection currents in the rooms.

This cut the operating costs 9.2%, or about \$90 a year.

The savings more than pay for the cost of the thermal insulation over the 20 year mortgage period.

Zonolite® prototype building #10: a college dormitory



BLOCK PLAN SHOWING THE SUPERIMPOSITION OF SECOND FLOOR ON GROUND FLOOR

For complete information about Zonolite Masonry Fill Insulation, write for our Bulletins MF-79 and MF-80, Dept. PA-95, 135 South LaSalle Street, Chicago, Illinois 60603.

ZONOLITE
GRACE ZONOLITE DIVISION
 W. R. GRACE & CO.
 135 SO. LA SALLE ST., CHICAGO, ILL.

DESIGN CONDITIONS			Winter Heat Loss in BTU/HR. Assuming 70° F Indoor —10° F Outdoor	
	Without Masonry Fill	With Masonry Fill	Without Masonry Fill	With Masonry Fill
Walls	12" x 8" x 8" Lightweight Concrete Block	12" x 8" x 8" Lightweight Concrete Block (Cells Filled)	142,000	71,000
Roof	Roofing, 8" Concrete 2" Insulation		98,000	98,000
Floor	4" Concrete on Grade		26,000	26,000
Glass	1" Insulated Glass		242,000	242,000
Ventilation	3600 CFM		260,000	260,000
Totals			768,000	697,000
% Savings with Masonry Fill			$\frac{768,000-697,000}{768,000} \times 100 = 9.2\%$	

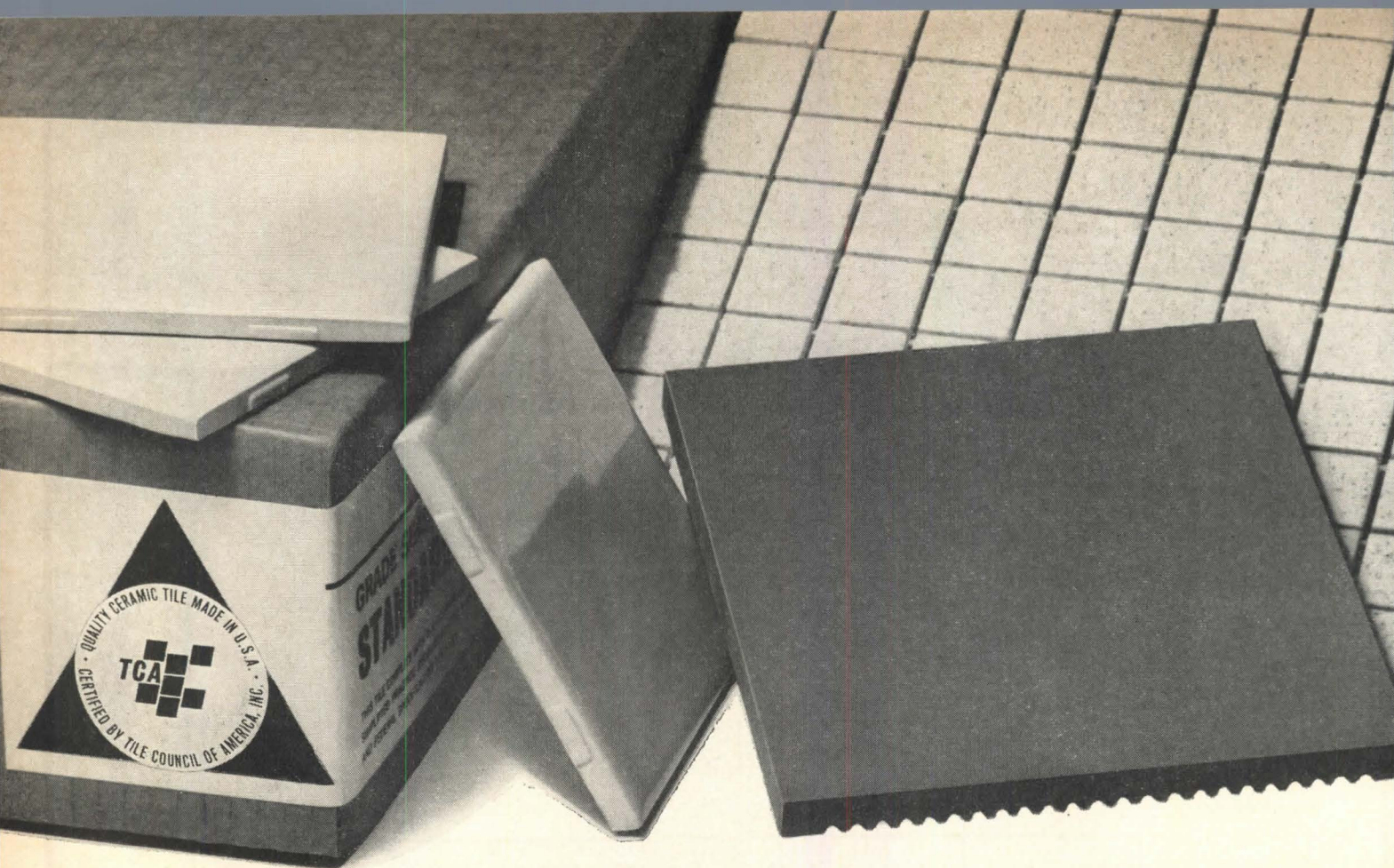
1. Increased wall attenuation characteristics reduces sound transmission considerably.

2. Raised indoor wall surface temperature from 50° F to 62° F provides added comfort.

3. 14,100 sq. ft. of walls (includes 8200 sq. ft. of interior walls) @ 18¢ sq. ft. = \$2,538 installed.

4. Additionally the operating costs are reduced by over \$90 per year based on 5673 degree days \$.053 per therm gas boiler.

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2. Raised indoor wall surface temperature from 50° F to 62° F provides added comfort.
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4. Additionally the operating costs are reduced by over \$90 per year based on 5673 degree days \$.053 per therm gas boiler.



Insist on ceramic tile that is certified by the Tile Council of America and identified by this certification mark.

the experts* say:
**“CERAMIC
TILE
COSTS
LESS”**

***McKee-Berger-Mansueto, Inc., New York, N. Y.**

independent construction and maintenance cost consultants

HERE'S WHY:

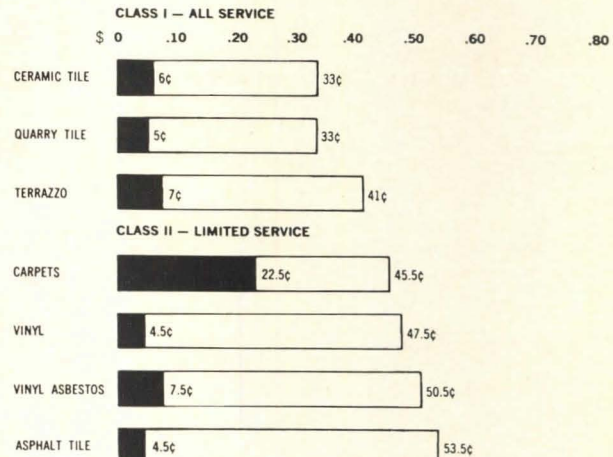
SOME HIGHLIGHTS FROM THE M-B-M, INC. INDEPENDENT STUDY

Total annual cost per square foot

FLOORS

Ceramic Tile most economical of materials tested

Long life and easy, infrequent maintenance make the total investment in ceramic tile less than that for other materials after ten years. Savings become still greater every year thereafter.

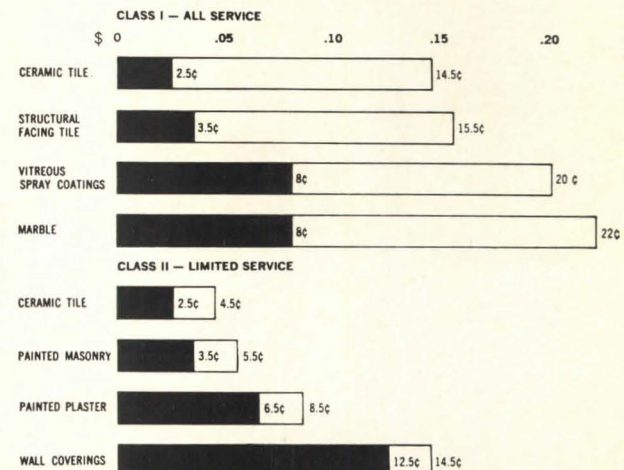


LEGEND: ■ Installation and Replacement □ Custodial Maintenance Based on a 60-Year Building Life

WALLS

Ceramic Tile has lowest annual cost

In both heavy-duty and light-duty applications, tile is more economical. In light duty, tile costs only 4.5 cents per square foot per year. Even in heavy-duty applications, tile costs only 14.5 cents per year.



AT LAST, definite answers to the true cost of tile in the long and short run. McKee-Berger-Mansueto, Inc., used actual records in their findings. They're detailed to the half-cent. A copy is yours for the asking. You'll want to study it closely. It's the best set of reasons yet for specifying ceramic tile, the material you've always known is best.

MEMBER COMPANIES: American Olean Tile Co., Inc. • Atlantic Tile Manufacturing Co. • Cal-Mar Tile Company • Cambridge Tile Manufacturing Co. • Carlyle Tile Company • Continental Ceramic Corporation • Florida Tile Industries, Inc. • General Tile Company • Gulf States Ceramic Tile • Highland Tile Company • Huntington Tile, Inc. • International Pipe and Ceramics Corporation • Jackson Tile Manufacturing Co. • Jordan Tile Manufacturing Co. • Lone Star Ceramics Co. • Ludowici-Celadon Company • Mid-State Tile Company • Monarch Tile Manufacturing, Inc. • Mosaic Tile Company • Oxford Tile Company • Pacific Tile Company • Pomona Tile Manufacturing Co. • Redondo Tile Company • Ridgeway Tile Company • Sparta Ceramic Company • Stylon Corporation • Summitville Tiles, Inc. • Texaramics Inc. • United States Ceramic Tile Co. • Wenzel Tile Company • Winburn Tile Manufacturing Co.



Tile Council of America INC.

800 Second Avenue • New York, N.Y. 10017

Gentlemen: I'd be most interested in a copy of your cost study, "Cutting Maintenance and Costs with Ceramic Tile," for my reference files.

Name _____

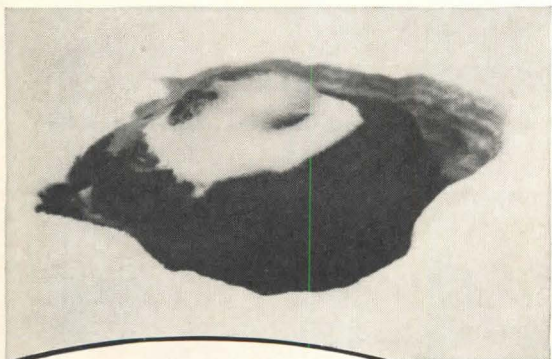
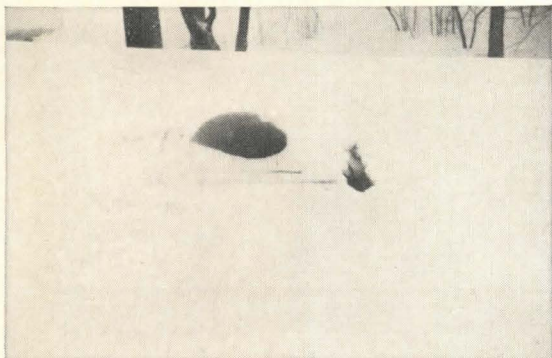
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Address _____





NO "FAIR WEATHER FRIEND" . . . Here's evidence that the Jenn-Air UNITARY Exhauster performs as well in January as it does in July: almost completely covered by drifting snow, this UNITARY cleared a trough around the vinyl curb in minutes . . . and kept right on going!



JENN-AIR

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ROOF EXHAUSTERS

that are neither seen nor heard...

**SNOW HEIGHT PROBLEMS
DISAPPEAR WITH THE**

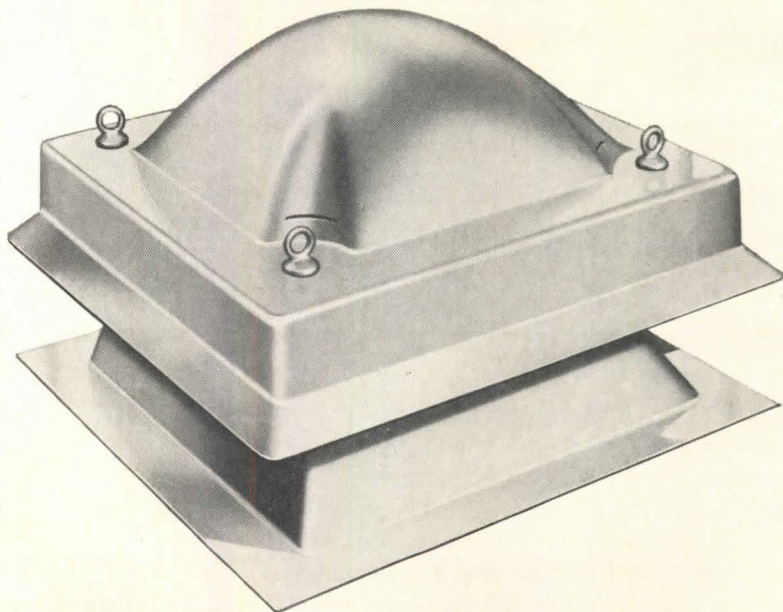
NEW UNITARY

Throughout much of the United States, 1965 will be remembered as the winter it *really* snowed! Although business, transportation and communications were completely stalled at times, these paralyzing storms failed to hamper the operation of Jenn-Air UNITARY Exhausters.

Available in centrifugal belt, direct drive, and relief vent units, these roof-hugging Hi-Temp (PVDC) vinyl exhausters were able to blow aside covering snows.

Thanks to Old Man Winter, the UNITARY has had the opportunity to flex its muscles, proving that these unobtrusive, low contour roof exhausters need have no limitations in any kind of weather.

Specify the UNITARY LINE and get curb, fan and back-draft damper in one low silhouette. Write for your copy of Bulletin No. 5-UV or call the Jenn-Air Representative in your area . . . he is listed under "Fans—Ventilating and Exhaust" in the Yellow Pages.

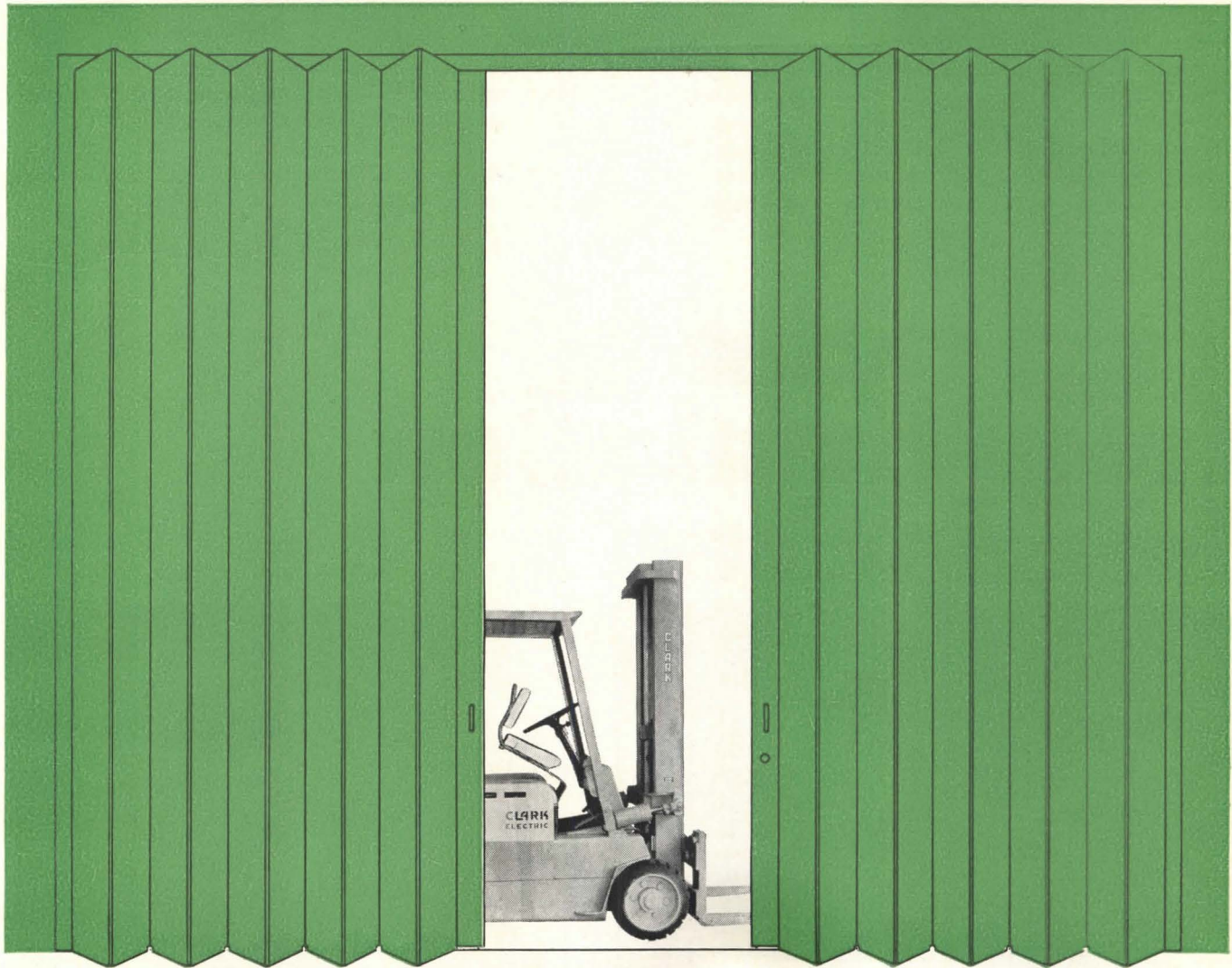


World's Largest Producer of Power Roof and Wall Exhausters

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For more information, write to Manager of Product Development, Overly Manufacturing Company, Greensburg, Pennsylvania 15601.

Overly

Silicone Treated Perlite loose fill insulation builds permanent efficiency into masonry wall systems.

Tests prove moisture does not impair the thermal properties of Silicone Treated Perlite. Even in severe wind driven rain exposure, Perlite stays dry.

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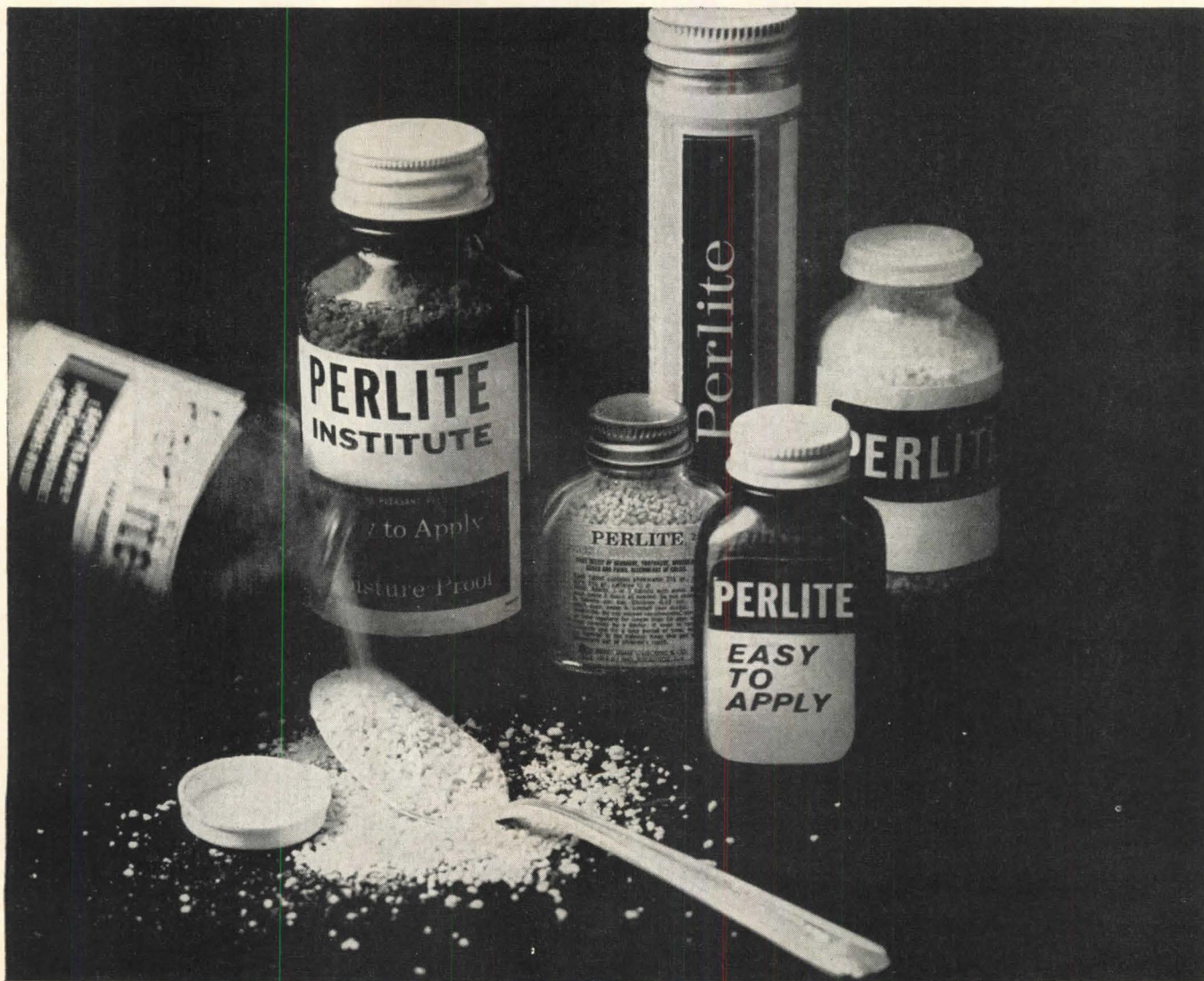
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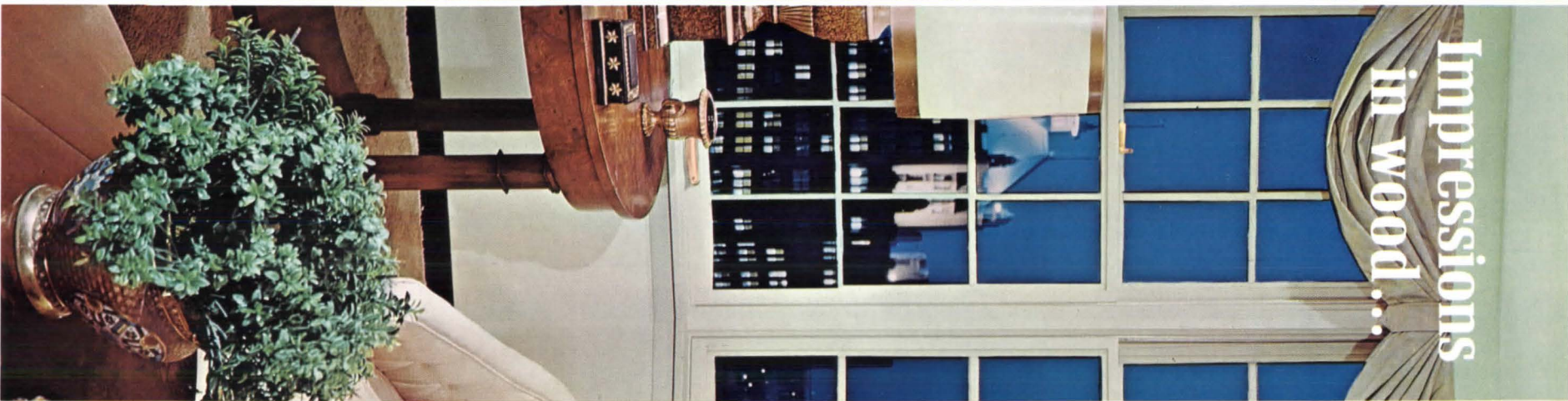
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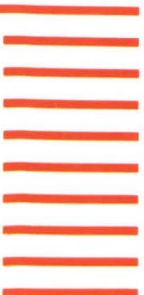
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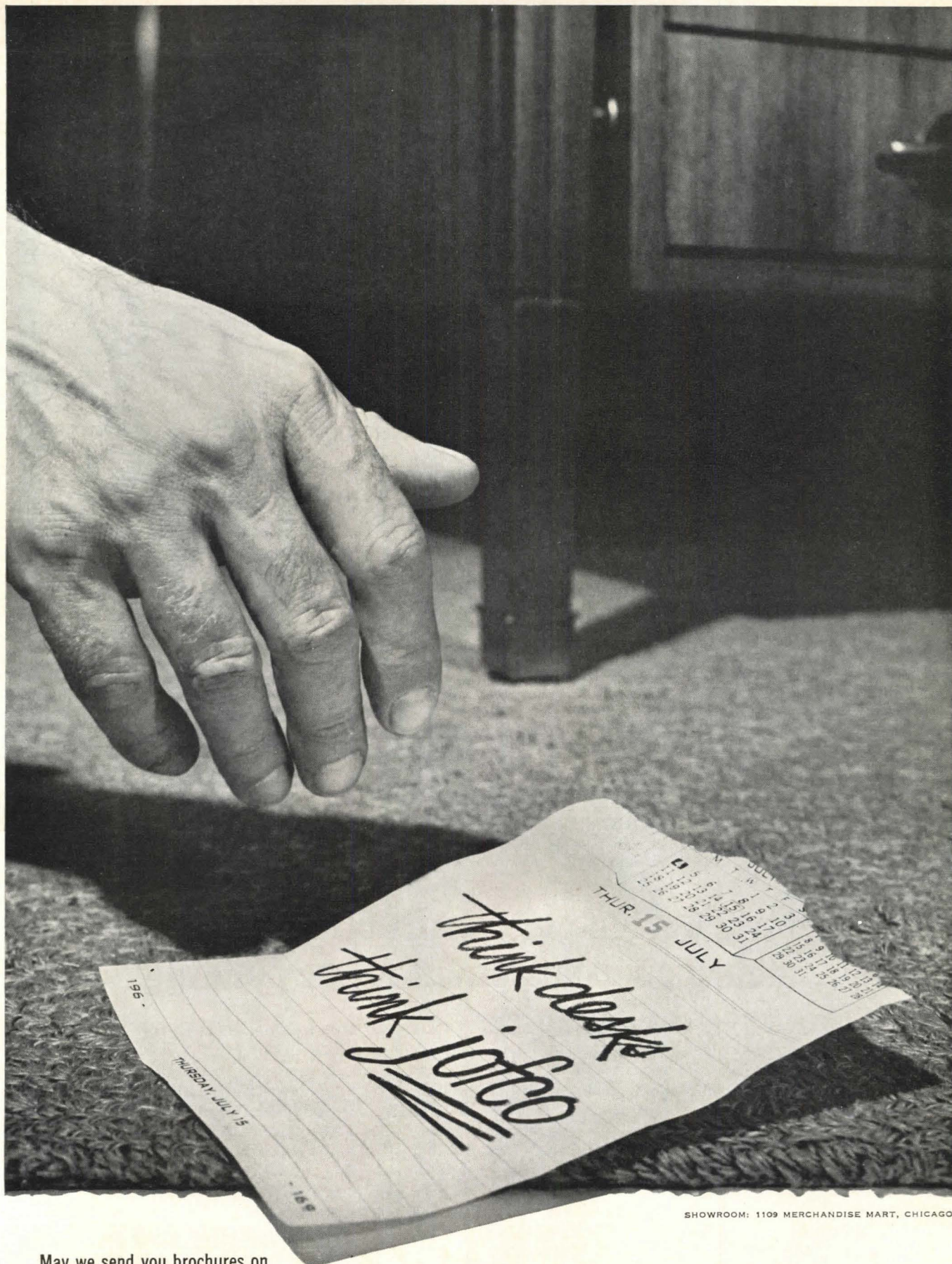
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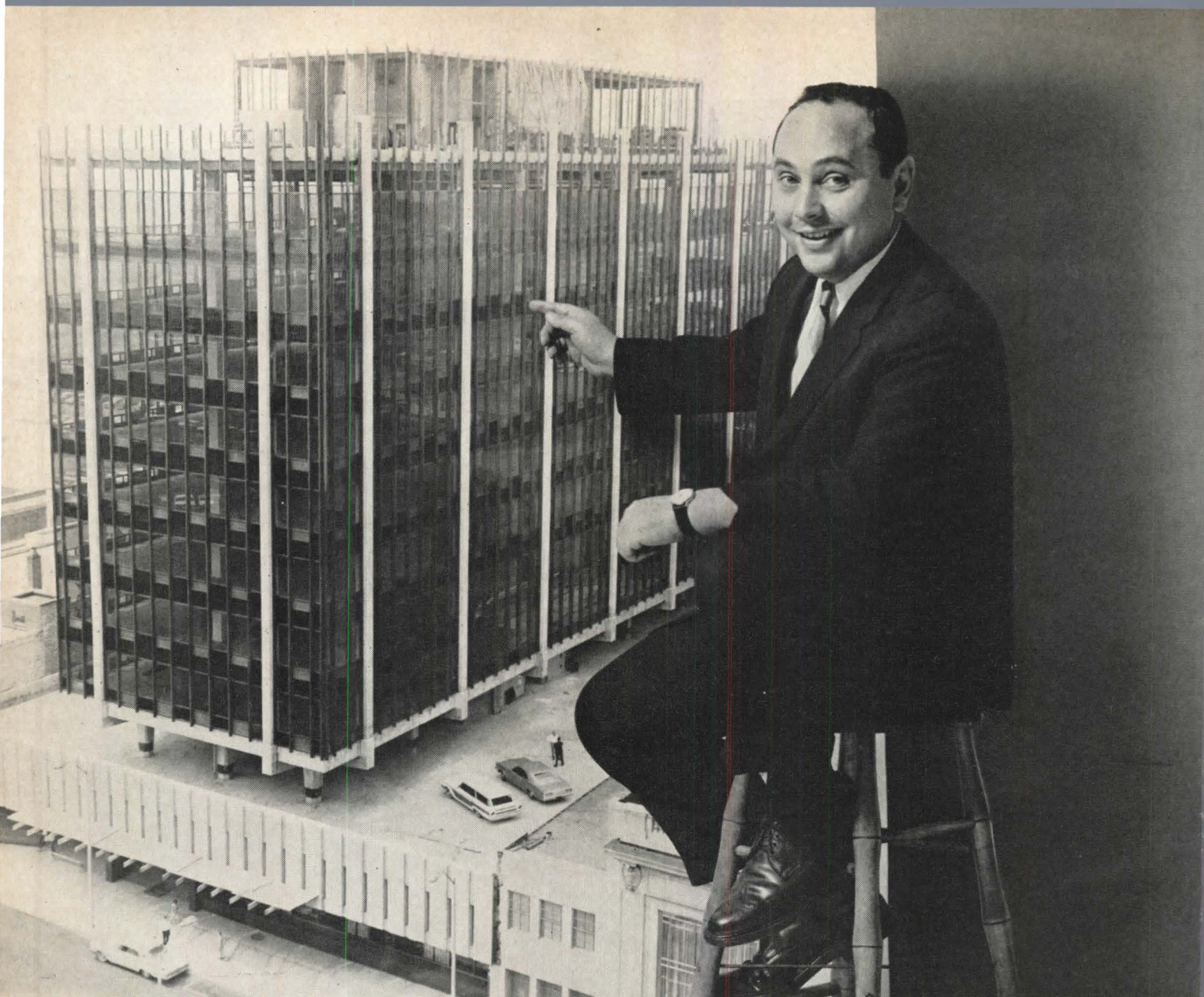




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"All-Electric Design cut construction costs \$180,000 in our new Connecticut office building"

Edmund Fusco, President of HF&A Development and Management Corporation, reports on the advantages of using flameless electricity for all heating, cooling and lighting in the \$3,000,000 People's Savings Bank Building in Bridgeport

"Extensive comparison studies by our architects and design engineer proved that all-electric design for our new People's Savings Bank Building would result in substantial benefits both to ourselves and our tenants," reports HF&A President Edmund Fusco.

"By going all-electric, we estimate an immediate saving of \$180,000 in initial costs alone. This includes a 40% saving in the cost of heating and cooling equipment. In addition, we freed 4800 square feet of rentable penthouse space by the elimination of flame-fired equipment. This will produce an additional net revenue of \$15,000 per year.

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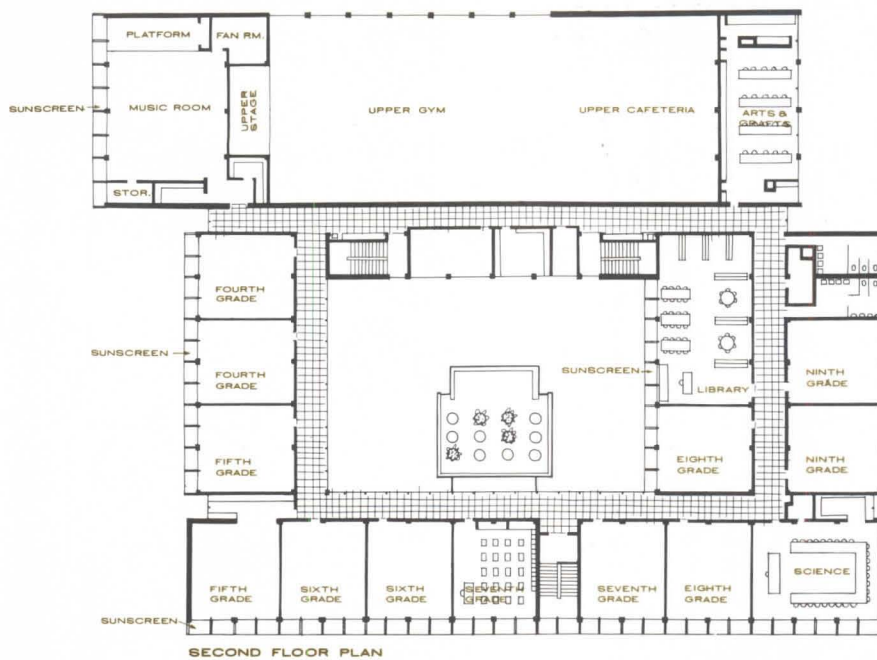
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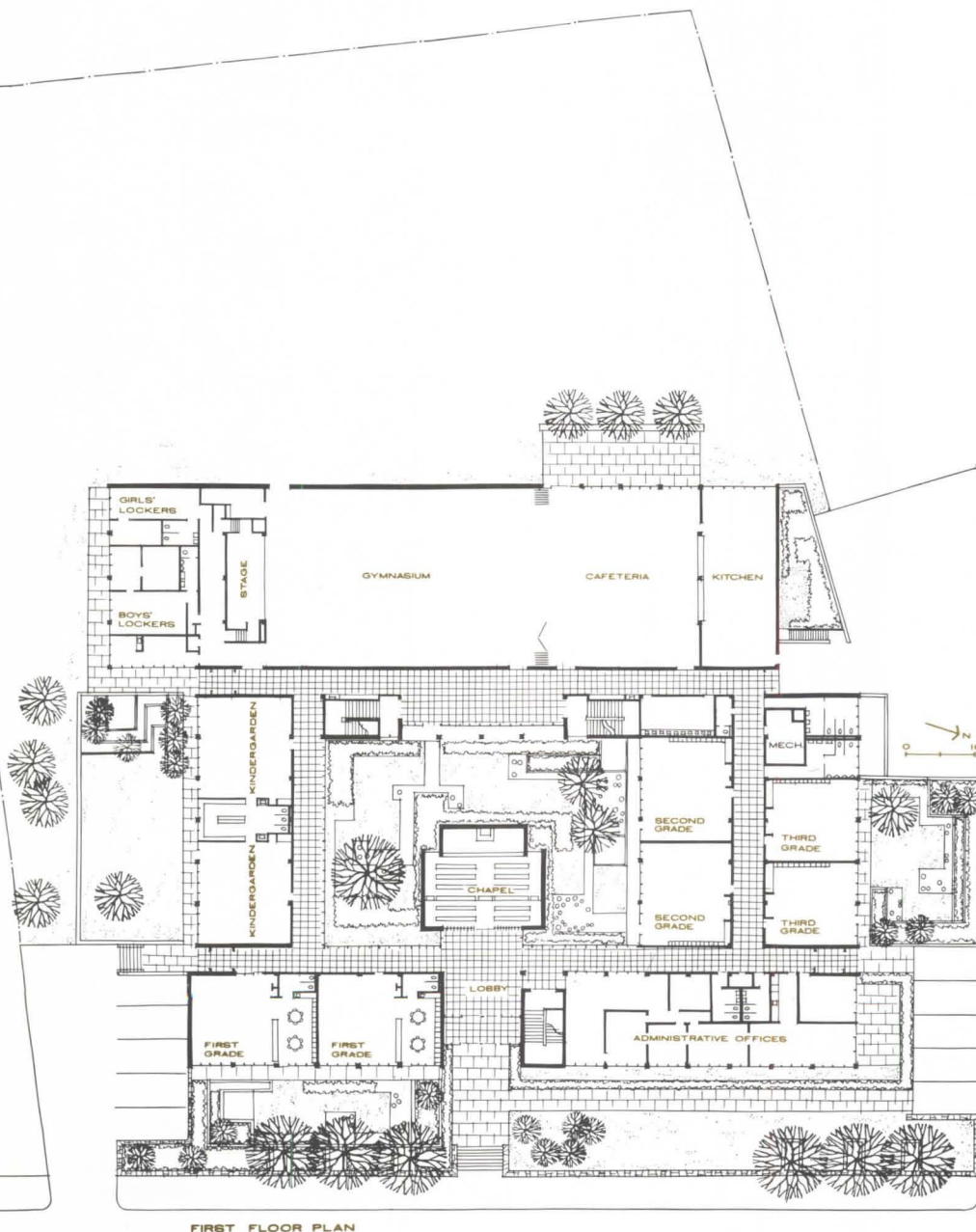
THIS PLAQUE, now given by many electric utility companies, identifies a modern building which has met the high standards of elec-







Rado has featured the chapel by placing it in the center of the interior court, with its entrance coinciding with the school entrance and accessible from the school corridors. It thus becomes unobtrusively and symbolically the heart of his design. His planning provides direct access and maximum active use of the outdoors. The teachers' room and administrative offices of the school are directly accessible from their parking space. Lower-grade students have only to pass through their classroom doors to enter private gardens. The second-floor corridor surrounding the interior court gives visual access to the court planting through glass curtain walls. Circular discs for planting on the chapel roof integrate it with the interior garden. Paving of the interior court is of granite blocks and 2' x 2' concrete squares set flush with the grass.



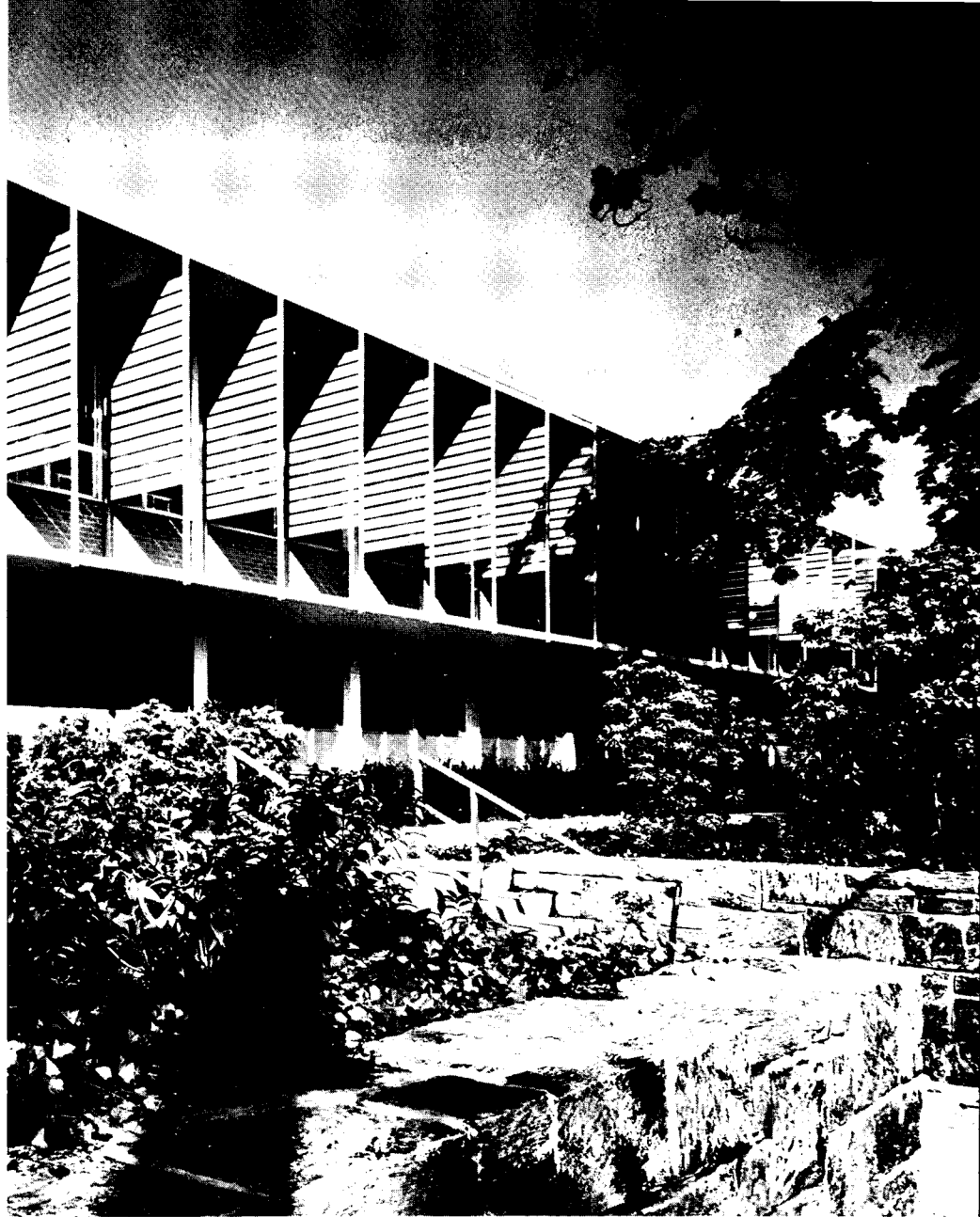
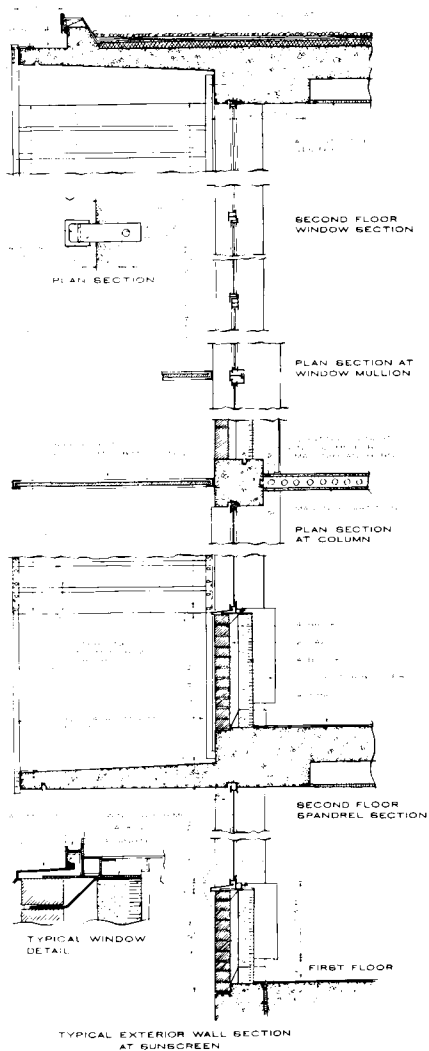
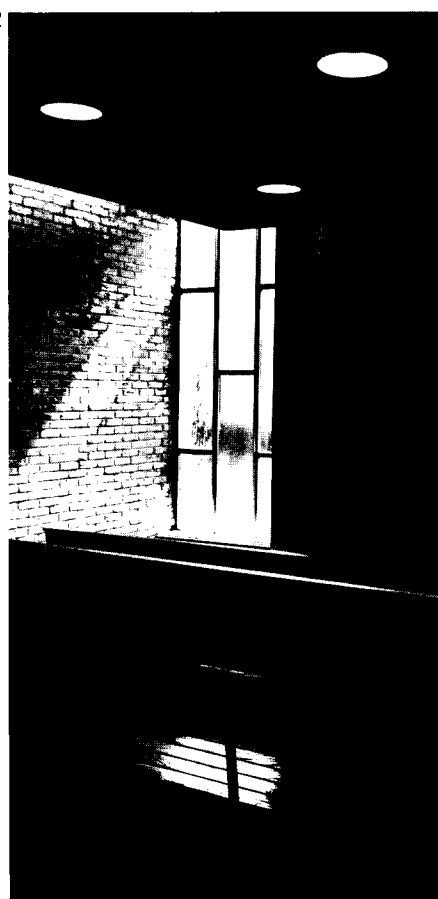


PHOTO: BEN SCHNALL

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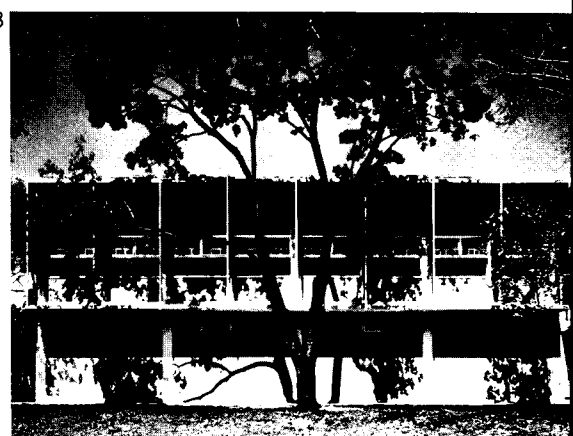


PHOTO: BEN SCHNALL

4



(1) School façade at entrance showing ashlar granite retaining wall which matches the street's residential field stone walls. (2, 4) Stained-glass windows that extend from floor to ceiling at either side of the chapel platform light the chapel interior, which is visible from the school entrance vestibule. (3) Recreation area at the side of the gymnasium.



Rado was faced with one of the two restrictions inherent in most school design problems—that of a minimal budget—but he was allowed to formulate his own program. Many of the details, as the architect candidly admits, would not have been permitted in a public school required to be vandalproof. The corridor lights, within easy reach of an enterprising student's jump, and the seating "mushrooms" in the garden, would probably not have been allowed under the stringencies of public school requirements. The Hillel school has been in operation for a year, and there are as yet no marks of careless occupancy.

In the selection of a conditioning system within the narrow confines allowed by the nature of school mechanical systems, Rado thought that convector heating was sufficient, with of course the usual radiant panel treatment of the kindergarten floors. The design intention was that the shading of the building by the slab overhangs and sunshades would make the interior comfortable during the warmer periods preceding the summer vacation. This contention was proven by the absence of the necessity of providing any interior window shading devices. This summer, the school was occupied as a summer day camp, and, when visited, the interior temperatures were found to be quite comfortable.

The use of the school during the summer demonstrates its adaptability without the rearrangement of architectural elements. In producing a pleasant school, Rado has perhaps encouraged a wider variation of function than the client originally intended. He has shown that the new bottle will also contain new wine and perhaps bring out flavors unrecognized in the old.



1



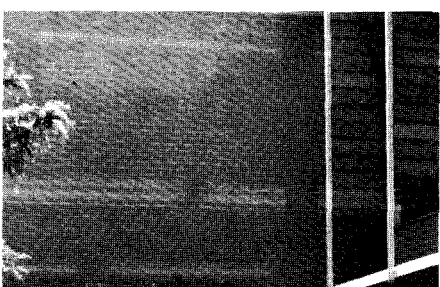
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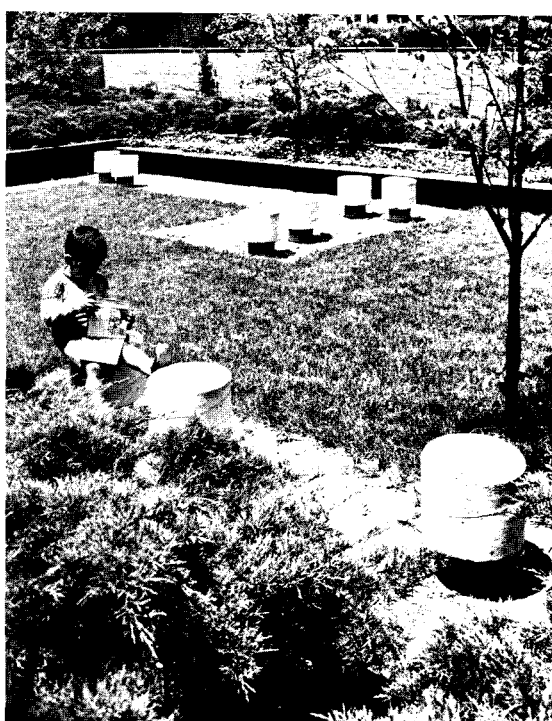
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Entrance to interior garden looking toward the third grade classrooms from the corridor opposite the chapel (facing page). The varying height "mushrooms" are of concrete and act as benches for outdoor instruction. (1) Typical classroom showing baffle of direct sunlight. (2) Typical unselected birch millwork with natural finish. Plaster over, painted in bright primary colors. (3) Sunshade framing of window openings. (4) Teacher and students in interior garden. (5) Students in interior garden seating area shown on facing page. (6) Private classroom garden play area outside second grade classroom. "Mushrooms" are set in granite block paved areas with platformed planting against the glazed brick enclosing wall. Glazed brick exterior garden walls are blue, red, and white.

PHOTO: BEN SCHNALL

STEINER'S GOETHEANUM AT DORNACH

"We should feel the walls as the living negative of the words that are spoken, and the deeds that are done in this building."

RUDOLF STEINER (1861-1925)

These monumental masses (1, 2, 3), which, from a distance, appear to be part of the limestone crags of the Jura Mountains near Basel, Switzerland, reveal themselves at close range as the reinforced concrete shells of an unusual collection of man-made structures. The most dominant of these buildings houses the headquarters of a philosophical organization known as the Anthroposophical Society, and its affiliated School of Spiritual Science. The Goetheanum, as this headquarters is officially named, derives its name from the German poet Goethe, whose philosophy—a somewhat unique combination of mysticism and pragmatism—formed the basis and the inspiration of the philosophy of the society's founder and mentor, Rudolf Steiner.

As a structure, the Goetheanum has always fascinated the design-conscious, and with the resurgence of interest in Art Nouveau and architectural expressionism, it has in recent years been subjected to closer scrutiny. Stylistically, the building, begun in 1923, is unclassifiable, yet it is related in many ways to the work of Steiner's more famous contemporaries, like Berg, Gaudí, Mendelsohn, and Pölzig. With its powerful, raw-concrete forms, the Goetheanum parallels Mendelsohn's Einstein Tower at Potsdam (1921) and Berg's Centennial Hall at Breslau (1913); in its fluid and organic aspects, it is not

unlike Gaudí's Casa Mila (1910) at Barcelona; and as an exercise in pure sculpture, the Goetheanum could easily have served as inspiration for Scharoun's recently completed Concert Hall for Berlin or Le Corbusier's Ronchamp chapel (1954), which is not too far from Dornach.

