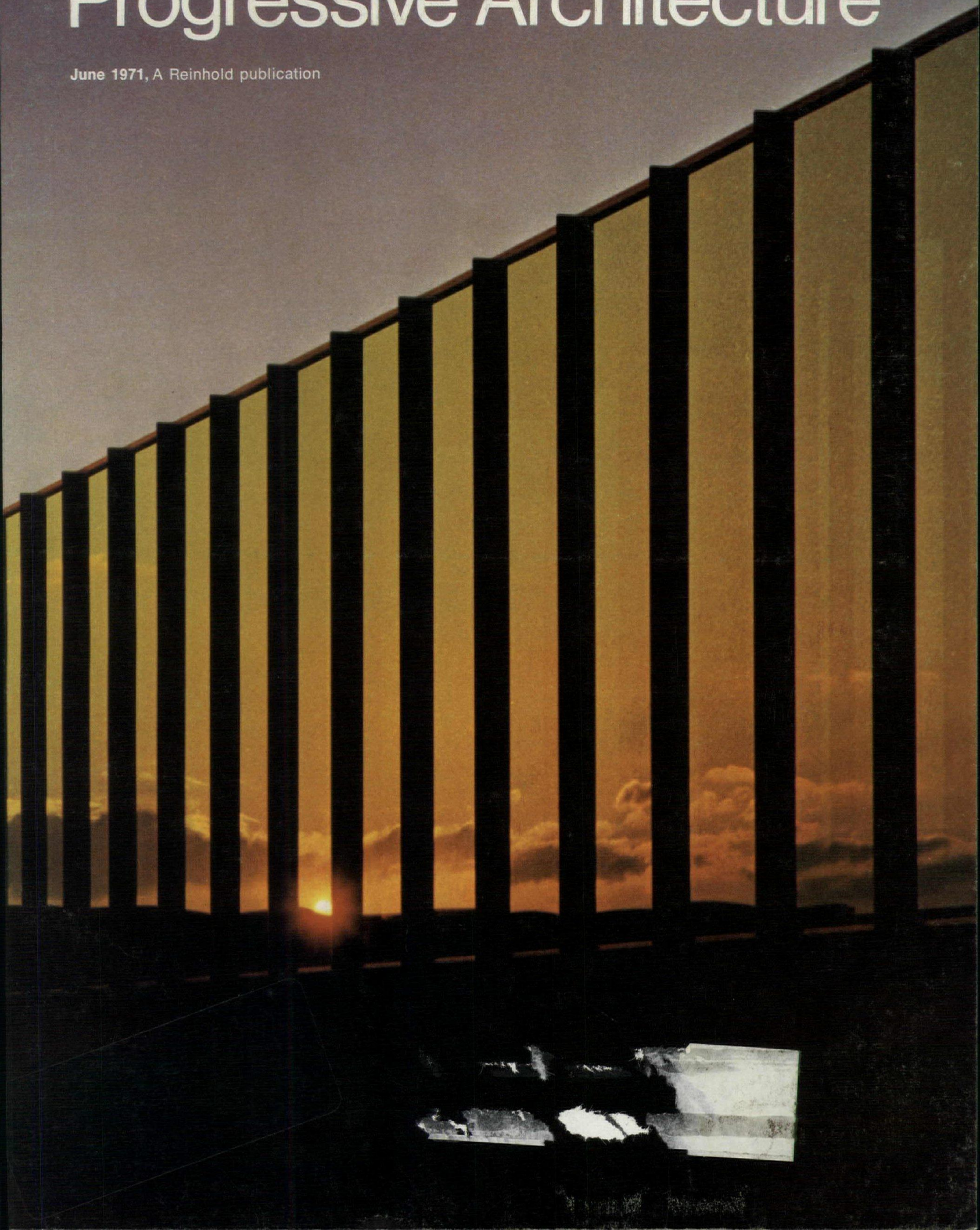


# Progressive Architecture

June 1971, A Reinhold publication







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## Departments

- 6 Views
- 27 News report
- 48 Products and literature
- 57 Editorial
- 90 Selected details
- 96 Environmental engineering
- 98 Specifications clinic
- 100 It's the law
- 102 Books
- 147 Job mart
- 148 Directory of advertisers
- 155 Reader service card

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June 1971

# Progressive Architecture

## 58 A building for dreamers

Glazed solar screen (cover photo) reflects a Pennsylvania sunset at the Armstrong Cork styling and design building by Vincent G. Kling & Partners.

## 66 Office profile: Geriarchitecture

St. Petersburg architect C. Randolph Wedding runs a large practice with a relatively small firm; a specialty is designing for the elderly poor.

## 74 Outpatients are in

Planning and design of Denver General Hospital by Eugene Sternberg emphasizes outpatient and emergency services to upgrade total municipal health care.

## 78 Interior design: Super-facial

If beauty is only skin deep, what about interior design that produces a turned-on environment? Dallek, Inc. supplied corporate cosmetics for Faberge.

## 84 People first, then mountains

A corporate headquarters designed by Loeb Schlossman Bennett Dart for a company that places contact with employees ahead of the Colorado view.

## 88 Materials and methods: Understanding sprayed fireproofing

Properly specified and applied, spray-on fireproofing can protect against fire and lessen pollution hazards; by Thomas F. Egan PE.

## 92 Materials and methods: Holography: a design process aid

Three-dimensional photographs offer the architect a new way to look at a project, even before it is built; by Lester Fader and Carl Leonard.

## Cover

Armstrong Cork Product Styling and Design Building, Lancaster, Pa.  
photographed by Lawrence S. Williams.



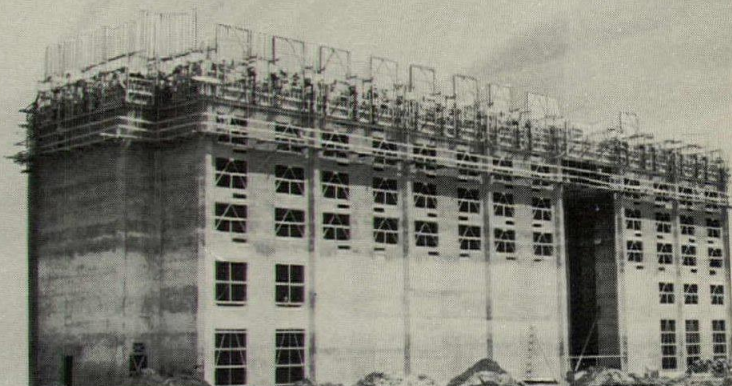
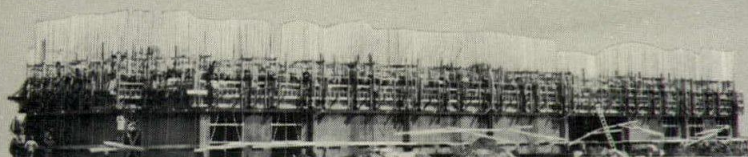
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tractor: R. D. Monroe  
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Kansas City,  
Kansas.

6TH DAY

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# Views

## Conservation architecture

Dear Editor: Thank you—thank you for the article by Mr. Wells on conservation architecture (p. 92) in your March 1971 issue.

His approach to the responsibilities of architecture as it relates to the environment is creative and intelligent. At long last, there is someone who is working for building structures that help nature instead of thwarting her at every turn. Articles which deal realistically with the city/wilderness dilemma are desperately needed by architects and by the people who must use these buildings. Artificial pools, potted trees and vast expanses of water-consuming, unproductive lawns are but placebos for the deadly problems that we all face.

If we are to have a healthy future for our cities and our precious remaining wilderness spots we must work on our problems without blinders. I sincerely hope that this article provides a turning point in the philosophy of architectural designers and builders.

*Kristin C. Graves*  
*Denver, Colo.*

Dear Editor: With regard to your fine article by Malcolm Wells on architecture/conservation I say let's have more. Here is a man who needs our support.

In addition, I enclose a copy of a letter forwarded to a catalog of building materials, which I hope will interest you too.

"In my daily use of your catalog I have come across something which is perhaps lacking in your system. As an architect who is greatly concerned with our earth and how we alter it through our profession, I find no sections geared to either ecological equipment or materials, no sections on self-contained power or waste systems, no

systems to utilize solar energy, or section on ground cover or planting to at least renew part of the earth that we mar.

"As I am primarily concerned with housing, my goal is to design self-contained dwellings in communities which do not concentrate waste into unmanageable proportions or draw power without generating any. Bucky Fuller's concept of a self-contained dwelling would make suburbia box city look like primitive caves with running water.

"Could we dare you to at least approach the subject with an open mind and to give serious thought to collecting and publishing the scattered, diverse material available in today's market on this subject.

"A copy of this letter will be sent to *Progressive Architecture* in hope that someone may rise to this challenge."

*Richard Redemske*  
*Chicago, Ill.*

Dear Editor: I have only just seen a copy of March P/A with the ACISAVS piece by Architect Malcolm B. Wells (The absolutely constant incontestably stable architectural value scale).

Armed with copies of Wells' evaluation charts I went through many of our prominent buildings. The results were frightening. We must do something now—and fast. Congratulations to P/A on this rare scoop.

*Peter Wille*  
*Melbourne, Australia*

## Georgetown

Dear Editor: All the hell we went through to put together a place in so sensitive an area as Georgetown is more than worth it for three reasons: the experience of the effort, the fact that the place merely exists, and the compliment to see it all climaxed on your cover (April 1971).

Thank you for understanding what we tried to do.

*Arthur Cotton Moore*  
*Washington, D.C.*

## A matter of money

Dear Editor: Your April cover, article and pictures dealing with the Canal Square office complex in Georgetown was of special interest to us. This truly imaginative concept was beset, as you say, by many constraints, among them being two fine arts commissions, the U.S. Department of the Interior, the Highway Commission and the Zoning Board.

The insurmountable obstacle, however, might well have been the inability to find an

imaginative lender. New York Life is particularly gratified to have been able to provide the financing that made this venture possible.

*W. C. Lutz*  
*Vice President*  
*New York Life Insurance Company*

## Special condemnation

Dear Editor: The design awards for 1971 (P/A Jan.) were outstanding as usual. Special condemnation is due for the jury that awarded a citation to Charles Tapley and Associate Joseph L. Mashburn for "Take Me to the Mountain" (p. 84). The jury's lucid comprehension of homo erectus architectural concepts elevates my belief that our profession will be the first to "see the cycle and dance naked in the rain" as did our savage ancestors before they clawed their way up from the enslavement of starvation survival.

*David W. Prince*  
*Houston, Tex.*

## Memory as meaning

Dear Editor: Some interesting developments have arisen from the article in P/A last August ("Memory as meaning," p. 90) and I thought that there might be some therapeutic value in relating these events.

Initially, let me enumerate the shortcomings of my article:

1. Most people didn't understand it.
2. The paper was too densely written. There is enough material for a book.
3. Unless the reader brought a past involvement to the subject, he was pretty much at a loss to make any comment beyond: "Geez; Isaw yerartikle. GGreat!"

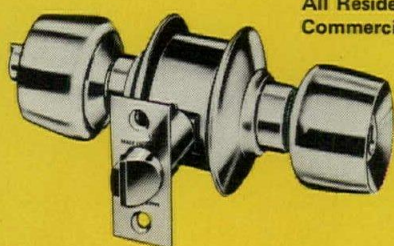
Now allow me to relate the accomplishments of that piece. The Construction Engineering Research Laboratory of the Army has shown an interest in the principles related in the article and feels there may be some application of these concepts possible in the design of dependent housing settlements. I have submitted a proposal to them. Also, the new art director of the Center for Inter-American Relations here in New York feels that there is enough in the concept of cybernetics to warrant a show at their headquarters here based on the article. This is the most exciting and gratifying result of the article, as well as being an honor to have the opportunity to represent the ideas of Norbert Weiner and his colleagues. Thank you for your support and interest. It has made this exposure possible.

Right now, I've just completed a study  
[continued on page 10]

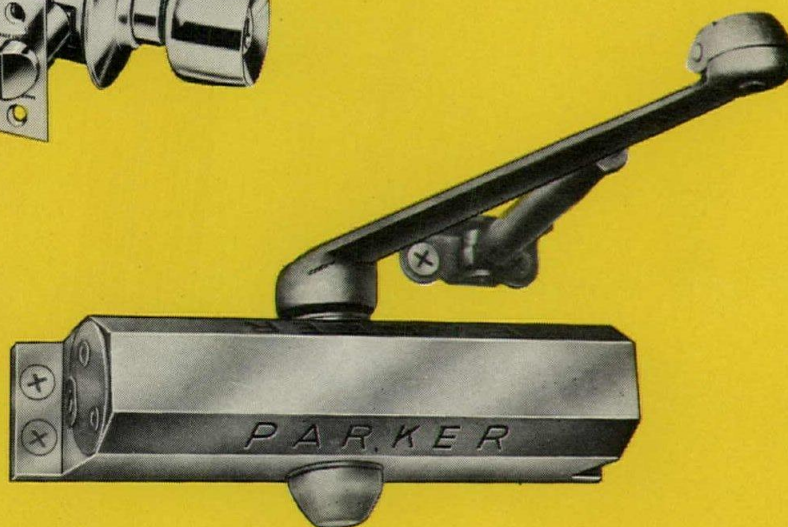


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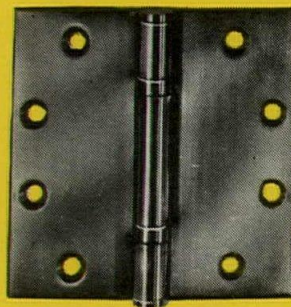
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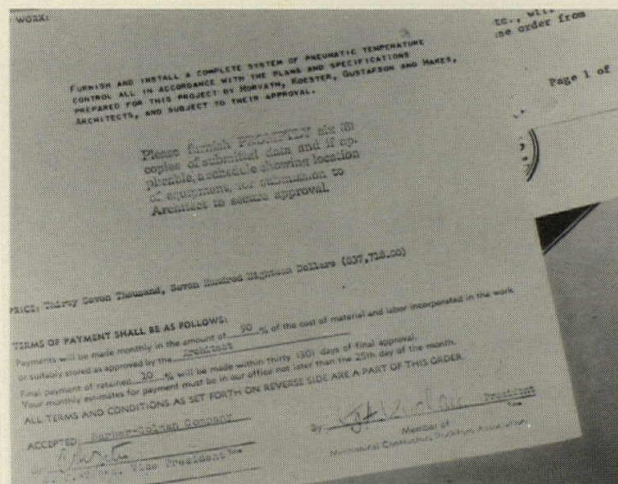
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**Views** continued from page 6

for the Mental Hygiene Facilities Improvement Corporation for a Narcotics Center. Hopefully, this will become a reality.

*Ken Ricci*

*New York, N.Y.*

#### **Guides**

Dear Editor: I have a pet project, one which aims at making easier the problem of remembering the buildings you want to visit. Imagine, for example, the frustration of driving cross-country and not remembering what you knew you wanted to visit in Moline, Illinois, Bloomfield, Connecticut, or in New Mexico. And where were those brand-new college campuses in south-eastern Massachusetts and upstate New York? Not to mention Canada. And even if you do remember, can you easily find your way from the center of town?

My suggestion is that some kind of a standard format be established to be put at the end of the article (or elsewhere), that will include the building, architect, location and directions for reaching it. That makes it easy for us—your readers—to start a usable file. Using this system, you can readily pull out all buildings so recorded that are in, for example, Ohio; all works of a certain

architect; or all published buildings of a given type.

Periodically, the magazine can compile its own summaries, and sell them as guide books. Local AIA Chapters may cover their own cities, but none covers the vast areas between major urban centers. It is probably too much to hope that all three of our major professional magazines will pick up this idea, but it can't hurt to suggest it. If that happened, a comprehensive national reference of international importance would soon develop, without any great additional effort for anyone.

*David Kenneth Specter, AIA*

*New York, N.Y.*

[See data listing at end of each P/A article. No driving directions—but everything else. Start clipping. Ed.]

#### **New format**

Dear Editor: Congratulations on your new format and typography! I am sure it will aid in the important, but difficult, job of communicating the flood of information that all of us design professionals must have. I am pleased that you are using the growing skills of typography and layout to accomplish this.

*R. F. Hastings*

*Detroit, Mich.*

#### **February format**

Dear Editor: May I extend my congratulations on your new format. This is the best idea for a professional magazine.

*Vincent Menza*

*Belleville, N.J.*

#### **Awards: influence**

Dear Editor: May we quote from your February editorial (p. 67), and disagree with P/A's philosophy? "The traditional means of assessing education by degrees, and excluding those without them from the important business of the world is no longer tolerable." . . . So fine, but:

" . . . when an annual design award is the equivalent of the union card for professional security, and the first design award an essential certificate for success, the institutions (cf. P/A) that manufacture these awards will be liable to political pressure and will exert an economic significance totally apart from their value as formation and information institutions . . ."

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*Université de Montreal*

*Montreal, Quebec*

[*"La Shoppe" is a French-Canadian environmental-help workshop bringing together 15 assiduous readers of Progressive Architecture.*]

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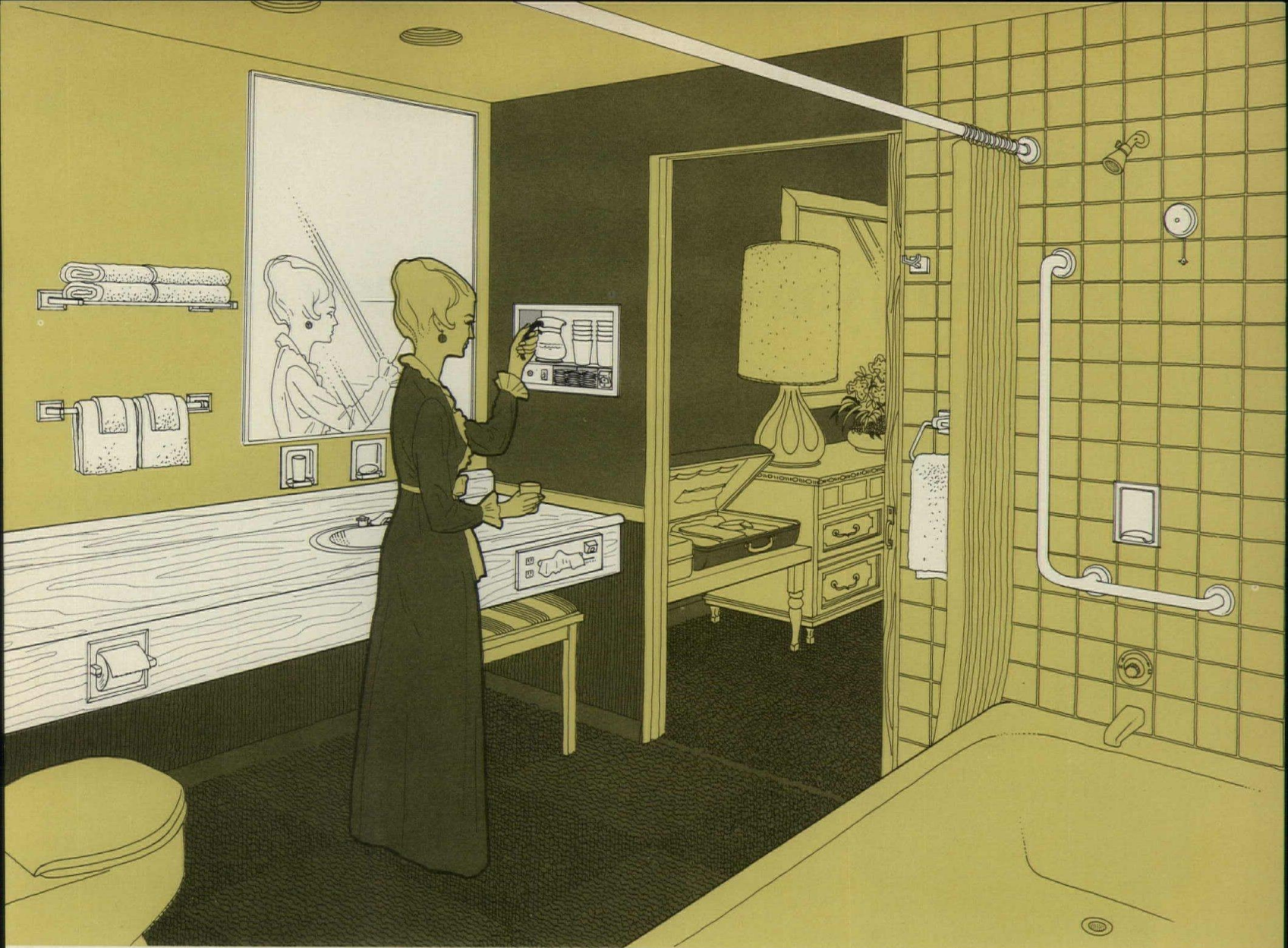
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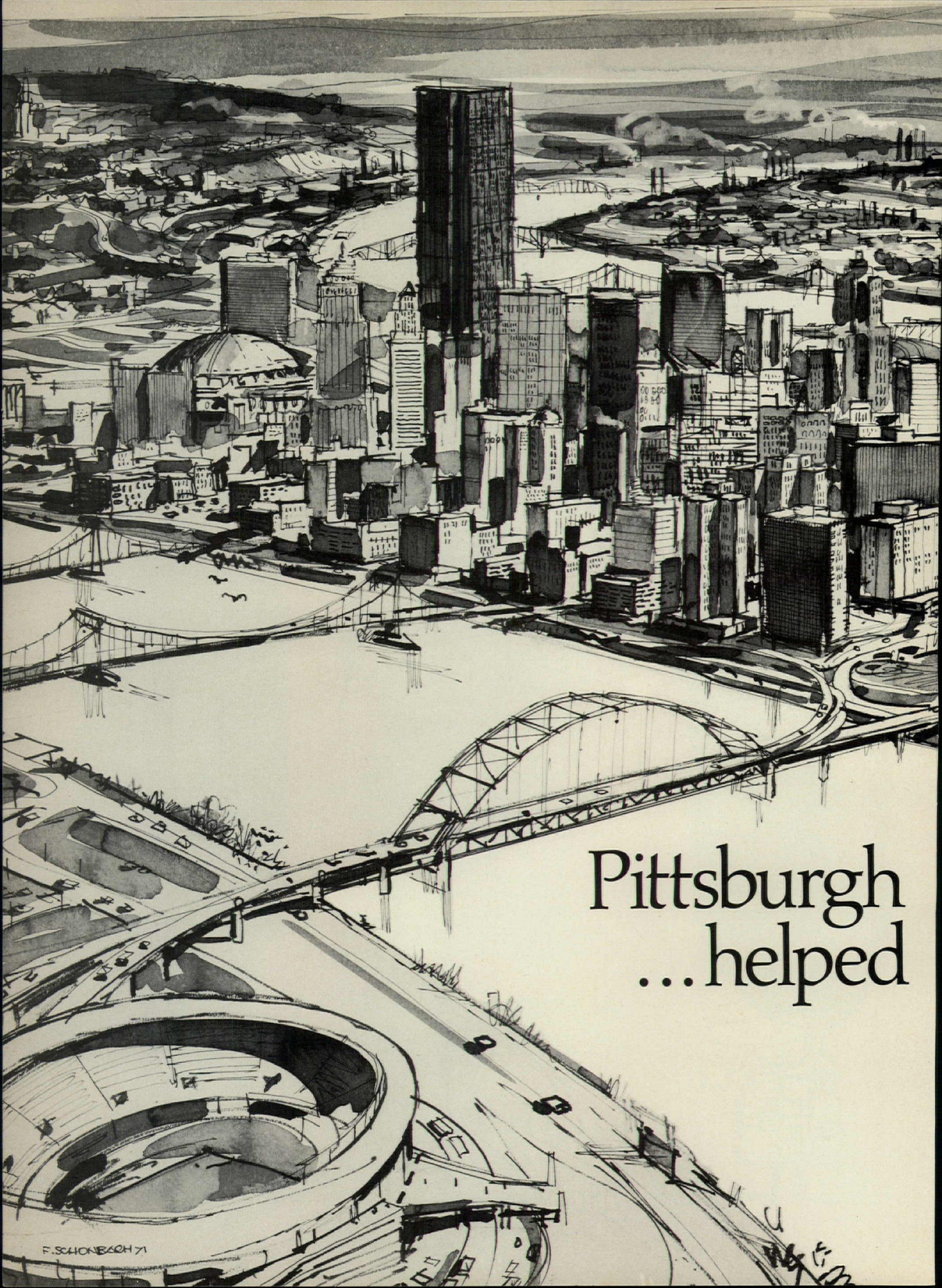
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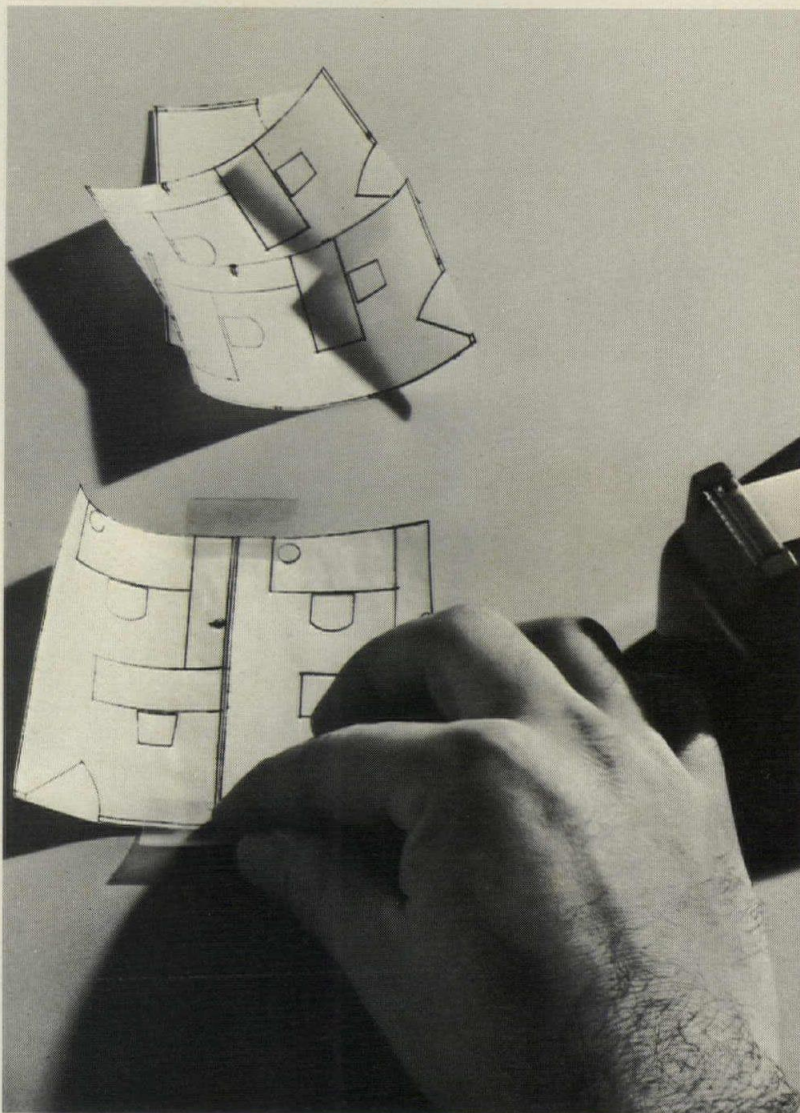




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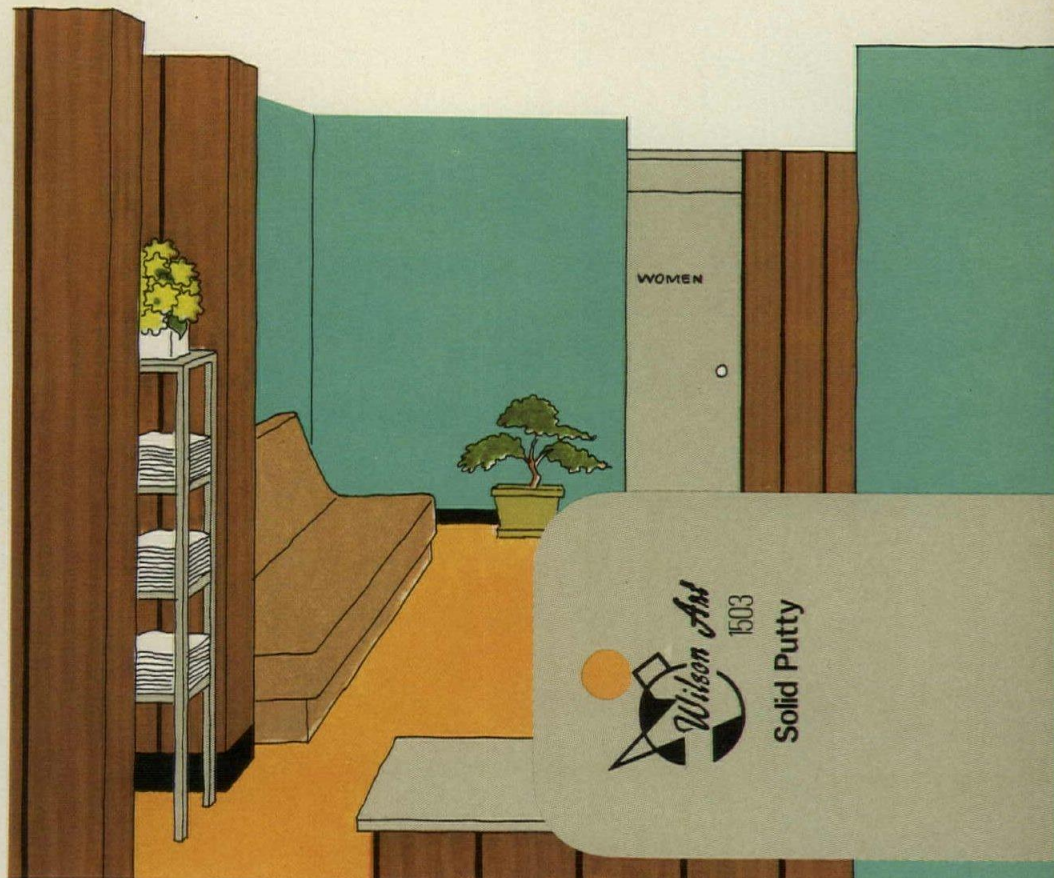


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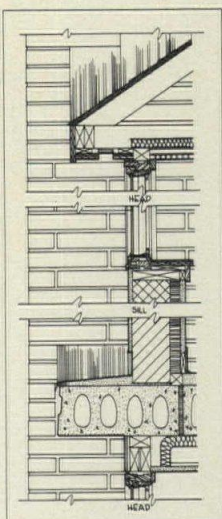
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Building: Housing Project for The Elderly, Minnesota 2-25.  
Architect: Bettenburg Townsend Stolte & Comb, Inc., Minneapolis, Minnesota



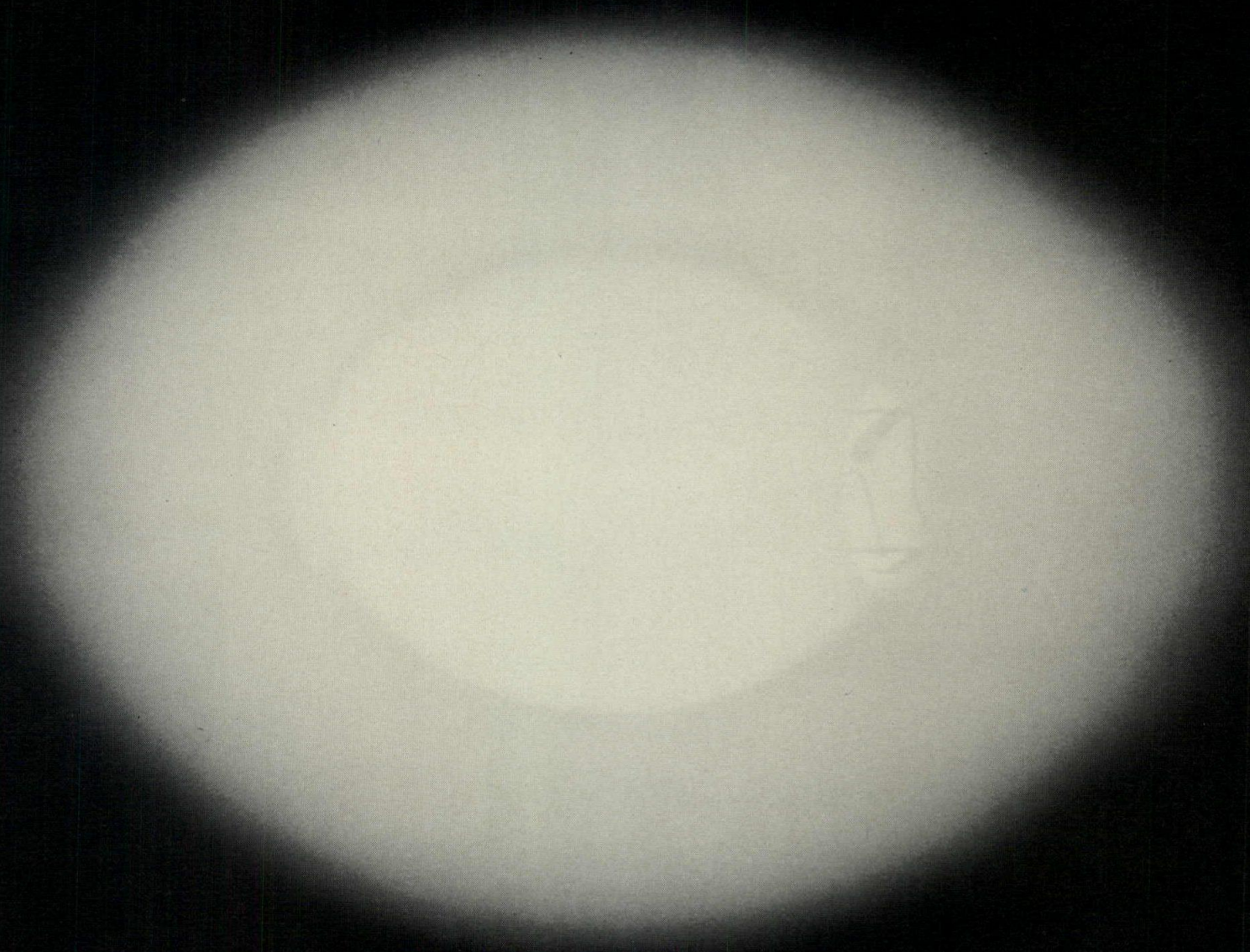
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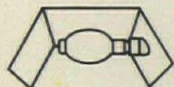
For more information, please write us. Dept. PA-6, Holophane Company, Inc., 1120 Ave. of the Americas, New York, N. Y. 10036



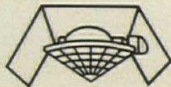
## How we tamed a wild lamp.



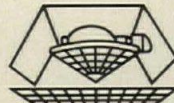
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## Contents

27	<b>Buildings on the way up</b>
44	<b>Awards</b>
44	<b>Calendar</b>
46	<b>Washington report</b>
47	<b>Architecture west</b>
48	<b>Products</b>
53	<b>Literature</b>
140	<b>Notices</b>

## Progressive Architecture

# News report

### Lady Bird leads tour of Lyndon Johnson Library

Although it wasn't quite finished, and although the guests at the press preview had to clamber over scaffolds and workmen, it was clear that the Lyndon Baines Johnson Library at the University of Texas would turn out to be a really well made building. The signs are there: the craftsmanship seems excellent, the concrete work fine, the contractor competent and the supervision good, judging from a pre-dedication tour.

Dedicated late last month, the library will house not only a large collection of memorabilia, but papers donated by President Johnson and others. Mrs. Johnson's bridal gown will be there, as will one of the daughters'; there will be mementos from President Johnson's early political career and from the White House. The mementos, of course, will delight tourists and Johnson fans; the real meat for historians will be in the 31 million papers, many of which won't be available for study for five more years. The library will also house an extensive oral history of the Johnson presidency.

The building is a strong structure of reinforced concrete, clad in travertine. It stands eight stories above a podium projecting from a sloping hillside. The side walls, 8 ft thick at the bottom, curve upward to support the cantilevered top story.

If the library was the main attraction at the preview, certainly the star was Mrs. Johnson. Charming and patient, she answered questions, posed for photos and gave an idea of just how close the deadlines were for completion. "The final deadline," she remarked, "was set for 12 noon one day later this month. But one of the workmen asked if they could have until 5 o'clock." The architects are Gordon Bunshaft of Skidmore, Owings & Merrill and associated architects Brooks, Barr, Graeber and White. Bunshaft had come highly recommended, Mrs. Johnson told P/A, and she was familiar with his work.

### Philadelphia passes on 1976 world's fair

Four years and \$2.5 million after it entered the Bicentennial sweepstakes, Philadelphia has all but scratched. The steering committee of the city's Bicentennial Corp. has recommended that plans for a world's fair in Philadelphia in 1976 be abandoned. The big reason: no site.

It all started with a spectacular plan for a \$1 billion exposition built over Penn-Central tracks at Philadelphia's 30th [continued on page 30]



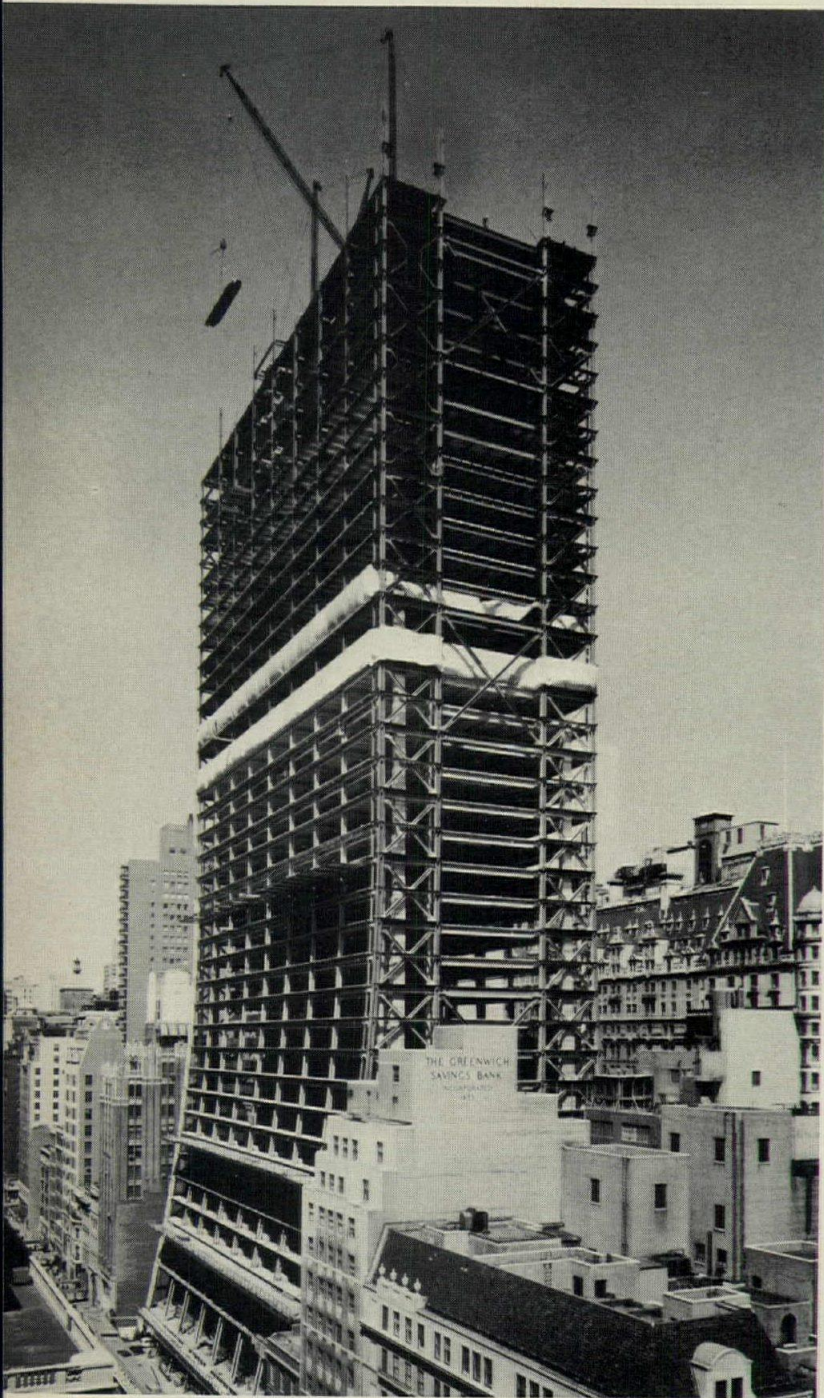
LBJ library





# Buildings on the way up

1



**1 Curving walls** of 50-story office building, glazed with gray glass, tower above Manhattan's 57th St. Black neoprene gaskets will hold windows and spandrel covers to frame, which will be behind wall. Tan travertine marble bands will be outside recessed glazing on ends; steel braces are for wind bracing. Gordon Bunshaft of Skidmore, Owings & Merrill is architect; Paul Weidlinger, structural engineer. A 90' x 100' private park is planned for one side of building. Plazas on north and south sides of building will be paved with marble.

**2 Dining hall** for Prairie View A & M College in Tex. will provide more than a place to eat for 3400 students. Building, designed by Edward Mattingly, will not only serve 17,200 meals a day in 1972 but will provide lounge and exhibit areas. Three-level building will have food storage in basement, receiving area and cold storage on first floor, and kitchen and dining areas on top level.

**3 Fan-shaped classrooms**, clearly expressed on exterior of Kent State University (Kent, Ohio) College of Business Administration building, will seat 100 students in 5 wide rows of seats. First three floors of six-story building are below main entry level because of steeply sloped site. As many as 3500 students and 120 instructors will use building designed by D.W.C.K. Partners, Inc. Triangular spaces between classrooms are used for storage, duct work and other facilities.

**4 Central spine** houses central facilities and connects parts of home office for United Services Automobile Association, designed by Benham-Blair & Associates, Inc. Site is 232-acre tract in San Antonio, Tex. Spine will include lounges, cafeterias and entry plazas as well as bridges, stairs, elevators and escalators linking departments and levels. Office portion of complex will be a three-level structure, with additional levels for utilities. Total cost of building, which will provide 880,000 sq ft of office space, is put at \$50 million.

**5 Three theaters**, two above and one below, are stacked in separate entertainment center at Westwood, Calif. Avco Center. Designed by Charles Luckman Associates, \$10 million complex is slated for completion in 1972. Main lobby of theater building will be glazed with bronze glass. Main theater will seat 1200; others will seat 800 and 271. Complex also includes 13-story office tower. Engineers: Erkel, Greenfield Associates (s); Ralph E. Philips, Inc. (m,e). Exterior walls will be putty colored fluted masonry.

**6 Graduate research center** for University of Massachusetts at Amherst will be built in two phases. Taller tower is first phase; its 17 stories will house chemistry labs and research facilities. Besides tower, first phase includes library, computer center and basements for two more towers. Second phase calls for two 16-story towers for math and physics research, along with 7-story connecting building. Buildings are of poured-in-place concrete with precast concrete exterior panels; exterior panels act as forms for the poured-in-place structural concrete. Campbell, Aldrich & Nulty are architects. Engineers: LeMessurier Associates (s), Francis Associates (m,e). First phase, to be completed this fall, will cost \$14.5 million; second phase, \$9.7 million. (Phokion Karas photo)

**7 Variations on a theme** show up in two hospital projects by Bertrand Goldberg. St. Joseph Hospital, Tacoma, Wash. and Affiliated hospitals Center in Boston both include low-rise base housing common services and separate concrete nursing towers. Affiliated Hospitals Center is actually three separate hospitals sharing common facilities; each will have its own tower housing patient-care facilities and research labs. Associated architect on St. Joseph Hospital is Seifert, Forbes and Berry; engineers are ABAM Engineers, Inc. Cost of 258-bed St. Joseph Hospital is put at \$13 million; Affiliated Hospitals complex will cost \$81.5 million.

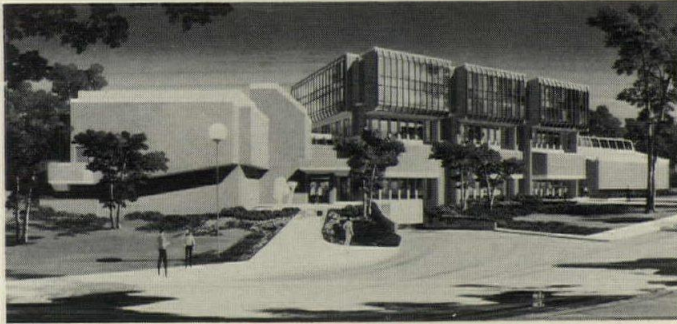
**8 Megastructure campus** for Community College of Allegheny County, Pa. designed by Williams/Trebilcock/Whitehead will serve 8000 students when third and final phase is completed. Monolithic concrete structure is set into wooded hillside and surrounded by playing fields and parking areas for 4500 cars. First phase will include classrooms, labs, student union, offices and a temporary library; faculty offices are integrated with teaching areas. First phase of \$30 million complex will be completed in 1972 and will serve 2000 students.



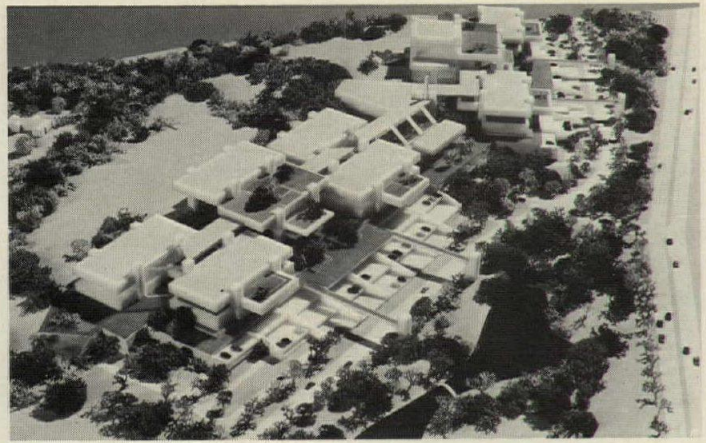
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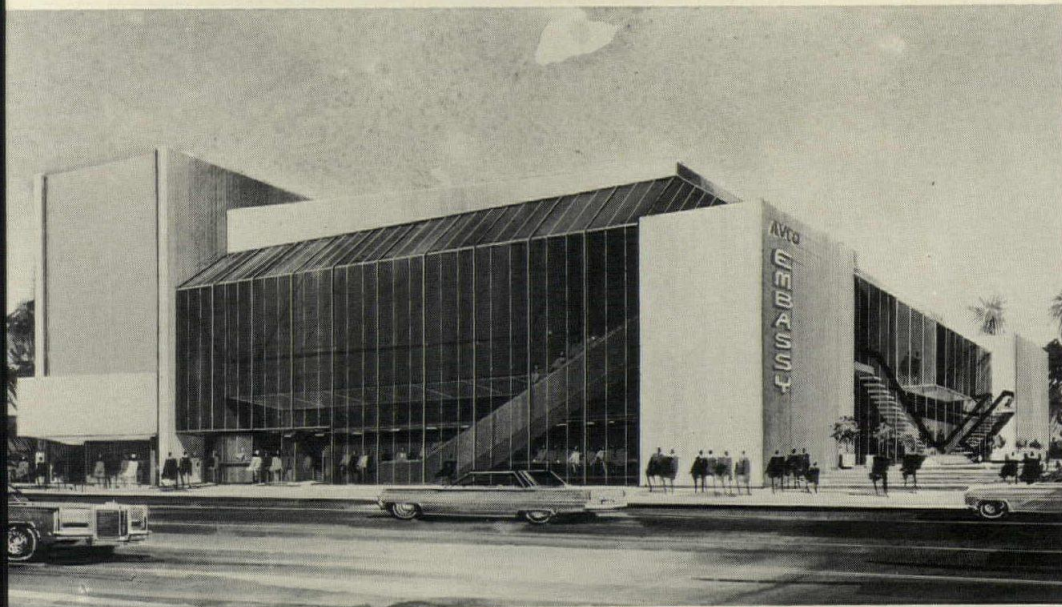
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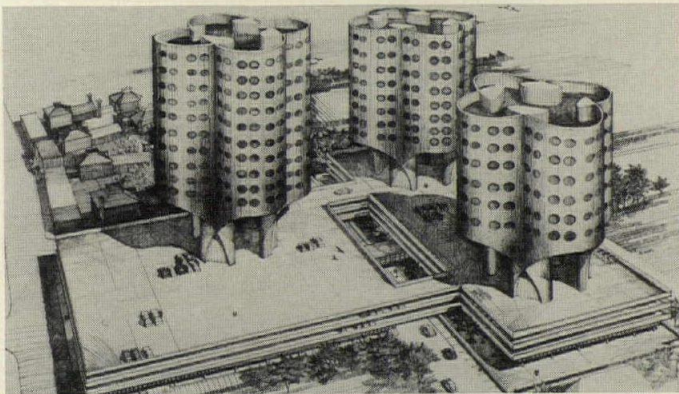
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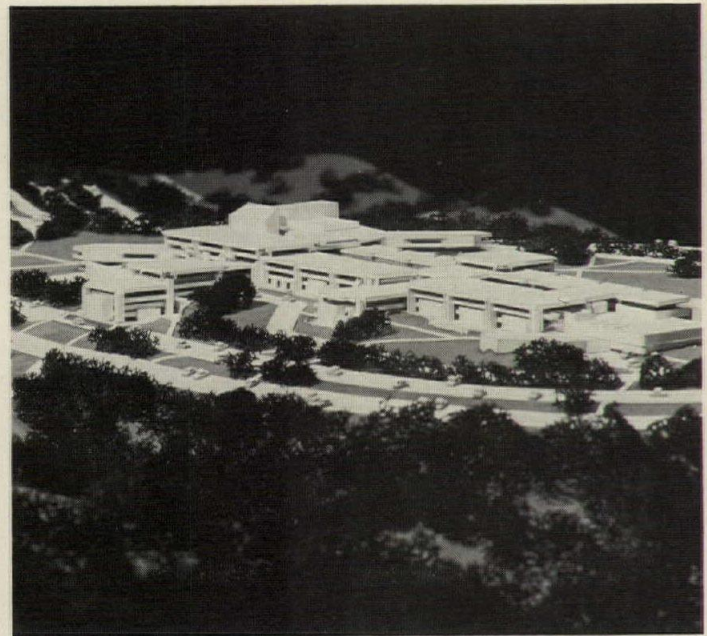
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8





Street Station. That plan was scrapped after three years, the board was reorganized and a new plan was presented in Washington. This one called for a \$555 million project on a 1000-acre site in northeast Philadelphia. The surrounding community, however, didn't share the board's enthusiasm: they don't want the circus atmosphere, the tourists and the noise. Some also fear that the site would eventually be converted to low income housing.

The steering committee's recommendation is not the last word, of course, but John P. Bracken, former chairman of the board and of the steering committee says only a miracle could make an exposition possible now. Plans to celebrate the Bicentennial are still afoot, however. Historical and cultural programs would not be ruled out by forgoing the exposition. And a good many Philadelphia boosters and businessmen who haven't given up on the world's fair angle have mounted a vigorous last ditch effort to save the expo.

#### **Detroit schools eye systems building**

Four school additions provide the basis for Detroit's first venture in school construction by systems building. Separate bid proposals were asked for five subsystems for all four projects; the four architectural firms involved had kept internal elements compatible and tried to use as many factory-manufactured components as possible.

The four additions total 280,000 sq ft in area; three are two-stories high, one is one-story. All are made up of relatively open flexible, air-conditioned, special-use space devoted to vocational-technical shops, laboratories, art and music studios and dining spaces; they contain no conventional classrooms or offices.

The program, known as Construction Systems Program (CSP), asked for bids on five subsystems: structure (floor and roof deck, spanning members, columns), atmosphere (heating, cooling, ventilation), lighting/ceiling (light fixtures, ceiling panels, acoustical surfaces), interior space division (partitions, panels, glass, chalkboards) and vertical skin (exterior walls, windows, doors). These systems account for about half of the total cost of construction, estimated at \$8.5 million.

Architects for this first phase of the program are Howard Sims & Associates, King & Lewis, Inc., Kissinger-Holzhauser Inc., and Nathan Johnson & Associates; each firm is responsible for one school. Once subsystem contracts have been awarded, the architects will complete the design of the non-system parts of the projects.

#### **Clearing house open for technicians' schools**

As the number of two-year architectural technicians programs increases, there is a growing need for communications between schools. So reasons R.J. Reinholt, chairman of the architectural technology department at Schoolcraft College, Livonia, Mich.

Reinholt is trying to set up a national communications network of "two-year post secondary schools involved in architectural technician education." Information on the structure of the schools and their programs would be exchanged. Reinholt is currently acting as a clearing house until the network is set up; he invites all interested educators to contact him at Schoolcraft College.

#### **Rochester, N.Y. on the way up**

Rochester's man in charge of clever and original ground-breakings has his work cut out for him this year. Some 4000 housing units, 17 parks and an assortment of schools, office and parking facilities will start construction during 1971; there are others on which design work will start, and still others for which construction will be completed.