Whether judged in terms of the 20's or the 60's, the Goetheanum is without doubt one of the purest examples of expressionist architecture, for seldom has a structure been designed more specifically to express, to interpret, to reflect a way of life, a philosophy. Although this philosophy, like the architecture, defies definition, the intent of anthroposophy, according to Steiner, is to reveal a "logic of life" through Goethe's observations of the natural sciences. It was Steiner's hope that, through his writings and through the school, he might both nurture and further develop the work begun by the poet-philosopher. (The school, incidentally, encompasses departments of speech and music; plastic arts; medicine, with its own clinic; natural sciences, with laboratories for biology, physics, and agriculture; mathematics and astronomy; and belles lettres.) Accordingly, Steiner insisted that the architecture, in all its details, derive from the same impulses, the same sources as the anthroposophic philosophy.

That this unification of thought, architecture, and function was realized is largely due to the fact that one man, Rudolf Steiner, evolved the philosophy, designed the building, and, as leader of the society, guided the activities the completed building would house. Steiner delivered many lectures, wrote four dramas, designed costumes and scenery, and certainly had these activities in mind

when designing the main interior space. With few exceptions—Wright's Taliesin West, for example—architects rarely have the opportunity to exercise such absolute control over form and function.

Interestingly enough, Steiner was not an architect and had had no professional training. His approach was entirely intuitive. To him, architectural forms were organic growths undergoing the same metamorphoses as plant and animal life. His goal was "to imbue forms with life," to establish "a harmony of supporting and downward-bearing forces" and to achieve a balanced "counterpoint of concave and convex architectonic forms." The static, geometric structures of previous generations, he felt, were not adequate to express his new Spiritual Science. Five lectures, given in 1914 and entitled "Ways to a New Style in Architecture," outlined Steiner's system of structure and ornamentation and found application in the first Goetheanum (4), begun in 1913. Tragically, this first building—a vast hollow wood sculpture of rare design interest—was destroyed by fire soon after its completion in 1922. Reinforced concrete was therefore the logical choice for the second Goetheanum (5), not only because of its fire-resistive qualities but mostly for its plastic possibilities. These Steiner explored to the fullest with the help of a study model of clay, which served as the guide for the erection of the wooden forms into which the concrete was poured. "Let us try to feel how one thing is connected with another," he said again and again to his followers, and, in demonstrating this thesis in terms of architecture, he revealed a rare intuitive talent that many trained architects would envy.

—Ilse Meissner Reese







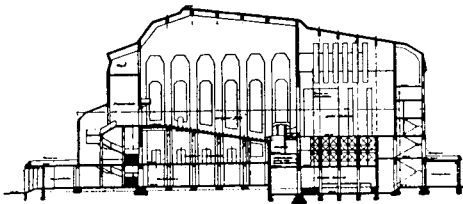
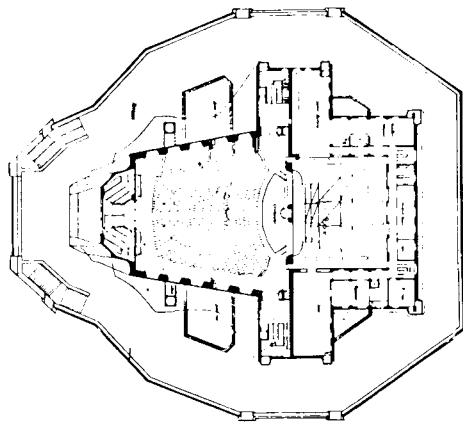
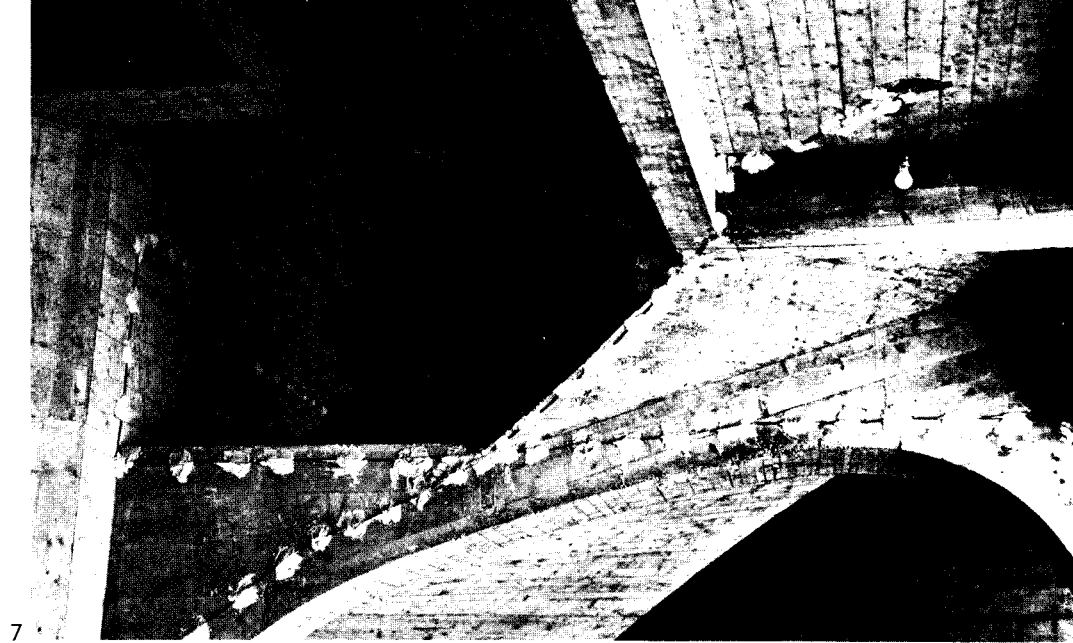


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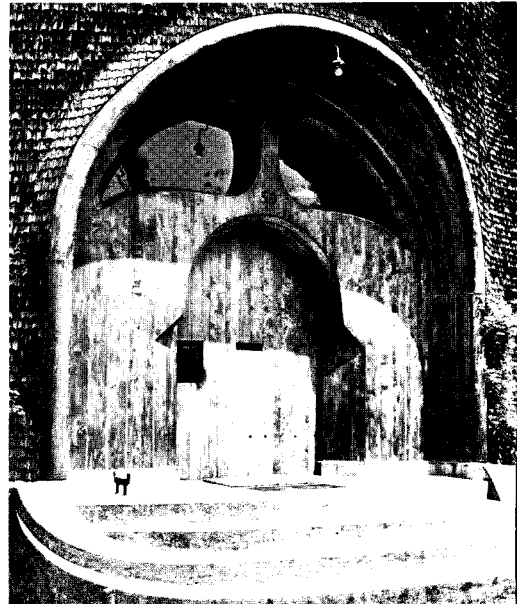
Of the first Goetheanum, only the concrete pedestal remains: on this, the second was later erected. In spite of the different appearances of the two Goetheanums—the first (4), a hand-crafted piece of wood sculpture: the second (3, 5), a muscular, undulating mass of reinforced concrete—both adhere to Steiner's theory of organic growth. "The columns develop downward into the ground, like roots," said Steiner of his design for the second Goetheanum, "and from these will grow the actual columns for the upper stories. These will join the forms of the roof and complete it." Carrying the idea of metamorphosis further, he added, "Like the nut-shell in relation to the inner kernel, the outer forms will reflect what takes place inside."



While the interior surfaces of the first Goetheanum were richly carved in flowing naturalistic forms (6) and embellished with stained glass and murals from the workshops on the site, the interior surfaces of the second are angular and stark (7) by comparison. The play of vertical and diagonal forms is particularly dramatic in the main stair hall at the west (8), where the bare concrete surfaces have until now been left untouched. Here, the visitor is brought through ever-widening spaces, designed by Steiner to culminate in the 1000-seat theater at the top of the stairs. Unfortunately, he did not live to give his detailed attention to this main space. Other meeting rooms, studios, and smaller spaces serving the school and the staff surround the stage house or are incorporated into the building's podium.



9 10

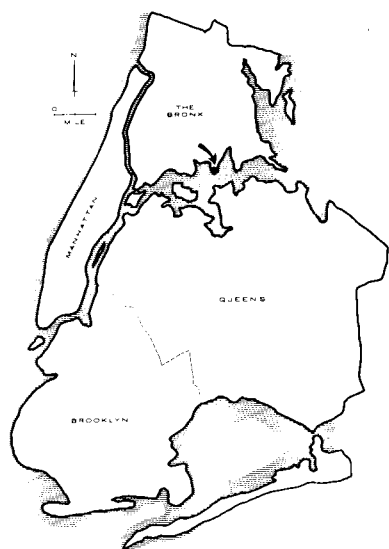


11

An entire community has grown around the Goetheanum on the large hilltop property donated to the society by one of its members. The house, built by Steiner in 1915 for this benefactor (12), is of particular interest, since its plastic concrete forms already foreshadow the second Goetheanum. Representative of the early period are two buildings, also designed by Steiner—a concrete heating plant topped by a flame-shaped chimney (9, 10), and a double-domed studio building of wood and slate (10, 11). Also saved from the fire were the simple board-and-batten structures used by the various craftsmen during the long construction period, and by Steiner, who was also an accomplished sculptor. Steiner's structures, and the many private houses based on his design theory, do indeed form the enclave, the sanctuary that he had in mind.



BRONX BRIGADOON



In 1956, Robert Moses, as Chairman of the Slum Clearance Committee, wanted to condemn it as a slum, call it "sub-standard," and have it cleared away for a Title I Housing project partially financed by Federal funds. It was, after all, a choice piece of New York City property: a point of land jutting out into the East River in the Bronx, surrounded on three sides by water and a half hour away from midtown Manhattan. It would make a splendid site for a "Project" and public park: the existing 250 dwellings could easily be dismissed as shacks, the roads were unpaved, and the sewer system was questionable.

But when Robert Moses' big black car toured the community, it must have been obvious that the little houses were diminutive but not disreputable, that they were cottages rather than shacks, and that the unpaved streets were really shady little country lanes. All in all, the white picket fences, neat little gardens, and sweet-smelling rose arbors added up to something more than a slum. In fact, most people in this little Bronx community enjoy a way of life that is the envy of the entowered project dweller, the lawnmower-enslaved-and-convention-bound suburbanite, and the harrassed city planner.

It was all unplanned. About 40 years ago, when the 92 acres formed a private estate, vacationers used to come and rent a quarter acre for about \$4 a month,



PHOTOS: MAUDE DORR



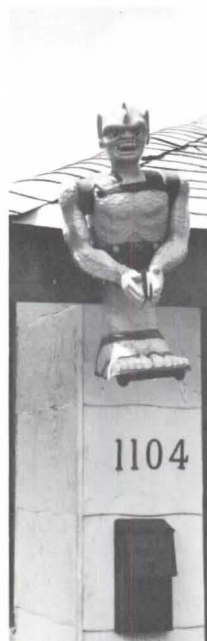
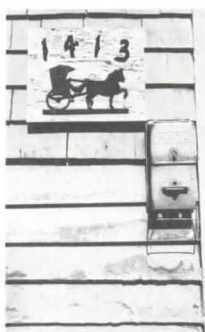
and build their own bungalows. Over the years, the houses were winterized, the land rent went up to \$25 a month, and the property changed hands till it is now owned by eight people—including architects Pomerance and Breines. The residents live a rather precarious existence, from month to month, but are completely enchanted with a way of life that is relaxed, casual, and countrylike: a Brigadoon in the midst of the Bronx.

"After all, what's there to do in a project 'cept ride up and down the elevator?" says one Huck Finn of the neighborhood with infinite superiority, wheeling his bike down a lane too narrow for anything except a Volkswagen, and where the main traffic of the day consists of little girls clomping along in their mother's high heels, boys riding go-carts, or unenterprising Tom Sawyers painting picket fences or boundary stones.

The scale of the community is made for children—small houses, small fences, and streets too small for cars. Everyone can keep tabs on everyone else. If a stranger walks down the block, telephones buzz down the line with the information; at a burglar alarm, everyone turns out for the search with flashlights (while the burglar canvasses the empty houses); when a fire breaks out, the volunteers make a dash for the polished red fire engine at Station No. 3 (since Nos. 1 and 2 were closed down and no one bothers to make any numerical adjustments). Finally, anyone looking like a Robert Moses sleuth or a city planner arouses the inhabitants to a level of community solidarity and concern seldom to be encountered in a metropolis.

On the other hand, a degree of privacy and individuality exists that is also foreign to more conventional housing developments. The frontyard fence, that outmoded piece of street furniture, works to real advantage. It gives each family the privacy of both front- and backyard—a feature currently ignored in suburban communities where fathers weekly mow the grassy wastes that stretch—unobstructedly—from one picture window to the other across the street, lawns that are useless because they are neither really private nor really public and end up being display pieces for the passing automobile. These little fenced-in areas in the Bronx permit individual tenants to indulge their personal fancies behind the scenes without disturbing the character of the block. Behind a screen of fence and bush, an owner is free to collect interesting and useful pieces of junk; to grow tomatoes, the godly grape, or geese; to make a mess and build a boat; or dig a beautiful rose garden. Several of the houses have

In the middle of the New York metropolis there's still a place you can build a house to fit your wildest dreams: the Corbu dream, the suburban dream, the dream of carriages and ghouls, or of Neptune in a palace studded with sea shells.





For a constructivist like Mr. Happel it's a place where you can still collect useful bits of junk: boats, a closet-full of odd-sized coats, a basement lined with old iceboxes sunk knee-deep in heaps of screws and nails and stuff. Stuff that comes in handy when you want to construct a burglar alarm, a remote-control TV switch, or telephone cutoff for long-winded neighbors.

taken on eccentric, fanciful forms—from Corbu-like concrete sculpture to bungalows studded with seashells, rocking horses, or sea dragons. But even the more conventional ones pursue a dream: the great American dream of the “Little White House with the Little White Fence.” So perfectly do they reproduce (in miniature and in fake stone) the clichés of a picture-book domesticity that they seem to belong more to Disneyland than the Bronx—to an exhibit of Pop Architecture at the Museum of Modern Art rather than to a living suburb.

Unfortunately, the fantasy life of this little community is almost certainly doomed. There are 1000 people (approximately) on 92 acres of land, Figures that cannot compare to the 5710 housed on the 13.7 acres of the Stephen Foster project in Manhattan. And it is true that the Lilliputian size of the community lends it a charmed perspective in a Gulliver’s eyes. Asbestos brick, like gingerbread, goes well in fairyland dimensions but waxes gross on grosser scale.

To a certain extent, however, everyone has a legitimate nostalgia for the old social unit of the block—that relationship of house to yard to path and street—and no one has quite figured out how to maintain it in a high-rise structure, how to create lateral community units instead of a mammoth, towering indifference.

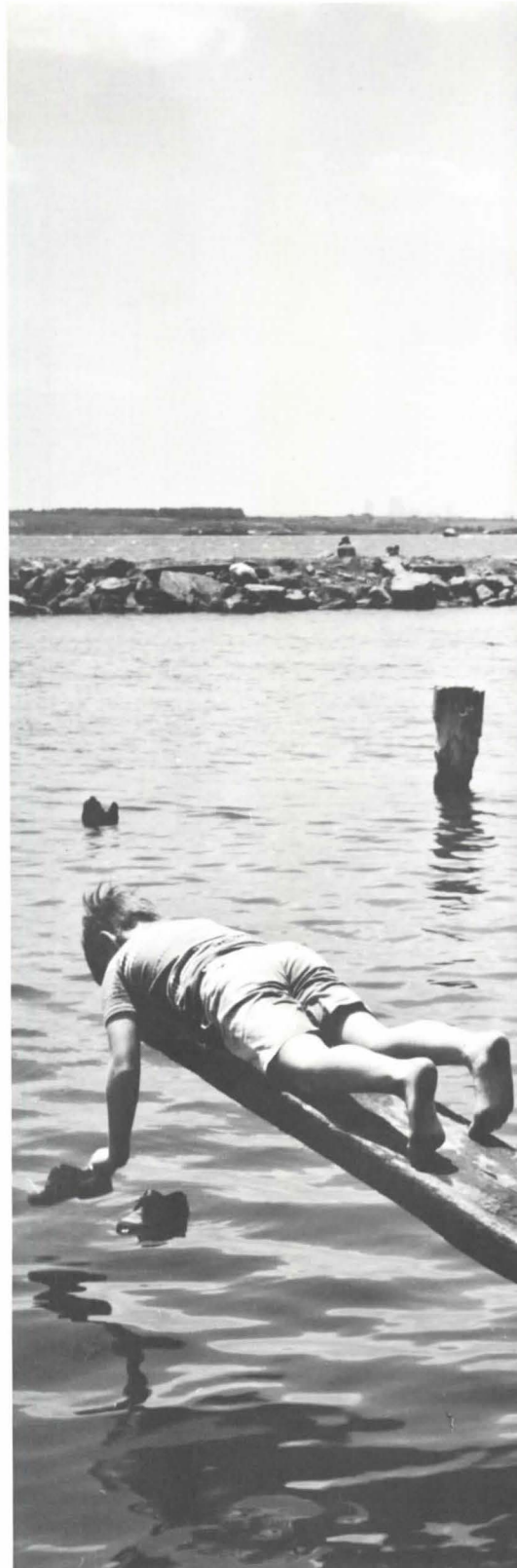
Some make an attempt by proposing exposed corridors or “streets” on the outside of buildings—passages wide enough for a little privacy with windows above the peep-in level. Still, this is a miserly substitute for a yard or lane and much of what is park at ground level is wasted in passive sit-down, don’t-walk-on-the-grass activities, or organized basketball and seesaw games that do not allow much individual construction and play. “Where could my boy ever build a boat in a project?” asked one privileged father of Moses’ “slum.”

Do city planners and architects candidly examine the ways of life of the groups that are to inhabit the projects? Or do they apply their own values, which may be inappropriate?

Perhaps the most ironical and saddest comment on the passing of the small community life came from an architect himself after a tour of the eastern Bronx for a city planning project. After surveying the looming apartment towers, the seas of parking lots and sprawling shopping centers—he came upon the shaded lanes full of small children, cats, dogs, and bicycles and suddenly—disarmed—he “dropped the guise of city planner and became a human being.”



It is a place to mess about, to paint a boat, or lie above the water sailing shoes (unprotected by any civic minded railing).





Roads and lanes are here of Lilliputian size for toy cars, small girls in high heels—all in the middle of metropolis.







LIBRARY RENOVATION FOR MARITIME CADETS

LIBRARY, NEW YORK STATE MARITIME COLLEGE, Fort Schuyler, Bronx, New York. **Interior Design** by William A. Hall, Architect. **Photography:** John R. Kennedy.

In the renovation of historical buildings, as in every other project, the important thing is to make the right initial decisions, for those decisions affect the validity of even the most godly final details.

What architect William Hall decided, in redesigning part of the massive, early 19th-Century, granite fortifications of Fort Schuyler into a library for New York State University's Maritime College, was to seek out the best of the old structure and to save it unadorned instead of attempting to build something that looked spankingly modern. The appropriateness of the finished project as a library for the cadets at Fort Schuyler proves the soundness of his decision.

Much of the job was a cleaning up process—removing the former mess deck and its kitchen facilities to restore the rugged dignity of the historic, 130-year old fort. A few years ago, the college began a new building program with the construction of a dormitory and mess-deck complex. Architect Hall subsequently drew up a master plan for the campus under the building program of the State University Construction Fund and began to implement that plan by rehousing the overcrowded second-story library in the former mess-deck quarters (17,000 sq ft) in the fort.

What Hall achieved for his reading room is a great, granite-walled space 29-ft high, roofed by red brick vaults, and interspersed with massive granite piers 9 ft by 9 ft. This "major space" was achieved by preserving and exposing the given advantages. The changes and additions that he made are carried out in a classic (that is, nonidiosyncratic) style of detailing, which is sufficiently ornamental yet does not intrude on the over-all scheme. For instance, the mezzanine on one side was extended in order to accommodate more stacks. (Goldreich, Page & Thropp were the structural engineers.) Light teak paneling was used as an end facing, and the old iron railing was saved, replaced, and simply painted black. An open, oak-tread stair in two flights was added in the middle of the 160-ft long room to cut walking distances.

On the inner, courtyard wall of the fort, vertical blinds have been installed at the windows, with teak and black radiator cases beneath them. Great black, 8-ft diameter, wheel chandeliers of can lights have been hung 10 ft below the vaults of the two-story space with supplementary downlights on the perimeter walls. (Wald



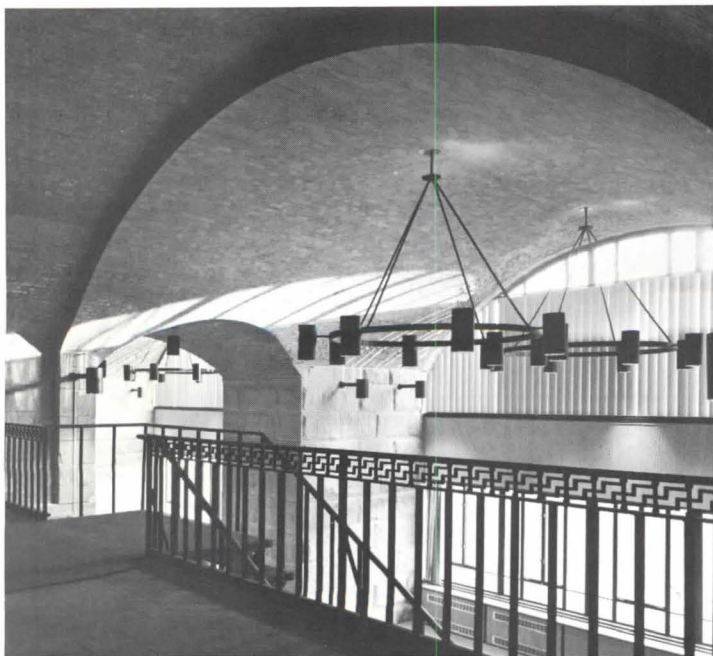
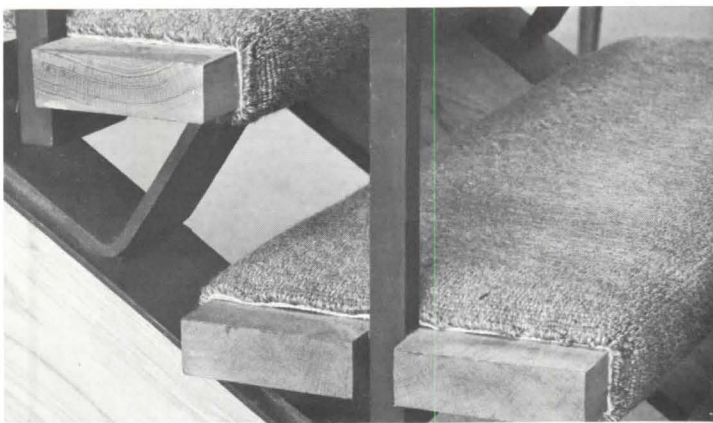
& Zigas were the electrical and mechanical engineers.) The new lighting is straightforwardly "of today" in its appearance, and the new conduit for the wall lights is run unashamedly on the granite without any costly attempt to recess and conceal it. Beneath the mezzanine, fluorescent troffers have been installed to supplement the lambent light that edges in through the narrow musketry apertures and the cannon ports, which have been preserved in the exterior wall of the fort.

Dark mustard carpeting has been used wall-to-wall and on the stair treads in the reading room to muffle the clatter of footfalls that echo throughout the rest of the fort. Acoustical tile has been added on the soffit beneath the mezzanine.

In keeping with the familiar library appearance, the W.P.A. oak mess tables have been sensibly retained. However, they have been refinished to match new maple captain's chairs ordered by Librarian Dr. J. N. Whitten, and the woods of the furniture do not seem to match the light, ochre teak of the woodwork and cabinetry.

Two other aspects of the reading room are worth noting: first (and doubtless a minor consideration), there might have been a means of balancing the room in section—perhaps by lowering the courtyard-side chandeliers to the level of the mezzanine. Second, there is a need for some focal element at each end of the long room. At the entry end, the office of the librarian properly overlooks the space through glass partitioning from the mezzanine, but underneath that, focus is wanting; at the other end, the same need can be felt, though there is a future possibility of exposing a splendid granite circular stair and its surrounding mezzanine. The latter could only improve this well-conceived interior.

Behind the scenes of the reading room, the functional requirements of the library called for complicated and detailed work; Dr. Whitten was, in effect, the library consultant. In these single-story spaces, where the mess-deck facilities had been—kitchens, steam tables, dishwashing machines, and dormitories for galley boys—are now located the cataloging area, additional stack space (total of 60,000 volumes, expandable to 90,000), a music listening room, audio-visual lecture



rooms, and staff and faculty lounges and toilets.

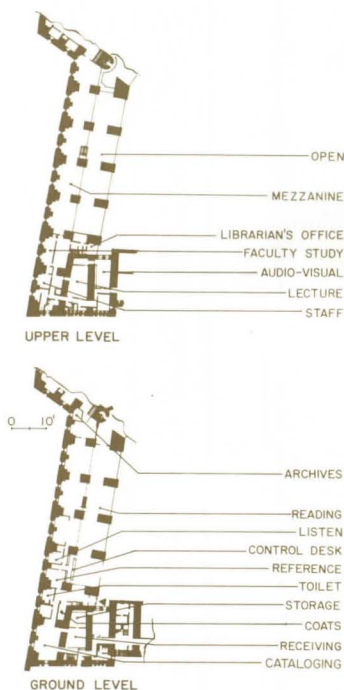
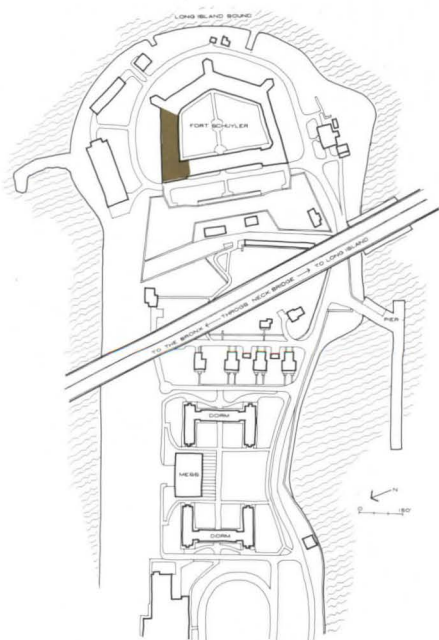
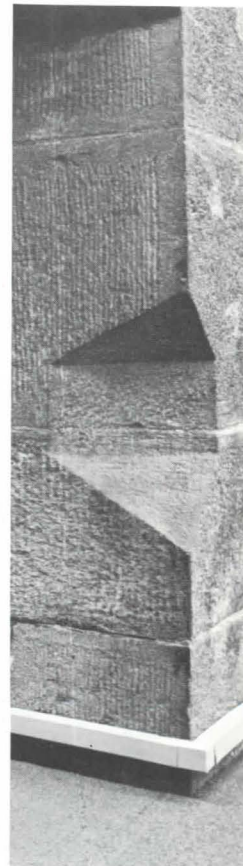
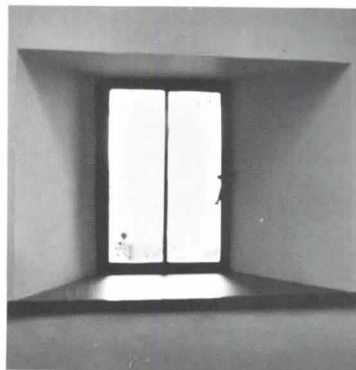
Since in most of these areas the rugged granite and brick textures had long been covered over, the rooms were plastered and vinyl-covered—the ochre color of the wood and black trim scheme being continued in wall treatments and partitioning—with acoustical tile ceilings and recessed troffers. In hallways, where the vaulted brick ceilings made overhead lighting difficult, a continuous strip of lighting behind a wood fascia is wall hung at the springing of the arches.

A trip to Fort Schuyler provides one with unanticipated pleasures: open space, trees, water, sky, and “history”—all in the city, yet without traffic, except that which is whizzing by high overhead, almost noiselessly, on the arching ribbon of the Throgs Neck Bridge. One must also be heartened by the library as a model of sensitive preservation, restoration, and of putting an old building to good new use—in this case, both civic and educational use. And it is to be hoped that architect Hall will be permitted to rejuvenate the remainder of the fort and also to express its surrounding areas with the appropriateness he has achieved for this New York Landmark.

Walls: vinyl/light ochre/Gilford; **paint:** Pratt & Lambert, PPG; **tile:** Mosaic Tile Co. **Floors:** carpet/wool/dark mustard/Roxbury; vinyl asbestos tile/Kentile. **Ceiling:** acoustical tile/Acoustone “F”/U.S. Gypsum. **Lighting:** chandeliers/incandescent/black-painted steel/architect-design/Omega; stack lighting, recessed troffers/fluorescent/Metro-Lite. **Radiator/Bookcase Units:** teak plastic laminate/matte finish/Textolite. **Window Coverings & Hardware:** vertical blinds/white/Vertavanes/Verticals, Inc. **Book-Lift:** Sedgwick. **Hardware:** Russwin & Erwin. **Furniture:** all-purchased by N. Y. State University: Bookstacks (mezzanine) Estey Corp.; Stacks (main floor), circulation desk, study carrels, card files/Bro-Dart Industries. Library chairs, general and lounge furniture/Thonet. Steel cabinets/All-Steel, Inc.



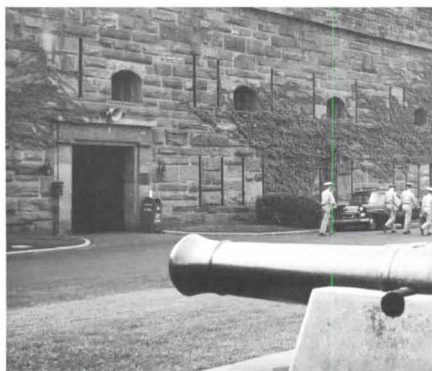
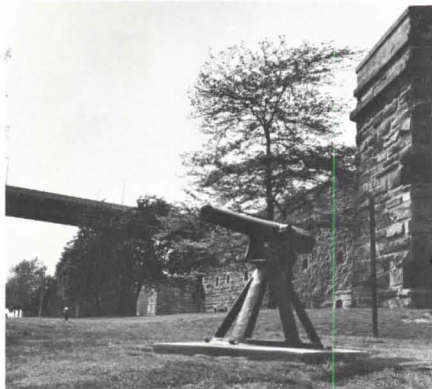
Beneath the mezzanine, on which the stacks are located (facing page, top left), study bays are provided against the exterior wall of the fortress (top of page). The window reveals the depth of the wall and remind the cadets that the windows were designed as cannon ports. Cutouts in the masonry (right) were to accommodate the swing of the cannon.



Fort Schuyler was built in the 1830's to serve as part of New York's coastal defense system. Located on the slim, Bronx peninsula, Throgs Neck (aerial view, below, right), the fort shared with Fort Totten (across on Long Island) the responsibility of protecting New York from invasion via Long Island Sound.

Construction was begun in 1833, and in December of 1845 the fort was ready for its armament of 312 seacoast and garrison guns, 6 field pieces, and 134 heavy guns. Engineers were garrisoned there from 1861 until 1865, when the fort was turned over to artillerymen. During the Civil War, McDougall General Hospital was located there.

Then, in the 1870's, the fort was abandoned and fell into disrepair. In 1934, the granite pile, pentagonal in plan, was rehabilitated by the W.P.A. to serve as the home of what was then called the New York Merchant Marine Academy, which has occupied the building since 1938. So it is that the 5-ft- to 11-ft-thick granite walls of Fort Schuyler now contain classrooms, laboratories, and administrative offices for instruction in marine engineering, nuclear science, transportation, oceanography, and meteorology.





TWO POST-TENSIONED HIGH-RISERS COMPARED

This discussion compares two buildings in the Southeast that take maximum advantage of precasting and are the first segmented, post-tensioned concrete, high-rise buildings in the United States.

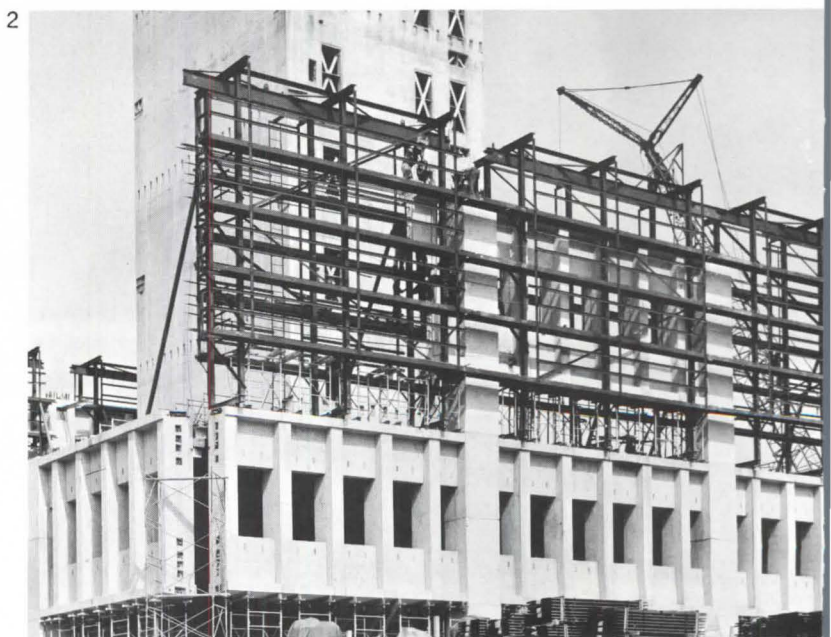
The continued refinement of precast-concrete techniques, coupled with recent technological advances in prestressing, have resulted in numerous new architectural as well as structural expressions.

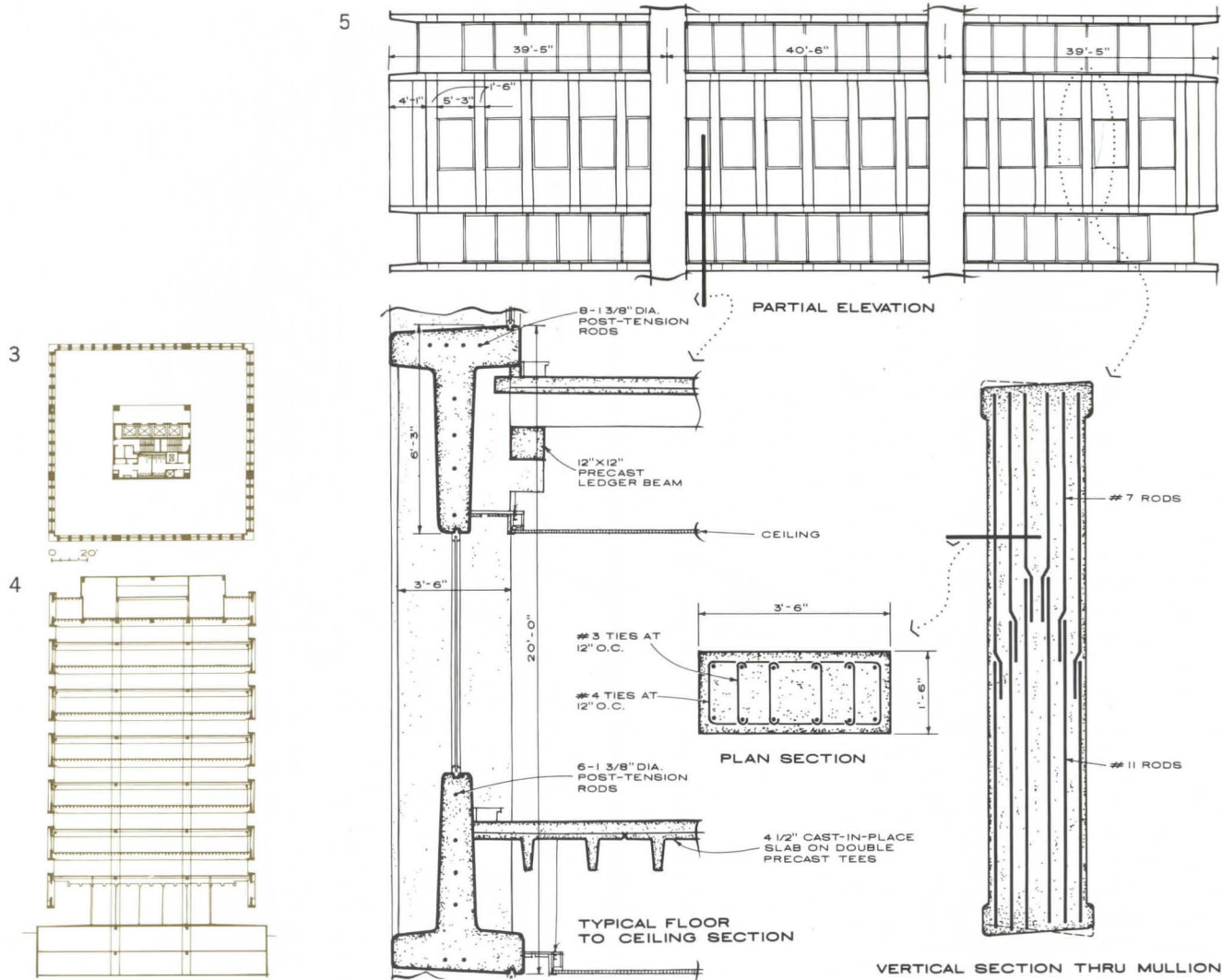
A significant extension of these methods, in which the architectural and structural expressions are completely combined, is realized in two buildings designed by Welton Becket & Associates, Los Angeles. Both of these structures take maximum advantage of precasting and are the first segmented, post-tensioned concrete, high-rise buildings in the U.S. These are the 13-story (including penthouse) North Carolina Mutual Life Insurance Company home office building in Durham, N. C., which opened in August, and the 27-story Gulf Tower, providing home office facilities for Gulf Life Insurance Company in Jacksonville, Florida, which is presently under construction, with occupancy planned for the spring of 1967.

While presenting broad design and unique structural differences, the buildings both rest on only two columns on each side, with 40-ft and 42-ft cantilevers at each floor. The exposed frames have been shaped, formed, and trimmed to meet the structural needs and aesthetic direction. They enclose the space, support the floor system, and have an inherent color and texture that provides the finish.

North Carolina Mutual

North Carolina Mutual's new home office building provides approximately 200,000 gross sq ft and on-site parking facilities for 300 automobiles. The owner requested that as much as possible of the 3.2-acre site be retained in its heavy growth of fine magnolia and oak trees (1). Thus, in preserving and taking advantage of the setting, a high-rise structure was proposed that would offer a contrast to the





lacy quality of the landscape.

Given the program and certain prerequisites, the architect's design for North Carolina Mutual evolved in concrete. It was the architect's objective to utilize the structural system itself as the "architectural" expression by using shapes and forms in a scale reflective of the boldness of concrete.

The result was a concept using the Vierendeel truss as a perimeter framing element. With the trusses as a two-story element, columns were placed at third points on each façade, resulting in 40-ft corner cantilevers. This concept of the proposed cantilevers proved easily feasible, with the depth of the truss and the combination and application of concrete in compression and steel in tension.

With an exposed structure of this design, the quality control necessary led to precasting as the only logical direction. After precasting, a permanent and integral finish followed. Based on the sections of the particular precast pieces and the conclusion that these would be a mono-

lithic pour, the choice of an inexpensive exposed aggregate available to the area was made.

The two columns on each side relate back to the core through girders that tie the exterior to the core at these points. A series of seven trusses on each elevation, supported on a total of eight exterior columns, was developed (2: see assembly rig in place). The chords of the truss, both top and bottom, each support a floor. The total height of a truss is 20 ft. The dimension between columns is 40 ft, the same as the cantilevers.

The Vierendeel truss easily adapted itself for placement of windows between the vertical members of the truss. These truss verticals were spaced 6'-9" o.c., or every one-and-a-half modules. This spacing was considered desirable for the interior, since the client's requirements called for a majority of loft space as opposed to a multitude of private offices. With a truss on every other floor, the space between trusses is glazed and creates a nontruss floor.

The glazing is set back near the inner face of the truss structure. This creates strong and deep shadows between trusses. From the interior, the vertical relationship of the glass is identical on all floors.

With a 5-ft-wide, 4-ft-deep column, the truss, too, was detailed to be 4 ft in depth at approximately the centerline of the column. With the location of the horizontal centerline of gravity of both the truss and column on the same axis, the Stressteel Rod Method of tensioning proved ideal.

From the start of the project, a close and effective working team was achieved that included the architect, the structural engineer, the general contractor, and the precast subcontractor. By bringing together engineering, fabricating, and building teams at an early stage of the project, much overlapping, wasted or lost effort, and inherent extra costs were avoided. This meant that each member of the team could express himself early in the development, leading to a design refinement being incorporated initially. With the evolution of a design concept such as

North Carolina Mutual, the architect believes that the team effort is a necessity. In addition, the owner can benefit with "more building" per dollar outlay.

The building is 120 ft sq, 205 ft above ground, and two stories below. The foundations are piers and caissons to 15-ton rock that occurs from 10 ft to 20 ft below the lowest basement. A 12-in. slip-formed concrete wall is used for the core, incorporating columns at the corners. Each of the four façades has two columns and seven Vierendeel trusses. The trusses are more than a story high and cantilever 40 ft beyond the column center lines to the building corners. Prestressed floor tees, with cast-in-place topping, span between Vierendeel and the core.

Foundation. The building is heavy and has few points of support. The eight exterior columns carry over 4,000,000 lbs each, which is unusual for a building of this height. It was essential to avoid any possibility of differential settlement, since the Vierendeel trusses are rigid. Rock foundations were thus an inescapable choice. Even with rock to bear on, heroic-sized piers and cubes of solid concrete 12 ft on a side had to be designed.

Core Construction. The core wall was slip-formed from the top of its foundation, at the lowest basement, to the underside of the penthouse. In plan, the core is a rectangle, about 32' x 40', with an extra interior wall placed at the rear of the elevator bank (3, 4, 5). All five walls are 12 in. thick; 4000 psi concrete was used throughout. All of the floors inside the core are conventional slab and beam construction.

In addition to serving as the interior support for the precast floor-framing system, the core resists all of the wind forces on the building. The core encloses four elevators, two stairs, toilets, closets, and mechanical stacks, all of which require entrances and exits through the walls. Mechanical requirements were significant: Many large holes were needed to allow passage of ducts from the mechanical equipment room at the lowest level, where the horizontal shear was the greatest.

While the core is not prestressed, the combination of slip-formed core with precast floors is common today.

Vierendeel Trusses. To meet structural requirements, satisfactory finish and color in the intricate shapes and quality workmanship, precasting was the only logical direction.

By slicing the truss into verticals alternating with chord segments and uniting the pieces by post-tensioning, a structural system developed for the first time where

a segmented post-tensioned method of construction has been used in a high-rise building.

Each Vierendeel truss has two 40-ft cantilevers and one 40-ft interior span; truss height is 20 ft over-all. Cantilever spans have five panels; interior spans have six.

Because of the standardization of components, only three types of forms were required: chords (896), verticals (420), and columns (168). Tolerance for the forms was $\frac{1}{16}$ in., while the concrete units were designed to a tolerance of $\frac{1}{8}$ in. The top-chords are tees, stem down, 4 ft wide by 6 ft high; stems and flanges are about 1 ft thick. The bottom-chords are the same as the top-chords, but upside down. Chord segments are about 5 ft long. The verticals are I-shaped, 20 ft high, 4 ft wide at top and bottom, to line up with the chord tee flanges, 3'-6" wide elsewhere. Mullion thickness, along the truss length, is 18 in. The columns are precast shells, to match the Vierendeel members with cast-in-place cores (6). The shells are 4' x 5' in plan, 6 in. thick, 10 ft high. All pieces were cast solid; voids showed no economy.

A series of manual, modified moment-distributions to analyze a typical truss was used. The truss, which is symmetrical top to bottom, provided a simple method that maintained constant panel-shear during each unlocking operation; four cycles of such distribution were generally enough to get convergence. A total of five moment-distribution analyses were made, with overlapping conservative assumptions and with refinement of load as the work progressed.

Since the chord pieces are as deep as they are long, investigation was made of the shear effect on the chord stiffnesses; and it was found that the effect on the distribution was negligible.

Also, because the members are deep, consideration had to be given as to how to make moment corrections from the theoretical values at the centerlines to the member faces. Final figures assumed the following: (1) For maximum chord moment, the chord segments were assumed to have infinitely stiff haunches for half of the mullion thickness. The chords were assumed to be fully rigid 9 in. inside the column face. (2) For maximum mullion moments, the chords were assumed to have constant section without haunches; the mullion moments were corrected for the distance between the chord neutral axis and the inner edge of the stem, less 6 in. to allow for local stresses.

The mullions are reinforced with mild steel, and have concrete brackets on the inner face to receive precast ledger-beams



on which the floor framing rests. To equalize the loads on all trusses, the floor framing direction reverses on successive floors.

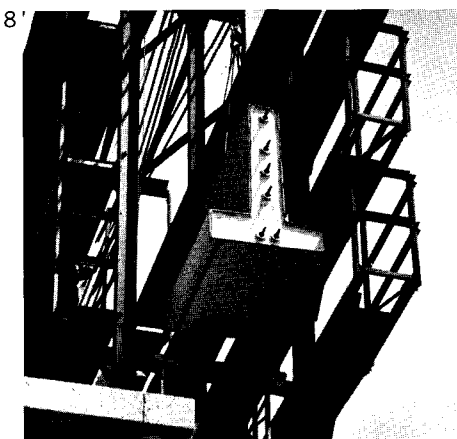
The chord tensioning was designed to accommodate the maximum negative and positive moments, leaving a minimum residual compression of 250 psi. The maximum negative moment occurred, as expected, in the cantilever at the column face. The top chord required eight $1\frac{3}{8}$ -in. Stressteel rods, with a net tension of well over 1,000,000 lbs (7); bottom chord required six of the same rods (8). Holes were cast in the chords and verticals to allow passage of the rods for the full truss length. In placing the tendons, they were tensioned in two stages to minimize the effect on the columns of the shortening of the interior span.

Two test trusses were assembled; strain gage readings verified truss action in the mullions and chord segments. Definite stress reversals were recorded some time after shoring was removed, indicating Vierendeel action. The observed deflection at the cantilever end was about 0.4 in. Observations at the building site show maximum deflections of 0.03 ft or less.

Floor Framing. The floor plan is a square array of 9 panels, each about 40 ft sq. The slip-formed core wall takes up most of the center panel, about 32' x 40', incorporating two columns at corners. Two free-standing, cast-in-place columns complete the center panel.

Prestressed, precast double-tees frame from the Vierendeel trusses to the center panel or to girders supported at the corners of the center panel; 14-in. tees are used on the typical floors above the ground, 18-in. tees are used elsewhere. Stone concrete topping is cast-in-place on the floor tees, generally 4-in. thick.

The girders are composite with precast, prestressed soffits, and cast-in-place stems. The soffits are 22 in. wide by 12 in. high, provide bearing for the tee stems, and were shored during construction. The



girder stems were placed monolithic with the floor topping; stirrups embedded in the soffits tie the parts together.

Negative girder moments are taken by mild steel top reinforcement at the columns, but special arrangements are required at the corner columns in the core wall.

Heavy dowels could not be placed in the slip-form work, and pockets to allow the top steel to be placed after the slip-forms had passed would reduce the column area dangerously. It was decided to place pipe sleeves through the columns, so that high-strength rods could be post-tensioned after the floor concrete was placed. The rods are deflected down to the middle of the girder depth at the point of inflection, where they terminate in a dead-end anchorage; a cage of mild steel encloses the anchorage and eases the transition from prestressed to ordinary concrete. The rods were tensioned against the column concrete inside the cove; a simple ram extension, furnished by the Stressteel firm, enabled placement of the anchorage 4 in. inside the column for fire protection, while still allowing the anchor wedge to be driven into the conical seats.

On either side of the center panel, the floor tees are designed for ultimate strength as three continuous spans. Mild steel is placed in the topping for nega-

tive reinforcement. The negative moment stresses have been checked to be sure that yield-hinges will not develop under service loads.

The double-tees that frame to the center panel are designed as simple spans. Pockets in the core-walls provide bearings for the tee-stems.

Associate Architects were M.A. Ham Associates; Structural Engineers, Seelye, Stevenson, Value & Knecht; General Contractor, Rea Construction Company; Sub-contractor, Concrete Materials Inc.

Gulf Life Tower

The achievement to date in segmented, post-tensioned high-rise construction, as marked by the North Carolina Mutual project, provided further impetus to continue in this direction.

With the Gulf Life Insurance Company project located in the same part of the United States, the architect could benefit from certain ground work and previous efforts (9). A 500,000 gross sq ft structure was planned to house Gulf Life, providing in this expansion for the future through flexible rental space. The site is 12 acres, with approximately 1000 ft of waterfront on the St. John's River directly across from downtown Jacksonville. Parking for nearly 1000 automobiles is provided for in a multilevel garage. A second phase, including a hotel, is now being planned.

With the site to be developed allowing for landscaping, open spaces, and secondary elements, a high-rise structure appeared the proper direction. With the cityscape virtually flat, a building emerging and extending upward seemed appropriate.

In developing the owner's program, the building evolved in a manner lending itself to a similar structural concept—a beam system for the façades with columns approximately at third points and the beams cantilevering to the ends.

Again, the architect took the structural expression of the beam as the architectural expression. The minimum cross sections, as required structurally for the beam, were also required to satisfy several other needs. The weight of the structure, being concentrated at few points, would, under any circumstances, require considerable footings. From an aesthetic point, the prominence of the structure in the Jacksonville skyline led the architect to propose a white structure that would take effective advantage of its Florida location in the sun. White concrete meant white cement and white quartz sand. For the economy of a structural frame with this mix throughout, only the "required"

amount of structure was quite important.

The beam intersects the column in the form of haunches on either side. From there, it tapers upward and inward sharply to a point where it becomes prismatic in plan; the taper upward toward the end becomes very gentle. At the cantilever ends, the beam splays to receive the tendon bearing plates, thus providing sufficient areas for them. The corner detail was developed to allow erection tolerances and proper conditions for the jacking equipment to do the actual post-tensioning.

An architectural requirement was that the inner face of the exterior frame elements—that is, the column and the beam—be in the same plane. This would allow for an uninterrupted perimeter of the loft space—a continuous glass line inside the structural frame.

Thus, the beam had both a horizontal and a vertical variation in the location of center of gravity due to the haunching in both directions. This meant a double curvature in the tendon pattern to achieve the desired stress pattern due to vertical loading and created no additional stresses due to horizontal eccentricity of the tendons. Several solutions were explored before the Freyssinet Strand Tendon Method was chosen. Thus, in North Carolina, where column and truss are about a horizontal center of gravity, the Stressteel rods prove ideal; while with the offsets in center of gravity, the Freyssinet flexible tendon was expressive of the particular needs for the Gulf Life project.

The building is 140 ft sq, 27 stories above ground, and 2 stories below. The foundations are spread footings to limestone that occurs approximately 25 ft below existing grade. A slip-formed concrete wall of varying thicknesses is used for the core. Each of the 4 façades has 2 columns and 25 beams. The beams are 6'-9" deep at their maximum point and cantilever 42 ft beyond the column center lines to the building corners. At the ends, the beams are 4 ft deep. Prestressed floor tees with cast-in-place topping span between the beams and the core.

Foundation. The foundation of the building presented special problems. The foundation strata is weathered limestone about 28 ft below the surface. Pile footings proved impractical, so large spread footings were used. Because this limestone is about 25 ft below ground water level and the St. John's River is immediately adjacent to the site, this required an extensive dewatering system of well points, sand drains, and piezometers. Of particular importance is the stabilizing by the dewatering of the "earth dam" formed between the river and the footing excavation.

The podium and concourse levels of the building, which are larger in area than the tower, are framed of precast, prestressed single tees with a 7 ft width, a multiple of the basic module of the building. The basement of the building has its slab 10 ft below the waterline and is, therefore, designed to resist hydrostatic pressures. The unbalanced uplift of this pressure is resisted by a number of walls that cantilever off the central core.

Other than the spread footings mentioned, all other portions of the structure are supported on steel "H" piles with a 75-ton capacity driven into the limestone or the underlying marl. Allowance is made in the tower for a differential settlement between the spread footing and the driven pile areas.

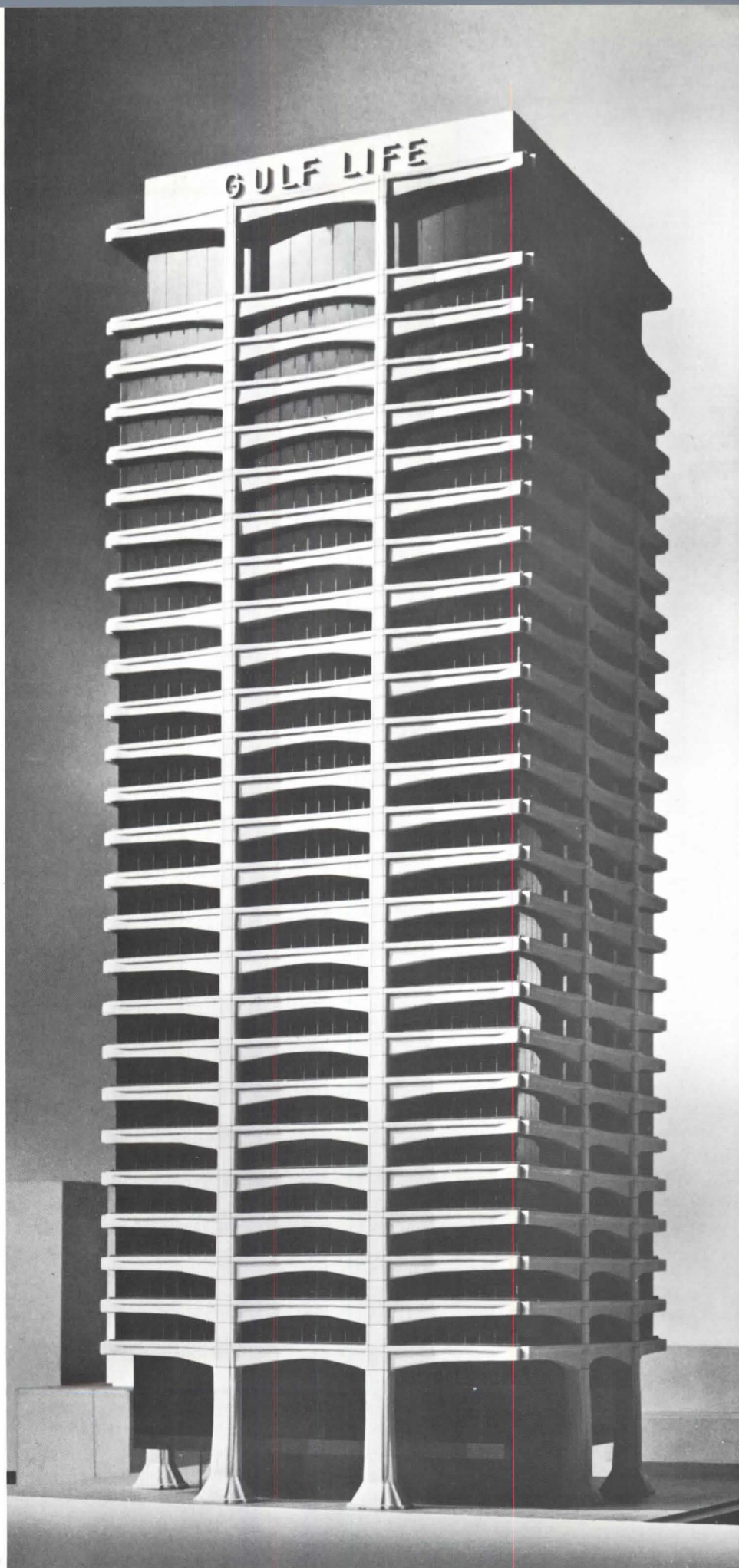
Core Construction. The core walls are slip-formed from the top of the third floor to the underside of the penthouse. In plan, the core is 53 ft sq with two additional free-standing elements enclosing elevators (10, 11). One of these elements drops off as a low-rise elevator bank. A 5000 psi concrete was used throughout. All floors inside the core are conventional slab and beam construction.

In addition to serving as the interior support for the precast floor framing system, the core resists all of the wind forces on the building.

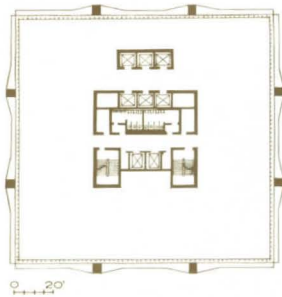
The main core encloses portions of the two passenger elevator banks, each with three elevators and an additional three elevators in the free-standing elements. The core also encloses two service elevators, two stairs, toilets, closets, a vertical conveyor, and mechanical stacks, all of which require entrances and exits through the walls. For mechanical requirements, many large holes were needed to allow passage of ducts.

Exterior Frame. To accomplish satisfactory structural requirements and the finish and color in the shapes and quality desired, precasting again became the only logical direction. Basic framing for the typical tower floor is as follows: with the building being square in plan, each of the four sides has a pair of large columns at about third points. Each pair of the columns supports a precast post-tensioned beam that spans between the columns and cantilevers 42 ft beyond the columns to the corners.

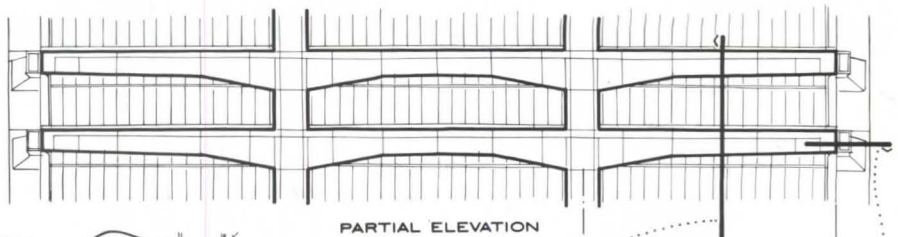
The exterior beams will be precast in segments tapered in two directions that weigh not more than 15,000 lbs each (12). A 5000-lb lightweight aggregate is specified. The beams will be erected by two tower cranes located alongside the tower. After the segments are shored in place, they will have 12 strand tendons inserted



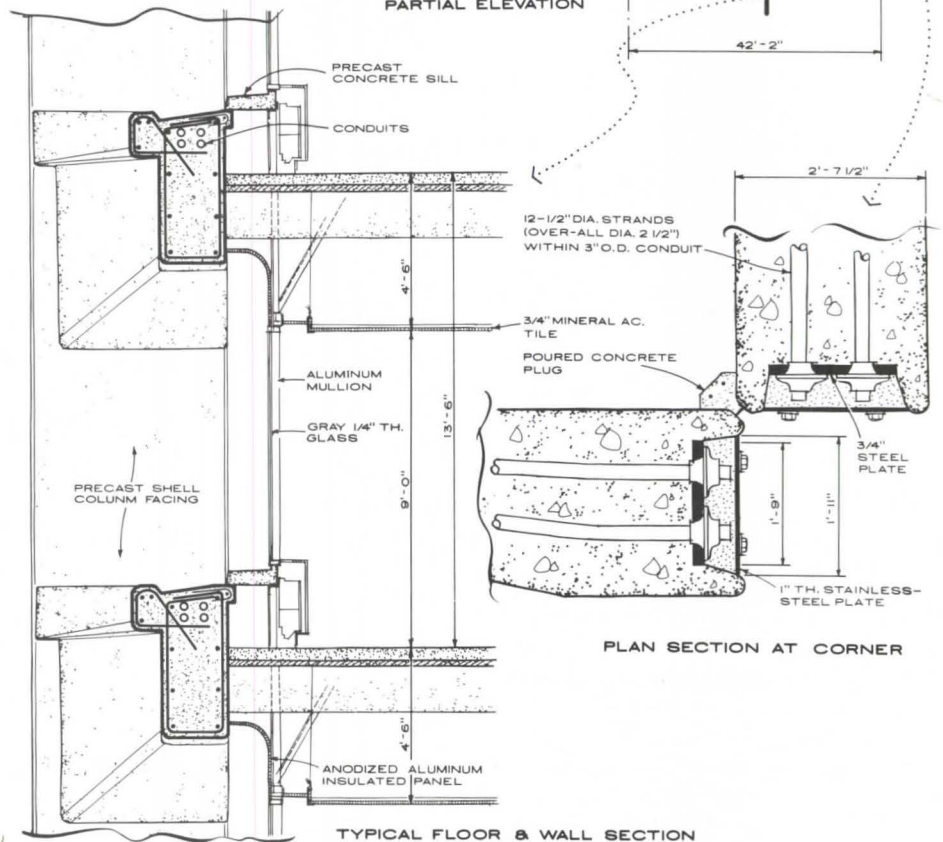
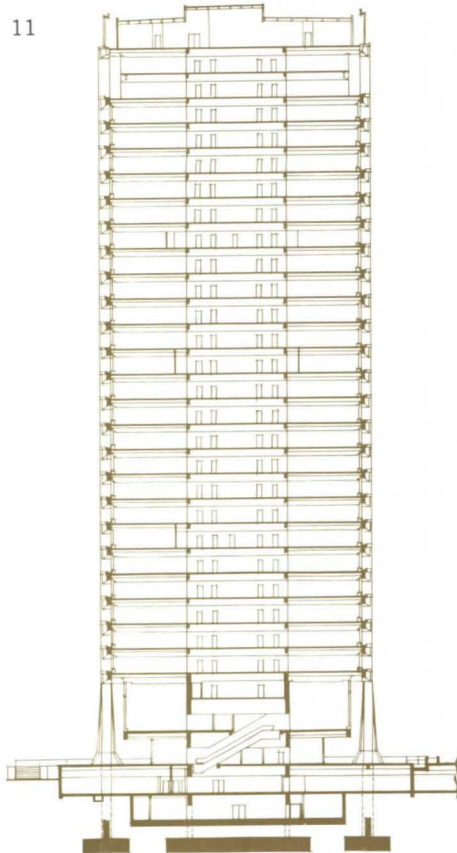
10



12



11



through a sheath made continuous through the full length of the beam by the alignment of the segments similar to stringing a line of beads on a wire. This sheath is arranged to undulate in two directions so as to place the tendons in the proper location for stress control along the full length of the beam.

After the joints between the beam segments are grouted, the beams will be post-tensioned and the sheath pressure grouted. The ends of the continuous beams, where they join the adjacent beam at the corner of the building, will be tied together to permit a sharing of the live loads of the adjacent beams.

The exterior columns will be formed by precasting a concrete shell and then pouring in place the core of the column after the shell and reinforcing are erected. This is done to allow finish of the column to match that of the beam without the expense of special cement and sand throughout the mass of the column. The columns

taper from a finish width of 6'-9" at the third floor to 4 ft at the penthouse, and are typically 5'-6" deep.

Floor Framing. With the square floor plan prestressed, precast header beams span between the exterior columns and the core in alternating directions from floor to floor. This spreads the load evenly on the eight exterior columns. The header beams receive changes of direction in the tees. The floor framing consists of 18-in. prestressed double tees on the typical floors, with 4 1/2-in. concrete topping.

Associate Architects are Kemp, Bunch, & Jackson; Structural Engineer, Richard R. Bradshaw, Inc.; General Contractor, Auchter Company; Subcontractor, Concrete Materials Inc.

Conclusion

Thus, with the work on these segmented, post-tensioned structures over the past two-and-a-half years, a logical development has occurred. The two buildings are

designed within budgets of \$20 per sq ft of tower for the North Carolina Mutual building and \$25 per sq ft of tower for the Gulf Life project.

The basic structural concept lent itself to two widely differing aesthetic expressions as a result of the specific siting conditions.

The expression of the structure in one is two stories high, with rectilinear lines, and an exposed beige aggregate complemented by the bronze-tinted glass. It is 12 floors high. The other has the beam structure cantilevering and expressed at every floor with a sculptured character, tapering columns, a smooth white cement finish with gray-tinted glass, behind and apart from the structure. Their similarity lies in the square plan and central core with two columns at third points on each façade with the trusses or beams cantilevering to the corners. And above all, the architectural and structural expression are one and the same.

ARC-WELDED RECTANGULAR TUBING

BY ANTHONY J. GRASSO

Roof framing system consisting of arc-welded rectangular steel tubing members is analyzed by a partner in the firm of Weiskopf & Pickworth, Consulting Engineers, New York. This discussion is based on a design entry in the 1964 Award Program for Progress in the Design of Arc Welded Structures sponsored by the James F. Lincoln Arc Welding Foundation, Cleveland.

Designing a roof-supporting structure to conform with and form a part of the architectural concept was the parameter for a college gymnasium. To integrate the structural elements with the design required members and connections of minimum bulk and clean lines. The bracing system had to blend with the same concept to retain an uncluttered appearance for the interior of the structure.

Design requirements consisted of a gymnasium floor size of 115' x 121', a mansard roof for the exterior, and a minimum depth of roof construction. Structural steel for roof supports was selected as the only material to satisfy all requirements.

Rectangular tubes of A-36 steel were selected for the truss, bracing, and framing members (1, 2). Use of tubes permits retaining the same exterior dimensions of section. Strength requirements of structural members are satisfied by varying the tube wall thickness. Top and bottom chord members of the trusses and the truss bracing system are 10" x 6" tubes, diagonal members are 5" x 5" tubes, and horizontal cross bracing members in the plane of the roof are 4" x 4" tubes. Tube members provide area of steel with minimum bulk and are efficient in handling compressive stress combined with bending. With the use of tubes of minimum wall thicknesses, it was economical to design a truss bracing system that would have the same appearance as the trusses.

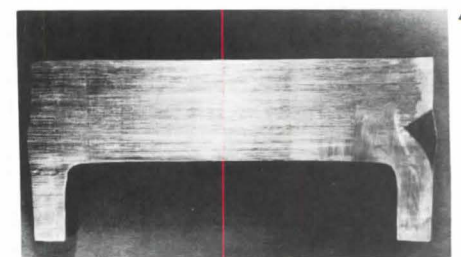
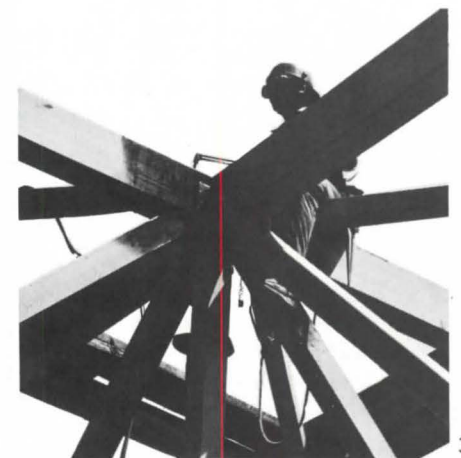
The construction of roof trusses of rectangular tubes is possible only with the aid of welding. At some of the top chord panel points, as many as 12 members had to be interconnected (3); this could be done only by welding.

It is believed that these roof trusses of rectangular tubes are unique. The assembly techniques had to be planned carefully and modified as experience in fabrication was gained.

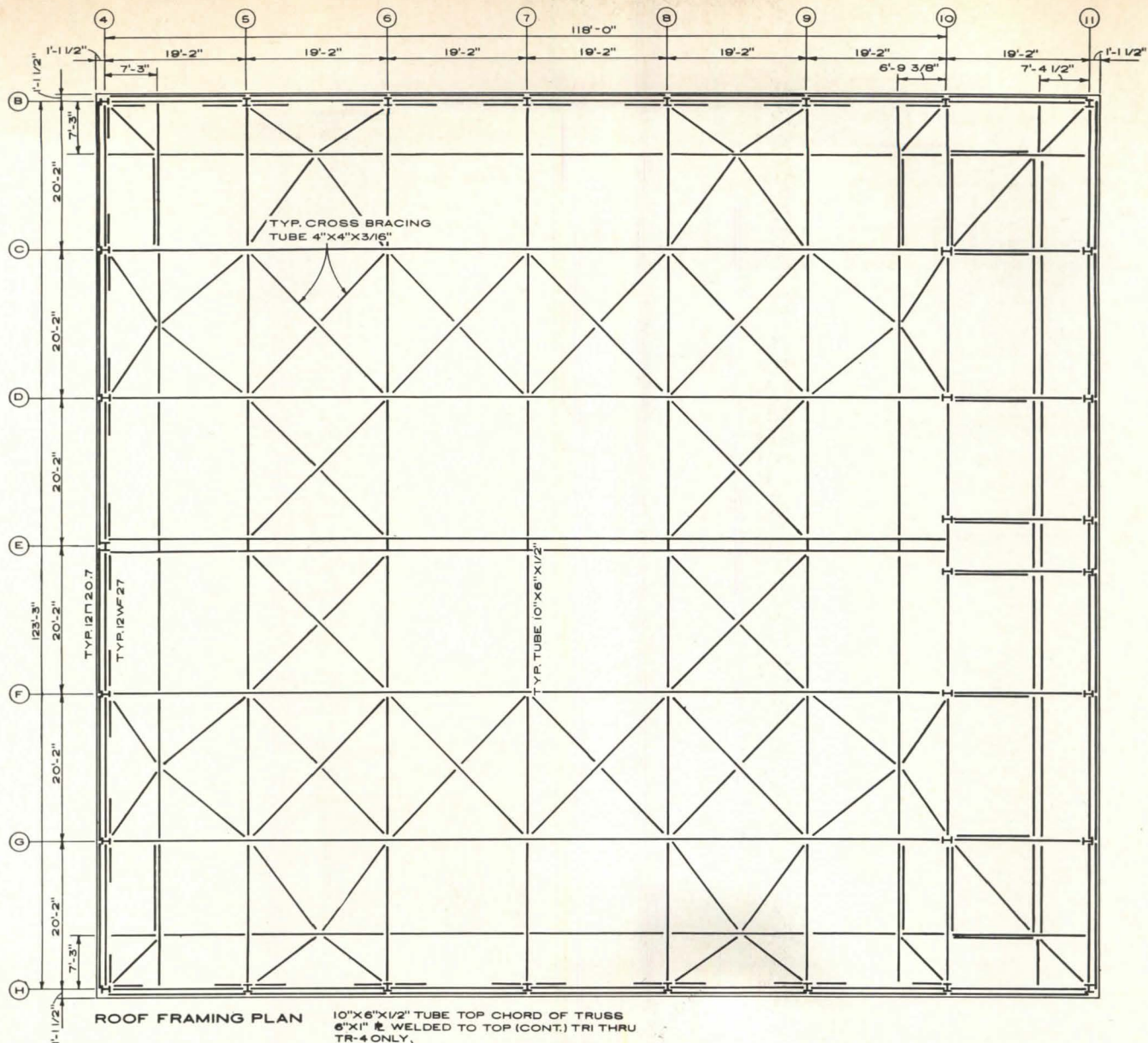
The major difficulty in fabrication and erection was maintaining camber and straightness, and the handling of long slender trusses. As an indication of the planning and procedures required for

fabrication of the trusses, the detailed procedure for welding cover plates on the top chord tube sections is as follows (4): (1) assemble section with cover plate horizontal and below tube; (2) block in camber plus an allowance for camber distortion; (3) tack weld cover plate securely to tube; (4) position section with cover plate vertical; (5) weld cover plate to tube (top side) using 1-ft increments at 3-ft centers; (6) turn section over (180°) and weld cover plate to tube using 2-ft increments at 3-ft centers; (7) turn section over (180°) and complete welding on first side; (8) turn section over (180°) and complete welding on second side; (9) weld must be smooth and neat in appearance (grind where necessary).

All diagonal members were fillet welded to the top and bottom chords. Maximum available tube length is 40 ft, necessitating two splices in every truss chord member. Chord splices were made using a backup bar bent to the tube shape, tube ends were flame gouged, sections of chord members were arc welded, and all bottom chord splices were radiographed. The trusses were shipped and erected in one piece.

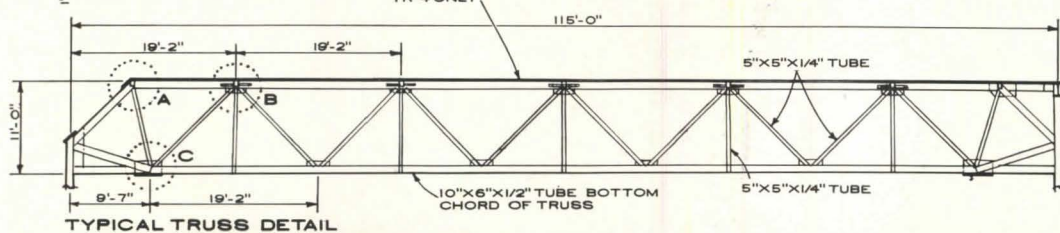


1



ROOF FRAMING PLAN

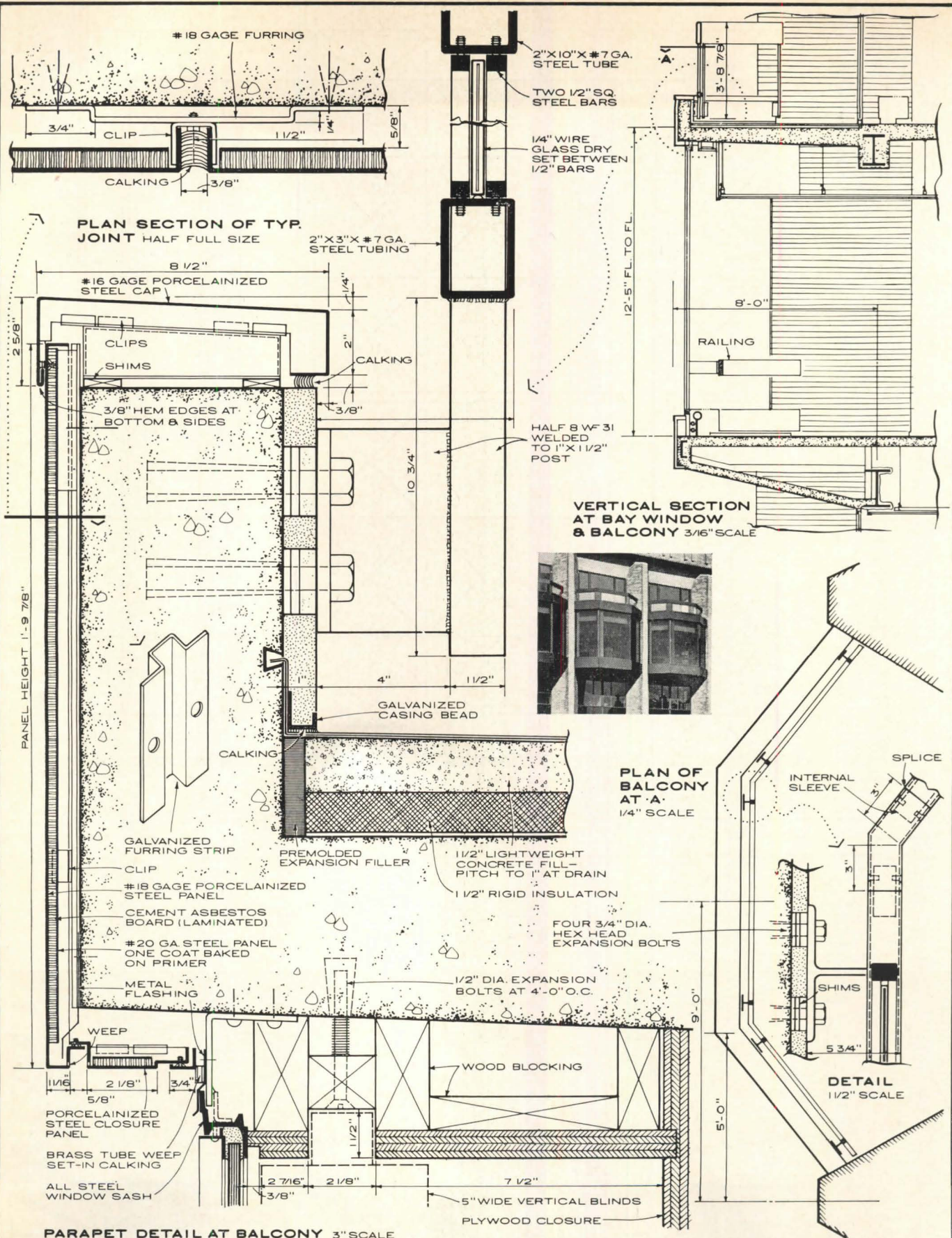
10"X6"X1/2" TUBE TOP CHORD OF TRUSS
6"X1" ϕ WELDED TO TOP (CONT.) TRI THRU
TR-4 ONLY



TYPICAL TRUSS DETAIL

2





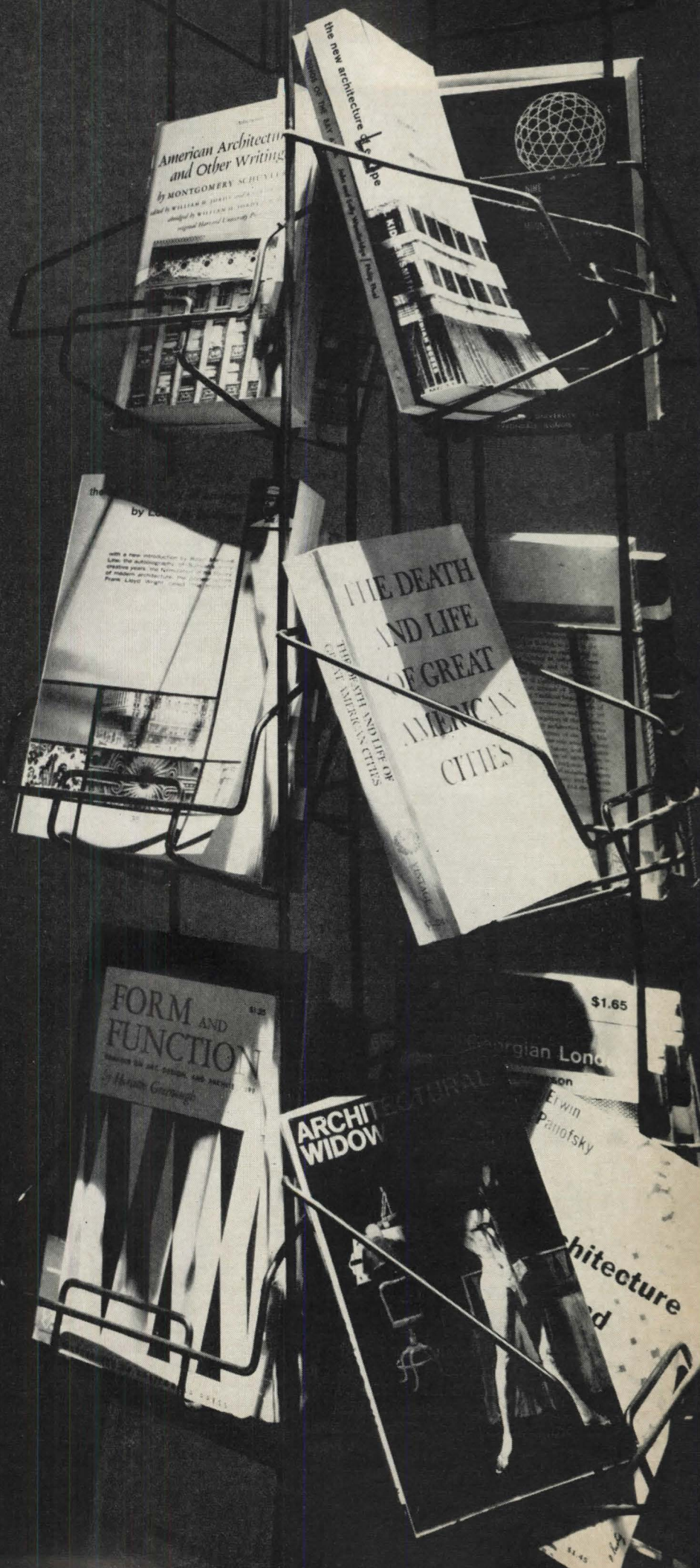
WARREN WEAVER HALL: New York, N. Y.*
WARNER, BURNS, TOAN & LUNDE, Architects

SELECTED DETAIL
BALCONY

* See April 1965 P/A

PAPERBACK PROSPECTUS

This month P/A begins what we hope to be an annual survey of architectural paperbacks in print. We chose to cut a broad path rather than take a deep dive. Apologies to those who suffer along the way.



PERSONALITY: THE INDIVIDUAL IN ARCHITECTURE

Masters of World Architecture Series. George Braziller, Inc. 1960. 126 pp., illus. \$1.95.

This series is a real breakthrough for the layman interested in architecture. The authors, however, tend sometimes to be too uncritical of their subjects. Text and illustrations are poorly coordinated.

Alvar Aalto. Frederick Gutheim.

Le Corbusier. Francoise Choay.

Antonio Gaudí. George R. Collins.

Eight plates are in color, showing us Gaudí as he should be seen.

Walter Gropius. James Marston Fitch.

Eric Mendelsohn. Wolf Von Eckardt.

Visually the most complete of the series, with sketches and drawings by Mendelsohn, and interior, exterior, and detail shots.

Ludwig Mies van der Rohe. Arthur Drexler.

Pier Luigi Nervi. Ada Louise Huxtable.

Nervi's most important executed projects are discussed and described—often in his own words.

Oscar Niemeyer. Stamo Papadakis.

Richard Neutra. Esther McCoy.

Neutra's romance with American houses, schools, and city and community planning is copiously documented and described. Included is a small selection of Neutra's "travel sketches."

Louis Sullivan. Albert Bush-Brown.

Bush-Brown's short 25-page introduction tops many others in the series.

Frank Lloyd Wright. Vincent Scully, Jr.

Scully reintroduces the reader to Wright in a fresh and informative manner.

Le Corbusier: Architecture and Form. Mies van der Rohe: **Architecture and Structure.** Frank Lloyd Wright: **Architecture and Space.** Peter Blake. Penguin Books. 1960. 124+ pp., illus. \$1.25.

These three studies, originally published in hard-cover editions as **The Master Builders**, are fast reading and somewhat informative. Text, printing, and illustrations are to be commended. Blake shows us personalities—not architects.

The Development by Alvar Aalto of the Design for the Church of Vuoksenniska, Imatra Finland; the Development by Le Corbusier of the Design for l'Eglise de Firminy, a church in France; the Development by Louis I. Kahn of the Design for the Second Capital of Pakistan at Dacca; the Development by Paolo Soleri of the Design for the Cosanti Foundation, Arizona. Student Publications of the School of Design North Carolina State of the University of North Carolina. 1964. Vol. 14:1, 2, 3, 4. Illus. \$8 for four volumes. A praiseworthy study of the growth of four

design ideas, illustrated through the architects' notes, sketches, measured drawings, and model photographs.

When the Cathedrals Were White. Le Corbusier. McGraw-Hill Book Co. 1964. 217 pp., illus. (drawings by the author). \$2.25. Corbusier's log of his first visit in 1936 to the U.S. New York and its "too small" skyscrapers, its people, its architecture.

Nine Chains to the Moon. R. Buckminster Fuller. Southern Illinois University Press. 1963. 375 pp. \$2.45.

"So much has been done to make us conscious of our infinite physical smallness, that the time has come to dare to include the complete universe in our rationalizing." Excellent writing, stimulating ideas—a delightful trip into Mr. Fuller's world.

Untitled Epic Poem on the History of Industrialization. R. Buckminster Fuller. Jonathan Williams, Publisher. 1962. 227 pp. \$3.50.

Beautifully printed and bound, this is Bucky Fuller's first poetic work. Written in the style of Dos Passos, the epic traces the industrialization of the U.S. and ends with the hope for constructive world development through the intelligent handling of energy.

Gaudí. Henry-Russell Hitchcock. Museum of Modern Art. 1957. 47 pp., illus. \$1.95. Hitchcock's 10-page text serves to introduce a consummate pictorial tour through 14 of Gaudí's extant buildings. Furniture, decorative details, and interiors are also included.

Form and Function: Remarks on Art, Design, and Architecture. Horatio Greenough. Edited by Harold A. Small. University of California Press. 1962. 136 pp. \$1.25. Printing and paper are of excellent quality, as are the words of that 19th-Century Modernist.



The New Architecture and the Bauhaus. Walter Gropius. Translated from the German by P. Morton Shand. The MIT Press. 1965. 112 pp., illus. \$1.95.

A slim book of clean, clear print and reproduction, reissued after a period of 30 years, states the Bauhaus program and history. Illustrated by pre-1935 Gropius projects, this is a classic in architectural literature.

Scope of Total Architecture. Walter Gropius. The Macmillan Company. 1962. 158 pp., illus. 95¢.

Compiled from articles and lectures written during his years as Chairman of Harvard's Department of Architecture (1937–1952), this collection of ideas and idealism should challenge any architect to meet the Bauhaus standard.

The New Vision and Abstract of an Artist. Laszlo Moholy-Nagy. George Wittenborn. 1947. 92 pp., illus. \$3.50.

A barely readable, poorly illustrated Bauhaus treatise on the theory and practice of "creation in space."

Pioneers of Modern Design: From William Morris to Walter Gropius. Nikolaus Pevsner. Penguin Books. 1960. 254 pp., illus. \$1.45.

Not up to the standard of textual and visual perfection of *An Outline of European Architecture*, this work is nevertheless important for its content, its study of the history of the modern movement. Revised and rewritten version of the 1936 publication.

The Autobiography of an Idea. Louis H. Sullivan. Dover. 1956. 337 pp., illus. \$2.00. The man and his idea—from 1856 to 1893 (the building of the Chicago World's Fair). Unabridged reissue of the 1924 edition with 34 dull photographs.

Kindergarten Chats and Other Writings. Louis H. Sullivan. George Wittenborn. 1947. 251 pp., illus. \$5.00.

A big book containing the 1918 revised Chats, seven essays, and a few bad photographs.

Louis Sullivan: Prophet of Modern Architecture. Hugh Morrison. W. W. Norton. 1962. 317 pp., illus. \$1.95.

The only regret of this sterling biography of man and architect is the quality of the photographs.

Louis Sullivan: An Architect in American Thought. Sherman Paul. Prentice-Hall, Inc. 1962. 177 pp., illus. \$1.95.

This makes a good companion to the above. Paul views Sullivan as part of our intellectual history, a man influenced by Whitman, Dewey, Veblen, and William James. Photos are good.

Frank Lloyd Wright on Architecture. Edited by Frederick Gutheim. Grosset & Dunlap. 1941. 275 pp. \$1.65.

Chronologically and graphically presented writings—unusual, almost epigrammatic, fresh, and always readable.

Frank Lloyd Wright: Writings and Buildings. Selected by Edgar Kaufmann and Ben Raeburn. The World Publishing Co. 1960. 347 pp., illus. \$2.45.

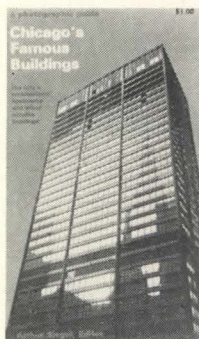
Rich in illustration, this book has a com-

plete list of 1893-1959 buildings. Attempt is made to unite text with pictures—in other words, to let Wright do his own explaining.

The Living City. The Natural House. The Future of Architecture. Frank Lloyd Wright. The New American Library. 1963. 223+ pp., illus. 75¢-95¢. A lot of Wright with a lot of pictures at the lowest price on the market. Quality of reproduction is poor.

PLACE: THE LOCALITY, THE CITY, THE STATE, THE NATION

Buildings of the Bay Area: A Guide to the Architecture of the San Francisco Bay Region. John and Sally Woodbridge. Grove Press. 1960. 144 pp., illus. \$1.95. To use this voluminous guide would turn tourist and resident alike myopic. There are just too many 1" x 1½" fuzzy photos—and not enough discrimination in their selection.



Chicago's Famous Buildings. Edited by Arthur Siegel. The University of Chicago Press. 1965. 230 pp., illus. \$1.00. This low-priced, excellently produced, informative work is much more than a guide—it is a hymn of praise to The Chicago School.

Four Walking Tours of Modern Architecture in New York. Ada Louise Huxtable. Doubleday. 1961. 76 pp., illus. 95¢. Very slim descriptions and occasionally poorly printed photographs, but—more important for the tourist—clear and easily understood.

Architecture Worth Saving in Onondaga County. Sponsored by New York State Council on the Arts. Syracuse University School of Architecture. 1964. 201 pp., illus. \$3.95. Everything—layout, printing, photographs, but, most of all, intent—is to be commended.

Seattle Cityscape: Sketches and Observations. Victor Steinbrueck. University of

Washington Press. 1962. 192 pp., illus. \$3.95.

Like a lollypop—pleasing but useless.

British Churches. Edwin Smith and Olive Cook. E. P. Dutton and Co. 1964. 160 pp., illus. \$1.75.

Text interesting, but at times disjointed. Photographs selected and presented are of the highest quality. Everything from roof to vault is explored in detail. It is a wonderful trip, a visual experience to remember.

English Castles. R. Allen Brown. W. W. Norton. 1962. 207 pp., illus. \$1.50. What was a castle? Why was a castle? Numerous photographs, excitingly presented, probe these questions; the answers are engrossing.

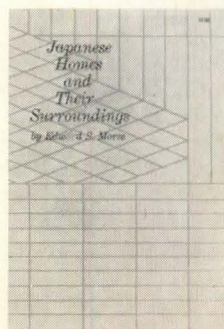
English Cathedrals. John Harvey. W. W. Norton. 1961. 188 pp., illus. \$1.50. Like some brainy girls, this looks bad but reads well. Histories of each of 27 cathedrals from Bath to York are in the back of the book.

The English Country House. Ralph Dutton. W. W. Norton. 1962. 200 pp., illus. \$1.50. A delightful stroll through the ins and outs, ups and downs of the English country house. Houses open to the public are listed in the back.

Parish Churches. J. C. Cox and C. B. Ford. W. W. Norton. 1961. 187 pp., illus. \$1.50. The evolution of the English parish church, from 600 to 1840, is traced thoroughly and effectively.

French Architecture. Pierre Laveden. Penguin. 1956. 304 pp., illus. \$1.25. A general survey of French building materials and techniques, French style, and French religious and civil architecture from medieval times to the present day. Ponderous, poorly printed and reproduced.

Landscape Gardening in Japan. Josiah Conder. Preface by Clay Lancaster. Dover. 1964. 299 pp., illus. \$2.75. A history and analysis (that first appeared in 1893) of the five main garden types, this is the unabridged reprint of the 1912 edition complete with sketches, lithographs, and photographs of existing late 19th-Century gardens.



Japanese Homes and Their Surroundings. Edward S. Morse. Dover. 1961. 372 pp., illus. \$2.00.

Reprint of 1886 edition that studies everything from thatched roofs to shoe closets—done with the usual Dover excellence. We see the home as architecture, habitat, and way of life.

The Art of Ancient Mexico. Paul Westheim. Doubleday. 1965. 260 pp., illus. \$1.95. An excellently illustrated, fully explored journey through the temples, pyramids, walls, and palaces of early Meso-American art.

PERSPECTIVE: LOOKING BACKWARD

American Architecture and Other Writings. Montgomery Schuyler. Edited by William H. Jordy and Ralph Coe. Abridged. Atheneum. 1964. 322 pp., illus. \$2.45. Schuyler's philosophy of tangibility, individuality, and articulation, his point of view, and criticism are still relevant. The print is small but readable. Illustrated with old engravings.

Architecture, Ambition and Americans: A Social History of American Architecture. Wayne Andrews. The Free Press of Glencoe. 1964. 319 pp., illus. \$2.45. Slick paper and dull though plenteous photographs fail to stultify Andrews' study of taste, the extraordinary in American architecture, and the influence of architect and client on an emergent design. This is definitely fun reading.

Architecture in America: A Battle of Styles. Edited by William A. Coles and Henry Hope Reed, Jr. Appleton-Century-Crofts, Inc. 1961. 412 pp., illus. \$2.75. Primarily prepared for students, this is an anthology of major statements on the aims of architecture and a study of five controversial projects: the 1893 Chicago Exposition; the National Gallery in Washington; the UN Building; Lever House; and Price Tower.

Architectural and Perspective Designs dedicated to his Majesty Charles VI, Holy Roman Emperor. Giuseppe Galli Bibiena. Introduction by A. Hyatt Mayor. Dover Publications. 1964. 50 plates. \$2.25. Bibiena, principal theatrical engineer and architect to the Viennese court of Charles VI, here presents 50 scenic drawings, not to be found in one volume since the 1740 original. Scenes from religious dramas, funeral monuments, and such—all faithfully and excellently reproduced.

The Art Criticism of John Ruskin. Edited and introduction by Robert L. Herbert. Doubleday & Co. 1964. 423 pp. \$1.45.

Part I: Theory and Practice; Part II: Architecture. Ruskin essays on Gothic, Renaissance, 19th-Century architecture, and the urban industrial world.

The Brown Decades: A Study of the Arts in America, 1865-1895. Dover. 1955. 248 pp. \$1.65.

Mumford's appraisal of the years of change — of Olmsted, Roebling, Root, Richardson, Sullivan, and Wright, among others.

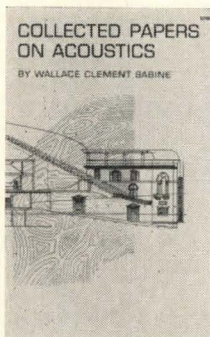
A Cartoon History of Architecture: A Skeleton Key for the Irreverent to Architecture, Decoration and Dress. Osbert Lancaster. Houghton Mifflin Co. 1964. 199 pp., illus. \$1.95.

A delightful galloping spoof in words and pictures of domestic architecture from Greek to Cola-Colonial.

The Cathedral Builders. Jean Gimpel. Translated by Carl F. Barnes, Jr. Grove Press. 1961. 192 pp., illus. \$1.35. Though learned, this study is cramped by the poorest photographs. It is a shame that such an intriguing subject has yet to be realized.

Classic New York: Georgian Gentility to Greek Elegance. Ada Louise Huxtable. Doubleday & Co. 1964. 142 pp., illus. \$1.95.

The first of a six-volume architectural history of Manhattan will serve as a guide to the visitor, a warning to the resident, and a delight to all. Photographs excellently illustrate a running commentary on New York's "Rage for the Greek." The author shows us Georgian and Federal architecture as a living force — a visible and enjoyable past.



Collected Papers on Acoustics. Wallace Clement Sabine. Introduction by Frederick V. Hunt. Dover. 1964. 279 pp., illus. \$2.00. Unaltered publication of the original 1922 edition of eleven papers written from 1900 to 1915 — the foundation of today's acoustical science.

Community Planning in the 1920's: The Contribution of the Regional Planning Association of America. Roy Lubove. University of Pittsburgh Press. 1964. 147 pp. \$2.25. Dry.

The Creation of the Rococo. Fiske Kimball. W. W. Norton & Co. 1964. 242 pp., illus. \$2.45.

A study of Rococo decoration and detail primarily as it influenced French interiors. Not to be taken up by the casual reader.

The Early Domestic Architecture of Connecticut. J. Frederick Kelly. Dover Publications. 1963. 207 pp., illus. \$3.00.

Unabridged republication of the 1924 edition replete with photographs, diagrams, floor plans, sketches — this is still an engrossing study of 150 pre-1790 houses.

Form in Gothic. Wilhelm Worringer. Translated, edited, introduction by Sir Herbert Read. Schocken Books, Inc. 1964. 192 pp. \$1.95.

A study of Gothic thought and feeling as expressed in art.

Garden Cities of To-Morrow. Ebenezer Howard. Edited with a preface by F. J. Osborn. Introductory essay by Lewis Mumford. The MIT Press. 1965. 168 pp. \$1.95. An 1898 original. Sociologist Howard, in lucid prose, sets out to build a marriage between town and country to save man and country.

Gothic Architecture and Scholasticism. Erwin Panofsky. The World Publishing Co. 1957. 156 pp., illus. \$1.45.

The poorest of photographs illustrate this beautifully printed Panofsky classic on Gothic architecture and philosophy.

The Gothic Cathedral: Origins of Gothic Architecture and the Medieval Concept of Order. Otto von Simson. Harper & Row. 1964. 275 pp., illus. \$2.25.

The text is an informative guide through the recesses of the Gothic spirit — symbolic, mystic, calculating — and its architectural creations. Plates in some instances are disappointing.

The Gothic Revival: An Essay in the History of Taste. Kenneth Clark. Penguin Books, Inc. 1964. 218 pp., illus. \$1.45.

Meant to be enjoyed "as history, as entertainment, and as criticism," this is a reprint of the 1928 edition. Wonderful old plates are used for illustration, but are far too few in number.

Greek Revival in America: Being an Account of Important Trends in American Architecture and American Life prior to the War Between the States. Talbot Hamlin. Dover. 1964. 489 pp., illus. \$3.00.

Unabridged republication of the original 1944 edition with an introduction by Dean Leopold Arnaud of Columbia University, this book is already a classic treatise on the Greek Revival as a genuine American architectural expression. Although the illustrations are numerous and present their subjects in depth, the quality of the reproduction is poor.

Heavenly Mansions and Other Essays on Architecture. Sir John Summerson. W. W. Norton & Co. 1963. 253 pp., illus. \$1.35. The curator of the Soane Museum in London has given us a set of brilliant essays on Gothic architecture, Wren, John Wood, J. M. Gandy, Viollet-le-Duc, William Butterfield, and Le Corbusier.

Lost Examples of Colonial Architecture. John Mead Howells. Introduction by Fiske Kimball. Dover Publications. 1963. 244 pp., illus. \$2.75.

Some 244 pages — a eulogy uncluttered with words — of "buildings that have disappeared or been so altered as to be denatured." Photographs speak for themselves. Most of those reproduced have never been available to the public before.

Made in America: The Arts in Modern Civilization. John A. Kouwenhoven. Introduction by Mark van Doren. Doubleday & Co. 1962. 259 pp., illus. \$1.45.

From balloon-frames to skyscrapers, rifles to jazz, Kouwenhoven traces the impact of democracy and machine technology on American "arts." This study of the victory of the vernacular over the cultivated is informative, interesting, and important reading. The author challenges us to accept our tradition.

Modern Architecture. J. M. Richards. Penguin Books. 1962. 185 pp., illus. \$1.25. An earnest attempt to explain the roots of architecture today by the editor of *Architectural Review*. Photographs, though well chosen, are poorly presented.

Modern Houses of the World. Sherman Cantacuzino. E. P. Dutton & Co. 1964. 160 pp., illus. \$1.75.

From Wright to Kikutake, one is invited to step into 40 superbly illustrated and presented homes. The pace is a fast one, but the host offers no food for thought.

Mont-Saint-Michel and Chartres. Henry Adams. Introduction by Ralph Adams Cram. Houghton Mifflin Co. 1963. 397 pp. \$2.45.

The best edition of this much published classic.

The New Architecture of Europe: An Illustrated Guidebook and Appraisal. G. E. Kidder Smith. World Publishing Co. 1961. 359 pp., illus. \$2.45.

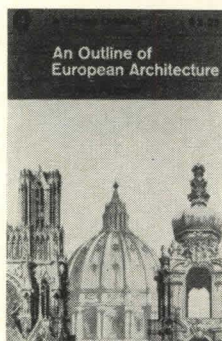
A valuable guide and eye-opener to 225 postwar buildings in 16 different countries. It stands alone in this field and stands tall.

Notre-Dame of Paris: The Biography of a Cathedral. Allan Temko. The Viking Press. 1952. 338 pp., illus. \$1.75.

Genealogical and chronological charts at the back, small amount of aptly chosen photographs — in all, a most thorough and loving account of a cathedral made human.

An Outline of European Architecture. Nikolaus Pevsner. Penguin Books. 1963. 496 pp., illus. \$2.25.

With an enlarged format, up-dated material, and additional illustration, Pevsner here is better than ever. The best book on the market.



Roman Art and Architecture. Mortimer Wheeler. Frederick A. Praeger, Inc. 1964. 250 pp., illus. \$3.95.

Some 158 pages of discussions and illustrations, many in color, of adequate depth and breadth on Roman architecture — towns, temples, theaters, and the like. Layout, paper, and binding are of excellent quality.

The Sculptural Programs of Chartres Cathedral. Adolf Katzenellenbogen. W. W. Norton. 1964. 151 pp., illus. \$1.95.

The story of the sculptures of the 12th-Century Royal Portal of the west façade and the 13th-Century transept wings — how they evolved from stone, literature, liturgy, church history, and current theological, philosophical, and political concepts. The story is an uncluttered and comprehensible one.

The Seven Lamps of Architecture. John Ruskin. Farrar, Straus and Cudahy. 1961. 210 pp., illus. by the author. \$1.95. Written in 1848, "Seven Lamps" (sacrifice, truth, power, beauty, life, memory, and obedience) created its own revolution and still sheds its light on art criticism.

Vitruvius: The Ten Books on Architecture. Translated by Morris Hicky Morgan. Dover. 1960. 331 pp., illus. \$2.00.

Writing the rules of building for Emperor Caesar, Vitruvius speaks to us today in clear type, excellent binding, and adequate reproductions.

PROBLEM: APPRAISALS OF THE CITY

Architecture: City Sense. Theo Crosby. Reinhold Publishing Corp. 1965. 95 pp., illus. \$2.25.

A well laid out, well produced book, lack-

ing a point of emphasis in its plea to save the city.

The City is the People. Henry S. Churchill, W. W. Norton. 1962. 204 pp., illus. \$1.85. A discussion of city planning — past, present, and future — that is well handled, but poorly illustrated, in what is generally an informative, readable work.

Cluster Development. William H. Whyte. Forward by Laurance S. Rockefeller. American Conservation Association. 1964. 130 pp., illus. \$3.00.

Comprehensive, readable survey on cluster development, answering the how and why. Included are examples of clusters, good and bad, an appendix of existing developments, ordinances, and homeowners' association forms.

Communitas: Means of Livelihood and Ways of Life. Percival and Paul Goodman. Random House. 1960. 248 pp., illus. \$1.45.

Weighty and worthy analysis of past community plans and future alternatives. Revised since the 1947 edition.

The Death and Life of Great American Cities. Jane Jacobs. Random House. 1961. 448 pp. \$1.95.

Jane Jacob's individualistic brew makes for delicious, unusual nourishment for city lovers and lovers.

Dictionary of Architecture. Henry H. Saylor. John Wiley & Sons. 1963. 221 pp., illus. \$1.45.

From Aaron's rod to zwinger, this is an excellent source for the spelling, pronunciation, and definition of architectural terms — the vocabulary of the mother of the arts.

Experiencing Architecture. Steen Eiler Rasmussen. MIT Press. 1964. 245 pp., illus. \$2.95.

A charming and informative book on the joys of experiencing solids and cavities, color, scale and proportion, rhythm, texture, light and sound in design.

The Exploding Metropolis. The Editors of *Fortune*. Doubleday. 1958. 168 pp., illus. 95¢.

This treatise, written by and for the layman, is a rousing battle cry for city regeneration. Illustrations poor.

From the Ground Up: Observations on Contemporary Architecture, Housing, Highway Building and Civic Design. Lewis Mumford. Dover. 1956. 243 pp. \$1.25. Mumford's *New Yorker* "Skyline" essays dealing with New York as he found it. Good reading, good criticism.