The most visible of Rochester's urban renewal projects is Genesee Crossroads—39 acres along both banks of the Genesee River in the center of town. Once an area of commercial and skid row streets, the Crossroads is being turned into Rochester's showplace. Two new hotels are up and operating; so are new office buildings, including the Crossroads Office Building (P/A March 1971). Later this year, a 3-acre park, designed by Frank Schlesinger (P/A Design Award Citation, 1967) is slated to open. Beneath it is a parking garage, and a pedestrian bridge will connect it to another open space across the river; the arms of the Y-shaped bridge will enclose a fountain. Construction will start on other projects this year: a 530-unit apartment development and a 10-story office tower and retail complex north of Main Street, and an office and retail complex in Genesee Crossroads South. This will include parking for 1800 cars, a retail mall and an 11-story office building; Chloethiel Woodard Smith is the architect.

Another major project in the central business district is the Southeast Loop, a 60-acre area that will be cleared to make room for an in-town community—medium and high density housing, parks and open spaces, stores, shops, and a school. Work also starts this year on 533 housing units designed by Gruzen and Partners and developed by the New York State Urban Development Corp. A six-acre park designed by Lawrence Halprin and Associates is also scheduled for this year.

These two major downtown projects illustrate a change in the thrust of Rochester's urban renewal efforts. Where once commercial and industrial development had priority, emphasis is now on housing, says Robert Spellman, who heads the Department of Urban Renewal and Economic Development. "Over the past 10 years, public housing starts averaged 600 units a year; in 1971, there will be 4000 or more, and we expect to maintain that pace for the next four years," Spellman says.

Among the housing goals outlined by the department's chief planner, Don Aures, are to bring middle-income people back into the city, and provide housing for larger families. "We're trying not to build clean ghettos; four clean walls isn't enough. What we did 15 years ago in public housing is a problem now." A case in point is Hanover Houses, built in 1952; the two seven-story buildings have been Rochester's Pruitt-Igoe story, and the experience has influenced recent planning. "There is a great need for units with three and four bedrooms," says Aures, "but you can only put so many large families into a project."

One solution being studied is the construction of Habitat-Rochester, a Safdie-designed project on the west bank of the river. A feasibility study backed by the city, UDC and a neighborhood group is underway to see if costs can be lowered.

Another new wrinkle in Rochester's urban renewal has been the active part played by the New York State Urban Development Corp., a result of the change in city administration at the beginning of 1970. By April of 1970, UDC and the city, county and housing authority had signed contracts for 7000 housing units and a 215-acre industrial park; in August, a lo-



cal subsidiary, UDC-Greater Rochester, Inc. was set up.

UDC is active in many renewal areas, including the Southeast Loop and Genessee Gateway (not to be confused with Crossroads). Genessee Gateway, on the east bank of the river, will eventually provide 1200 housing units; work starts this year on the first 400 units. Designed by Conklin & Rossant, the project will include three high-rise towers and several low-rise buildings, grouped around small courts and linked to a 9-acre park designed by Lawrence Halprin and Associates.

According to Spellman, UDC has made a significant difference. "We try to really use UDC," he says. "Some cities slough off the dog projects on UDC, but we've given them large and challenging ones. We might have done the Southeast Loop and Genessee Gateway without them, but we couldn't have done them as quickly and as smoothly."

With all its building, the city isn't forgetting parks and open space. The river offers many opportunities for park development, and along with the riverfront parks that are part of housing and commercial projects, there is one major park development slated for the Upper Falls. Here, on the site of a city park built a hundred years ago, a large new park will be developed overlooking the falls. Designed by Corgan and Balestiere, it will be linked by pedestrian bridges with a park across the river at an electric generating station.

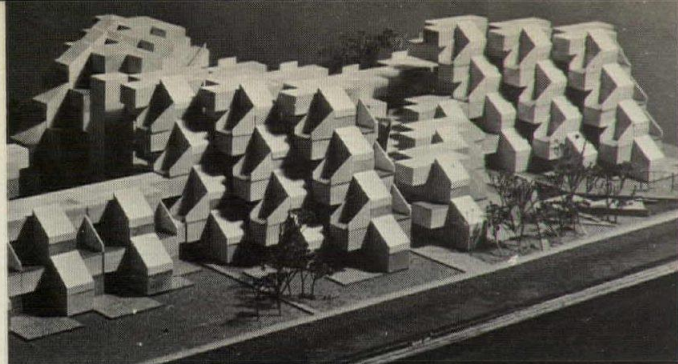
The opening up of the riverfront is one aim of the city's Open Space program, says planner Neil Schulman; the other is a series of neighborhood recreational parks. Many are in urban renewal areas, and many are extensions of school playgrounds. "These will be adventure playgrounds," Schulman says, "with a minimum of fencing." All together, Open Space and Urban Renewal account for about two dozen parks. Designers include M. Paul Friedberg and Associates and Corgan and Balestiere; parks will be for adults as well as kids.

Behind all this urban renewal activity are two main strengths. One is money: Rochester is a fairly affluent city. Founded as a mill town in the late 1700s, it should have died in the 1850s when the mills died. Instead, Eastman started his camera industry, other industries took hold and today there is a high degree of manufacturing.

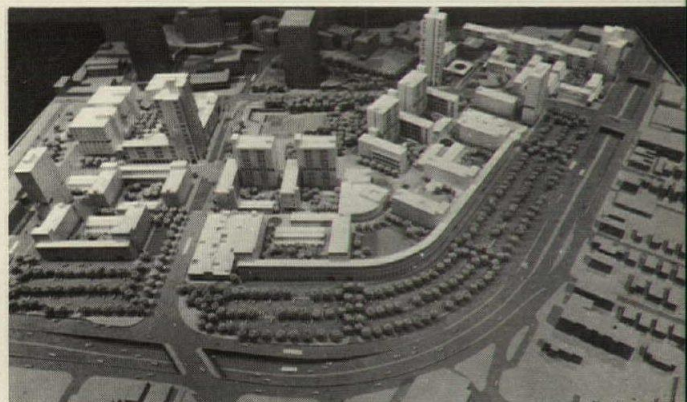
The city's political system is another source of strength, and the two main power points are the city council and the neighborhoods. On the council, says Spellman, "There is usually a clear majority of either party. As long as that majority supports city development, urban renewal can move at a fairly rapid pace. We send 40 to 60 pieces of legislation to the council every two weeks; they usually zip right through. The only problems come from the neighborhoods."

The Department of Urban Renewal makes a real effort to include neighborhood people in the renewal process. In two renewal areas, Spellman says, the agency disposes of land only to community groups. "That's a hell of a lot more socially significant than calling a committee together to involve them in land use planning." Neighborhood groups are also involved through advisory committees set up for each project, or through the Department's neighborhood relations staff. The neighborhoods, Don Aures says, "feel they are being heard."

Rochester is spending money on planning and programming; it is reaching for good design, good planning and good architects. The program, says Aures, is a balanced one, rebuilding neighborhoods as well as downtown. And its going to keep the vice president in charge of groundbreakings very busy this year.

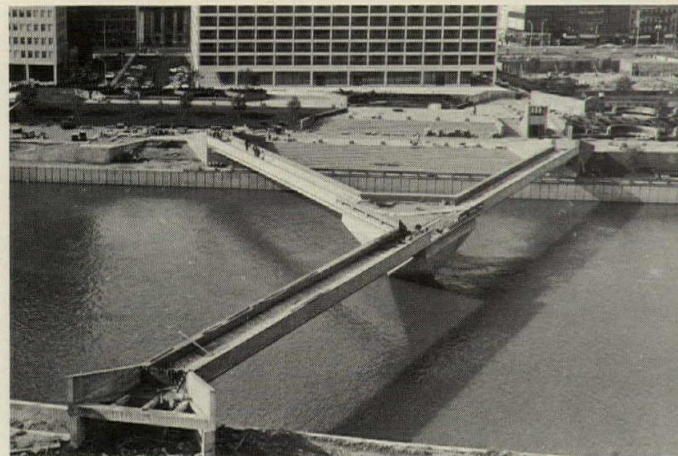


Rochester's Habitat?

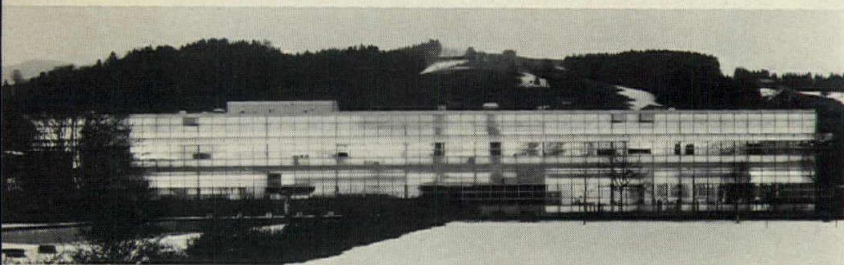


Southeast Loop

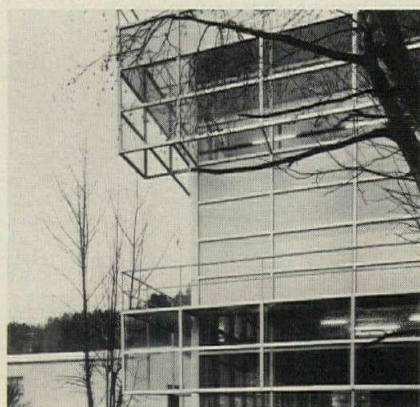
At the Crossroads: park, Samuel Paul and Seymour Jarmul's Federal Building, Corgan & Balestiere's Bankers Trust Plaza







Prize winning factory



### Reynolds Award given for Swiss factory

A machine factory in the Swiss village of Wattwil brought the 1971 R.S. Reynolds Memorial Award to Prof. Walter W. Custer of Zurich and Fred Hochstrasser and Hans Bleiker of Ulm, West Germany. The factory is part of a complex of factories, office buildings and service facilities being built for Heberlein & Co. AG.

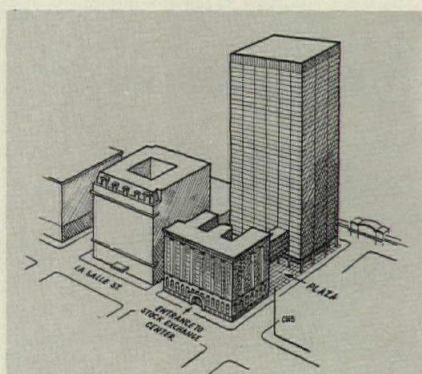
The factory is a curtain wall building with an exterior of aluminum-and-glass panels. Insulating glass panels, framed with anodized aluminum, form most of the curtain wall; aluminum sandwich panels are used at corners and for the lowest part of the wall. The sandwich panels have anodized aluminum on the exterior, untreated metal on the interior.

Solar glare and heat are reduced by a sunscreen of tinted glass and aluminum. The screen cantilevers out from the building, and its structural system serves as a maintenance platform and fire exit. Production operations are centered on the second floor of the building, offering workers panoramic views of the valley in which the factory is located.

### Chicago landmark groups still fighting for Stock Exchange

The Chicago Stock Exchange, scheduled for demolition this summer, is being vigorously defended by local preservationists. One more attempt has been made to have it declared a landmark; otherwise it is to be razed to make way for an office tower.

One way to have the best of both worlds would be to save the Stock Exchange and build a high rise structure a bit to the west of it. Architect Charles William Brubaker gets credit for the proposal and the drawing.



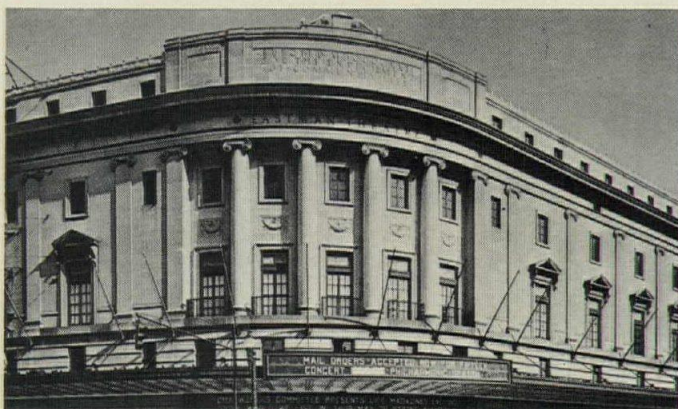
Chicago Stock Exchange

### University of Rochester's Eastman Theatre renovated

Eastman is a big name around Rochester, N.Y., and one of the buildings it appears on is the Eastman Theatre at the University of Rochester. A gift of George Eastman, the theater was completed in 1921; Gordon and Kaelber, a Rochester firm, were the planners and McKim, Mead and White were the architects. It was grand and glorious, complete with a huge crystal chandelier from Vienna and wall paper printed from wood-blocks commissioned by Napoleon.

The grandeur faded over the years. The wallpaper deteriorated, and during the 1950s a four-ton section of ceiling fell into the auditorium. At that time around \$100,000 was spent on repairs that included new supports for the ceiling and an inspection of every inch of ceiling.

During the next year the Eastman Theatre will get another going over. The rundown wallpaper will be replaced by the last available set from the original blocks, which have long since disappeared. New carpeting, new seats and new stage curtains will be installed. The ceiling will be reinspected. Everything—repainting, lighting, redecorating—will be aimed at "highlighting the original beauty of the theatre," according to University architect Igor Shwabe.



Eastman Theatre

### Airport boom prompts new firms

There must have been a few people listening when Clyde Pace of the Federal Aviation Agency outlined future airport development to a group of architects and engineers in New Orleans a few months ago. The most conservative estimates put expenditures for air transportation facilities at around \$10 billion for the next 10 years or so, which should in itself be [continued on page 34]





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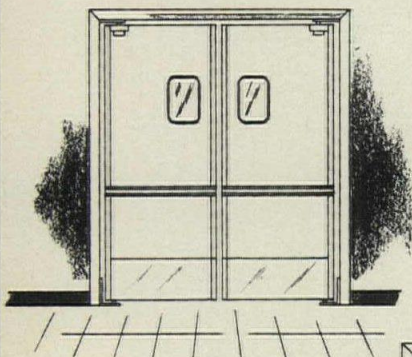


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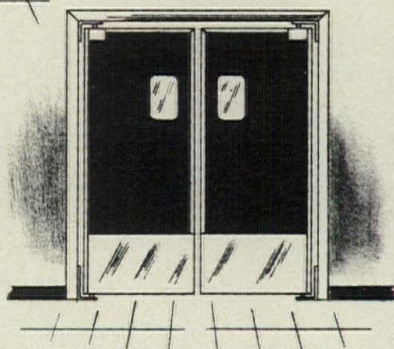
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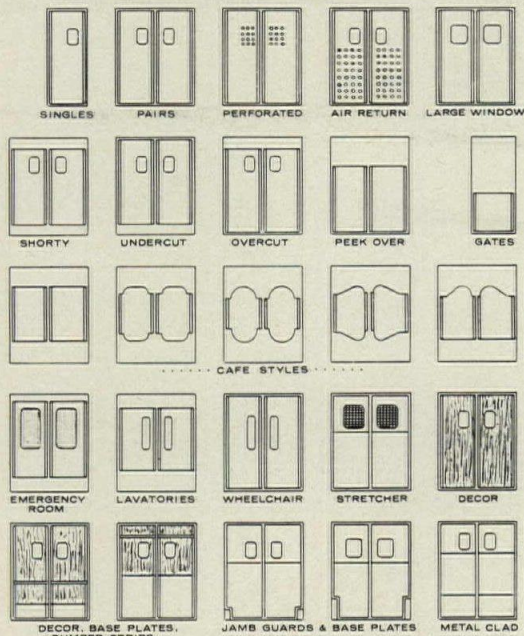
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News report continued from page 32

enough to attract a variety of enterprising firms. Or maybe groups of firms, because the projects are huge.

There are a couple of straws in the wind. The Eggers Partnership, an architectural firm; Transplan Inc., aviation and transportation consultants; and Syska & Hennessy, Inc., engineers have joined forces for work on air transport facilities projects. They have all been working independently in the airport field, but they see virtues in coordinated work. "The \$500 million price tag for development of a large air transportation facility means consultant fees running into the millions. Any savings in cost and time through efficiency of planning may make a critical difference to communities and carriers at a time when ground facilities can't keep pace with aviation technology," said Michael R. Santoro of Transplan.

In obvious agreement are the firms making up Aeroplaning International, Inc., another multidisciplinary entry into the field. In this case, the founding firms are: Parsons, Brinckerhoff, Quade & Douglas; Edward Durrell Stone & Associates; Edward D. Stone, Jr. & Associates; and Tyler Abell of the Washington law firm McCormack & Bregman. That list of firms totals over 800 employees, and Aeroplaning International says it is ready to provide engineering, architectural, land planning, legal and socio-economic services to existing as well as new airports.

### Texas student develops high strength masonry

Thomas J. Fraley, a graduate student in architectural engineering at the University of Texas has apparently developed the highest strength ever recorded for brick masonry. He has developed, so far only in a lab, a type of polymerized brick masonry with compressive strengths of 17,429 psi.

Based on earlier studies using Cobalt 60 to polymerize the masonry, Fraley developed a water-like liquid polymer with an acrylic base. The polymer soaks into the masonry and cement, occupying the space between the sand grains. When set and heat cured, it becomes part of the mass, binding it together with more strength than the cement alone.

Dr. David W. Fowler, who directed Fraley's study, sees potential use of the polymerized masonry in prefabricated masonry structural systems. What's more, he says, the polymer helps masonry resist moisture and other weather problems.

### Boston meetings bring systems architects together

As systems building becomes more and more in vogue, more and more architects seem to want to design their own individual systems. At the same time there is precious little real interchange of experience and knowledge, which means duplicated effort and little progress in general knowledge.

In an attempt to do something about the situation, the Boston Architectural Center launched a series of meetings. The program began back in December as Systems Building Round Table Discussion I, headed by Ken Wilson of Hugh Stubbins and Associates. SBRTD I concentrated on user needs studies, market aggregation, government roles, hardware, methodology and industrial efforts. For the second meeting John Ellis of Campbell, Aldrich and Nulty described a graphic method of plotting user considerations against producer considerations to determine what system best serves each need.

[continued on page 39]

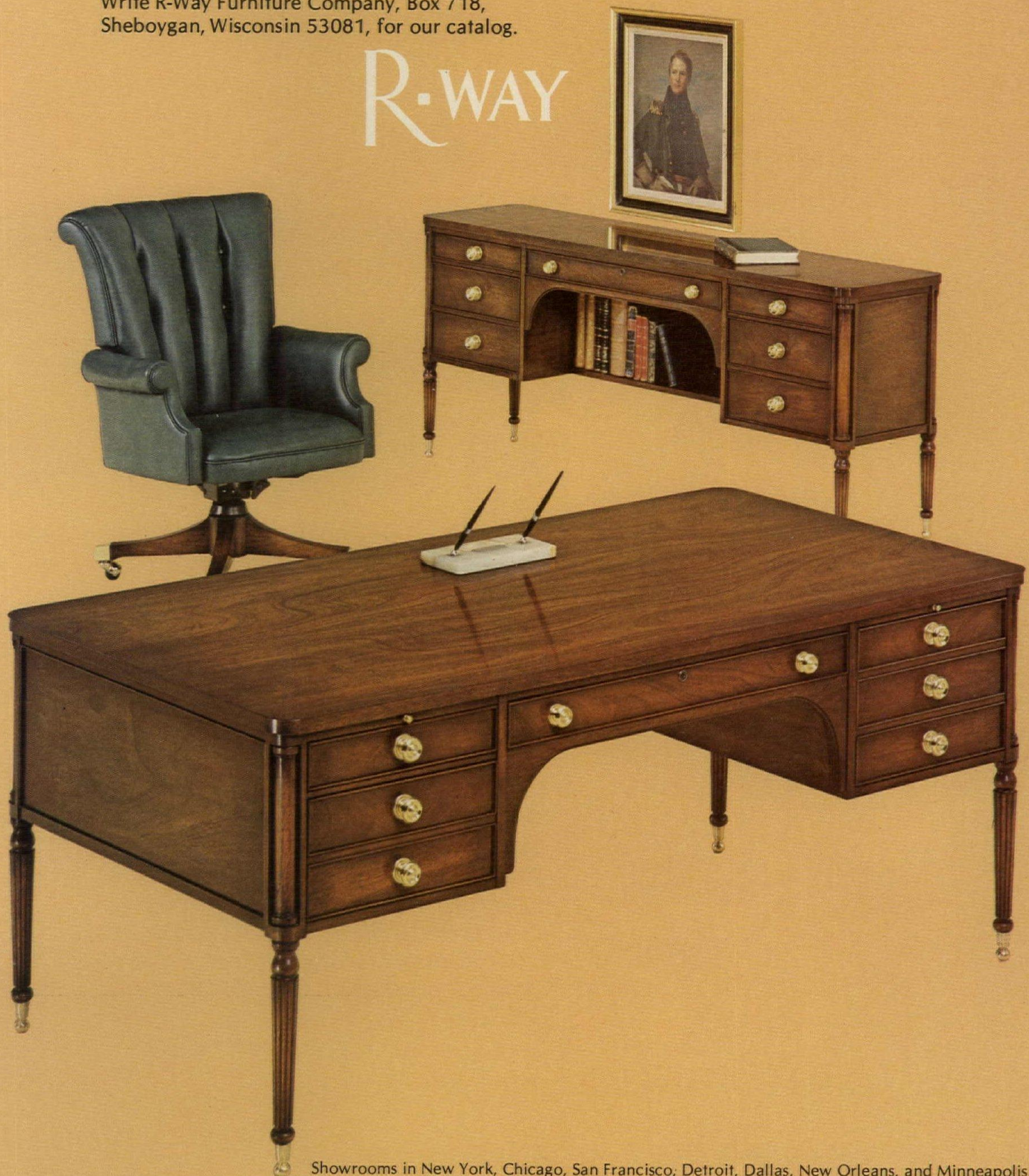


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## Contemporary



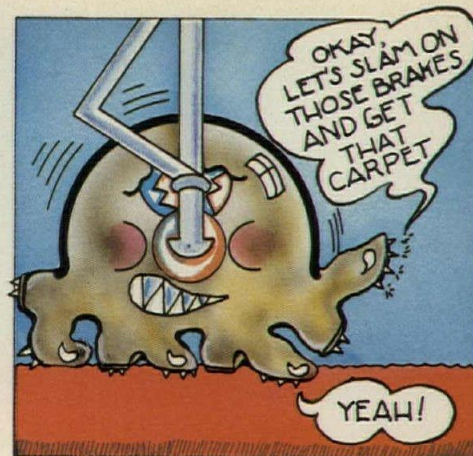
*The Great Western United Corporation, Denver, Colorado*

The clean, sweeping lines of today's office interior; a design statement of functional superiority. No door closer is seen, yet no more positive control could be provided. Unseen, Rixson X-5 closers control these high, unframed office doors . . . Rixson 28's control these giant entrance doors of heavy glass. Here, no compromise was made.

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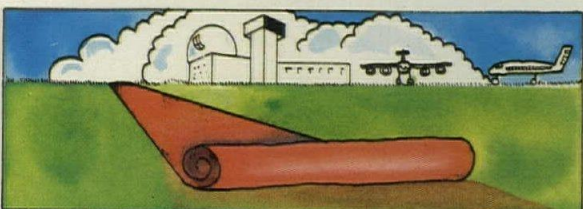
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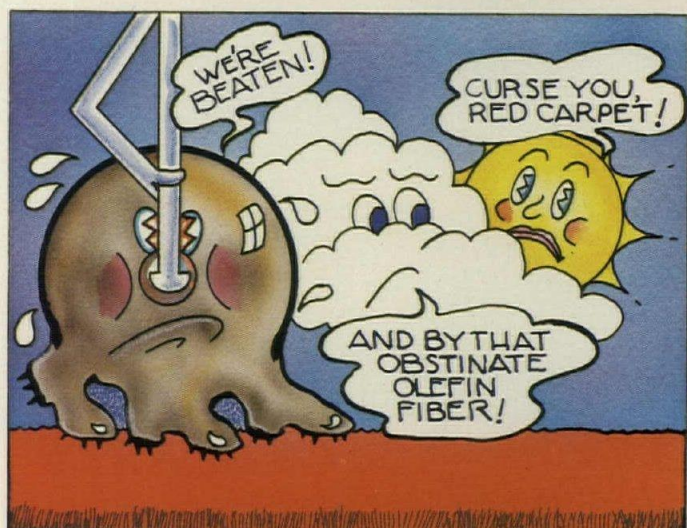
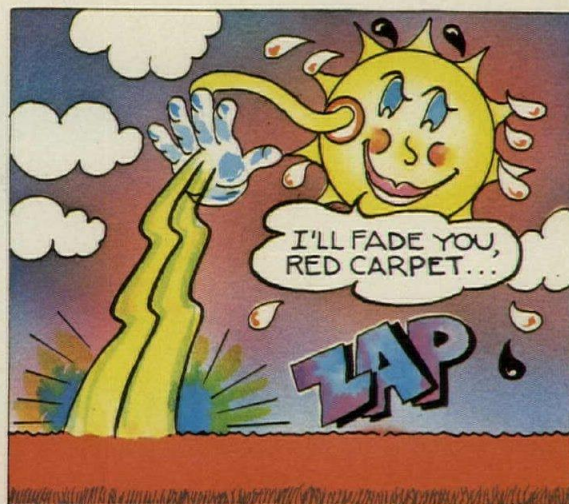
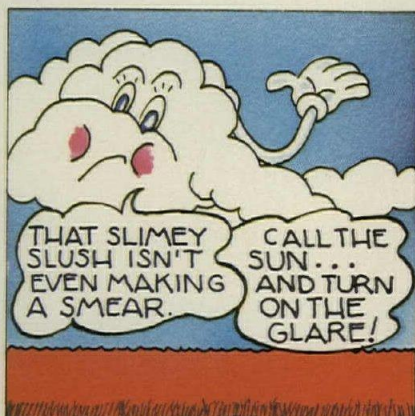
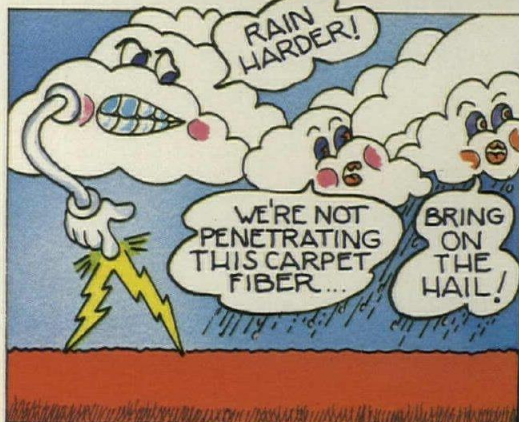
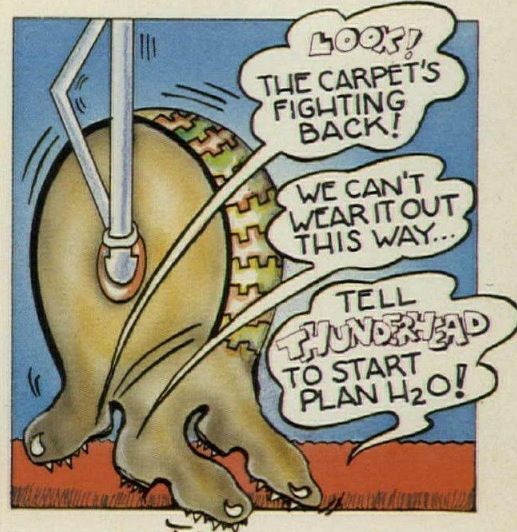


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Ed Tsoi of Sert, Jackson and Associates discussed financing of low income housing.

SBRTD III took a slightly different tack, with the program divided equally between the architect's and industry's points of view. Russell Brown and Ron Wood of Urban Design Group (Newport) documented the path that development of their modular system has taken and their view of industrial involvement as it relates to their effort; Carroll Keller of Westinghouse told of his company's approach. The discussion which followed centered on the question of whether or not industry (or architects) adequately meet the housing needs set before them.

The fourth meeting covered aerospace technology and performance specifications. Representatives from Abt Associates, Inc. described the firm's work in finding applications for NASA technological advances in the construction field. The second half of the meeting dealt with writing performance specifications for federally sponsored community projects. Slides showed a program developed by the speaker, Richard Krauss, and Michael Brill while both worked at the National Bureau of Standards. Called PAK (Planning Aid Kit), the program is used for planning mental health facilities.

#### West coast building uses staggered steel truss

A staggered steel truss system, developed at MIT and used so far in a couple of projects in Minneapolis-St. Paul, is being used for the structural framing in a San Francisco

apartment project. The 12-story structure, designed by Chan/Rader & Associates, is expected to cost no more than a comparable reinforced concrete building back in 1968.

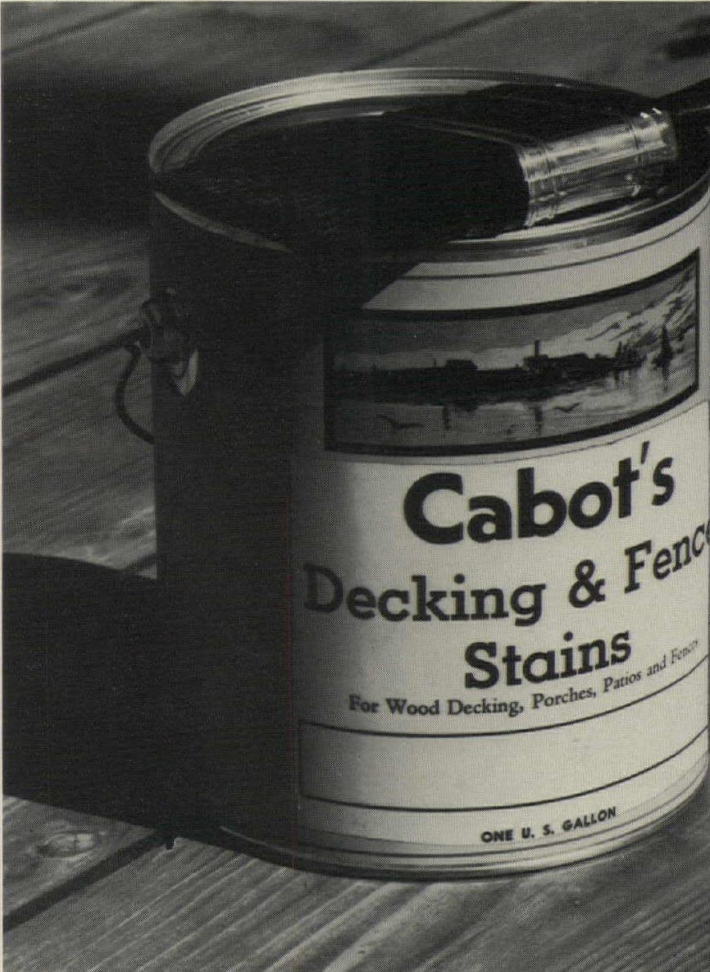
The structural system consists of one-story trusses set in a staggered pattern on alternate floors. Their 25-ft spacing provides a 12'-6" module for apartments on each floor between the top chord of one truss and the bottom chord of the adjacent truss on the floor above. Chin and Hensolt, Inc. are the structural engineers.

Front offsets and sawtooth walls, with windows set at a 30 degree angle, give each apartment a view, even if another high-rise building goes up next door. A typical floor will contain 12 apartments; the structural system allows a column-free basement garage.

#### Enclosed pedestrian walkways proposed for Philadelphia

Why shouldn't downtown pedestrians be treated the same as shoppers at suburban malls, or passengers passing through the best air terminals? That's the question F.J. Rarig of Philadelphia asks in a proposal for two-level enclosed pedestrian walkways on downtown city streets.

Rarig's idea grew out of a number of origins, the first being a previous proposal for low walls along Chestnut St. If the city would consider a 3-ft wall, why not a 20-ft wall, asks Rarig. Closed in, it would provide two levels of pedestrian traffic protected from weather, noise, pollution and other urban environmental problems. Minneapolis' overhead crosswalks are another encouragement that Rarig cites, along with proposals in other cities to control highway and mass [continued on page 40]



**It's new,  
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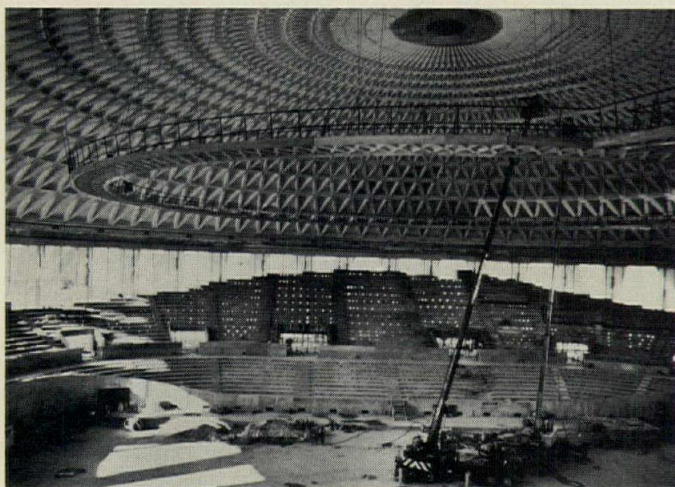
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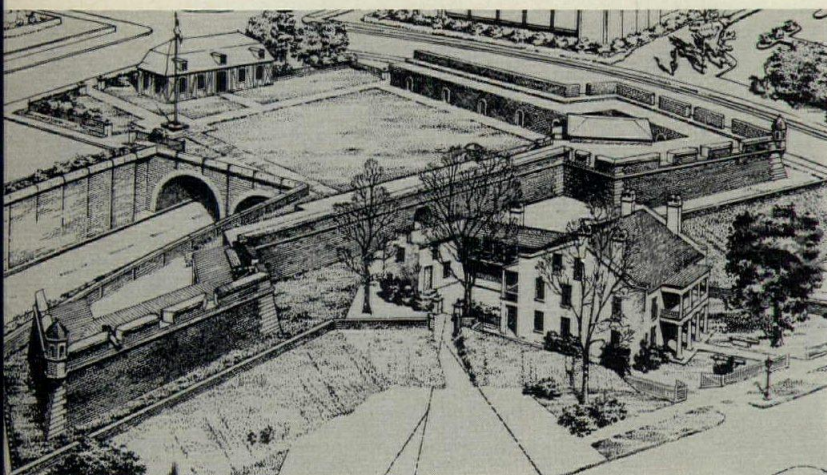
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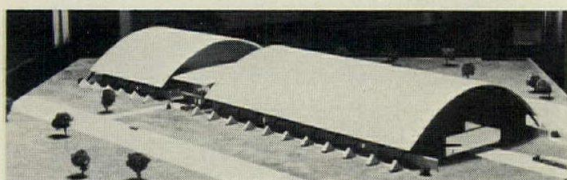
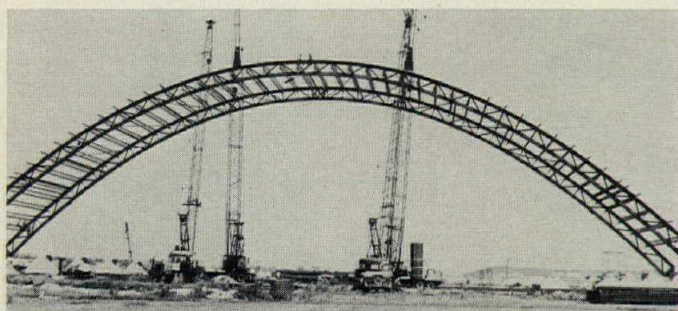




Norfolk dome



Mobile fort



Air Force Museum

transit noise. Then too, there are the new air terminals and shopping malls; Rarig's proposed walkways would give pedestrians the carpeted air conditioned comfort of the air terminal and bring downtown the convenience of the suburban shopping malls.

#### Norfolk convention center boasts Nervi dome

A thin shell concrete dome, originally conceived by Pier Luigi Nervi, is probably the most outstanding part of a cultural and convention center known as SCOPE, now under construction on a 14-acre site in Norfolk, Va. The dome will cover a convention hall and arena with seats for as many as 12,500 people; the only other building in the project is a 2500-seat civic theater. Both buildings will rise from a raised platform covering parking for more than 600 cars.

The dome, 440 ft in diameter and rising to a height of 100 ft above the arena floor, consists of 2500 separate precast concrete pieces, covered with a thin layer of poured-in-place concrete. It thrusts against a tension ring about 45 ft above ground level; the tension ring is supported by 24 concrete flying buttresses, which are supported by a post-tensioned ring beam that rests on heavy piers. The building will be glazed with copper colored glass.

Inside, a precast concrete ring 100 ft in diameter hangs from the dome. This ring, suspended on stainless steel cables, will carry lighting and camera equipment; a bridge links it with the top level of seats. Architects are Williams and Tazewell & Associates, with Studio Nervi as consultant on the dome. Fraioli-Blum-Yesselman Associates are the structural engineers for the \$23 million project.

#### Mobile highway to run under historic fort

In earlier times, forts were built to stand guard over harbors and rivers; Fort Conde, built by the French when they first settled Mobile, Ala., was built for that reason. But today it will be highway travelers who will enter the city under the guns of the fort: a joint effort of the city planning commission and the state highway department will reconstruct part of the fort over an interstate highway interchange.

The fort, built in the 18th Century, was dismantled during the 1820s; historical and archaeological research started in 1967. The masonry footings of the walls were located, and wells were found, along with over 2000 artifacts of Indian, French, Spanish, English and early American origin.

The south bastions of the fort will be reconstructed over the highway, and the area next to the fort, circled by one loop of the interchange, will become a museum of Mobile's architectural heritage. Houses of Greek Revival and Federal styles will be reconstructed, along with typical townhouses and cottages. The buildings will be used as museums, shops and restaurants.

#### Pre-engineered system saves time, money for Air Force

When the original design for the Air Force Museum at Dayton's Wright-Patterson Air Force Base became too costly (the \$6 million project was going to cost \$10 million or maybe more) the Museum Foundation started looking at pre-engineered building systems. From an assortment of proposals, bids and designs, they chose a clear span arched truss system from Pascoe Steel Corp.; the new museum will be finished on time (this month) and at the original cost.

It is a good sized building: 800'x300', with a clear span of [continued on page 42]



# Bright idea



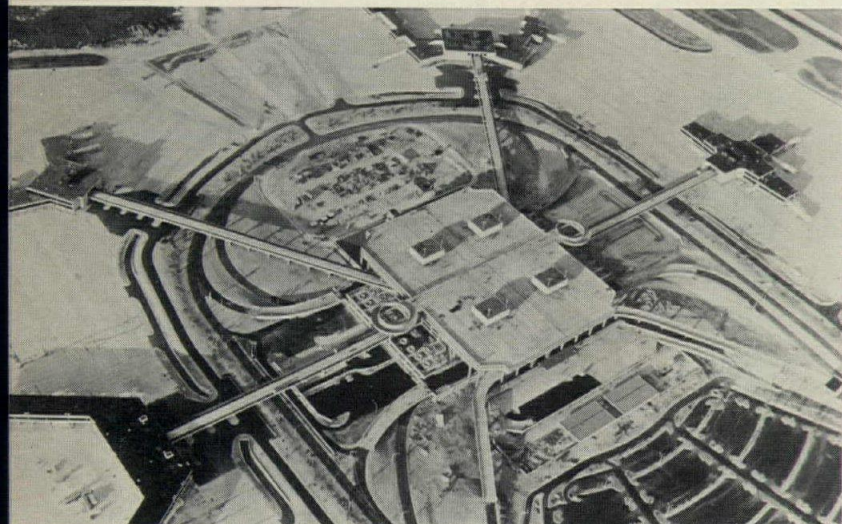
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Tampa air terminal

240 ft. It is 80 ft high at the top of its parabolic arched roof. The arches were put together on the ground in half-arch sections, which were connected by pins to concrete buttresses. Then they were lifted by crane and connected to form the complete arch. Steel is used throughout the structure, except for the reinforced concrete floor slab and the lower portion of the sidewalls, which is also concrete. The endwalls have large hangar doors so that aircraft can be moved in and out.

The museum is actually two large exhibit areas with a central concourse housing a 500-seat theater, art galleries, restaurant, library and offices. The concourse has an air foil shaped roof resting on tapered columns.

#### Tampa opens jumbo jet air terminal

The \$80 million Tampa, Fla. air terminal, claimed to be the first terminal specifically designed for the age of the jumbo jets, opened for business in April. The first phase of the terminal is expected to serve 8 to 10 million passengers a year; expansion will boost that by 50 percent.

The terminal is based on a landside/airside concept which works just the way it sounds: ground transport and passenger services are grouped together, as are facilities for loading and servicing the aircraft. The 1 million sq ft central building is the landside terminal. It houses parking, ticketing, baggage handling and other passenger services. Loading and unloading of planes is taken care of in four satellite buildings of about 200,000 sq ft each. Walking is kept to a minimum by an intra-terminal shuttle system linking all the airside terminals with the central building. The electrically powered cars, which carry 100 passengers each, make the trip from central building to satellite in less than a minute.

The central building is a six-story structure. The first three floors house baggage and ticketing areas and the interchange for the shuttle system. Above these floors are three parking levels, with all six levels connected by elevators and escalators. Because no planes park next to the main building, all four sides are open to ground traffic; four-lane roadways serve two sides of the building on two levels.

The design team for the airport included engineers J.E. Greiner Co., aviation consultants Leigh Fisher and Associates and architects Reynolds, Smith & Hills. The shuttle system was developed by Westinghouse Electric Corp., and graphics were done by Architectural Graphics Associates.

#### Garbage problem is interior design problem

What can be done with household garbage? That was the basic question behind an interior design problem assigned to Arnold Friedman at Pratt Institute. Student responses ranged from funny to serious.

Several students prepared thoughtful papers on the recycling of household waste, while others found an assortment of uses for the things the average housewife pitches out. Furniture was made from egg crates and plastic cups, and one student came up with an assortment of life preservers, rafts and whimsical ocean liners to be made of plastic bottles.

#### New York City plans permanent Madison Avenue mall

Encouraged by the success of the experimental closing of Manhattan's Madison Ave., the city has announced plans to do it permanently. A part of the avenue will be turned into a permanent pedestrian mall, complete with benches, trees and [continued on page 44]





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mini-buses. Funds will be sought from Federal "green street" and open space programs.

The experiment that prompted the permanent mall plans closed 17 blocks of Madison for two hours every weekday. Mayor John V. Lindsay termed it a "spectacular success." Pedestrians took to it with gusto, filling the street, strolling, playing guitars and throwing Frisbees with abandon. Merchants, however, had mixed reactions: some felt it helped business; others maintained that their customers came by bus and cab and couldn't get there; still others found their business had suffered. Some seemed to think that people who throw Frisbees don't spend money, but they do—on Frisbees.

#### **NYC's Harlem River to get parks, housing**

A 3000-ft stretch of Harlem River shoreline is going to become a state park inside New York City. Situated on the Bronx side of the river, across from the northern end of Manhattan, the Harlem River Bronx State Park will combine housing, recreation and education. It is the first project of the State Park Commission for the City of New York.

Two apartment towers, with a total of 1655 units, will be built by the Urban Development Corp.; the educational part of the project is a proposed 1800-student school to be built on air rights over a Penn Central railroad right of way. It is, however, a park project, and recreational facilities take up the lion's share of plans by M. Paul Friedberg and Associates.

The biggest single item will be a three-level community center housing a gymnasium, locker rooms, lecture and craft rooms, offices, terraces and a snack bar. Pedestrian and bicycle paths will meander along the river, and bridges will connect the park to the surrounding neighborhoods.

Later, as funds become available (the first phase will cost almost \$7 million), swimming pools, softball fields, outdoor basketball courts, parking areas and more landscaping and paths will be built. Also planned for the future is an environmental education and cultural center, which will include a small theater and music hall, an arts workshop and an exhibition area.

Meanwhile, across the river in the Inwood section of Manhattan, a 100-acre sliver of riverfront land is being looked at as a site for some 7500 to 8000 units of low-, moderate- and middle-income housing. Richard Dattner, who developed the plan for the community, figures the cost at \$300 million spread over 10 years.

Dattner's plan calls for 81 buildings ranging in height from 4 to 28 stories, with the lower buildings on the water-front. Some of the housing units would be built on platforms over subway repair yards, and there would be a strip of parks and pedestrian paths along the Harlem River. Shopping areas would be developed at two subway stations in the area; pedestrian overpasses would link subway stations to the housing areas.

#### **BBN, Brooklyn Poly study some windy problems**

Wind tunnel studies by Bolt Beranek and Newman Inc. and by the Polytechnic Institute of Brooklyn may reduce some of the problems associated with buildings and wind. The BBN studies are concerned with what is sometimes called the Marilyn Monroe effect (gusty winds in open spaces near high-

rise buildings) while the Brooklyn Poly studies are aimed at structural problems, pollution and fire safety.

In spite of its catchy name, the Marilyn Monroe effect is sometimes not too funny. Not only do gusts of wind at ground level lift skirts, but they sometimes bowl over pedestrians. What happens, according to BBN's Richard E. Hayden, is that upper level winds, usually stronger than winds at the ground, create higher pressures near the tops of tall buildings. This forces air down and around the sides of a building, causing a strong gust of wind at the base.

Once a building is built, there's not much to be done, but Hayden feels that BBN wind tunnel studies offer a way to plan the shape and location of a building to reduce the effect of wind at the bottom. The study was made with a 1/1200 scale model of a city mounted in front of a low-velocity wind tunnel; streets around the model buildings were instrumented to show the effects of winds.

Brooklyn Poly is involved in its own set of low velocity wind tunnel studies. The tunnel, at the school's Farmingdale, Long Island, campus will be used to study the interaction between building exteriors and the surrounding air. One potential benefit, according to the school, would be buildings aerodynamically designed to meet specified strength and performance criteria with lighter materials. Proper aerodynamic design of buildings might also help solve pollution problems, according to Poly's department of aerospace engineering and applied mechanics: reducing turbulence and channeling air flow could reduce, or maybe eliminate, the stirring up of solid particles already settled on the ground. Then too, the researchers feel they may be able to set up principles for designing buildings that will provide greater safety during fires. Their thinking: interior layouts that restrict the flow of air during a fire will discourage the spread of a fire.

#### **Awards**

Idaho Chapter AIA gave honor awards to Dropping, Kelley, Horsford and LaMarche (Idaho First National Bank Statehouse Branch) and Hummel, Hummel, Jones and Shawver (Federal Office Building). Merit awards went to Cline, Smull, Hamill, Shaw and Associates (KBOI Transmitter Building); Neil M. Wright (Chapman S. Root residence); and Watson and Leatham (American Reserve Insurance Building).

#### **Calendar**

June 18-19. Association of Collegiate Schools of Architecture Annual Meeting, Detroit Hilton Hotel, Detroit.

June 20-24. American Institute of Architects, 103rd Convention, Detroit.

June 20-25. The 21st Annual International Design Conference, Aspen, Colo.

June 21-25. National Conference and Exposition sponsored by the AIA and the Producers' Council, Cobo Hall, Detroit.

June 22-30. CIB 5th Congress, Versailles, France.

June 23-25. NEOCON National Exposition of Contract Interior Furnishings, Merchandise Mart, Chicago.

June 28-30. Eighth Annual Design Automation Workshop, sponsored by SHARE/ACM/IEEE, The Shelburne Hotel, Atlantic City, N.J.

July 5-24. Athens Ekistics Month, Athens Technological Organization, Athens, Greece.

Aug. 23-24, Aug. 26-28. Two courses on industrialization in the construction industry. Washington University, St. Louis.

[continued on page 46]





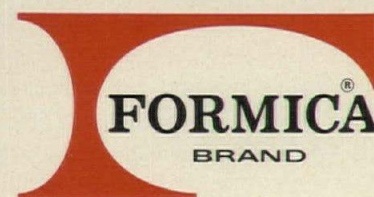
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Aug. 27–Sept. 3. XIII International Congress of Refrigeration, Washington, D.C. Sheraton Park Hotel.

Oct. 30–Nov. 5. American Concrete Institute's Fall Convention at Statler-Hilton Hotel, Buffalo, N.Y.

Oct. 31–Nov. 4. Industrialized Building Exposition & Congress, Kentucky Exposition Center in Louisville.

## Washington report

### Slowing down the bandwagon

The real effect on the design professions and the construction industry of the headlong drive to "preserve the environment" is just beginning to surface in Washington. It has not yet really touched the public consciousness. Design professionals themselves are still thrashing about, trying to find their place in the movement—an effort that often has them rushing ahead as fast as possible to keep from being trodden by the crowd pushing behind.

It now begins to appear—to the surprise of no one who has given the matter much thought—that the role of the professional must be one of guidance and caution, rather than that of leading a charge, if any sanity is to be retained. It means, however, that the professionals must add another dimension to their considerations in planning new work. Beauty, utility and cost won't be enough any more; effect on the environment must also be considered.

An example is a recent conference on siting powerplants, sponsored by the National Academy of Sciences. The conference was particularly timely, in view of real evidence of a growing energy crisis—at a time when public outcry has virtually halted construction of nuclear-fueled, fossil-fueled and even hydro-power electric generating stations. (The energy shortage is further complicated by demand for pollution-free fuels such as natural gas, already in spottily short supply for other purposes, or further refining of crude oil to reduce its sulfur content. This has resulted, among other things, in spotty shortages of home-heating fuel during the past winter season.) Conclusion of the participants was that engineers and others must rearrange their site selection criteria. They might often have to settle on a "second best" site from an economic viewpoint, if the second site offers less possibility of ecological damage.

Other signs of the emergence of a "slow down" attitude in which professionals must provide guidance began to appear: the Environmental Protection Agency appeared on Capitol Hill to oppose a spate of legislation that would end ocean dumping of municipal refuse and sludge. EPA countered that many communities had no other means of disposal, and that costs of land-disposal operations (if allowed to be conducted) would be impossible; it also argued that nobody really knows what damage, if any, such dumping actually does. At the same time, the Environmental Quality Council opposed another gaggle of bills that would vastly broaden the rights of citizens to bring suits on pollution matters, pleading that such suits would overburden the courts and tie up federal departments to such an extent that they'd be unable to function.

Further evidence: a high Federal Highway Administration official commented that enforcing all of the existing laws con-

cerning environmental protection would bring the entire highway program to an immediate halt.

Note also that new safety and health regulations for the construction industry, promulgated by the Labor Department, add "noise pollution" as a health hazard. They require employers to provide protective devices for workers exposed for any length of time to noise levels (90 decibels) little more than that produced by a household vacuum cleaner.

And the Corps of Engineers' new regulations requiring permits for virtually any construction along virtually any U.S. stream include immensely complex requirements for protecting the water; this could cause major delays in construction and major design changes. (EPA, incidentally, is also studying this problem and expects to complete studies this month on some 21 major water-using industries as a basis for new standards and criteria for permissible effluents.) "Clean air" regulations will certainly affect the design, the cost and even the use of the family car within the next model year.

Within the cities and suburban areas, work of architects is also being affected. The range runs from an increasing number of state-wide and local ordinances concerning site run-off during construction (a very strong emphasis here on housing developments, where large areas of land may be cleared at a time), to increasing insistence on site planning for proper drainage, and finally to design of buildings themselves, all the way from private homes to high-rise and factory structures.

In urban areas, public outcry—now based in the public mind on ecological matters—has forced major changes in the design of office and apartment structures. Architects have been forced into designs that permit the central tower to rise straight up from the center of plaza-like arrangements, thus providing relatively large open spaces at the foot of the structure, instead of occupying all available inches of expensive land. The professionals have come with ingenious solutions to compensate for this loss (in the owner's eyes) by hiding garage and storage space under street-level plazas; by discarding the setback requirements that characterize most older high-rise buildings; by incorporating total interior air-handling systems in their designs; by thinning down exterior curtain walls and interior partitions to use up as little space as possible.

Nevertheless, the flood of "environmental" legislation continues to pour into Congressional hopper, and many self-appointed conservationists seem always at hand to leap onto almost any proposal that is made. Their remedies often seem to center on the "Stop the world, I want to get off" theory of a recent movie; some thinkers, like New York's famed Robert Moses (at a recent meeting of the Associated General Contractors), are beginning to warn that elements that wish to destroy the U.S. economy are climbing on the "ecology" bandwagon to further their plans.

Of course, no one—particularly professional designers—can argue the point that the national propensity for fouling the nest must be brought under control. The evidence of pollution is too clear.

Equally obviously, the key group that can guide the drive in the right direction is the professionals. And they're trying (through such efforts as seminars sponsored by AIA and other societies, special courses in the environment in schools and the like). But they haven't succeeded, as yet, in making an impression. And meanwhile, construction work and future plans can be seriously slowed or stopped. [E.E. Halmos]



## Architecture west

The West Coast source of draftsmen is the School of Architecture at California Polytechnic College at San Luis Obispo. "Cal Poly kids learn to draw and pull their weight; the Berkeley ones want to take over the design," an architect summed it up. Cal Poly with its 1400 enrollment for a five-year schedule is the biggest quarry in the world.

"Some schools are so caught up in the theory of problem solving that they miss the problem," said Paul Neel, one of the five directors. "We address ourselves to the problem."