The Future of London. Edward Carter. Penguin Books. 1962. 197 pp., illus. \$1.25.

The Director of the Architectural Association School in London looks at his city — its decay and renewal — with an informed and informative eye. Slim on illustration.

God's Own Junkyard: The Planned Deterioration of America's Landscape. Peter Blake. Holt, Rinehart & Winston. 1964. 144 pp., illus. \$2.95.

Muckraker Peter Blake pummels the reader with photographs and essays on America, the Ugly, posing the question, "What manner of people is being reared in these infernal wastelands?"

The Highway and the City. Lewis Mumford. Harcourt, Brace. 1953. 246 pp. \$1.65.

Collection of essays, some from *The New Yorker*, in which Mumford takes us through the cities of the world, their problems and promise. One might wish for some illustration in this treatise against the architecture of a "money-centered and power-intoxicated economy."

The Image of the City. Kevin Lynch. MIT Press. 1964. 194 pp., illus. \$2.95.

The first publication of the Harvard-MIT Joint Center for Urban Studies is an excellent one. Lynch applies "imageability" to the cities of Boston, Jersey City, and Los Angeles.

Megalopolis: The Urbanized Northeastern Seaboard of the United States. Jean Gottmann. The MIT Press. 1964. 777 pp. \$3.95.

Gargantuan study of the "main street of the nation" — an area stretching from southern New Hampshire to northern Virginia, from the Atlantic to the Appalachians.

Sick Cities: Psychology and Pathology of American Urban Life. Mitchell Gordon. Penguin Books. 1965. 444 pp. \$2.25.

The author's purpose — "to light up some of the darker corners of city housekeeping": traffic, air and water pollution, crime, garbage, city government, city sprawl — was motivated by a tour and study of 70 American cities.

The Squeeze: Cities without Space. Edward Higbee. William Morrow & Co. 1960. 348 pp. \$1.85.

Juicy tidbits in the guerilla warfare of CAR — public enemy number one — against city, suburb, farm, and park.

Sticks and Stones: A Study of American Architecture and Civilization. Lewis Mumford. Dover. 1955 (revised from 1924 edition). 238 pp., illus. \$1.65. Well printed, bound, and illustrated.

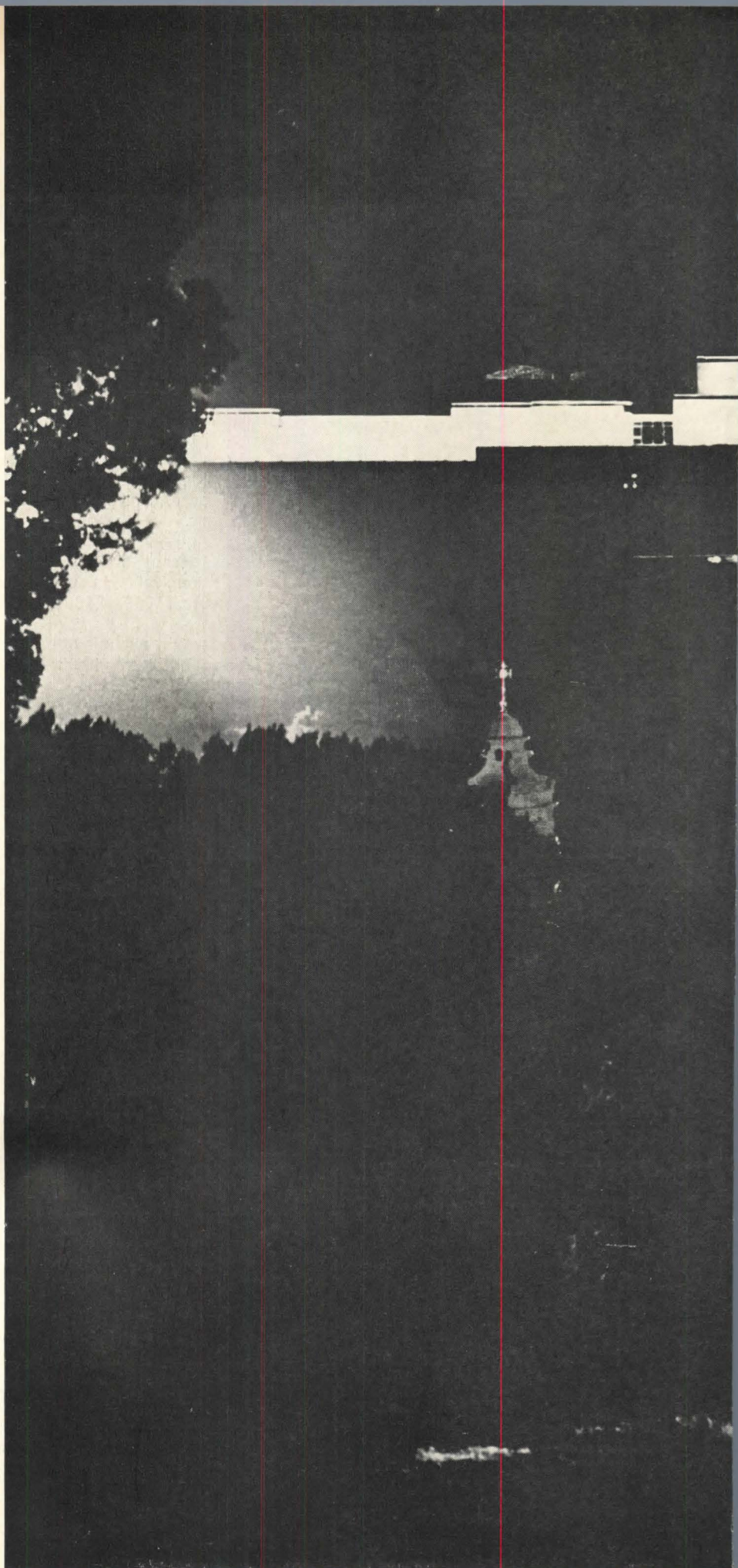
Urban Life and Form. Edited by Werner E. Hirsch. Holt, Rinehart & Winston. 1963. 248 pp. \$3.50.

Looks like a college textbook, thinks like a college textbook, is a college textbook.

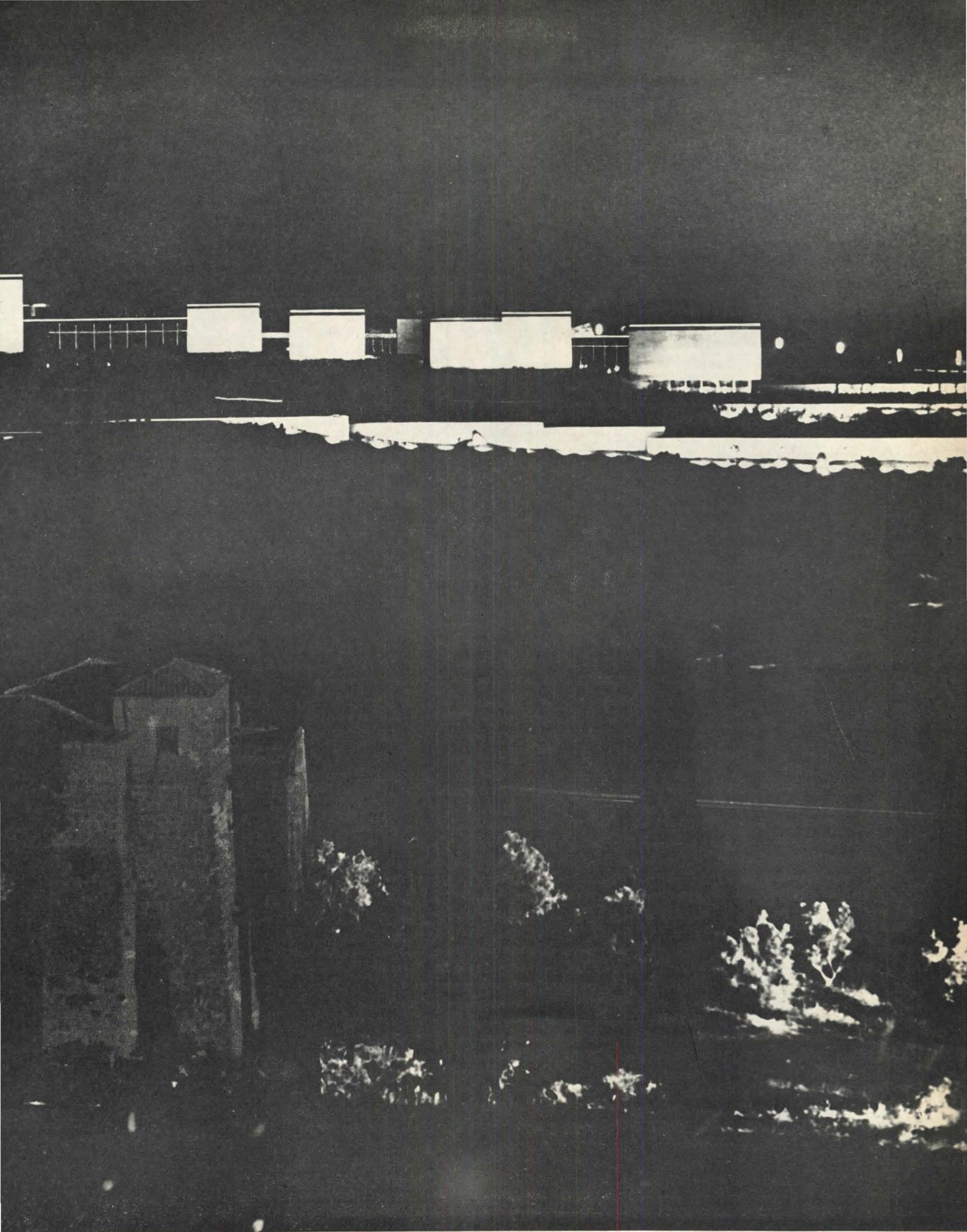
ACROPOLIS IN JERUSALEM

"An acropolis for our times" is the way Isamu Noguchi has described the Israel Museum in Jerusalem. And, indeed, the combination of a high place and buildings that shelter artifacts symbolizing the religion, history, and aspirations of a people would seem to justify this characterization.

The museum consists of four elements: the Bezalel Museum of Fine Arts and the Bronfmann Museum of Biblical Archaeology in the central structures, the Billy Rose Art Garden by Noguchi, and the Shrine of the Book by Frederick Kiesler and Armand Bartos (see p. 126). Professor Al. Mansfeld and Mrs. Dora Gad, competition-winning architects for the central complex of the museum and coordinators for the entire project, evidently had the idea of an acropolis in mind. In describing the 40-acre hill given to the museum by the Government of Israel, Mansfeld says "it symbolically looks out upon the 'Kiryah'—the new seat of government with its Knesset (Houses of Parliament) and its Ministries, on the Hebrew University campus, the Valley of the Cross with its historical Crusaders' Monastery, and residential areas of the city of Jerusalem." The form of the Mansfeld-Gad structures, which house the

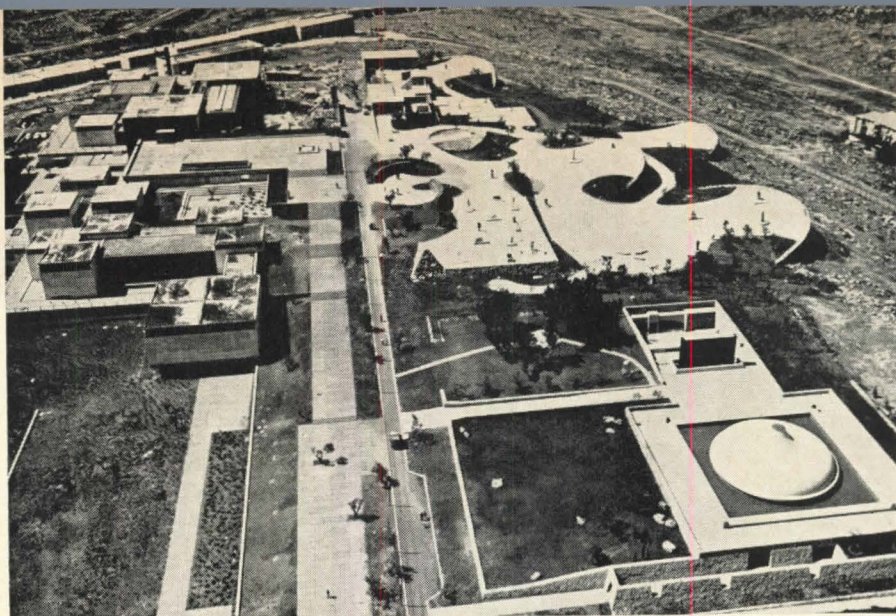


Photos: Keren-Or, Haifa



Bezalel Museum of Fine Arts and the Bronfmann Museum of Biblical Archaeology, though contemporary in execution and design, deliberately recall the Arab villages of the region. Based on a series of 36' x 36' "space units" roofed by hyperbolic paraboloid shells supported on central columns, the museums follow the topography to provide a continually changing series of spatial experiences: high to low, open to enclosed, small to large. This, together with its "village" appearance when seen from afar, is the most interesting achievement of the museum according to an architectural writer who visited Israel last year. A more recent visitor, a New York architect, reports that the clerestories formed by the h.p.'s seem the poorest place to have natural light in a number of cases, since one is almost blinded by the bright light entering. The same architect found the exhibit techniques in the museum quite imaginative and exciting. Outside, however, the whole complex (Bezalel, Bronfmann, Shrine of the Book, Billy Rose Art Garden) "seemed to be every man for himself," he reported to P/A, the three appearing nonunified. Indeed, Billy Rose was allegedly against a close integration of his garden with the buildings, and attempts by Noguchi to bring the two into some kind of relationship brought about considerable conflict. Noguchi (and others who have seen the site) nevertheless believes that the entire development should be assessed as a whole. Referring again to *the Acropolis*, he told P/A that the classic complex would not be regarded as a wholly integrated group itself, having been built over a period of time.

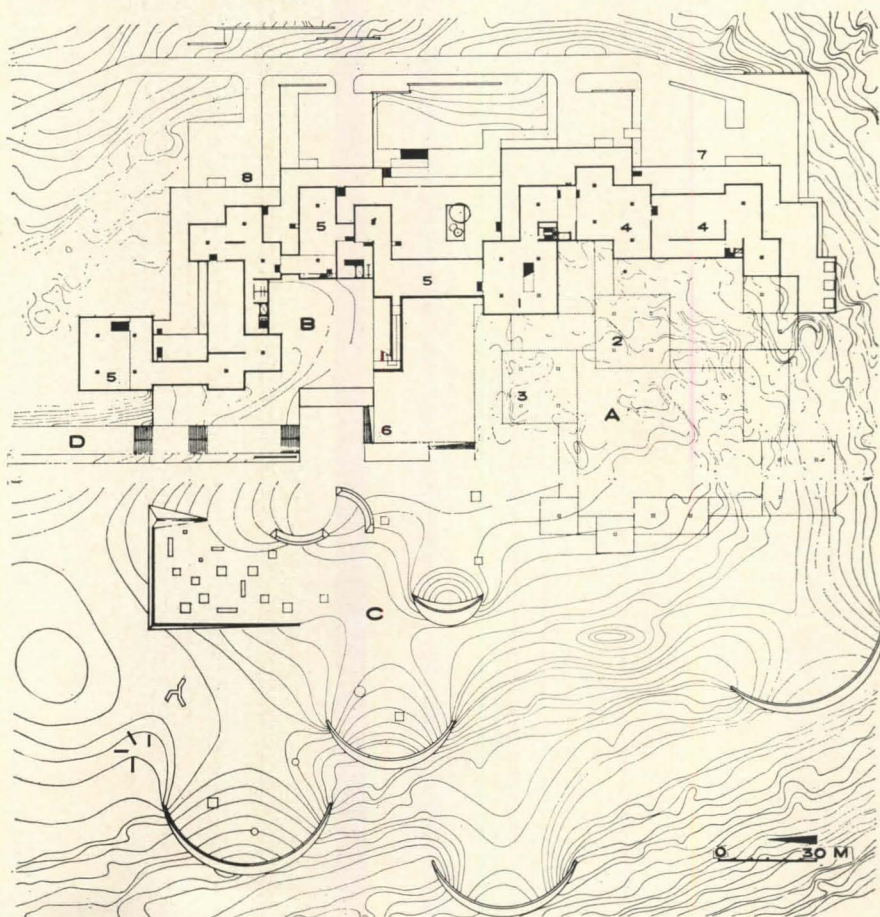
Noguchi's sculpture garden is a powerful series of arced terraces facing the university. Local commentators have written that some of the more delicate sculptures are somewhat overwhelmed by their surroundings, and the New York architect reported to P/A that he felt the landscape is a wonderful piece of sculpture in itself, but larger than it should be, including bases for the statues and the massive stone retaining walls. The difference in scale



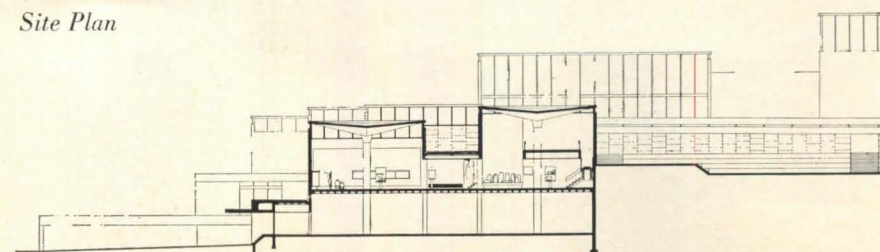
Above, clockwise: Bronfmann and Bezalel museums; Billy Rose Art Garden; Shrine of the Book.

(A) Bezalel Museum of Fine Arts; (B) Bronfmann Museum of Archaeology; (C) Billy Rose Sculpture Garden; (D) path to Shrine of the Book.

(1) lower entrance hall; (2) temporary exhibitions; (3) library and auditoriums; (4) Bezalel galleries; (5) archaeology galleries; (6) entrance plaza; (7) Bezalel stores entrance; (8) archaeology stores entrance.

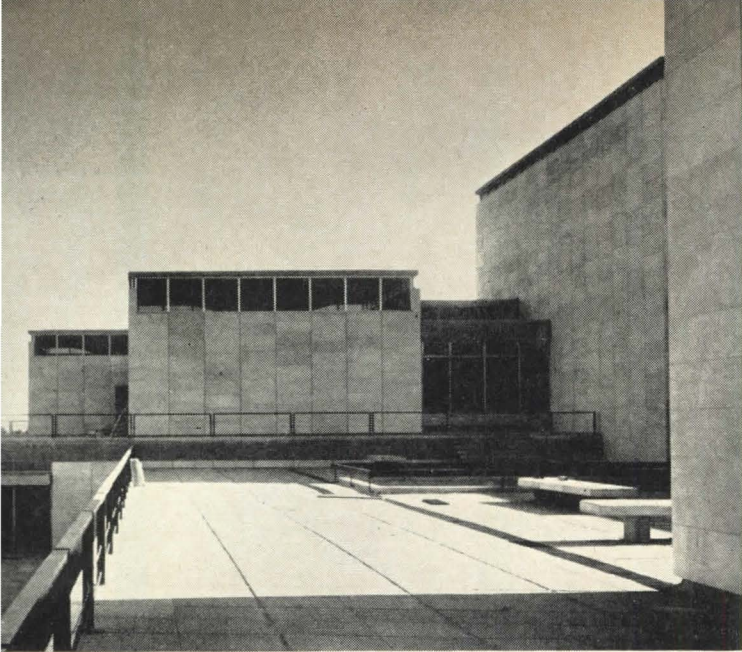


Site Plan

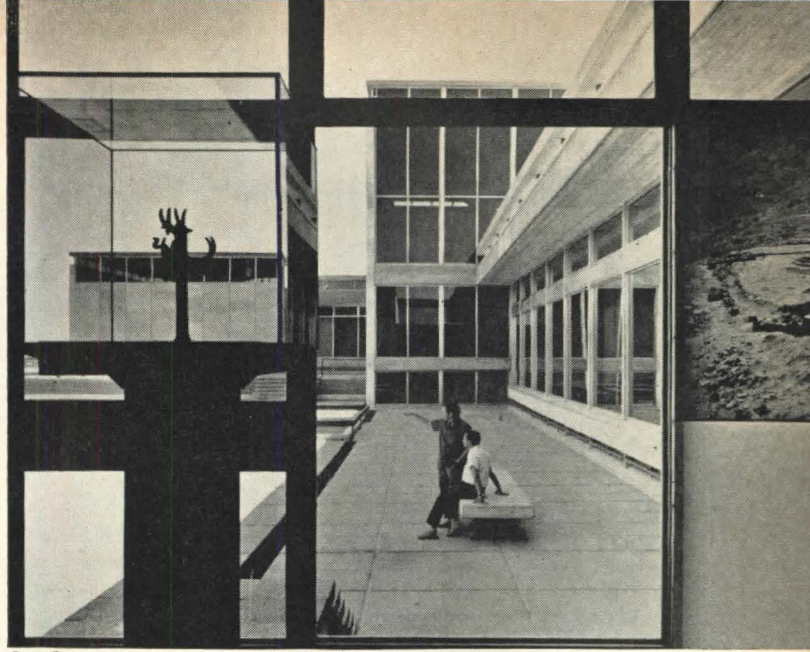


Section: Archaeology Wing

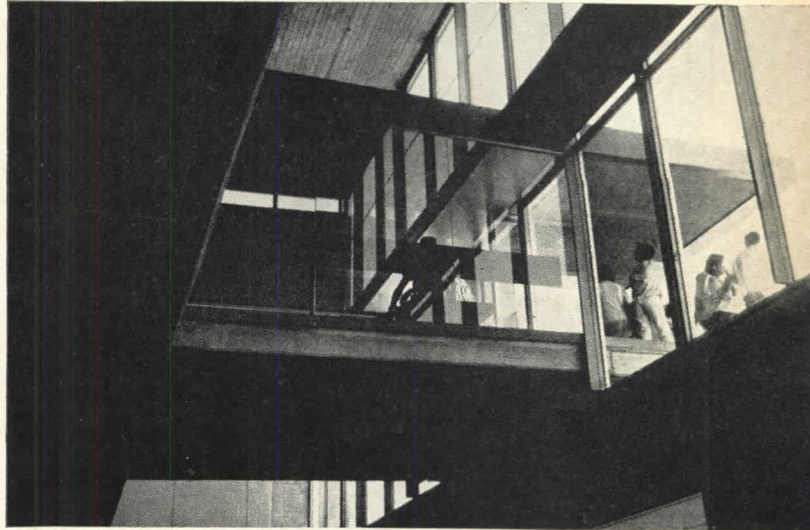
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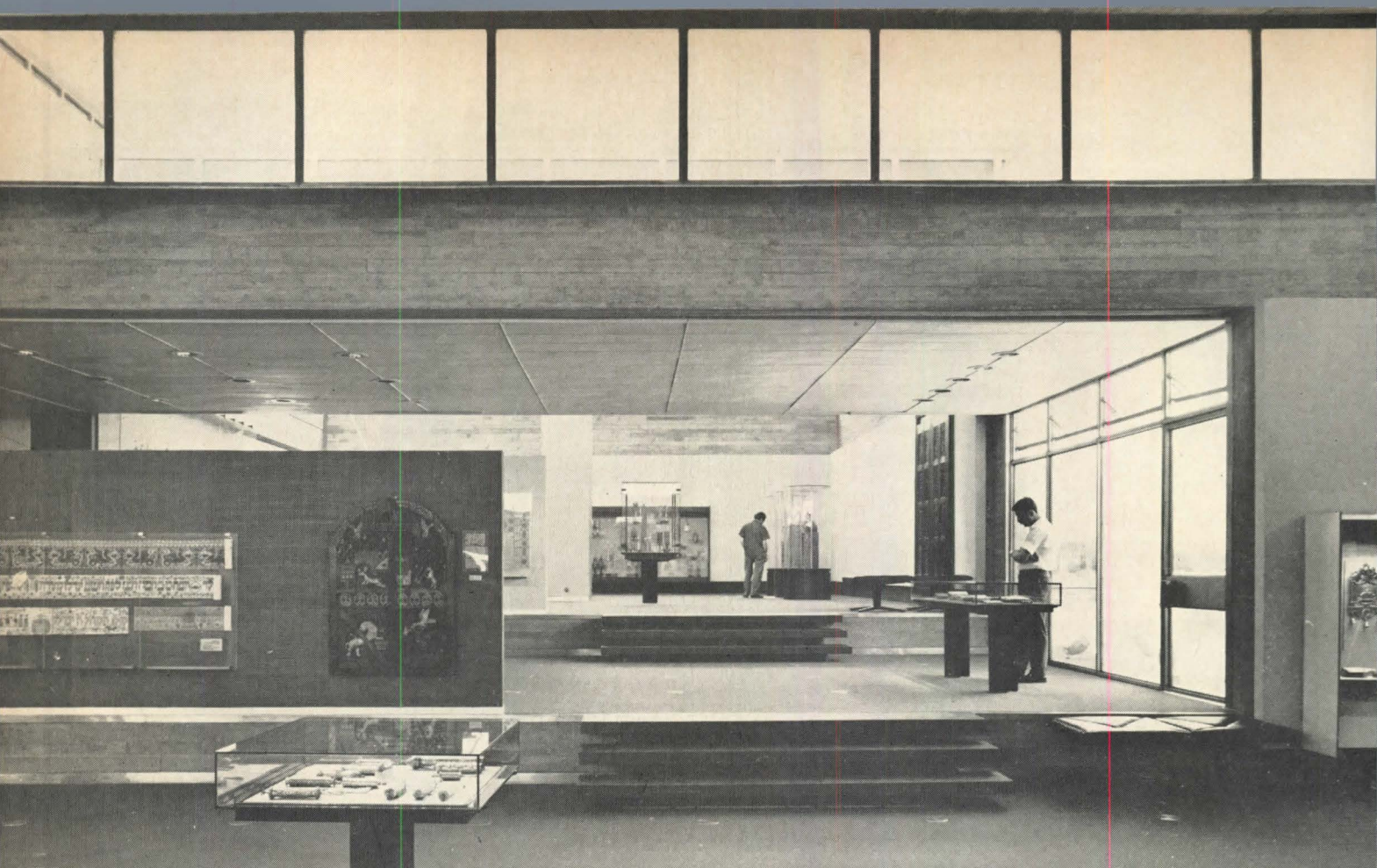


Museum terrace (above). Archaeology wing (below).



Outdoor terrace (above). Bridge element (below).

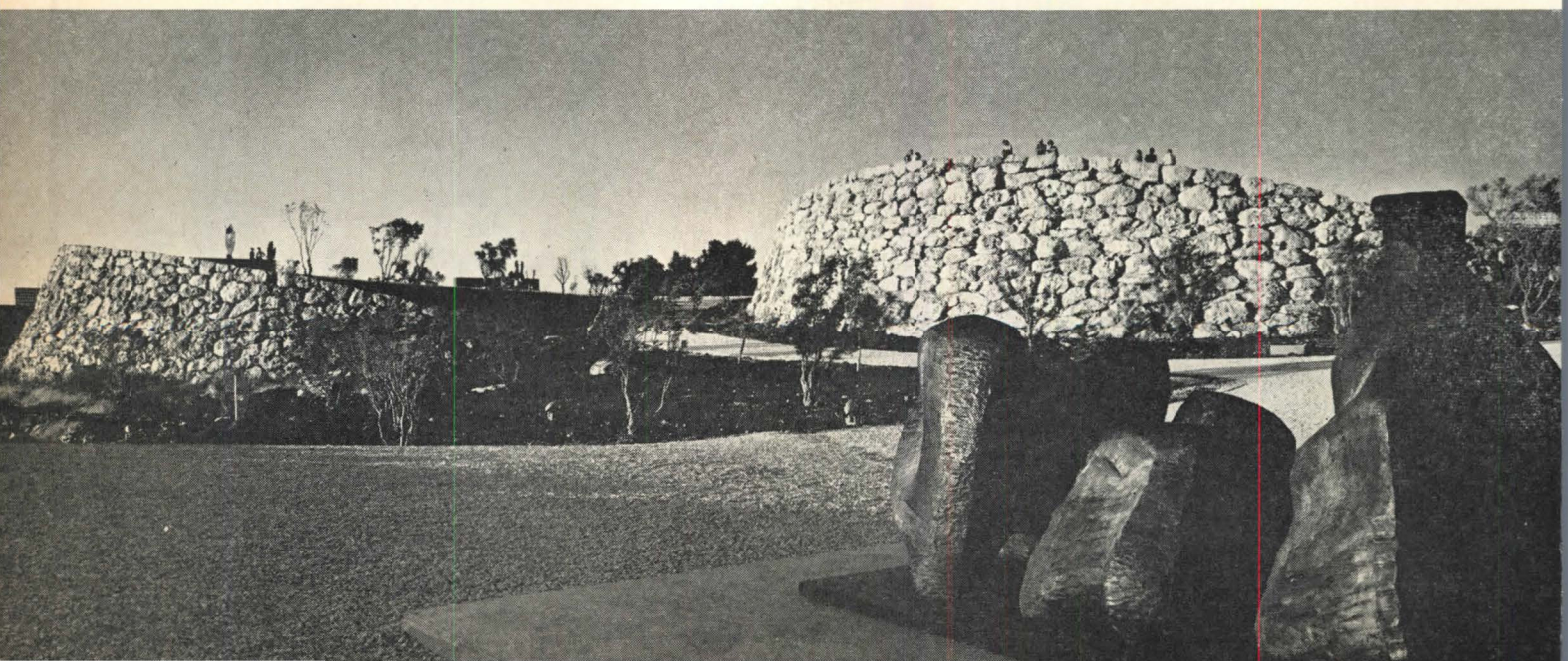
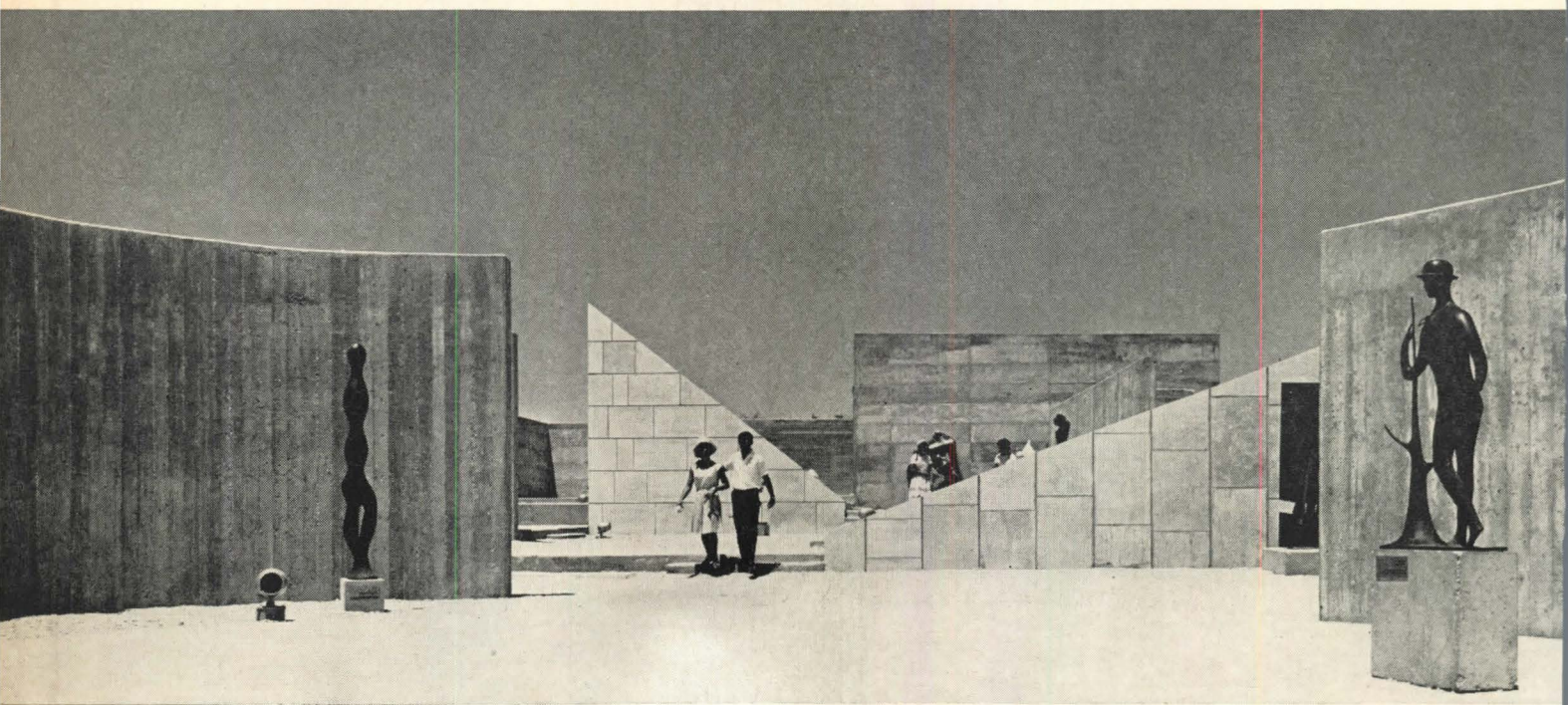
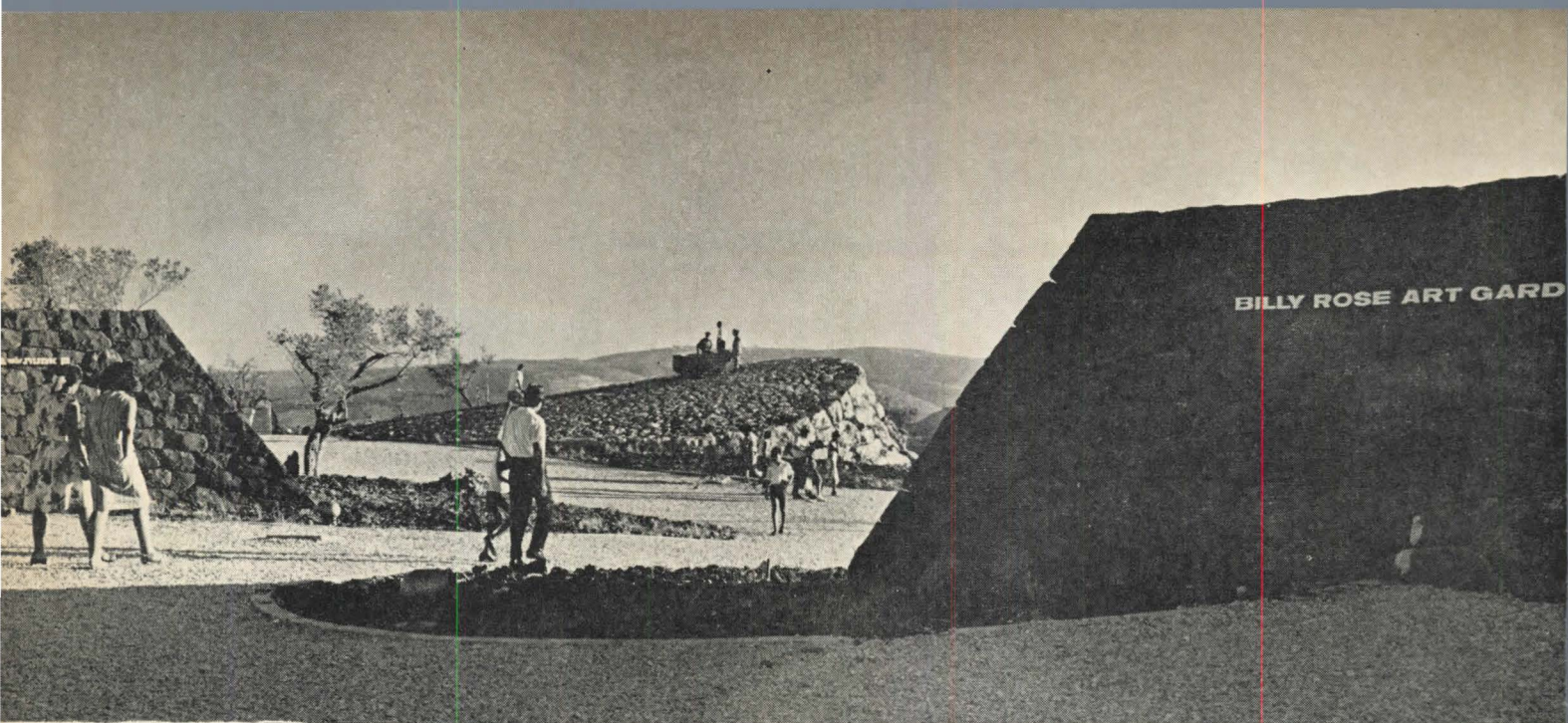




View showing clerestories between hp elements (above). Archaeology wing (below).









between Noguchi's garden and the Mansfeld-Gad pavilions, he feels, makes the museum look "too precise, thin, and temporary." The best thing about the whole impression, he feels, is the Jerusalem hills.

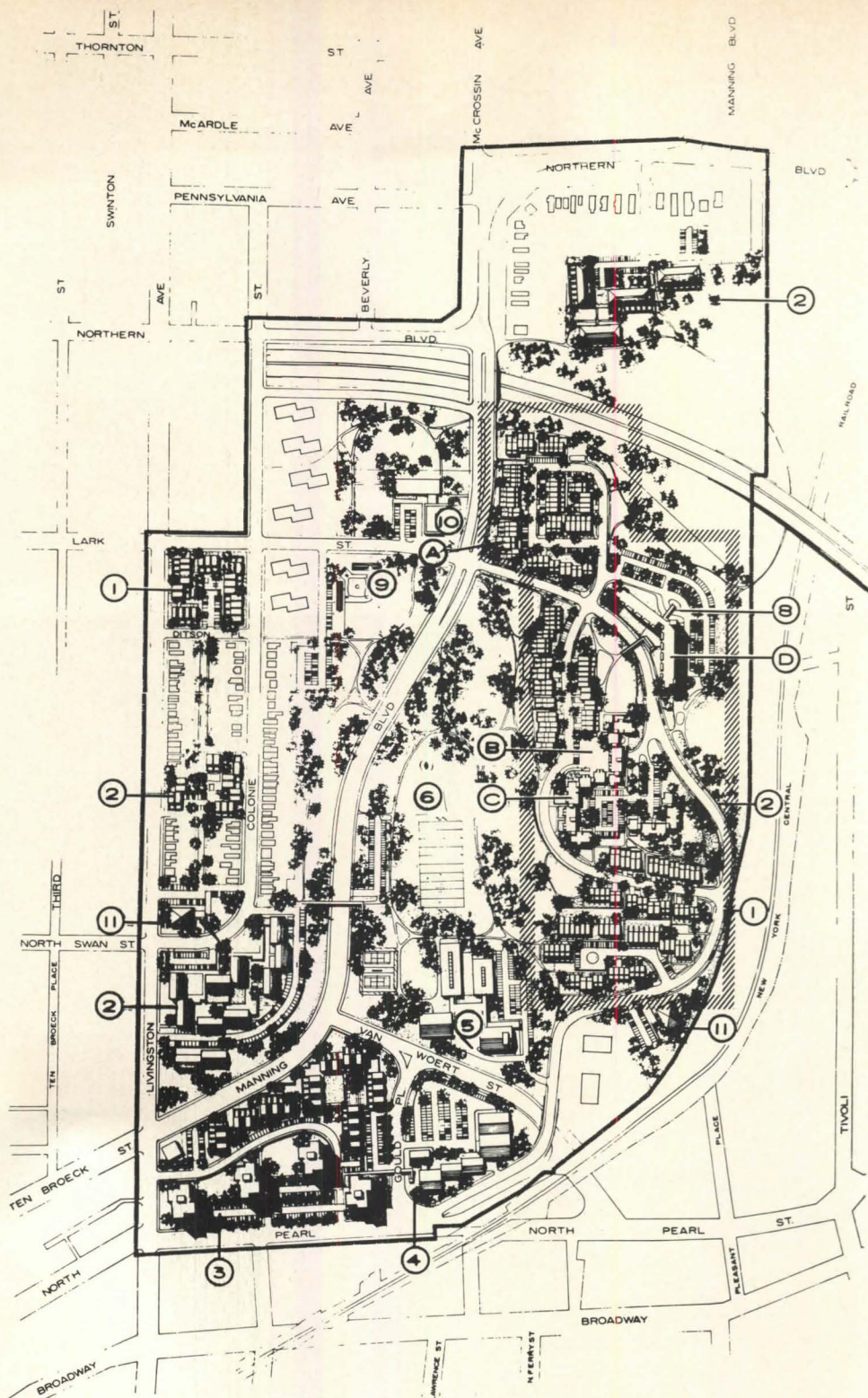
The hills do seem to have exercised a basic influence on everyone but the architects of the Shrine of the Book. Noguchi readily acknowledges this influence and says he used regional materials and forms consciously to enforce such a feeling. The respect Mansfeld and Gad showed for the rising and falling lines of the site and their "interpretation" of an Arab village show the debt they owe to traditional forms. Mansfeld writes that the use of cluster elements to house the archaeological and art exhibits is "the true expression of the principle of organic growth, achieved through contemporary architectural and technological means." Noguchi says of his garden: "My own feeling is that here is consciousness of the earth upon which we stand. It is free, open—a place of release. The great walls do not limit possession. They are mounds within the general landscape from which they rise and to which they return. They are like the hills of Judea; like the wings of prayer touching the sky. The sea of stones so characteristic of Israel's hills laps into the garden and coalesces in the crests of the giant arcs. The enclosures they form are not exclusive; they are only definitive in a periodic or relative sense."

Perhaps the pull of the elements of the Israel Museum against each other is more meaningful than a totally integrated design would have been, for here are reflected not only the atavistic impulses of a people homeless for 2000 years, but also the desire of a young nation to achieve a place for itself in contemporary world culture. Symbolically supporting this proof of an ancient heritage (the archaeological museum, the Shrine of the Book) and this striving for national identification (Bezalel Museum of Fine Arts) is the body of Israel (the Noguchi garden). In these disparate senses, the Israel Museum may be said to have achieved a unity in diversity.

INSURING PLANNING DIVERSITY

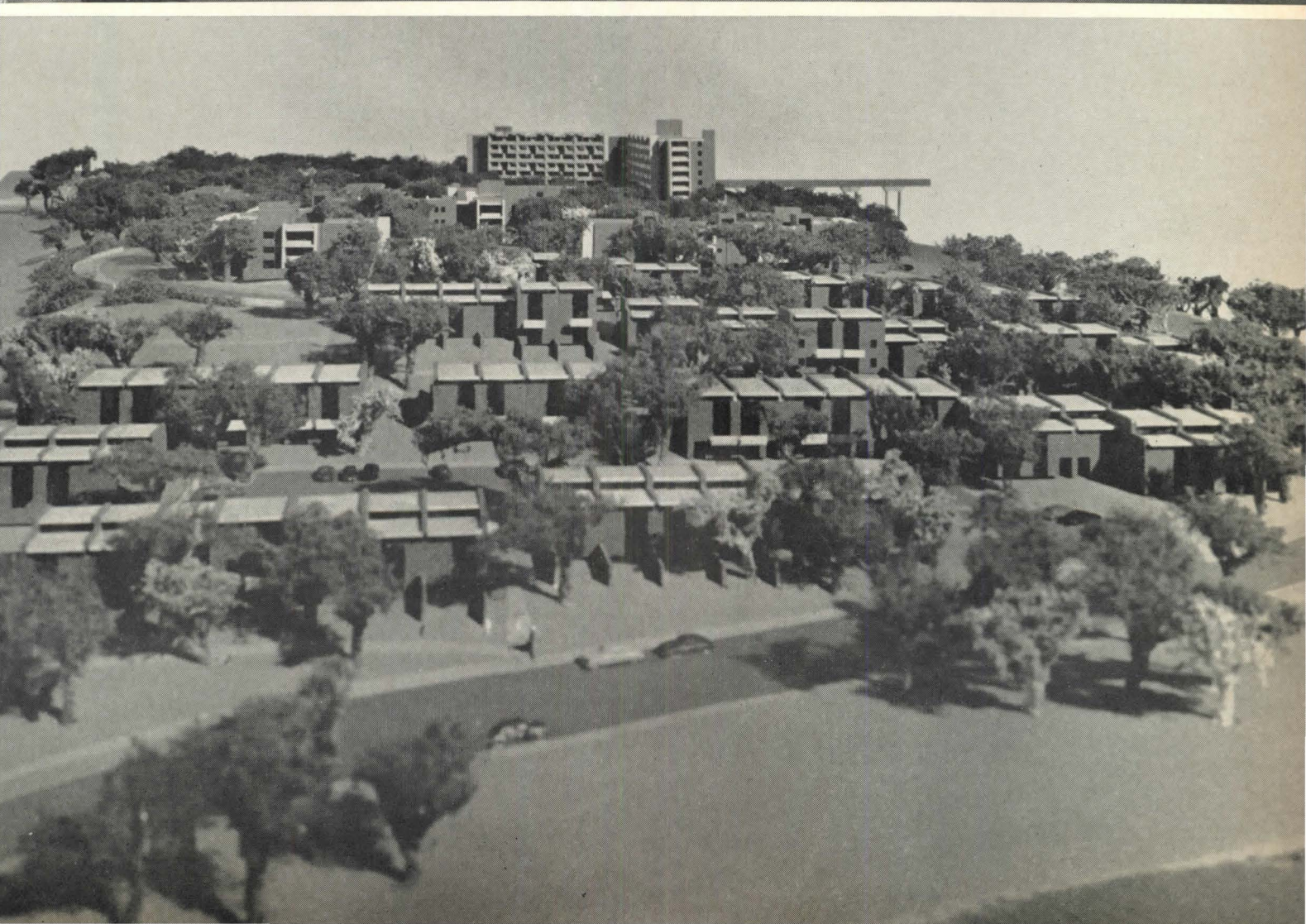
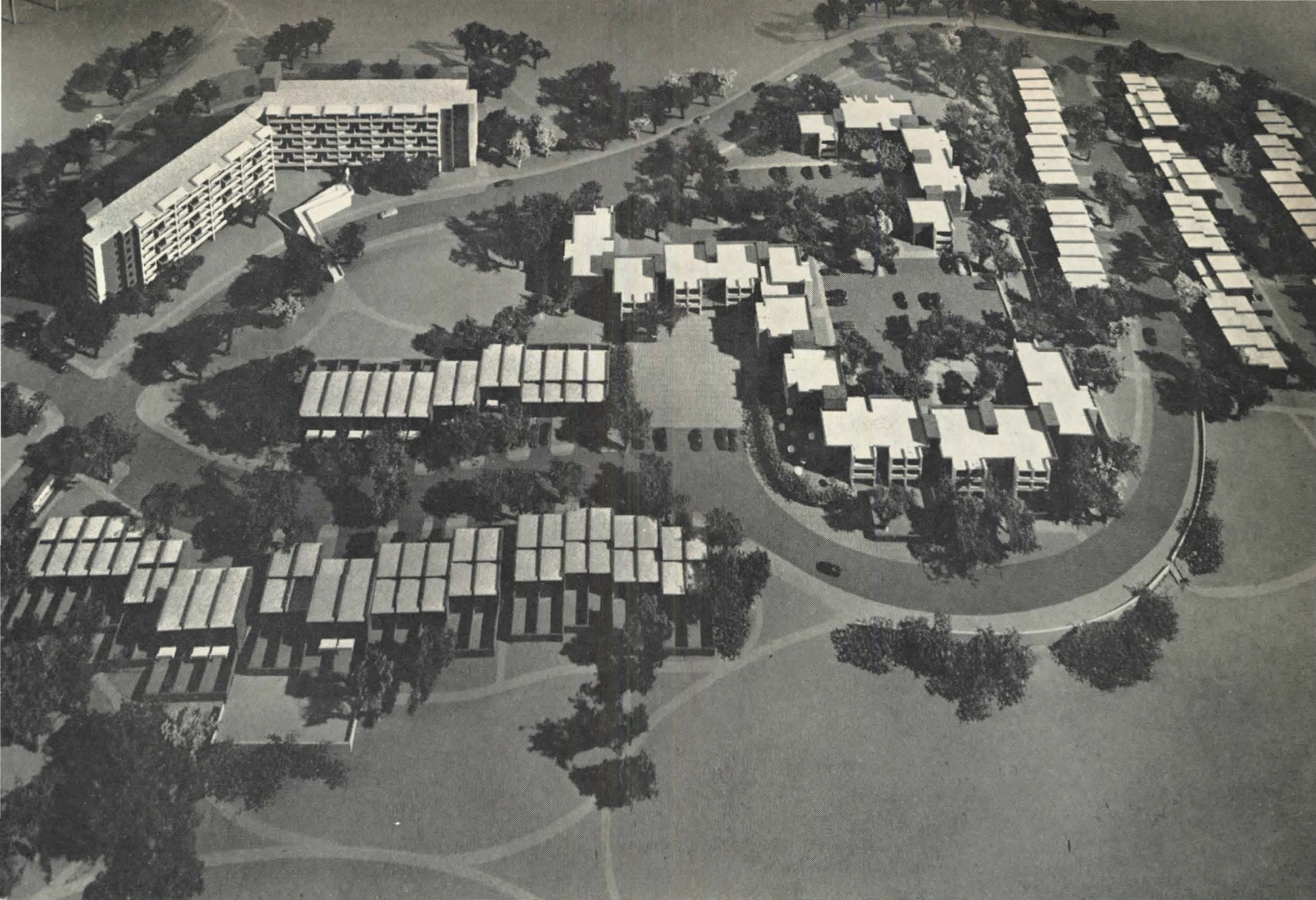
The Urban Renewal Agency's new practice of allowing municipalities to prepare detailed development studies normally submitted by private sponsors is likely to be of considerable benefit in speeding urban renewal projects, and, in enlightened instances, improving them. The usual procedure of cities selecting plans submitted by various developers and having them approved by all the necessary agencies is simplified under this procedure by having a comprehensive plan all ready in the local planning commission for sponsors to study and on which to base their own proposals.

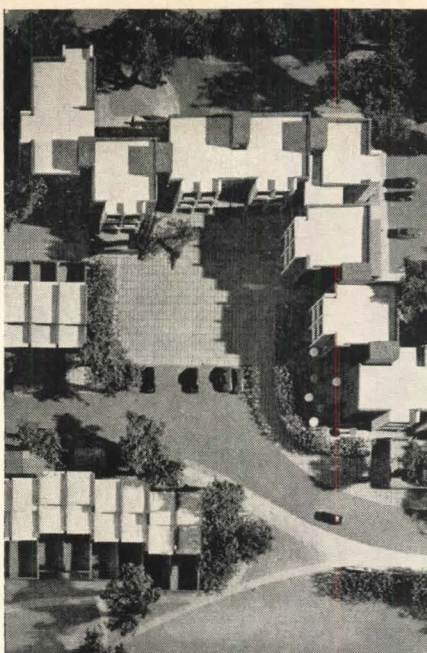
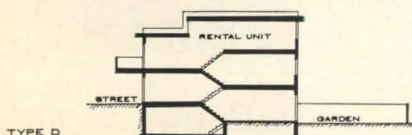
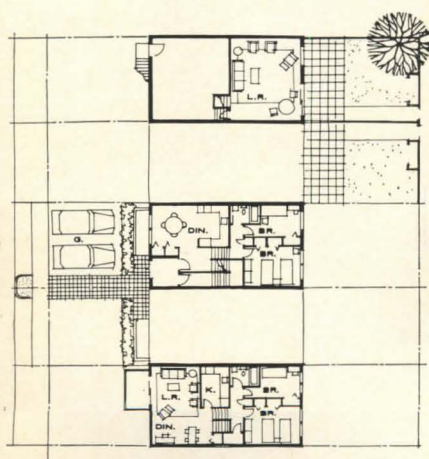
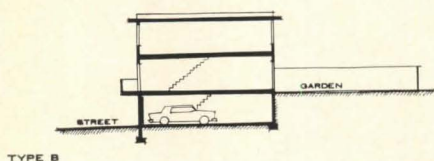
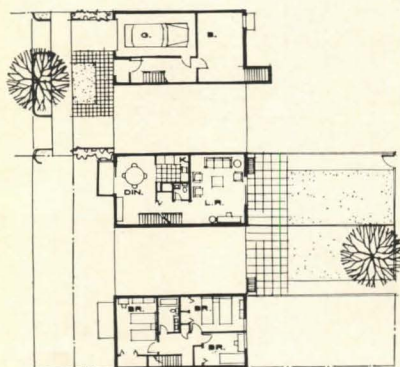
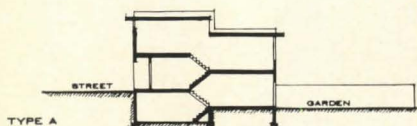
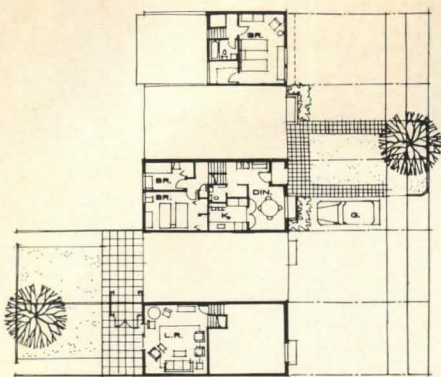
A notable case in point is the Dudley Heights plan for Albany, New York, by Manhattan architects Hoberman & Wasserman with planning consultants Candeub, Fleissig, Adley & Associates. Selected by the city to prepare an "illustrative site design" for Arbor Hill Project #1, the architects and planners subsequently went much deeper into detail



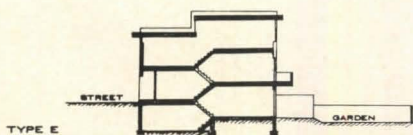
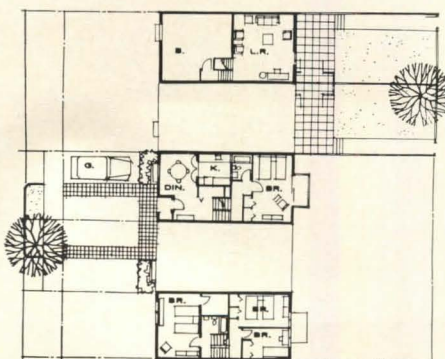
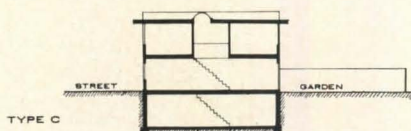
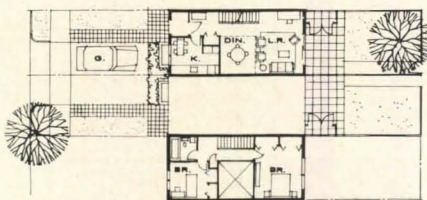
Arbor Hill Project #1: (1) town houses; (2) garden apartments; (3) public housing and housing for elderly; (4) neighborhood shopping center; (5) elementary school; (6) neighborhood park; (7) plaza-overlook; (8) high-rise apartments; (9) little league baseball; (10) community center; (11) churches

Dudley Heights Plan (hatched in): (A) row houses; (B) garden apartments; (C) high-rise apartments; (D) neighborhood plaza





The neighborhood plaza



in planning the area known as Dudley Heights, "a largely undeveloped parcel of land formerly known as Dudley Park" (see site plan). Without actually controlling the eventual design of individual units—developers and their architects would do this, and presumably there would be more than one sponsor for various parts of the project—Hoberman & Waserman have produced so cohesive a plan as to insure that the eventual appearance of the area will be pretty close to the pictures you see here.

The Dudley Heights plan provides moderate-income housing in 204 row houses (traditionally popular in Albany) with two, three, and four bedrooms, 91 walk-up apartments, and 160 elevator apartments in a high-rise building. Total: 455 units for 1604 persons.

One of the major aims of the architects and planners was to avoid a "project" quality for the new neighborhood. This they have attempted to do not only by over-all design and utilizing the somewhat precipitous configuration of the site to advantage, but, more importantly, by attempting to insure that the development will be tenanted by a diversity of people of differing ages, occupations, living preferences, and—within the concept of moderate income—earning powers. Thus, row houses to cost approximately \$12,000 to \$21,000 will occupy most of the site, garden apartments will be clustered around a neighborhood plaza at the central point, and the high-rise building will terminate the site at the north and be connected to the central area by a pedestrian bridge. Further assuring diversity, the row houses will be in five different plans, including a unique variation—a house with a top floor rental unit (see plans). The buildings around the neighborhood plaza will contain provisions for a grocery store, laundromat, hobby room, café, and a kindergarten.

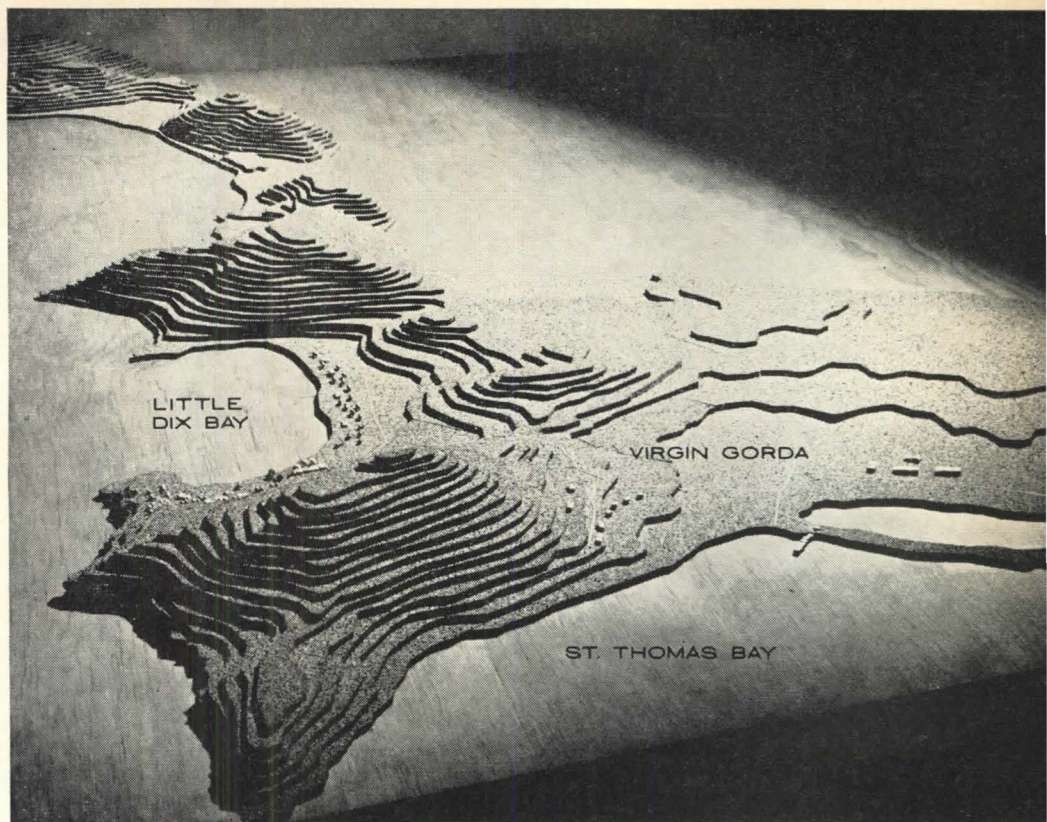
The Dudley Heights proposal is a healthy development in an area that can certainly use it—moderate-income housing. And it is even healthier in a city that has not always been so fortunate in its urban development plans.—JTB.

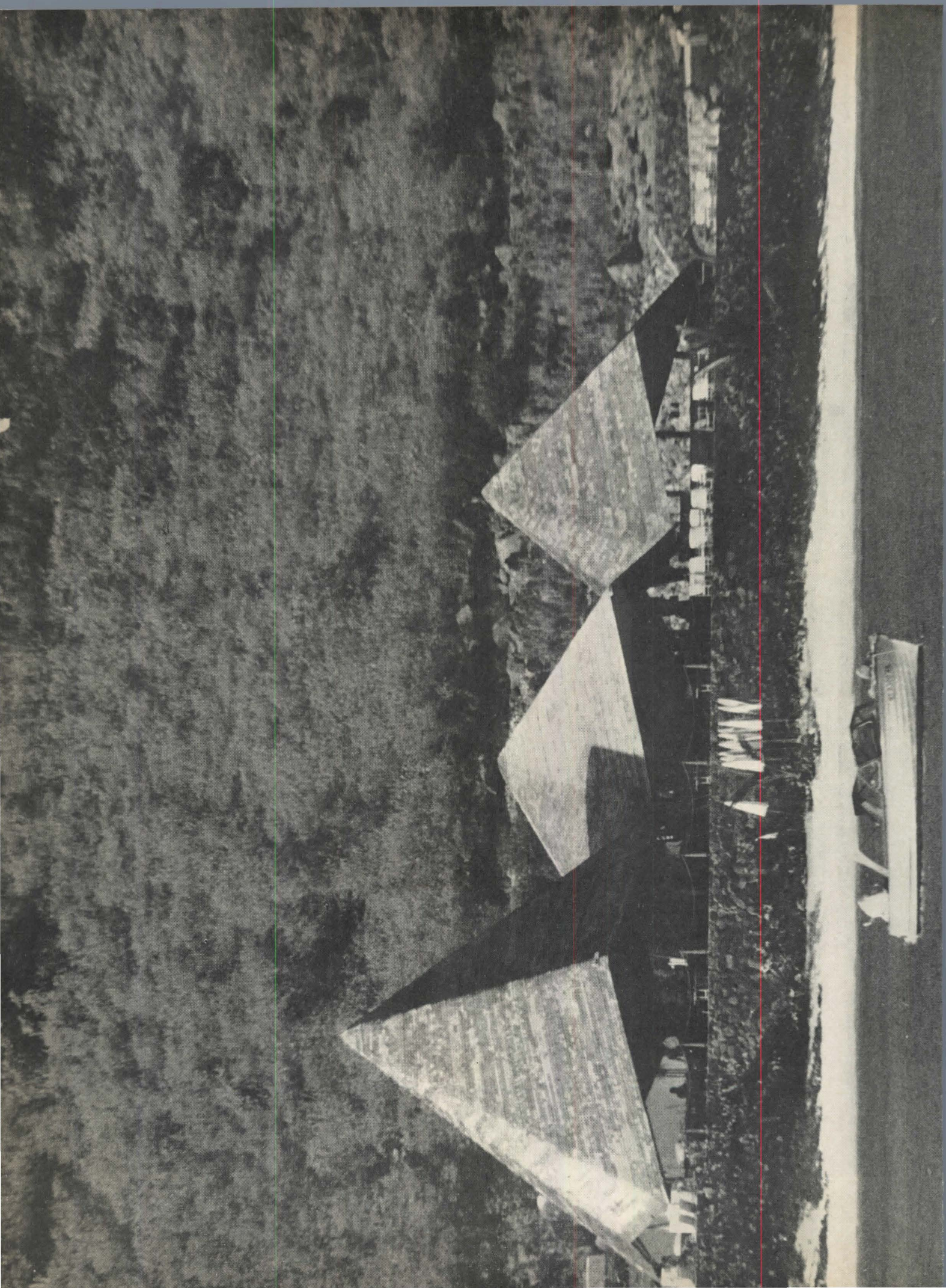
INVITING VIRGIN

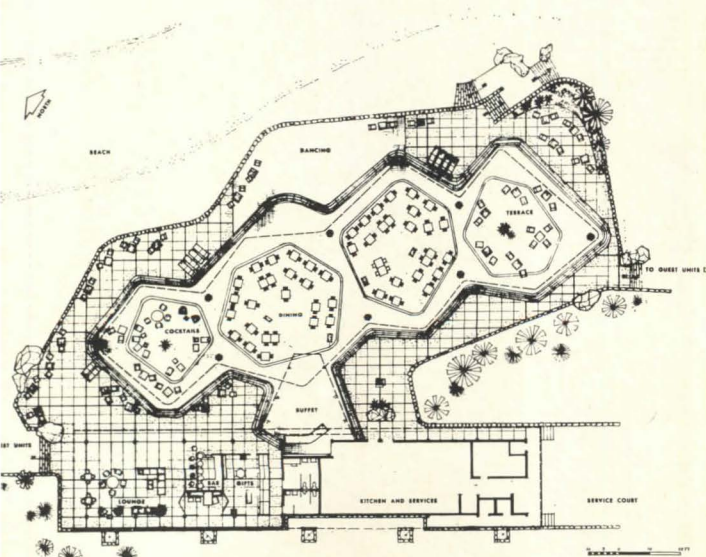
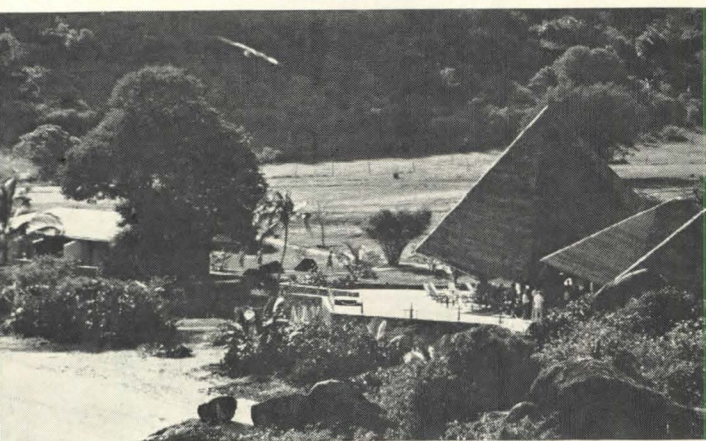
Virgin Gorda, second largest of the British Virgin Islands, resembles in profile a hefty woman (ergo its name: "Fat Virgin") lying on the surface of the sea. Just about where the lady's cleavage would be is a classically Caribbean arc of palm-fringed sand called Little Dix Bay.

Last year, a 50-unit resort sponsored by Laurance Rockefeller opened here, dedicated to relaxed, informal vacationing. Just as the pulsating pleasure domes of Miami reflect the frenetic one-upmanship that passes for fun in that Babel, so does the low-key, ingratiating architecture of Little Dix Bay invite a leisurely sneakers-and-shorts existence. Tippetts-Abbett-McCarthy-Stratton of New York were architects and engineers.

Thirty guest units are in hexagonal buildings divided into two guest rooms. A number of these are raised on stilts for views and breezes, thus creating lower-level terraces (see plan). The remaining 20 units are in groups of four in low buildings along the edge of the







Plan of central dining area



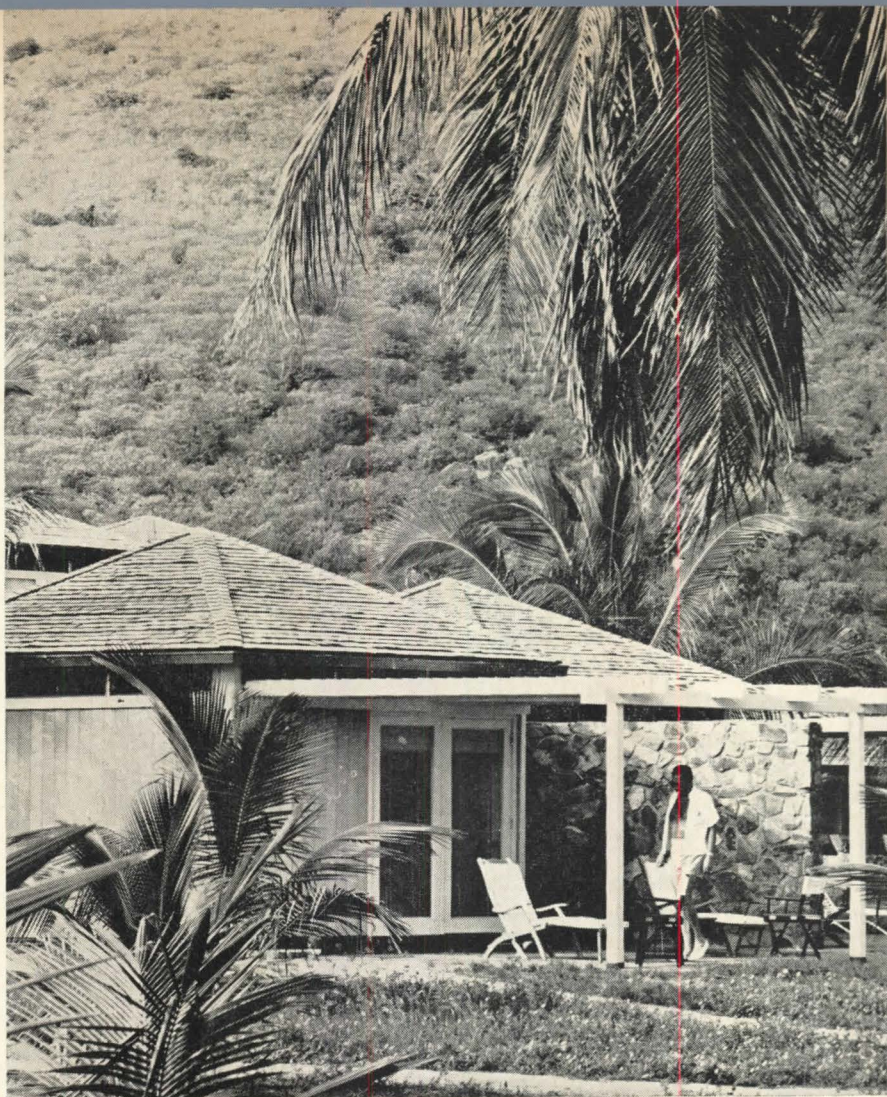
beach, well shaded from the sun by deep roof overhangs.

At the center of the group, which follows the crescent of Little Dix Bay's shoreline, is the dining area, a series of three pyramidal roofs over a free-form area that includes dining, drinking, dancing, and terrace spaces. The form of the building echoes the surrounding conical hills. (A similar form was used by Costas Machlouzarides in his Sierra Leone Pavilion—p. 80, OCTOBER 1963 P/A—at the New York World's Fair to evoke the mountains of that country.) Framing of the structure is purpleheart from British Guiana, with the largest member measuring 12"x14"x40'. Wallaba roof shingles, also from British Guiana, will weather to silver gray. The entire building is open to the air, with canvas draw draperies provided to keep out direct sunlight or sudden showers.

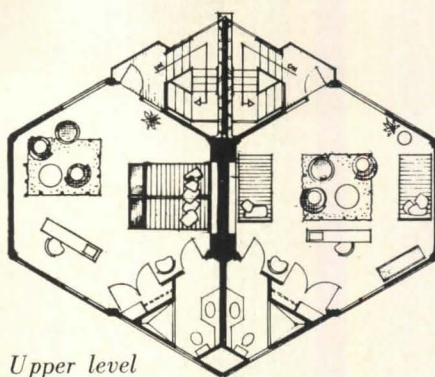
Materials throughout the resort reflect the sophisticated simplicity that gives it its main character: woods, stone, tile, shingle, wicker and cane.

Since this was the first development on Virgin Gorda of any complexity—there were no previous water, telephone, or power supply provisions—the architects had to devise ways of furnishing these conveniences from scratch. An experimental solar distillation plant for fresh water was tried, but techniques have not yet been advanced to the point that the system could be relied upon exclusively. Water is now obtained from a low-temperature, low-pressure sea water evaporation process and from a rain water collection system. Electricity is supplied by diesel-powered generators. A sewerage treatment plant allows the effluent to be used for irrigation.

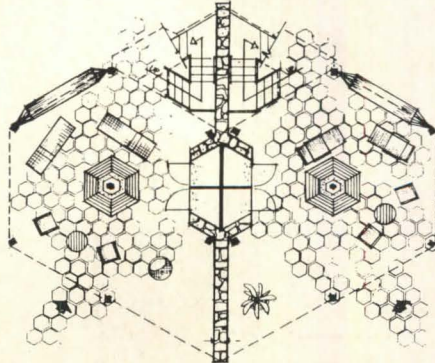
For people who need not be in a constant state of activity to be convinced that they are indeed on vacation, resorts such as Little Dix Bay are a welcome invitation to unwind from today's pressures. As such, they are perhaps the closest reminders of the old boarding house on the lake or the rough cabin in the mountains of our youth.



Beach-side guest unit (above). Raised units (below and facing page).

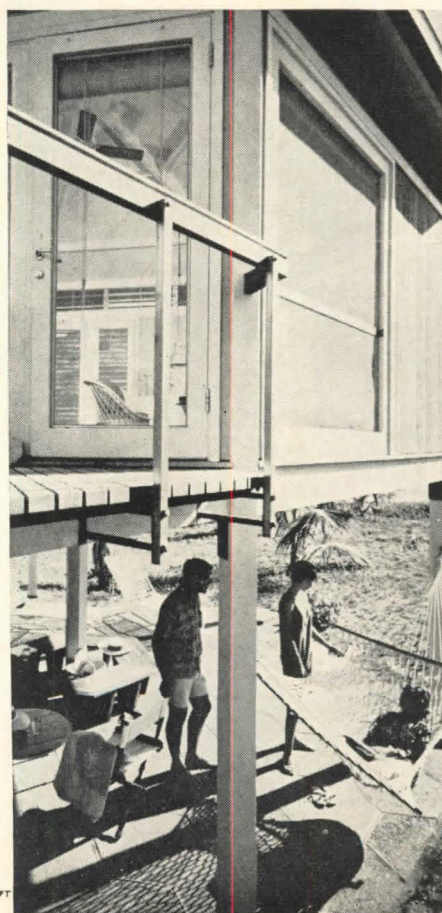


Upper level



Lower level

5 0 5 10 FT





Industrial Ceiling Economy



BY WILLIAM J. McGUINNESS

Advantages of using a suspended flush ceiling, as compared to an exposed ceiling in a one-story industrial building, are discussed by a practicing mechanical engineer.

It has recently been demonstrated that a one-story industrial building can be provided with a suspended flush ceiling at lower cost than if it were omitted and the structure left exposed. The thermal qualities are equivalent and the visual and acoustic characteristics are better.

In 1961, the Delevan Electronics Corporation of East Aurora, a suburb of Buffalo, outgrew its plant and built a new one in a rural area of town. The manufacturing processes of this company are of a precise nature. It was essential, therefore, that a clean, comfortable, and well-illuminated environment be provided for its personnel. Visual comfort and control of the ambient noise level were considered important. Economy appeared to dictate the usual industrial approach to planning—a 16½-ft story height, good insulation above the roof deck, and luminaires suspended below the exposed roof structure. Full year-round air conditioning was part of the program in which a system of ducts above the luminaires would serve diffusers supplied

from rooftop units. Architect Howard Bell, with company president Ken Richard, set out to plan something better than this stark industrial scheme, and, if possible, achieved.

Bell made two designs for exploratory bidding. Design A (*shown*), the preferred one, would employ a ceiling suspended at a 14-ft level. A furred grid receives 48-in. square textured acoustical ceiling panels of 1-in. thick Owens-Corning Fiberglas. Flush diffusers, sprinklers, and strip fluorescent luminaires, 8' x 16" of the continuous, recessed ventilated-troffer type, were planned. The entire ceiling assembly would be blanketed above by 2-in. glass-fiber batts. The insulation above the roof deck would be held to a minimum ½-in. thickness and function mainly as preparation for the built-up roofing. The space between roof and ceiling assembly would be vented through the walls.

Design B, the conventional one for factories, included 2¾ in. glass-fiber insulation above the roof deck, suspended luminaires with sprinkler and ducts systems visible below the roof structure, and no acoustical treatment.

Bids were taken from four contractors. Three of them indicated a saving of about \$2,000, if design A were used, including the suspended ceiling. The owner

and architect decided to employ design A at this lower cost. A number of specially studied considerations not mentioned above, but now to be discussed in detail, made the saving possible.

In design A, the unseen roof structure was treated by asphalt-dipping the steel joists and shop-coating the metal deck. The cost was less than if the joists were prime painted, and both joists were deck sprayed with undercoat and semigloss enamel. The latter was necessary in design B. The careful tooling of the interior masonry joints of the walls and two finish coats of paint were stopped at the 14-ft height of the suspended ceiling. Partitions, in a similar manner, were braced at this level instead of being carried to the 16½-ft roof deck and fitted neatly around the joists. Above the ceiling, BX conduit was used instead of the more expensive metallic tubing that would be necessary if it were visible.

In addition to the dollar saving, quality dividends were acquired. The smooth ceiling is easily cleaned and prevents dust from falling to the work area from unavoidable accumulations above ducts and luminaires. Disturbing visual contrast is lessened by the bright flush ceiling as compared to the dark appearance of the voids above suspended fixtures and ducts. Though both schemes would afford 100 ft-c, design A allowed direct dispersal of ballast heat to the vented space between the ceiling and the roof; in design B, this heat added to the burden of the cooling system because it originated within the conditioned space.

Both designs were planned for a better-than-average U coefficient of 0.09 through the roof. In design A, this was met by the combination of the glass-fiber ceiling, resistance (R) of 3.00, and the insulation blanket, neglecting the rigid roof insulation above the vented space. The thermal performance in summer is better because of this vented attic. Acoustic sound reduction is effected by the ceiling panels. The hard soffit of the steel deck would have been acoustically useless. Cost of the glass-fiber products was about the same for both designs.

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Flexalum DIVISION, ALCAN ALUMINUM CORPORATION
111 West 50th Street, New York, N. Y.



Protection of Window Glass

BY HAROLD J. ROSEN

Preventing the etching and staining of tinted window glass during the construction process is discussed by the Chief Specifications Writer of Skidmore, Owings & Merrill, New York.

In many instances, new designs create new problems due to the juxtaposition of building materials. Unfortunately, during the design period, and even during the working drawing and specifications phases, these new designs do not necessarily alert anyone connected with the project that certain phenomena will manifest themselves as a result of these new details.

A case in point is the use of exposed architectural concrete, either cast-in-place or precast, that forms a part of the façade as concrete window frames with structural neoprene gaskets and glass. At first glance, it is a seemingly satisfactory design solution without any apparent problems. It is not until the façade has been erected, glazed, and subjected to rainfall that one observes—especially on tinted glass of the heat-absorbing variety such as gray and bronze—a staining and/or an etching effect. These effects occur on clear glass too, but it is less apparent than on the darker glasses.

Such staining (and, in some cases, etching) of the glass is the result of alkalis released from concrete through water that has permeated the concrete after rainfall and then leached concentrated free alkali onto the surface of the glass.

Having thus become aware that alkalis from concrete can etch and stain glass, there are several precautions that one can take to eliminate or to minimize

these effects. Concrete frames at window heads should, wherever possible, be designed so that they do not splay down and back toward the glass. This particular design invites the maximum possible damage to the glass, since it creates a direct wash down the face of the glass. The introduction of edge drips and a second drip as another line of defense should be considered. The vertical concrete frames and sills should not ordinarily be a source of complaint. Sometimes, in wind-driven rains, this same condition might prevail whereby a drip or rabbet might preclude this from occurring.

Concrete that is to be treated with acid, as well as sandblasting, bushhammering, and grouting, should be completed before glazing begins; any loose particles resulting from the above operations should be removed by thoroughly cleaning with water.

During the construction phase, it would be advisable to examine all glass on a periodic monthly basis to detect any formation of staining and/or etching. Where dirt, scum, or other deposits are found during the inspection period, this material should be washed from the surfaces.

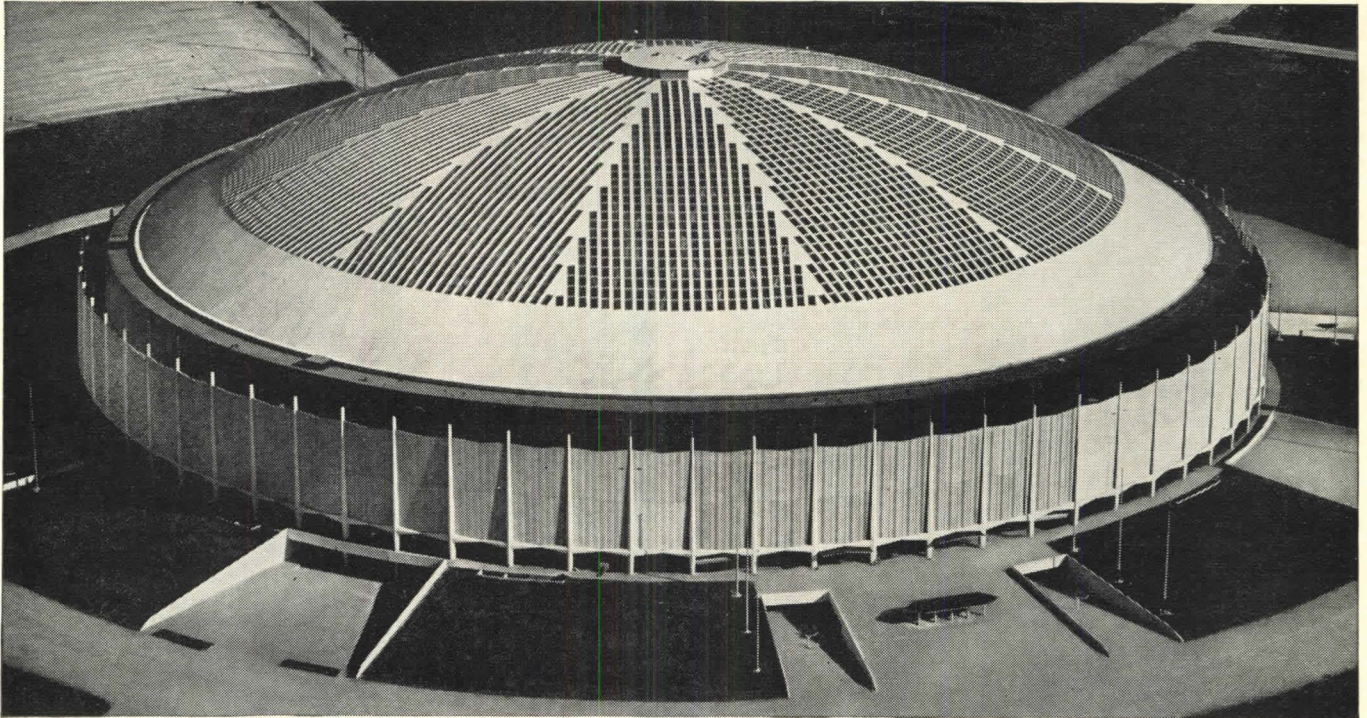
It generally follows that a trouble area gets a lot of attention. Consequently, the following additional recommendations are offered for the protection of glass during the construction phase to reduce the danger of glass damage. Glazed openings should be identified with markers such as tapes or flags that are not in contact with the glass, but which are held in position away from the glass and attached to the framing members. Keeping these markers away from the glass prevents them from photographing through the glass when exposed to the sun be-

cause of alkalinity in the paper or adhesive. Conversely, if the paper or adhesive is slightly acidic, the adjacent glass areas may weather somewhat differently than the glass that is contacted by the protective devices. Thus, a differential marking will result.

For many years, it had been the custom during the construction phase to mark and identify glazed openings with soap and cleaning powders by marking an X or the floor designation on the surface of the glass.

A brand X material that had been used for years without any untoward failures was recently used on a construction project in a similar way. When the building was being made ready for the owner's occupancy, the glass was cleaned. Upon cleaning the glass of the window markings, the sun and/or the brand X material had etched the mark right into the glass, which no amount of cleaning could erase. The glass had to be replaced. It was subsequently determined that brand X had undergone a change in formulation unbeknown to the contractor, and thus had had a deleterious effect on the glass.

When the glass is cleaned at the close of the construction phase, it should be washed and rinsed with a mild, neutral, or slightly acidic cleaning solution. Mild detergents may be used for cleaning if the glass is then thoroughly rinsed with clear water and then dried. Since it is costly to ask for more than one washing during the construction phase, it might be advisable to include a provision for periodic examination of the glass surfaces. Then, if plaster, mortar, paint splatter, or other construction scum is found, it can be removed before permanent damage sets in.



THE ASTRODOME seats 45,000 for baseball, 52,000 for football, and 65,000 for conventions. Six tiers of gaily-colored seats are designed so that spectators enter the Stadium at mid-level and proceed up or down on wide, low gradient ramps or escalators to their seats. 10,428 seats in two stands at field level rotate 35 degrees under power on tracks from baseball position to parallel position for football. Roof is 202 ft. above the playing field.

The ASTRODOME

—called the Eighth Wonder of the World!

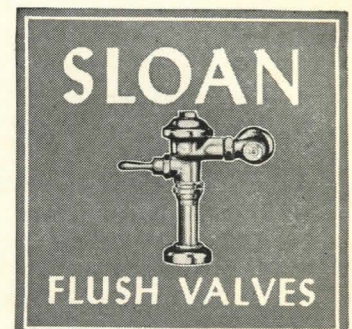
Any description of the Astrodome must, of necessity, begin and end in superlatives. For this colossal \$31 million amphitheatre, rising like a rare jewel from the broad Texas plain seven miles south of Houston, boasts a long list of credits beginning with "first," "biggest," and "world's largest" which defy the imagination. Here are but a few:

- Largest indoor arena in the world
- Largest clear-span building ever constructed
- World's largest air-conditioned stadium
- First major league baseball stadium with a roof on it
- World's largest electrical scoreboard (cost: \$2 million)
- First all-purpose, weather-free combined sports stadium and convention center

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Discharge of Contractor and the Construction Contract: Part 1

BY BERNARD TOMSON AND
NORMAN COPLAN

In the first of two articles, P/A's legal team discusses a recent case in which a contractor was prematurely discharged for default in performance of the construction contract.

When a contractor's services are prematurely terminated because of a default in the performance of the construction contract, questions will undoubtedly arise as to the respective legal rights and liabilities of the parties involved. In such a situation, the status of the architect who certifies that such termination is justified, the relationship between the owner and the contractor's bonding company, the position of subcontractors who are requested to continue performing, the validity of the owner's action in discharging the contractor—all may be subject to question or dispute. The legal consequences that flow from the termination of the contractor's services will depend upon the provisions of the construction contract, the law of the state in which the project is being constructed, the legal relationships that are created subsequent to the termination, and, of course, the actual facts as to whether the contractor's performance was improper or inadequate.

A recent case in New York is illustrative of some of the issues that may arise from the discharge of a contractor (*Tibbetts Contracting Corporation v. O & E Contracting Company, Inc. and Vioe Realty Corp.*, 15 N.Y. 2d 324). This case involved a contract between a real estate corporation and a general contractor for excavation, grading, and drainage work on property the owner was developing for lease to S. Klein Department Stores, Inc. The contractor subcontracted that portion of his work that involved the laying of drainage pipes. In March 1959, the general contractor removed his equipment from the job site, and on that basis and other alleged breaches of the construction contract, the owner declared the general contrac-

tor in default. The subcontractor, however, completed the drainage work after such declaration of default. The subcontractor, who was not paid for his services by either the general contractor or the owner, filed a lien against the owner's property and commenced an action to foreclose the lien. The owner instituted an action against the general contractor for damages arising from breach of contract. The general contractor counterclaimed against the owner for amounts alleged to be due for work he had performed under the construction contract and for damages for alleged breach of contract on the part of the owner in terminating the general contractor's employment. These actions were consolidated, and after trial judgment was rendered in favor of the subcontractor, foreclosing his lien, together with a deficiency judgment against the owner, a judgment was awarded to the general contractor against the owner for monies due him and for damages.

Upon appeal to the Appellate Division of the Supreme Court of the State of New York, the trial court's judgment in favor of the general contractor and against the owner was reversed, the Court finding that the owner was justified in finding the general contractor in default because of the general contractor's failure to comply with the owner's demand that he resume performance of the contract and his concurrent removal of its equipment from the job site. This Appellate Court also reversed the judgment in favor of the subcontractor on ground that, since the owner was justified in declaring the general contractor in default, there was no money owing by the owner to the general contractor and thus "at the time of the filing of plaintiff's notice of lien no funds were in existence to which the lien could attach; hence the lien was unenforceable at least through plaintiff's subcontract with the general contractor."

The Appellate Court, however, in order to prevent the unjust enrichment of the owner who accepted the subcon-

tractor's continued services following the discharge of the general contractor, ruled that the subcontractor was entitled to a judgment against the owner for the value of the services rendered on the doctrine of quasi-contract, or constructive contract implied in law, for the work done and materials supplied by the subcontractor. The Court reached this conclusion on the basis of its finding that the owner "permitted plaintiff to perform under its subcontract and . . . fostered and promoted such performance by the subcontractor." The Appellate Court, in order to grant the judgment in question in favor of the subcontractor, permitted the subcontractor retroactively to amend his complaint to allege a quasi or constructive contract implied in law with the owner.

A further appeal was taken to the Court of Appeals, the highest court of New York. Upon this appeal, the determination of the Supreme Court, Appellate Division, was reversed and the original determination and judgment of the trial court was reinstated. The Court of Appeals ruled that the rights of the subcontractor were to be determined by the validity of his lien and that there was no contract implied in law between the subcontractor and the owner. The Court said:

"Having subcontracted to do its part of the work under the general contractor, and having billed the general contractor (not the owner), the subcontractor cannot look to the owner for payment except through the general contractor. . . . Nobody contends that there was any express contract between the owner and the subcontractor. No contract between them could be implied in fact, inasmuch as the owner has disclaimed any such relationship throughout and the subcontractor acquiesced in that interpretation by billing the general contractor only for the drains which it layed under contract with the general contractor, and billing the general contractor under the subcontract after the work was completed. That was not done by mistake, either of fact or of law. The subcontractor knew of the alleged termination of the principal contract. . . ."

In next month's column, we will continue our discussion of this case.

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BOOK REVIEWS

A Strange Freedom Creates Slums

BY FORREST WILSON

LET IN THE SUN. By Woody Klein. Published by The MacMillan Co., 60 Fifth Ave., New York, N.Y., 1964. 297 pp., \$5.95. The reviewer, an Associate Editor of P/A, is also an accomplished artist, as the drawings on this page indicate.

As long as the rich and the poor are equally privileged to live in rat-infested tenements, it will be difficult to persuade



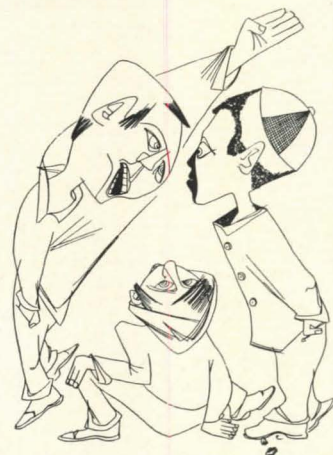
society that it should assume responsibility for the existence of slums. Nonetheless, Woody Klein, a former newspaper writer, traces the life of a tenement through its 60 years of degeneration in an effort to affix that responsibility. He writes an objective account; his compassion is evidenced by his very act of writing the book. He does not attempt to embellish the horror of slum dwelling. He sets responsibility upon the evidence provided, rather than evoking sympathy for the building's occupants.

Let in the Sun is a documentary account of a building that shortly after the turn of the century symbolized hope for the underprivileged of the day. The house was built in 1906 in a pleasant neighborhood—East Harlem. It benefited architecturally from drastic housing reforms adopted just prior to its design. To most of its occupants, it represented

their escape from the slums of lower Manhattan to a pleasant neighborhood in a multiple dwelling provided with the mandatory improvements of the new housing laws.

In affixing responsibility for slum conditions, Klein is relentlessly objective in his report about the people involved—both the exploiters and the occupants of the building. The roles of the politician, the landlord, the slumlord, the reputable bank, the speculator, the law enforcement officers, and the city agencies in the perpetuation of the slum are well documented. The author is explicit in his reference to politicians, yet, ironically, the book's Foreword was written by a prominent politician now seeking office.

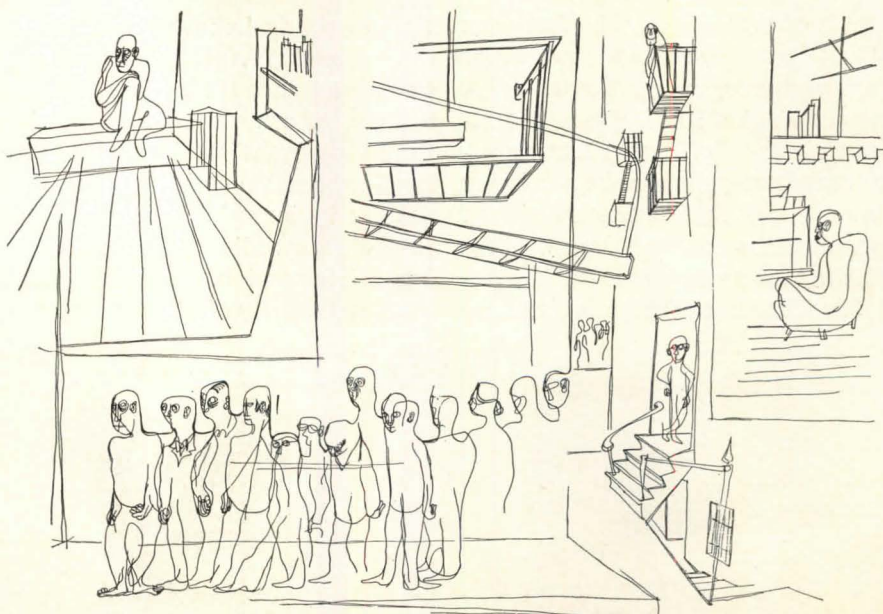
As the author reports, the ills of our society are focused in the horrifying conditions of our slums, so that it comes as no surprise that we are all guilty. But there are two groups that are guilty—slum dwellers and non-slum dwellers, the marked difference between them be-



ing that the former share only in the guilt, not the profits.

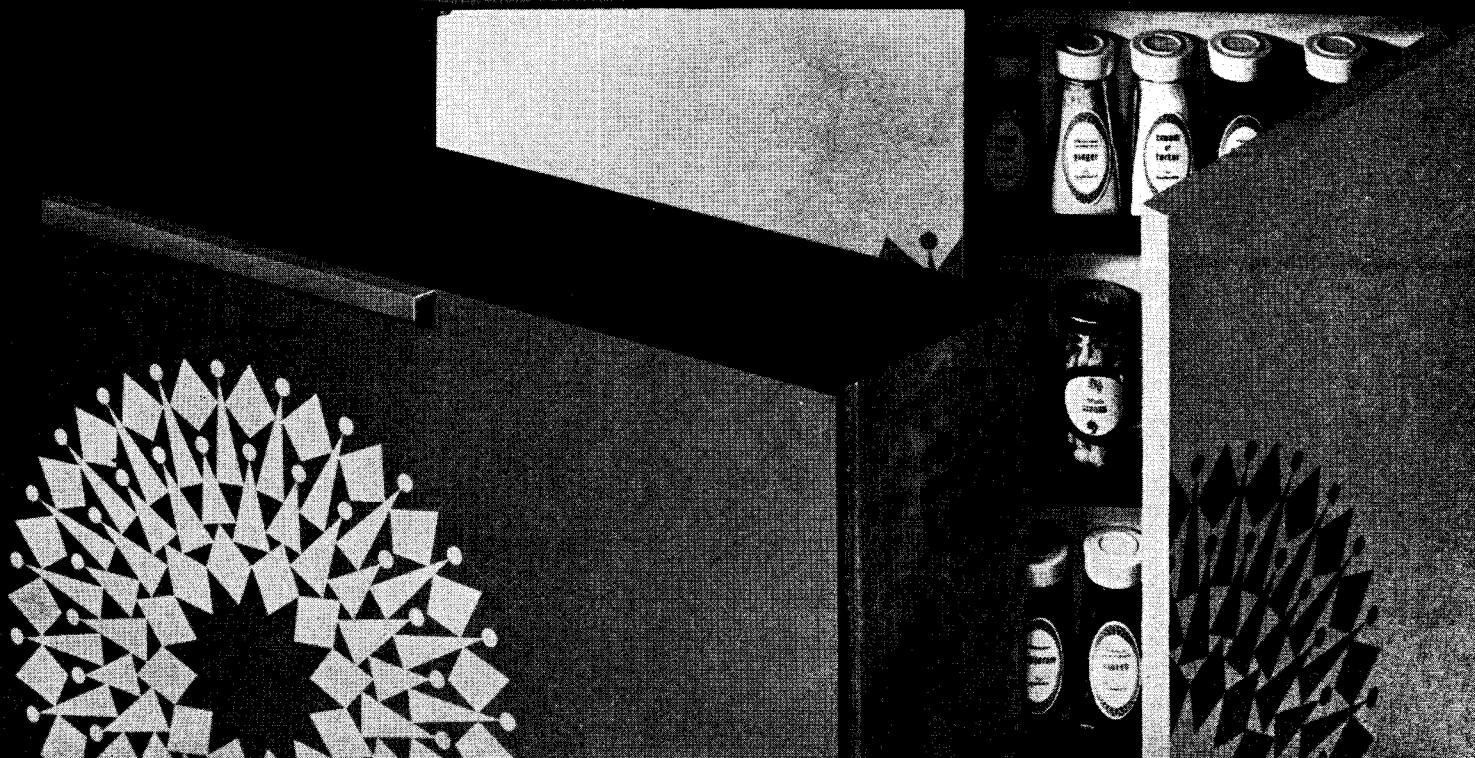
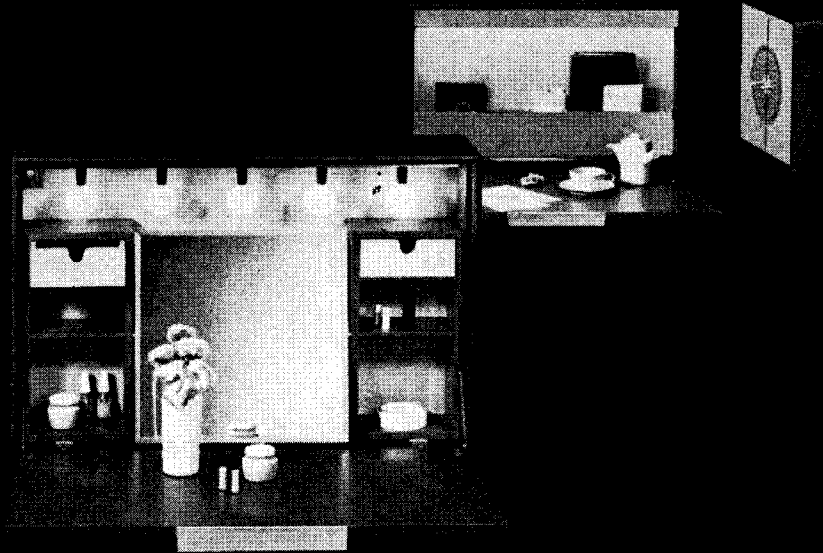
Most architects will agree with the author when he blames the lack of city planning as a major factor in the creation of slums. His use of Churchill's quotation, "We shape our buildings and afterwards our buildings shape us," illustrates another area of responsibility—the architects'. At a time of expanding personal responsibility for the architect, it is reasonable that he assume expanded moral and social responsibility for his

Continued on page 208



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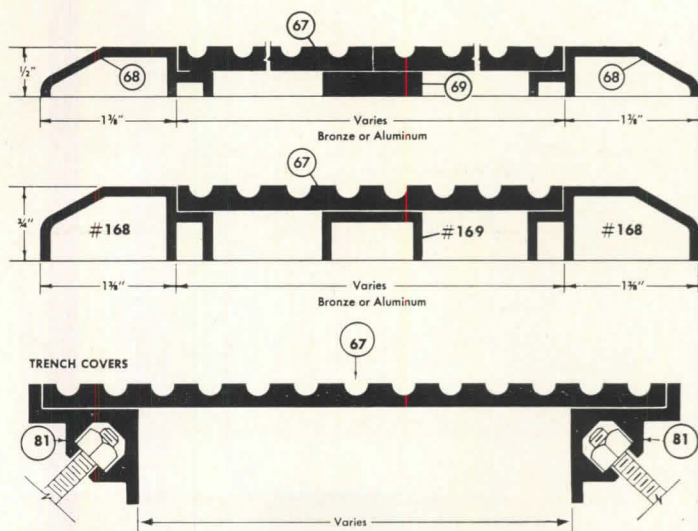
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Continued from page 202

designs and their environment.

Sixty years after the completion of the house the author describes, we are again attempting a reform of our building codes. It is unfortunate that much of present-day comment seems so reminiscent of 1906. Code revision can undoubtedly herald an era of improved design and planning, but it is not assured. The immoral speculator and designer are usually quicker to benefit financially from the necessity for low-income housing than responsible architects and builders. And since we cannot legislate morals, we might well heed the suggestions made by Klein at the end of his book.

Let in the Sun concludes with a series of 10 excellent proposals to implement the author's premise that "housing must become a social responsibility in the same sense as education and health." Klein feels that if our laws permit us to quarantine and treat communicable diseases, then the slum should not be allowed to languish and infect the entire society. One must admit that the concept of freedom of choice that allows anyone to live in diseased housing is strange indeed. The following are five of Klein's proposals:

1. Provide a deputy mayor or assistant city manager for housing in each major municipality.
2. Create and properly staff a central inspections department to enforce local building and health laws.
3. Take the profit out of slums by legislative amendments to the Federal income tax laws.
4. Relocate families on welfare from privately owned slums to rehabilitated municipally operated dwellings.
5. Expand the public-housing program; construct more units; combine low- and middle-income families in the same projects; provide complete community facilities, such as stores, garages, schools, and churches.

The author makes a powerful indictment against the perversion of majority thinking that allows us to assume that the slum dweller's housing is of his own choosing—an assumption as logical as that a sane man would willingly contract leprosy and infect his wife and family. Our society cannot allow itself the luxury of rampant disease among the rich or poor, for the slums represent a social—a communicable—disease. However, if the slum disease can be checked among the underprivileged, it is fairly certain that the smart set will not become in-

Continued on page 212

a climate for every occasion



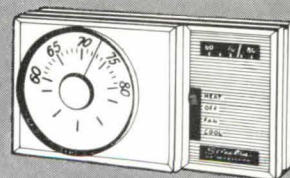
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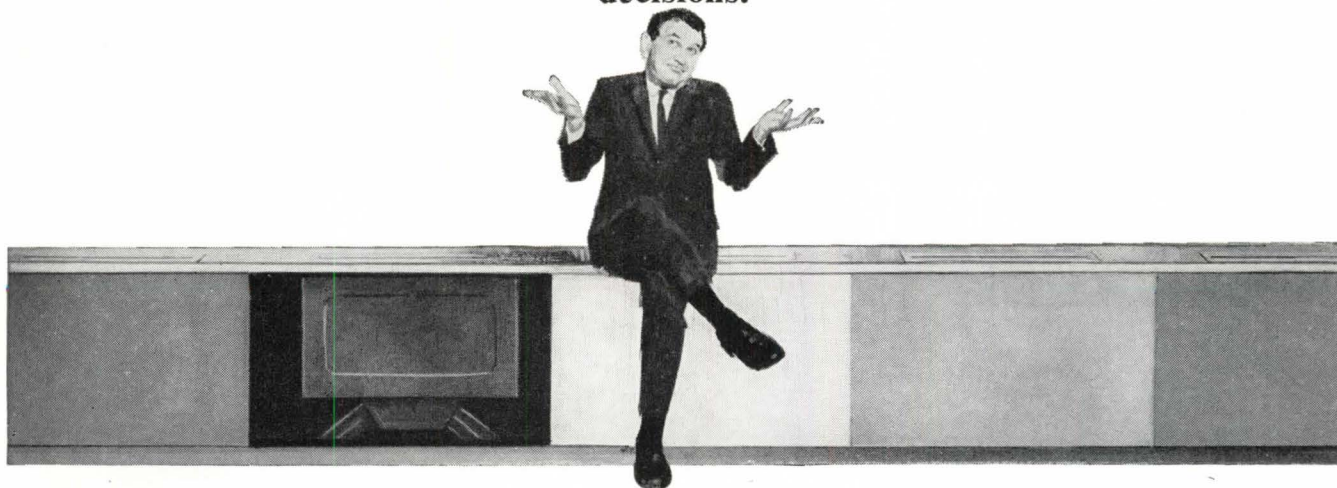
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Continued from page 208

flicted, although it would be fascinating to see with what haste measures would be adopted to clean up the slums if they spread from upper to lower Park Avenue.