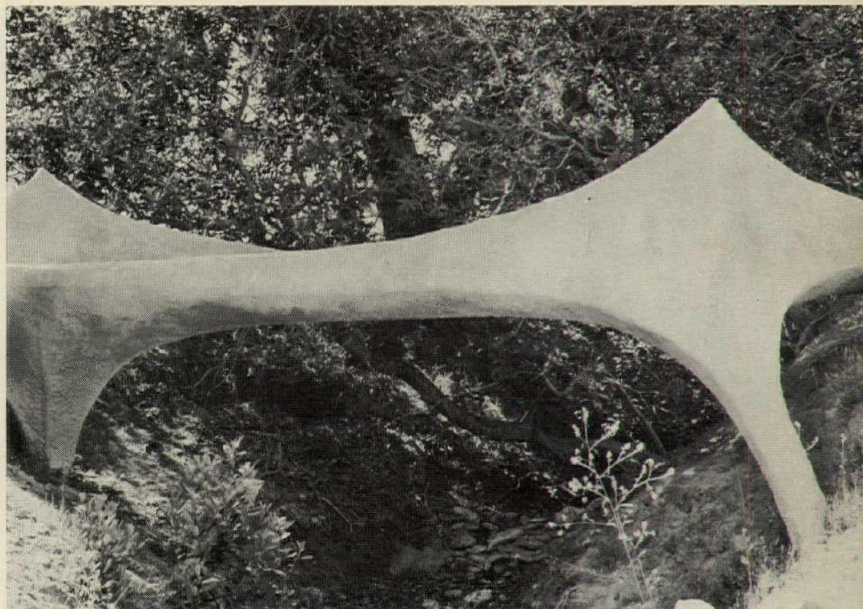
The emphasis of the school was established as engineering and agriculture, and architecture slipped in as a branch of engineering. It is still a strong focus; engineering and agriculture are the interdisciplines of architecture. Cal Poly is the only school of architecture where a student can check out a bulldozer.

Bruce Becket and James Luckman, sons of the principles of two of the largest local offices, attended the nuts and bolts school rather than one longer on theory. What gives the school its uniqueness is its floating faculty. Half of the members are on temporary assignment and many of those are bright young foreign architects taking a year's breather from a young practice. The school, long on discipline, favors the young Swiss, but they come from England, Egypt, South Africa, etc., often on a year's leave from a subsistence practice.

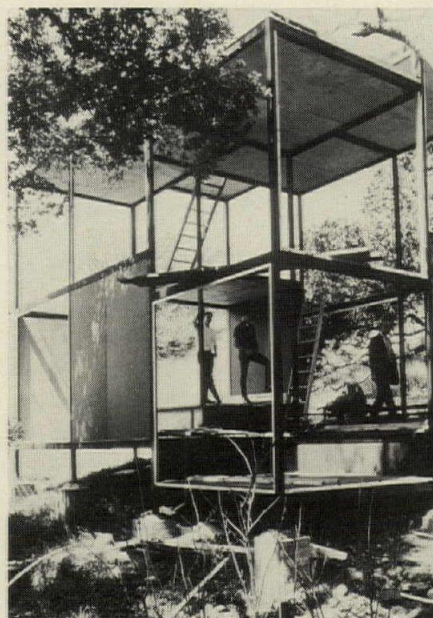
The students benefit from a young faculty oriented to practice, and George Hasslein, the dean, finds that as many problems are eliminated as created by the 50 percent turnover each year. One temporary faculty member was neither young nor in practice; he was a former student of Adolf Loos. The California influence is not lacking. Architects from all types of offices come in a steady stream for one-week stays to set up problems for five design classes.

In their spare time students build experimental structures in a 10-acre canyon on loan from the School of Agriculture. The structures are beautifully tucked into the soft wooded slopes, and a Sunday pastime is the walk past a stress reversal handkerchief dome, post-tensioned openended cantilevers from a single stem to a pie crust water tower made of sections of boiler plate. Cattle are sure to be scratching their backs on the modular cube structure with stressed plexiglass walls, or a tension-into-compression bridge house. When a new road was needed, a design student checked out a cat.

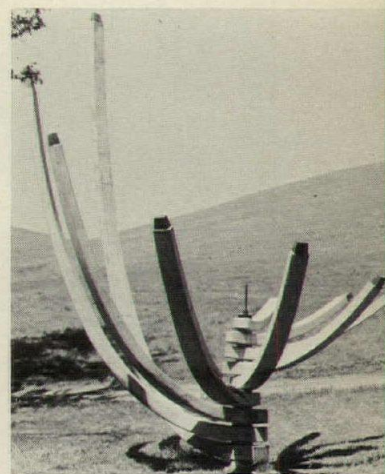
The Reagan cutbacks delayed construction on a \$1 million



Tension compression bridge



Modular cubes



Cantilevers

architecture building so the students have remodeled a sub-standard one for \$48,000. They remodeled the power house as offices and rebuilt the president's house on campus. Then they rebuilt a Head Start structure for a community church and replanned a playground in a depressed area.

Everyone works. The directors and the dean teach classes. Kenneth Schwartz, director of curriculum, is the mayor of San Luis Obispo and was formerly head of city planning. The faculty is involved in AID programs for Latin American countries—surveys of technical-agriculture schools, experiments with rammed earth blocks, experimental structures to enclose classroom-size spaces.

The students are as experimental off campus as on. I recently had dinner with 20 of them in the old hotel they had remodeled and named The Ark. Most of them had raised the roof of their small bedrooms and no two of their skylights were alike. A home ec major plans and cooks the dinners and a girl from ornamental horticulture spells her on Thursdays.

[Esther McCoy]



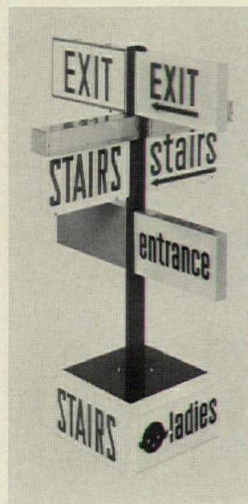
## Products and literature



Storage for schools



Designer's seating



Lighting the way

Library carrel



**School storage system.** In order to determine the most adequate space requirements for school storage units, a study of schools of varied sizes, grade levels and educational programs was made. The kinds of materials, supplies and equipment used throughout these schools provided the base for the dimensions used in "Environment 5," a series of molded plastic units. Included are cupboards, cabinets, drawers and bookshelves that can act as dividers, are easily moved and interchangeable. Southern Desk Co.

*Circle 101 on reader service card*

**Flame-resistant Naugahyde.** A vinyl upholstery line has been specially treated to be flame-resistant, meeting Federal Specification CCC-A-680A. Suitable for upholstery for contract furniture, the fabric is self-sanitizing, anti-static and bacteriostatic, of interest for hospital and rest home use. Available in 38 colors. Uniroyal.

*Circle 102 on reader service card*

**Suspension Seating.** Designed by Morrison and Hannah, who received Alcoa's 6th Award in that company's "Ventures in Design" program, this seating group offers a two-part frame: end frames and stretchers. The end frames which determine the kind of piece—high back lounge, lounge, contract seating or bench—are identical castings with a tough epoxy finish available in charcoal or white. The two stretchers are extruded aluminum with charcoal or polished anodized finish. Upholstered cushions are of molded polyurethane bolted into the slotted stretchers. Knoll International.

*Circle 103 on reader service card*

**Signs.** Illuminated exit, directional, emergency warning and information signs are made of polished crystal acrylic panels furnished with lamps designed to provide long life circuitry. Complete specifications available from Basic Lighting.

*Circle 104 on reader service card*

**Emergency lighting.** A rectangular block console provides an emergency luminaire to be installed either on the wall or ceiling. Utilizing a U-shaped 40 w fluorescent lamp and a light diffuser of matte white acrylic plastic, the console can be used as a conventional lighting fixture. In case of a power failure the unit turns itself on, and operates for approximately four hours under its self-contained battery inverter system. U.L. listed. Bulletin. Siltron Illumination, Inc.

*Circle 105 on reader service card*

**Tilt-swivel.** Two chairs that do both—one for executive use with polished chrome and steel base, the other for executive or conference room with an exposed, contoured walnut wood frame. Dependable Furniture Mfg. Co.

*Circle 106 on reader service card*

**Study.** Two-place, back-to-back library carrel is shaped to accommodate the student's habit of spreading work in a semi-circular pattern. Made of 19-ply veneer core with show wood veneer panels in oak or walnut and high pressure laminate surfaces on tops and shelves. A four-place table of the same veneer panels is designed to define each user's area of the table. Jens Risom Design Inc.

*Circle 107 on reader service card*

[continued on page 50]



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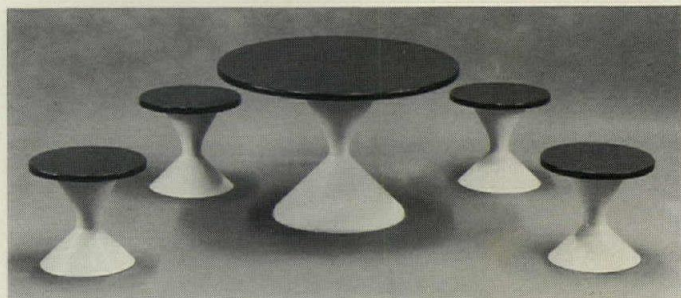


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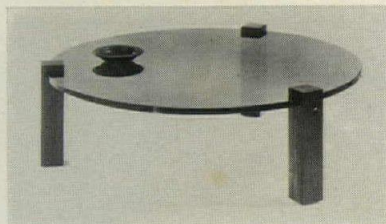
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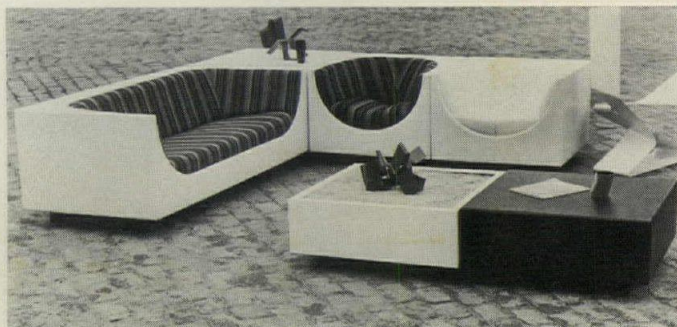




For school or play



Glass floats

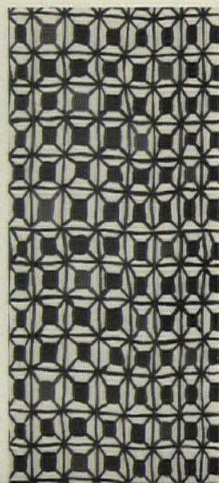


Large scale cubes



Arched table for drawing

Handprinted



**Luau school sets.** The all-fiberglass construction makes this set of 22½"-high table and 16"-high stools suitable for indoor or outdoor use. No maintenance required—crayons, paints, clay, sand and chalk are accepted. Also suitable for patios and pool decks. Fibercon Industries.

*Circle 108 on reader service card*

**Screened for sound.** Designed for landscape and other open plan offices, these screens have been laboratory tested for sound absorption and are said to offer superior sound control. Constructed of a foil septum with fireproof, glass fiber material on each side and filler material over an expanded metal screen, the screens are easily moved and available in a variety of fabric, colors or with customers' own. Techniques in Wood Inc.

*Circle 109 on reader service card*

**Floating.** The need for stretchers is eliminated in these tables; a clamping system secures each leg to the thick glass top, allowing the glass to look like it's floating between the wood pillars. Legs in rosewood or elm burl veneers, clear plate or solar bronze glass tops. Complete range of sizes and heights for use as occasional, dining or desk tables. Harvey Probbler.

*Circle 110 on reader service card*

**Cubo.** Shaped of molded foam over fiberglass-reinforced polyester shells, the frames of this furniture are upholstered all around in leather, in a variety of colors. Large-scaled proportions make the group suitable for reception rooms, conference areas and other contract interiors. Available in two- or three-seater sofas and matching armchairs, plus leather upholstered coffee or side tables and planter tables. L'Atelier for Brazil Industries through Designer Furniture Center.

*Circle 111 on reader service card*

**Air filtration.** By combining particulate and gaseous filters into a complete package for installation in new or existing structures, the manufacturer claims this system will distribute up to 97 percent pollution-free air within commercial, industrial and residential buildings. Three stages are involved: a pre-filter for large particulates; an activated carbon filter that halts gases and odors; an after-filter that keeps dirt and dust at a minimum. Ozones and nitrogen oxides, which typify the photochemical type of smog of large cities, are also claimed to be effectively removed. Farr Co.

*Circle 112 on reader service card*

**Drawing table.** A departure from the familiar "A" frame, this drawing table has an arched line, with the base available in a choice of baked enamel colors, including blue, black, orange or gold. The warp-proof drawing surface is lightweight but rigid. Two knobs adjust height and angle, nonskid leveling glides assure stability and a level surface. Plan Hold.

*Circle 113 on reader service card*

**Wallpaper.** A collection of handprinted designs on vinyl or foil grounds includes 12 patterns that range from themes inspired by the Far East to classical Renaissance and contemporary styles. "Front Page" collection from Classic Wallcoverings Connoisseur, Inc.

*Circle 114 on reader service card*

[continued on page 53]



**Acoustic door.** Flush steel door is said to be sealed tightly against noise as a result of its cam-lift gravity hinges. They are sloped to lower the door as it is closed and to compress the acoustic seal firmly against the finished floor. When the door is opened, it is raised by the cam action of the hinges, and the compression seal is released. Industrial Acoustics Co., Inc.  
*Circle 115 on reader service card*

**Roof expansion joint cover.** Designed to solve the problem of sealing expansion joints in roofs, this roof expansion joint cover consists of two plies of neoprene bonded together with flaps along each edge into which perforated metal strips are bonded. Called "E-Z-flash," it comes in a continuous 50-ft roll; this one size accommodates expansion joints 1" to 4½", adapts to metal, wood or concrete. Neoprene by Du Pont.  
*Circle 116 on reader service card*

**Sealer.** Acrylic concrete sealer is said to beautify concrete surfaces, make them easy to clean, and to weatherproof and stainproof. It offers sealing and dustproofing qualities when applied to concrete, masonry, terrazzo, slate, stone, exposed aggregate and other ceramic materials. W.R. Meadows, Inc.  
*Circle 117 on reader service card*

**For aggregate surfaces.** Suggested for use in aggregate surfacing of interior and exterior walls, this epoxical wall matrix, a mixture of epoxy resin and a hardener, is said to be lightweight, of high strength, and to apply easily over almost any substrate. The makers claim it is 5 to 8 times stronger than concrete, and is especially well suited for curtain wall buildings. United States Gypsum Co.  
*Circle 118 on reader service card*

**Life safety.** Reportedly, this is the first fire-safety sprinkler system designed principally to save life rather than property. The developers claim this copper system is more economical than existing ones, quicker to respond and requires a much smaller water supply. Copper Development Association, Inc.  
*Circle 119 on reader service card*

## Literature

**Glass.** Booklet describes a variety of glass products: tempered safety glass, ceramic enameled spandrel panels, insulating glass units, solar glass and sun and sound control glass units. CE Glass, Combustion Engineering, Inc.  
*Circle 120 on reader service card*

**Silicone water repellents.** Booklet discusses the advantages of using silicone water repellents, rather than waterproofing agents, on above-grade construction materials. The makers claim that silicones bar the passage of water while permitting the surface to breathe, thus preventing the peeling, warping and scaling that result from entrapped moisture. Colorless, they do not alter the natural appearance of materials. Union Carbide.  
*Circle 121 on reader service card*

**One-man building control.** Automation center, operated by one man, offers total building control. It features a rapid scan rate that can report alarms at one of as many as 8000 points within 5 seconds, offers monitoring, indication, command, motor status. Powers Regulator Co.  
*Circle 122 on reader service card*

**Storm-resistant.** Hoping to answer the need for better fastening methods for storm-resistant construction, booklet describes and illustrates such construction details. It explains how wood frame buildings can be anchored and tied together securely by using special fastening devices. TECO.  
*Circle 123 on reader service card*

**Plywood construction guide.** Applications, types and grades of plywood siding for residential construction are explained in 28-page brochure. Included are diagrams showing wall, roof and floor construction methods, grade use guides and suggestions for applying and finishing plywood paneling. American Plywood Association.  
*Circle 124 on reader service card*

**Instant lettering.** Catalog presents a wide variety of popular type and point sizes available in dry transfer lettering. Wax-free, heat-resistant opaque inks. Letraset.  
*Circle 125 on reader service card*

**Pressure-treated wood.** Eight-page brochure features the varied uses of pressure-treated wood products which include fire-protected wood, lumber and plywood for exterior use. Koppers Co. Inc.  
*Circle 126 on reader service card*

**Laminates.** "High Pressure Laminates As An Architectural Woodwork Material" reviews the nature of laminate materials, wood substrates, glues and adhesives. Installations that integrate wood and plastics are featured. The Architectural Woodwork Institute.  
*Circle 127 on reader service card*

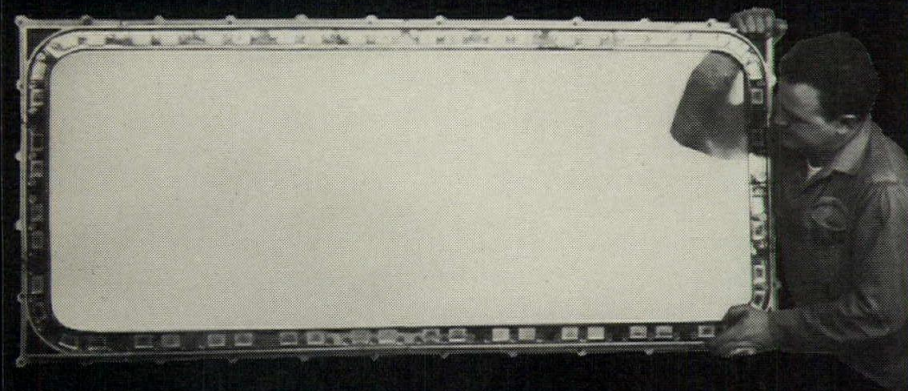
**Steel joists.** A 40-page book covers open web steel joists and longspan steel joists and outlines a code of standard practice for the use of these materials. Included is all information for specification of joists to carry uniform loads on spans up to 96 ft. Steel Joist Institute.  
*Circle 128 on reader service card*

**Five by five.** Two booklets describe two 5' x 5' interior systems which consist of a ceiling suspension system, illumination, acoustical panels and tiles, air distribution, movable partitions and hollow metal doors. Keene Corp.  
*Circle 129 on reader service card*

**Waterstop.** A small brochure covers specifications, physical properties, applications, and illustrates various types of "Vinylstops." Designed to provide a positive permanent seal in poured-in-place concrete construction expansion joints, these waterstops are compounded from a PVC material, and are available in several widths, thicknesses and profile configurations. Contech, Inc.  
*Circle 130 on reader service card*  
[continued on page 54]



# Design your next pool with a KDI Paragon underwater window.



## You'll see the difference.

No other single piece of equipment multiplies the use of a pool like an underwater observation window. It is coveted by Coaches of swimming and diving; an invaluable aid for ballet and synchronized swimming instruction; a dramatic aid for photographers and a delight for audiences.

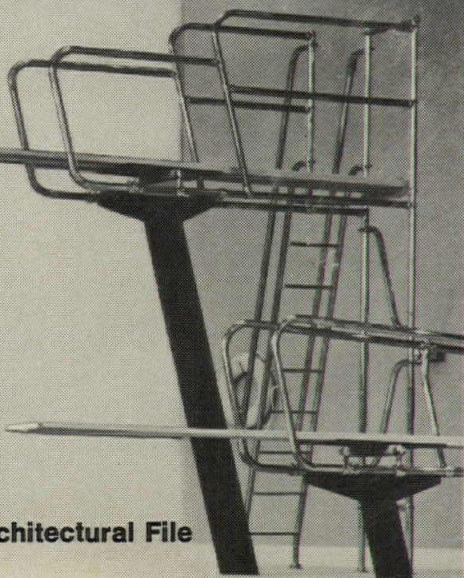
KDI Paragon underwater windows are precision-engineered of cast bronze with a polished chrome surface. Available with  $\frac{3}{4}$ " tempered polished plate glass or  $1\frac{1}{8}$ " safety glass. They fit flush in any plain or tiled concrete wall pool. Shipped fully assembled to the job site ready to install. Rectangular windows 2' x 2' to 3' x 5'. Also 18" round windows.

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Underwater Equipment  
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914-769-6221

See Our Catalog in Sweets Architectural File



**Products** continued from page 53

**Locks.** Catalog is designed to show as much of this company's product line as possible, with emphasis on technical information. It suggests ways of comparing, selecting, specifying and installing locks, and gives data required for specification decisions. Schlage Lock Co.

Circle 131 on reader service card

**Tennis anyone?** Bulletin describes the use of Vynatex 23, a protective color coating on asphalt or concrete tennis courts, said to offer ease of cleaning and maintenance, increased court life, more attractive courts. Maintenance, Inc.

Circle 132 on reader service card

**Recessed lighting.** A 95-page catalog of information on recessed incandescent lighting includes a selection guide, round, air-handling round, square and special lighting effects. Lightolier.

Circle 133 on reader service card

**Pools.** Just about all of the equipment a pool could possibly accommodate, from diving board to vacuums and pumps to water-testing and treating equipment, plus the pool itself are described in this 27-page catalog. Ocean Pool Co. Inc.

Circle 134 on reader service card

**Nickel.** What's new in the use of nickel-containing materials is the subject of a 12-page publication with a special section describing how rechargeable nickel-cadmium batteries have caused a cordless revolution. International Nickel Co., Inc.

Circle 135 on reader service card

**Stoned.** A simulated stone panel is designed to duplicate real stone in color, texture and design:  $\frac{1}{10}$  the weight, it is said to be considerably lower in cost. A backer sheet laminated to a polystyrene core is covered with a modified latex portland cement face. Artists hand-form the cement on the panel so that stones are not duplicated in size, shape, texture or color. No preparation for installation; panels are nailed, belted, glued or fastened to any hard interior or exterior surface. Millstone.

Circle 136 on reader service card

**Fireplaces.** Several catalogs describe various gas- or wood-burning fireplaces suitable for single- or multi-family installation. Free-standing and wall-mounted units. Heatilator Fireplace Division, Vega Industries, Inc.

Circle 137 on reader service card

**Primitive.** Color brochure features a primitive-like ceramic tile that comes in an unglazed, earthy color and in seven other muted glazes. Also available: 36-page color brochure showing full line of glazed and quarry tiles and ceramic mosaics. American Olean Tile Co.

Circle 138 on reader service card

**Sprinkler system.** 32-page guide defines sprinkler fire protection including information on fire protection costs, insurance requirements, building codes, water supplies, hydraulic calculations and design. The Viking Corp.

Circle 139 on reader service card



# "We've never had to replace one single faucet during the entire 8-year history of Marina City"

*Robert R. Butler*

Building Superintendent

And he's talking about more than 5000 faucets. Delta faucets.

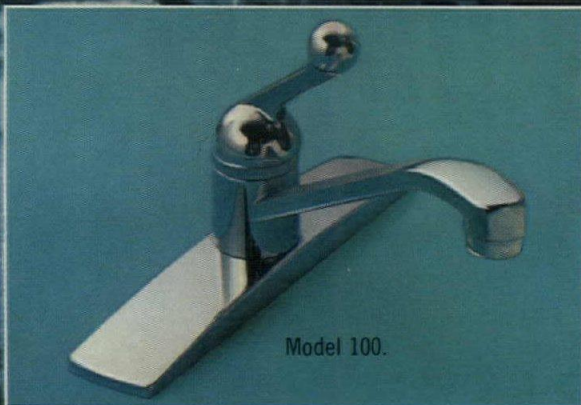
The success of Chicago's famous Marina City is no accident. It's the result of specifying Delta single-handle faucets exclusively in the building complex.

Mr. Butler, who's been at Marina City from its beginning, figures that in 8 years less than \$200 was spent to maintain over 5000 faucets. But low maintenance cost is just one of the advantages you get when you specify Delta single-handle faucets.

Delta's also simply beautiful . . . simply beautiful to look at, beautifully convenient to operate. And that prompted many Marina City tenants building new homes to ask where and how they can get Delta faucets.

Let us tell you more about Delta faucets. Write Delta Faucet Company, a Division of Masco Corporation, Greensburg, Indiana 47240. That's forward thinking.

**Delta Faucet.**  
**Simply beautiful.**



Model 100.





Architects: Hobbs/Fukui Associates  
Wood: Western Red Cedar

## START WITH WOOD / FINISH WITH OLYMPIC STAIN.

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For color samples on wood and A.I.A. Manual, write Dept. T, 1148 N.W. Leary Way, Seattle, Washington 98107. Olympic Stain. A division of COMERCO, INC.



On Reader Service Card, circle no. 365



# Progressive Architecture

June 1971

**This issue of *Progressive Architecture*** will be the last to bear my name on the masthead as editor. At the beginning of this month I turned over my executive responsibilities to Burton H. Holmes, our Executive Editor. At such times it is customary to sum up one's impressions, which will make this a very personal parading of my prejudices.

Two and a half years ago when I became editor it seemed that the position of the architect had never been more precarious. He was being squeezed by construction managers, systems analysts, psychologists, engineering specialists, package builders and ladies in funny hats. Since the definition of an architect seemed up for grabs everyone was willing to identify himself as such. The individual architect has received no guarantees during my time as editor that he will be "the leader of the team," but the profession of architecture has grown tremendously in importance.

As the emphasis continues to move from the architect to architecture, architecture has become synonymous with survival. Two and one-half years ago the first Earth Day had not been held. Ecology had not yet become a household word on every detergent. The Earth Day frolics kicked off a revolution. This disruptive challenge to our established beliefs has involved a broader cross section of our people than all the traditional revolutionary movements of our time.

Its implications are altering the goals of all professionals. Not long ago the ideal of most young mechanical engineers was to help place a man on the moon. It has been done and does not now seem of much consequence. The toilet flush valve has become more important to the survival of man as a species than the rocket propulsion engine.

The striving on the part of the architect for scientific design methodologies has increased the scope of design decisions and in so doing has exposed aesthetics as one of, not the only, involvement of architecture. Aesthetics must be

weighed against minority economic and social genocide, the inequality of distribution of the products of affluence and the blind corporate crushing of human priorities.

It seems the long hairs that kicked off Earth Day have shown unexpected strength. There has proved to be a good deal of muscle beneath the eccentric clothes and a lot of brains under their pates. Although the virtuoso architect has not made much headway, architecture, defined as the whole wide earth, now has 365 days.

There is now a glimmer of hope that the contest between man and his environment can be won, if we do not stop fighting. There is time, if we don't waste any of it. We find that people whose taste we used to deride in the name of "Good Design" are tenacious fighters against the general deterioration of our surroundings, which puts them on the side of quality of environment, another name for architecture.

I regret leaving *Progressive Architecture* at a time of such potential for the profession of architecture, yet look forward to my return to teaching, and to a little more time to sort out the ideas that have come across my desk in such profusion.

An editor is much like a migrant bird. Undigested ideas get stuck in his mind like seeds in a bird's craw, and he distributes these ideas just as the bird casually scatters the seeds. The results are exotic plants and ideas growing in otherwise barren regions. As gratifying as the winging of ideas can be, eventually one has to tend his own garden and see if he can bring a plant to full flower instead of a sprout.

The peculiarity of an architectural magazine is that the whole is greater than its parts, reflecting, in P/A's case, the convictions of an excellent staff of editors whose ideas, capabilities and direction of thought I admire. I look forward to our continual sharing of ideas, and still taking part in the positive distribution of these ideas that is so essential and so important to the profession of architecture.

*Forrest Wilson*



Armstrong Cork styling and design building

# A building for dreamers





**Designing for designers is a tricky business, but designing a building for designers to design in is an even more challenging proposition for the architect**

It's not hard to picture Vincent Kling standing on a slight plateau at the Armstrong Cork Co. Technical Center, carving chunks of space out of the air with his hands as he outlines his ideas for their new styling and design building. The concept he sketches in the air is simple and logical: studios to the north, where a large sloping glass wall, shown by a sweep of one hand, will let in the required north light; offices to the south, behind their own vertical glass wall; and a central spine for moving people and services.

That, of course, was well before construction started in the spring of 1968, and now, with the building finished and occupied, that basic concept is clearly seen in the completed

structure. The sloping glass wall, the towers, the cantilevers—all of which combine to give the building its dramatic form—all reflect the original requirements and the original scheme.

The building was to provide space in which new products for building interiors could be designed and then presented to the company and its customers. This meant a set of functional requirements, with the need for north light in the design studios and presentation area being the most basic, and a set of more intangible requirements. Besides the necessary spaces and equipment, the building had to provide a certain atmosphere. "We wanted the building to be a place for reflection," says Styling and Design Director Richard F. Smith. "We wanted it to prompt dreams and bull sessions."

The form grew directly from the program and its basic requirement of maximum north light in the work spaces. Thus studios, designer work spaces and the large presentation





## A building for dreamers

room, which all share the same lighting requirements, were grouped on the north side of the upper, or main, level of the 60,000 sq ft building. That in turn gave the building its dramatic form, marked by the slanted glass wall.

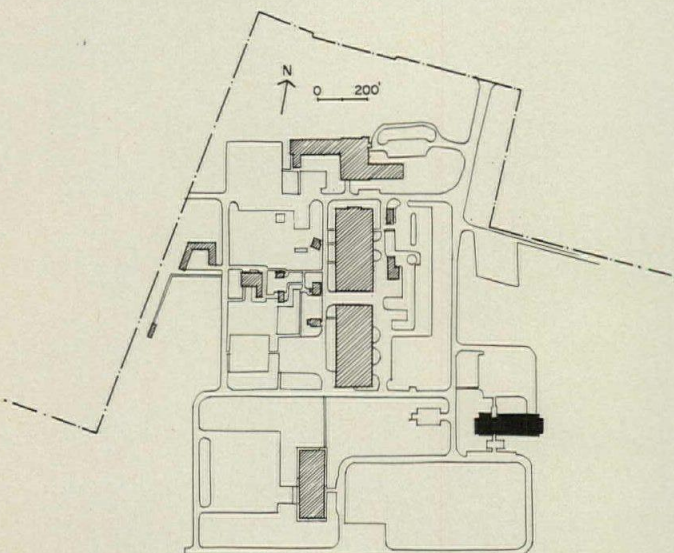
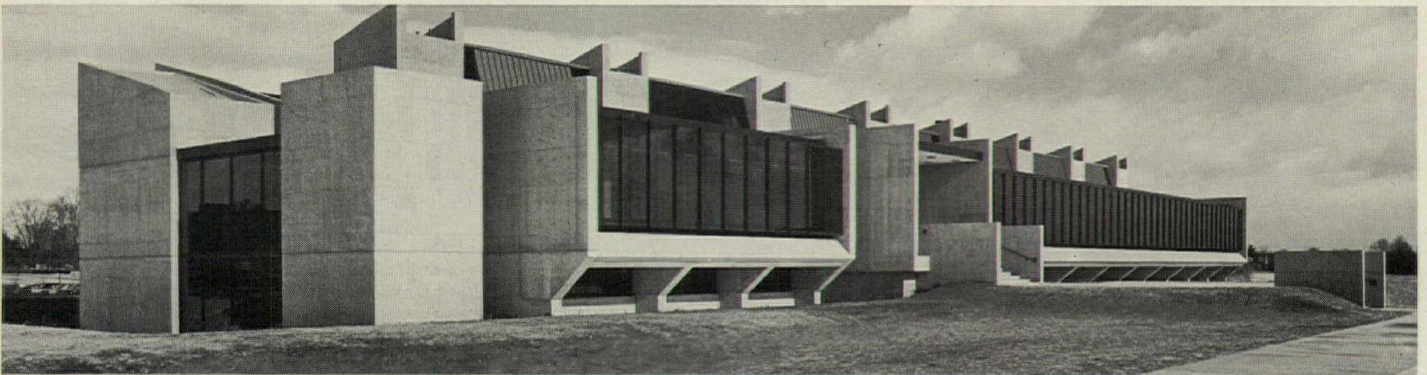
The studios, five of them, are contained in a 140' x 40' space behind the glass north wall. A system of partitions and furniture, designed by Armstrong, gives great variety to studio arrangements. Individual work stations are separated by partitions 54 in. high, while the partitions that separate one studio from another are a full 6 ft high. This gives needed privacy without destroying the openness of the high ceilinged studio space. Design supervisors have enclosed work areas within the large studio space.

On the south side of the building are administrative offices

and a library and the smaller presentation room. Through another window wall, these spaces have a sweeping view of the Pennsylvania farmland south of the site.

Solar glare and heat are controlled on the south side by a screen of tinted glass. Set 2½ ft away from the windows, the screen is designed to reduce air conditioning loads; a louvered aluminum grid at the top blocks direct rays of the sun.

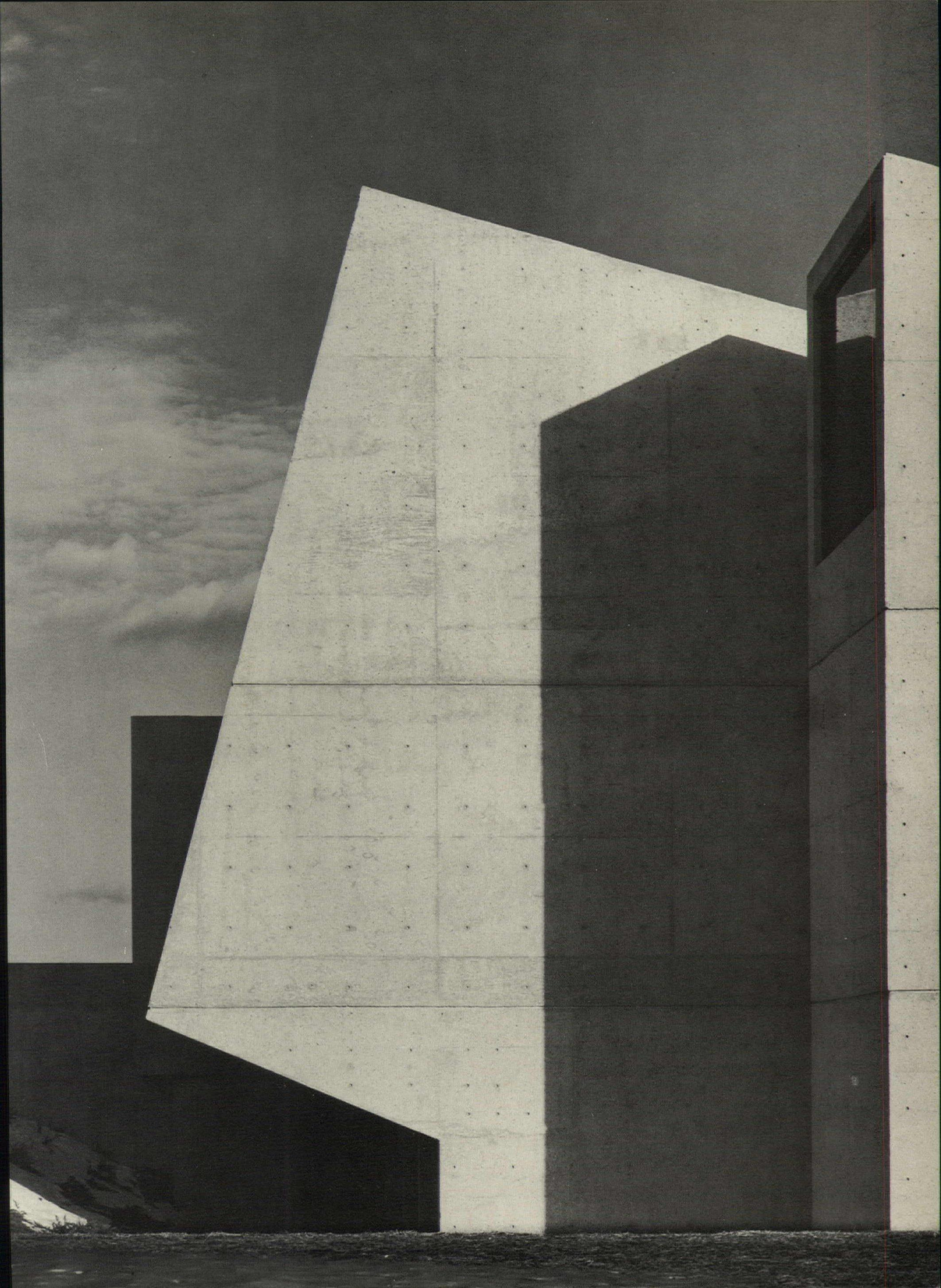
At the western end of the upper level are the two presentation rooms. The large one, which is the same height and width as the studio area, seats as many as 60 people; the smaller one seats 20. Both are entered from a public vestibule which opens onto the lobby. The lobby, part of a cross axis formed by the two main entrances to the building, separates the more or less public spaces of the presentation rooms from the



Small presentation room, offices and library line south side of Armstrong Styling and Design Center (top); window wall on opposite side (above) brings north light to large studio area and main presentation room. The glazed solar screen (below) on south side reduces glare and heat load.

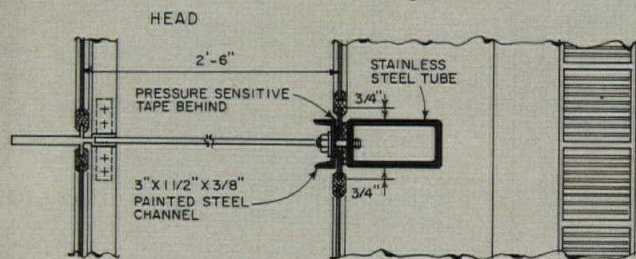
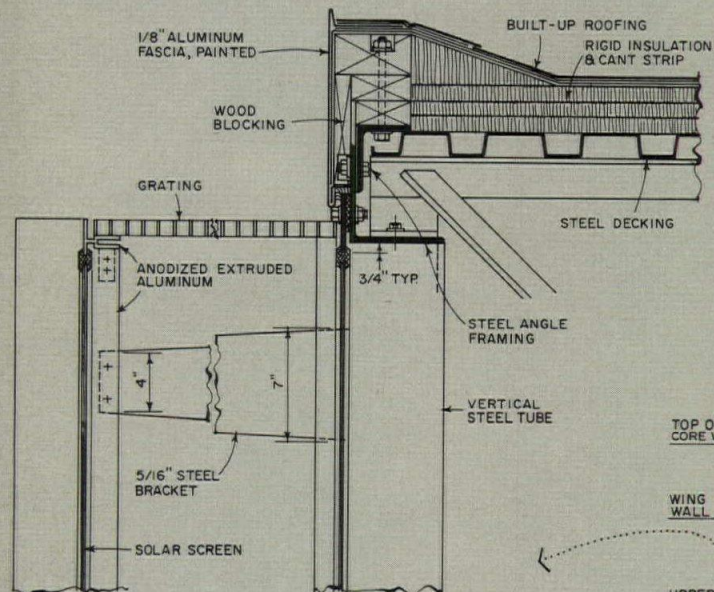




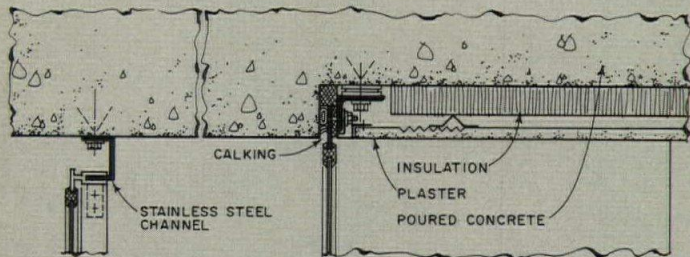




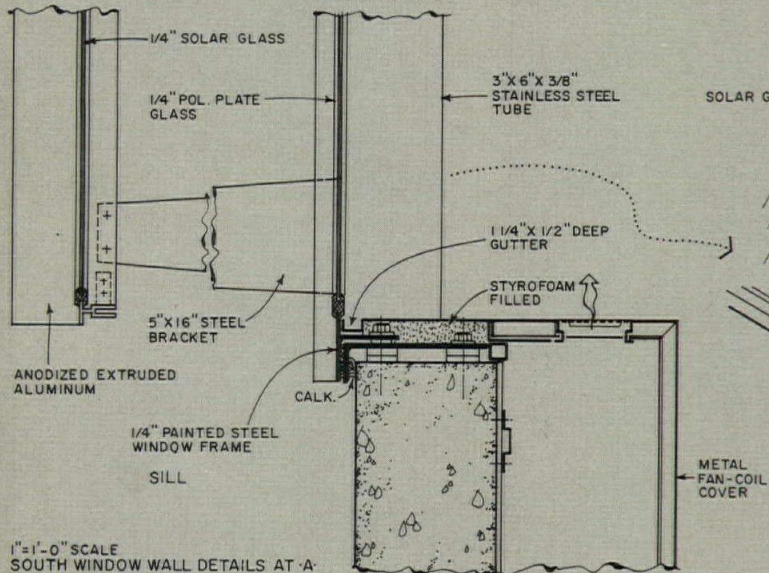
# Construction details



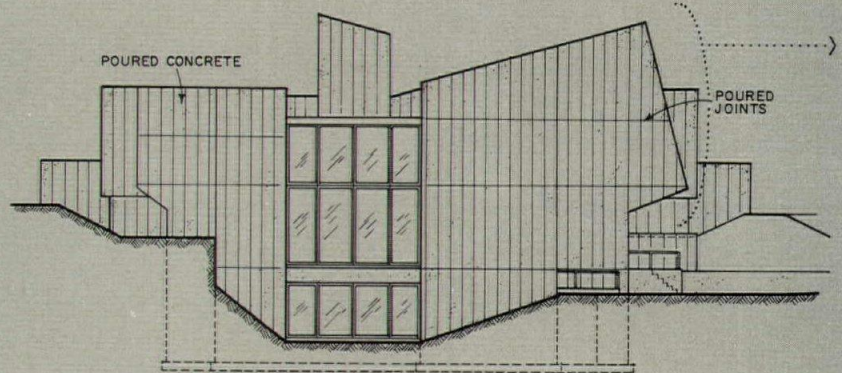
PLAN SECTION OF MULLION



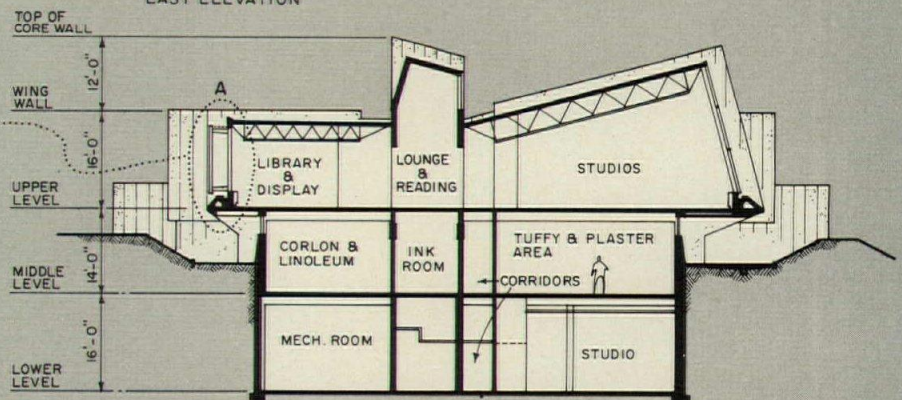
PLAN SECTION AT CONCRETE WALL



1"=1'-0" SCALE  
SOUTH WINDOW WALL DETAILS AT 'A'

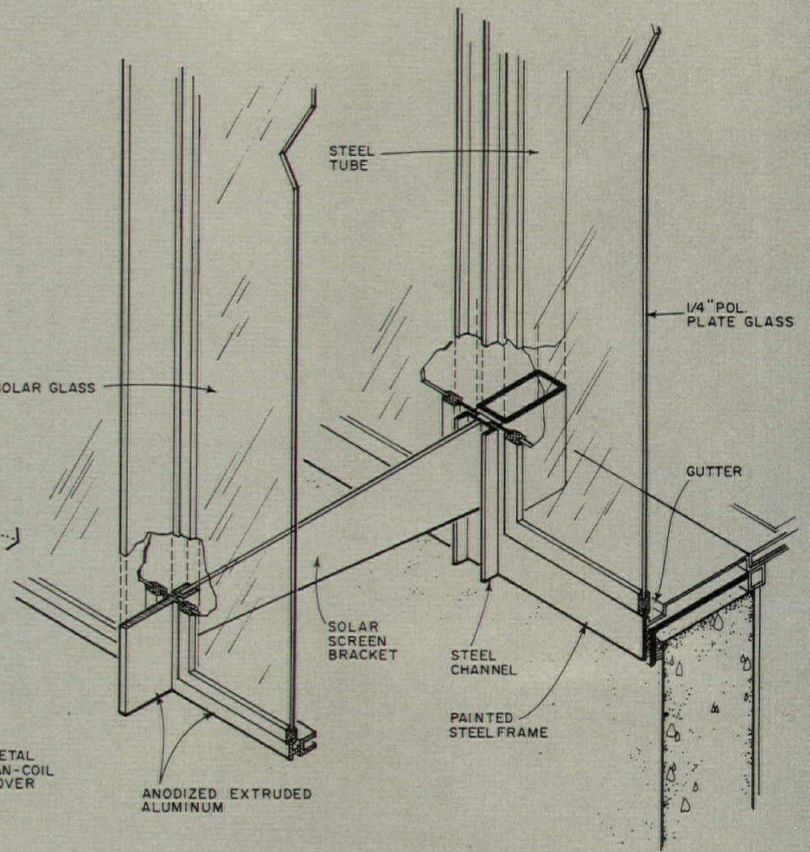


EAST ELEVATION



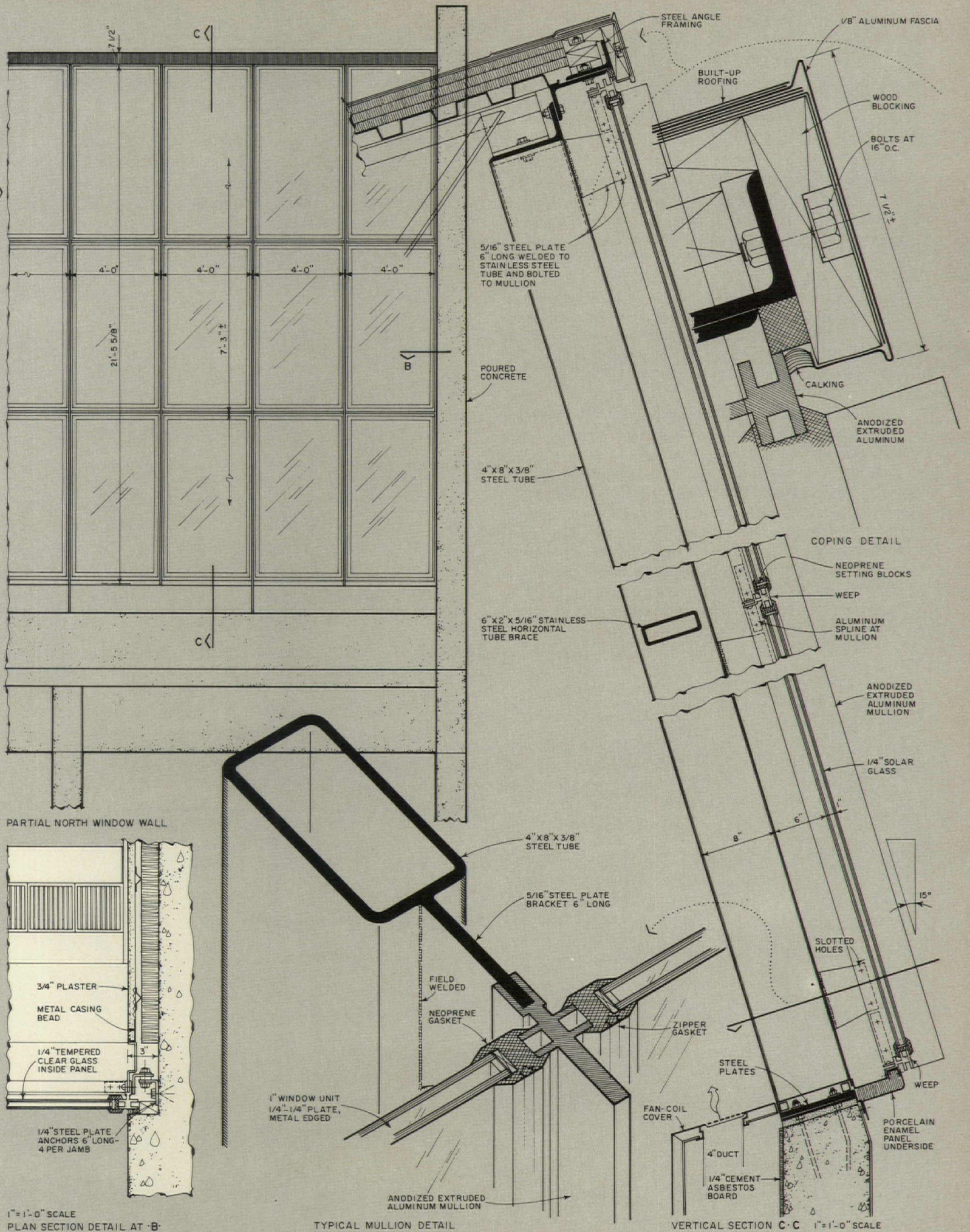
TRANSVERSE SECTION (LOOKING EAST)

0 16'



ISOMETRIC DETAIL AT STEEL BRACKET







## A building for dreamers

decidedly private spaces of the studios and offices.

The two lower levels of the building contain workshops, storage space and mechanical and electrical equipment. In the workshops are facilities and equipment for turning the designers' ideas into prototype products; there are rotogravure workshops with three presses, 14 rooms of photographic equipment, chemical rooms and other specialized areas.

Three sets of stairs and an elevator are within the central structural spine that serves as a hallway on each floor; on the main floor it is actually a double aisle, with lounges and display spaces, as well as restrooms, in the middle. The spine also carries the mechanical distribution system for the structure, supplying conditioned air to the three levels and exhausting used air from the lower levels through eight evenly spaced vertical shafts. Above the upper level, the spine carries skylights to bring north or south light to the central areas of the building.

From all reports, the building does just what Armstrong wanted. Smith says, without any hesitancy, that the building is a success in two ways. "It works very well in terms of the functional program," and it succeeds "psychologically" by providing the desired atmosphere for design work. And judging from the looks of things, everyone feels at home. Some staff members have done paintings and sculptures for their own offices, and the individual workspaces in the studios can be arranged to suit occupants' needs and whims. According to Albert C. Hufford, Armstrong's general manager of architectural and construction services, designers were given

great liberty in furnishing their spaces. So far, there has been some changing, primarily of chair styles.

The building is part of Armstrong's Technical Center, a 600-acre campus a few miles west of Lancaster, Pa., which includes some older brick buildings and an engineering building of exposed steel and solar glass. The concrete, dark glass and dark metals of the styling and design building are as much a complement to the engineering building as the strong forms of the new structure are a contrast to its precision. It probably is, as Smith suggests, just the right contrast between a design building and an engineering building. [CP]

### Data

**Project:** Armstrong Cork Co. Product Styling and Design Building.

**Architect:** Vincent G. Kling and Partners.

**Program:** provide space for designers of new products.

**Site:** existing man-made plateau at center of company's Technical Center near Lancaster, Pa.

**Structural system:** poured-in-place reinforced concrete; roof is steel deck topped with insulation and built-up roofing.

**Mechanical system:** chilled and warm air distributed through ventilating ceiling systems; chilled water for air conditioning comes from central refrigeration plant.

**Major materials:** concrete, solar glass, steel and aluminum.

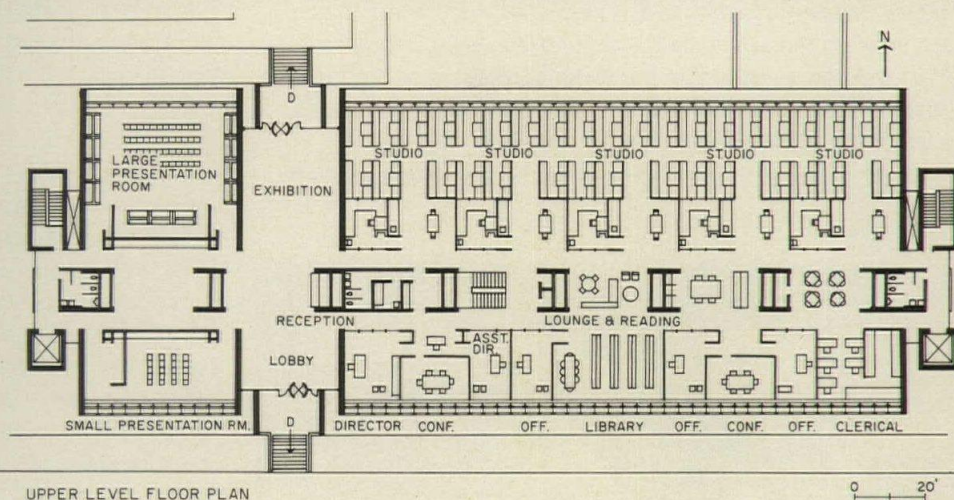
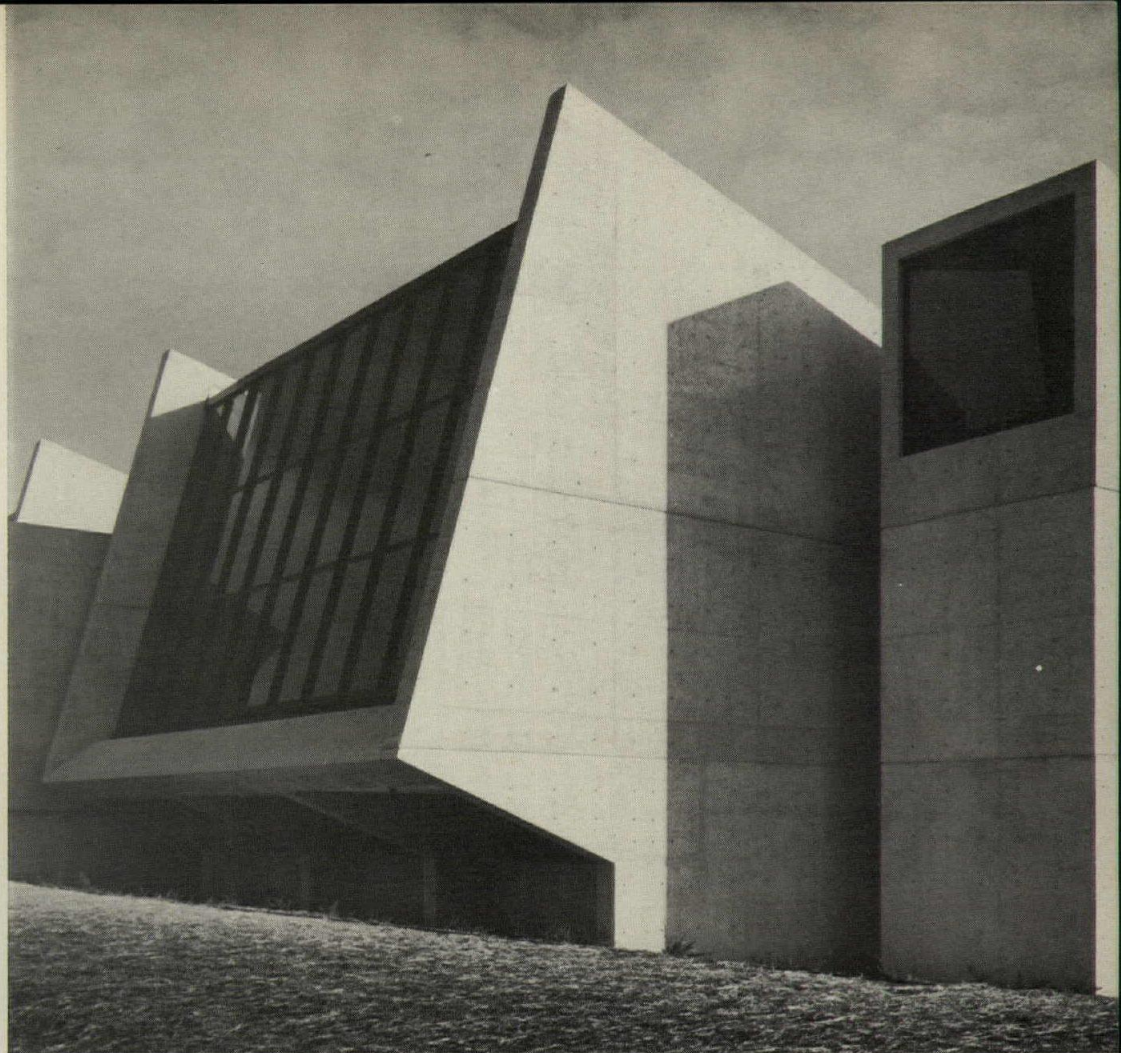
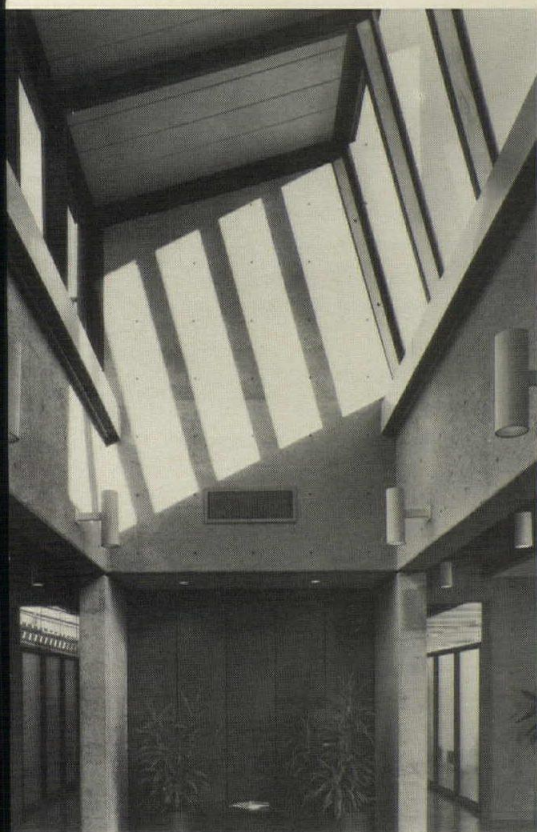
**Costs:** not available.

**Consultants:** Severud-Perrone-Sturm-Conlin-Bandel, structural; Kling-Leopold, Inc., mechanical.

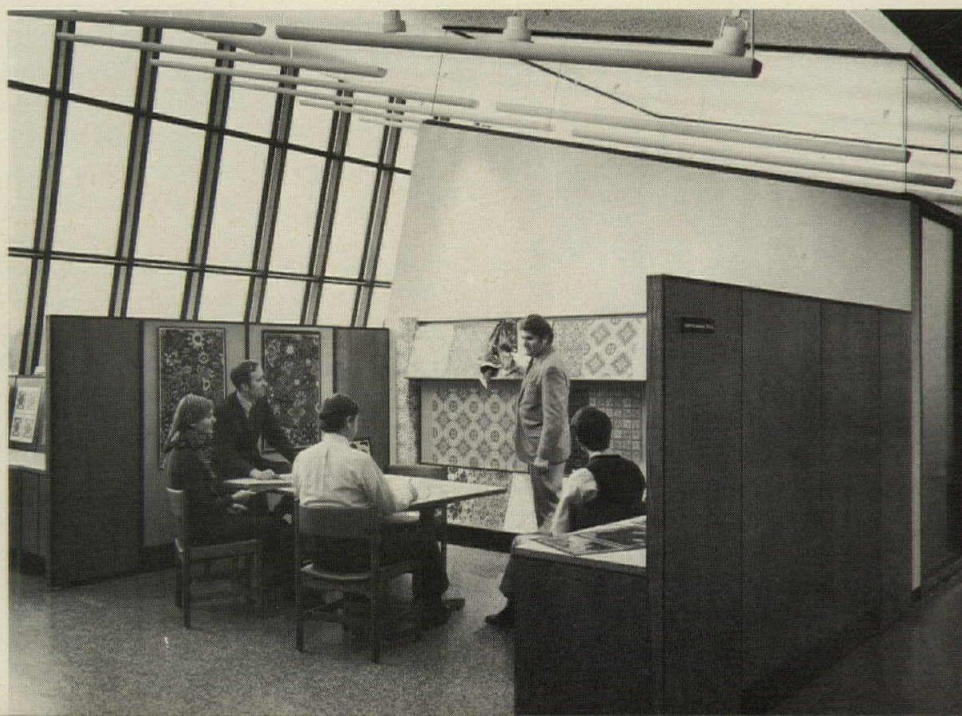
**Photography:** Lawrence S. Williams.







Lobby separates private areas (studios, offices) from public areas (presentation rooms). Central spine (above) runs the length of the building; skylight brings north or south light to inner parts of the main floor. Behind sloping north wall are a large presentation room (top right) and design studios. Partition/furniture system for studios was designed by Armstrong, as were other furnishings throughout the building.





# Geriarchitecture

**It's not all condominiums and beach houses along Florida's sun coast. St. Petersburg architect C. Randolph Wedding became an expert on housing the elderly poor by designing under low budgets, varied programs and nonprofit sponsors**

"Heatherwood" doesn't sound like a public housing project for the elderly. It doesn't look like one, either. And, unfortunately, it stands as the client's lone monument to the notion that low-income housing can be well designed, well built and provide a pleasant place to live. A year after Heatherwood was completed, the same client, the Pinellas County Housing Authority, filled an adjoining tract with barracks-type "modulars" chosen because they were \$500 cheaper (\$8500 vs. \$9000) per unit and could be installed in a hurry.

C. Randolph Wedding, the architect, views Heatherwood

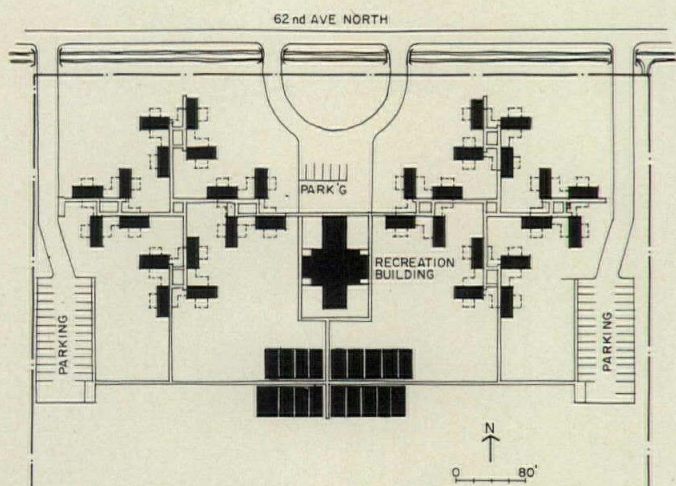
not as a monument, but as a milestone on the way to both better public housing and developing a building system. "We have worked very hard to develop a viable system of building residential units here in the Tampa Bay area," he says. "We determined some three years ago what we thought to be the level of expertise of the average builder, and what he could handle. We designed Heatherwood as an interim step in this process. It's a series of precast walls and poured slabs. At the same time we were developing a concrete tube system. Then there is a ferro-cement panel system with a styrofoam core that we're working on right now."

For Heatherwood, the concrete panels and slabs were arranged in 8 clusters of 8-plexes, stacked so that second-level units are cantilevered perpendicular to the lower ones. No unit looks into any other, and each has access to a central landscaped courtyard. There are also 36 units arranged along a two-story walkway, making a total of 100 on the 10-acre site.

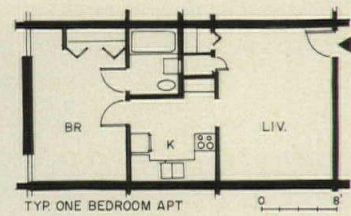
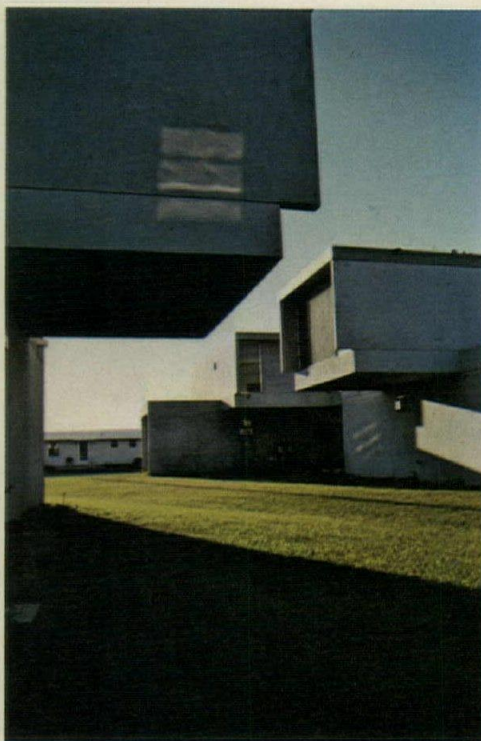
"Actually," says Wedding, "we've built on only five of the acres, and it's still loose as a goose. The same facility, much better organized, could have been built at 50 or 70 to the acre in a vertical community. That would serve this particular group of people much better than having them sprawled out all over the place where they have long walking distances outdoors." But the client was the county, and county land for county housing is rural. A tenant organization has since won campaigns to build a bridge over a creek to a regular subdivision where buses run, and also to bring special buses to Heatherwood.

But Wedding believes the elderly belong downtown. His best project in this respect is the Lutheran Apartments, just one block away from St. Petersburg's busiest downtown intersection. The land cost half a million dollars per acre, and was worth every penny, he says. Built under 202 Federal financing, the 16-story tower is a moderate-income project for those over 62. It has 225 apartments, and tenants make full use of the ground floor lounge, community room, restaurant, small grocery store, beauty shop, laundromat and a doctor's office. As in other church-sponsored projects, it is managed by a nonprofit organization which provides some social services to the tenants. Wedding calls this "eyeball to eyeball mission."

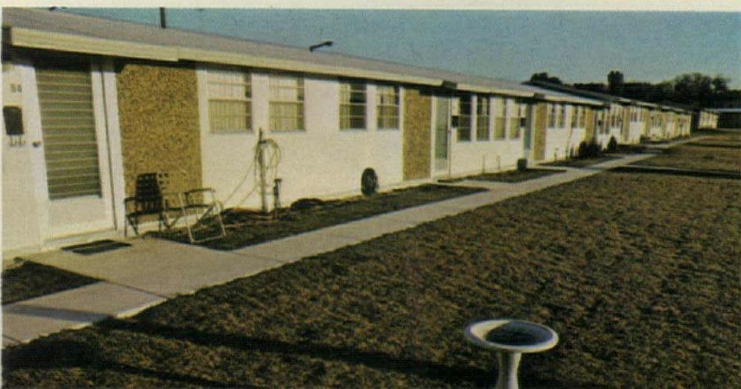
The Lutheran tower was the first building over five stories to be built in St. Petersburg since 1925, and it marked the start







Heatherwood, a county public housing project, consists of stacked boxes made of precast concrete panels; courtyards serve eight units. County later put up barracks type "modulars" on site next door to save a little time, money.

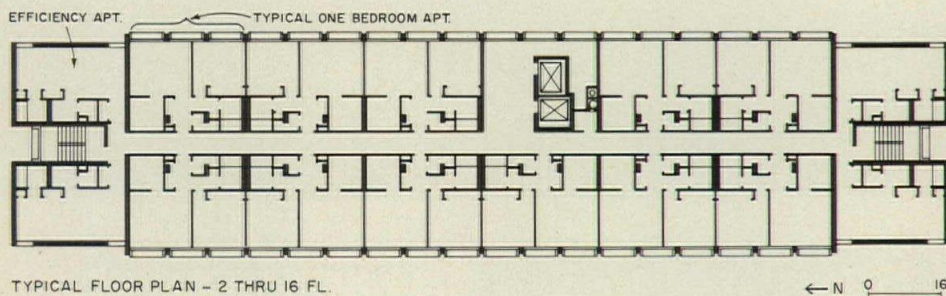




of a long-range, if informal, plan to revive the central business district. In 1964 Wedding was part of a group called Citizens for Better St. Petersburg which tried unsuccessfully to pass an urban renewal referendum. Then a "Safety Progress" group was formed to carry out a redevelopment program with private enterprise building on land that the city would clear through the right of eminent domain. Plans were drawn for a major parking podium with a hotel, office and apartment towers using the air rights. A taxpayers' suit took care of that, however, and the citizen's committee turned its attention to an RC-1 zone (residential-commercial, high rise) that loops all the way around the CBD 2½ or 3 blocks wide. The Lutheran tower site had been used for parking for about 18 years, and was a natural place to start repopulating the downtown area.

### Housing starts renewal

Other sponsored housing projects are being used as focal points in neighborhood renewal areas. The John Knox tower, sponsored by the Presbyterians, is a 221 (d)3 structure for very low income elderly tenants, most of whom receive rent subsidies. Breezes substitute for air conditioning here, and Wedding designed the building on a "string of beads" concept that alternates apartments and open spaces along open corridors. Although the 300 units were built for \$10,000 each, money was spent on psychological security devices such as high walls around the exterior corridors, projecting slabs below each window that prevent tenants from looking straight down, very slow elevators and panic buttons in bathrooms. Except for the view there is little sensation of being up high.



The elderly belong downtown, says Wedding, so they can walk to shops, parks and other urban facilities. The Lutheran Apartments in St. Petersburg is a moderate income project.





From the top of the John Knox tower, Wedding points out the neighborhood he hopes will be redeveloped, either privately or under nonprofit sponsorship. Composed of sub-standard wood buildings, the area has enough vacant lots, he believes, to allow building without relocating the residents. He even assigned this area as the design problem last year for the annual competition he sponsors at the University of Florida school of architecture. Several of the student teams, he reports, came up with viable urban designs based on actual neighborhood conditions.

Nearing completion in another run-down part of town is the first public housing project in the South to be fully air conditioned. The client is the St. Petersburg Public Housing Authority, and the contractor is bringing it in some \$350,000 under the \$4.4 million budget. Wedding designed the 300-unit structure along the cost-cutting principles he has been working out in other projects. "You've got to use every known gimmick to make the dollars come out." Concrete is poured with flying forms that are lifted by crane at the rate of one floor every six days; plumbing and electricity go in as each floor is finished. The 7-in. slab serves as both ceiling and base for carpet or tile and the plumbing is no-hub cast iron clipped with stainless steel.

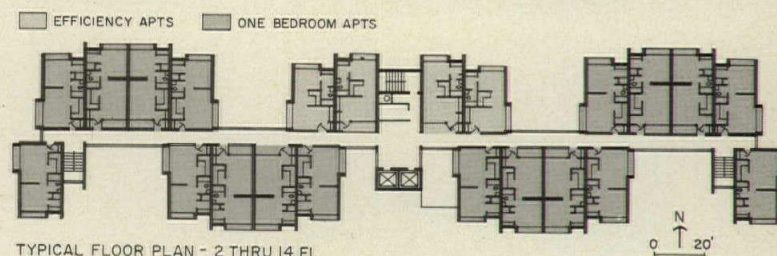
The project, called Graham Park, is a complex of 6-, 8- and 12-story buildings on a rather large landscaped site; each building contains either efficiencies, one- or two-bedroom units, all for the elderly. Two bedrooms in public housing for the elderly? Wedding explains that many tenants have relatives living with them, either to be taken care of or to take care of them.

"There is a crying need," he says, "for someone to take an architectural interest in these public-oriented projects. There are a lot of bad ones done, but it doesn't have to be that way. It's hard to make them really great, but you can make them decent and can improve the environment architecturally if you're really willing to pour the effort into them."

He derives a special satisfaction from the church-sponsored projects. "It's a very special client-architect relationship. These people rely on their architect for almost everything, unlike a corporation, for instance, which brings in a lot of expertise. The sponsor may have expertise in operations and social programs, but they are not professional apartment house operators. The programming and everything else falls on the architect and the loan consultant, and it becomes a fiduciary relationship between the sponsoring organization, the architect and maybe the attorney. It puts the architect on the spot to provide more help than he normally would, but it's very rewarding. The people who live in these buildings are so tickled to be living in decent housing it's hard to believe."

#### The ins and outs of finance

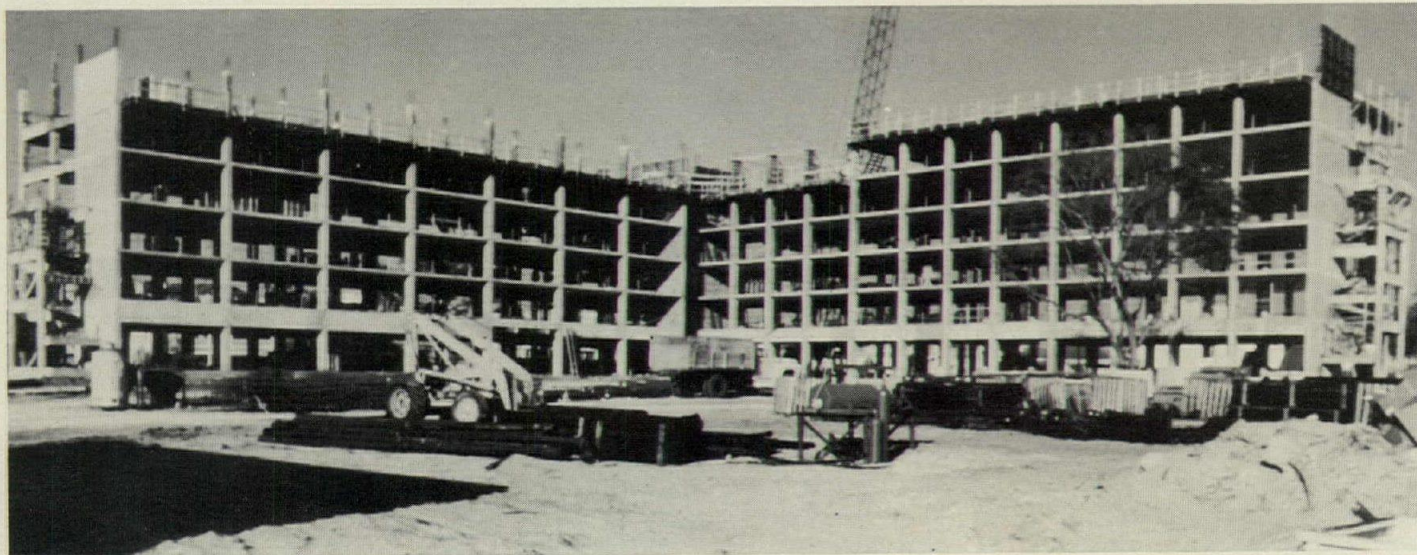
After designing 16 housing projects, Wedding has learned the ins and outs of government financing. His favorite, the 202 program, no longer exists. "The 202 had the attraction," Wedding points out, "of really enlisting the aid of the professional, of leaving the architect with enough to work with so that he could at least employ his ingenuity to get a project built." It was not, he says, "a road exercise where you had to go from A to B like a follow-the-dot book; the regulations it



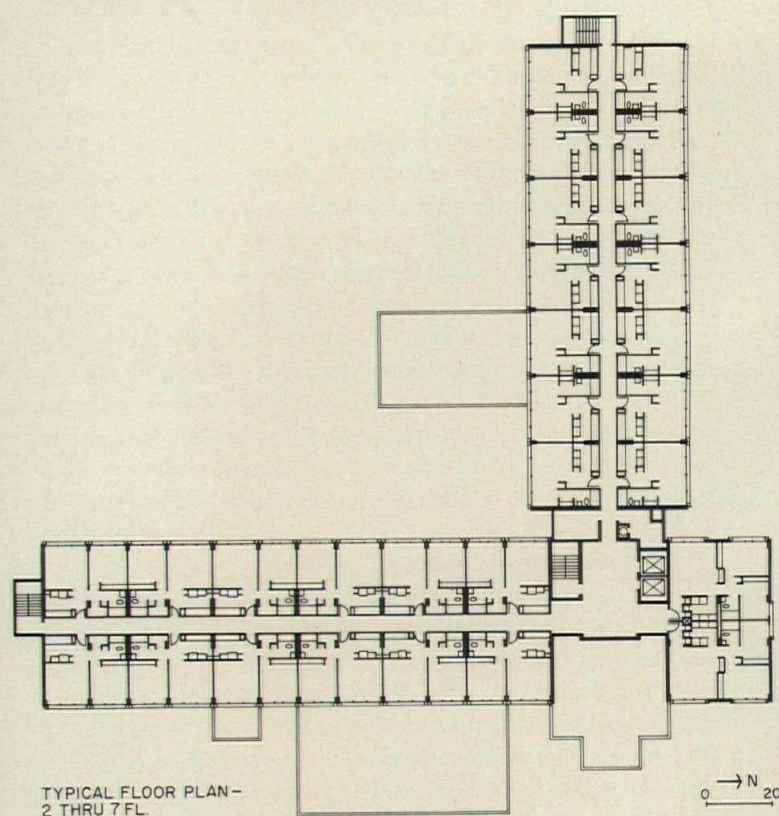
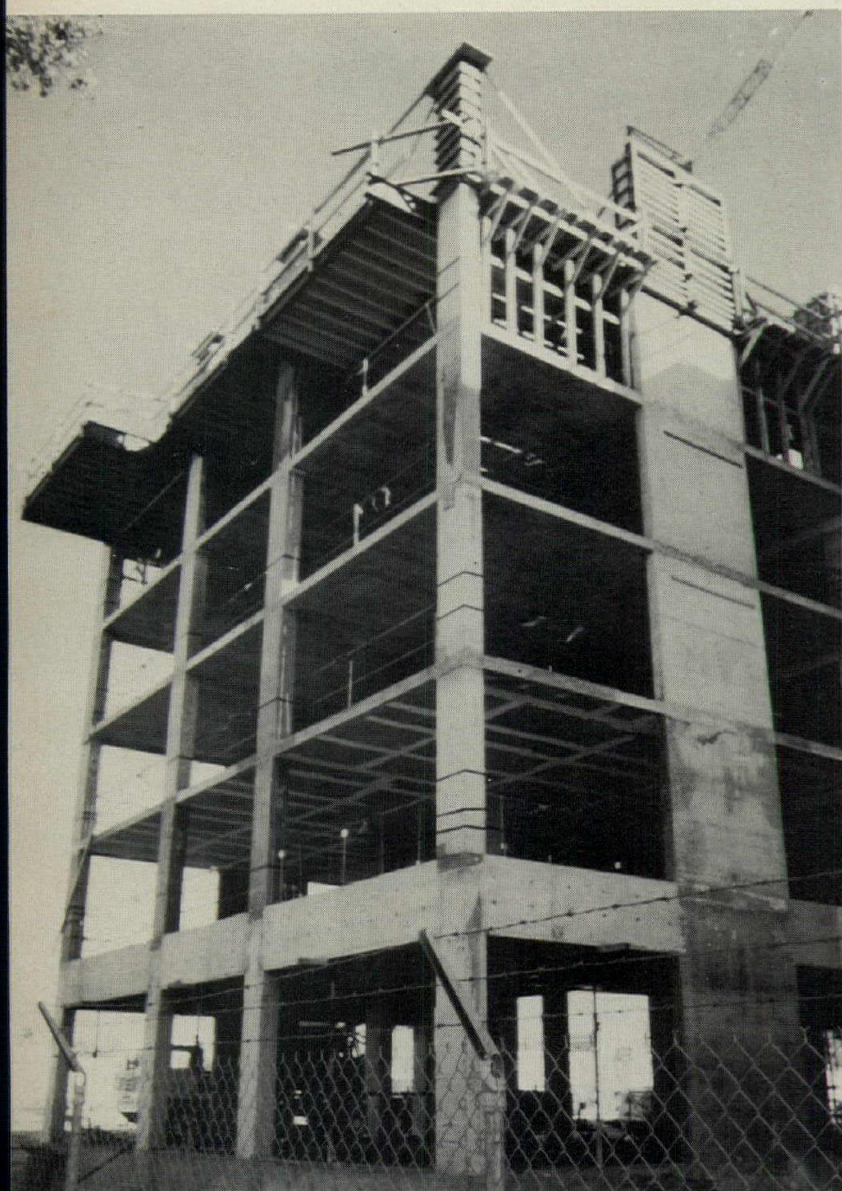
John Knox Apartments, 300 units in a string-of-beads plan that catches breezes, is sponsored by the Presbytery of West Florida; it replaces 50 substandard houses like those shown below.







Graham Park, first air conditioned public housing in the South, is a St. Petersburg municipal project. Wedding holds down costs by using flying forms for columns and slabs.





supplied to the architect were less than the tables of contents of any of the other programs." He thinks the new programs, particularly the 236, are going to bureaucratize the housing process to the point where little will be built; their budgets are so "unrealistically low" that whatever will be built will be of such low quality that it will be falling down within 12 months. He grants that 236 will allow low-rise housing to be built out in the country, but this is no help to the elderly poor who rarely drive, much less own, automobiles. In addition, it only encourages the kind of sprawl Wedding is so opposed to. He says the allowed \$12.30 a sq ft under 236 simply will not work, that to build high- or mixed high- and low-rise on urban sites requires at least \$15 to \$16 a sq ft.

This points up another advantage of the 202 program. Under it, Wedding says, if an architect went a little over the dollar ceiling the problem could usually be resolved by having a number of alternatives that were not severe and that could reduce the cost somewhat; in the meantime, he could usually convince the government to add another 5 or 6 percent to make a good project out of something. Ultimately, Wedding thinks, the 236 will die after it has gone through a three- to four-year period with very little of any quality built.

Institutional sponsorship, it turns out, is one of the only ways to accomplish building in Florida today. The state, which has no money for building, is no help; there is no state or city income tax, and no corporate state tax. Revenues derived from local sales tax, the racing commission, automobile and cigarette taxes are not abundant and go to other causes.

Another problem is that very little housing within the reach of those who need it is being built by private enterprise in Florida. But here is where Wedding thinks 236 can be of help. He has great hopes of getting around this problem by forming a limited dividend corporation which would be a special-purpose corporation formed by, say, 10 people who would make a personal investment of capital that would result in about 10 percent of the cost of the overall project. As he explains it, for a \$3 million housing project of 200 units, each partner would contribute \$30,000 and the rest could be financed under 236. The investors are allowed a limited and legitimate profit, set by FHA, of 6 percent per annum return on their money. In addition, the investors would have the tax advantage of depreciation that would go with the project, which would make it attractive to certain business people in an over 50 percent tax bracket.

The only problem, Wedding says, is real estate. "We need to do these in urban areas, but land is high and the costs are out of the picture, which won't allow the rents to come out right." But he hopes to be able to build one in a nearby country area to run through the exercise to find out what the inner workings of the process would be. Having done that, he hopes to be able to find ways of building good housing in urban areas, with the aid of the 236 program.

#### The eleventh year

As soon as he became registered in 1960, Wedding opened his own office in St. Petersburg, across the street from his father's landscape firm and nursery. This, plus the carefully tended "natural" landscaping within his brick serpentine wall, provides a lush rural setting even though the office is well



Rose of Sharon Apartments, Savannah, Ga.



Presbyterian Apartments, Lakeland, Fla.



Presbyterian Apartments, Bradenton, Fla.



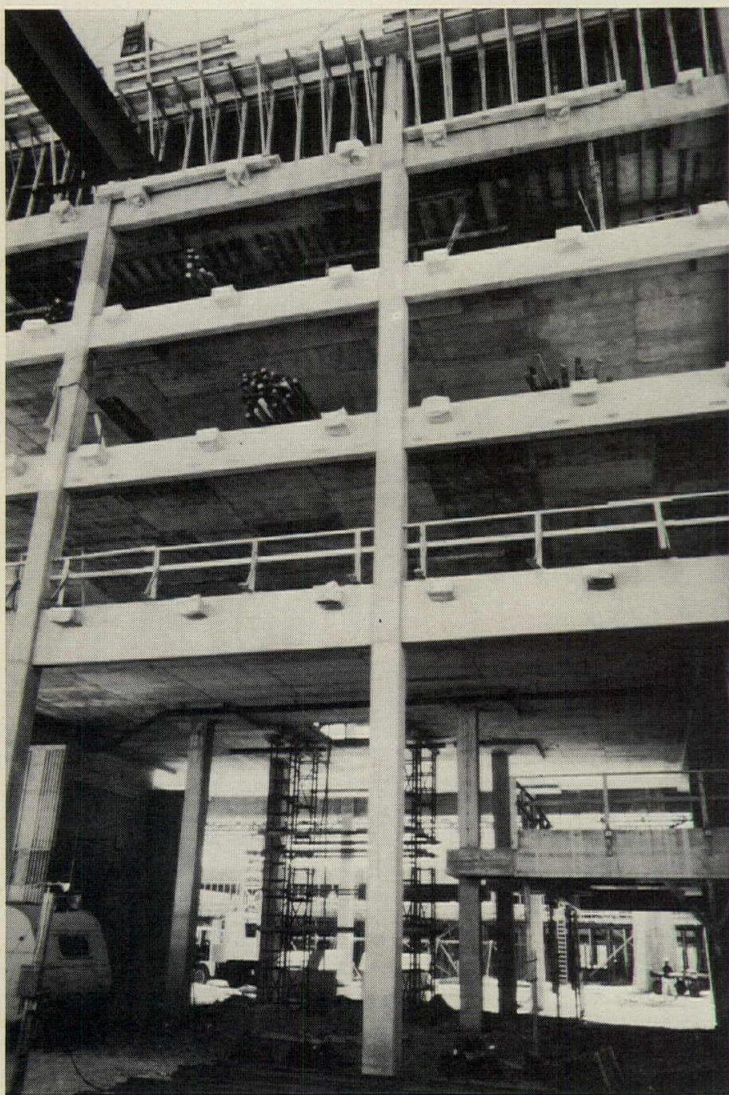
The Columbian (Knights of Columbus), St. Petersburg.

Wedding has designed 16 public and church-sponsored housing projects in Florida, Georgia, North Carolina and Delaware, putting families into low rises and elderly persons into towers.

Luther Towers, Wilmington, Del.







Corporate headquarters for Florida Power, St. Petersburg, is a campus designed for expansion from 300,000 to 1 million sq ft without losing its identity. Covered walkways and plazas connect six two-story buildings to the main tower. The firm is also doing the landscaping for the \$8 million project.



within the city limits. His father, Charles R. Wedding, FALA, is an associate of the firm, heading the landscape department. Wedding himself is also registered as a landscape architect, and most commissions include both architecture and landscaping.

At the outset Wedding felt that too much effort was being put into contract documents and too little effort before and after. "Documents may be traditional architecture, but it's the other things that really let you get involved." He developed a strong field force for supervision—one senior inspector and six others—and put great emphasis on meeting budgets. This led to expanded front end services in research, problem definition and programming.

In 1969 the firm added an in-house economist, who arrived in St. Petersburg in a rather unorthodox fashion via H.M.S. Bounty. For several years Dr. Ronald Carroll, whose degree is in economics from the University of Vienna, had been director of economic and market research for MGM, Inc., studying the best use of its worldwide real estate holdings. The Bounty, built for the remake of "Mutiny on the Bounty," has been moored at Municipal Pier since 1965. Carroll and Wedding met over plans for setting up the tourist attraction and later for its expansion into a replica of an 18th Century English seaport. Because of Carroll, the firm now takes commissions in market research and analysis in addition to offering these services to architectural clients.

The firm has a three-girl department of interior design but no in-house engineers. It works with a small number of consulting engineering firms, all of whom are familiar enough with Wedding "so they don't have to start from scratch every time." Computer programs and CPM networks are used, not because they are cheaper, but to get better decisions. "We try to simplify all areas of the work," Wedding says.

The growth of Wedding's practice is reflected in the dollar volumes of major projects (even discounting for inflation). From 1965 to 1970, some \$28.5 million worth of construction was completed; the largest was the 200-acre Busch Gardens tourist facility (\$15 million) in Tampa. Value of projects currently under construction is \$23 million. Projects in the working drawing stage account for \$8.7 million, and those in planning and preliminary design stages, almost \$45.5 million. The latest commission, a two-story "vertical shopping center" for downtown St. Petersburg, is tagged at \$24 million.

Of the projects now under construction, the largest is an \$8 million office complex for Florida Power Corp. Wedding says it is "overdesigned" for its first phase size, 300,000 sq ft, but it can be expanded to one million sq ft without losing its original identity. Six two-story buildings are tied to a tower, and to each other, by covered walkways and plazas. At first workers will occupy only the second levels of these buildings, parking their cars below. First expansion will be into these parking areas, but the buildings are also designed for eventual lateral expansion.

Because the site is in an area Wedding had once helped "save" from highway strip development (it was recently rezoned for setbacks of 250 ft) landscaping became a major factor in design of the Florida Power campus. Large earth berms help conceal parking lots and as many trees were saved as possible. To cut costs and also to insure that they would be



Two award winning designs: addition to First Federal Savings & Loan, St. Petersburg (above) and radio and TV studio for ABC affiliate WCLY, located at the edge of Tampa Bay.



available when needed, the Weddings bought all the plants for landscaping two years ahead of time and set up a special nursery on the site.

The buildings, which occupy 40 percent of the site, are exposed concrete with brick infill panels. Interiors will be open plan with Herman Miller Action Office II furnishings.

Wedding has given a lot of thought to handling a large volume of work with a fairly small staff (there are 33 on the payroll, including secretaries and field inspectors). "We try and remain a tightly organized work group without creating a lot of specialists. The personnel are flexible, and our method of using unspecialized time is the reason we do as much as we do. Some people might prefer to work in well-defined paths, but here there is no real chain of command. The two architectural associates, Fred Schlotterlein, Jr. and Peter Jon Volmar, take full responsibility for projects. Others on the staff act as team members, filling the jobs that need filling at the moment." [RR/DM]



# Outpatients are in

**The new Denver General Hospital tackles the problem of providing more health care to more people by switching emphasis from patient beds to outpatient services in the first step towards total renewal of municipal health care**

At Denver General Hospital, an emergency patient sees a doctor as soon as he enters the door, before he is asked questions or required to fill out forms. Soon he might be brought in via helicopter ambulance dispatched directly from the rooftop pad to an accident scene. This emphasis on outpatients extends even to prisoners or persons under guard: they can be brought to and from a special section of the emergency room without being seen by anyone other than the medical staff.

Designed to slow the runaway costs of public health care by increasing programs for preventative medicine and ambulatory cases, the hospital is geared to 400,000 patient visits per year but has only 333 beds. Even the \$12.5 million price tag was a bargain: \$25.20 per sq ft.

Although Denver General has occupied its present site since 1873, it began in 1860 to provide for the sick and desti-

tute of the little settlement of goldseekers on the east bank of Cherry Creek. Some buildings date back to 1892, and others of the 1920s, '30s and '40s still use their original equipment. By the mid-1950s, conditions at the old plant made it clear that either a new hospital would have to be constructed or other arrangements would have to be made for the health care of the people of Denver. But with the costs of hospital care rising at unacceptably steep rates, Denver General realized that it could not continue to provide services largely oriented to inpatient care, even with a new hospital. It would have to do both: build new facilities and develop alternative methods of care. Because of this situation, preventative care was considered of prime importance in the new design. Outpatient facilities were given heavy emphasis, and new educational programs had to be initiated to orient people to the use of outpatient clinics.

This new approach introduced unpredictable variables of new programs whose size, usage and success could not be accurately forecast. In addition, rapidly changing medical technology added more unknown variables. For these reasons, all spaces were planned with a minimum number of columns to allow maximum flexibility of use and ease of changing drywall partitions. Also incorporated into the basic design is the possibility of adding three more floors to the tower and an additional floor to the base. The architectural problem of the building, which consists of a large base of two floors plus basement and a seven-story tower, became one of devising a solution devoted to total health care rather than designing another inpatient hospital.

Most important to the success of the total health care approach, states architect Eugene D. Sternberg, was the need to change the image of the physical facility so that it would not have the old, sterile, impersonal impact that characterizes the term "hospital." Preventative medicine works, he says "only if its facilities are pleasant, friendly and convenient to use . . . (and), because this is especially true with the poor, it was vital to the success of the building to change past images and make it a pleasant, inviting, friendly place."

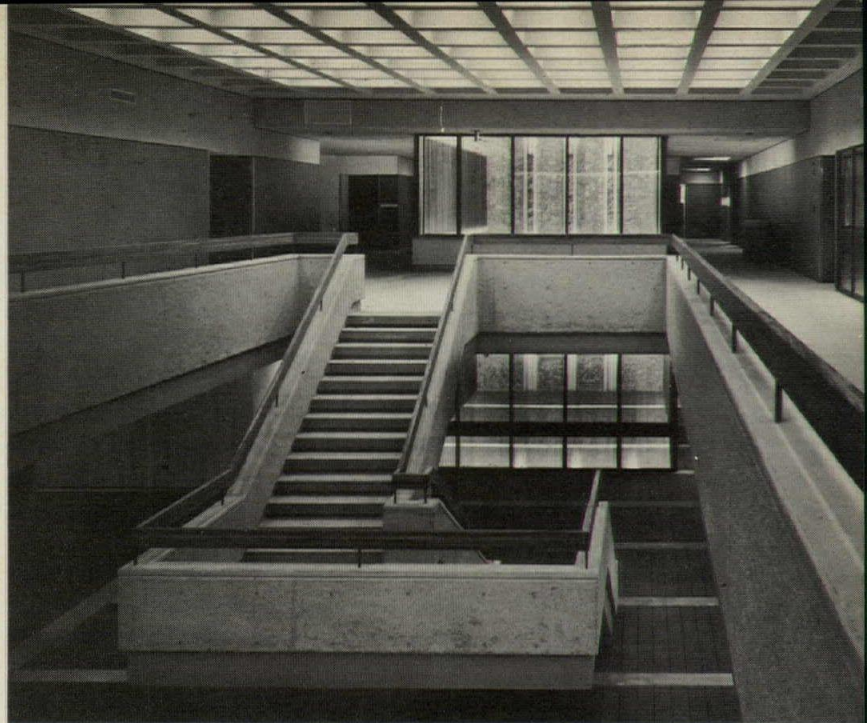
The first floor is given over to outpatient and emergency facilities, while administration, ancillary facilities, and surgery are on the second floor with the central lab and other outpatient services. The X-ray department is next to the emergency department, where it is also convenient to the out-



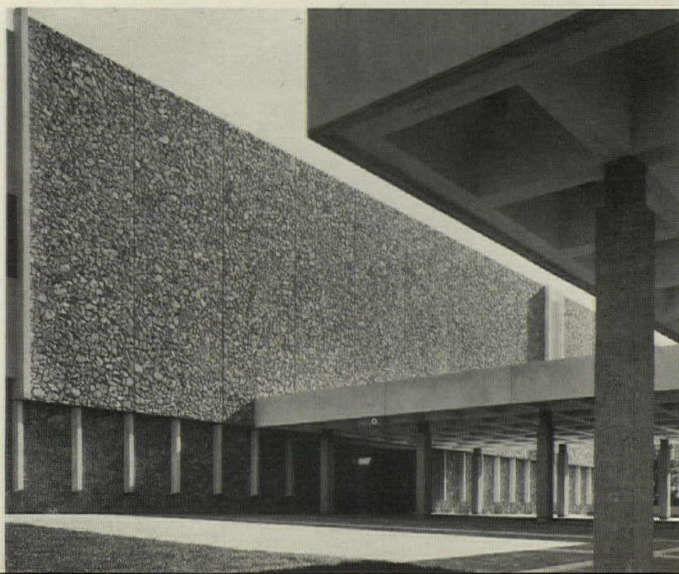


patient clinics. The surgical suite is directly above and readily accessible by the three hospital service elevators. All in-patient services are in the tower, and the basement houses all service areas. The ambulatory care clinics surround a large, glassed-in, open courtyard lobby. They are large enough so that patients can be cared for quickly and efficiently without crowding or mass production approaches. Computerized appointments also speed up the waiting time. Circulation patterns were carefully planned to accommodate the movement of large numbers of outpatients as well as the inpatients, emergency patients, visitors, medical and administrative personnel, housekeeping and support service staffs.

Separate dumbwaiter systems deliver food and supplies to each tower floor from the basement service area; other dumbwaiters return used equipment and soiled linen to the basement. A pneumatic tube system interconnects all nurse stations, admissions, emergency and other vital areas so that

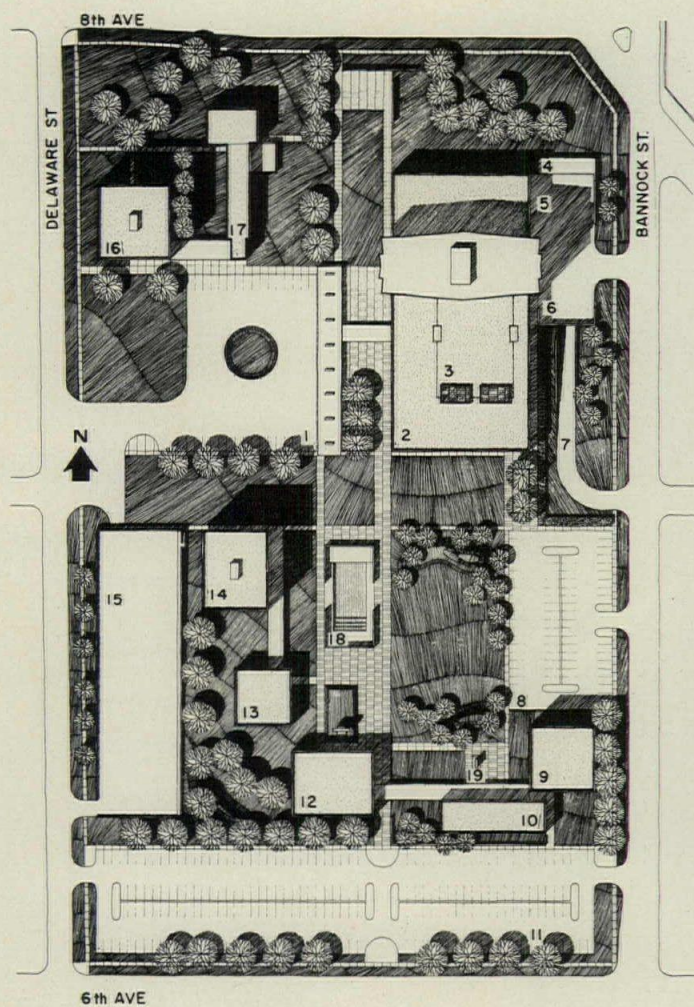


A new hospital is the first step toward renewal of Denver's health facilities that are being planned both inside and out to accommodate new programs of expanded outpatient care.

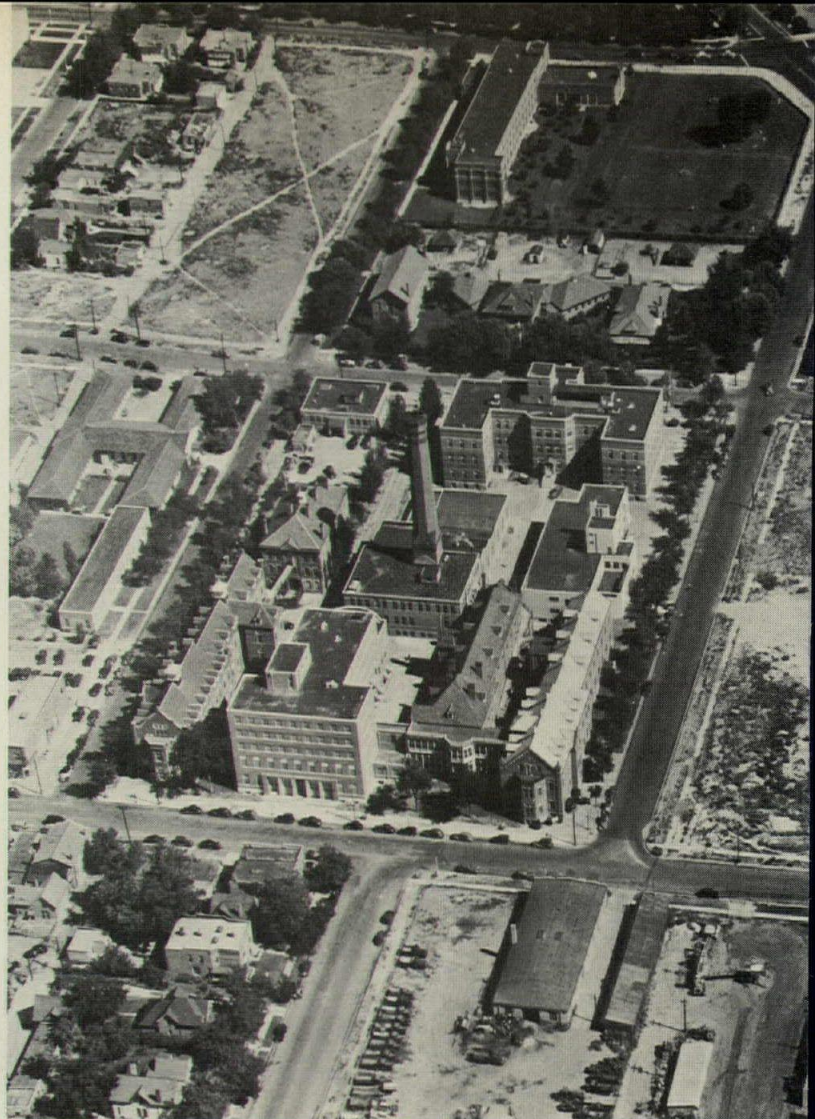




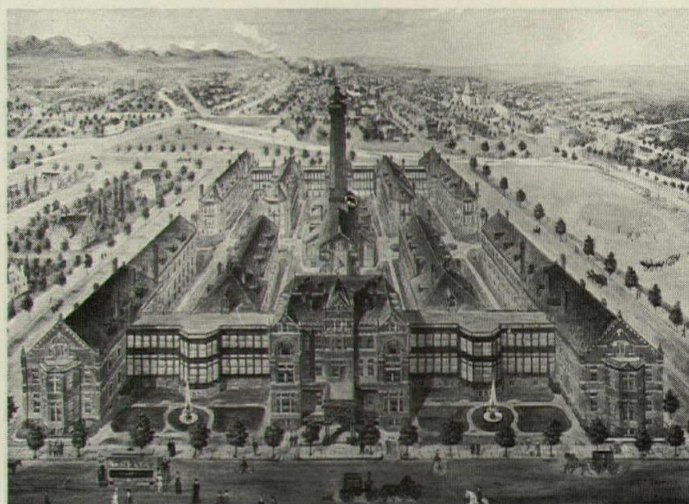
Outpatients are in



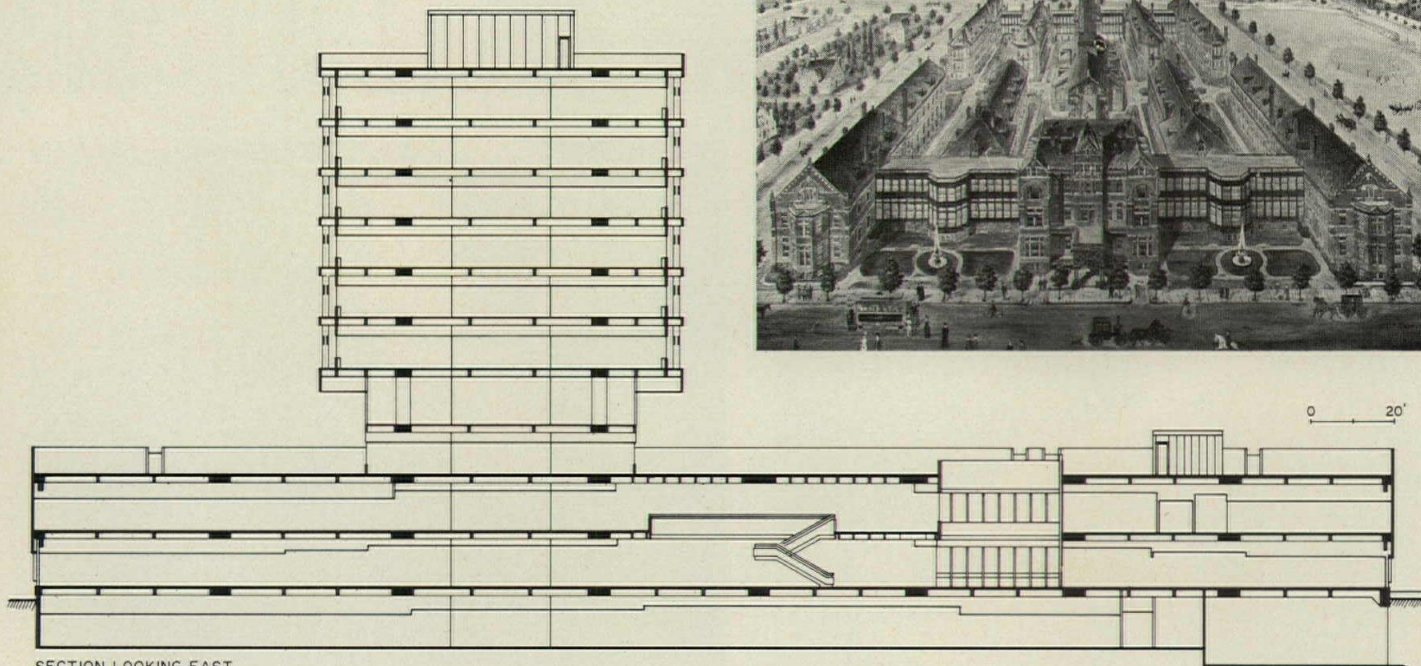
1 main plaza, 2 hospital, 3 play, 4 ambulance parking, 5 emergency, 6 parking, 7 service, 8 parking, 9 nurse res. 10 intern res., 11 parking, 12 long-term care, 13 medical library, 14 research, 15 parking, 16 public health and welfare, 17 existing welfare, 18 terrace, 19 sculpture.



Final realization of master plan (upper left) will create one large park setting to replace present four-block complex of old buildings (upper right). An 1890s scheme (below) was never completed, although remnants of it stand today.