The Password is Money

BY ELLIOTT WILLENSKY

NEW YORK: PEOPLE AND PLACES. Photographs by Victor Laredo. Text by Percy Seitlin. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1964. 191 pp., illus., \$12.50. The reviewer is a prac-

ticing architect and director of Cornell University's New York City Program, a branch of the College of Architecture concerned with the study of urban problems.

America is coming of age. The city is very much "in." "It's a nice place to visit but who wants to live there" is disappearing from polite conversation.

To help this wave along, or perhaps to ride its crest, a multitude of picture books on various cities has recently appeared. This effort by photographer

Victor Laredo and writer Percy Seitlin is devoted to possibly the most maligned city of all—New York. Its approach is to show the "other" side of New York: Katz's Delicatessen, the outdoor celebration of San Gennaro, the cobbled streets and ornate decoration of the Washington Market. The text is a personal memoir of the City, dealing with the issues of traffic, commuting, growth and change, with New York's girls and ladies, with "Sam Flower," a "printner" (*sic*) in the city's vast publishing industry.

The photographs are about equally divided between close-ups of obscure architectural ephemera and friendly shots of New Yorkers at work and at play. The reproduction by gravure in Holland is superb. The narrative consists of a series of sensitive and incisive essays with more than an average involvement in questions of architecture and planning.

This is a sentimental volume and a record of a New York that is beginning to pass from the scene. Regrettably, its approach is an overly romantic one—particularly in its photography. No city ever stops in quite the ordered, carefully composed, statistically picturesque way Laredo's camera has stopped New York. Dynamism and variety and contrasts cannot be removed from the city, not even for the purposes of giving serenity to the pages of a book.

New York: People and Places succeeds visually in pulling charming vignettes from the unpredictable, ever-changing, indefinable fabric which is the city. To fall in love with these in the pages of a book is not to love the city but rather to keep it at arm's length. I doubt that this was the photographer's intent, but I'm afraid it will be the book's effect.

The essays, on the other hand, penetrate somewhat deeper into the plasma of the urban organism. Seitlin ends the book with this paragraph: "Most of what you can see, hear, smell or touch in New York you can get for money, including respect and even love, the best that money can buy—everything, anything and nothing. If you can solve the mystery of money—how it came to be, what's good about it, what's bad about it, why people do what they do to get it or lose it, how they manage to live with or without it, why they do or don't do what they do or don't do with it or without it—you'll be on your way to solving not only the mystery of money but the mystery of New York as well."

The wisdom of this observation is indicative of the sharp insights sprinkled throughout the book.

Continued on page 214

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Continued from page 212

Furnishing Pictures

BY MARIO AMAYA

AN ILLUSTRATED HISTORY OF FURNISHINGS FROM THE RENAISSANCE TO THE 20TH CENTURY. Mario Praz. Translated from the Italian by William Weaver. George Braziller, Inc., 215 Park Ave. South, New York 3, N.Y. 1964. 396 pp. illus., \$25. Reviewer is London art critic (Apollo, the Financial Times) and is writing a book on Art Nouveau for Dutton Vista. His book on Pop Art will be published in the fall, by Studio Vista.

In an age when so many highly paid interior designers dictate through glossy magazines and chic shops what our furnishings should be, it is refreshing to see in Mario Praz's colored picture-book that, up until the end of the 19th Century, interiors were mainly the product of both necessity and the householder's taste, rather than the whim of the decorator.

With a few notable exceptions of certain architect-designers such as Robert Adam, who saw the interior as a unified complex of architecture, decoration, furniture, and fittings (he often designed

door handles and light fixtures), the history of furnishing, until the 20th Century, is more a matter of social conditions, class differences, personal taste and needs, private interests, and a love of luxury. With the appearance of Charles Rennie Mackintosh, Frank Lloyd Wright, and later Mies Van der Rohe—all of whom designed furnishings for their houses—we find interiors tailor-made to architectural specifications without much consideration of the clients' class, comfort, or pleasure.

Although he takes us into the 20th Century, Praz fails to point out the new differences between interior designer and architect-designer. Moreover, he fails to mention that, nowadays, both possess great influence and power over customers who have less and less to say about what they want to live with, or how they want to live. One indication of how far things have gone is the oft-told story of the architect-designer, who, when asked to find a place for a reading lamp in a newly completed hard-edge décor, coolly advised his client to do his reading at the public library.

Praz's hefty volume attempts to trace the history of furnishings through eight centuries by showing reproductions of works of art, rather than the original designs, plans, or documents, or without any particular thesis. The running commentary that accompanies the many paintings, watercolors, drawings, or etchings (we are never told which is which) is limited to rather superficial descriptions and some slick sociological observations. Unfortunately, paintings and watercolors, charming as they might be, are not the most explicit way to relate social history—a thousand pictures do not always equal one well-thought-out idea. One feels much has been missed by Praz's self-restriction to works of art for illustration, many of which are what "the trade" calls "furnishing pictures."

We begin with a Roman interior as seen in a wall-painting at Pompei; then we leap 1200 years forward to Pietro Lorenzetti's version of a bedroom in a Nativity (why not Duccio or Giotto, both of whom were more attentive to interiors and their furnishings?). We move then to the Renaissance through Carpaccio, del Sarto, Ghirlandaio, and Memling. (How could the author resist Mantegna's *Camera degli Sposi* in Mantua, which provides not only a description of furnishings, but actually exists as a monument of interior decoration of the period?) We are whizzed through the 17th Century with Frans Franken II, de Hooch, Vermeer, and de Witte (without so much as

Continued on page 220

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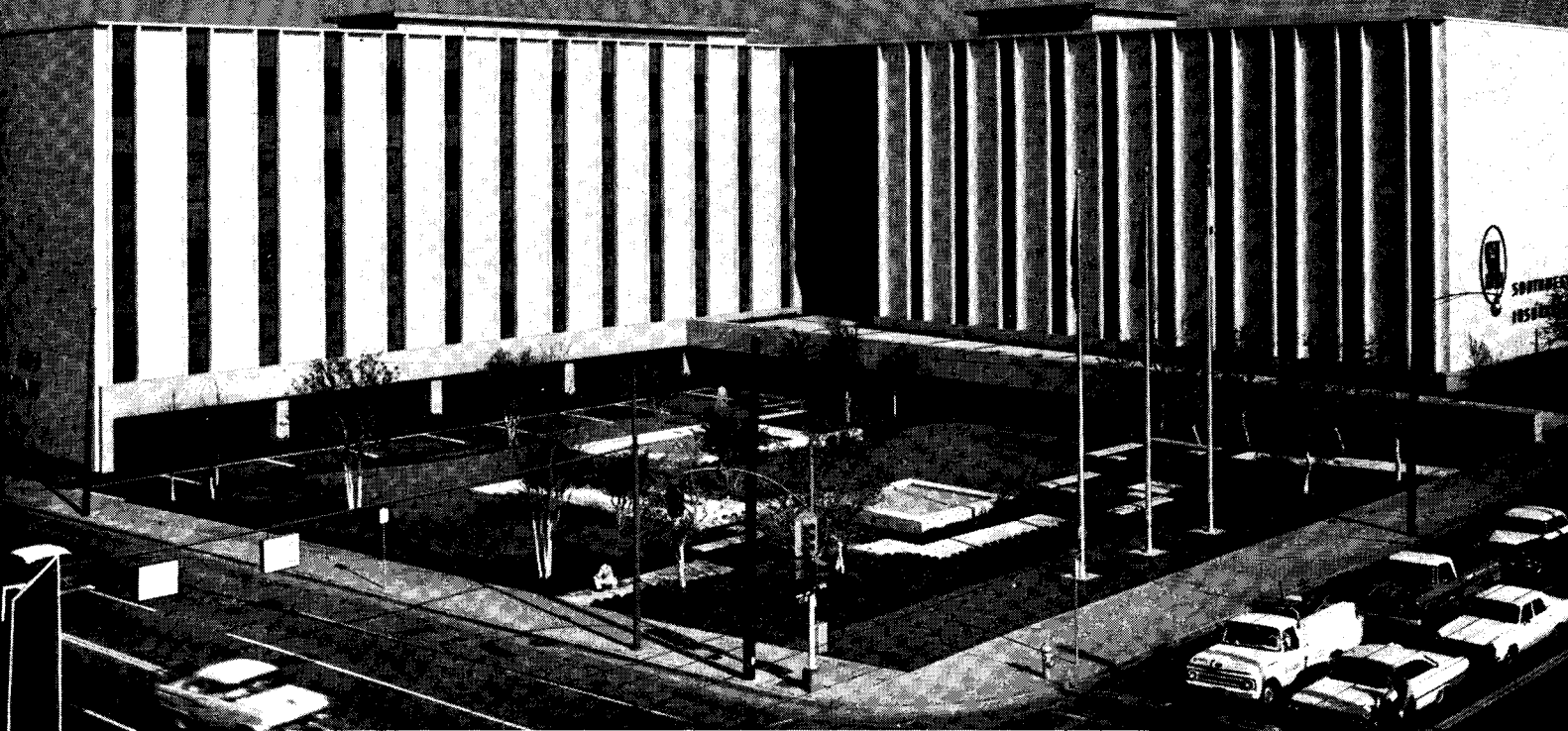
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Continued from page 214

a glance at Kent's double-cube room at Wilton with its made-to-match furnishings), and we arrive safe and sound at the 18th Century by way of Hogarth, Elias Martin, Zoffany, Boucher, and Tischbein (without one illustration of a Robert Adam interior, although innumerable watercolors by him survive).

Praz, who displayed his knowledge of the 19th Century in *The Romantic Agony*, naturally handles this period more comprehensively and with greater zest; in fact, more than half the plates in the book are of 19th Century views of inte-

riors, many of which belong to the author. There is hardly a 19th Century palace from Berlin to Naples, from the Hague to Vienna, from Marina to Pavlino, from Parma to Laxenberg, that is not illustrated. The dining rooms, drawing rooms, bedrooms and baths of Princess Eugenie, Marie-Louise, Princess Mathilde, Ernest Augustus of Hanover, Queen Elizabeth of Prussia, Queen Theresa of Bavaria, and almost every other royalty in that heyday of modern court life (with the notable exception of Ludwig II of Bavaria, who was one of the most outstanding decorator-mon-

archs of the entire century), are all investigated by the author with something approaching fanatical fervor.

One of the most fascinating aspects of 19th Century royal furnishings after Napoleon was the desire to forego the grandeur and magnificence of the past in favor of a relaxed atmosphere of bourgeois comfort, with large, plush armchairs, slip-covered sofas, moveable tables on which to play parlour games or serve refreshments, and simple hangings and papers. An interesting innovation in German palaces in the 1840's, which today's designers have reinterpreted within their open-plan interiors, is the *zimmerlauben*—a sort of trelliswork screen covered with ivy and growing plants, which marked off a corner of a room, where *son Altesse* could retire to write her "thank you's" or to read the latest Parisian novel.

The rising bourgeoisie and the working classes are not forgotten either, although they are handled somewhat summarily; also, there are some *vie de boheme* interiors represented by Tommaso Minardi's "Self Portrait" in his garret, Ingres in his rooms in Rome, and Rossetti at home in Cheyne Walk, Chelsea. But even though the author is at ease in his period, strange omissions occur: Nothing is said of William Morris, who inadvertently signaled the coming changes of Art Nouveau in the self-consciously decorated room; nor of Whistler, who made dramatic use of the fashionable *japonaiserie*; nor of Tiffany, who changed the decorating taste of a nation.

The author's prosy approach to history, even if it is illustrated, would seem to court danger: His introduction rambles romantically through a series of subconscious free associations (he admits disliking an old professor of his because he owned a rickety Liberty-Style Art Nouveau suite), which lend a strangely subjective air to an ostensibly objective study.

Moreover, although it is true that those who love furnishings are a breed apart—they rarely have an eye for paintings or sculpture—we cannot take seriously the author's contention that "Hypersensitive nerves and a love for furniture are indeed connected phenomena."

In the end, Praz comes to the rather curious conclusion that "the ultimate meaning of a harmoniously decorated house is, as we have hinted, to mirror man, but to mirror him in his ideal being; it is an exaltation of the self."

Is this what his beloved 19th Century royals were doing when they put together those *hinterland* palaces? Or were they

Continued on page 224



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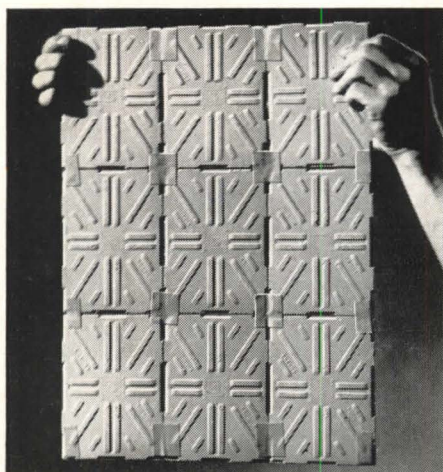


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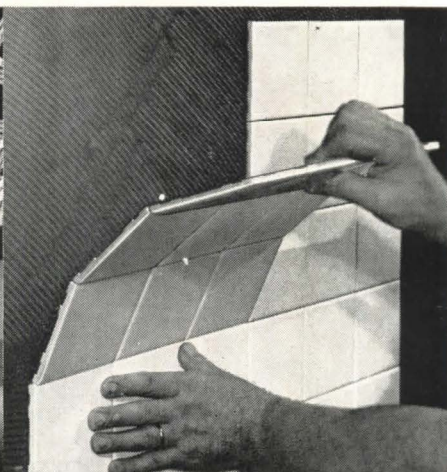
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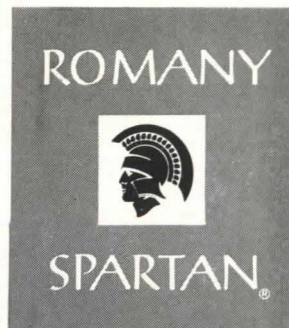
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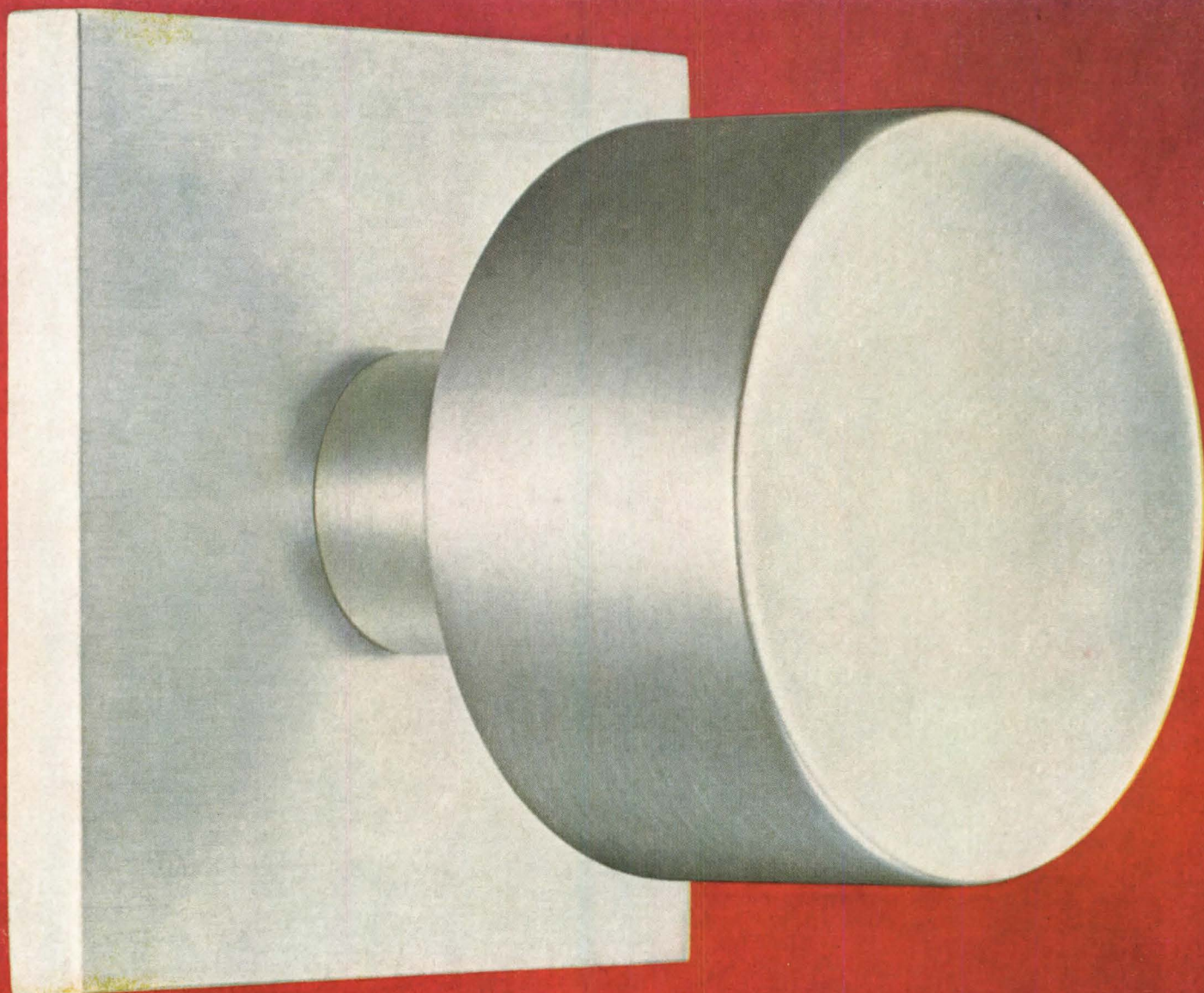
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Continued from page 220

merely expressing their personal preferences and their desire for cozy comfort in an epoch before "ideal" interior-design formulas were invented?

Solutions Dictated by Climate

BY JEFFREY ELLIS ARONIN

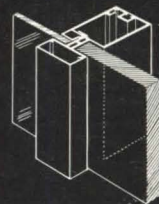
TROPICAL ARCHITECTURE IN THE DRY AND HUMID ZONES. *Maxwell Fry and Jane Drew. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y. (1964, 264 pp., illus. \$17.50) Reviewer is an architect practicing in New York City.*

The underdeveloped nations of the world can generally be found in tropical regions. But whether in Peru or Nigeria, Indonesia or Puerto Rico, India or Mexico, they have one thing in common: their architecture is often very sophisticated. From this point of view, among others, *Tropical Architecture* is very refreshing reading for an architect. It jolts him into examining his own problems in greater depth; it shakes him from the mental state of overfamiliarity with his own problems, from his reverence for outmoded customs and habits; it takes him—via brilliant text and 299 illustrations—on an architectural tour to all corners of the globe. Moreover, the authors speak from experience. This is no mere hypothetical discourse—it is living architecture, and one can see why Fry, 1964 recipient of the Gold Medal from the Royal Institute of British Architects, deserves an even greater place in the sun.

The authors' credo is that architecture is a personal art responding to what its creator brings to it of feeling, knowledge and experience. "What we can do here in treating architecture in the tropics is to attempt to arrange what knowledge and experience we have, and can collect upon the subject, that will augment, define, and perhaps refine the vocabulary that each reader may bring to the creation of new works of architecture."

The first requirement of good architecture is to satisfy peoples' needs—which seem to be the same in the tropics as in temperate zones. "We have never known that people of any class or race knew exactly what it was they wanted of a building until it was done for them. when for a certainty they knew what they did not want, or how far the building fell below what they thought they had wanted." Fry and Drew discuss the social implications of architecture and planning, the advent of industrialization in primitive areas, the great increases in

Continued on page 228



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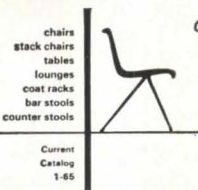
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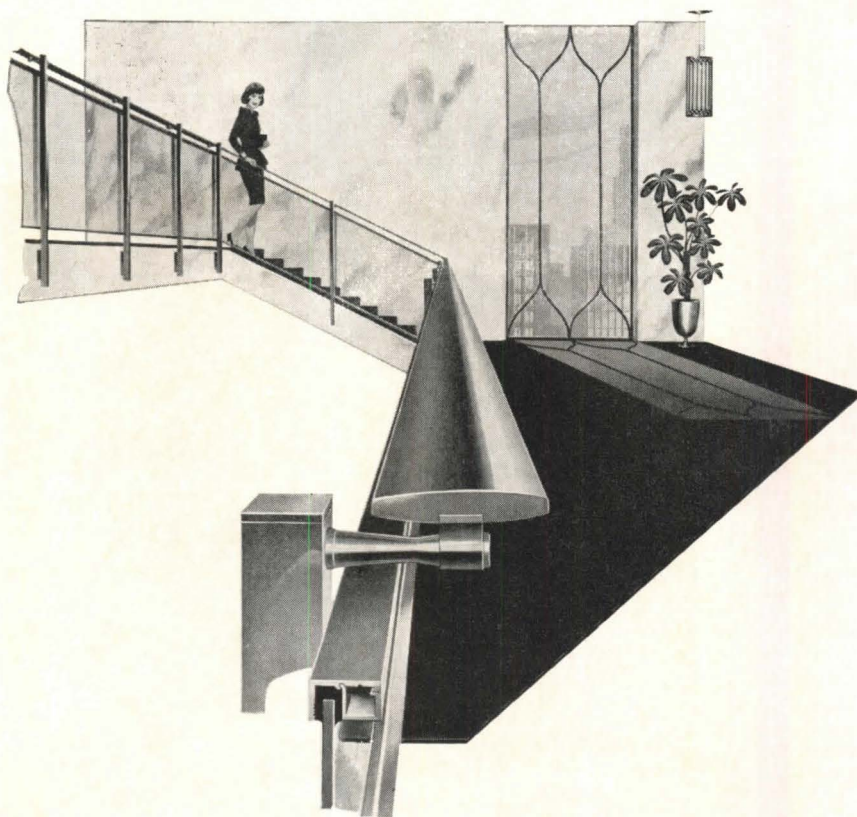


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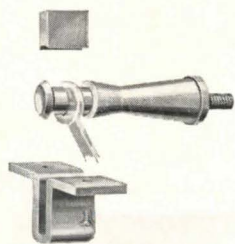
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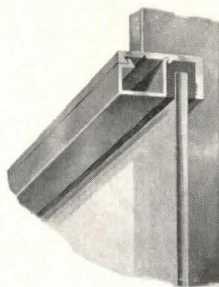
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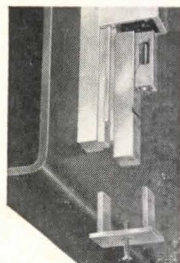
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Continued from page 224

population, the termite and insect problem, and the selection of materials in humid and dry tropics. The result: a book whose title could really be expanded to include not only the influence of the climate, but of the entire environment, on tropical architecture.

Although construction techniques are not reviewed in detail, as in David Oakley's *Tropical Houses*, design techniques are. Numerous recommendations are made for good design under various situations, although certain situations can cause conflicts in design techniques (i.e., techniques for sunshading and creation of breeze conditions). The significant factor, however, and a point I have long maintained, is that many interesting solutions have been created solely because the environment has influenced the design. In other words, a respect for environment is the key to good regional architecture. Whether in housing, town planning, furniture design, civic, commercial or industrial architecture, or in hospitals, the authors consistently illustrate how a recognition of the climate pays off not only in a functional solution but also in an aesthetic one.

Mandatory Reading for Architects

BY WILLIAM M. C. LAM

ARCHITECTURAL PHYSICS: LIGHTING. R. G. Hopkinson. *Her Majesty's Stationery Office, London. Distributed by British Information Services, 845 Third Ave., New York 22, N.Y., 1963. 360 pp., illus., \$10.* The reviewer is a consultant for the coordination of lighting and design, with offices in Cambridge, Mass.

"Whenever we treat lighting purely in physical, quantitative terms . . . we must constantly sit back and think where our calculations are leading us. If they lead us to a design that common sense and experience tell us will be disliked, there is no choice but to examine the design on those grounds and to reject it if it is clearly at fault."

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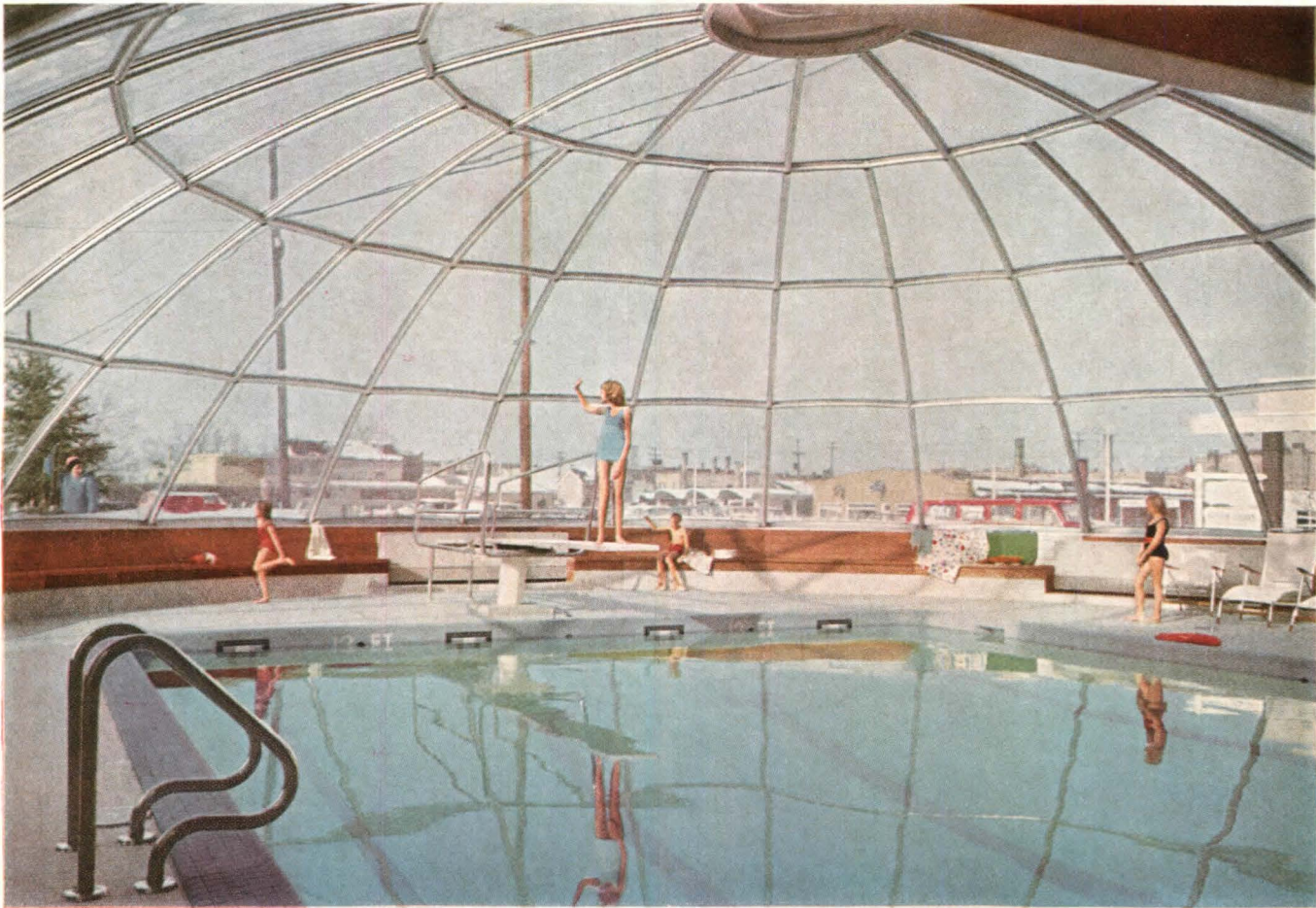
These two quotations indicate the point of point of view from which Dr. Hopkinson lucidly brings together the results of the lighting research he directs at England's Building Research Station. (We should immediately acknowledge our indebtedness to Her Majesty's Government for supporting research of this sort, which

Continued on page 234



ARCHITECT: PAUL HAZELTON, TRAVERSE CITY, MICHIGAN

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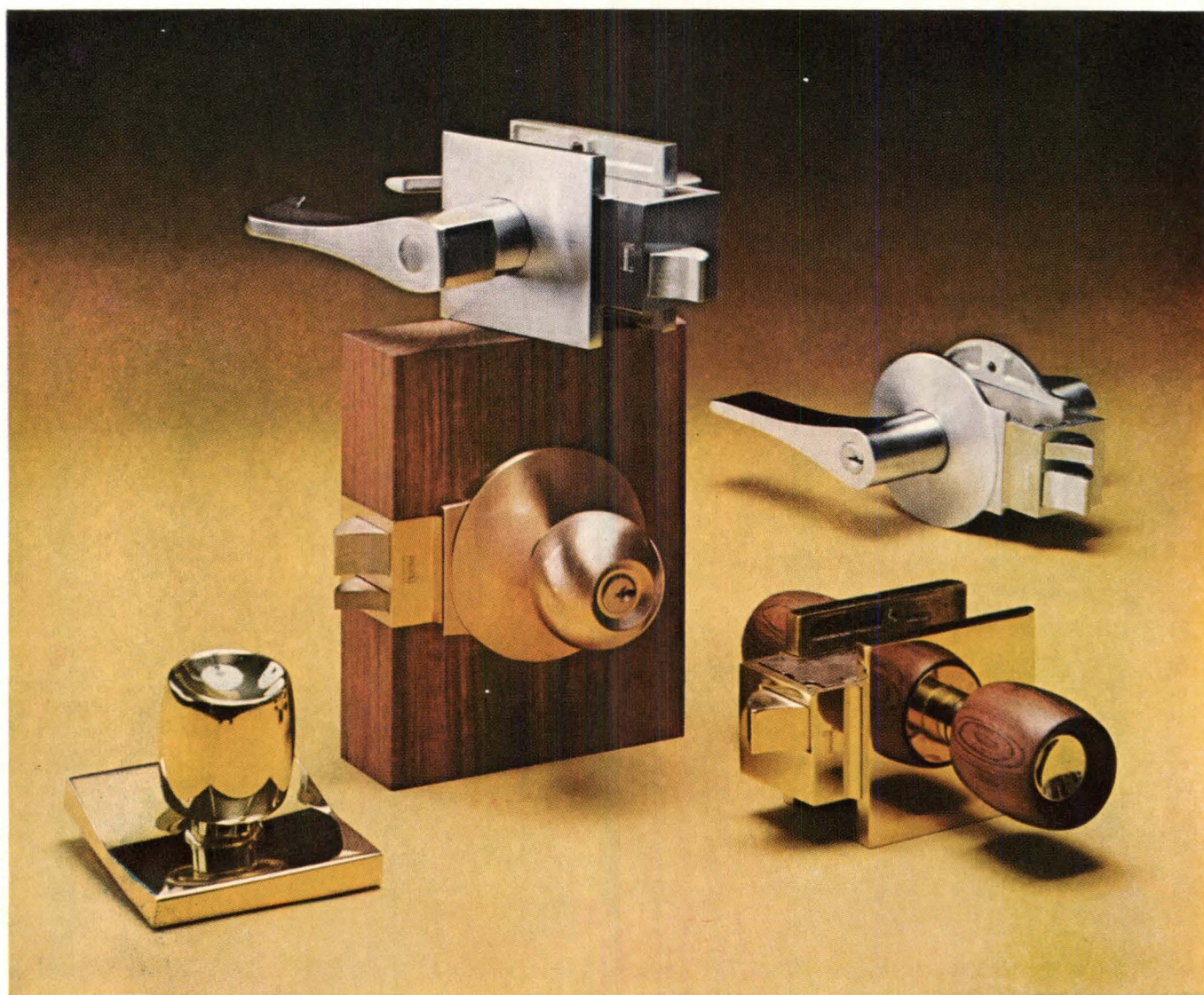
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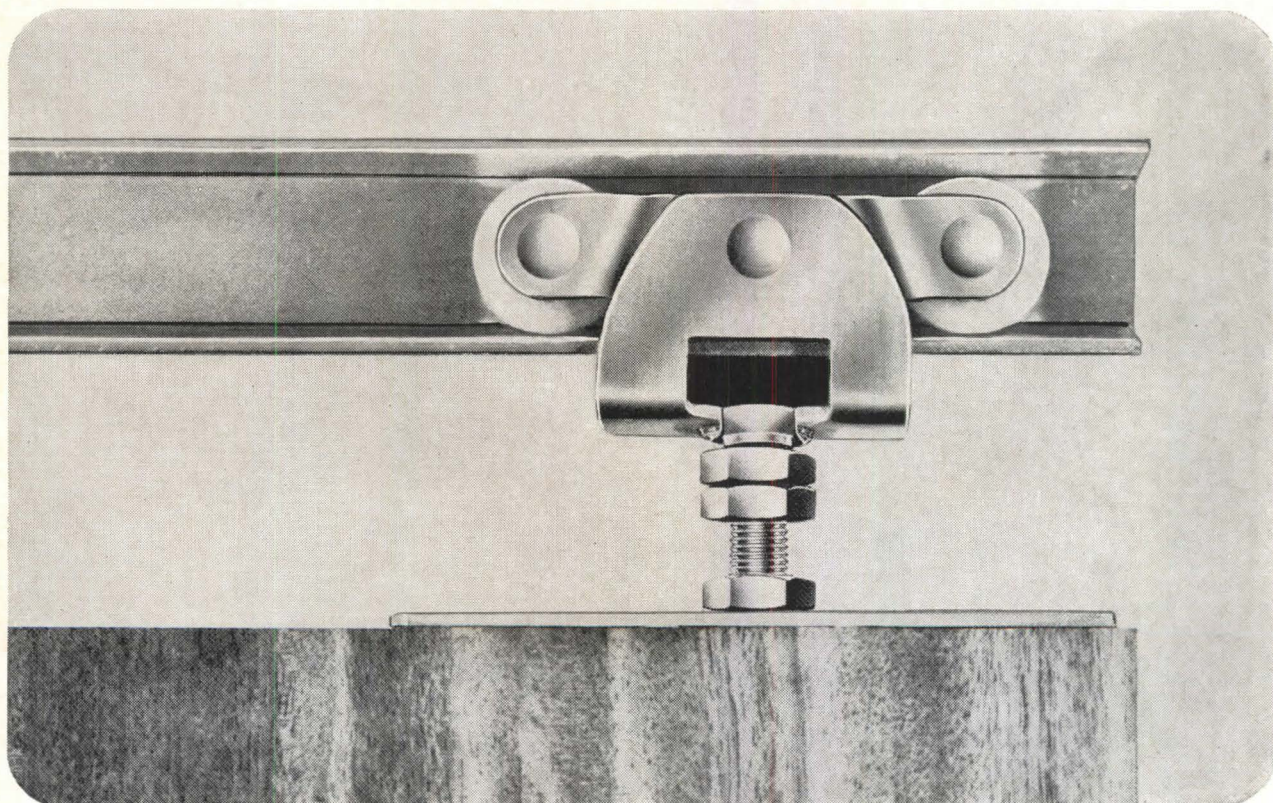
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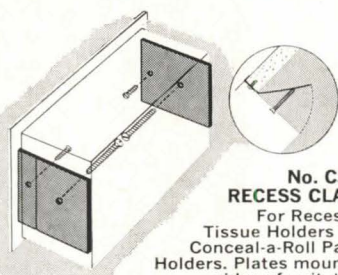
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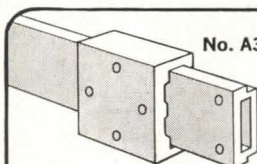
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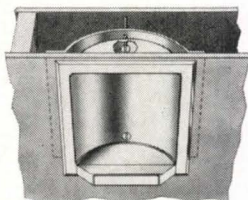
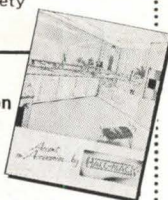
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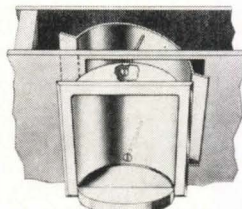
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Continued from page 228

brings together men of varied backgrounds and disciplines to explore the needs of the human being in his environment.) Dr. Hopkinson's work has been largely directed to the problem of developing methods for the determination of reliable subjective judgments from human beings. This book—especially the collection of studies in Part II—will be of interest to environmental psychologists, physiologists, and physicists, as well as to architects and designers.

The first part of the book is of primary interest to architects, electrical engineers, and those who in any way are called upon to pass judgment on lighting design and architecture. There is an excellent discussion on "Light, Vision and Buildings" that will enable readers to gain a clear understanding of the law of diminishing returns as it applies to vision—a law that lighting researchers in this country generally ignore or attempt to repeal. On the basis of this chapter alone, I urge that this book become required reading for every architectural student; for that matter, I wish it could be required reading for every practicing architect and lighting designer.

There are also excellent chapters on daylight and methods of measuring it, with considerable emphasis on the use of models to determine how spaces will look when natural illumination is used. If the model is properly conceived, architects can learn something about the quality of the illumination that cannot be learned by quantitative studies alone. (One wonders if anyone ever looked up from underneath a model of the Houston Astro-dome.)

Interestingly, the British seem much more concerned about daylight than we are in this country, and far less concerned about artificial light levels. Indeed, nowhere in the book are there to be found specific quantitative recommendations for various types of space or work.

One will, however, learn a great deal about the psychology of vision, the importance of glare and distraction, the use of color, and balancing daylight with artificial light. One will also learn that in lighting design, as in other architectural judgments, there are no quick and easy answers. I hope this book will produce a much-needed skepticism in architects when they are told that a particular light level is an absolute requirement.

This book accomplishes a great deal and I highly recommend it. I do have some minor reservations and one major

Continued on page 240

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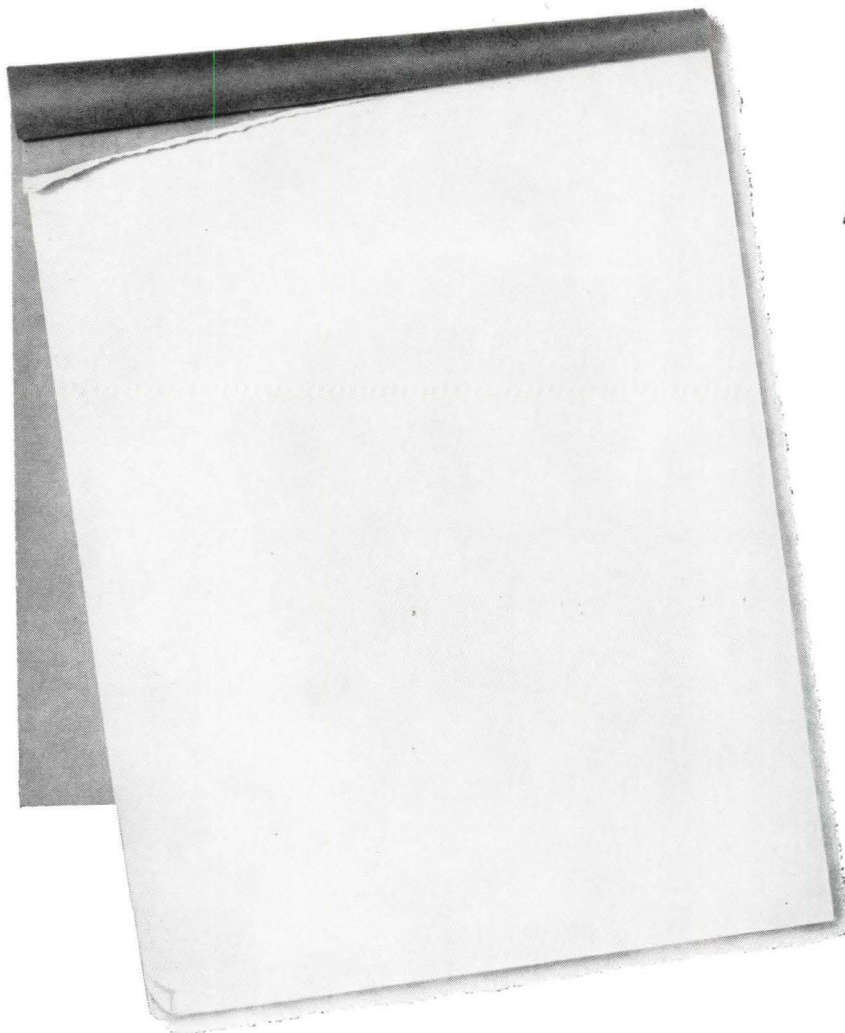
MEMORIAL HALL BUILDING, Stone Mountain State Park, Georgia. Architect: Robert & Company, Inc., Atlanta, Ga.
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Yours sincerely,
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Continued from page 234

regret—namely, that not one of the photographs shows a space that could be considered an example of good architectural design. The book will not provide anyone with interiors to copy, but it will define the parameters of lighting design. Thus, the architect can be helped to retain control over lighting program and design, and to avoid losing control to the technicians and their rule books. A thorough study of *Architectural Physics: Lighting* should be mandatory for those who are involved in creating lighting codes and standards, because these codes and standards are rapidly forcing all (except the few who are strong enough to resist) into creating unpleasant environments at ever-increasing costs for power and lighting equipment.

OTHER BOOKS TO BE NOTED

The American Association of Architectural Bibliographers, Papers, Vol. I, 1965. Edited by William B. O'Neal. The University Press of Virginia, The Rotunda, Charlottesville, Virginia, 1965. 128 pp., \$5.00.

A nicely printed and bound book containing four exhaustive bibliographies: "Henry-Russell Hitchcock: 'The First Thirty Years' (edited by himself); 'Walter Gropius: A Bibliography, Part I'; 'Writings by and about Philip C. Johnson, Part I'; and 'The Early Architecture of Virginia, Original Sources and Books.'"

Architecture: Forms and Functions, Vol. II. Edited by Anthony Kraftt. Published by Editions Anthony Kraftt, Lausanne, Suisse. Distributed by Wittenborn and Co., 1018 Madison Ave., New York, N. Y., 1965. 279 pp., illus. \$11.

Complete with advertisements in front and back, like a magazine, this book is composed of three sections: "Architecture and Urbanism," "International Panorama," and "Swiss Panorama." In the first part, essays are presented in English, German, French, and occasionally in Italian, by Candela, Neutra, Marc Gaillard, Le Ricolais, and others. The essay by Victor Lundy is a speech he gave to the West Coast Lumbermen's Association in 1959. The translation is poor and choppy. Lundy advocates wood, and tells the lumbermen what to do to get architects to use wood more often. The translation of Neutra's "School Design, A Global Issue" is even worse than that of Lundy, and the one of "Holiday Architecture" by Marc Gaillard is one-tenth as long as the original French version. Captions are vague throughout; translations are often completely missing. But there are a few excellent pictures.

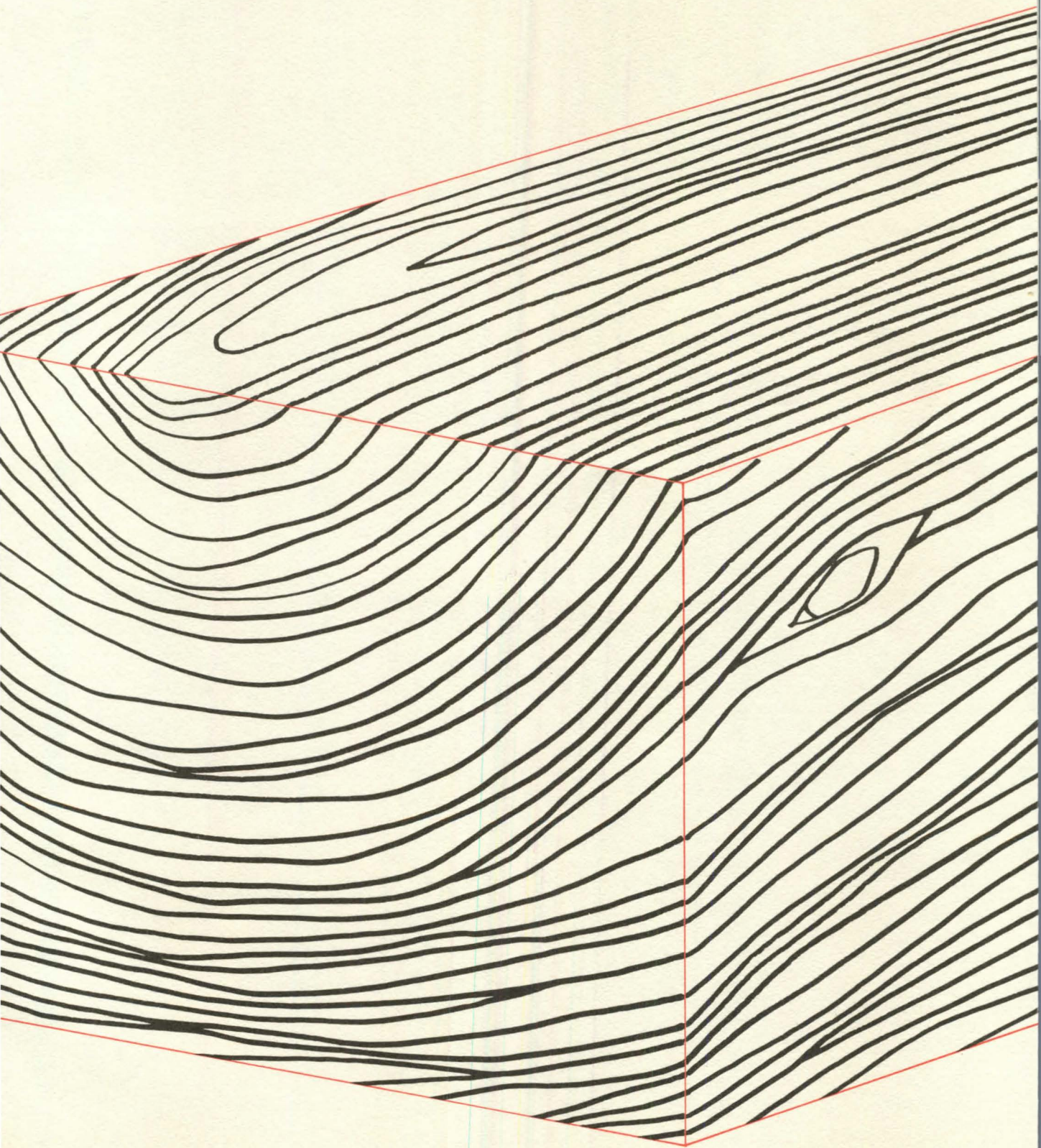
Delhi, Agra, Fatehpur Sikri. By Martin Hurlimann. Published by The Viking Press, Inc., 625 Madison Ave., New York, N. Y., 1965. 150 pp., illus. \$8.95.