0 20'





medical records, X-rays, lab reports and administrative papers can be dispatched quickly from one area to another. Prescriptions for inpatients and outpatients are received by pneumatic tube at the central pharmacy; individual-unit doses are prepared and dispatched to inpatients via the supply dumbwaiter, and medications to outpatients by a separate dumbwaiter to the outpatient dispensary on the first floor at the main entrance. Lab specimens for all patients are sent to the lab from various locations by a small counter loading dumbwaiter. Trash is processed by a pulper system. A computer assisted health data management system is being implemented to help handle patient records and to operate a central appointment system for the Department of Health and Hospitals' patients.

Capacity of the inpatient tower is 333, but the structural system is planned for expansion to 500 beds. Inpatient rooms, except those in intensive care units, contain one, two or four beds. Each room is equipped with a service unit which includes a nurse call system, outlets for vacuum, oxygen and air, color corrected examination light, reading light and night light. All tower rooms give patients a view of the spectacular Rocky Mountain range in the distance, and sun screens have been designed not to obstruct that view.

Exterior and interior materials were chosen for durability, low maintenance and visual warmth. Exterior walls are precast panels of pecan and beige colored stone; the lobby floor is pecan colored quarry tile and its walls are travertine marble. Clinic areas have durable textured vinyl wall covering in subdued colors and heavy duty acrilan carpeting to reduce noise and housekeeping costs.

Denver General, the city's first new health facility in over 30 years, is the first step in a planned, total renewal of the city and county health services that will also include complete renovation of the site. The hospital now spreads chaotically over four city blocks; the new master plan, which calls for removal of all the old buildings except one, will ultimately unite those blocks into one spacious park with interconnecting sidewalks, sunken terraces, gardens, new buildings and well hidden parking lots.

Design of the hospital and the master plan were both awarded to Eugene D. Sternberg and Associates as the result of an AIA sponsored Colorado architects competition. When completed last year, the hospital was honored as the "best designed building in Denver" by the Downtown Denver Improvement Association. [DM]

## Data

**Project:** Denver General Hospital, Denver, Colorado.

**Architect:** Eugene D. Sternberg and Associates.

**Program:** 353,000 sq ft health center for City and County of Denver with outpatient and emergency facilities to accommodate 400,000 patients per year, plus facilities for 333 inpatients, expandable to accommodate 500.

**Site:** a block formerly occupied by nurses' residence, adjacent to old hospital which will be demolished. Ultimately, four city blocks will be united into one health complex.

**Structural system:** reinforced post-tensioned cast-in-place concrete with column spacings of 40 ft to allow maximum flexibility with minimum column interference. Tower portion has only two rows of columns with structure cantilevered to eliminate columns on exterior. Pan and dome forming poured-in-place floors. Poured-in-place concrete roof.

**Mechanical system:** heating and air-conditioning ducts and piping for tower carried in series of small chases on exterior walls using high pressure air with induction units in each space (terminal reheat). Base floors served with variable volume air diffusers and terminal reheat coils.

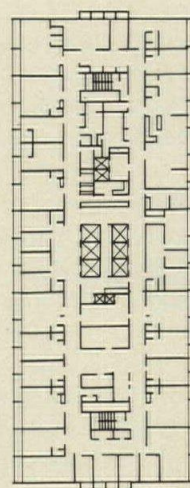
**Major materials:** exterior: precast concrete panels. Interior: perimeter is drywall on styrofoam insulation applied to precast panels; partitions are metal studs and drywall. Floor surfacing: quarry tile, sheet vinyl, vinyl asbestos tile, carpet, conductive flooring, conductive epoxy. Ceiling surfacing: acoustical laying grid, exposed concrete painted coffers. Roof surfacing: built-up asphalt and gravel, traffic deck.

**Costs:** \$12.5 million including equipment, finishing, fees and equipment rental (\$40,000 per month for X-ray). Building cost \$25.20 per sq ft.

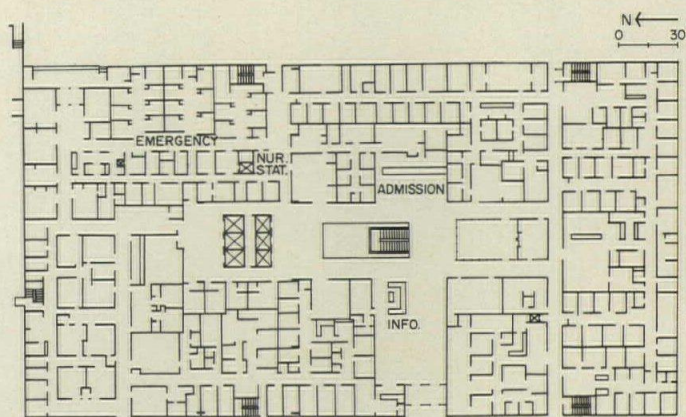
**Consultants:** mechanical: Heckman Engineering; structural: Jack D. Gillum & Associates.

**Client:** City and County of Denver; Dr. David L. Cowen, Manager of Health and Hospitals.

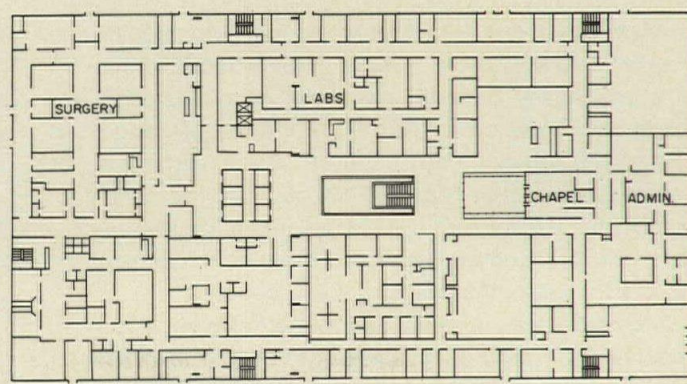
**Photography:** Ted Eden; except p. 75, middle, Rush J. McCoy; p. 76, Bert Holbrook.



FIFTH FLOOR PLAN (TYPICAL)



FIRST FLOOR PLAN



SECOND FLOOR PLAN



# Super-facial

**Cosmetics: 'Articles to be rubbed, poured, sprinkled or sprayed on, introduced into or otherwise applied to the human body or any part thereof, for cleansing, beautifying, promoting attractiveness or altering the appearance ...'**  
**Federal Food, Drug and Cosmetic Act 1969 Sec. 201-2(1)**

Six billion dollars are spent every year on cosmetics by men and women all of whom succumb to ads promising glorified sexuality and all that it implies. In our desire to become seductive, we are being seduced by the promises of instant beauty in a tube.

The corporate offices of Faberge, designed by Dallek, Inc., occupy two floors of Burlington House in New York City. Three million dollars and three years are a conservative estimate for this effort. The idea was to create a "turned on" environment in which to conceive and promote still more cosmetics. Faberge's definition of "turned on" was "love of life" and "pursuit of happiness." The initial response of some employees was outright hate. "Turned on" for the designer was not what was "turned on" for the people working there. But that was solved, according to the designer, by making the people fit. Human adaptation soon repressed the expression of any negative feelings.

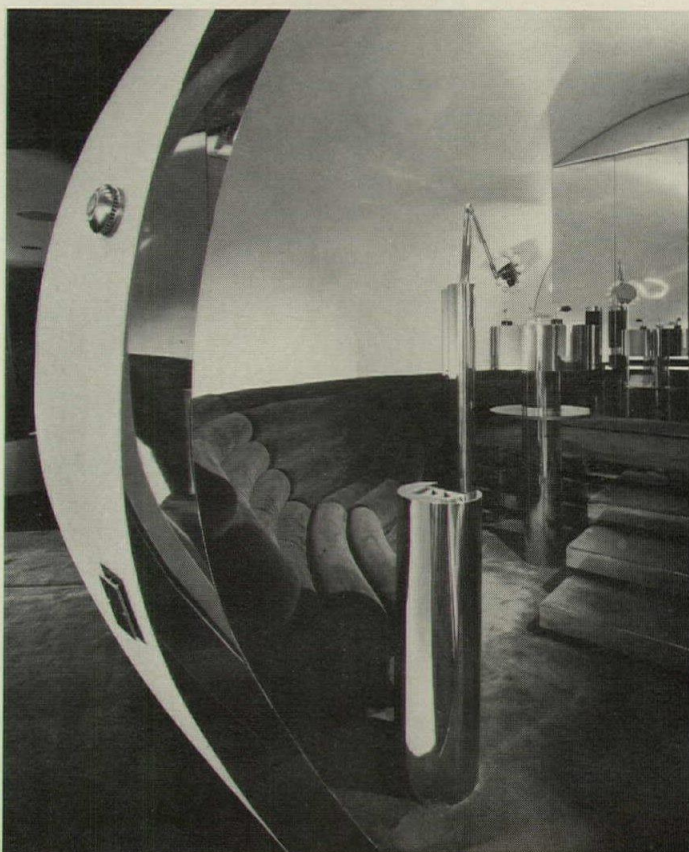
The implied or otherwise stated sexuality of the cosmetic industry is obvious from the advertising it uses to promote its products. "If he has any doubts about himself, give him something else," states an ad for Brut by Faberge, "after shower, after shave, after anything ..." That same sexuality is present in the Faberge offices. One is constantly assaulted by voluptuous curving walls, super-shiny vinyl, endless miles of velvet couch and a 25-ft reclining nude and, judging from the grandeur and sheer number of bathrooms, someone likes cleanliness. Faberge is also not without its conveniences. Doors slide into walls, curtains open and close themselves, tables go up and down. There are fingertip controls for stereo, tape deck, FM, TV, and two live pianos for leisure time amusement. It all slides into and rolls out of shiny black lacquered custom built cabinets which, when not in use, reflect the image of the occupant.

One office style, as described by the designer, is "western" with leather, sheepskin, wood and cactus; another is "Miesian" because it is geometrically laid out. The design

vocabulary of each office is different and relies solely on the designer's discretion for its style. The overall bureaucratic hierarchy is clearly carried out in the design of spaces. Executives get 600 sq ft with bathroom, window wall, sliding door and pushbutton music. Their secretaries get 50 sq ft, a typewriter and canned light and air. There are miles of corridor and many small cubby holes into which the vast working forces are tucked with little to console them except mylar walls and diagonally striped carpet.

It is enlightening to realize that all this sprayed on, laid down, pasted up treatment of walls, floors and ceiling has finally found an appropriate place in the FDA's rubbed, poured, sprinkled, introduced into or otherwise applied world of the cosmetic industry—where everything is effect/illusion, "love of life" and "pursuit of happiness" are sought in jars and tubes and where design comes in rolls of flocking and miles of neon tube. Had any lately? [SLR]

Executive bath and grooming area is equipped with a purple velvet couch, stainless steel and gold washstand, lighted shaving mirror and mirrored wardrobe, plus shower and toilet.



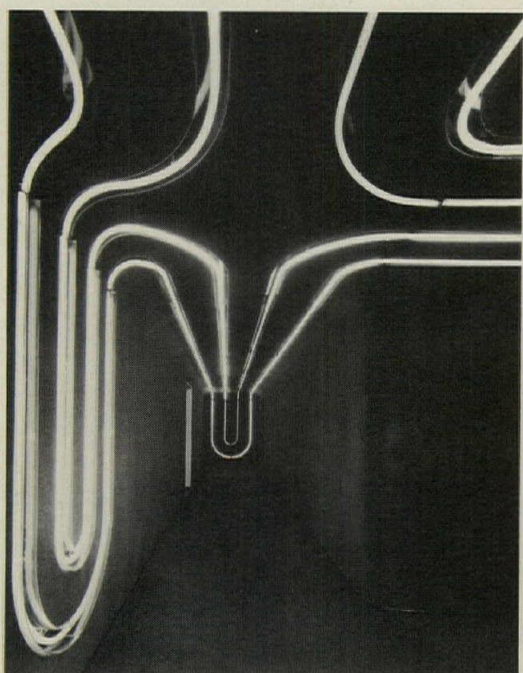
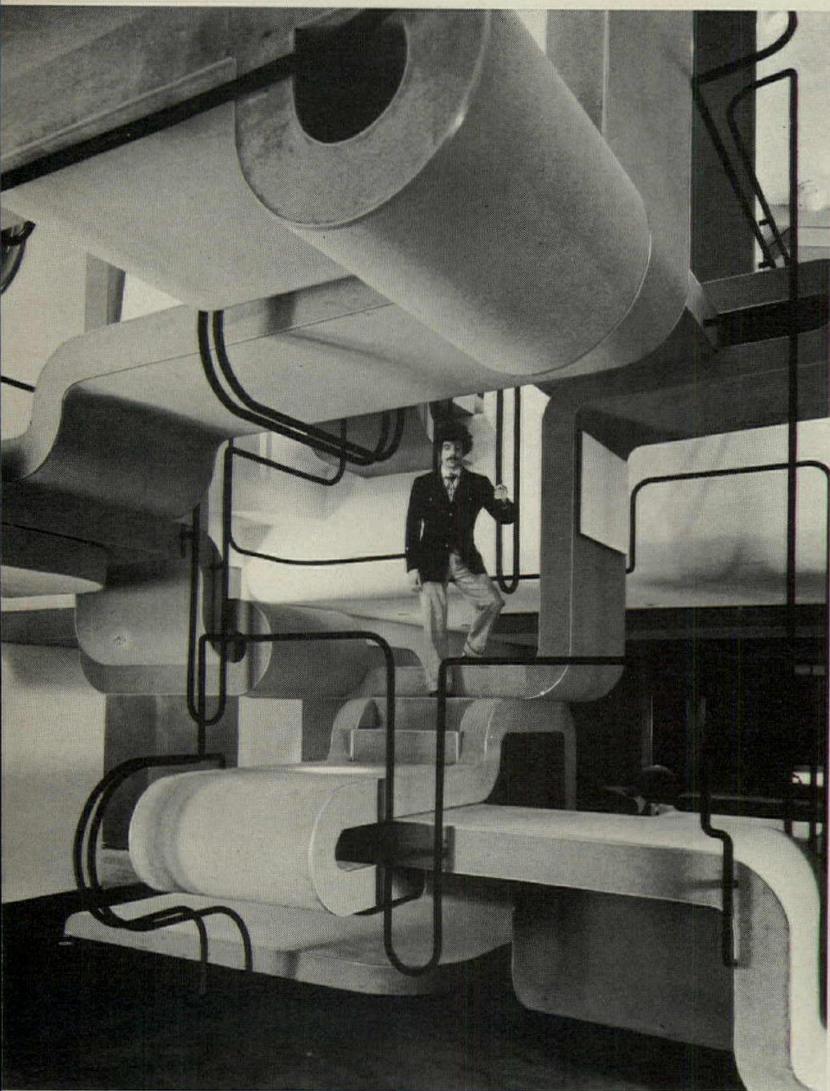




The disembodiment of space-dominated people

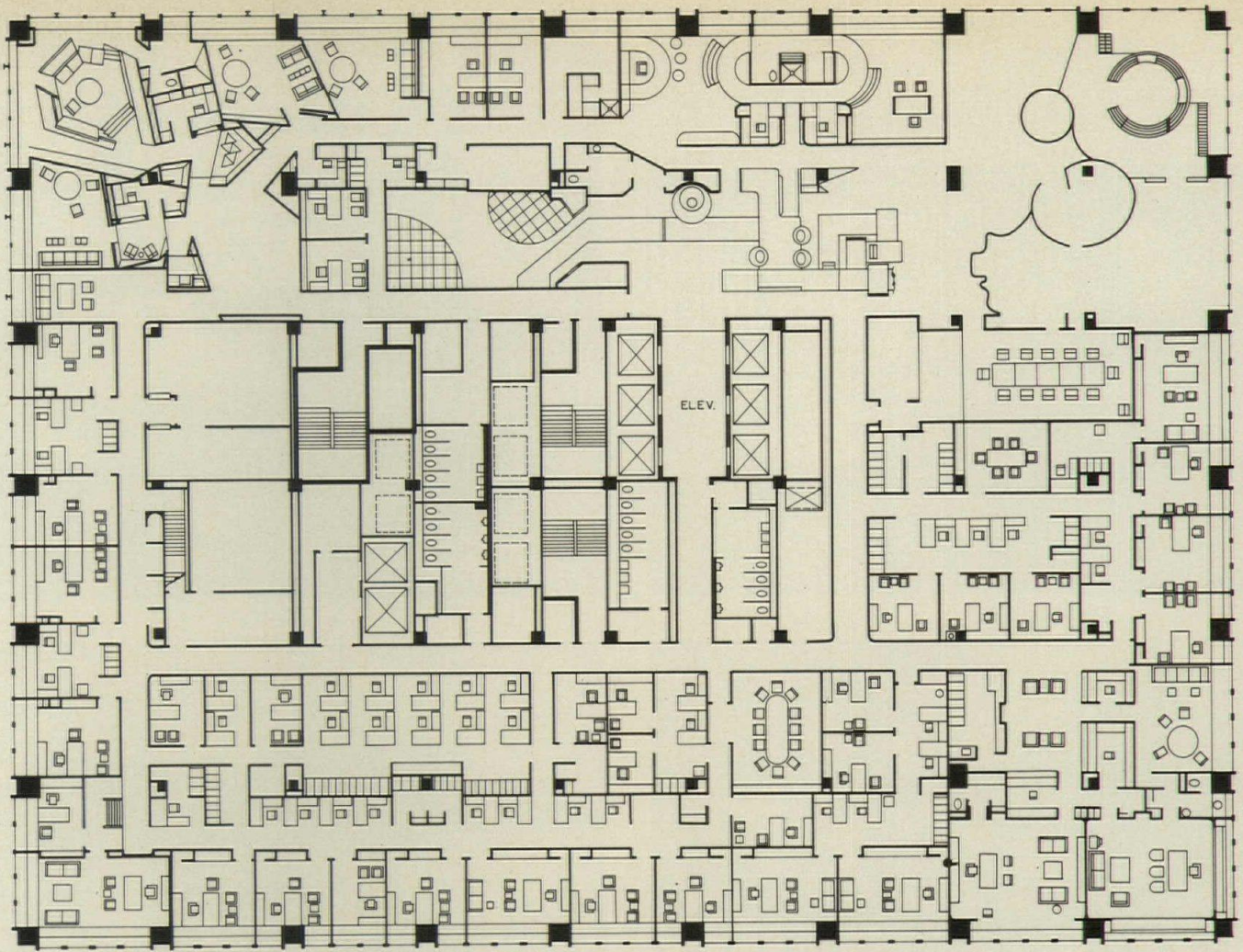


# Super-facial

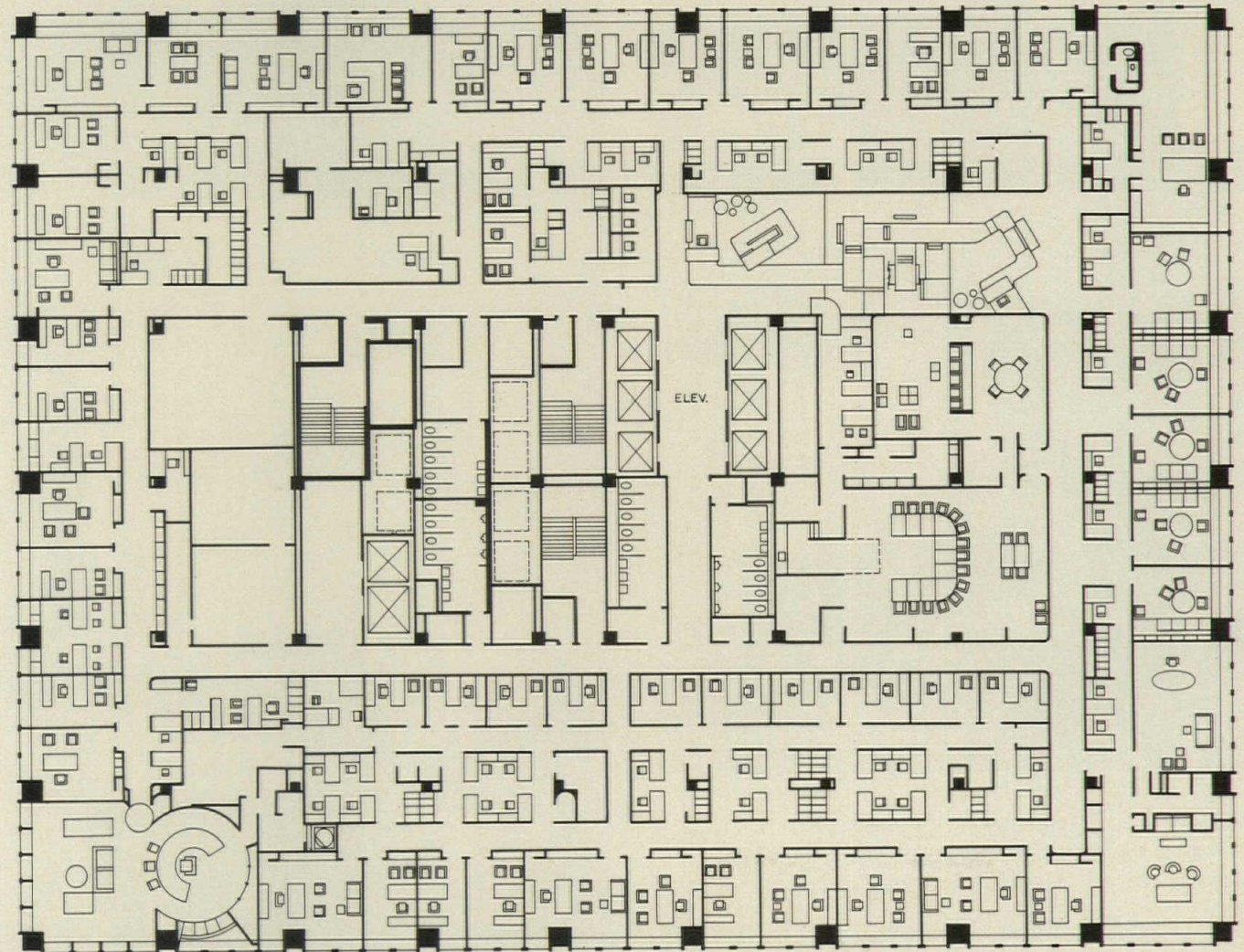


"Our goal," states the designer, "was to confront executives and working staff with the real vibrations of an outside world that almost all offices strive to be insulated from. It's like taking someone who has always driven an ordinary car and placing him in a Porsche ... we seek a similar type of 'turn on'."





37TH FLOOR



38TH FLOOR



# Super-facial



Relying solely on the designer's discretion for its style, offices range from the "western" (top right) to what was called "Miesian" by the designer (top left).





Office of George Barrie, Faberge's president, was designed after "following him around rigorously for days to observe and absorb his habits. We learned, for example, that he is a 'percher,' a person who rarely sits back, and who requires a situation where he can perch high above with legs dangling." This, at best, would seem a difficult posture to assume, given the type of furniture in his office. The white "sculptured enclave" in the background is the executive bath.

#### Data

**Project:** Rayette-Faberge corporate offices.

**Location:** two floors of Burlington House, New York City.

**Designer:** Dallek Design Group, Inc.

**Program:** designer given freedom to develop his own approach in planning the 70,000 sq ft of office space for 225 employees.

**Major materials:** walls, stainless steel, vinyl, electrostatic flocking, mylar, painted sheetrock, lacquered wood, suede, and glass; floors, stainless steel, carpeting, various colored wood, travertine.

**Furnishings:** stock except custom designed executive furniture and bathroom fixtures.

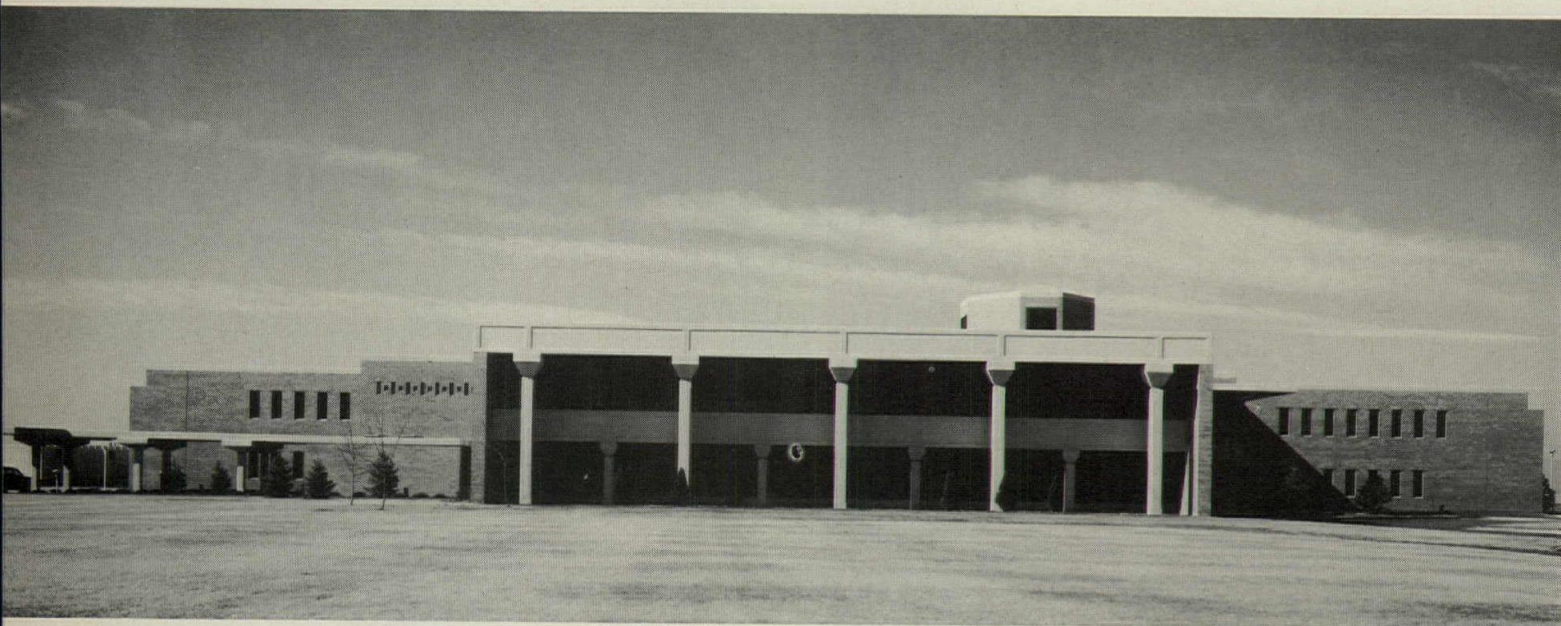
**Costs:** exact cost withheld by client; approximate cost \$3.5 million.

**Photography:** Louis Reens.





# People first, then mountains



**Putting the executives close to each other and to their employees was a problem; the key came from an executive who would rather see people than mountains**

It seemed like a knotty problem at the beginning. The executives of Samsonite, Inc. had made it clear to their architects, Loeb Schlossman Bennett & Dart that while Samsonite was large and dynamic, it was also warm and friendly, almost a family. To the architects, it soon became clear that the top level executives wanted to be close to each other in the new building and also to the people working under them, which pretty well pinned down the problem, but offered no solution.

Then one executive happened to say that it was more important for him to see his people than to see the mountains. That remark was more important than it might sound, for the site offers a spectacular view across Denver to the Continental Divide, and it is tempting to capitalize on scenery like that.

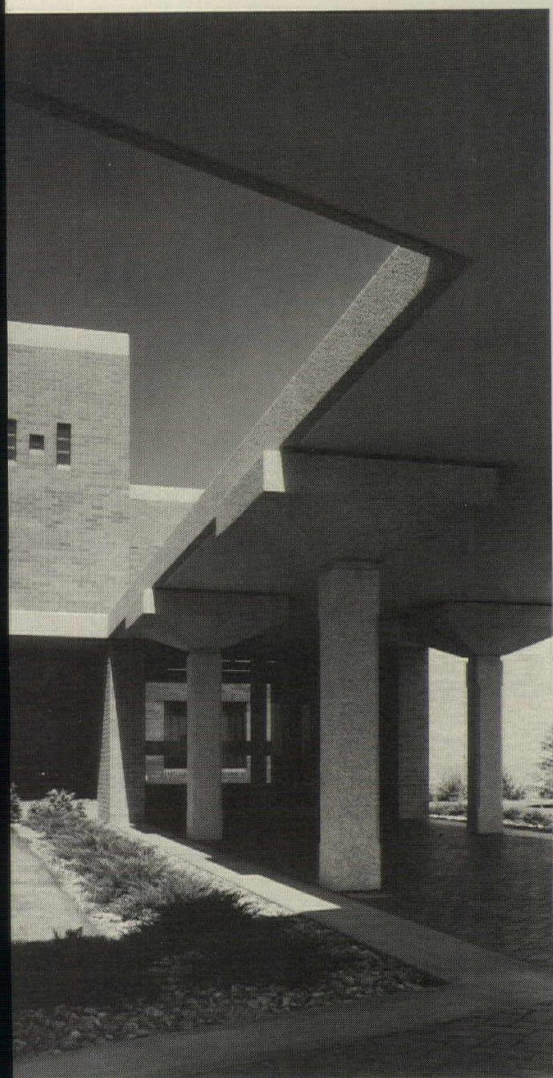
LSBD arranged the major offices in a square doughnut around an open courtyard. This put the top executives close together—they can see each other across the courtyard or meet there for informal conferences, and they use the court-

yard as an outdoor hallway—and yet close to their respective departments. Sales, accounting, advertising, data processing and other large corporate departments are placed around the inner circle of executive offices. The departments are on two floors, with the executives occupying a mezzanine level between them; walking distances are shortened this way, and management and employees can literally keep an eye on each other. And everybody gets a view of the mountains—at lunch or coffee break time—from the employees' cafeteria and the executive dining room just above it, which offer a panoramic view from Pike's Peak to Long's Peak.

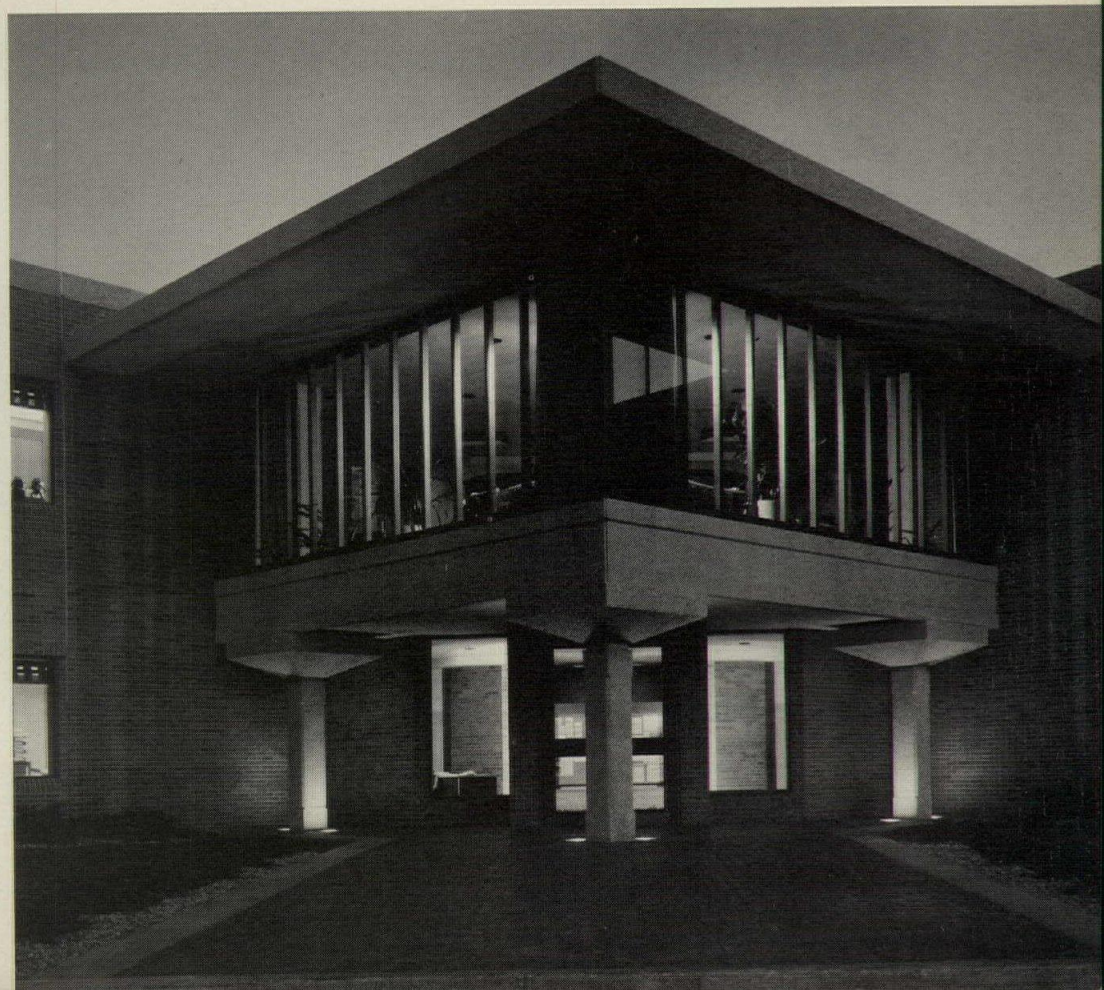
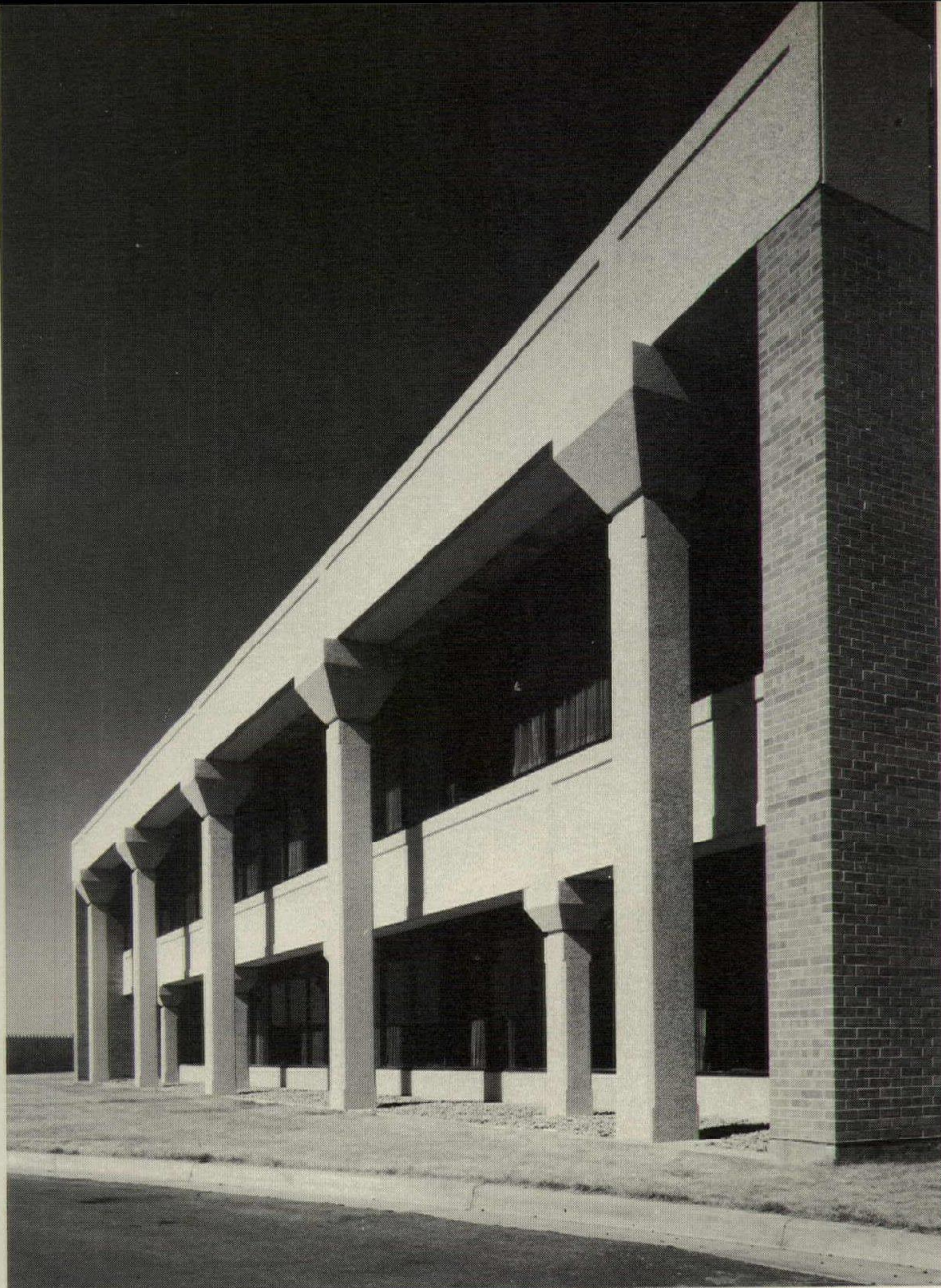
As the architects describe it, the 120,000 sq ft building grew around the idea of the squared circle. Shared facilities were placed on the diagonals, where they would be convenient to everyone using them. Thus, on the mezzanine level, the board room and a library take up two opposite corners, with restrooms on the other diagonal; on the office levels, toilets, lounges and the main and employees' entrances are at the corners of the square. The corners also serve as stair towers and above the roof line, the towers provide space for ventilating fans.

Each of the four two-story office wings has its own venti-



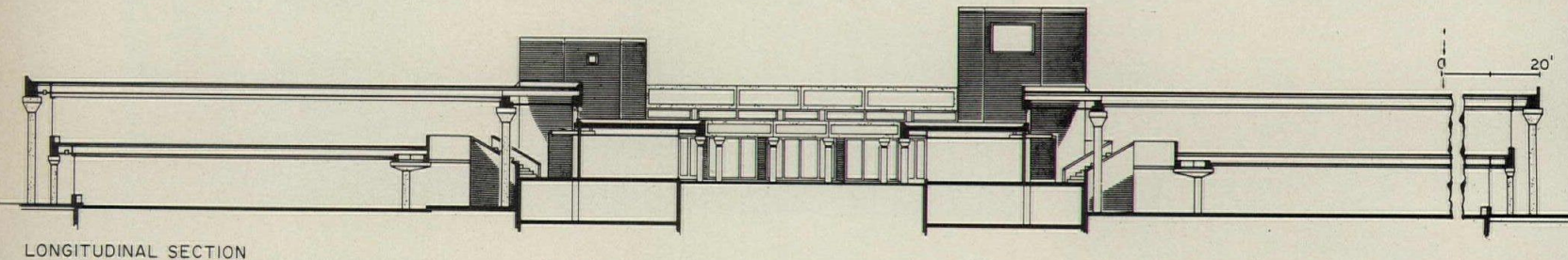
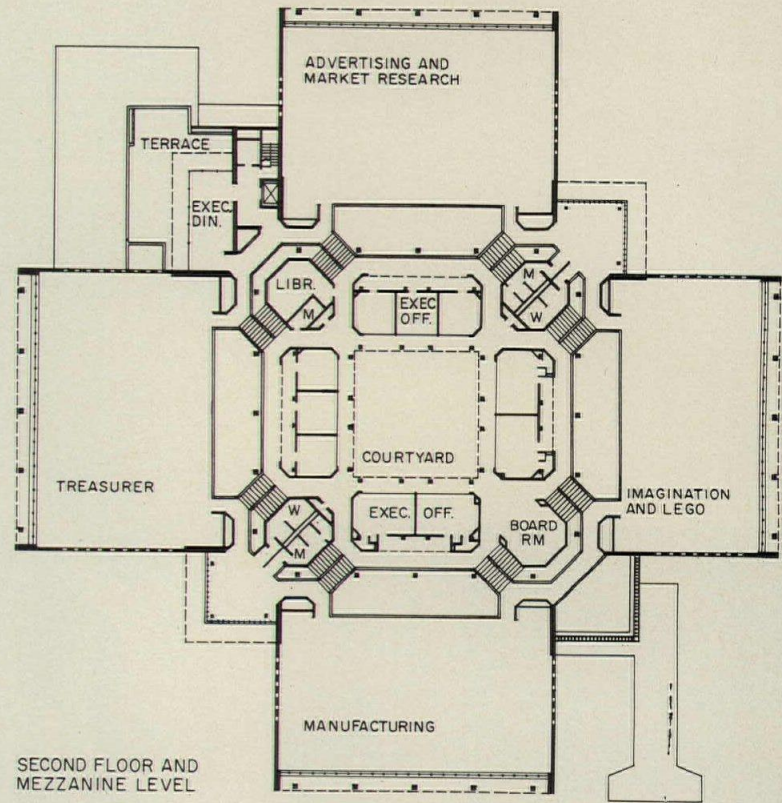
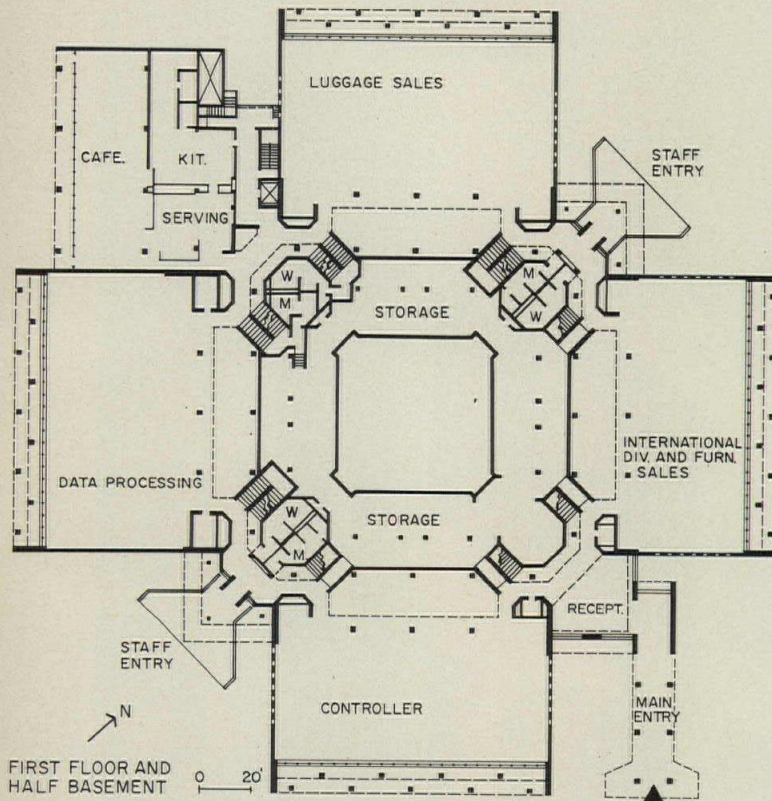


Canopied main entrance leads to reception area in one of four corners of central square; staff entrance (right) is topped by lounge that provides a view. Precast exposed aggregate columns (top right) support roof system of precast long span double tees.





## People first, then mountains



lating system for heating and cooling, with hot and chilled water coming from a central plant. Distribution is through a totally integrated ceiling, which hides light sources, air diffusers and ducts in the voids between the precast concrete double tee sections that span the 92-ft spaces in the offices.

A local brick is used throughout, adding to the warmth of the building, with off white precast concrete for contrast. Wood paneling, mill work and trim is oiled teak, except in the executive offices, where choices were allowed.

The same brick is used in the other buildings on the Samsonite site, 100 acres of prairie land northeast of Denver. There are, beside the corporate office building, a luggage factory, a hardware plant, a warehouse, an employee interview and processing building (complete with a three-bed emergency hospital) and a central power plant. The utility lines are all underground, and when the landscaping is completed, it should be about as pleasant a place to work as you'll find; then, too, there is the view. [CP]

### Data

**Project:** Samsonite corporate offices.

**Architect:** Loeb Schlossman Bennett & Dart.

**Program:** 120,000-sq-ft building to house corporate functions of Samsonite Corp.

**Site:** industrial park northeast of metropolitan Denver; includes two manufacturing buildings, warehouse, employee services building and central power plant.

**Structural system:** precast concrete beams, columns; brick walls; precast prestressed long span open double tees for floors, roof.

**Mechanical system:** separate systems for heating (high temperature heat exchange) and cooling (from central plant) distributed through integrated ceilings of four wings; individual fan coil units for supplementary heating and cooling.

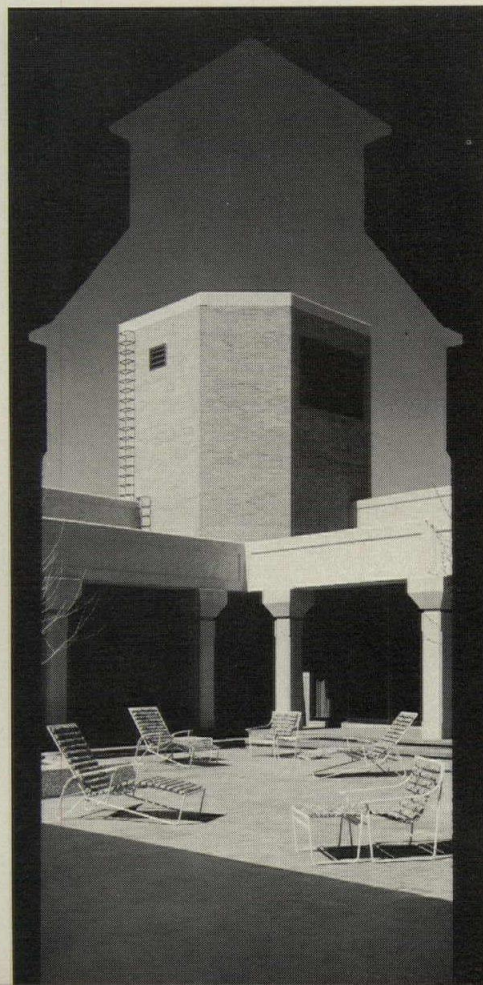
**Major materials:** brick, precast concrete.

**Costs:** \$24.75 per sq ft, excluding sitework, utilities outside building, land, furnishings and fees.

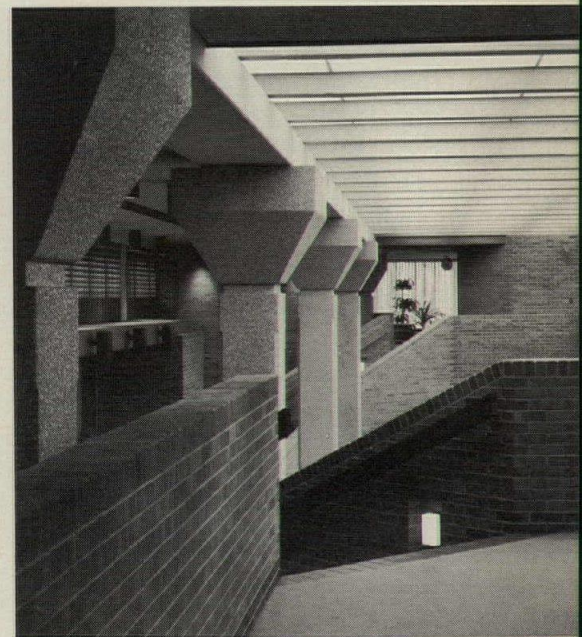
**Consultants:** Eugene A. Dubin, structural; Kralovec & Best, mechanical, electrical; Samsonite/Design West, Inc., interiors.

**Photography:** Hedrich-Blessing.





Mezzanine level executive offices are easily reached from first or second floor office areas; central courtyard serves as an informal conference room.





# Understanding sprayed fireproofing

Thomas F. Egan, P.E.

**Proper specification, application and on-site sampling to insure proper density of sprayed fireproofing provide long-term fire protection and pollution control**

Recent business publications, medical journals, newspapers and civic agencies, have reported the dangers of pollution caused by sprayed fireproofing materials as used in building construction. The indestructible quality of asbestos, particularly when related to fire, has led to its use in thousands of products. All available data tends to confirm that this quality is beneficial as long as the fibers are bound to other materials, but creates a danger when the fiber becomes airborne.

One of the major applications of loose asbestos is in the use of sprayed fiber fireproofing applied to the steel floor and frame of skyscrapers. In the last decade, while medical and industrial experts were becoming concerned about asbestos pollution, the use of sprayed fireproofing materials grew.

## Pollution considerations

While much has been written and spoken about asbestos pollution from sprayed fireproofing in the last year, little or nothing had been stated about the materials, methods of application and the standards for their proper performance by the people in position to force change. That was until tragic and costly fires in New York City alarmed some insurance officials enough to intensify their inspection of actual jobs. What they saw in New York caused evident concern, because they issued a statement that steel-framed structures with spray fireproofing be considered unprotected.

It is important to note that these officials reacted to conditions of the application of sprayed fiber type of fireproofing in New York. For years the attention of construction authorities has been almost totally focused on lower in-place costs. The need for proper application was relegated to a minor role. The relatively small number of contractors applying fibers in New York on major office building work had few guidelines by legislation or code. Also, those few regulations were seldom, if ever, enforced. Therefore, the rules of conduct were: "How

fast and how cheap?" As long as standards were not defined or not enforced, there was little incentive to improve performance in the placement of spray fireproofing materials. Also, little notice was taken of what other cities required for placement of fireproofing. There are two basic types of direct-to-steel fireproofing currently used in high-rise office building construction. They are (1) cementitious (plaster) and (2) sprayed fiber. There are major differences in these products, and it is important that they be noted.

## Cementitious

This material is mill-mixed, and at the job site water is added in a plaster mixer and pumped and sprayed wet. Cementitious materials contain gypsum—which takes a set—plus lightweight aggregates such as vermiculite or perlite, and other proprietary materials. One of the cementitious products now on the market is formulated without asbestos.

## Sprayed fibers

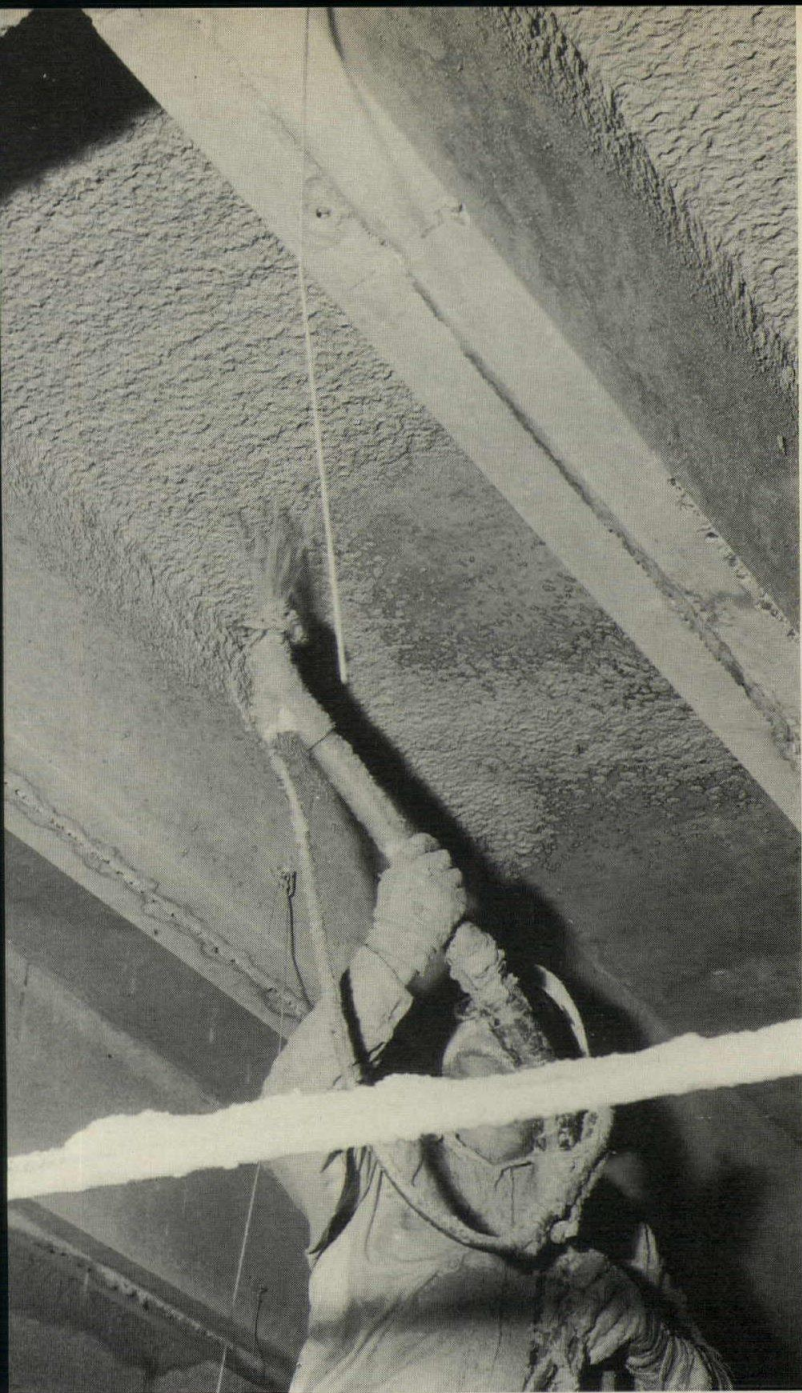
These materials are mill-mixed, and at the job site are fluffed or mixed dry, pumped dry, and wetted at the nozzle. The material is a blend of virgin asbestos fibers, white mineral wool fibers and inorganic binders. Some spray fiber formulations have no asbestos fiber. Market data show that, except for the east coast, a majority of buildings are sprayed with cementitious materials. The total in-place costs of cementitious vs. sprayed fibers are very competitive, and, indeed, will show savings with cementitious when proper application of fibers is required.