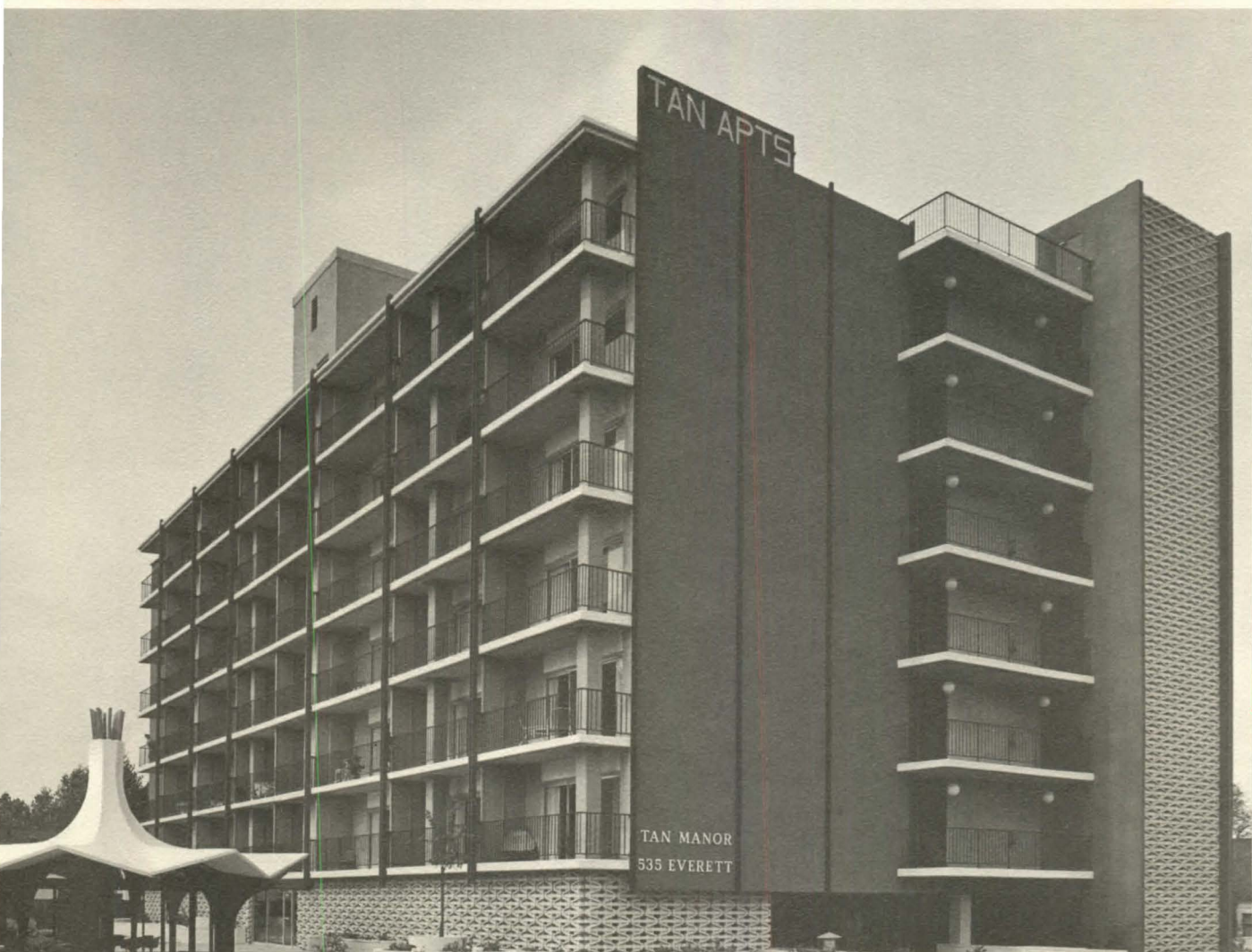
A small book that has five short sections relating the history of Old Delhi, Shahjah-

Continued on page 250

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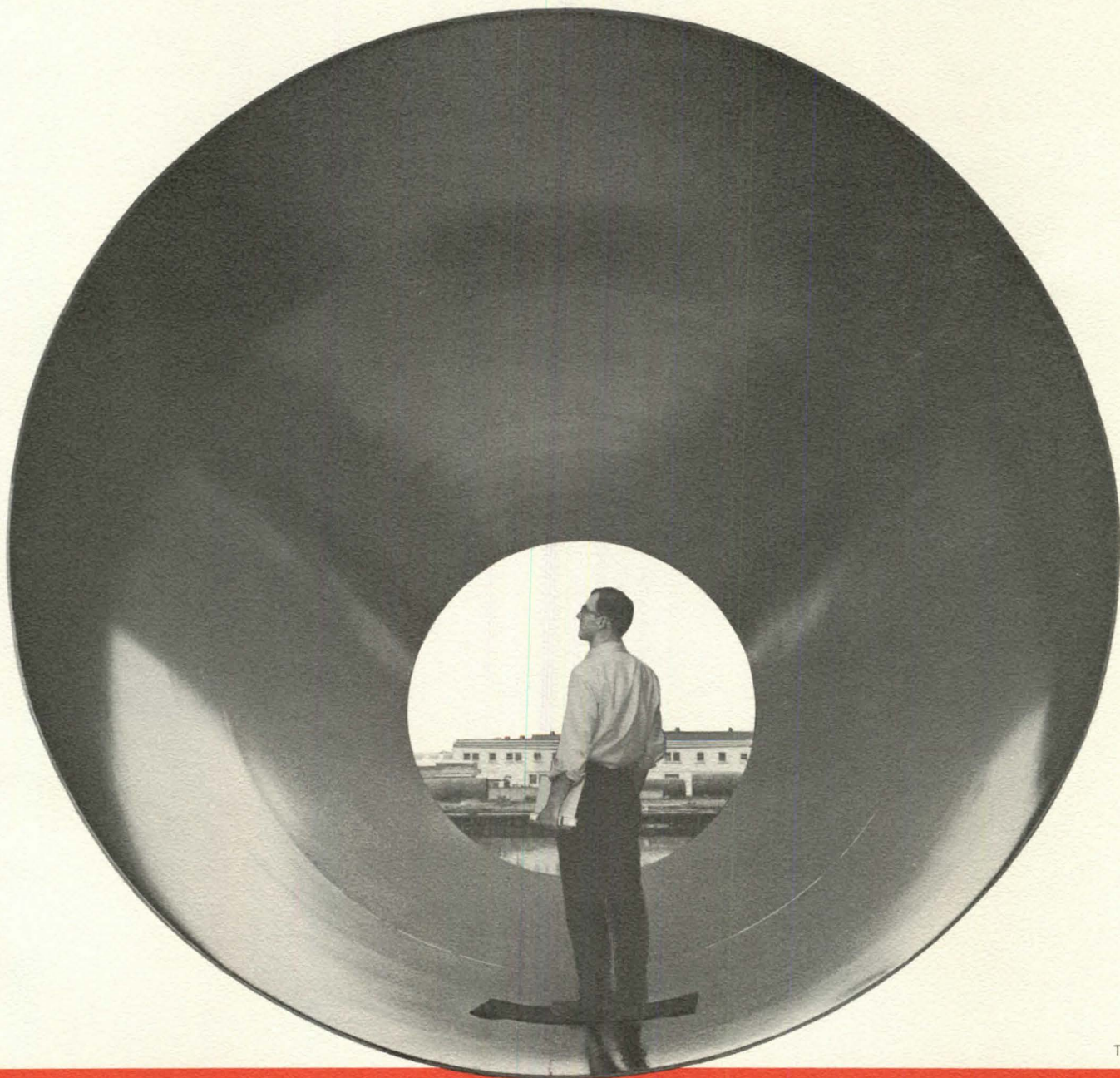
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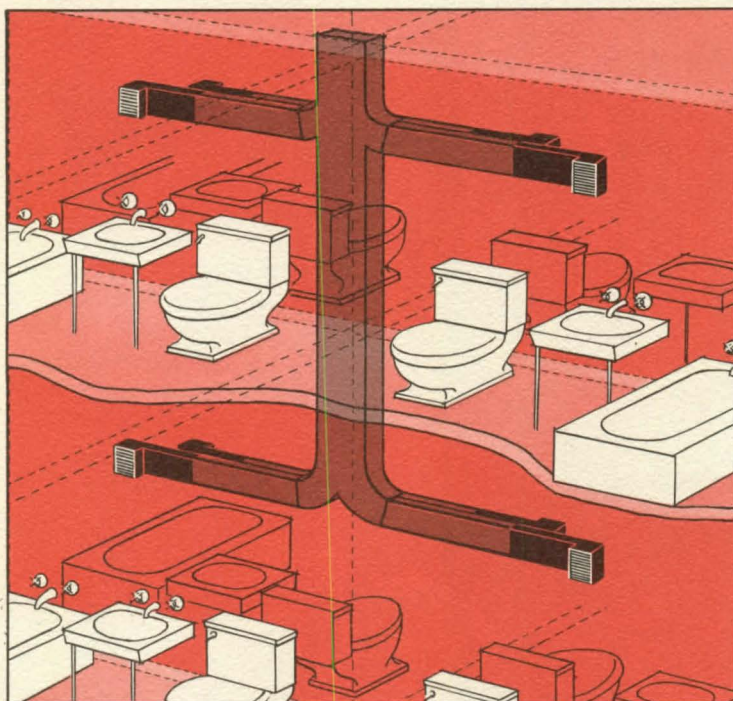
small wheels, turned by motors, and rotated to peripheral speeds of 900 ft. per minute. A long traveling weir is inserted and coal tar enamel, heated to 450-490°F., is spread into the pipe. Centrifugal force distributes the enamel evenly, and as it cools the result is a tight, mirror-like interior surface that gives life-long corrosion protection. The coating meets specifications set up by the American Water Works Association.

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People who live in modern apartments, hotels and motels are sometimes plagued with sounds they really don't want to hear. Voices have been known to come out of kitchen vents. Water splashing several apartments away sometimes sounds as if it is in the next room. But strange sounds, particularly bathroom plumbing noises from other rooms, have been eliminated at H. A. Knott's Congress Inn in Baltimore because the consulting engineer specified a "Hush Flush" AIRCOUSTAT® sound trap behind the exhaust register in each of the 102 bathrooms.

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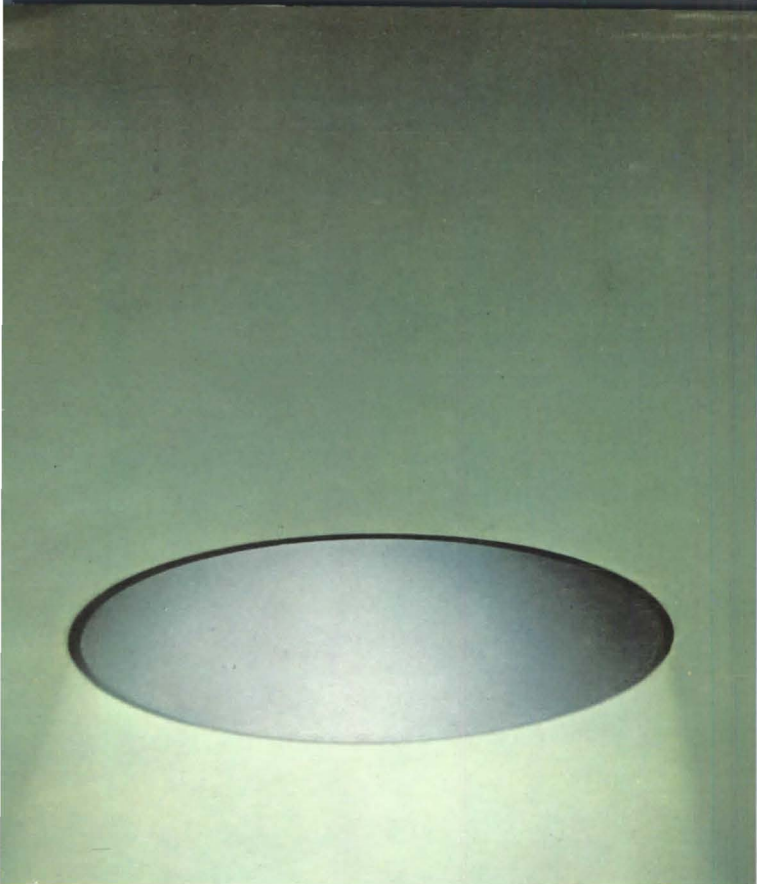
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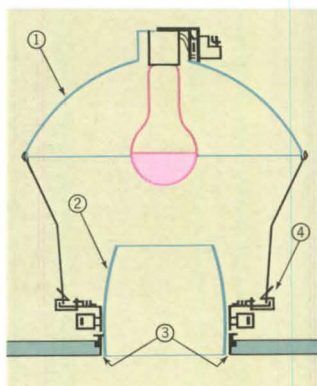




general downlight

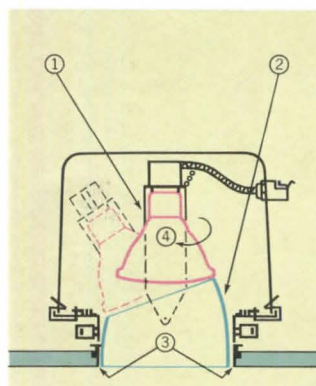


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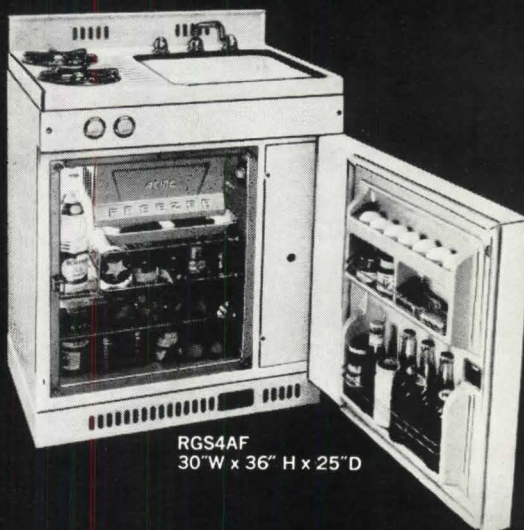
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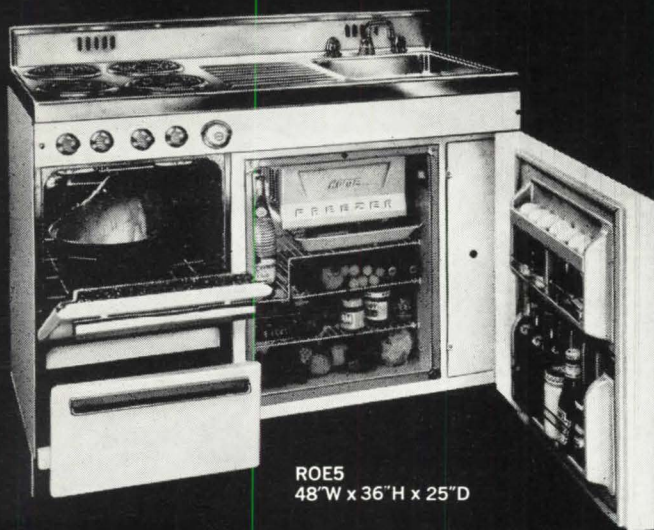
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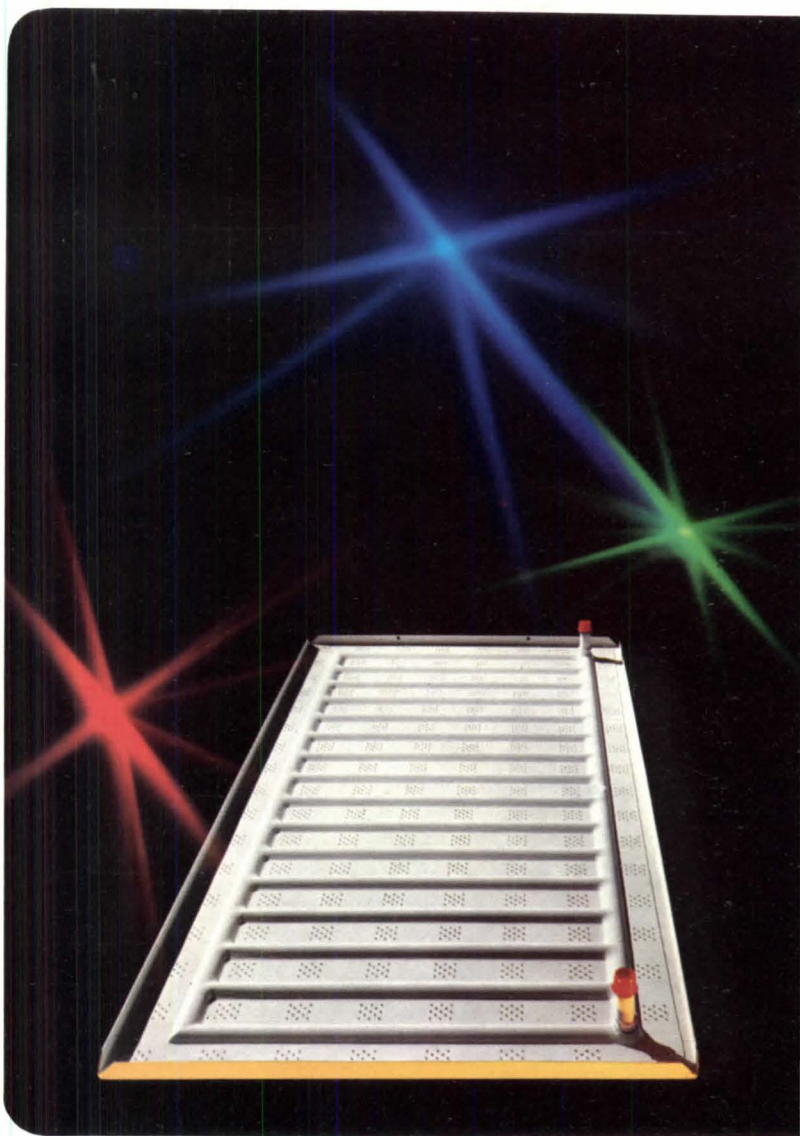


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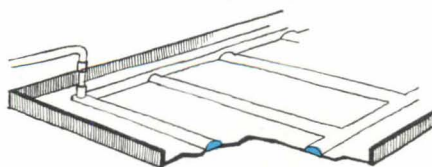
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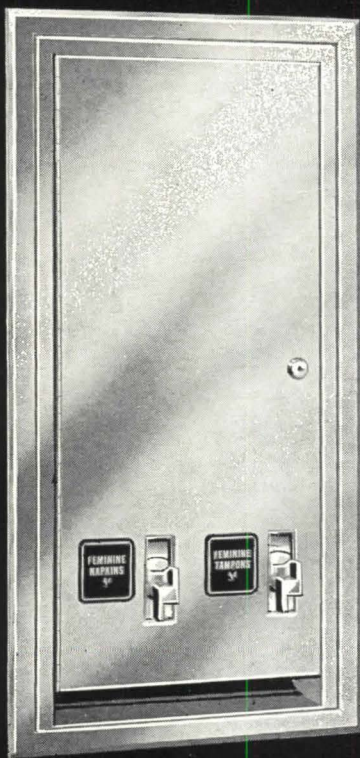
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Continued from page 240

anabad Delhi, New Delhi, Agra, and Fatehpur Sikri in simple, rather general terms. There is just enough explanation to make the pictures interesting and the prospect of never seeing India for one-self unbearable.

Design With Climate. Victor Olgyay. Princeton University Press, Princeton, N. J., 1963. 190 pp., illus. \$15.00.

To be reviewed.

Freehand Drawing: A Primer. By Philip Thiel. Published by the University of Washington Press, Seattle, Wash., 1965. 127 pp., illus. \$4.95.

The author is an associate professor in the College of Architecture and Urban Planning at Washington University. He has written this book in order to get people interested in visual experience, in perceiving forms, and to teach competence in free-hand graphic representation. The method he uses is self-discipline, precision, clarity, sensitive observation, and the copying of real objects. First you learn to copy the forms of things (this makes you see them), and then, later, after learning the discipline of the line, and after you have gone through this book, you are able and ready to draw for subjective expression.

Living Architecture: Mayan. Text and photographs by Henri Stierlin. Preface by Pedro Ramirez Vasquez. Published by Grosset & Dunlap, 51 Madison Ave., New York, N.Y. 10010, 1965. 192 pp., illus. \$6.95.

To be reviewed.

Psychiatry and Psychology in the Visual Arts and Aesthetics: A Bibliography. Compiled and Edited by Norman Kiell. The University of Wisconsin Press, Box 1379, Madison, Wisconsin, 1965. 250 pp., \$6.50.

"Neurology-Psychiatry" is the title of the hideous black-and-blue painting on this book's dust jacket, which pictures a broken shackle, a brain, several old musty books, and (can you guess?) a bust of Freud. It's a shame, because the book heralds the burgeoning growth of a new field: the relation of psychology and the visual arts. It lists 7000 valuable references for students, professors, and interested architects. Listed under the "Architecture" section are articles about the design of psychiatric hospitals and sanitariums, including some about the creative process, some that seem totally unrelated to architecture, and even one called "A Metaphysical Approach to the Architecture of Frank Lloyd Wright."

Resort Hotels, Planning and Management. By E. Abraben, Architect, Reinhold Publishing Corp., 430 Park Ave., New York, N. Y. 10022, 1965. 200 pp., illus. \$22.50.

To be reviewed.

Rombola by Rombola. Drawings by John Rombola. Published by A.S. Barnes & Co., 11 East 36 Street, New York, N. Y., 1965. 160 pp., illus. \$10.

John Rombola draws the circus, a bullfight, New York, the Scaasi collection, a wedding, the opera, the race track, fencers, and "Sophisticates Going to a Premiere," proving that drawing is the shortest distance between seeing and understanding. The "Sophisticates" are mostly old ladies betased, bedecked, beaded, and no doubt, bedeviled—all in the shapes of huge old cows. Their



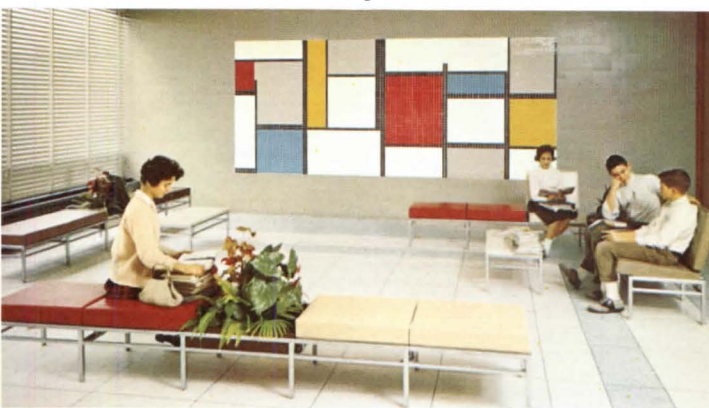
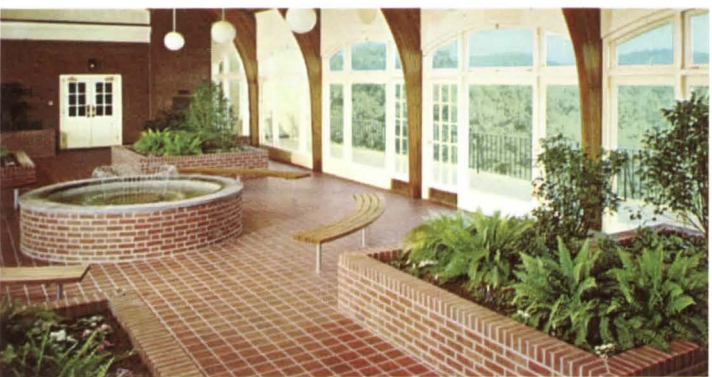
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1. Entrance Area, upper left, Pennfield Jr. High School, Hatfield, Pa. Feature wall: 1 1/2" Tile Gems® with mural in assorted glazed colors. Architect: Howell Lewis Shay & Assoc. Tile Contr.: E. Roman & Son. Plate 537.

2. Apartment lobby, left center, of Troy Towers, Bloomfield, N.J. This distinguished mural is 1" x 1" ceramic mosaics. Architect: Gerber & Pancani. Tile Contr.: Bloomfield Tile & Terrazzo Co. Plate 518.

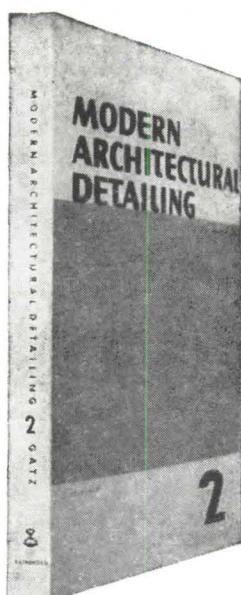
3. Freedoms Foundation, lower left, at Valley Forge, Pa. Floor is subtly shaded Murray Ember Flash quarry tile. Architect: Howell Lewis Shay & Assoc. Tile Contr.: Italian Marble Mosaic Co. Plate 516.

4. Entrance lobby, upper right, of Dulaney High School, Towson, Md., has colorful abstract ceramic mosaic design. Architect: Henry Powell Hopkins & Assoc. Tile Contr.: Atlas Tile & Terrazzo, Inc. Plate 539.

5. Entrance, in E. B. Erwin High School, Birmingham, Ala. Color and design interest is given to walls by using contrasting stripes of tile against a background of scored tile SD-5 in 370 Cr. Mocha. Architect: Davis, Speake & Thrasher. Tile Contr.: Wilson & Daniels Tile Co., Inc. Plate 536.

6. Lobby, lower right, James M. Bennett Jr. High School, Salisbury, Md. Mondrian-type mural is 1 1/2" Tile Gems. Architect: Booth & Somers. Tile Contr.: The Ba-Mor Co. Inc. Plate 512.

Write for new color booklet 1100, "Ceramic Tile in Architectural Design."



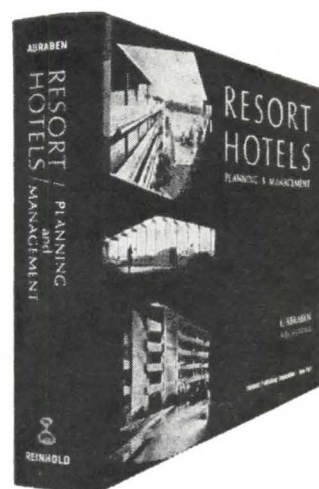
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Edited by **Konrad Gatz**

1965 284 pages \$17.50

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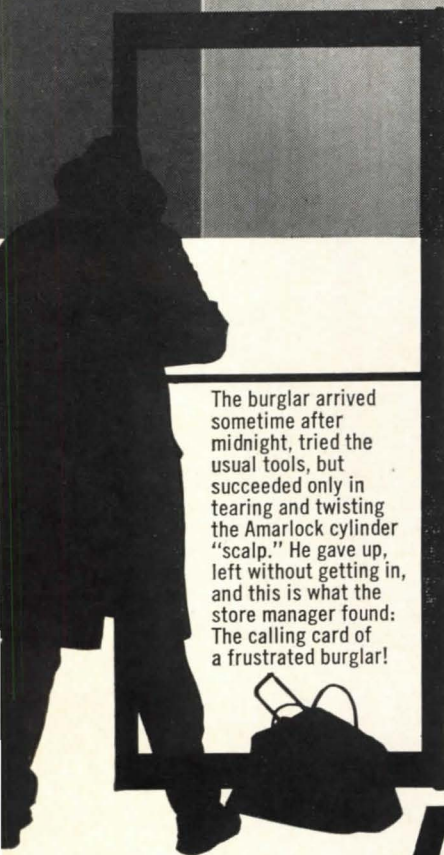
City _____

State _____

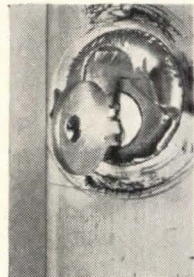
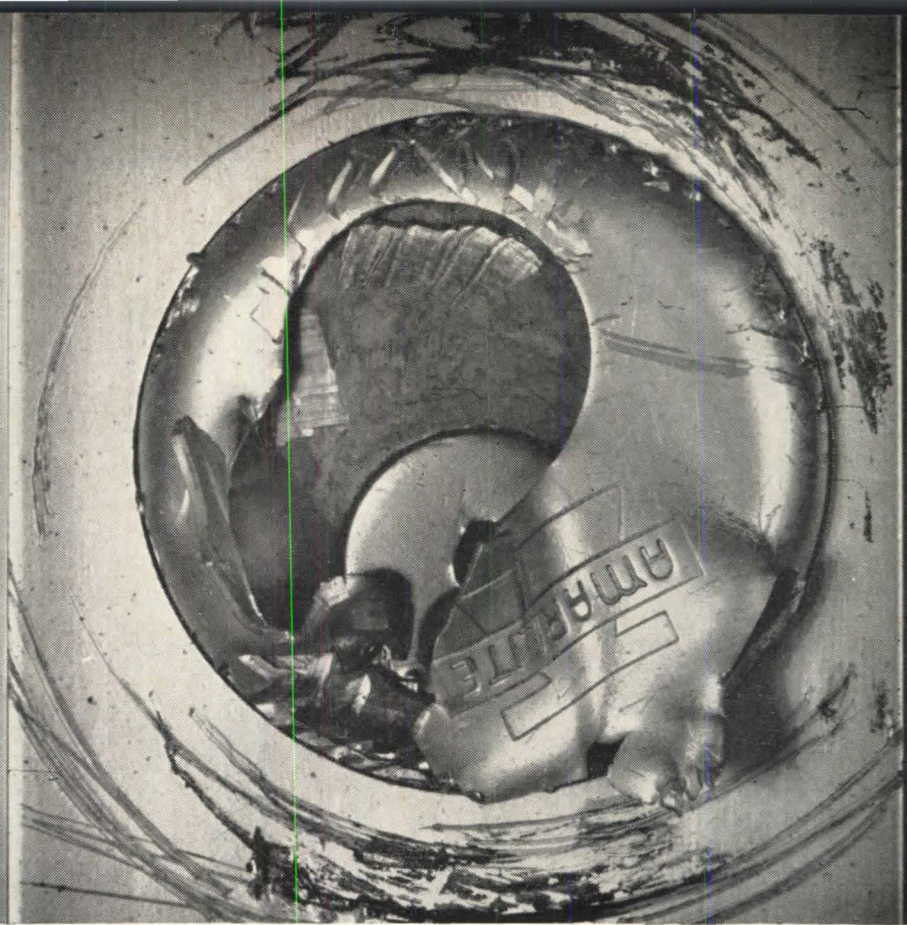
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Save Money! Enclose full payment with order and Reinhold pays regular delivery charges. Same return privilege guaranteed. Please add sales tax on California, Ohio, Pennsylvania, and New York City orders. For your protection, do not send cash. Check or money order only.

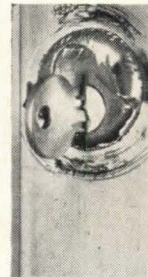
Dept. M-207



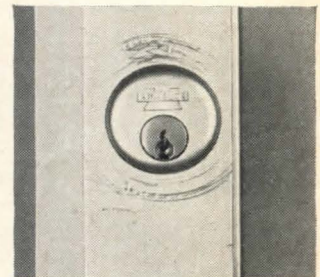
The burglar arrived sometime after midnight, tried the usual tools, but succeeded only in tearing and twisting the Amarlock cylinder "scalp." He gave up, left without getting in, and this is what the store manager found: The calling card of a frustrated burglar!



After break-in attempt, lock still worked like new, opened for business as usual.



Amarlock long-throw bolt shows deeper penetration length. Chrome-plated steel sleeve is armored reinforcement.



New cylinder was installed in one minute flat, and the Amarlock stands guard—strong and reliable as the day it was new! Installed and serviced by Binswanger Glass Co., Charlotte, N.C., R. B. Williams, Manager.

The Case of the Unyielding Amarlock

Specify Amarlite for maximum security... and an AMARLOCK stands guard at the door. It's built to take it! Built to stand up to rough treatment, even BURGLAR TOOLS... because the standard Amarlock cylinder is NOT screwed in; rather, it's inserted through a countersunk hole, then secured by a steel clip!

There's no extra cost for AMARLOCK protection. It's standard equipment on AMARLITE doors! Another standard protection feature—SECURITY CLIPS... easily installed... permit removal of glass stops from inside only.

Next job, specify AMARLITE aluminum entrances... superior in finish and design! For complete details... write for our catalog and specifications... or, look into Sweet's!

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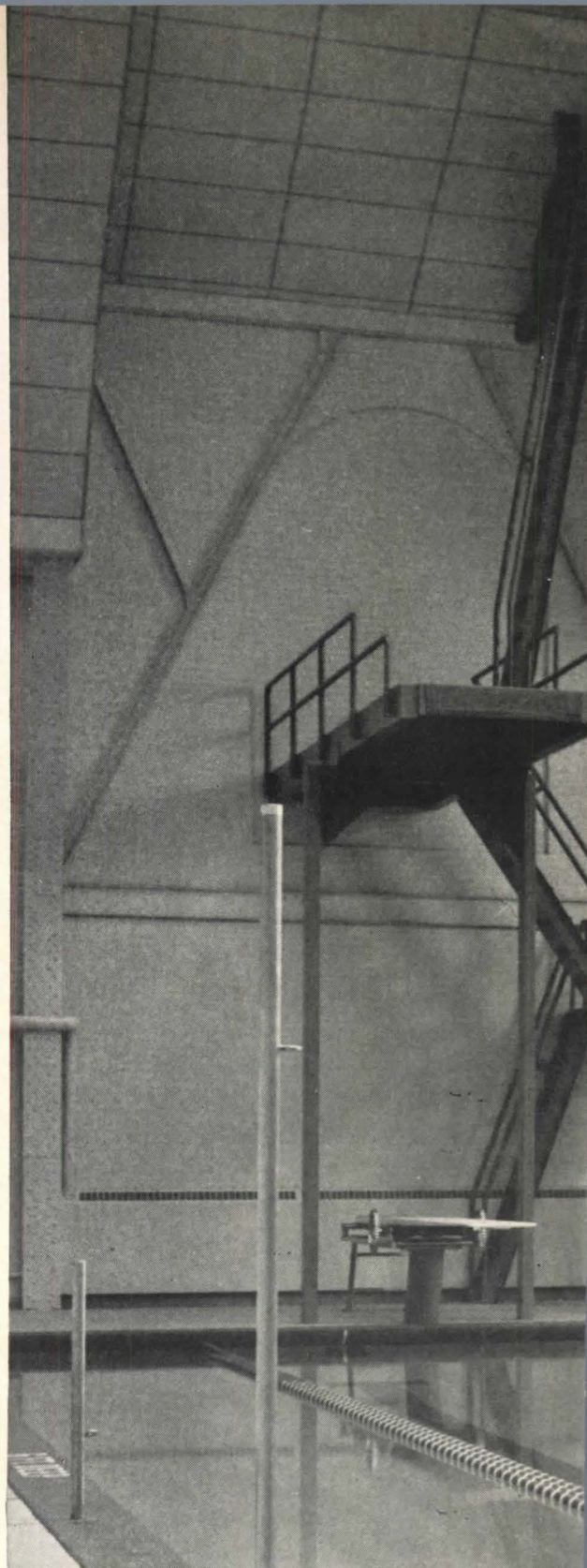
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NO SAG

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**These perforated asbestos panels are
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Will not warp or sag under high-humidity conditions. Shrinkage is held to less than 1/10 of 1%. A sound-absorptive membrane backing puts them in the .70-.80 NRC range. Sizes: 2' x 2' and 2' x 4' for grid application. Finished with a high-reflective (74%) washable white paint and the



Architects: Eggers and Higgins, New York City. Acoustical Contractor: Dillaby Fireproofing Company, Cambridge, Mass.

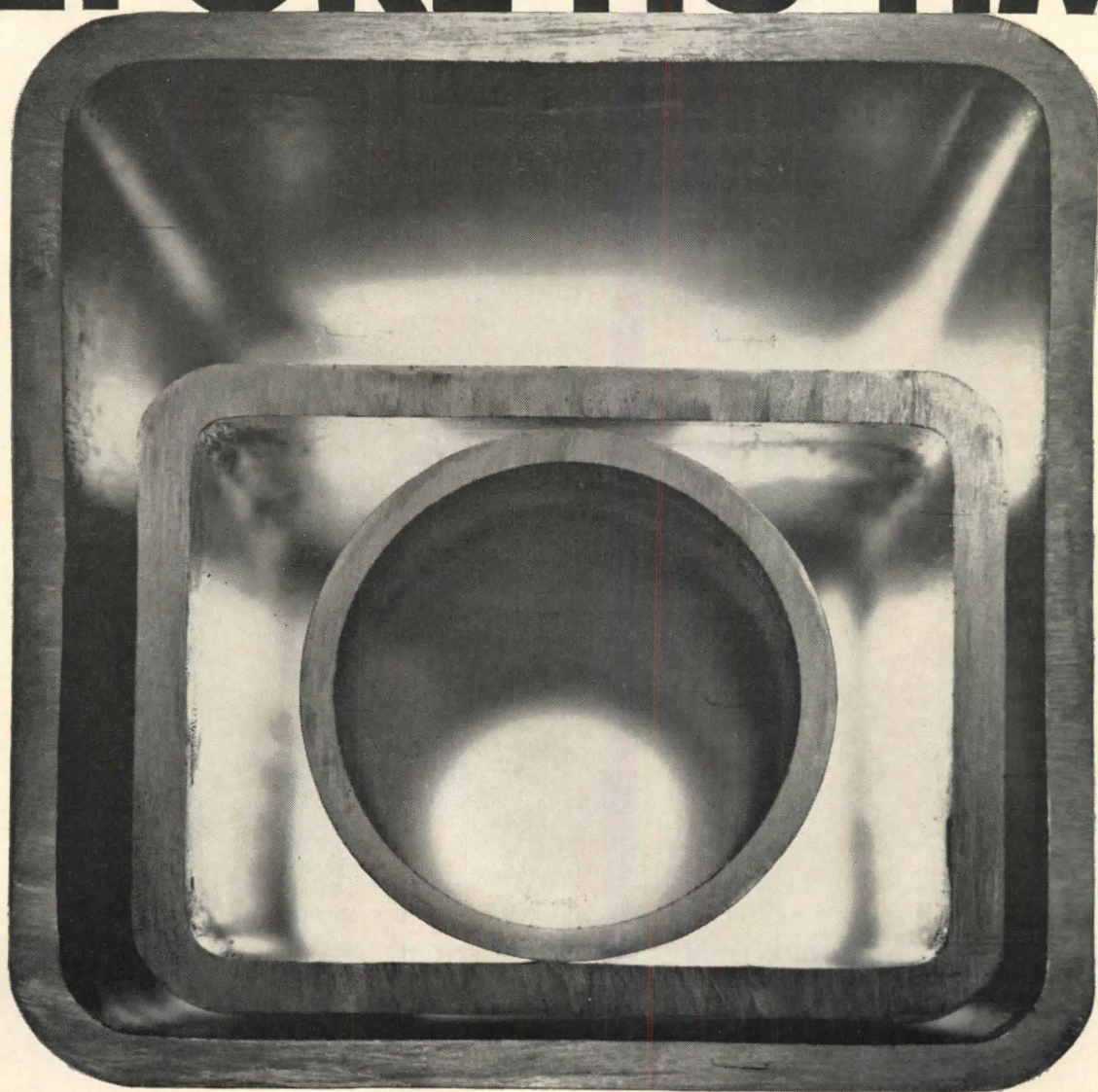
panels have a distinctive ripple texture. Thinking about a moisture problem? Think new with Gold Bond. Your Gold Bond® Representative has samples and information. Or write to Department PA-95, National Gypsum Company, Buffalo, New York 14225.



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Republic's ELECTRUNITE® Structural Steel Tubing
that met or exceeded the
ASTM Specification A-500 of 1964.**

Nearly three years ago Republic first put into practical applications a new structural steel tubing with a yield strength 36 percent greater than ever before produced. The specifications for the new higher strength tubing were published by Republic in 1962. These specifications were the first ever issued specifically for structural steel tubing by or for the industry. From the time ELECTRUNITE's advantages were discovered by customers, this tubing has been increasingly hard at work in a wide variety of building applications.

WITH ELECTRUNITE STRUCTURAL TUBING:

- A building will average 30 to 40 percent lighter in weight than a similar structure employing conventional steel members.
- You'll spend less to get more than enough strength in columns, posts, lintels, spandrels, and other structurals.
- Lighter framework allows lighter footings and foundations.
- Walls are one-third thinner for increased usable floor space.
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STEEL AND TUBES DIVISION

CLEVELAND, OHIO 44108



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STRUCTURAL TUBING**

ROUND STRUCTURAL TUBING

	Grade A	Grade B
Tensile strength, min, psi	45,000	58,000
Yield point, min, psi	33,000	42,000
Elongation in 2 in, min, percent .	25 ^a	23 ^b

SHAPED STRUCTURAL TUBING

Tensile strength, min, psi	45,000	58,000
Yield point, min, psi	39,000	46,000
Elongation in 2 in, min, percent .	25 ^a	23 ^b

(a) Applies to specified wall thicknesses 0.120 in. and over. For wall thicknesses under 0.120 in., the minimum elongation shall be calculated by the formula: percent elongation in 2 in. = $56\frac{1}{2} + 17.5$.

(b) Applies to specified wall thicknesses 0.180 in. and over. For wall thicknesses under 0.180 in., the minimum elongation shall be calculated by the formula: percent elongation in 2 in. = $61\frac{1}{2} + 12$.

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No.19 / PUMPED & SPRAYED

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For spraying of concrete (shotcreting), equipment is available for handling either wet or dry mixes containing aggregate up to $\frac{3}{4}$ -in. size. The method provides a means of forming structural shapes with reduced formwork. Shotcrete bonds well to steel or concrete, and has high strength, density and durability.

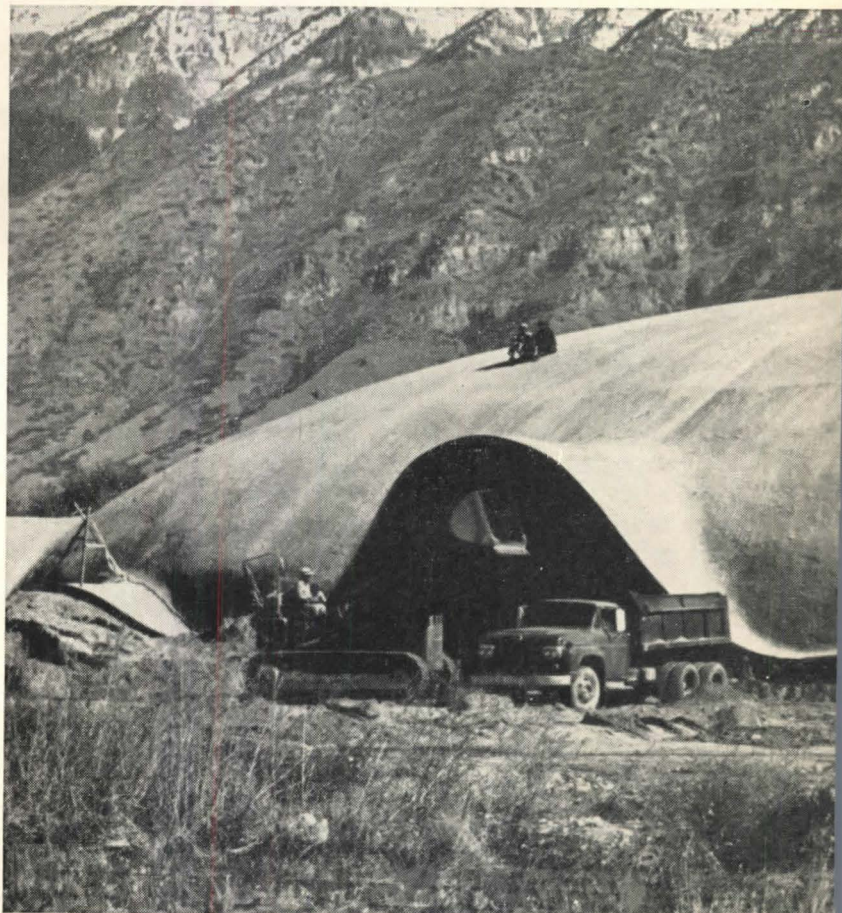
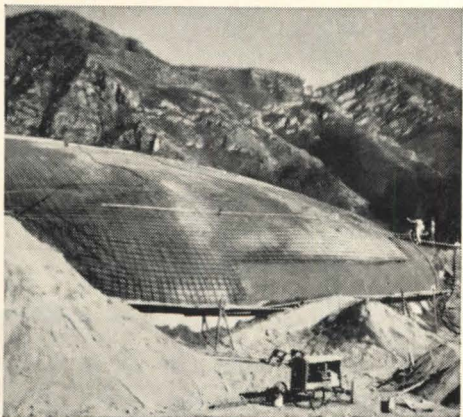
Grouting consists of filling voids with a fluid mixture of cement, sand and water, usually under pressure. In one type of application, coarse aggregate is preplaced in a form and then grouted. For decorative effects, surface mortar may be removed later to expose the coarse aggregate particles.

Where placing of structural concrete by conventional methods is difficult because of inaccessibility to ready-mix trucks, absence of hoisting equipment, or necessity for placing in unusual locations, pumping of concrete may provide an economical solution. Equipment is available for pumping high-quality concrete more than 1,000 feet horizontally, and 120 feet vertically.

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An organization to improve and extend the uses of concrete, made possible by the financial support of most competing cement manufacturers in the United States and Canada



A dramatic example of pneumatic concrete construction is this "triaxial ellipsoid." It is the Winter Gardens Ice Skating & Sports Arena in Provo, Utah. The structure, 160 feet wide and 240 feet long, was cast over a man-made mound of dirt. After the concrete had set, front-

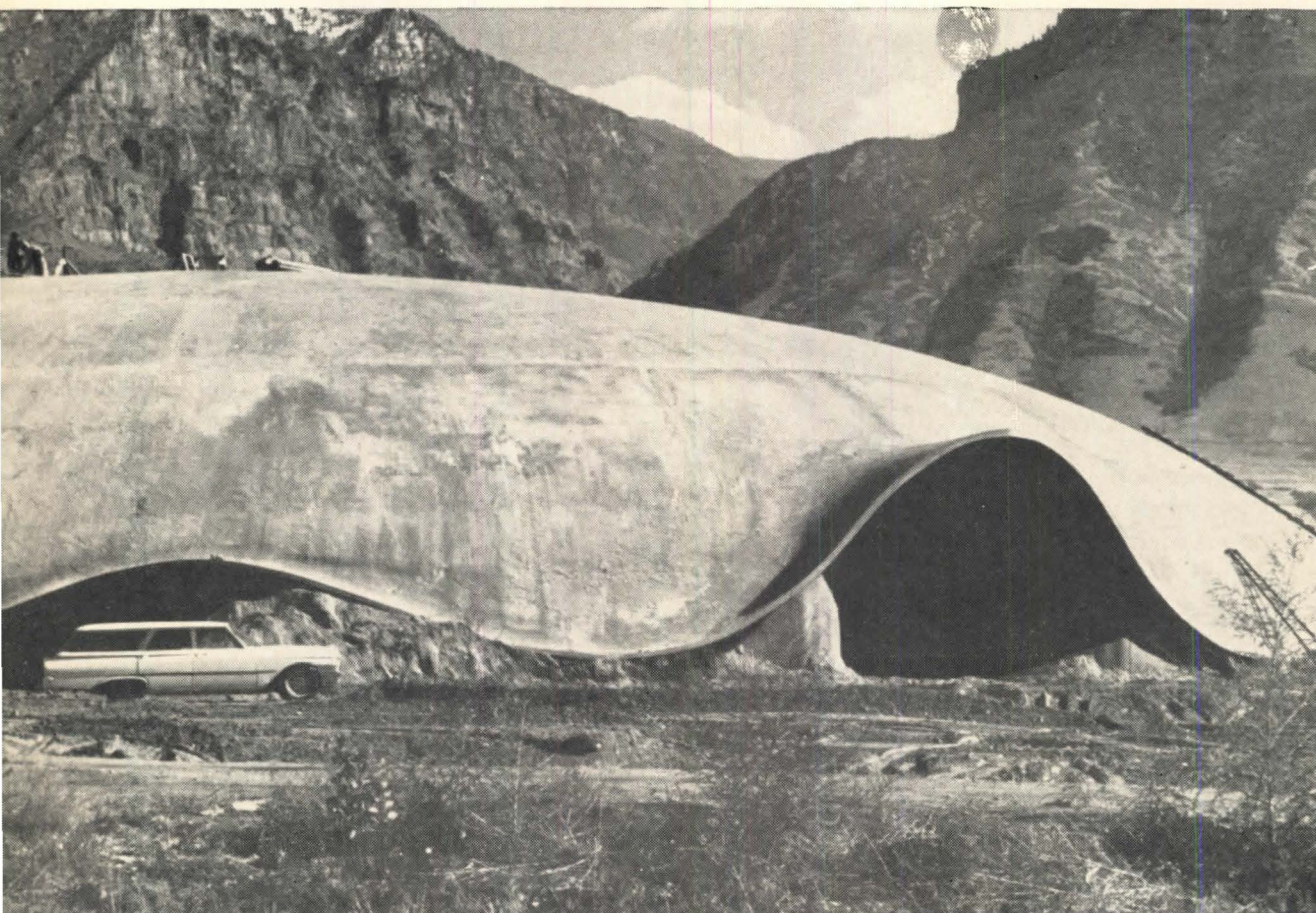
CONCRETES

Clip for a.i.a. file 4-a

Prepared as an industry service by
Portland Cement Association

STRUCTURAL APPLICATIONS OF PUMPED AND SPRAYED CONCRETES

Construction Technique	Process	Equipment	Application
<i>Dry-mix shotcrete</i>	Portland cement and dry sand conveyed by air pressure and mixed at nozzle with water as it is blown onto receiving surface.	Mixer, compressor, and nozzle.	Thin slabs, roofs and sloping surfaces; repair of concrete surfaces; overhead applications; placement in locations which are not accessible for normal methods of placement.
<i>Wet-mix shotcrete</i>	Pre-mixed mortar and concrete are shot into place pneumatically.	Mixer-compressor, hose and nozzle.	Same as above.
<i>Preplaced-aggregate concrete</i>	Aggregates placed and compacted into forms and then grouted.	Mechanical & centrifugal pumping systems.	Use of exposed aggregates in decorative concrete; and for structures such as reactors, underwater foundations, dams.
<i>Grouting</i>	Portland cement-water slurry, pumped through hoses.	Pumps	Stabilization of foundations; bonding of strands in conduits for prestressed concrete.



end loaders moved into the entrances of the building, dug out the 40,000 cubic feet of dirt, and left the huge double-curved concrete shell. The architect was Lee Knell of Provo. The engineers were Harry Hodson, formerly of Provo, and Arnold Wilson.



Carr Hall of Science, Allegheny College, Meadville, Pa.
Architects: Stotz, Hess and MacLachlan, Pittsburgh, Pa.
General Contractor: Associated Contractors of Conneaut Lake, Inc., Conneaut Lake, Pa.
Plumbing Contractor: Wm. T. Spaeder Co., Erie, Pa.

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Continued from page 250

hair is shaped like bison horns; one has a small trophy perched up on her backside. The New York section has drawings of the Seagram building, of Pan Am glowering abstractly above Park Avenue, of Trinity Church smiling from in between Wall Street office buildings, and of a complex of circling highways that looks like a giant convulsed octopus. (On close examination, it turns out that all the roads go in circles, and one spirals into a dead end.) Rombola is apparently amused by architecture—and by most everything. The book is for people who can read and enjoy pictures.

Room and Building Acoustics and Noise Abatement. By Willi Furrer. Translated by Evelyn R. Robinson and Peter Lod. Butterworth, Inc., 7235 Wisconsin Avenue, Washington, D. C., 1964. 226 pp., charts, diagrams, illus. \$11.95.

To be reviewed.

SER 1: Environmental Abstracts. Edited by Harold W. Himes, Assoc. Prof. of Arch. Published by the Architectural Research Laboratory at the University of Michigan, Department of Architecture, Monroe at Tappan, Ann Arbor, Michigan, 1965. 768 pp., index of authors. \$15.

This is publication No. 1 in a series of reports describing work accomplished by the School Environments Research Project (hence "SER"), an activity of the Architectural Research Laboratory at Michigan University. The book is a collection of reference documents selected by the SER project in its first step: a review of existing literature. The purpose of the project, and the subject matter of this first volume, is to study the relationships that link environment with human behavior and how the environment affects learning.

A Survey of Television Station Design. By the Editors of Television Magazine. Published by Television Magazine, 444 Madison Ave., New York 22, N. Y., 1964. 76 pp., illus., \$3.95.

How form follows function in 65 TV stations throughout the country.

Mark Tobey: The World of a Market. Mark Tobey. University of Washington Press, Seattle, Wash., 1964. 64 pp., illus., \$7.50.

The architecture of people and a place—the Seattle Public Market—is explored by artist Mark Tobey.

Town Planning in the Netherlands since 1900. R. Blijstra. P. N. van Kampen & Zoon, Nv, Amsterdam. Distributed by the Netherlands Information Service, 711 Third Ave., New York, N. Y., 10017. 153 pp., illus., free.

This little book tells the story of Dutch architecture and town planning, and reveals some interesting facts. For instance, since 1902, every Dutch town with a population over 10,000 has been required by law to have a plan. Photographs are well produced and town plans are shown. Most of the photographs are of town centers, streets, and apartments built in the 50's.

The Urban General Plan. By T. J. Kent, Jr. With a bibliographic essay on the urban general plan by Holway R. Jones. Chandler Publishing Co., 124 Spear Street, San Francisco, Calif. 94105, 1964. 213 pp. \$6.

To be reviewed.

How big were the savings at Thrall Car when PANELBLOC Gas infra-red heaters were introduced?



Big enough to return 100% on investment after one season.

The Thrall Car Manufacturing Co. high bay Plant No. 2 was being inadequately heated by warm air equipment, with supplementary salamanders. Many a man-hour was lost when workers left work stations to warm themselves.

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If you're converting your existing plant—or designing a new one—look into the economy and efficiency of PANELBLOC Gas infra-red units. Call your local Gas Company sales engineer. Or write: The Bettcher Manufacturing Corporation, West 61st at Clark Ave., Cleveland 2, Ohio.