There is much to consider in the application of these two product types, as it pertains to the wet pumping process. It has been well documented by medical authorities that asbestos or other hazardous materials when wet are not easily respirable and of less danger. It is important that this aspect of application not be overlooked when evaluating types of products for specification. When considering the problem of pollution, we are really talking about (1) the method of control of the application of a given product and (2) its in-place performance. These same criteria hold true for the original purpose of the product, which is to provide fire resistance ratings to the frame of the building.

There are three important facts in the choice of a direct-applied fireproofing material: (1) authoritative test data and en-

**Author:** Thomas F. Egan is Manager, Fireproofing Products, Construction Prod. Div., W.R. Grace & Co., Cambridge, Mass.





gineering analysis to validate the performance of the product when subjected to fire, (2) proper thickness classification and (3) proper in-place density in conformance with the fire tested and rated assemblies. Most people involved in code work or in meeting the requirements of a code body are aware of the importance of items 1 and 2 noted above. However, it is rare to find people aware of the question or importance of density in proper applied fire-rated material. It should be noted that every listing of assemblies involving spray applied material in Underwriters' Laboratories, Inc. Building Materials List and guide cards shows the *minimum average and individual densities* of the fireproofing. Also, in these documents, Underwriters' Laboratories, Inc. describes suggested methods of testing for this in-place density. Rarely, if ever, are samples taken on the job to insure that densities on the job are consistent with the densities that prevailed when the assembly was fire tested.

Cementitious materials, since they are wet pumped and sprayed, are self-controlling and assure in-place density in conformance with the fire test. The same cannot be said for sprayed fibers. It is clearly noted in many specification documents that there is a problem and they caution specifications

writers to be very accurate about the proper water measurement in the application of sprayed fibers. The problem is that by control of the water flow at the nozzle, water reduction will decrease density and increase coverage per pound of fiber. This matter, for example, is treated in detail in Construction Specification Institute Document No. 3, "Specifying Sprayed Fireproofing," June, 1965.

### Proper density

Since it is important for long-term fire protection to have proper in-place density, likewise, for a long-term pollution control it is also vital that these materials be applied at the proper densities. A third factor which has gained notice is the need for materials providing the best bond strength, surface hardness and overall resistance to damage by other trades during construction and over the lifetime of occupancy from maintenance and renovation requirements. A review of the physical properties of both types show cementitious materials excel in all these areas, particularly with the permissible methods of application for fibers. One of the surest ways to guarantee proper density is to require an individual testing laboratory to verify in-place density of the applied architectural firms, but too few do so to date.

These controls assure the following: (1) proper fire resistance in conformance to test criteria, (2) control of dusting and erosion and the relation to long-term pollution within the building and (3) maximum control of maintenance and serviceability during the life of the structure. Some cities have regulations covering these matters. San Francisco has for some time required abrasion damageability tests on spray fireproofing materials. Also, it requires density tests by independent laboratories to correlate fire test figures and assure in-place density for maintenance, serviceability and erosion.

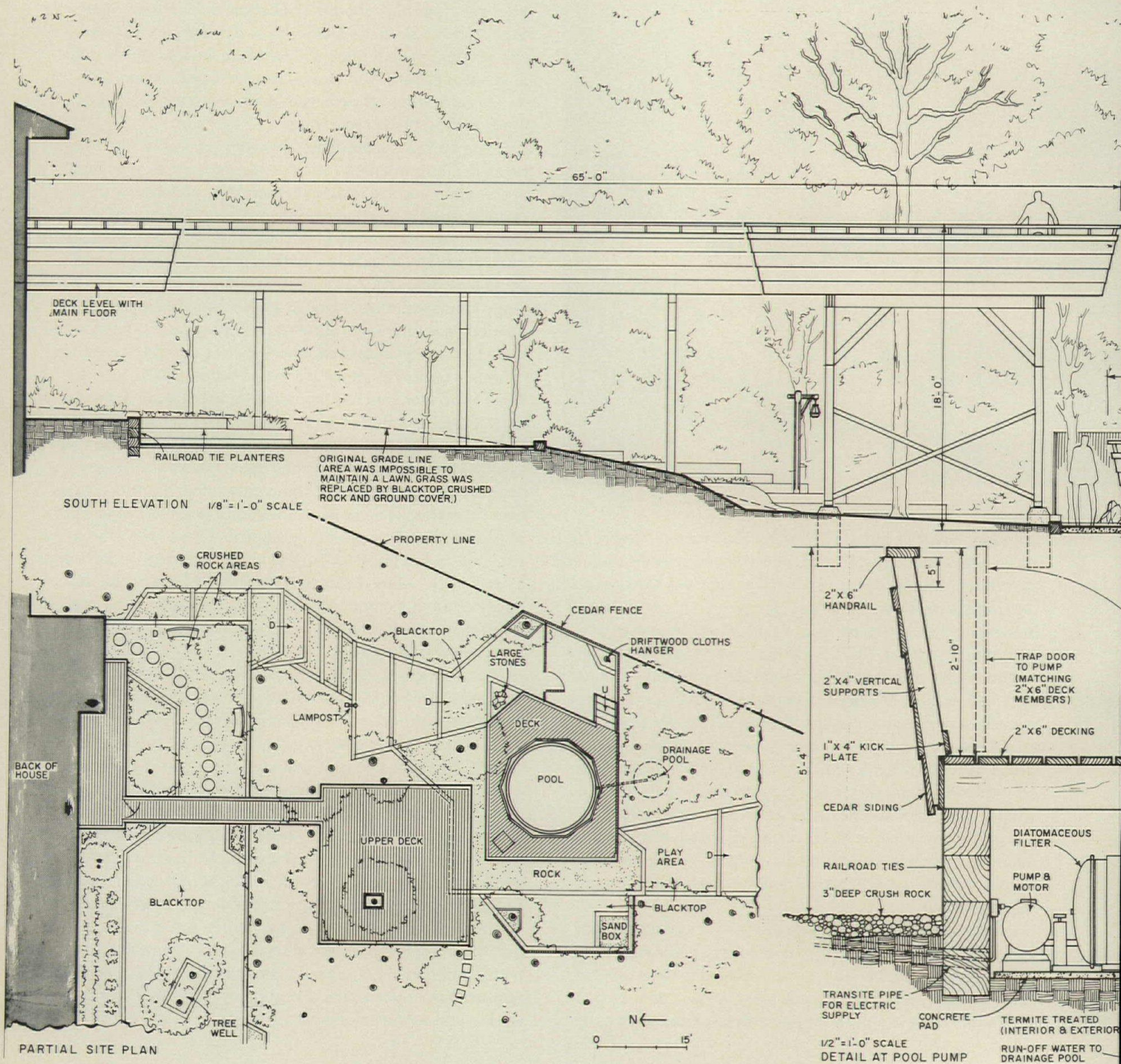
Recent approvals of sprayed fiber material in New York show more stringent requirements for application of the products. The Board of Standards and Appeals notes in Item 7 that Type III (Mineral Fiber) finished fireproofing shall be tamped to uniform thickness which shall be not less than that approved for the required fire resistance rating. Further, under item 9 it states: "The general contractor and the owner shall provide qualified personnel to supervise the application of the sprayed-on-fireproofing. They shall certify to the Department of Buildings that the finished fireproofing of the completed building is in full compliance with requirements of the approval granted, these rules and the drawings approved by the Department of Buildings."

Approvals granted under the Material and Equipment Acceptance Division for sprayed fibers note tamping to obtain a minimum thickness and a minimum density. Also of great importance is that a specification for taking samples and testing to verify in-place density is included. Now that regulations are in effect, ways must be found to enforce them. One way is to demand that the general contractor and owner's certification include copies of the density tests. Insurance officials have commented that they want independent laboratory test reports on density taken from each floor as one requirement for recognition of proper installation of sprayed fireproofing. There is now a large group of concerned persons who are eager to correct this problem. A review of fundamentals often helps in understanding the cause and effects of any situation and removes much of the distortion of facts that can often lead to unrealistic solutions.



Selected details

# Deck for private house

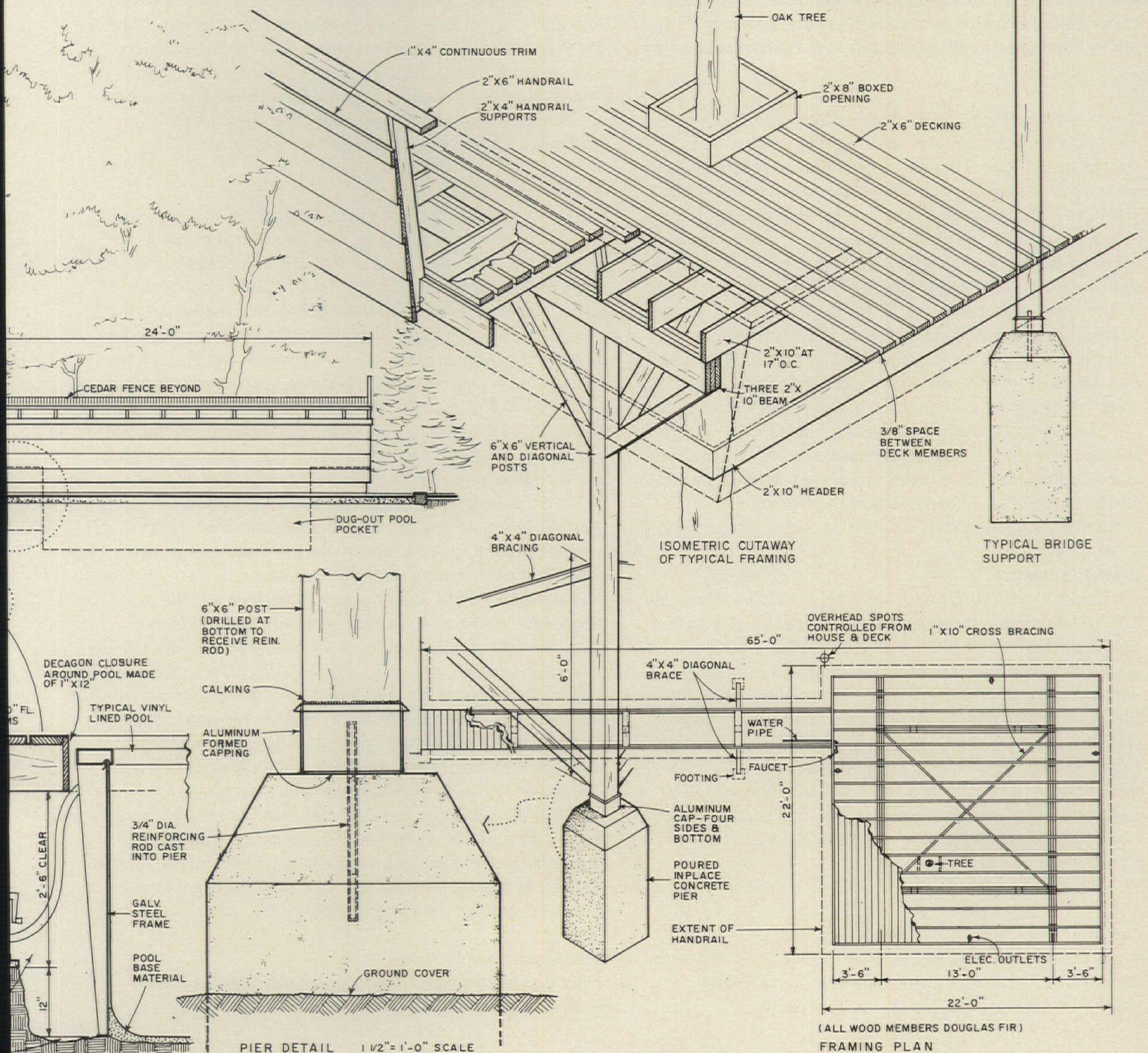


Designer: Nicholas R. Loscalzo; structural engineer: Forrest Wilson





PHOTO TAKEN UPON COMPLETION OF DECK, POOL & LANDSCAPING COMPLETED ONE YEAR LATER.





# Holography: a design process aid

Lester Fader and Carl Leonard

**Many limitations of traditional methods of demonstrating the development and final form of architectural projects will be eliminated by a method now in the experimental stage**

For decades methods of developing and displaying information related to the architectural design process have remained unchanged. Traditional architectural graphic modes and symbols are usually confusing, since few of the symbols are universally accepted, and only a select group of individuals is educated in the graphic language. These symbols, however, have been necessary to understand fully the total synthesized product and the sequence of procedures necessary to arrive at that product.

Drawings at different scales and with different symbols confuse the nature of a completed system or object. Models are also difficult to accept as authentic simulations. True scale is upset by the model's relationship to larger items surrounding it—such as people, pencils and desks. Further, it takes time to understand a model. After one walks from one side to another, one often loses his visualization of the first view. The nature of a system could be visualized by showing the sequence of construction, a procedure impractical until now.

## Graphic potential

Holography has supplied us with this added graphic potential. It offers a three-dimensional representation of form that can be accented with textural gradients, plus sequential views of a form or a process on a single photographic plate.

Holography, then, is the science of recording three-dimensional images on photographic plates. After a photographic plate has been exposed and developed, the image is reconstructed by holding the plate in front of a special light source. An image of the original object appears in three dimensions, as if that object were still behind the plate. Hence, if one moves his head, different parts of the photographic plate reveal more of the object.

**Authors:** Lester Fader is Professor of Architecture, Architectural Research Laboratory, The University of Michigan, Ann Arbor. Carl Leonard is Graduate Research Assistant, Willow Run Laboratories, The University of Michigan.

The holographic image can be seen in three dimensions without the aid of an auxiliary viewing device. Formerly, three-dimensional images had to be viewed with the aid of a stereopticon; later, stereo pairs were projected and viewed with special glasses. Numerous other methods have been used to simulate stereographic images, but none approach the natural appearance of the image seen in a hologram.

## Method

The method of producing three-dimensional images in holography is different from techniques used in the past (1). An object to be holographed is placed on an optical bench so that it will remain perfectly still. A laser is used as a light source; the laser is divided by beam splitters, redirected by mirrors and then diverged with a lens. Two beams of light fall on the photographic plate ( $\frac{1}{8}$ " to  $\frac{3}{16}$ " thick). The first is from a pinhole and is called the reference beam. The second consists of light reflected from the object which has been illuminated by one or more beams. These beams were split off the same laser beam from which the reference beam was formed. The wavefront reflected by the object is recorded on the photographic plate and developed using techniques similar to those employed in processing ordinary film. When held in front of ordinary light, the developed plate appears to be exposed, but may have no discernable details.

The reason for this apparent lack of detail is that the many details recorded are too fine for the eye to resolve. A hologram viewed through a high powered microscope would appear to be a pattern of closely spaced wiggly lines, called fringes. There are as many as 25,000 of these fringes per in. or more. Once the hologram is processed, the reconstructed image can be viewed not only with the laser but also with a small spot source of a mercury vapor lamp. An incandescent source that has been filtered to transmit a narrow band of spectrum may also be used. The reconstructed image has the color of light used to illuminate the hologram. Holograms have also been made that produce multicolored images, but there are problems involved which presently prevent wide introduction of full-colored holograms.

## Quality and complexities

In the present state of development of holographic techniques, a high quality hologram is not simple to make. Laser



equipment and related optics can be complex and expensive; stability necessary to record the fine fringes requires a vibration-free location; and high-resolution photographic emulsions are slow and require long exposures. Shorter exposures with more intense bursts of pulsed laser light are being used experimentally, but the dangers and expenses involved are much higher. However, with improved laser techniques and photographic plates, it is expected that practical holography will become more available for general use.

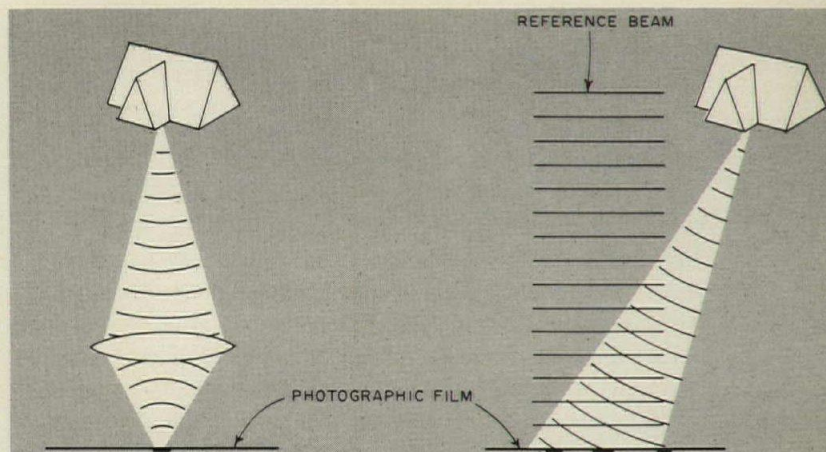
Such unusual lifelike images have inspired thoughts about architectural applications. Most people who deal with the development and presentation of complex forms or systems would appreciate these applications. A three-dimensional view of a design can now be carried in a briefcase. The organization of a building can be shown completely in stereo, 360 degrees in the round and on a single photographic plate. Complex building systems, their interrelationships and the building process—displaying plan, structure, internal partitions and form—can be shown in rapid sequence and in stereo. Other applications of holography to architecture can be envisioned. The holograph can show not only three-dimensional views, but also textural gradients, natural parallax and sequence viewing. With these added qualities, which require no intellectual exercise, even the nonprofessional can comprehend the representation.

### Realizations

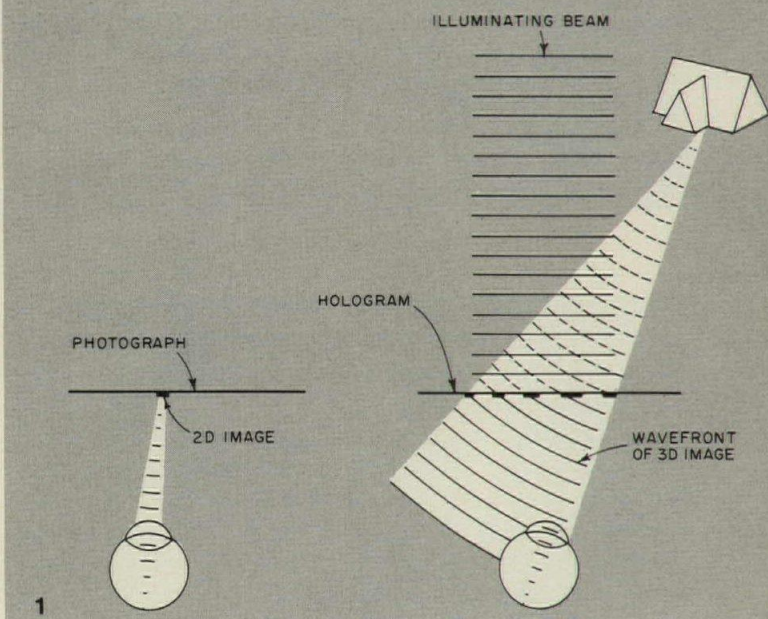
To experiment with these specific applications, multiple-exposure holograms were made. Each exposure produced a distinct three-dimensional image that could be viewed independently of the other images. By rotating the hologram a few degrees, one image would disappear and another image would appear in its place. To produce this effect, the photographic plate was rotated between exposures.

Holography was first applied to a study of a proposed multiple housing development. The architectural model had been prepared as a study vehicle for an advanced course in architectural design. The goal was to develop a sequence of holographic images that would take the viewer completely around the housing development. All views around the model were to appear on one holographic plate to allow rapid study of the development and form relationships. The model was isolated from outside items that would give false cues to the intended scale and size. The greatest problem was the object's stability. When the object moved during exposure, dark fringes would appear on the reconstructed image. Contours had to be reglued and the model base filled with paraffin to give added weight to its construction. Making models for holographic purposes reverses the modern trend of lightweight materials and styrofoam contours. Maximum mass and structural stabilization are required. For example, weight can be added to model elements by filling hollow forms with an epoxy or polyester resin. Substituting hardwood for balsa and the use of positive joint connections should be considered.

Another problem encountered was to achieve equal brightness in the multiple image. A few test holograms were constructed first, and the exposure time for each image was adjusted accordingly. These holograms recorded four images, with a 90 degree rotation of the model between images. In the completed hologram, views can be advanced or reversed rapidly. It is possible to see all around the space so rapidly that information can be interrelated more easily than with the orig-



Techniques of recording images by the standard photographic method and the holographic process are compared (above). How the eye records a two-dimensional photograph and the wavefront of a three-dimensional image from a hologram are illustrated in the line drawings (below).



inal model. Also, scale is not destroyed by surrounding visual distractions as it is when viewing most scale models in situ. More refined models and illumination conditions could show subtleties in surface texture and building shadows. Since these sequential three-dimensional views are, in effect, a time-lapse study, changing light and shadow effects can be simulated for different times of day or year.

### A construction sequence

The application of holography to a study of the building process was investigated a second time. One of the project objectives was to use techniques of the previous study in producing sequential images on a single holographic plate in order to present a final visualization which would utilize the hologram's improved graphic representation (2). Since presentation of a product is the usual objective of representational graphics, the idea of presenting a process seemed worthy of consideration. The process we chose was the building construction sequence, proceeding from area planning to interior space divisions, to the structural elements and termi-



## Holography

nating with the exterior surface. This terminal stage would present the building in its final form.

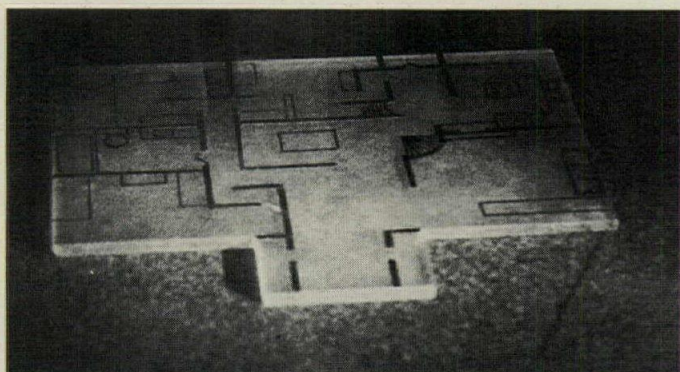
The project did, in fact, produce such a sequence of images. A bonus also resulted: the superposition of two images by rotating the hologram from one image to the next. By rapidly rotating the plate, one can see a three-dimensional form being built on top of the previous form. This feature reinforces the unique aspect of information buildup available through the sequential hologram. In this particular application, the building organization, volume, space allocation, form and material are quickly revealed. Traditional graphics

and models cannot accomplish this sequence build-up with such completeness.

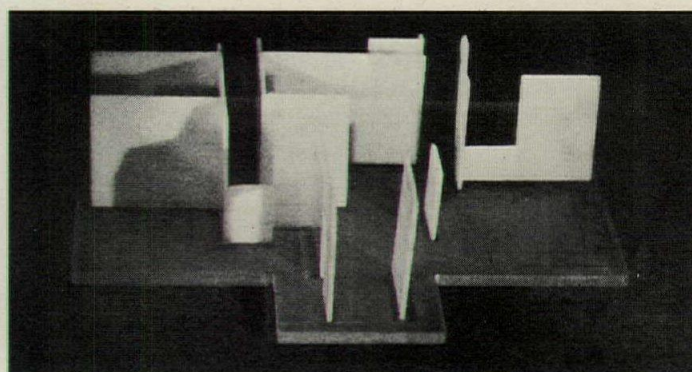
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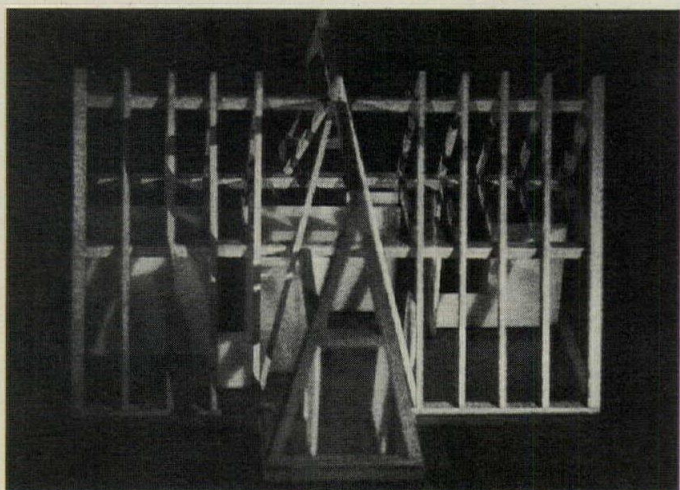
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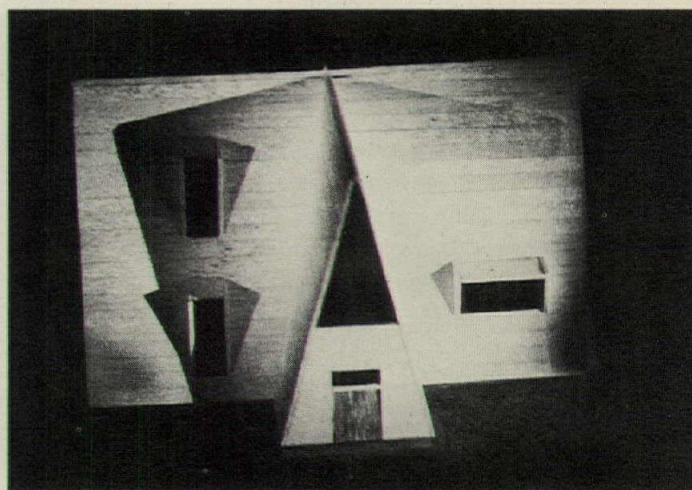
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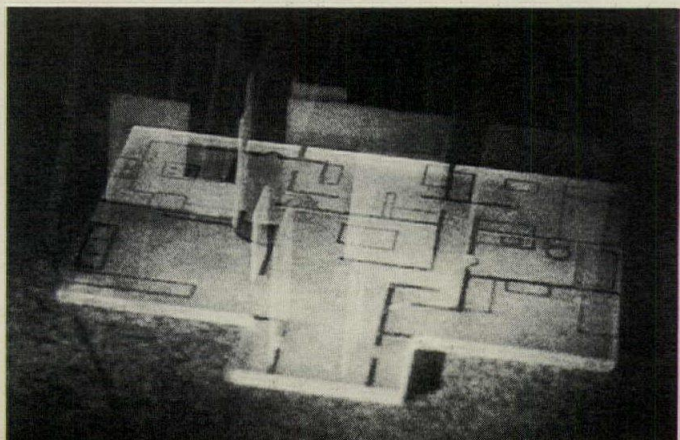


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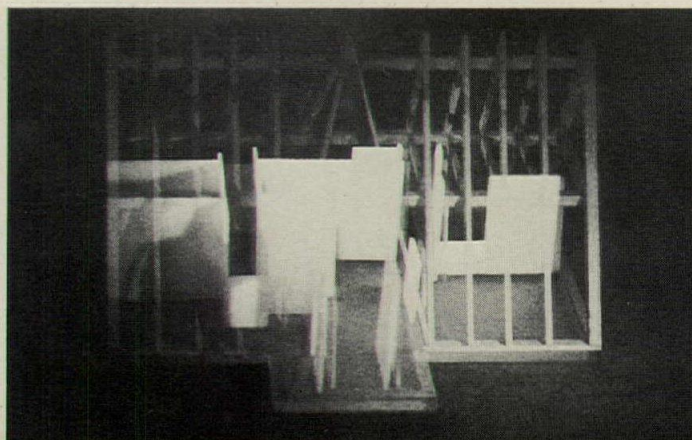
A selected sequence of views recorded on one 8"x10" holographic plate. Four distinct images were made (a,c,e, and f). Ghost images (b,d) record in-between stages obtained by rotating the holographic plate. A whole series of such

stages can be obtained through rotation, and one can go back and forth at will. Obviously, two-dimensional photographs do not do justice to the actual experience.

b



d







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# Space planning for electrical systems

Louis A. Bello, PE

## Proper allowance for electrical equipment spaces and locations during the initial planning stages minimizes later design changes and expensive installation charges

The number and location of electrical spaces in modern tall buildings are determined not only by the equipment to be installed, but also by building codes and utility company requirements. Thus, they are not as flexible as other mechanical spaces, even though the actual space allotment may be small compared with other mechanical space requirements.

For example, transformer vaults and network protector compartments supplied from urban utility company network systems must be located at building perimeters in order to meet utility company requirements, and telephone relay and terminal facilities must be isolated from power equipment to meet both telephone company and code safety requirements. The inherent operational hazard makes proper access and clearances especially important.

The first consideration in developing space requirements is to determine the power and telephone service entrance points and proceed from there to respective service and distribution points.

At 120/208 v, transformer vaults and network protector compartments are not normally located on the customer's property, but rather in the sidewalk adjacent to the building perimeter and, where feasible, to major mechanical equipment areas. The power service enters directly into the service equipment in the main switchboard room. At this voltage the space requirements are approximately 1 sq ft of floor area for each 10 amps of service, based on services of 2000 amps and above. Head room should be a minimum of 10'-6" clear.

With a 265/460 v service, however, network protector compartments must be located on the customer's property and therefore both switchboard room and compartments must be accommodated. Floor space and location for network protector compartments are critical since they require from 300 to 600 sq ft, depending on the number (3 to 6) of service transformers, and they must also be located along the building perimeter wall adjacent to their sidewalk transformer vaults. The switchboard room requirements are similar to those for the 120/208 v service except that they often contain step-down transformers for the 120/208 v power requirements for

items such as incandescent lighting, receptacles and small appliances. Space allocation for the 265/460 v service should therefore be based on approximately 1½ sq ft per 10 amps of service. In buildings over 30 stories high, or when sidewalk space is not available, it may be necessary to supplement or locate the sidewalk vault and compartment installation on an upper floor as a spot network at some convenient load center location such as a major mechanical equipment area. The space requirements for these vaults and compartments will vary from 1000 to 2000 sq ft, again depending on the number of vaults and compartment units (3 to 6). In addition, space will also be required for the related switchboard room and high voltage cable risers from street level. Careful consideration must also be given to clearance paths for possible transformer and network protector replacement.

Main telephone frame rooms (where service entrance cables meet building distribution wiring) require approximately 1 sq ft of floor space for each 3000 sq ft of net floor area, with a minimum of 150 sq ft. Their location is a little more flexible than electric switchboard rooms, but ideally they should be located on a lower floor somewhere between the service entrance and the building telephone riser locations.

Space requirements for standby power plant rooms with emergency engine generators are a bit more difficult to predict due to dimensional differences between engine generator capacities. However, 1 sq ft per kw for the 100 to 300 kw engine generator units and less than ½ sq ft per kw for the larger 800 kw units are reasonable for space allocation purposes, but should be verified with selected unit sizes in final design. Consideration must also be given to ventilation, engine exhaust and fuel supply.

Electric closets for lighting and floor power panels and other related protective equipment and wiring should be provided for approximately every 10,000 sq ft of floor area, aligned vertically to minimize offsets. They may be either walk-in or reach-in type and minimum sizes may range from 4' x 5' (walk-in) to 1'6" x 10' (reach-in). The reach-in closets require full width access, with continuous full opening doors.

Telephone closets for relays and terminals may also be provided for every 10,000 sq ft of floor area, but this can vary down to 5000 sq ft and up to a maximum of 20,000 sq ft depending upon access and other layout considerations. When fewer and larger closets are proposed, raceway distribution may be restricted and more costly. Typical closet requirements are:

Sq ft/floor area	Walk-in	Reach-in
5,000	3' x 4'	1½' x 6'
10,000	4' x 4'	1½' x 7'
15,000	4' x 6'	1½' x 10'
20,000	6' x 6'	

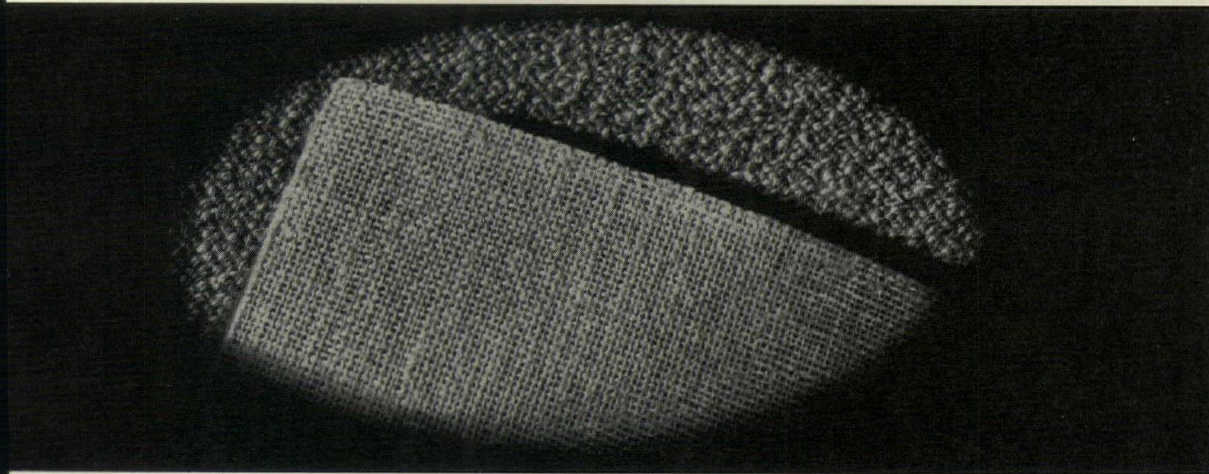
As with mechanical spaces, which were discussed in last month's column, proper allowance for electrical equipment spaces and locations during the initial planning stages lessens later design changes and expensive installation charges, permits easier maintenance and future expansion.

**Author:** Louis A. Bello, PE, is Chief Electrical Engineer for Syska & Hennessy, Inc., Consulting Engineers, New York City.



# Key to successful glue-down carpet installations...

## JUTE double carpet backing



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- When pulled up, carpet is generally intact for re-installation.
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### Editorial reports on double jute-backed carpet glue-down



#### Jute installations proven successes

"The only case studies documented to date have been of no-pad installations with double jute-backed carpeting — with success reported in each instance."

—from BUILDINGS, February, 1971



#### Hospital's experience a guide for any site

"Does direct jute glue-down really work? To get the answers... an earlier installation was revisited that has received grueling treatment... It is a large and exceptionally active general hospital — St. Luke's in Duluth, Minn. St. Luke's added a sizeable new wing and carpeted throughout all patient rooms, nursing stations, corridors, lounges and reception areas with the direct jute glue-down system.

"Richard K. Fox, administrator of the hospital reported: 'Our experience has been a satisfactory one. So much so that we are using exactly the same carpet and direct glue-down installation method in an older wing now being completely renovated. The carpet... has jute primary and secondary backings.

"I have been asked many questions about cleaning problems with carpet, especially with normal hospital spillage situations. We have had no difficulties that could not be resolved with ordinary effort.

"The direct jute glue-down system gives us practically as much wheel and caster mobility as we enjoy in our areas with hard-surface flooring. The difference is hardly noticeable..."

—from BUILDING OPERATING  
MANAGEMENT, November, 1970



# Contributions to building research by the NBS

Harold J. Rosen, PE, FCSI

## A brief history of the research activities of the National Bureau of Standards in relation to building and technology points up the contributions of this organization

For some 70 years, the National Bureau of Standards has been actively, although quietly, engaged in the scientific investigation of building materials and systems. Its studies, technical information and test procedures have proved invaluable to architects, engineers and code-making bodies. In addition, participation by its staff members on committees and task forces of professional societies, national standards organizations and code and specifications groups has provided leadership in the preparation of technical documents and recommendations on test procedures.

Today the Building Research Division of NBS comprises seven sections with responsibilities in the areas of structures, fire research, environmental engineering, materials durability and analysis, codes and standards, building systems and professional liaison. Its evolution and its emphasis have shifted with the times and with the needs of the building industry.

In 1921, following World War I, a Division of Building and Housing was created at NBS to coordinate scientific, technical and economic research in building. Its findings were published from 1922 to 1932 in *The Building and Housing Series*. Information from this series of publications was included in many building codes and standards. In 1937 a low cost housing research program was initiated at NBS which included investigation of structural properties, fire properties, durability of building components; the chemical, physical and engineering properties of building materials and mechanical equipment, simplified practice recommendations and commercial standards. A new series of publications, the Building Materials and Structures Reports (BMS) was instituted to report the bureau's findings. A total of 152 BMS reports were issued from 1937 through 1959 on the technical and scientific investigations and were highly regarded by the building industry since it included information on functional properties of building components, design information, handbook data and technical properties of building materials and systems.

In 1947 a Building Technology Division was formed at NBS and later changed to the current Building Research Division. Its activities are reported in a new group of publications be-

gun in 1965, entitled *Building Science Series* (BSS) with a total of 31 publications issued to date.

Some of the more important NBS contributions are:

1 "Minimum Requirements for Masonry Wall Construction." This document contains information on permissible working stresses for brick and is a result of the bureau's testing of full scale brick walls.

2 "Durability and Strength of Bond between Mortar and Brick."

3 Durability of masonry to freezing and thawing. The data obtained in this investigation are the basis for the durability of clay building brick in the ASTM specification.

4 Studies of structural and water permeability properties of steel, masonry and wood constructions have led to methods for measuring strength, stiffness and resistance to abuse of construction intended for walls, partitions, floors and roofs.

5 Research into the physical properties and durability characteristics of limestone, slate, marble, granite and stone flooring provides architects and engineers with important data.

6 Deformed reinforcing bars. The bureau's investigation on bonding to concrete led to the development of minimum requirements for deformation of reinforced bars.

7 Creep and drying shrinkage of lightweight aggregate concrete. Studies by the bureau led to a better understanding of creep phenomena.

8 Structural properties of thin-shell constructions. Studies in this field have led to the development of ACI Standard 525.

9 Live loads in buildings and wind pressures in the United States. These investigations helped produce an ANSI Standard A58.1 and also the map of wind loads in the U.S. used in the design of curtain walls.

10 Fire research tests on over 1000 fire endurance specimens has helped evolve the time-temperature curve used in ASTM standards for fire tests of building constructions.

11 Determination of noncombustibility of building materials. Research on ignition temperatures of materials has led to ASTM test procedure E136 for noncombustibility of elementary materials that are used in many building codes.

12 Measurement of thermal conductivity of insulating materials. The first guarded hot-plate apparatus for measuring heat transmission was conceived and built by NBS in 1912, and an ASTM Standard C177 was adopted as a standard test method in 1945.

Additional investigations in acoustics, plumbing and water systems, paints and coatings, roofing and waterproofing materials, flooring materials, cement and concrete, plaster and porcelain enamel have led to additional test methods and standards.

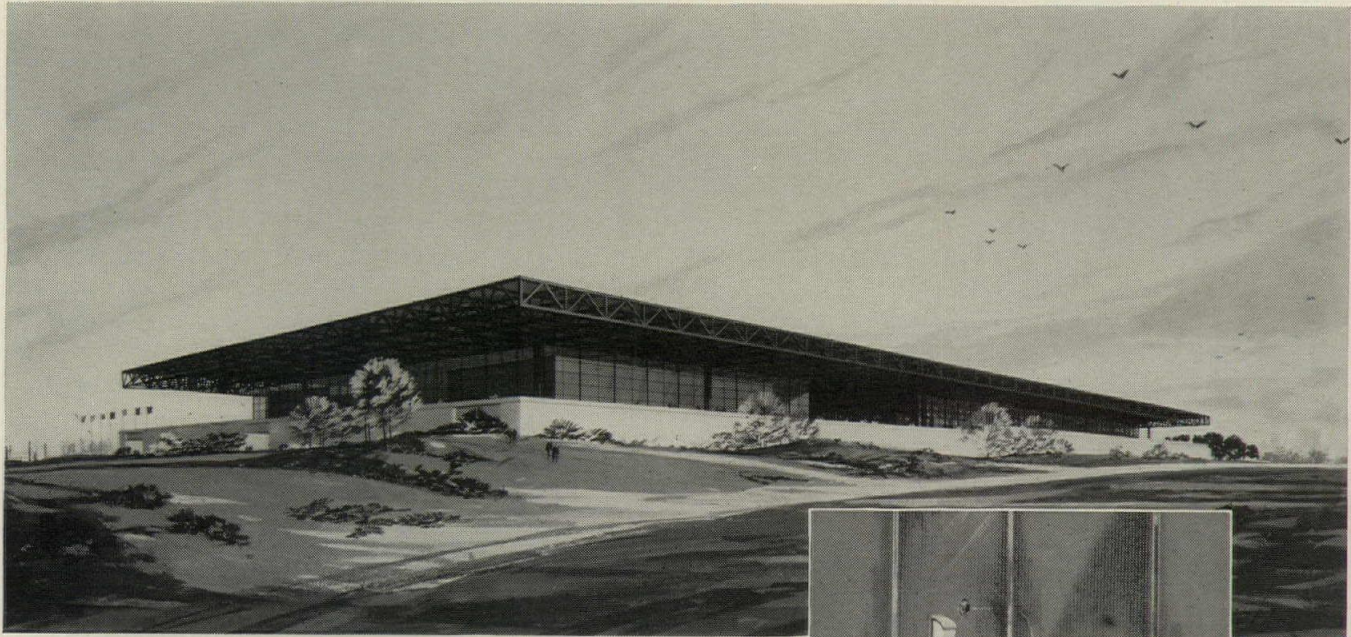
Today NBS is interested in the trend toward the industrialization of the building process and how to establish criteria, tests and standards to evaluate subassemblies and composites to be used in systems design. Another major area of concern is the application of computer technology to the design, analysis, construction and testing of buildings.

Building Science Series 0, "Building Research at the National Bureau of Standards," describing the activities of the Building Research Division of NBS is available from the Superintendent of Documents, Washington, D.C. for \$.60.

**Author:** Harold J. Rosen is the Chief Specifications Writer of Skidmore, Owings & Merrill, New York City.



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## Chicago's New McCormick Place Acclaimed



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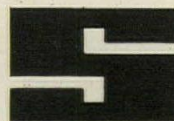
Stretching over two city blocks beside Lake Michigan, this 95 million dollar structure has risen phoenix-like from the ashes of the first McCormick Place destroyed by fire four years ago.

Though actually a third larger than its predecessor, the new structure manages to create an atmosphere of warmth and intimacy unique in so massive a building. This illusion stems from the Architect's ability to design the lobby, corridors and other pub-

lic areas as a series of elements rather than as a formidable, overwhelming monolith.

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# Liability for extra compensation claims

Bernard Tomson and Norman Coplan

**This case considers a contractor's performance of extra work, purportedly due to an architect's error. Must the architect first be notified in writing?**

The standard contract for the construction of buildings issued by the American Institute of Architects, has recently been under review by the Court of Appeals of the State of New York, that state's highest court. One of the provisions of this document, as a condition precedent to a claim by the contractor for extra compensation, requires that the architect be given written notice of the contractor's claim for additional monies before he proceeds to execute any extra work. It is further provided that the architect shall determine the validity of such claim, and that his decision shall be subject to arbitration. One of the primary issues before the Court of Appeals was whether such notice provision was applicable where the contractor's claim for extra compensation was based upon a purported omission or error on the part of the architect (*The Methodist Church of Babylon v. Glen-Rich Construction Corporation*, 165 N.Y.L.J. No. 24).

This case involved a leakage that occurred in the duct work for an air conditioning and hot air heating system which was installed in a building under construction. The leakage was discovered during construction and remedial repairs were made. However, following the completion of the contract, and final payment by the owner to the general contractor, a further leakage occurred. The owner, architect and the general contractor all placed the responsibility for this condition upon the air conditioning subcontractor, who denied responsibility on the ground that the plans called for air tight but not water tight construction. During the course of this dispute, the general contractor, in accordance with new plans prepared by the architect, corrected the difficulty at a cost of approximately \$12,000. The general contractor instituted an arbitration proceeding against the subcontractor, supported by the owner and the architect, but the general contractor was unsuccessful in the arbitration, the subcontractor's position being upheld by the court.

The general contractor then instituted action against the owner to recover the \$12,000 in costs which he had incurred for remedying the leakage in the air conditioning and hot air system. The owner moved to stay the action on the ground

that the subject of the dispute was covered by the arbitration provisions contained in the construction contract and the court stayed the court proceedings pending arbitration of the controversy. The contractor acquiesced in this decision and served a notice and demand for arbitration. The owner then moved to stay arbitration on the ground that the provisions of the contract, which were precedent to the right to arbitration, had not been met by the contractor. In particular, the owner contended that the architect had not been notified in writing by the general contractor that the work to remedy the leakage constituted an extra for which he would look to the owner for compensation, and had thus not afforded the architect the opportunity to determine the validity of such claim. The general contractor, on the other hand, asserted that, having relied upon the professional judgment of the owner's architect, the fault lay with his subcontractor. And, in having proceeded against the subcontractor with the support of the owner and architect, he could not consistently file a notice of claim with the architect and take the position that the architect's plans were inadequate or erroneous.

The trial court, as well as the intermediate appeals court, ruled in favor of the contractor, finding that "it would be unreasonable . . . to require that simultaneously with the claim against the subcontractor, the general contractor should have made a formal complaint against the owner and thereby have charged the architect . . . with having prepared inadequate plans and specifications."

The Court of Appeals, in affirming this decision, stated that it was implicit in such finding that the parties were, at the time, in "reasonable concurrence" that the fault was the subcontractor's, and that, therefore, there existed no dispute between the general contractor and the owner within the provisions of those articles of the general construction contract which required certain action on the part of the contractor in order to preserve his right to arbitrate a claim against the owner. The court further pointed out that not only was the general contractor precluded from formal observance of the conditions precedent to arbitration of a dispute between owner and contractor, but the giving of notice to the architect of such a claim would be inconsistent and futile, as such claim would have to be predicated upon the architect's own fault and the architect had predetermined this issue by assigning fault to the subcontractor.

In a dissenting opinion, two judges of the Court of Appeals voted to reverse the decision in favor of the general contractor. They pointed out that the AIA standard contract "is used widely in the nation" and its provisions . . . "have often been before the courts, and are well known to the people in the industry." The general contractor could have protected his position, asserted the dissenting justices, by furnishing notice to the architect of a conditional claim against the owner dependent upon the result of his initial claim against the subcontractor.

This decision illustrates the significant fact that provisions, which are included in the form documents to protect the owner, may be waived, or their application estopped, by acts of the owner or architect.

**Authors:** Bernard Tomson is County Court Judge, Nassau County, N.Y., Hon. AIA. Norman Coplan, Attorney, is Counsel to the New York State Chapter of the AIA.



# Knoll International

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**Andrew Ivar Morrison and Bruce R. Hannah design for Knoll.**

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# An optimistic view

**The Urbanization of the Earth** by Jorge Arango. Boston: Beacon Press, 1971. 175 pp. \$6.95.

Reviewed by Leonard J. Currie. The reviewer is Dean of the College of Architecture and Art, University of Illinois, Chicago. He initiated and directed the Inter-American Housing and Planning Center at Bogota, Colombia.

Among the spate of current books about ecology, the environment, over-population, pollution, and man's disrupted relationship with nature, it is refreshing to find a book as simple, direct and unpretentious as Jorge Arango's *The Urbanization of the Earth*. Others may probe more deeply into specialized concerns and may argue and footnote their observations with scholarly meticulousness, but few match Arango for his confident broad-brush expositions and his holistic insights. His wide-ranging interests, historical allusions, references to theory drawn from many disciplines—from biology to communication theory to transportation—and his direct, personal observations of phenomena and patterns in many parts of the world reveal the author as a well-read, cosmopolitan man who, in his personal experience, has bridged two markedly differing cultures and who retains the renaissance ideal of the "universal man." He manages to be scholarly without pendency and pomposity.

Mankind has a continuing need for new utopias—those noble visions of a more humane and perfect world than that world in which we find ourselves. Of course, the style of these utopian visions changes with the time, reflecting the problems and opportunities peculiar to the era. Nineteenth century utopias stressed shimmering alabaster cities, often peopled with bland,

bloodless, sexless creatures. Utopias seem to fall into two general categories: environmental or physical utopias, and social utopias. Among the latter are those models of social organization based on cooperative action, religious affiliations, communal ownership of land, the eschewing of man and the profit motive. Although utopias are not meant to be actually built, this social stream of utopian ideal spawned numerous sects during the 18th and 19th Centuries, first in Europe and later in America, that resulted in experimental communities based upon certain assumed and predetermined behavior patterns of the inhabitants. That such communities were generally short-lived was apparently due in part to the typically stringent sexual taboos that obviated their continuity. Such strictures are not evident in the modern counterpart of those utopias—the "communes" of today's youth groups and drug cultures.

The physical or environmental utopias have generally been proposed by individuals with a strong visual or design sense. These visions such as Le Corbusier's "Ville Radieuse," Frank Lloyd Wright's "Broadacre City," and (currently) Paolo Soleri's "Arcologies," conjure up splendid images of man-made environments, purportedly greatly enhanced receptors for human life. Perhaps because each of these artifacts is so completely planned and ordered by a strong and single-minded genius, the inhabitants seem incidental to the schemes, and—if you are aware of them at all—they appear to be like robots.

As architect Arango is indeed a sensitive and confident designer, it is not surprising that his utopian solution to an over-populated and rapidly urbanizing

world—his "Pan-Urban Land Use System (PLUS)"—is more related to the physical design utopias than to the social solution models such as Henry George's "Single Tax" proposal that promised to cure the ills of urban growth by taxing away the "unearned increment" implicit in land speculation, and recovering this gain for public use. However, as Arango is well aware, very specific "master plans for forecasting city growth have gone out of style and many of the most dramatic of futuristic city designs have rather quickly been made obsolete by technological and philosophical developments—leaving such schemes in the realm of the naive or amusing. Therefore Arango's utopia avoids specific forms and building design, and adopts the more current mode of open-ended planning, establishing stated guide-lines for growth with future options open for specific form determination. A "system" approach (he even includes "system" in the title of the scheme), the use of the acronym "PLUS" which suggests a relationship to computer problem solving, and the "field theory" establishment of a land-use strategy permitting ubiquitous and unlimited growth—all give Arango's utopia the unmistakable stamp of the present.

I am delighted by flashes of Arango's dry wit, and by his often surprising analogies—juxtaposing data and ideas that are remote from each other in time as well as geographically and philosophically. There is much that one could find to argue with in this frankly opinionated book. The author seems much more casually optimistic than am I about man's capacity to adjust his birthrate and population growth short of total disaster to life on our planet. Indeed the population explosion of homo sapiens has already proved disastrous to numerous extinct and currently threatened species of animal, insect and plant life. On a related subject, I am less inclined than Arango to accept the inevitability of our continued dependency on the automobile—although he may be correct.

The chapter on "Pathology of the American City" gives an excellent compressed statement and thumbnail sketch of what is wrong with American cities. This view, coupled with the following chapter on "Ambiology," effectively synthesizes the nature of urbanized contemporary society in global terms.

The reader should enjoy making the acquaintance, through this book, with the lively mind of Jorge Arango, an urbane thoroughly contemporary man who is fully aware of his cultural roots.

[More Books on page 108]



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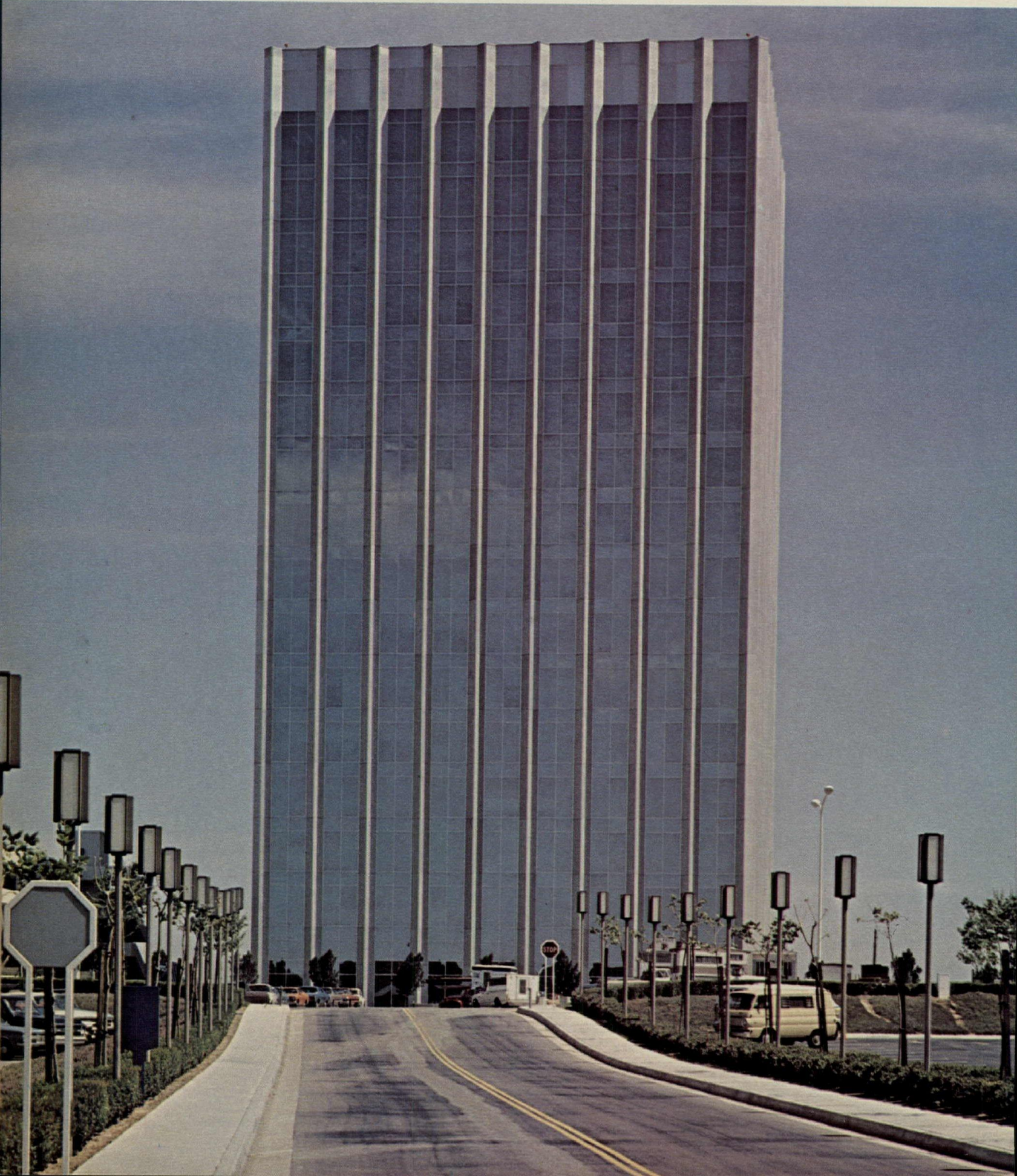
**A GAF Timberline<sup>TM</sup> roof. The only thing better  
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**Result: lower construction costs, lower cost of operation.**



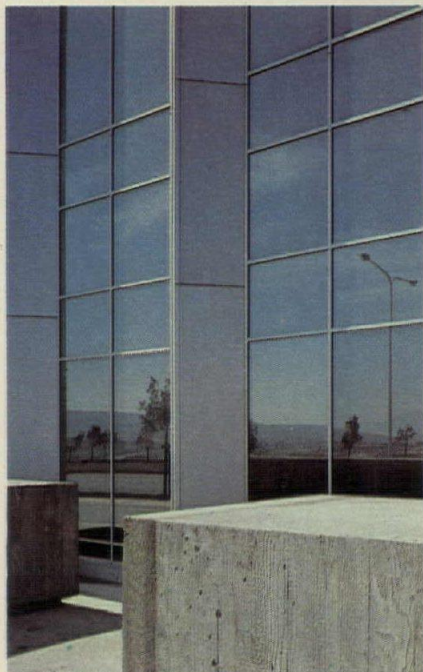


## How Vari-Tran reduced the cost per rentable square foot.

James A. Knowles and Associates, Consulting Mechanical Engineers, of Los Angeles, made a glass cost analysis of glazing this building with Thermopane® insulating glass with an outboard light of Vari-Tran 114 coating versus conventional 1/4" Parallel-O-Grey® plate. They compared the glass in terms of heat loss and gain, initial glass costs, total building cost, effects on taxes and insurance, annual operating costs, etc. (See summary.)

## Vari-Tran justified on construction cost savings, alone.

The study definitely proved that Thermopane/Vari-Tran would save the owners money on initial and long-range investment. With Vari-Tran's superior heat-reflecting qualities, it was economically feasible to design an all-electric building, eliminating space requirements for boilers.



The reflective glass increased rentable area on the upper 15 stories due to smaller fan-coil machinery on each floor. The estimated rental area gained was 3% of total on these floors, representing rental income of \$46,656 per year. The additional rental income, and owning and operating cost savings, total \$66,478 per year. If this amount were capitalized at 10%, an initial investment of \$664,780 could be justified.



The improved 'U' value of the double glazed glass had a significant effect on reducing the size — and cost — of the heat recovery cycle required by all-electric concept.

As to the aesthetics, the silvery Vari-Tran 114 blends with the aluminum exterior columns and the spandrels of Tuf-flex® tempered glass, also Vari-Tran coated. (Vari-Tran is available in golden as well as silvery coatings in light transmittances of 8, 14 and 20 percent. Each provides significant reduction in solar heat and glare.)

If you would like a computerized cost analysis of the glass wall of a building you're planning, contact your L-O-F Architectural Representative, or Architectural Dept., Libbey-Owens-Ford Company, Toledo, Ohio 43624.

## Here's what Vari-Tran, the glass that cuts building costs, will save.

### ECONOMIC GLASS COST ANALYSIS

by James A. Knowles and Associates, Los Angeles

A differential 'Annual Cost of Owning and Operating' between the larger capacity air conditioning plant required for the conventional heat absorbing glass as opposed to the plant capacity required by the Vari-Tran 114 is as follows:

#### 1. Additional Investment —

<b>A. Added A.C. Machinery Cost . . . . .</b>	<b>\$56,300</b>
<b>B. Larger Roof Machinery Space . . . . .</b>	<b>\$ 6,320</b>
<b>C. Larger Gas, Electrical Services. . . . .</b>	<b>\$ 7,100</b>
<b>Total Additional Investment . . . . .</b>	<b>\$69,720</b>

#### 2. Additional Annual Owning Cost —

<b>A. Amortization and Depreciation for 20 years at 10% (CRF-0.11746) . . . . .</b>	<b>\$ 8,200</b>
<b>B. Taxes and Insurance. . . . .</b>	<b>\$ 3,140</b>
<b>Total Added Annual Owning Cost . . . . .</b>	<b>\$11,340</b>

#### 3. Additional Annual Operating Cost —

<b>A. Preventive Maintenance . . . . .</b>	<b>\$ 719</b>
<b>B. Repairs and Replacement . . . . .</b>	<b>\$ 992</b>
<b>C. Gas, Water and Electricity . . . . .</b>	<b>\$ 6,771</b>
<b>Total Added Annual Operating Cost . . . . .</b>	<b>\$ 8,482</b>

#### 4. Summary —

<b>A. Additional Annual Owning Cost . . . . .</b>	<b>\$11,340</b>
<b>B. Additional Annual Operating Cost . . . . .</b>	<b>\$ 8,482</b>
<b>Total Added Owning and Operating Cost for conventional heat absorbing glass . . . . .</b>	<b>\$19,822</b>





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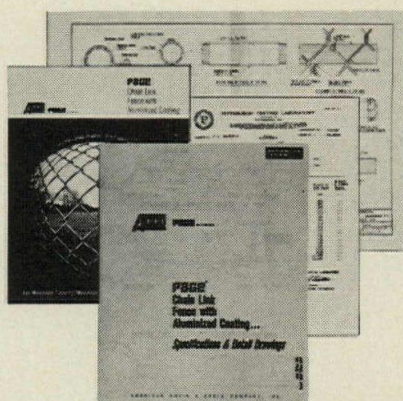
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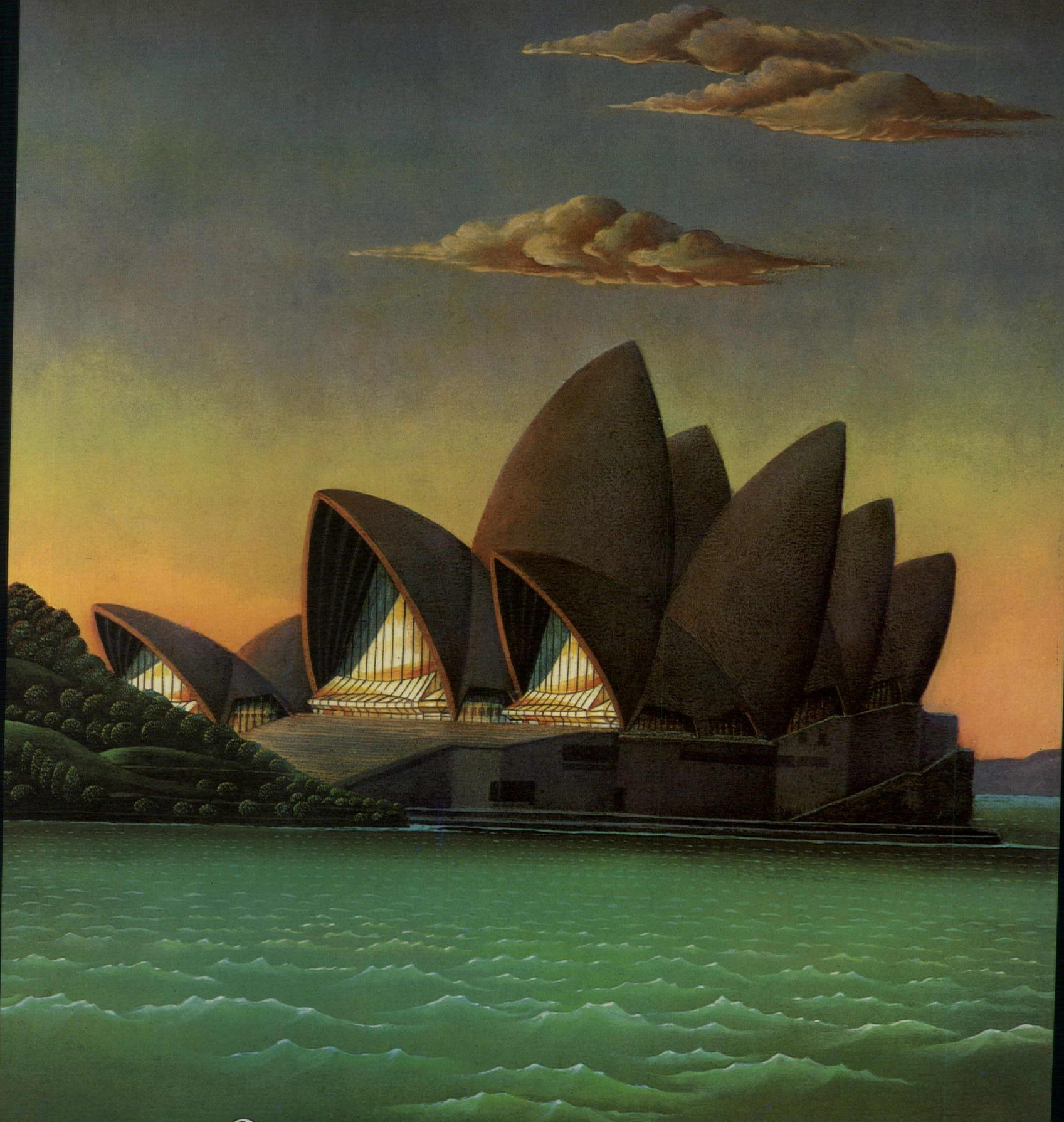
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**Mechanical and Electrical Equipment for Buildings** by William J. McGuinness and Benjamin Stein. Fifth Edition. New York: John Wiley and Sons, Inc., 1971. \$18.50.

Reviewed by Robert H. Emerick, PE, Consulting Engineer.

This is a book of one thousand and eleven pages, including the index, and you ask, what can all these data do for me? Depending on who you are and what you do, here are the answers.

1. If you are an architect charged with the design of a new building, no matter whether it is large or small, you can refer to this Fifth Edition of a standard work and obtain a comprehensive idea of the mechanical and electrical components that will be needed by the project. In these pages, you will meet them not only by name, but by their approximate sizes and shapes, their individual advantages and limitations, and in many instances tables and reports of their competitive costs. With this information you will possess a sound mental picture of the space demands, supports, accessibility and controls that must be incorporated in the design.

The theme of this book as expressed by the authors in their Preface is "The interrelationship of architecture and engineering . . . offered as an aid to those who must bring together the knowledge and skill necessary to produce a beautiful and useful building." The successful application of this theme is illustrated by the many photographs of notable structures, taken in various sections of the country.

2. If you belong to the engineer side of this interrelationship, you can find immediate guidance in identifying most, if not all, of the mechanical and electrical items you will evaluate and ultimately specify in carrying out your responsibilities for creating a smooth and efficiently performing building. Most of the 34 chapters in this book treat of subjects familiar to the engineer of experience; others may carry new information concerning areas of design long considered the concern of experts or specialists, or there may be something you have never run into before.

For examples of these limited fields, have you ever designed a total energy project? Or a sewage and industrial waste disposal system? Or sound and signal arrangements? Maybe you need a refresher in basic electricity, or electrical materials (there are pages and pages of data), or services and utilization equipment. Per-

haps you are not up to date on lighting fundamentals and illumination levels for various activities. You can catch up here.

Another rare encounter for a designing engineer is with a moving sidewalk or ramp; sometimes a dumbwaiter. All of these items are in the book. All are potential components of a building that should harmonize with the architect's master plans. The interrelationship is inescapable.

3. If you happen to be a building manager, or perhaps the superintendent of a complex of buildings such as a college campus, this book is certainly for you. It will give you the whys and wherefores of overhead and underground steam and water piping, overhead and underground power cables, and practical data on centralized controls. Beyond that, the presented data will help you to evaluate what you have, against what you ought to have, or would like to have. The result could be more efficient and better maintained systems in your complex.

4. Should you be a public utility engineer, of either the electric, gas or district steam persuasion, certain information in this book will arm you soundly in customer discussions involving the costs of service, and, perhaps interruptions in the service. To illustrate, suppose your utility operates a district steam grid under the city streets. Suppose further, that a new steam customer turned on his steam jet type of water chiller for air conditioning on a hot humid day. The temperature controls were not yet set properly, the spaces became far too cold and condensation appeared on walls and tile floors. Can you explain to the uninitiated how the condensation formed, and why, and that there was no defect in the quality of the steam?

This book covers not only steam jet refrigeration, but the other kinds of compressors and absorption. You may not have been involved in air conditioning problems, at least not with all types of systems. In such events, this book is a dependable reference.

Another area of growing importance concerns acoustics. This is the concern of the last chapter in the book. The danger of damage to the ear is recognized, and the effects of noise on communication in the classroom and auditorium is of concern to teachers and public speakers. As a source of recent information, this chapter presents data on the basic principles of sound; its velocity, wave length, behavior in a free field, sound absorption, sound coefficients of building materials, and de-

[continued on page 114]

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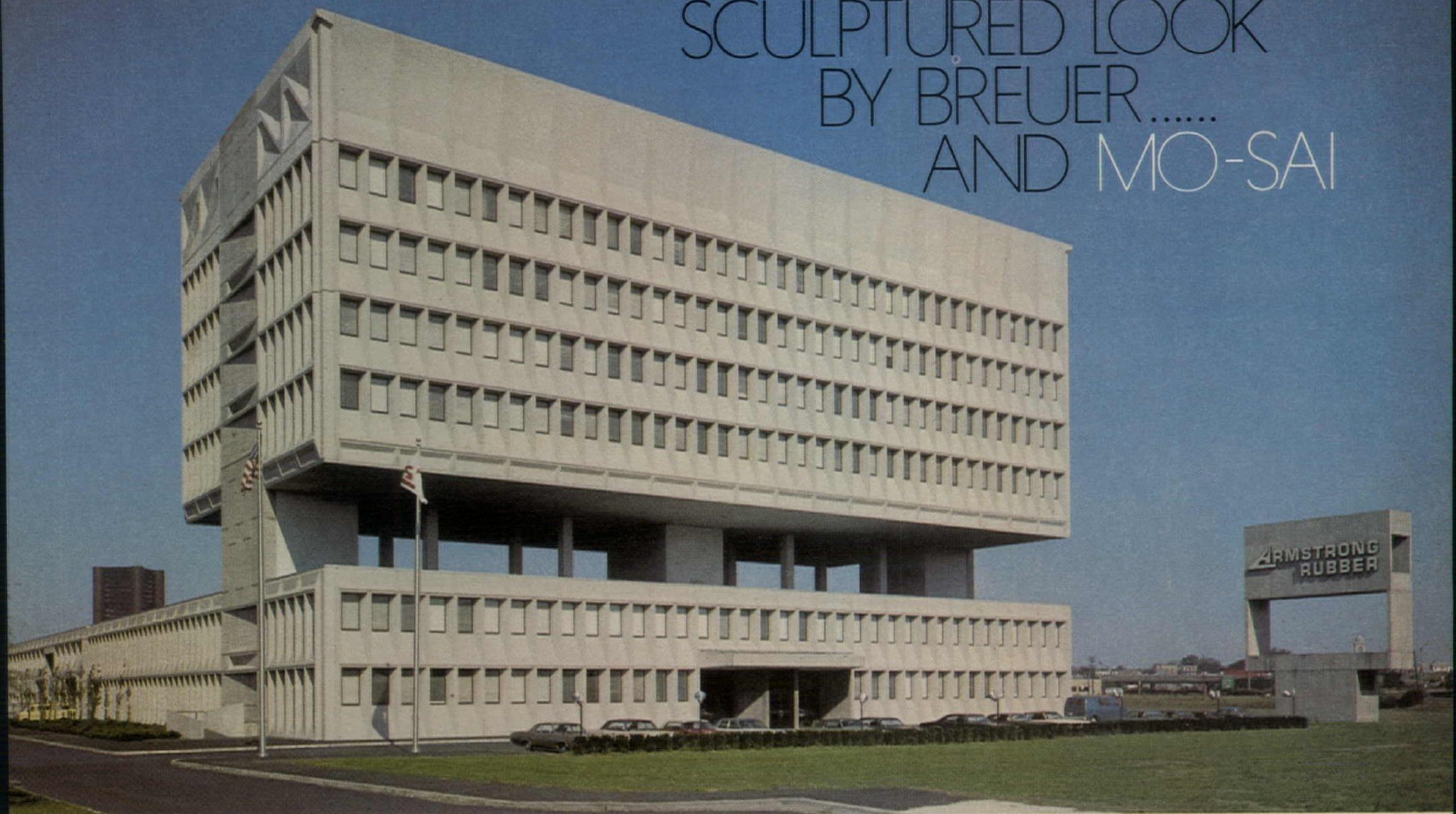
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Armstrong Rubber Company, Corporate Headquarters / Research and Development, New Haven, Connecticut / Architects: Marcel Breuer and Robert F. Gatje

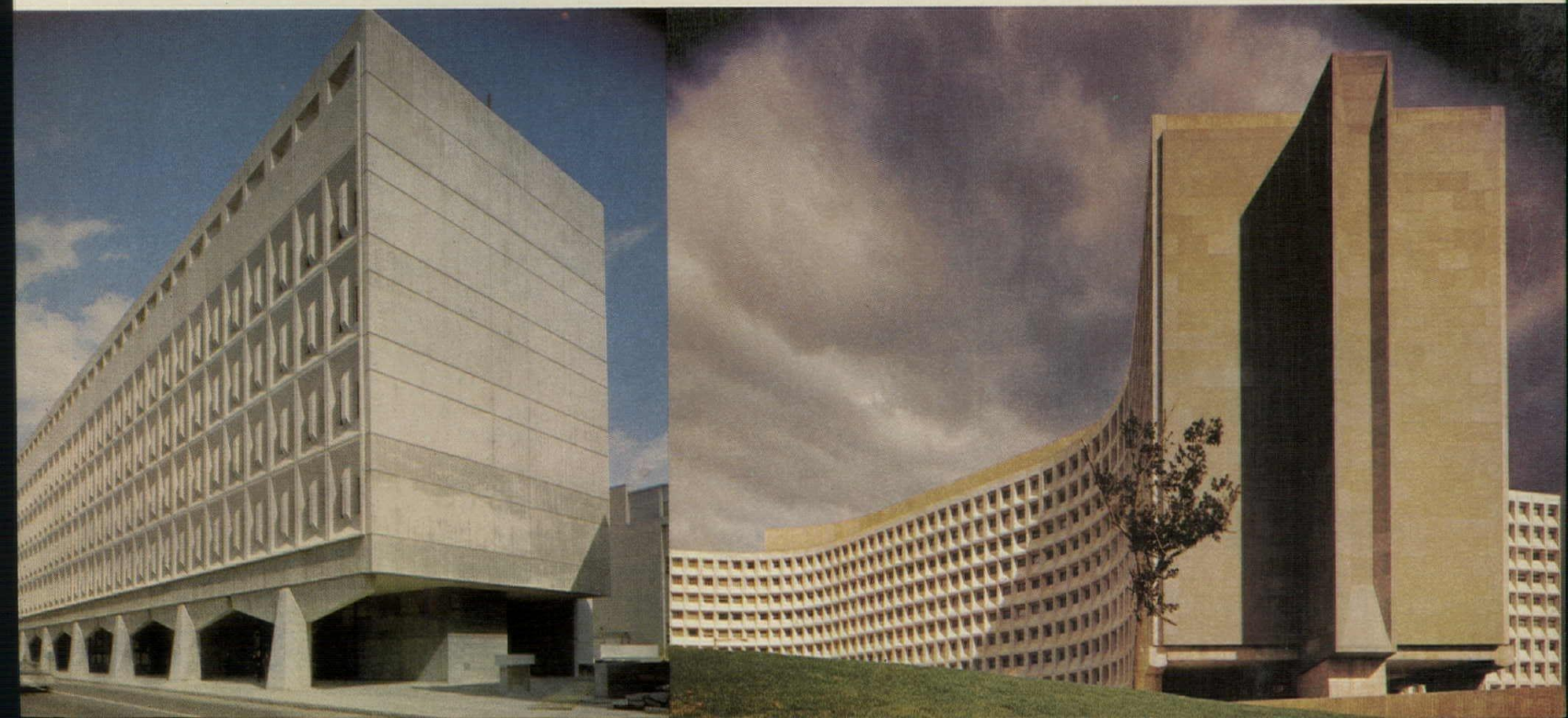
There are certain hallmarks by which pace-setting architectural trends can often be identified. The "sculptured look" is characteristic of the work of many of our leading contemporary architects... but particularly of Marcel Breuer and his design colleagues. The three projects in this page, all factory manufactured to Mo-Sai quality standards by firms licensed by Mo-Sai Institute, Inc., are interesting current examples in the use of versatile precast architectural concrete... made the Mo-Sai way.

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Architects: Marcel Breuer and Hamilton P. Smith

HUD Headquarters, Washington, D.C. / Architects: Marcel Breuer and Herbert Beckhard





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## Then, we added some new chapters.

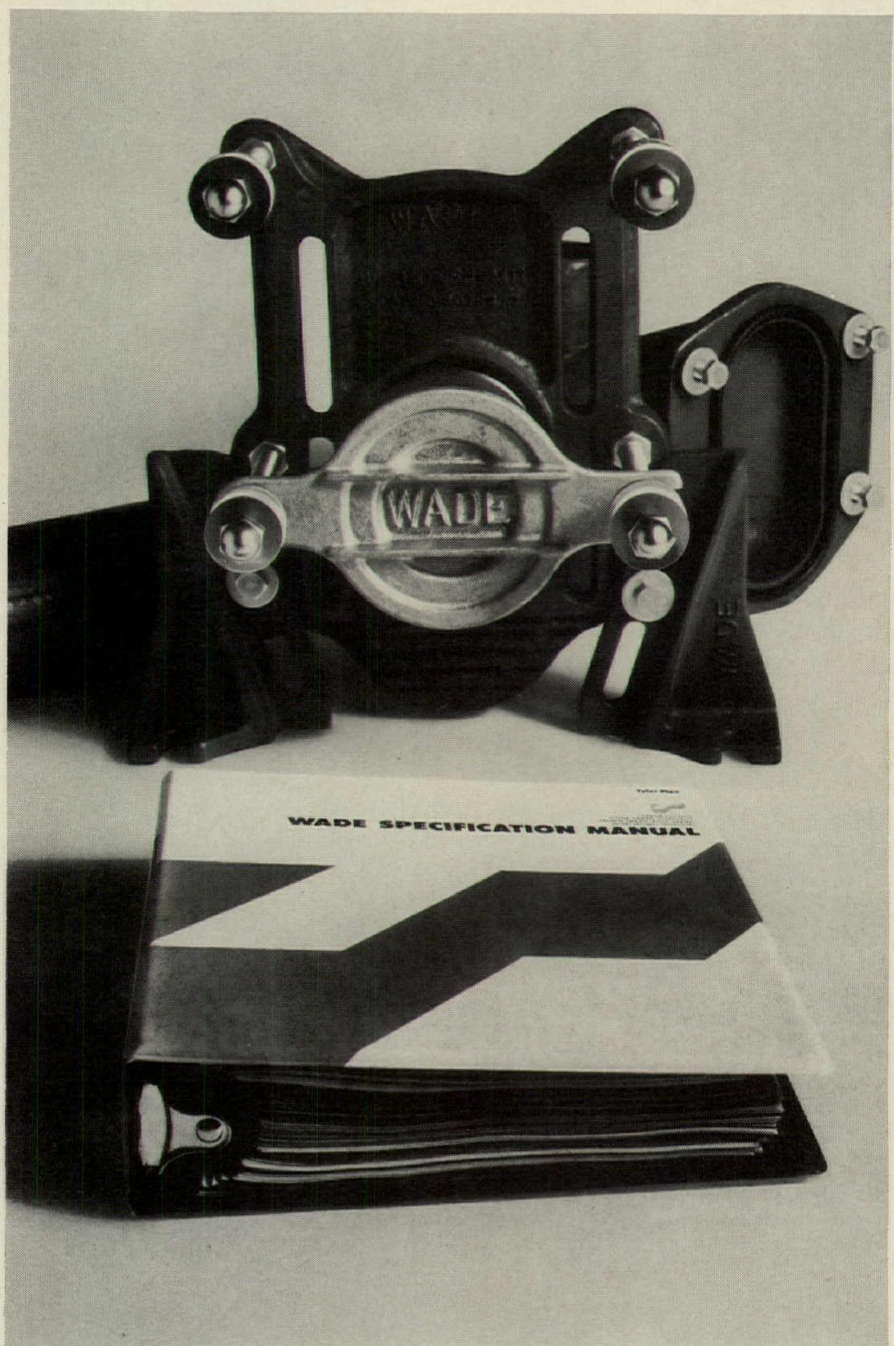
The book is our Wade Specification Manual and it was good as far as it went.

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Gyo Obata, FAIA—Hellmuth, Obata & Kassabaum, Inc., St. Louis, Missouri

Marjorie Phillips—Chairman, Washington State Arts Commission, Seattle, Washington

Louis W. Riggs, F., ASCE—President, Tudor Engineering Company, San Francisco, California

## CREDITS:

### Manufacturers Hanover Trust Company Operations Building

Owner: Manufacturers Hanover Trust Company, New York, New York.

Architect: Carson, Lundin & Shaw, New York, New York.

Structural Engineer: Edwards & Hjorth, New York, New York.

Steel Fabricator: Bethlehem Steel Corporation, Bethlehem, Pennsylvania.

General Contractor: George A. Fuller Company, New York, New York.

### Currihan Exhibition Hall

Owner: City and County of Denver, Department of Public Works, Denver, Colorado.

Architect: A joint venture. Muchow, Associates, Architects; Haller & Larson, Architects; James T. Ream, Architect.

Structural Engineer: Ketchum, Konkell, Barrett, Nichol and Austin, Denver, Colorado.

Steel Fabricator: Burkhardt Steel Company, Denver, Colorado.

General Contractor: F. R. Orr Construction Company, Inc., Denver, Colorado.

### New England Center for Continuing Education

Owner: University of New Hampshire, Durham, New Hampshire.

Architect: William L. Pereira Associates, Planners, Architects, Engineers, Corona del Mar, California.

Structural Engineer: LeMessurier Associates, Inc., Boston, Massachusetts.

Steel Fabricator: Augusta Iron Works, Div. of Cives Corp., Augusta, Maine.

General Contractor: Davison Construction Co., Manchester, New Hampshire.

### Knights of Columbus Headquarters

Owner: Knights of Columbus, New Haven, Connecticut.

Architect: Kevin Roche John Dinkeloo and Associates, Hamden, Connecticut.

Structural Engineer: Pfisterer, Tor & Associates, New Haven, Connecticut.

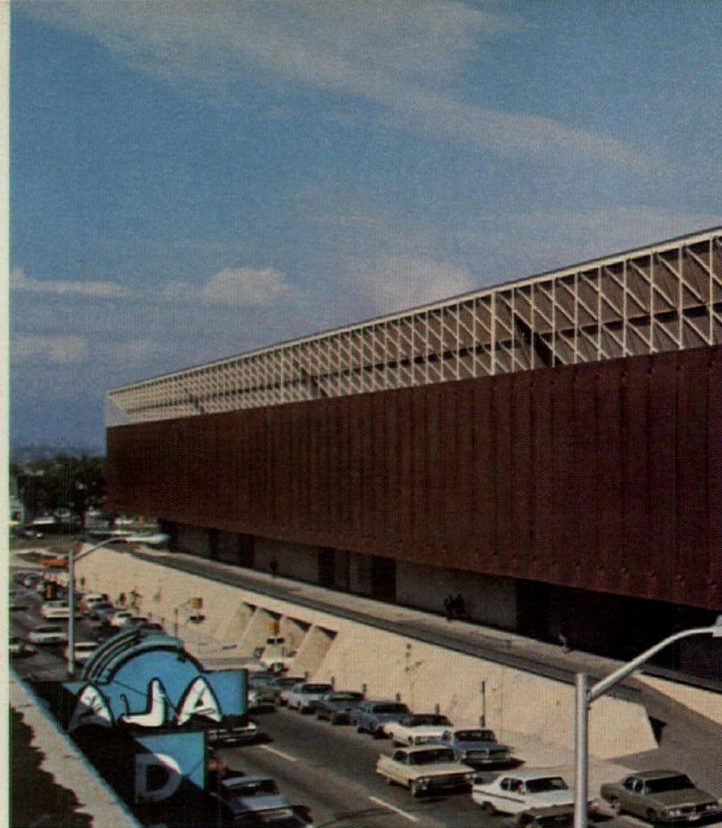
Steel Fabricator: Belmont Iron Works, Eddystone, Pennsylvania.

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Structural steel for these award winning buildings was supplied by Bethlehem Steel.

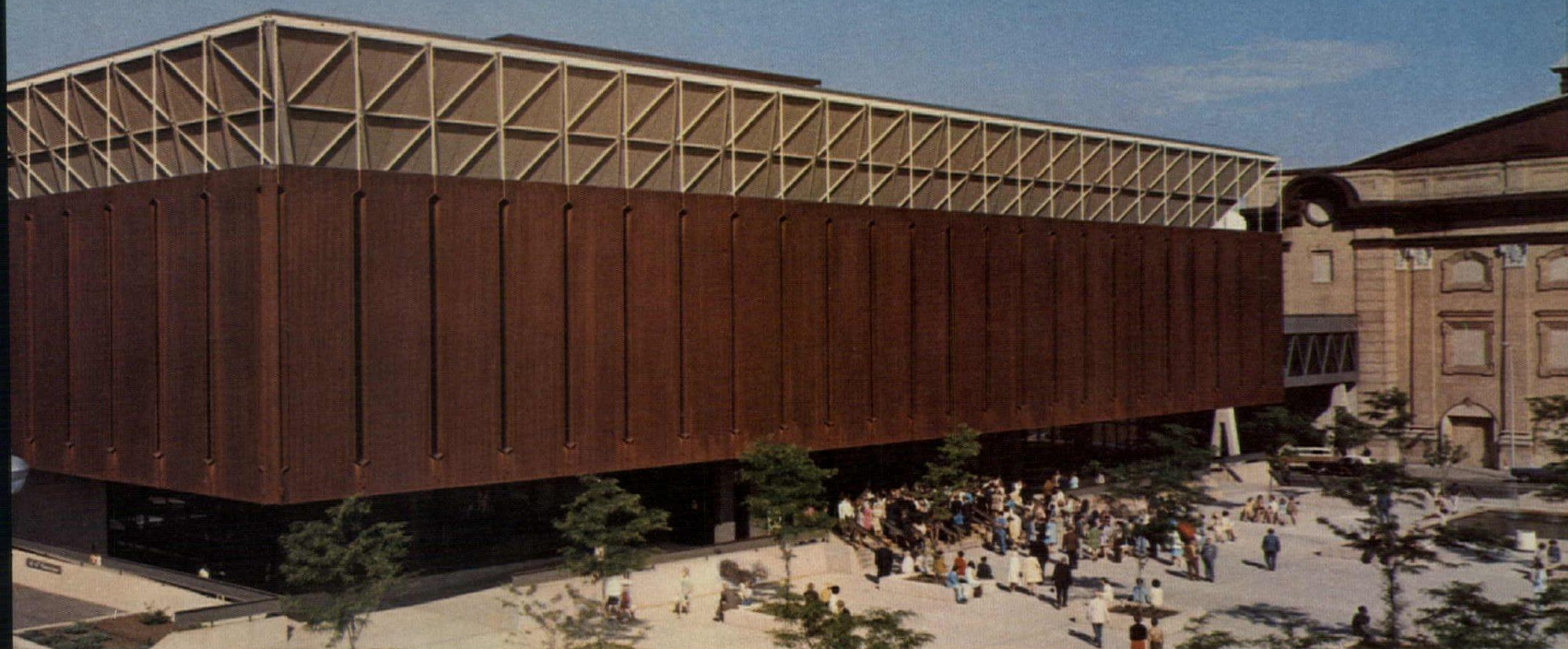
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BETHLEHEM STEEL CORPORATION, BETHLEHEM, PA

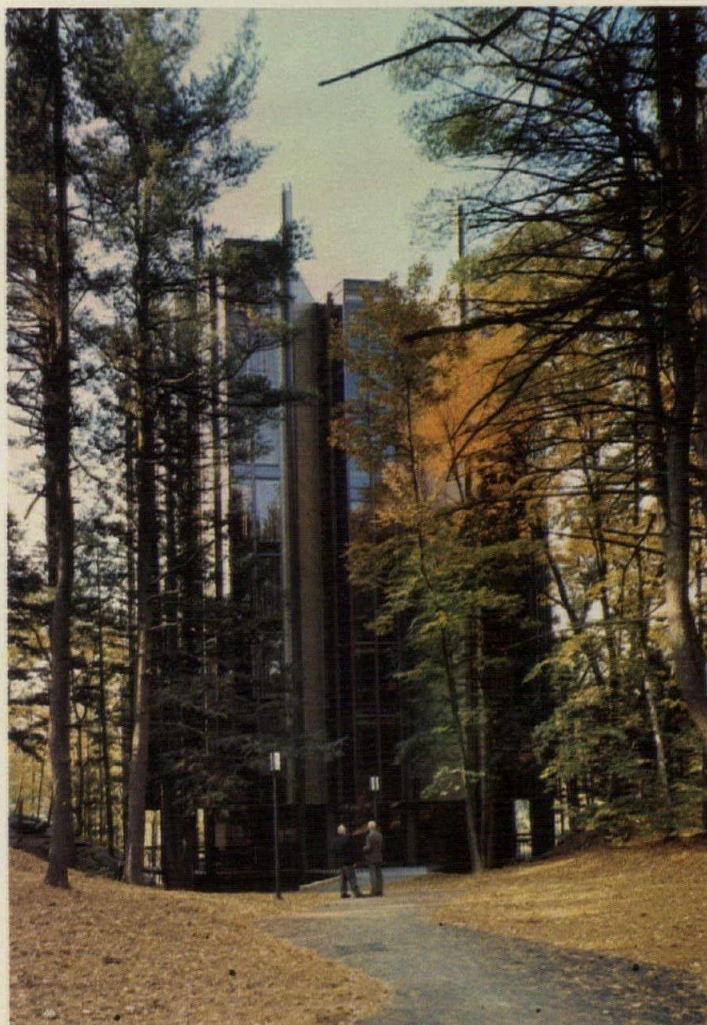


**Knights of Columbus Headquarters, New Haven**—"This building is executed in a positive, vigorous idiom. It is very strong visually, but does not overpower its surroundings. The exposed steel framing, contrasted with the corner brick shafts, defines the structure with great clarity."





**Currigan Exhibition Hall, Denver**—"This building is distinguished by its tremendous space frame that gives the entire structure a sense of dramatic power. The interior expression is particularly impressive."



**New England Center for Continuing Education, Durham**—"This attractive building takes maximum advantage of a lovely and natural setting. The interior spaces are beautifully and carefully developed. The designer has created an appealing total environment for education."



**Manufacturers Hanover Trust Company Operations Building, New York**—"A strong, straightforward, simply executed design—clearly organized and well planned. This is a handsome building that makes effective use of masonry."



sign data for such areas as schools, dining rooms, churches, gymnasiums, swimming pools, apartment buildings and FHA codes.

Noise is a problem for both the engineer and the architect: the engineer's machinery makes it, the architect's structure must be arranged to muffle and absorb it. It is another example of the essential interrelationship of these design arts.

*Mechanical and Electrical Equipment of Buildings* is a big book, not only in its more than a thousand pages, but in its physical dimensions (7"x10"). Pages of this size make easy reading and permit large and clear illustrations.

As a strictly personal note, I am well pleased to have a copy of this comprehensive reference book in my library.

**Stone Shelters** by Edward Allen. Cambridge: The MIT Press, 1969. 210 pp., 151 photographs, plans, sections. \$13.50.

Reviewed by Walter C. Kidney. The reviewer is a former Associate Editor of P/A.

This is a very good, very beautiful book, a presentation of the masonry folk architecture of Apulia in southern Italy, both the

famed trulli and the less famous building types. The graphics, which include photos, plans, sections, detailed elevations and maps, are excellent and are presented on well-designed pages. The accompanying text gives the geological, technical and historical background that makes the existence of such ponderously heavy building types, in such variety, comprehensible.

The author takes obvious delight in Apulia; after a short history of the region, he turns, not to architecture, but to "The Good Life"; to the hot bread, "the thick, steaming focaccia, topped with olive oil, large-crystal salt, and small tomatoes," to the wine . . . "hidden away in cool rooms to be brought out at mealtimes by the brimming pitcherful."

The book discusses Apulia itself: the dolmens and menhirs; the pagghiaro, massively walled but with a wooden roof; the casella, of corbeled construction with a stepped conical exterior; the chipuro, which looks like an early blast furnace; the cave dwellings of Massafra; the trullo; the gable-roofed house, heavily vaulted, attics included; the town of Cisternino, wild with steps, archways and mysterious entrances; and finally, "superstone," i.e., reinforced

concrete, which has been popular since the war, and in which the author sees no hope whatever: "It will not produce a Massafra, an Alberobello, or a Cisternino. It will instead produce towns without souls." *Stone Shelters* offers a refreshing look at the ingenious architecture of a community from another time and place. In it is inspiration for here and now.

**Planning and Politics** edited by Thad L. Beyle and George T. Lathrop. New York: The Odyssey Press, 1970. 277 pp. \$4.75.

The thrust of this collection of papers, many of them sponsored by grants from the Institute on State Programming for the '70s at the University of North Carolina, is pretty well spelled out in the preface by the Institute's director, former governor of New Mexico, Jack M. Campbell. Governor Campbell stressed four themes the Institute dealt with in its work: people, innovation, comprehensiveness and implementation. These same four themes underlie the individual selections in the book; the bureaucratic aspect of government and politics tends to work against people and innovation, yet the govern- [continued on page 118]

## DAVIS X-10



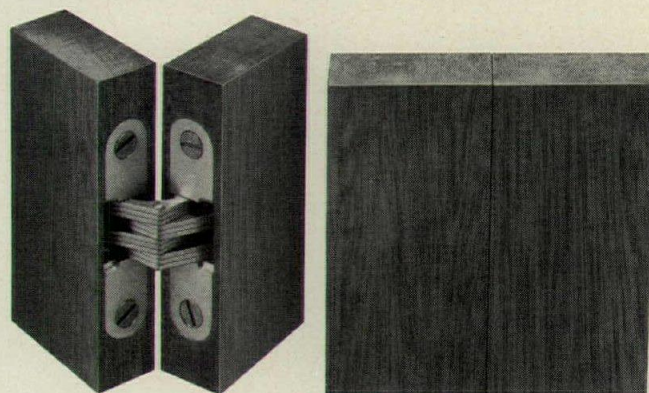
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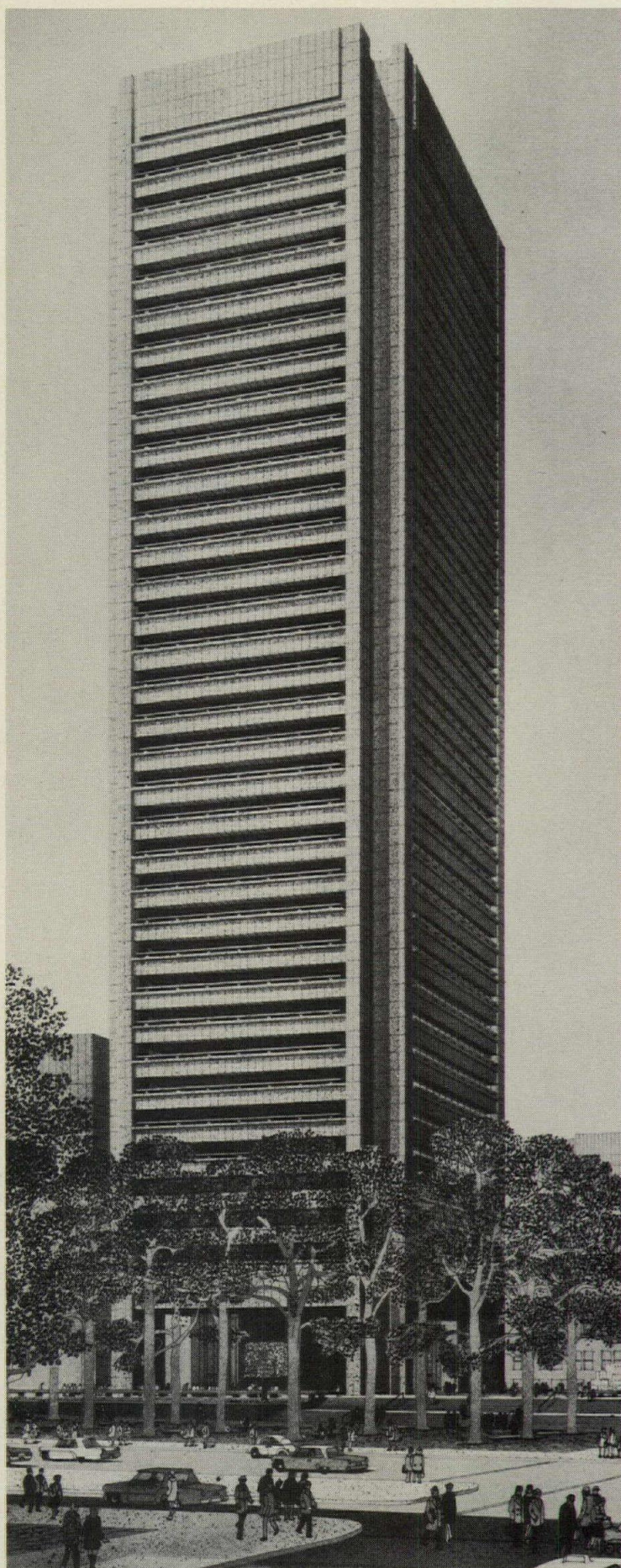
There's an  
evolution in the  
kitchen



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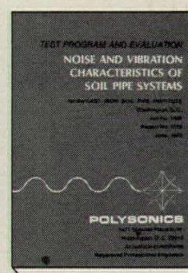


United States Fidelity & Guaranty Headquarters,  
Baltimore, Md. Architect: Vlastimil Koubek, AIA.  
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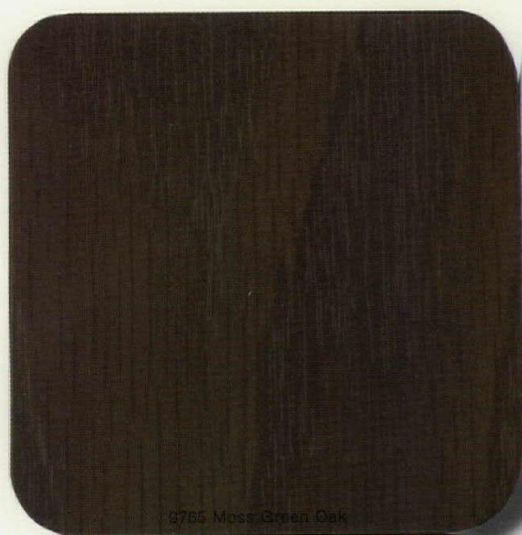


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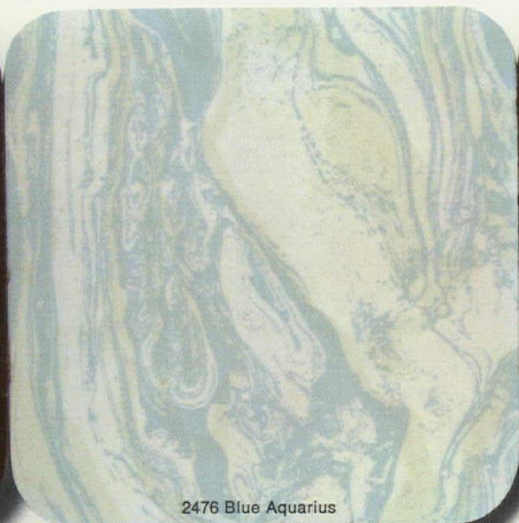


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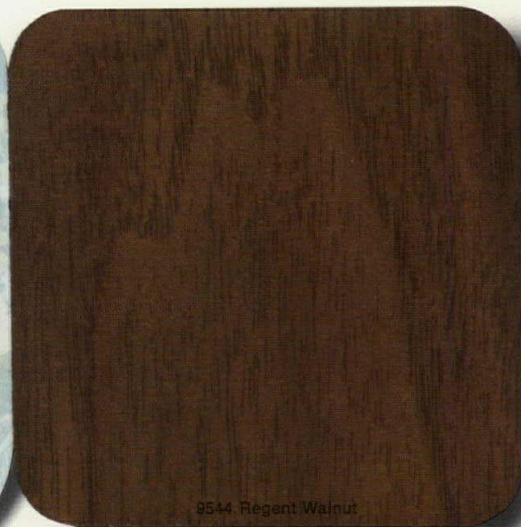




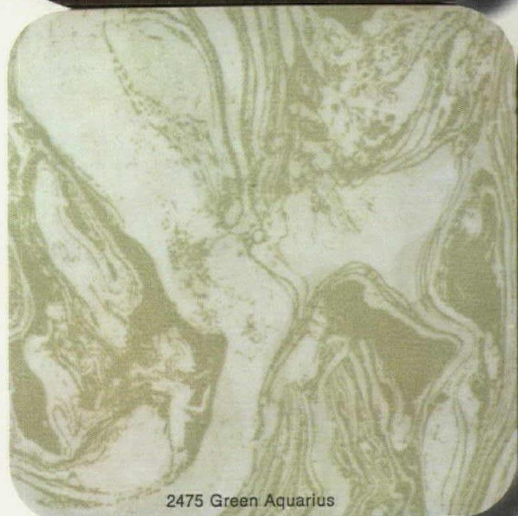
6765 Moss Green Oak



2476 Blue Aquarius



9544 Regent Walnut



2475 Green Aquarius



8505 Continental Pecan

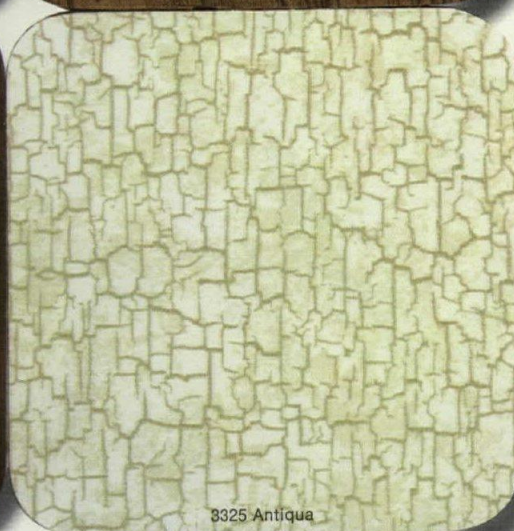


2474 Yellow Aquarius

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8510 Burmese Rosewood



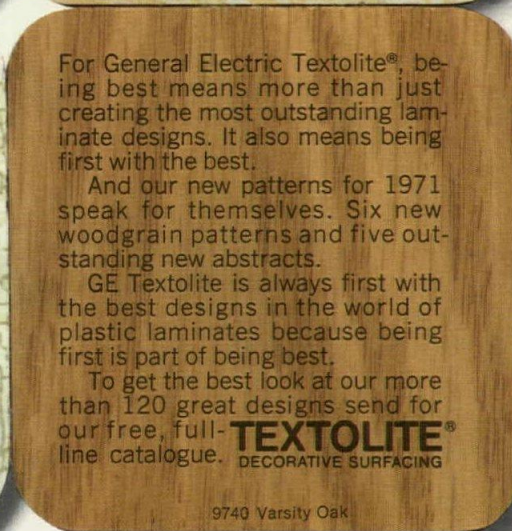
3325 Antiqua

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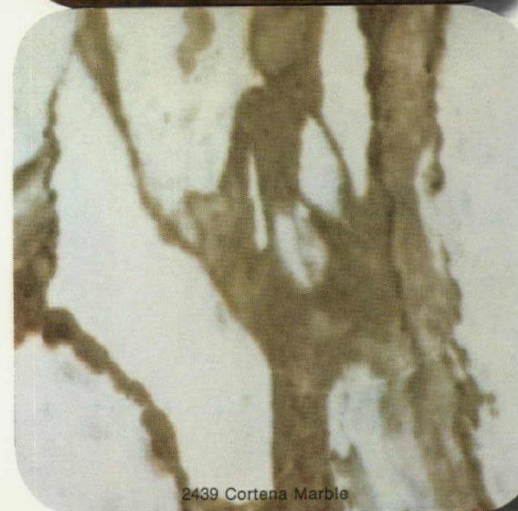
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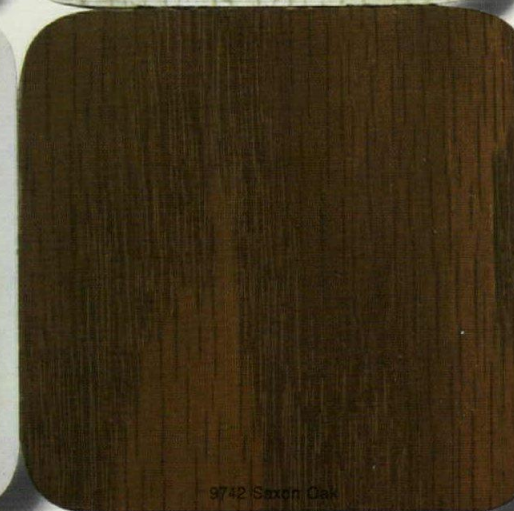
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ment, through the political process, has the scope to be comprehensive and the power to implement. Campbell calls it an "uneasy marriage."

If there is a way to save this marriage, the final selection suggests it is through what author Alan S. Kravitz labels "liberation" planning: planning beginning at a grass roots, street corner, neighborhood level. It brings planning and politics together—people planning their own environment with the political power to make their plans work.

**Environmental Psychology. Man and his Physical Setting.** Edited by Harold M. Proshansky, William H. Ittelson and Leanne G. Rivlin. New York: Holt, Rinehart and Winston, Inc., 1970. 668 pp. \$15.75.

According to the Preface, it took the editors of this volume—all professors at the New York City University Graduate Center which offers the only doctoral program in environmental psychology in the country—almost a decade to research. It brings together diverse writings in environmental psychology by psychologists,

psychiatrists, sociologists, urban planners, architects, geographers and novelists. The 65 essays include theory and methodology, as well as studies in environmental design and individual needs, design and social institutions and environmental planning.

A glance at some of the titles best reveals the book's content: "Neighbour on the Hearth" by Leo Kuper is concerned with the lack of privacy and its effects on life styles in an English urban development; "Use of Sidewalks" by Jane Jacobs defines social behaviors in the urban Street. Other titles include "Housing and Its Effects," from *Slums and Social Insecurity* by Alvin L. Schorr; "Office Design: A Study of the Environment" by Peter Manning; "Planning and Social Life: Friendship and Neighbor Relations in Suburban Communities" by Herber J. Gans.

**Interior Design. An Introduction to Architectural Interiors** by Arnold Friedmann, John F. Pile, Forrest Wilson. New York: American Elsevier, Inc. 1970. 303 pp. \$14.

In reality, *Interior Design* is two books sharing one binding. One section is a general and subjective 200-page survey of in-

terior design by Arnold Friedmann and John Pile. It includes a brief history of architecture, an explanation of what determines quality in design, the elements and vocabulary of interior design, and a description of interior design education and professional practice.

The other section of the book is an introduction to interior construction by Forrest Wilson (Editor of P/A) which, in 83 pages, describes simple structural and mechanical systems as well as most of the materials used in construction and how they are fabricated and assembled.

Wilson's section is crisp and succinct, crammed with factual material, and supported by beautifully simple drawings that explain fully the ways to put together wood, stone, metal, masonry, concrete and plastic; techniques for making construction drawings, how to deal with mechanical and electrical systems, plus glossaries of terms for each subject.