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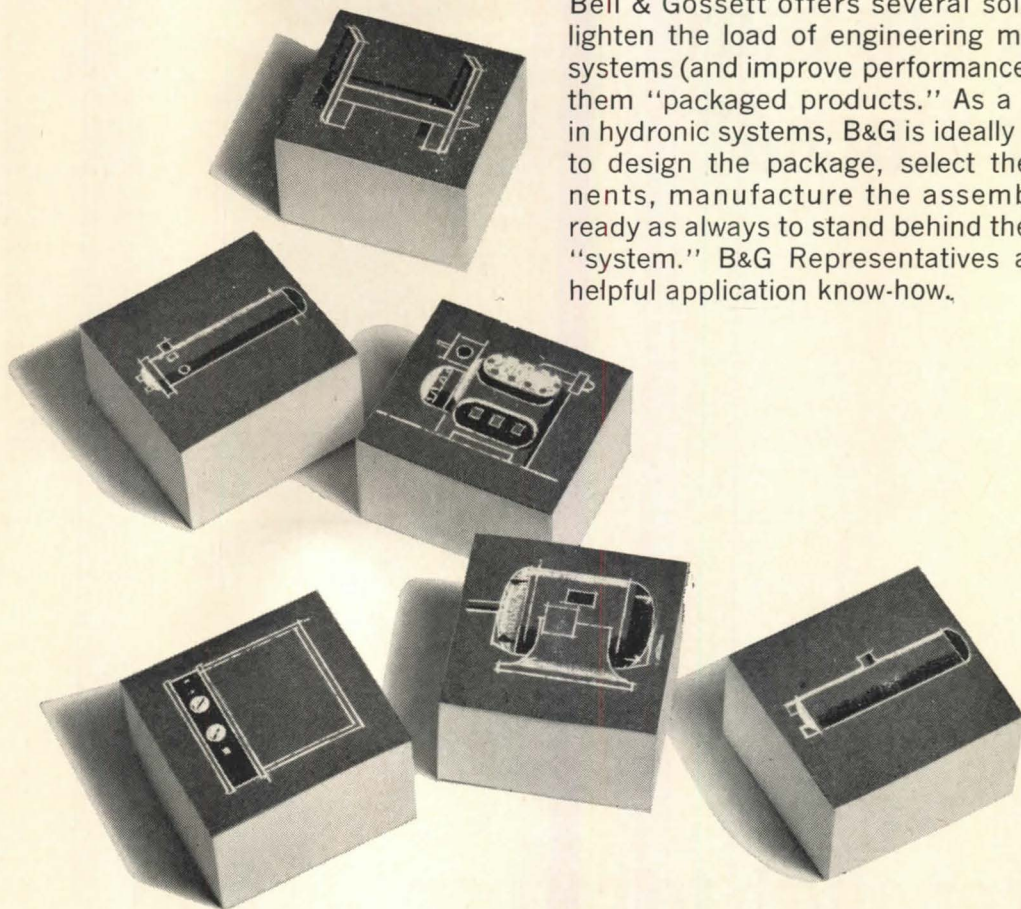
**For industrial heating...
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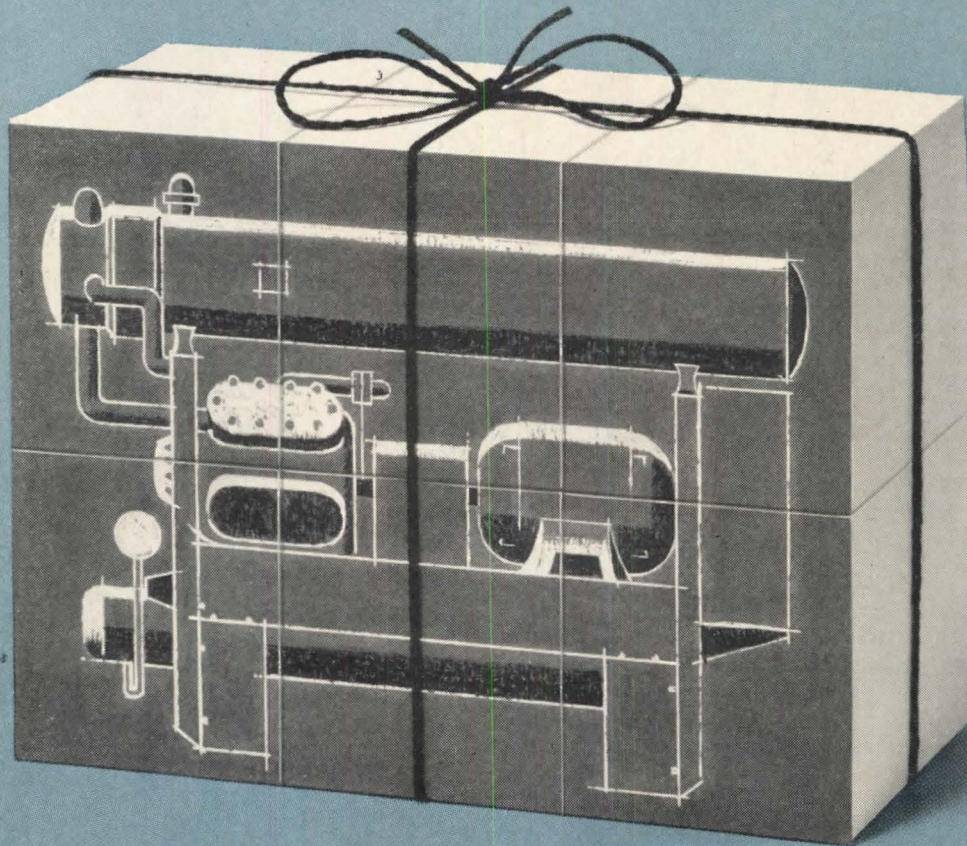
Put them all together and you've got savings in "Packaged Systems"

Engineered systems to pump fluids, maintain circuit pressures, heat and cool grow more complex daily. Analyzing and pricing the components for these installations places burdensome loads on the engineering staff. In the end, the individually designed "package" generally costs more and often poses problems of split responsibility.

Bell & Gossett offers several solutions to lighten the load of engineering mechanical systems (and improve performance). We call them "packaged products." As a specialist in hydronic systems, B&G is ideally equipped to design the package, select the components, manufacture the assembly...and ready as always to stand behind the finished "system." B&G Representatives also offer helpful application know-how.



B&G offers packages for four basic applications: (1) Pressure Boosting to maintain uniform pressure throughout a domestic or industrial water distribution system without use of storage tanks; (2) Packaged Chiller units for air conditioning; (3) Heating/Cooling in industrial process circuits; (4) Air Control in hydronic heating and cooling systems.
(More data provided on following page.)



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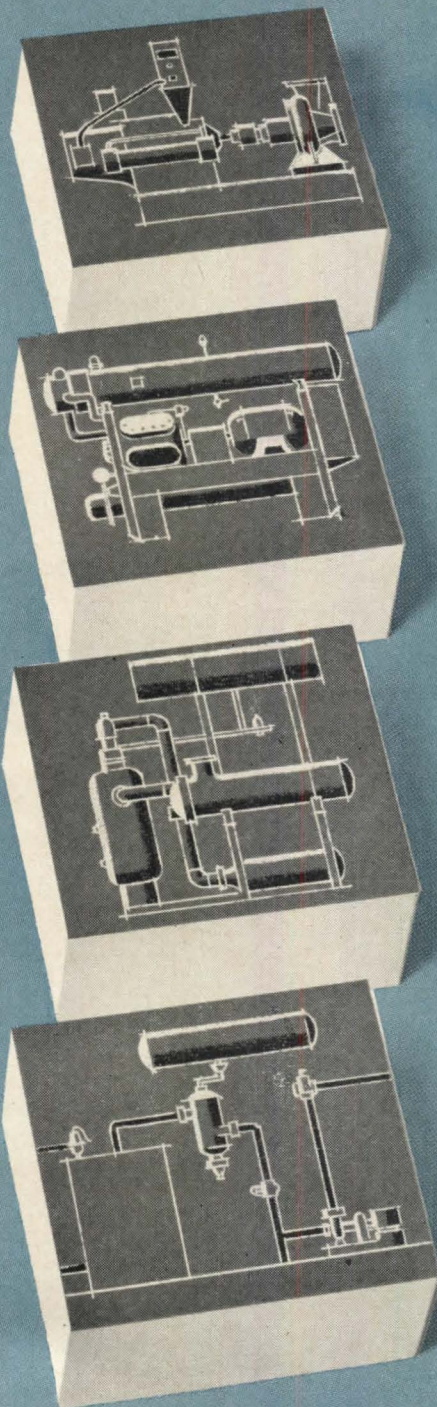
B&G Pressure Booster Package is the first complete water pressure boosting unit including electrical control panel mounted and pre-wired. Automatic, variable speed control provides constant system pressure in office buildings, hotels, motels, apartments, hospitals, schools and factories. Available as single units; or multiples connected in parallel and electrically interlocked.

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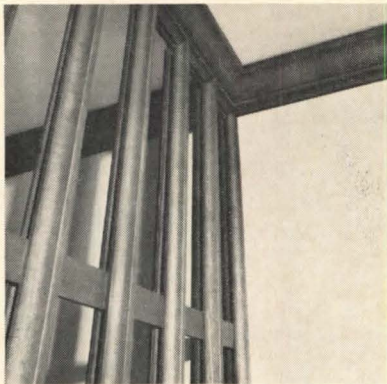
Air Control Devices from B&G provide a *guaranteed* method of eliminating entrained air in hydronic systems. While the wide diversity of installations does not permit factory assembly, B&G Air Control does represent a "package" in the complete selection of valves, fittings and Air Control Boosters from a single source for your needs.

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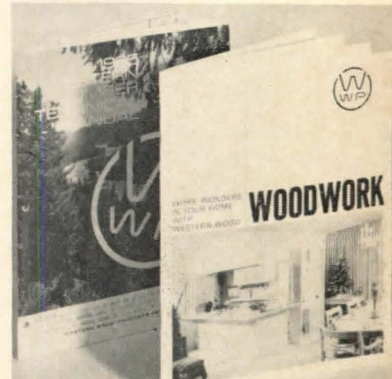
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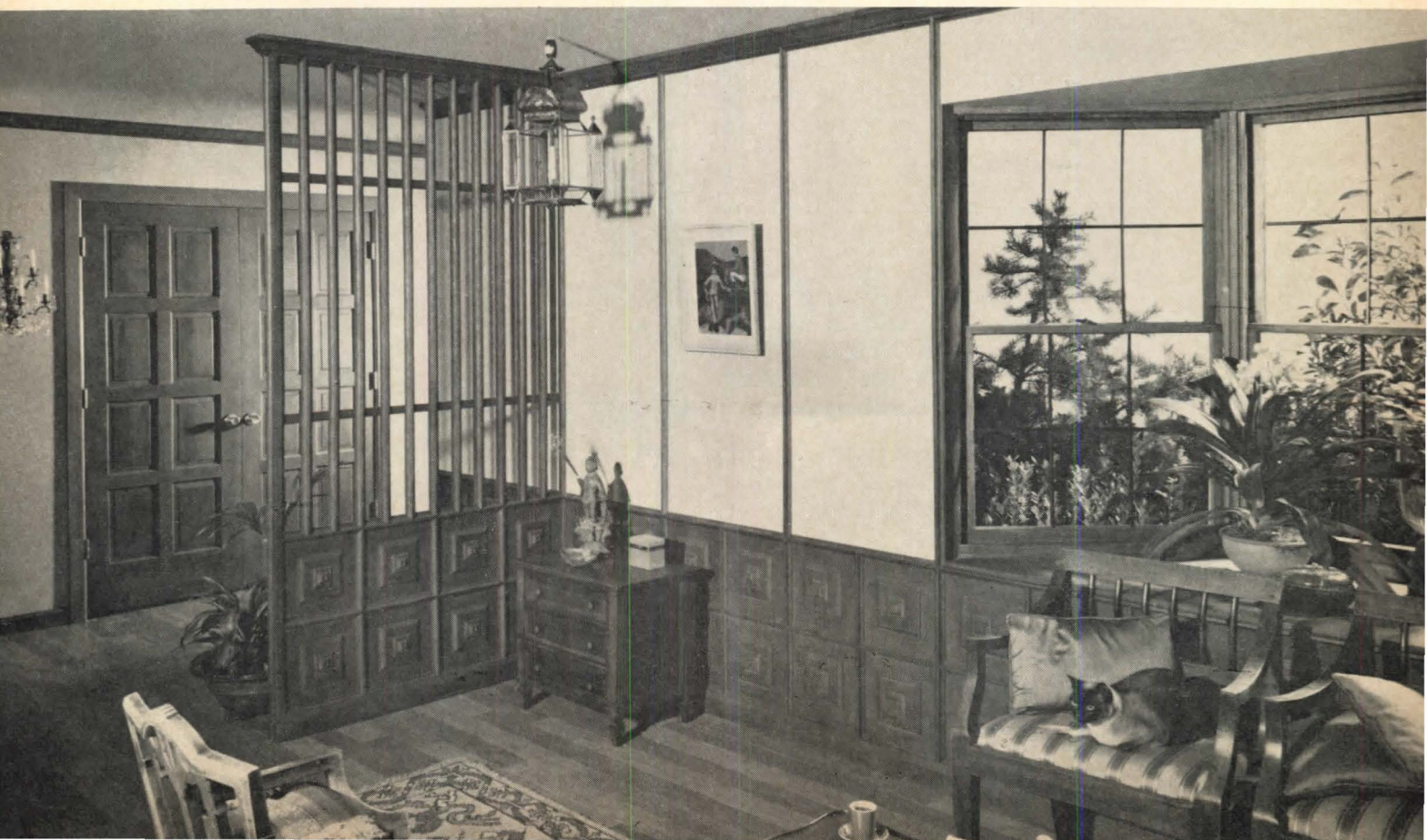
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PARKWOOD LAMINATES, INC., manufacturers, have opened a Midwest office and showroom at 2144 American Furniture Mart, 666 North Lake Shore Dr., Chicago, Ill.

WILLIAM WILDE, Architect, Phoenix, Ariz., now has a branch office at 177 N. Church Ave., Tucson, Ariz.

New Addresses

EDWARD J. AISNER, Architect, 38 Newbury St., Boston, Mass.

ROBERT BENJAMIN, INC., Contemporary Furniture, 6 E. 53 St., New York, N.Y.

GERALD H. BENSE ARCHITECT & ASSOCIATES, The Whittier Square Bldg., 300 E. Penn St., Whittier, Calif.

MARCEL BREUER & ASSOCIATES, ARCHITECTS, 635 Madison Ave., New York, N.Y.

MORGAN D. HOWELL, Architect, 22245 Main St., Hayward, Calif.

VICTOR A. LUNDY, Architect, 22 E. 67 St., New York, N.Y.

JOHN J. McNAMARA, Architect, 450 Seventh Ave., New York, N.Y.

L.R. SOLOMON, J.D. CORDWELL & ASSOCIATES, INC., 444 W. Grant Place, Chicago, Ill.

STRICKLAND & ROBERTS, Architects, 404 S. Sixth St., Gadsden, Ala.

New Firms

ARCHITECTS AND PLANNERS ASSOCIATES have opened a new office with HANFORD YANG, ALEXANDER A. GARTNER, Architect AIA, 101 Park Avenue, New York, N.Y. 10017.

ROBERT J. DRAYTON, Architect, 101 N. Main St., Crystal Lake, Ill.

RANGER FARRELL & ASSOCIATES, Acoustics, 150 Riverview Ave., Tarrytown, N. Y.

WIN HOFFMAN & ASSOCIATES, 80 Fifth Ave., New York, N.Y.

RICHARD S. PIKE & ASSOCIATES, Architects, 1530 Summer St., Stamford, Conn.

ROLOSON, IMLAY & ASSOCIATES, Architects, 508 Central Ave., Highland Park, Ill.

STRAKA & GREENWALD, Architects, 116 S. Michigan Ave., Chicago, Ill.

SALTZMAN & GLECKMAN, ASSOCIATES, Architects, 4 E. 54 St., New York, N.Y.

New Partners, Associates

EGGERS & HIGGINS, Architects, New York, N.Y., have appointed four new associates: FRANK W. MUNZER, ROBERT H. WELZ, JOSEPH A. CAPANO, and PETER G. MOORE.

ALONZO J. HARRIMAN ASSOCIATES, Architects-Engineers of Auburn, Me., have named GRIDLEY BARROWS a senior associate.

LEO KORNBLATH ASSOCIATES, Architects and Interior Designers, New York, N.Y., has appointed SAMUEL F. ZAMBITO associate in charge of the Washington, D.C., office.

MORGANELLI, HEUMANN & RUDD, Architects, Los Angeles, Calif., have made CARROLL C. RUDD a partner.

SIEGMUND SPIEGEL, Architect, East Meadow, N.Y., has appointed WILLIAM F. PATTERSON and LEONARD S. GOLDEN associates.

JOHN CARL WARNECKE & ASSOCIATES, San Francisco, Calif., have appointed

Continued on page 274

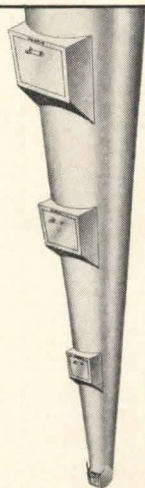
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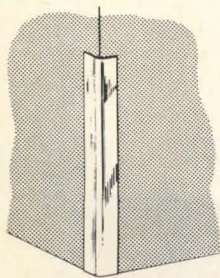
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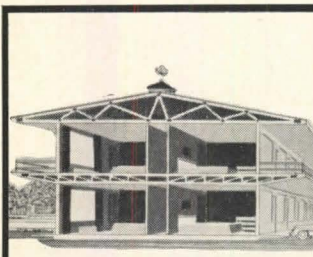
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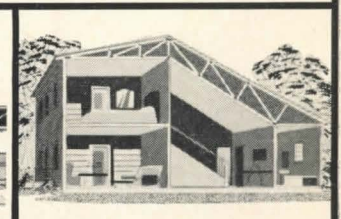
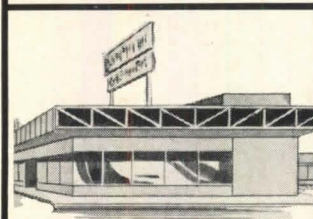
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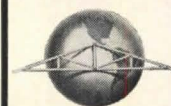
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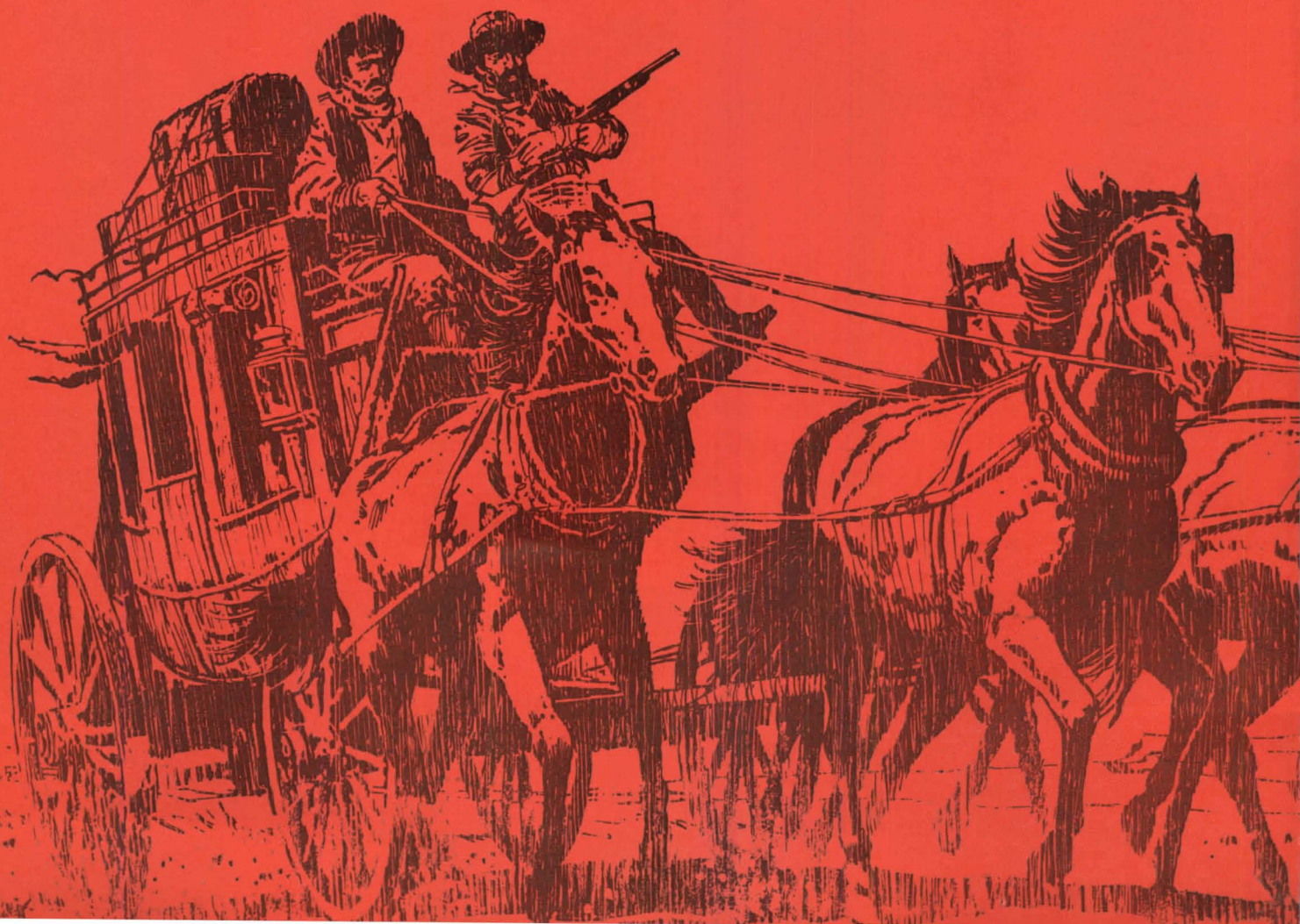
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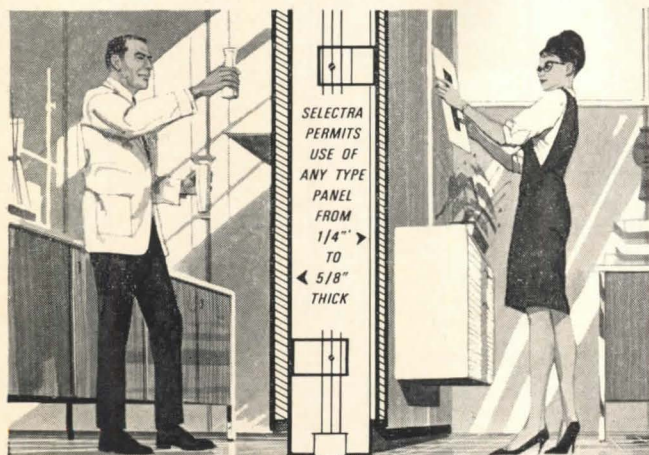
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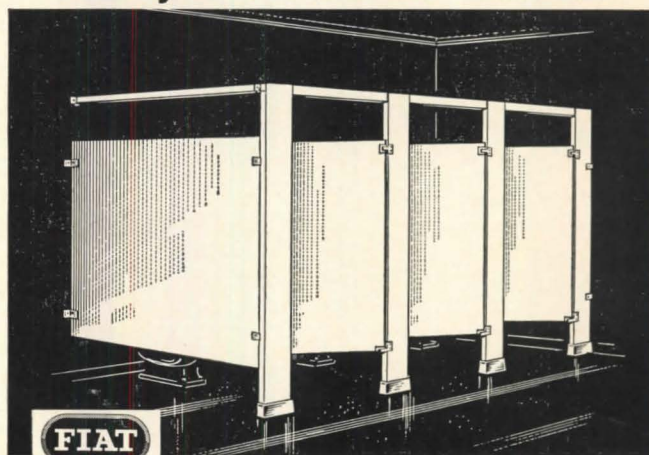
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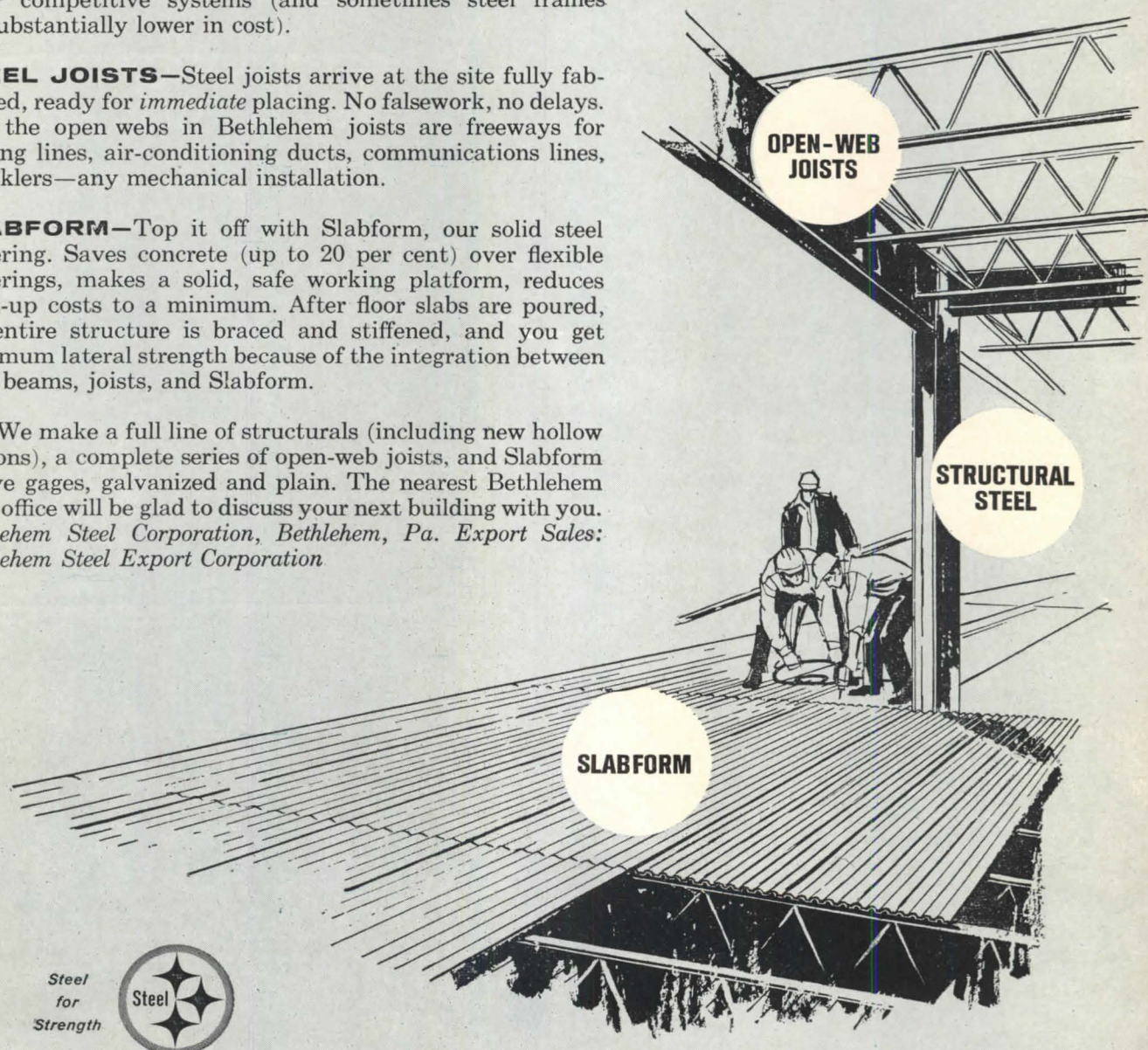
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BETHLEHEM STEEL



Continued from page 268

HARRY NEWMAN, WILLIAM D. STUBEE, and GLENN SCHNEIDER associates.

WHEEL-GARON, INC., Lighting Designers, New York, New York, have named DOUGLAS H. BAKER an associate.

WILSEY, HAM & BLAIR, Planners-Architects-Engineers, have named EDUARD A. WALLACH an associate and manager of the Santa Ana, Calif., office.

Elections, Appointments

ENGINEERS INC., Consulting Engineers, Newark, N.J., announce the appointment of MICHAEL STRUNSKY as director of the construction-management division.

JOHN GRAHAM & COMPANY, Architects-Planners-Engineers, has appointed ROBERT J. BARR a member of the New York office planning department.

INARCO, a division of David G. Reynolds Co., in Whittier, Calif., has appointed E. ROSS STATON project architect.

THE MAXWELL COMPANY, Contract Designers, Miami, Fla., has appointed CHARLES V. WARMOUTH to the staff.

NEW YORK CITY HOUSING AND REDEVELOPMENT BOARD announces the appointment of EDWARD A. GIBBS as chief of the board's Bureau of Neighborhood Conservation.

OWENS-ILLINOIS GLASS COMPANY has appointed JOHN P. KEARNEY general manager of the LIBBEY PRODUCTS division of consumer and technical products.

THE PERKINS & WILL PARTNERSHIP, Architects, has named J. RAYMOND MATZ chief of design of its White Plains, N.Y., office.

JENS RISOM DESIGN, INC., will have its New York City office headed by NIELS RISOM.

SAPHIER, LERNER, SCHINDLER, INC., Designers, New York, N.Y., have appointed SYDNEY KLEIN vice-president in charge of production. ROBERT FRANK has been put in charge of client contact. JULIO KAUFMAN was made executive project director.

IRVING D. SHAPIRO & ASSOCIATES, Architects, Los Angeles, Calif., announce the appointment of JOHN E. MCCARTHY as vice-president.

SMITH, HINCHMAN & GRYLLS ASSOCIATES, INC., Architects-Engineers-Planners, Detroit, Mich., have admitted WILLIAM R. JARRETT to the firm.

EBERLE M. SMITH ASSOC., INC., Detroit, Mich., has admitted JAMES F. STADLER to the firm.

JOHN STUART, INC., Furniture Distributor, New York, N.Y., has gained OTTO L. OVERBY as new executive head of design and styling.

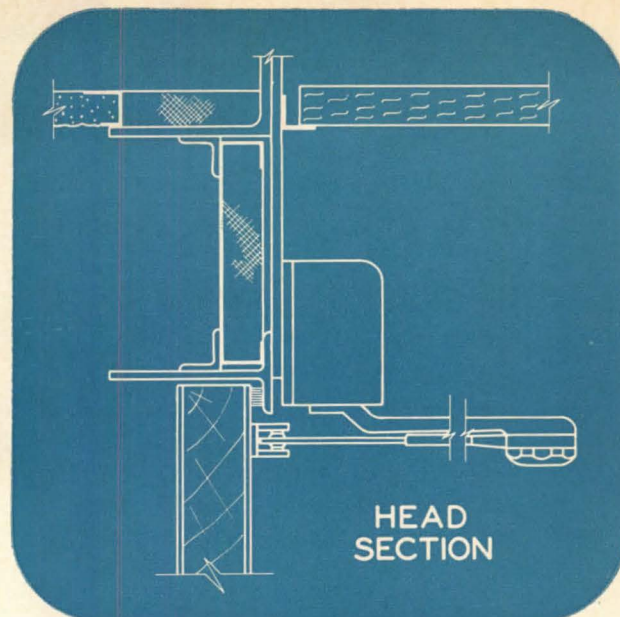
SVERDRUP & PARCEL AND ASSOC., INC., Engineers-Architects, St. Louis, Mo., announce the election of PERCY Z. MICHENER as vice-president.

SWANSON ASSOCIATES, Architects-Engineers-Planners, Bloomfield Hills, Mich., have appointed LYNN W. FRY to the staff.

UNITED STATES PLYWOOD CORPORATION, New York, N.Y., has named CHARLES R. CARROLL director of architectural services.

WILSEY, HAM & BLAIR, Planners-Engineers-Architects, San Mateo, Calif., have named four new corporate officers: RONALD T. CALHOUN, DANIEL W. KLAR, FRED P. DINGER, and EDUARD A. WALLACH.

Continued on page 278



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A Modern Approach How to Use Creative Perspective

By ERNEST W. WATSON

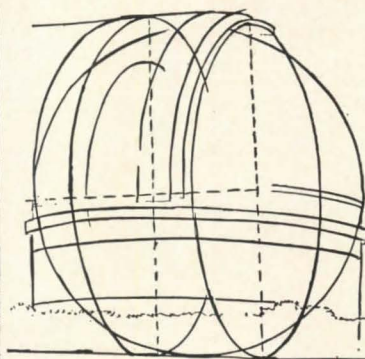
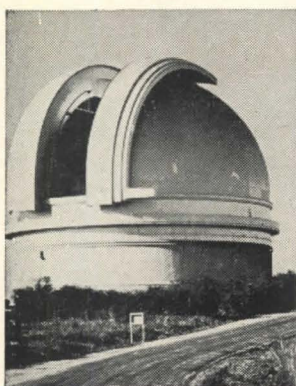
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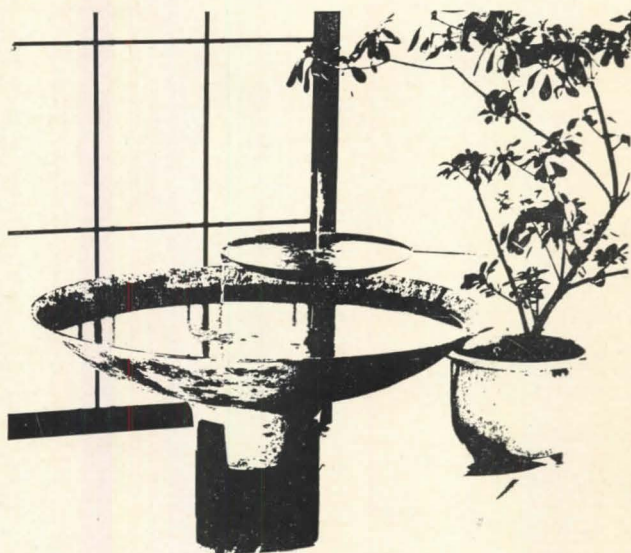
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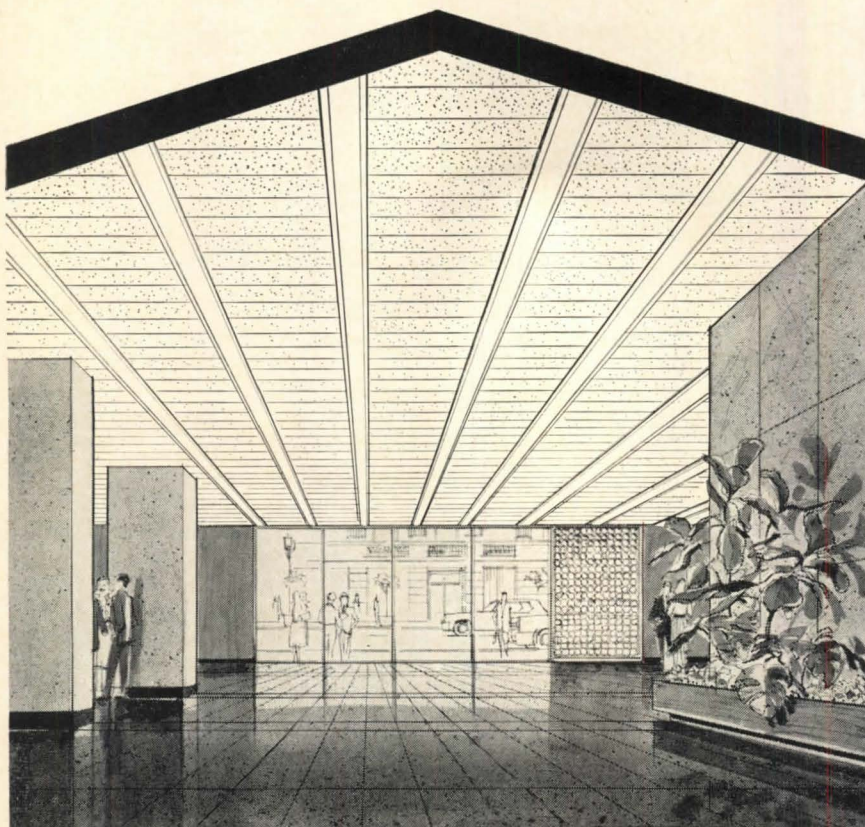
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GRIFFIN, MYNATT & ASSOCIATES, INC., Architects-Engineers, Knoxville, Tenn.; formerly BAUMANN & BAUMANN, INC.

JOHN HACKLER & COMPANY, Architects, Peoria, Ill.; formerly FOLEY/HACKLER/THOMPSON/LEE.

EDWARD L. HOLLAND, Architect, Philadelphia, Pa.; formerly, GLEESON & MULROONEY.

NATIONAL FOREST PRODUCTS ASSOCIATION, Washington, D.C.; formerly NATIONAL LUMBER MANUFACTURERS ASSOCIATION.

NOR-CAL DESIGN GROUP, Architects-Engineers, Santa Rosa, Calif.; formerly NOR-CAL ENGINEERS AND DESIGNERS.

SASAKI, DAWSON, DEMAY ASSOCIATES, INC., Landscape Architecture, Site Planning, 23 Main St., Watertown, Mass.; formerly SASAKI, WALKER & ASSOCIATES.

SHERRY & LYSIAK, Consulting Engineers, Buffalo, N.Y.; formerly JONES & LYSIAK.

MILLARD F. WHITESIDE & LASZLO PAPP, Architects, White Plains, N.Y. Formerly, MILLARD F. WHITESIDE, Architect.

WILSON, OKAMOTO, OKA, Architects-Engineers, 1441 Kapiolani Blvd., Honolulu, H.I.; formerly, WILSON ASSOCIATES.

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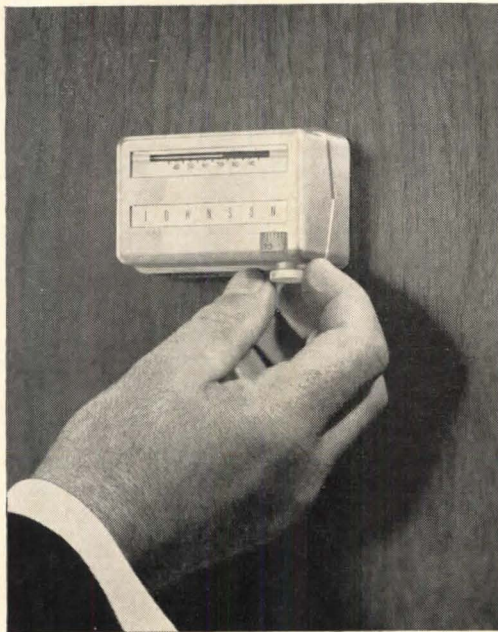
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Continued on page 282

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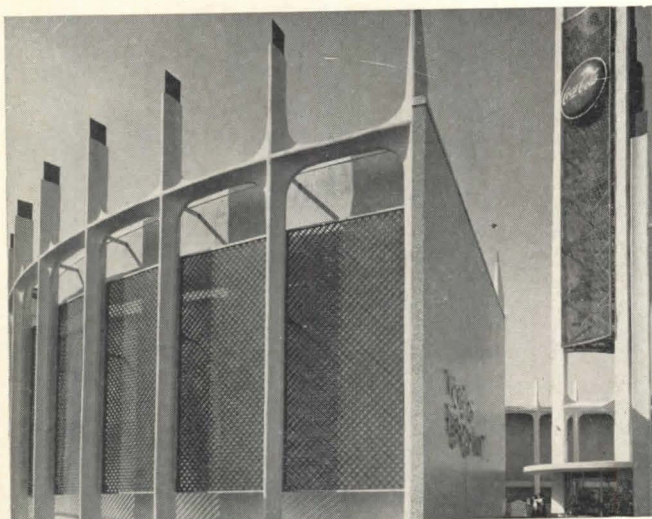


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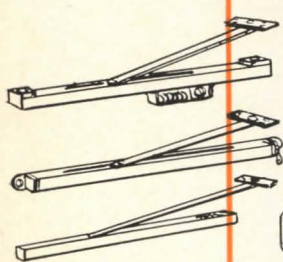
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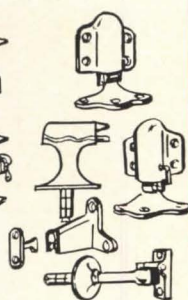


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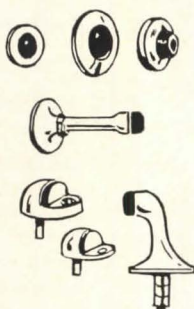
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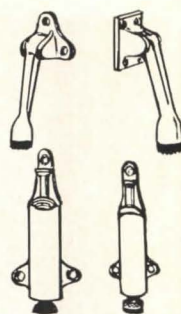
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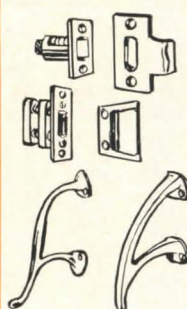
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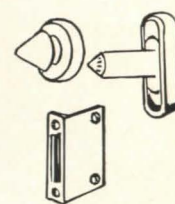
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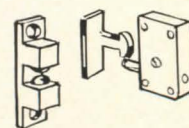
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Continued from page 280

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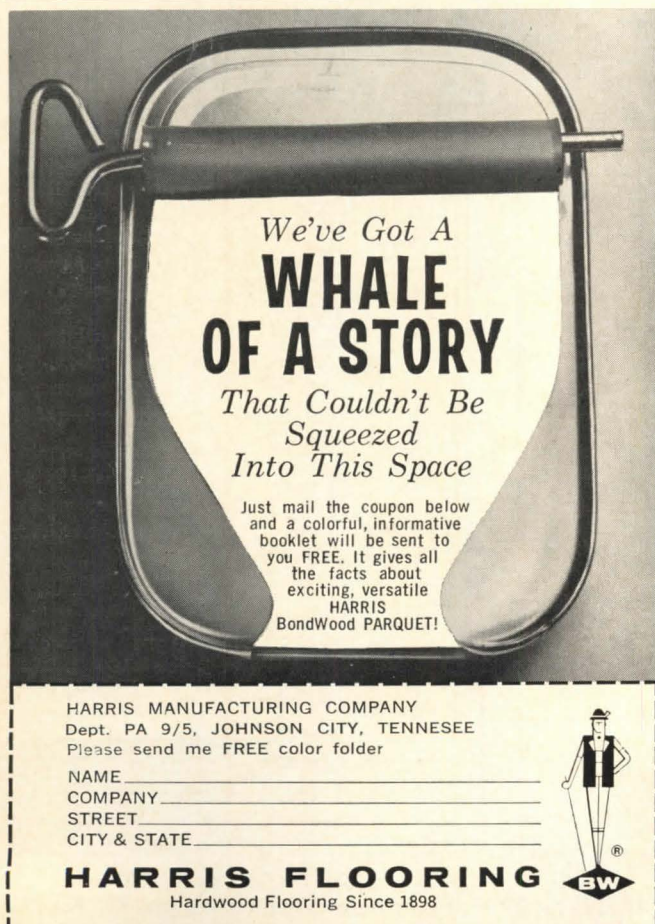
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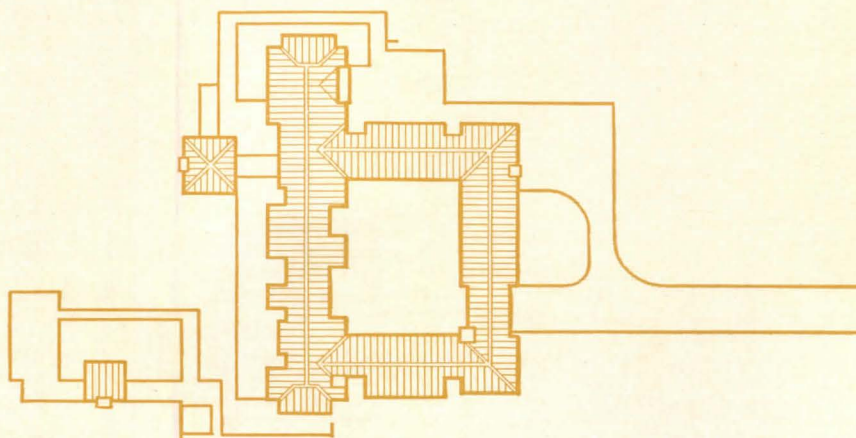
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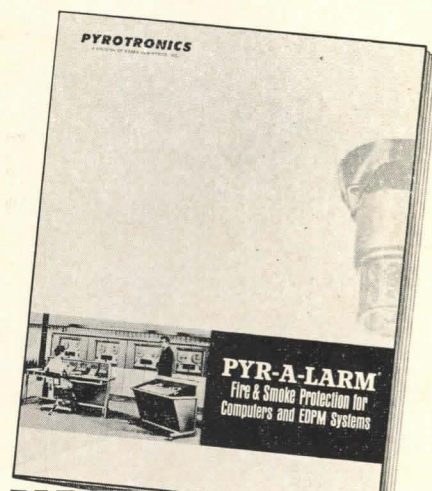


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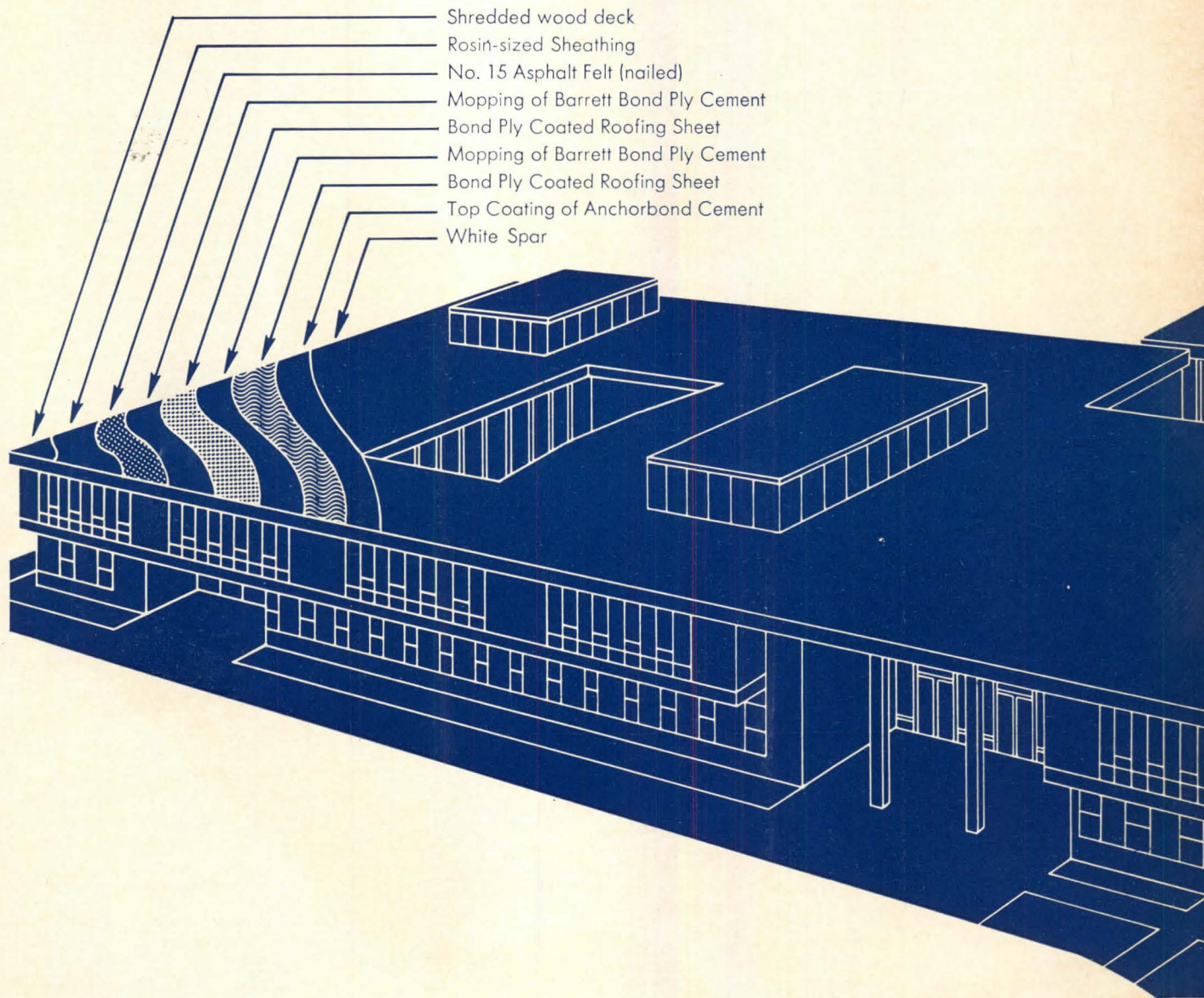
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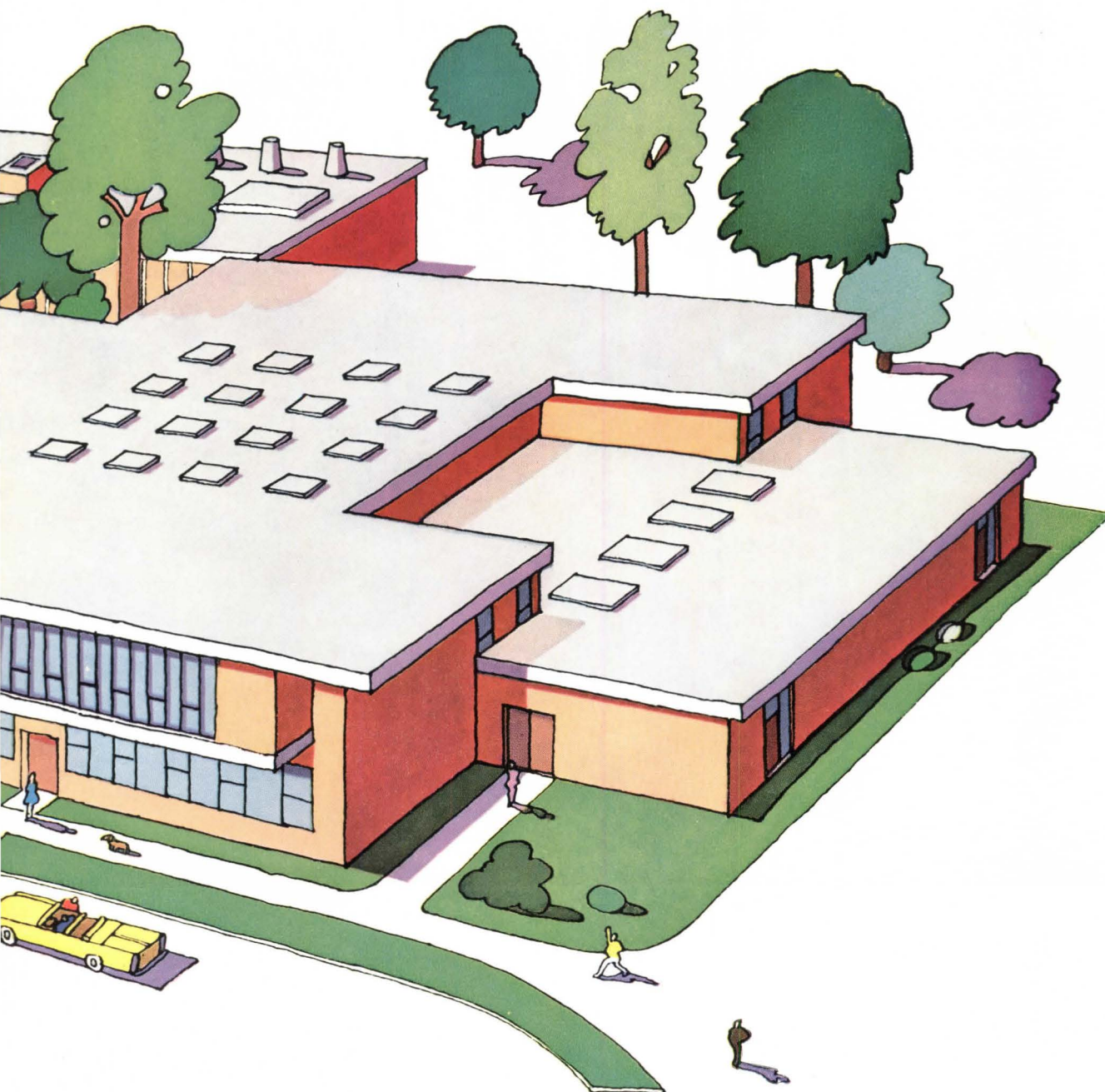
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