**Steel Buildings: Analysis and Design** by Stanley W. Crawley and Robert M. Dillon. New York: Wiley, 1970. 397 pp. \$17.50.

This book explains both theory and [continued on page 125]

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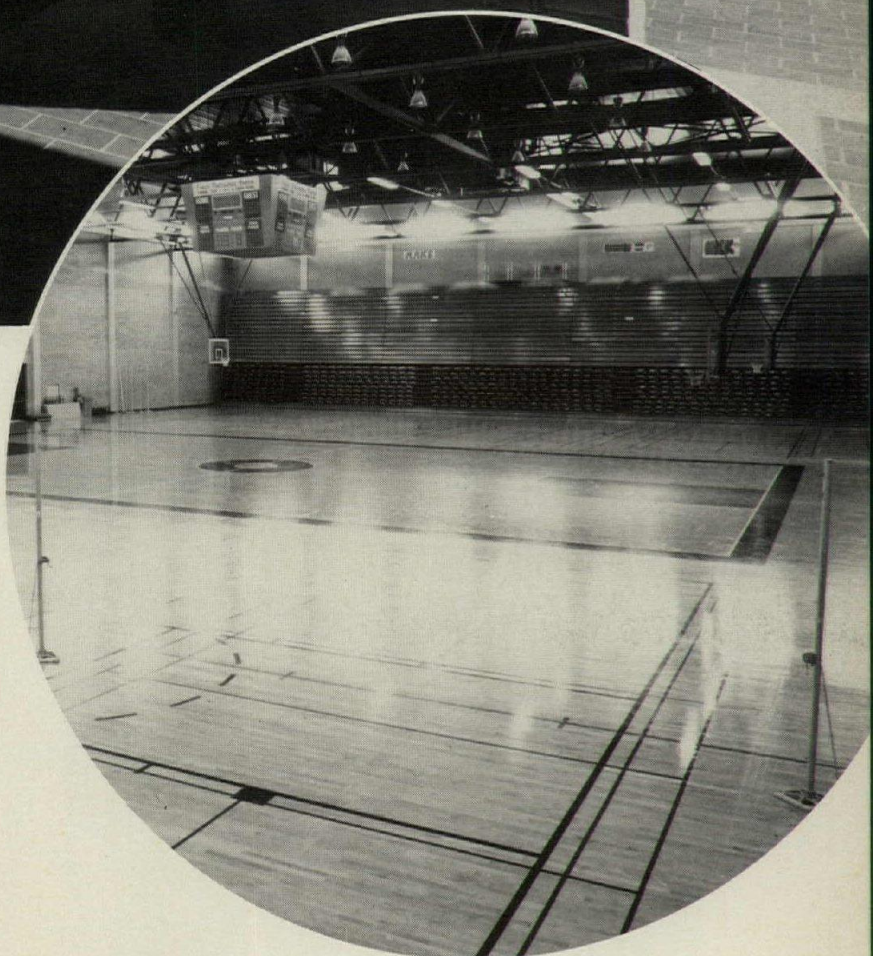
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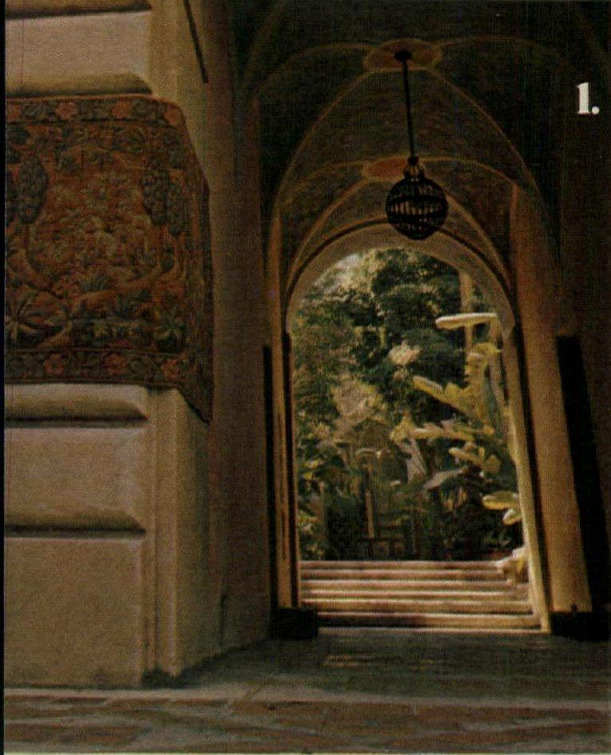
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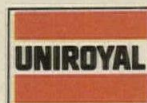
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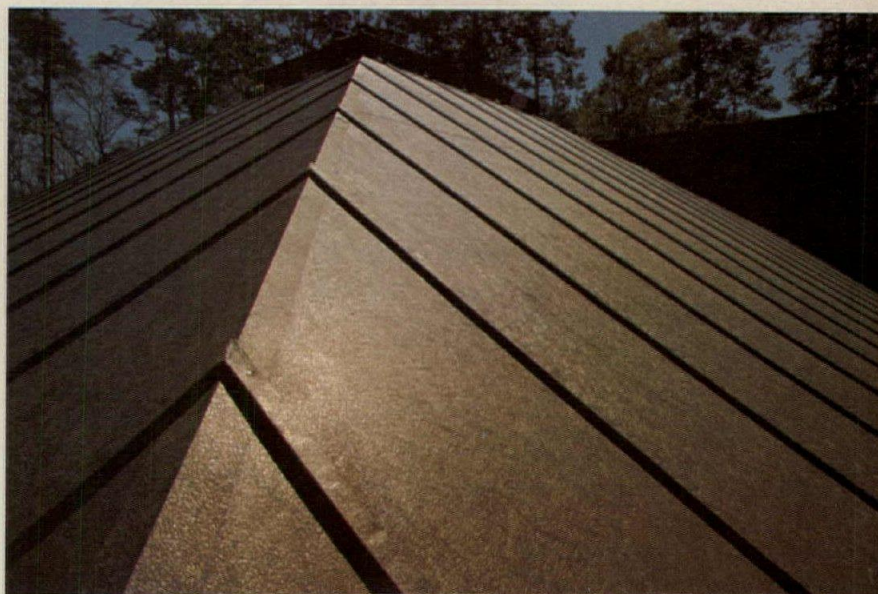
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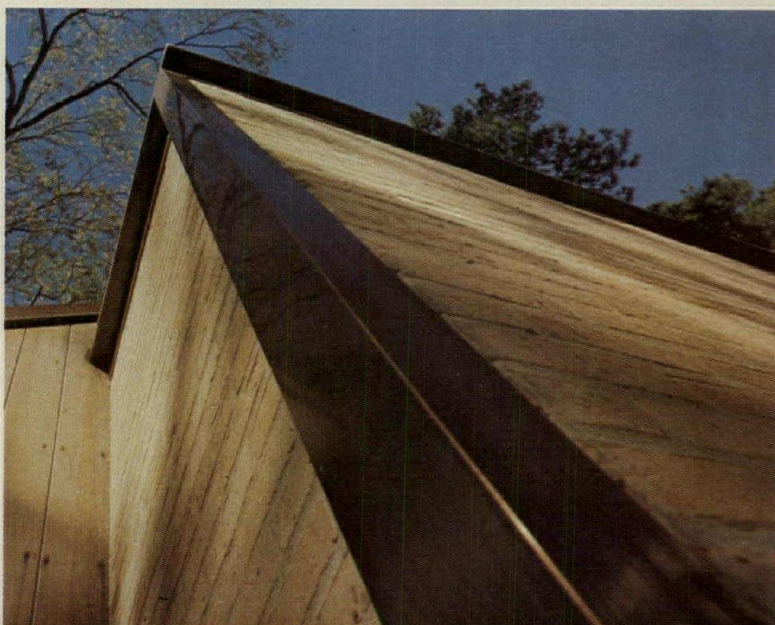
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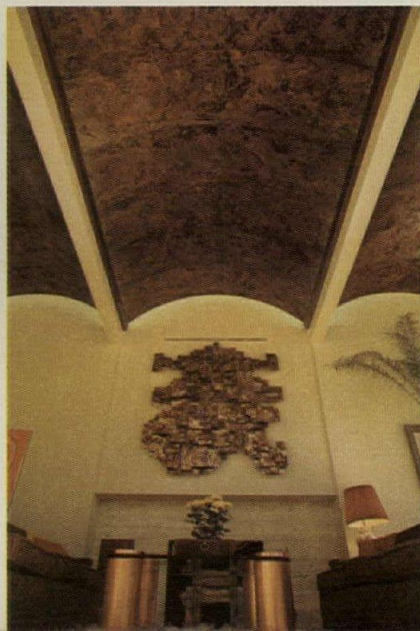
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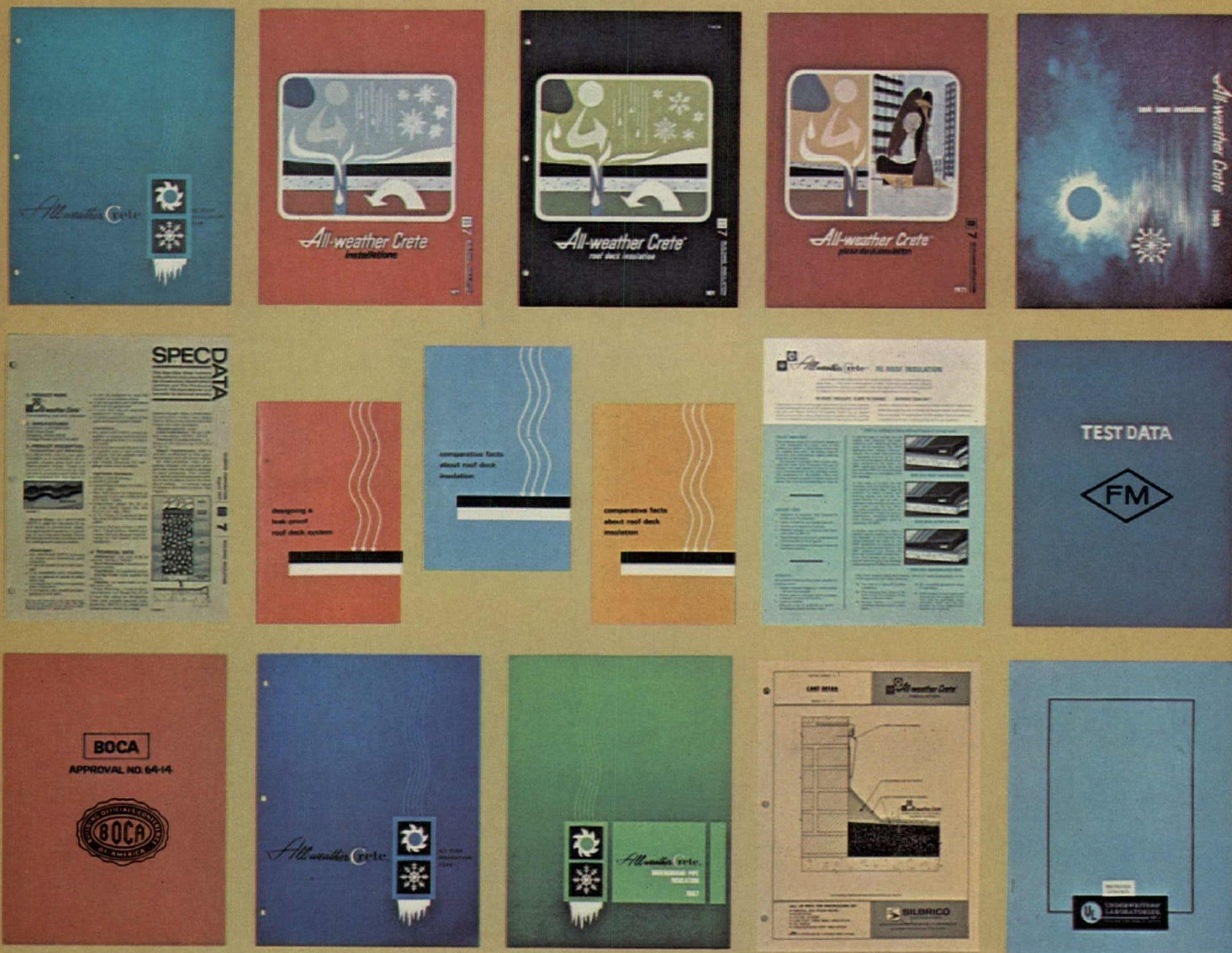


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**Books** continued from page 118

practice of the structural aspects of steel building design. The architect-authors examine the elements of structural design, assembly of components and the theoretical reasoning behind design decisions. It is assumed that the reader has a knowledge of the elementary principles of statics and strength of materials, although much of this is reviewed throughout the book.

Chapters include reactions, shear and bending moment; beams—bending and shear, deflection and design procedure; columns and struts; connections; framing of one-story building; continuous beams and frames; ultimate strength and plastic design. The final chapter forms a "design project," with a three-story commercial type building as the model, which is developed, analyzed and critical elements designed to bridge the gap between component and total building design. Architectural as well as structural drawings and related details are presented.

**Hospital Modernization and Expansion** by E. Todd Wheeler. New York: McGraw-Hill Book Co., 1971. 261 pp. \$22.50.

Functional planning methods to improve existing hospital facilities are offered in this book, ranging from the initial program to the completion of the project. Subjects investigated include the planning process, functional programming and the existing physical plant, directions for growth, schematic planning, modernization economics, the problems of phasing, funding and regulations.

**Principles of Turfgrass Culture** by John H. Madison. New York: Van Nostrand Reinhold Co., 1971. 420 pp. \$18.50.

The scientific basis of turfgrass culture is offered in this reference: anatomy, physiology, genetics, chemistry, ecology, nutrition and irrigation problems are discussed.

**Environmental Planning for Children's Play** by Arvid Bengtsson. New York: Praeger Publishers, 1970. 224 pp. \$17.50.

An international study of playgrounds in those nations where advanced solutions for play are in use. Factors considered include climate, housing, redevelopment of old areas, portable playgrounds, gardens, zoos, malls and play areas for adults. Well organized and illustrated.

## Documents

[The documents listed below are available from the associations and agencies cited. Request for such documents should be directed accordingly.]

**The New York Society of Architects' Building Code Manual.** Available from the Society, 101 Park Ave., New York, N.Y. 10017. \$17.50, plus tax \$1.05 and mailing charges \$1.50.

Updated hard cover bound book contains the New Building Code, amended to August 1970, plus all other important City Codes and ordinances.

**How to Care for Works of Art on Paper** by Francis W. Dolloff and Roy Perkinson. Boston: Museum of Fine Arts, 1971. 46 pp. \$2 plus handling and shipping charge of \$.50.

Believed to be the first general guide on the subject, this handbook was published by the Museum in connection with an exhibition on "The Conservation of Works of Art on Paper." Contents include an account of the evolution of papermaking, focusing on innovations affecting the [continued on page 134]

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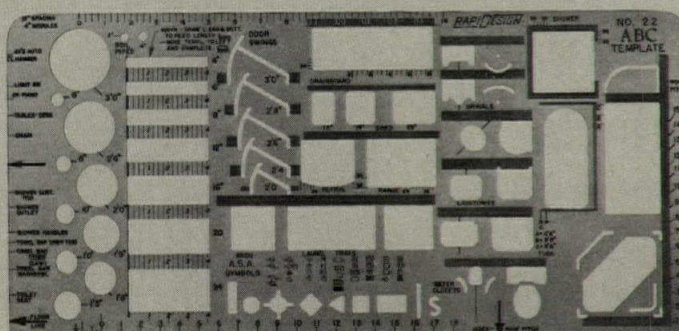


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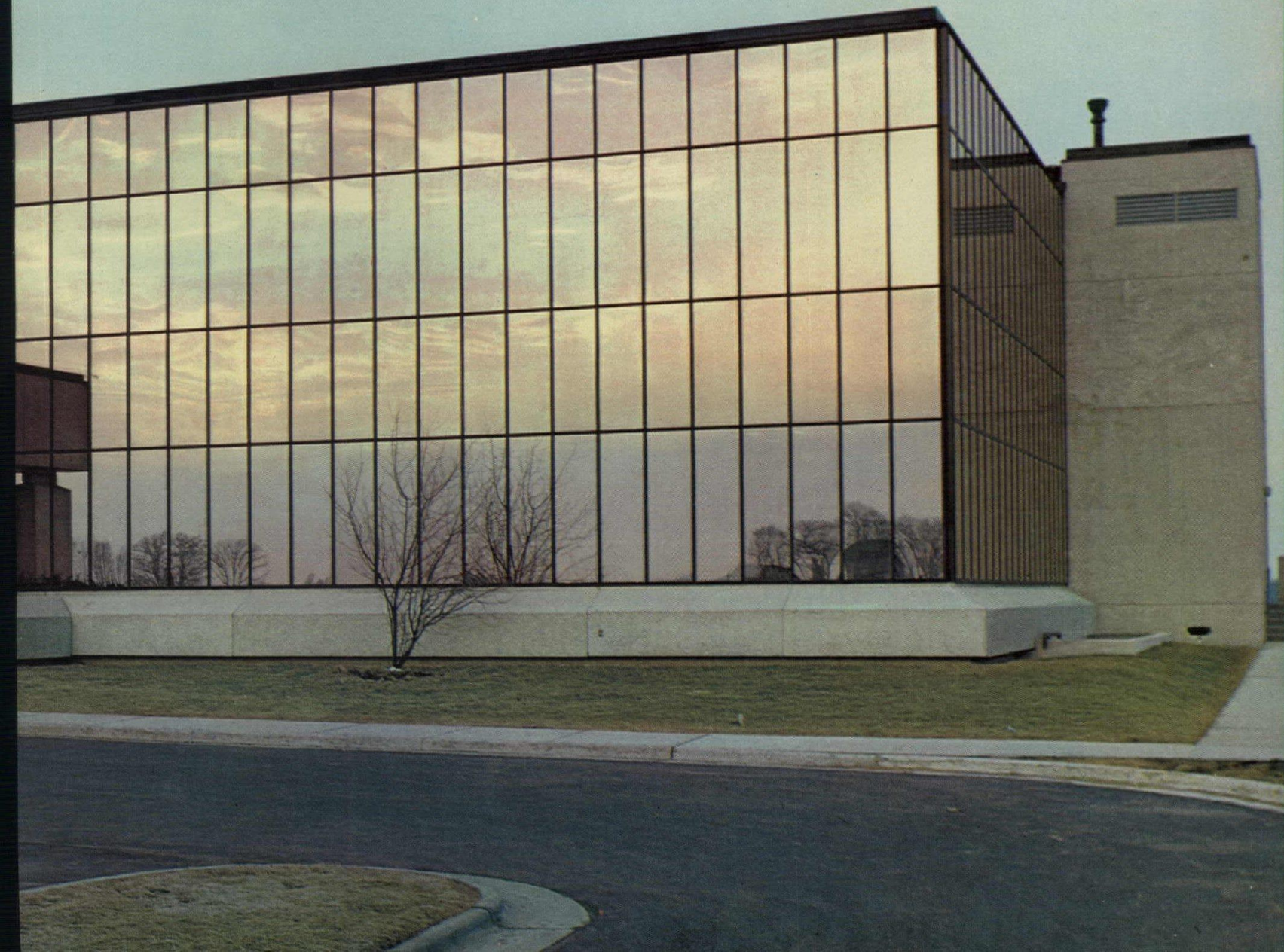
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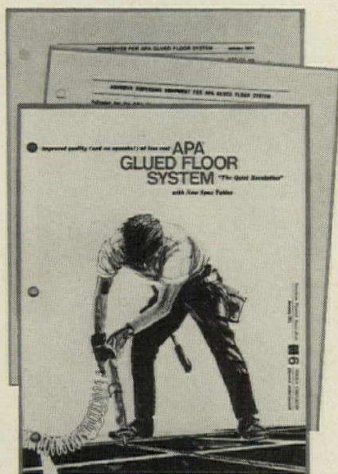
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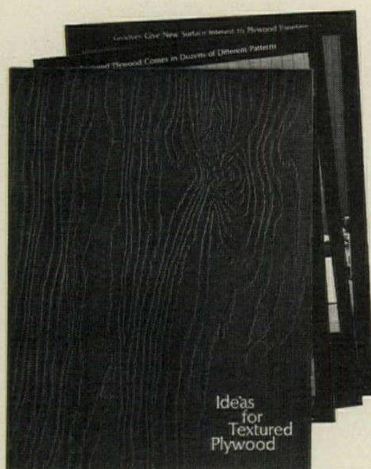
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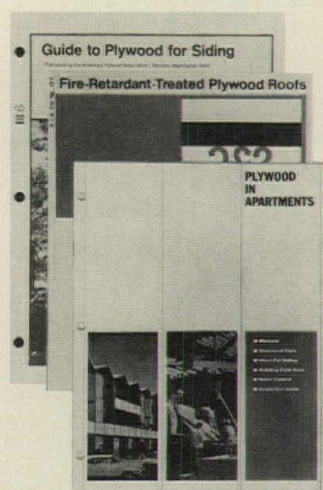
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**Plywood in Apartments Package.** The works on plywood walls, floors, roofs and decks. Span tables. Grade-use guides. 8 pages of sound control data. A new book on *Fire-Retardant-Treated Plywood Roofs*; Requirements, UL tests, insurance rates, code acceptance, details and specs. Plus *Guide to Plywood for Siding*.

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**Plywood Components in Church Architecture.** A guide to plywood in contemporary church architecture: photographs, design details, cost savings on folded plates, stressed skin panels, box beams, space planes.

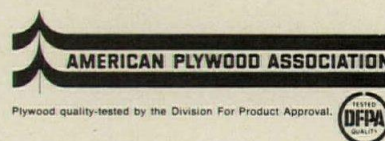
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**Architectural Case Histories.** Two, new, 4-page case histories are examples of plywood's potential for innovation design. 1. *Usdan Center for the Arts*, Huntington, New York. 2. *Killlearn Country Club*, Tallahassee, Florida.

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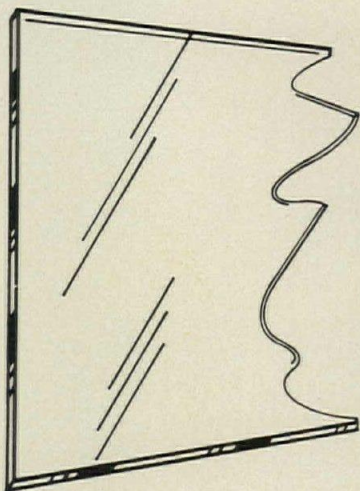
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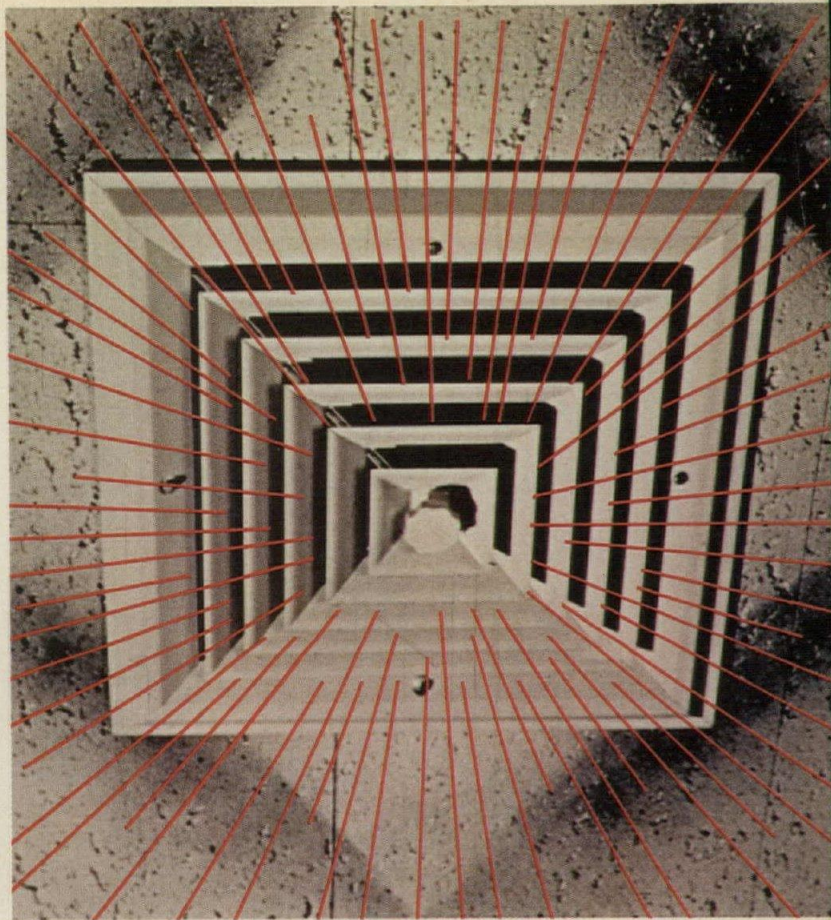
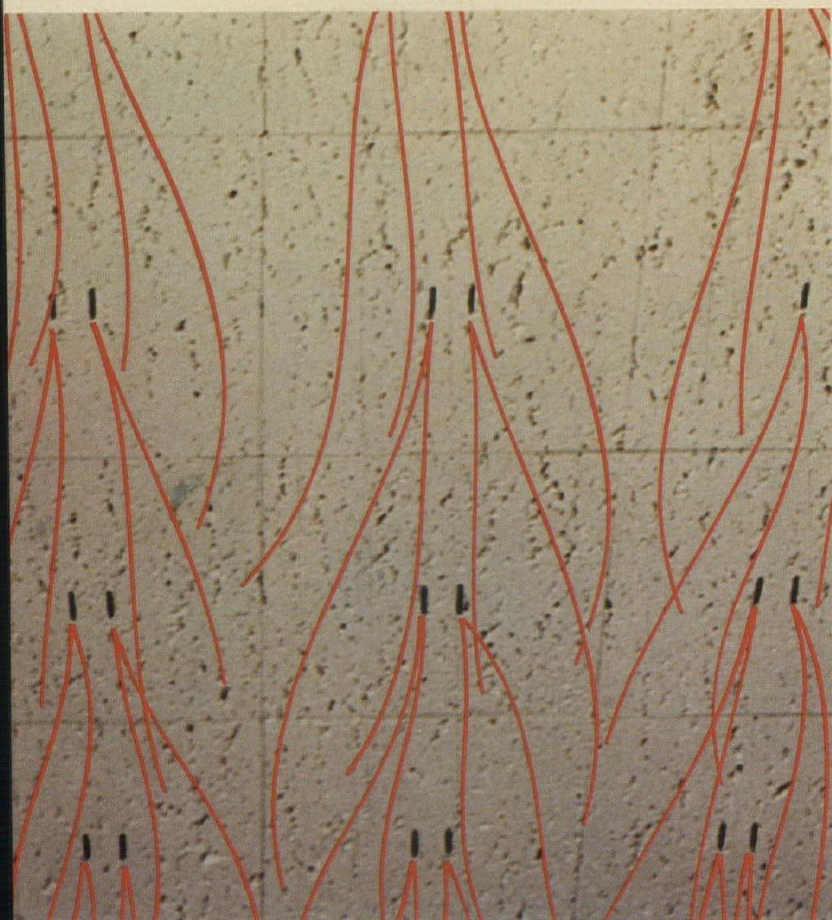
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**Books** continued from page 125

durability and consistency of paper; the "enemies of paper"; preventive measures against mold fading, paper pests, air pollution and other destructive agents; instructions for storage and handling; illustrations of how to mat and frame prints and drawings.

**Innovation and New Communities.** Princeton University School of Architecture and Urban Planning, 1971. 80 pp. \$3 plus \$.50 for postage and handling.

This is a conference report of the Princeton University Conference, co-sponsored by the School of Architecture and Urban Planning and the National Urban Coalition, held at Princeton University, Sept. 1970.

**Code for Safety to Life from Fire in Buildings and Structures (NFPA No. 101).** National Fire Protection Association, 1970. 232 pp. \$2.

Available from NFPA Publications Service Department, 60 Batterymarch St., Boston, Mass. 02110.

This 22nd edition of the Life Safety

Code covers construction, protection and occupancy features to lessen danger to life from fire, smoke, fumes and panic before buildings are vacated.

**Guide to Architectural Information** compiled and edited by Margaret Phillips. 90 pp. \$4.95.

Design Data Center, P.O. Box 566, Lansdale, Pa., 19446.

Information sources useful to architects, builders, engineers, students and librarians are described, indexed by title, subject and author.

**Non-reinforced Concrete Masonry Design Tables** compiled by Henry Toennies. 402 pp. \$9.95.

Available from National Concrete Masonry Association, P.O. Box 9185, Rosslyn Station, Arlington, Va. 22209.

Four different types of tables are presented in this book: "A" tables present allowable design loads that can be carried by the wall with different wall heights, load applications and concrete masonry prism strength; "B" tables present allowable vertical load on walls when the application of the load is such as to create tensile

stresses; "C" tables present combined loading, vertical and horizontal, on walls of various heights constructed with units of various prism strength; "D" tables present nonstructural data on walls. Twenty-three different wall constructions are covered by the design tables.

**Public Policy and Shoreline Landowner Behavior** by Raymond J. Burby, III and Shirley F. Weiss. Water Resources Research Institute, Center for Urban and Regional Studies, University of North Carolina at Chapel Hill. 1970. 126 pp. On request.

Report No. 38. Water Resources Research Institute, 124 Riddick Building, Raleigh, N.C. 27607.

This study, sponsored by the Office of Water Resources of the U.S. Department of the Interior, is concerned with the development process shaping recreational communities beginning to surround large multipurpose reservoirs in the U.S. By analyzing the factors involved in landowner decisions to hold, develop or sell shoreline land, an attempt is made to create an operational forecast model. Five reservoirs in North Carolina provided the field data.

[Continued on page 140]

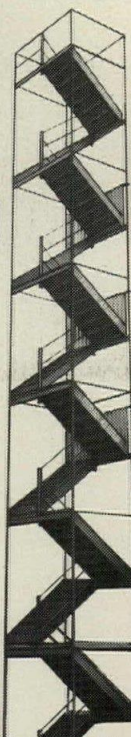
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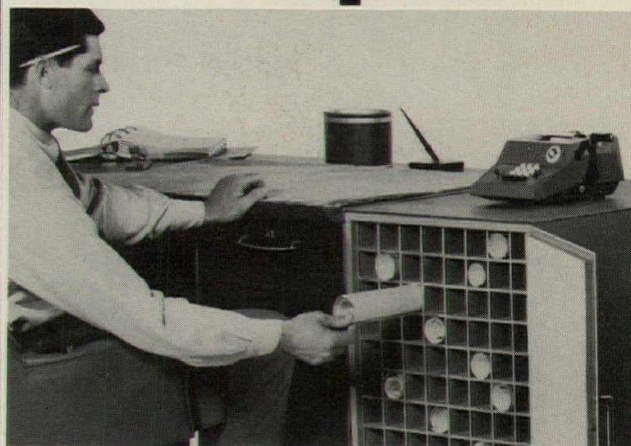
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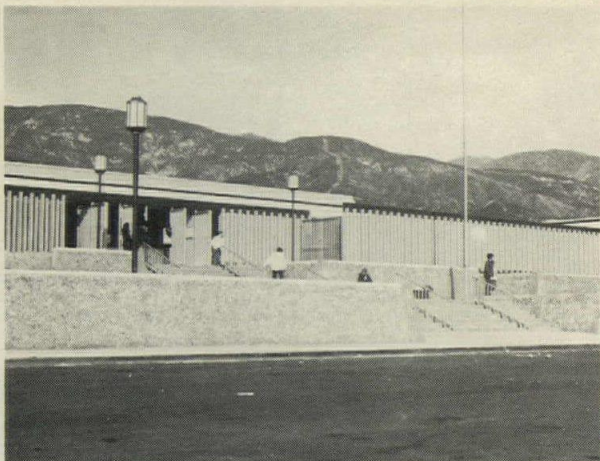


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#### Appointments

Hiam Barmack was elected president and chairman of the executive committee of Quinton-Budlong, Los Angeles-based planning, architecture and engineering firm.

Richard H. Wheeler, professor of architecture at the University of Cincinnati, has been invited to serve on the National Public Advisory Panel on Architectural Services under the U.S. General Services Administration.

Michael J. Kraus, AIA and Eugene R. Raczek were appointed associates of Hugh Stubbins and Associates, architects and planners of Cambridge, Mass.

Eugene Haberman was made a partner of Francisco & Jacobus, New York.

Earl Roy Wardrum, AIA has joined Ellerbe Architects, St. Paul, Minn.

Jaroslav J. Burbello, has joined the architectural staff of Gruen Associates of N.Y.

Ben Darmer now heads the building design and drafting departments of DeLoach and Campbell, Atlanta, Ga.

Robert F. Hastings, FAIA has been named chairman of the board and chief executive officer and Philip J. Meathe, FAIA, was elected president of Smith, Hinchman & Grylls Associates, Detroit.

Ian I. Harris and Donald Fairweather have been named associates of Wimberly, Whisenand, Allison, Tong & Goo Architects, Ltd. of Honolulu.

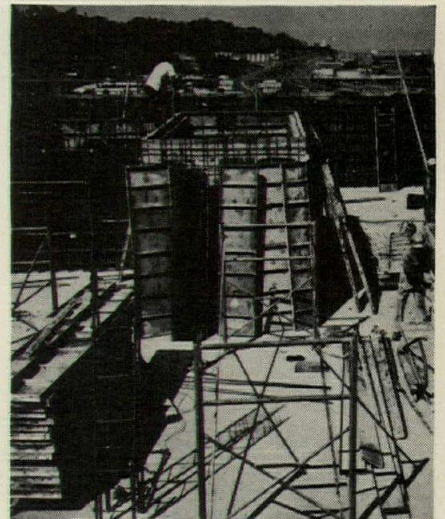
Philip A. Baewer, Atul Patel, and Richard Rigterink have become associates of Carl L. Gardner & Associates, Inc., Chicago.

Lindley M.F. Hoffman and Winston C. Perry, Jr. were made partners of Schofield & Colgan, Architects of Nyack, N.Y.

John A. Kreishman, Charles R. Nash and G. Stephen Scott were named associates of the firm of Anselevicius/Rupe/Associates, St. Louis, Mo.

[continued on page 143]

## IDEA, SIMPLE & INGENIOUS



Jack Ninteman, Project Manager, L. J. Ninteman Construction Co., San Diego, California, ganged one half of the 60 ft. long, 8 ft. high shear wall on the new Mission Valley Holiday Inn, San Diego. 2 x 6 ft. and 2 x 4 ft. Symons Steel-Ply Forms were used in a staggered sequence. The extra foot of formwork at top and bottom of the form gave:


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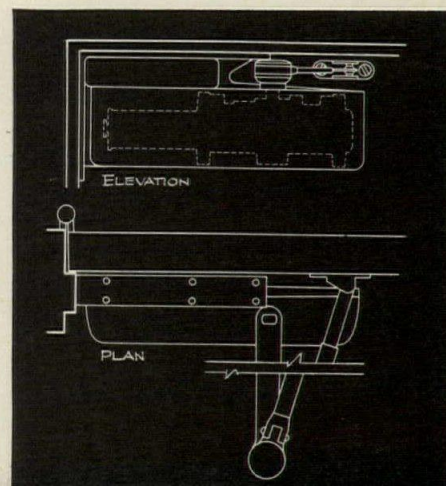
Administration Building, Davis County School District, Farmington, Utah. Architect: Stanley C. Evans, Salt Lake City, Utah.

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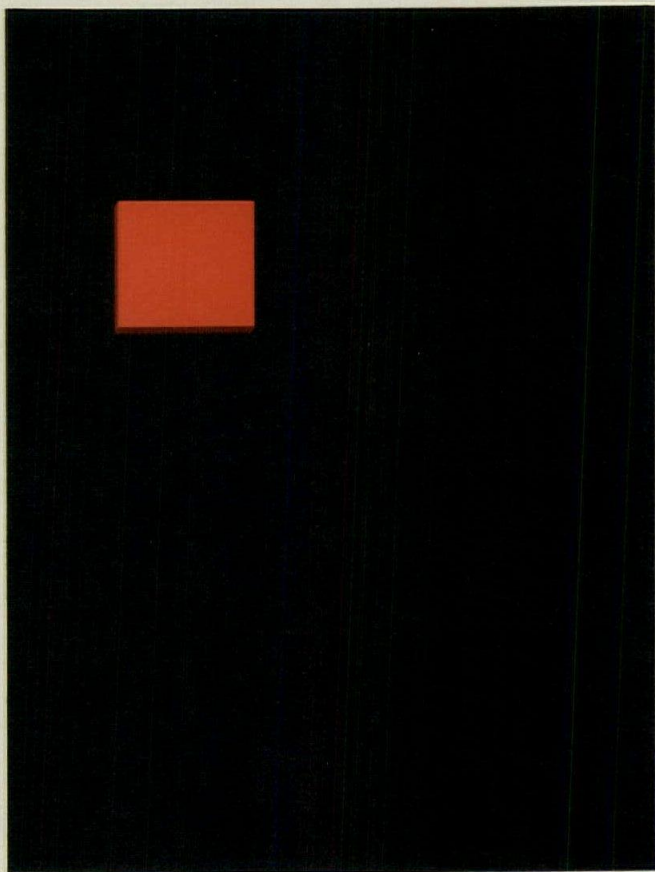
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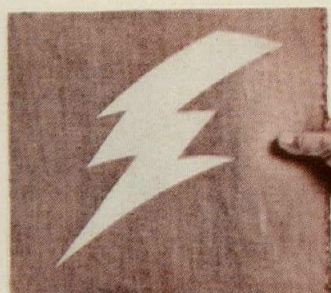
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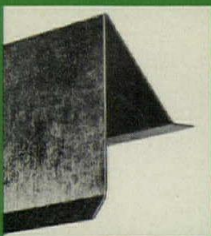


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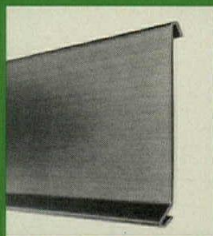
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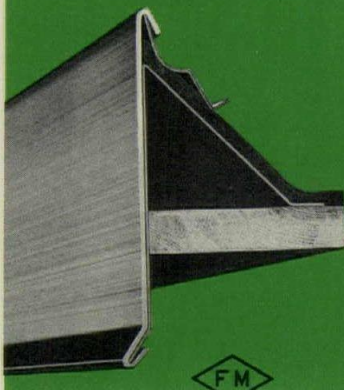
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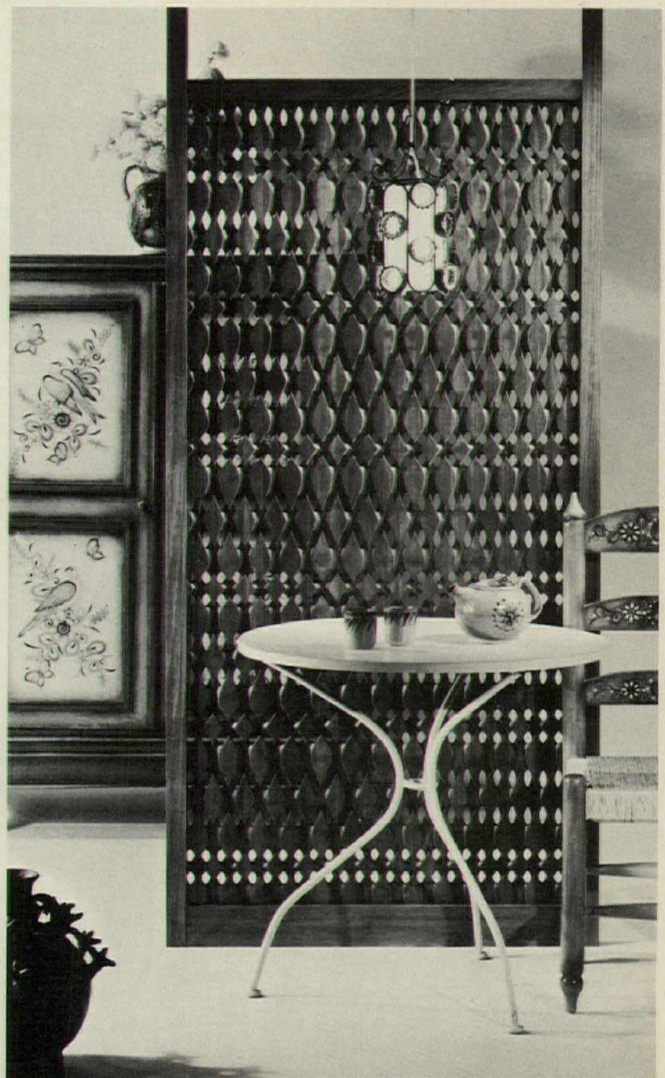
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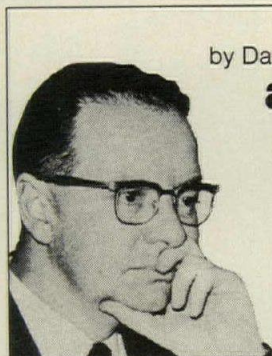
# A noted audio expert explains how ALTEC's training of sound contractors is absolutely "WITHOUT EQUAL".

Probably it just never occurs to most manufacturers that there are relatively easy ways of forging dealer loyalty and expertise other than just offering price and delivery. Or maybe most manufacturers just don't have the men to do the job — although if they can design and build the product, there must be somebody back there (or, as they'd have you believe, *UP THERE*) who knows how the thing ought to work, and maybe even how to fix it.

But the distressing truth is that only a handful of manufacturers seem to give a damn about the state of knowledge the dealer's personnel are in — just so long as they sell the product. And as a result, the level of professionalism among audio salesmen and (worse) servicemen is strictly curbside.

Having so griped at the industry in general, let me now hurl garlands of roses at the few — very few — people who do try to put something back in the way of teaching and maybe elevating the industry just a bit!

First of all, there's Altec Lansing. I suppose



by Dave Wilson

## audio shop talk

they may have always done so, but I just found out about it two years ago: their training of sound contractors is absolutely without equal. Every year they hold a series of training sessions across North America and in these sessions they teach so much about sound equipment, its design, installation, and adjustment that

the contractors who aren't involved in the program are hopelessly outclassed. Their training is so thorough, and the results in the field so good, that some Professional Engineers societies are beginning to recognize graduates. Minnesota was the first, I believe, registering three men as P. Eng.'s! And I'm not just talking about Acousta-Voicing — which, by itself, makes this training worth while — because the majority of Altec's contractors have not taken that training. Just the "regular" CE course puts a man in the driver's seat when he starts a sound job. And Altec has been thinking this way, and teaching for so long now, that I don't think any other sound manufacturer will ever catch up.

Article appeared in the January, 1971 issue of *electron* magazine. □ Reprint courtesy of *electron*.

As Mr. Wilson observed in his column in Canadian *electron* magazine, Altec is the only sound systems manufacturer with a perpetual training program for its contractors. Altec engineers hold seminars and "clinics" throughout the United States to update its field personnel in the latest techniques in the design and installation of quality sound systems. It is the only company in the world to offer its contractors computer-calculated system perfection. Shouldn't you learn more?



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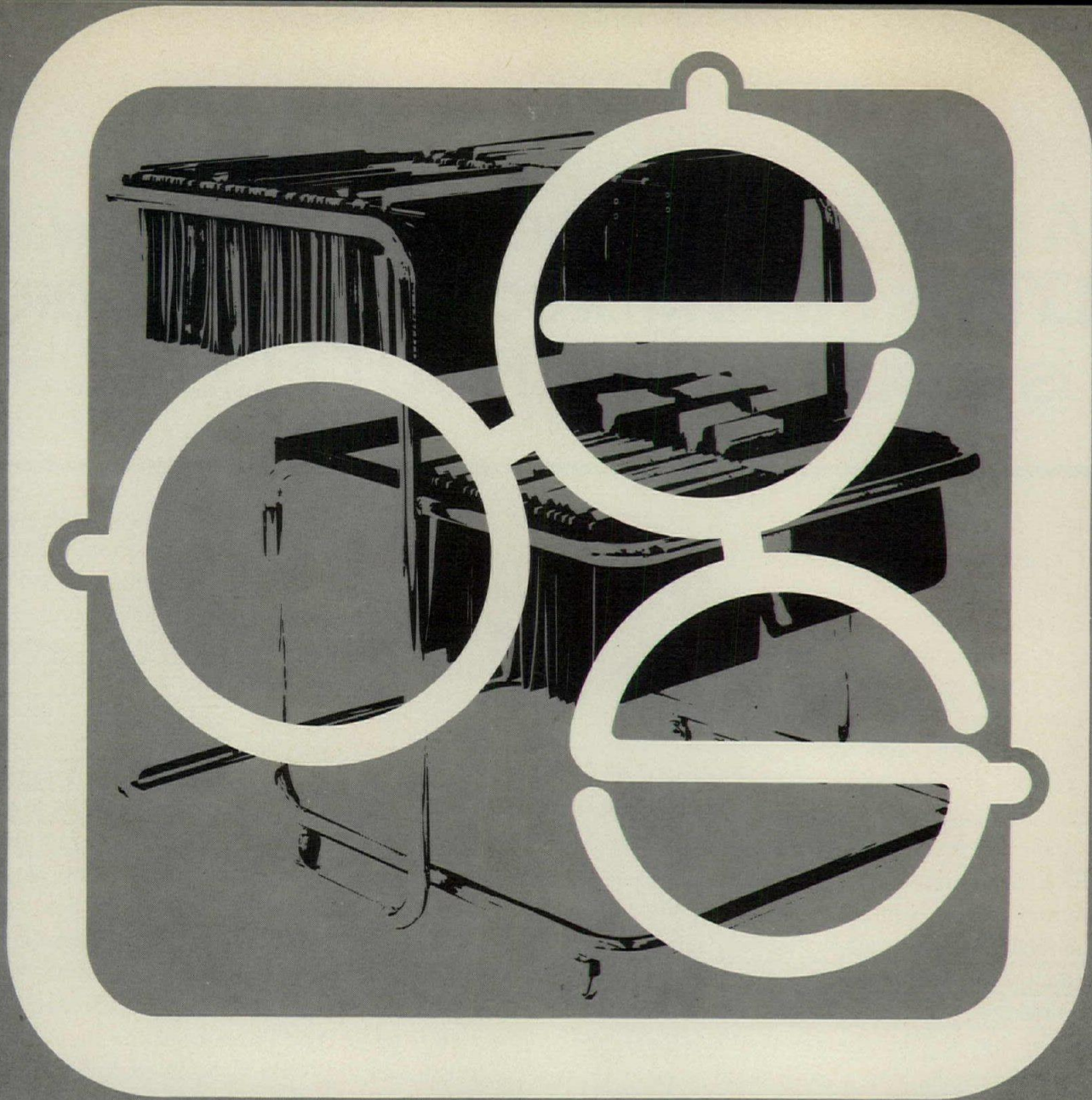
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Jeffrey L. Corbin, H. Robert Douglass, Truitt B. Garrison and Thomas A. Hooker were elected vice presidents of Caudill Rowlett Scott. James J. Johnson has joined the firm of Eberle M. Smith Associates, Inc., architects and engineers, as director of business development in Detroit.

Robert W. Hill, AIA, has been made a senior associate at The Ballinger Company, architects and engineers of Philadelphia. Joseph Archut, Frank J. Butler, Robert H. Rand and Ruth R. Richards were appointed associates.

Marvin Nadel has been appointed vice president of research and planning for Day & Zimmermann, Inc. of Philadelphia.

Key Kolb, AIA, has been promoted to president of OMNIPLAN Architects, Dallas.

Dawson F. Dean, Jr., George L. Hanna, R. Clark McDonald and Theodore A. Stolte are now vice presidents of Hertzka & Knowles of San Francisco.

Jacqueline Laverne was named director of design of ENVIRONMENTS INCORPORATED in Philadelphia.

#### New addresses

Samton Associates, Architects, 119 E. 18 St., N.Y.

Harland Bartholomew and Associates, 899 Skokie Blvd., Northbrook, Ill.

Caudill Rowlett Scott, Bradbury Building, 304 S. Broadway, Los Angeles, Calif. 90013.

#### New firms

Kenneth D. Maynard and C. Harold Wirum have formed Maynard & Wirum, Architects, 746 F St., Anchorage, Alaska.

John L. Turner & Associates, Architects-Engineers-Planners, 1200 Petroleum Building, Jackson, Miss.

Tallman and Tallman, Architects, First National Bank Building, Ithaca, N.Y. 14850.

Jay Fishman, Architect, office planning firm, 80-13 213 St., New York, N.Y. 11427.

INTERFORM, Planning and Design Ltd., 204 811A Seventeenth Ave., S.W. Calgary 3, Alberta, Can.

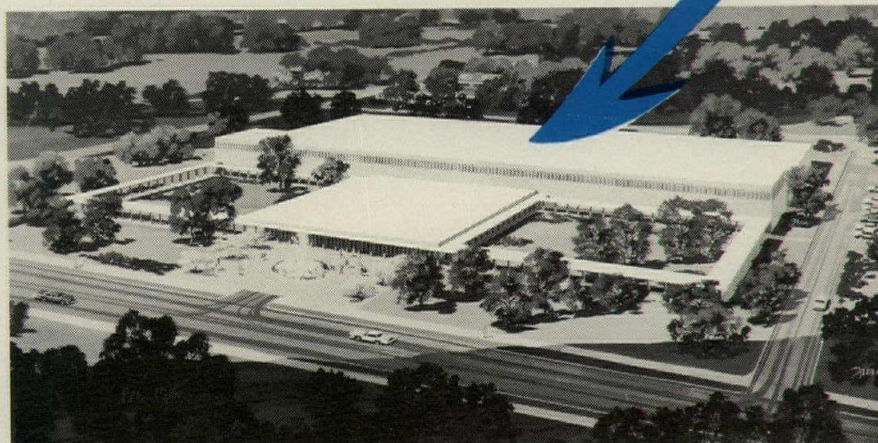
Pedriana Gustafson Partnership, Architects Environmentalists, 3535 N. Main St., Rockford, Ill. 61103.

#### Mergers and expansions

DeLoach & Campbell, architects, Atlanta, announce the formation of Design Concepts, an interior design firm.

Wm. B. Wiener, Morgan & O'Neal, Lufkin, Tex., announces the partnership of Hill, Wiener, Morgan & O'Neal.

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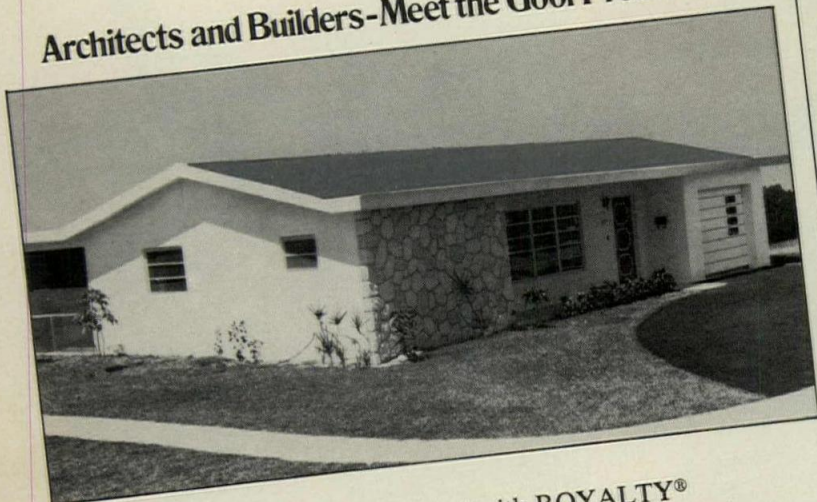
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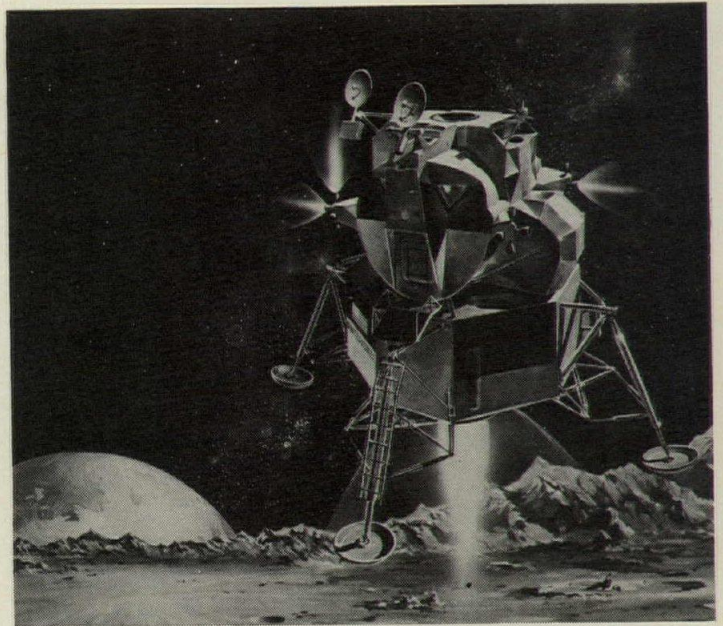
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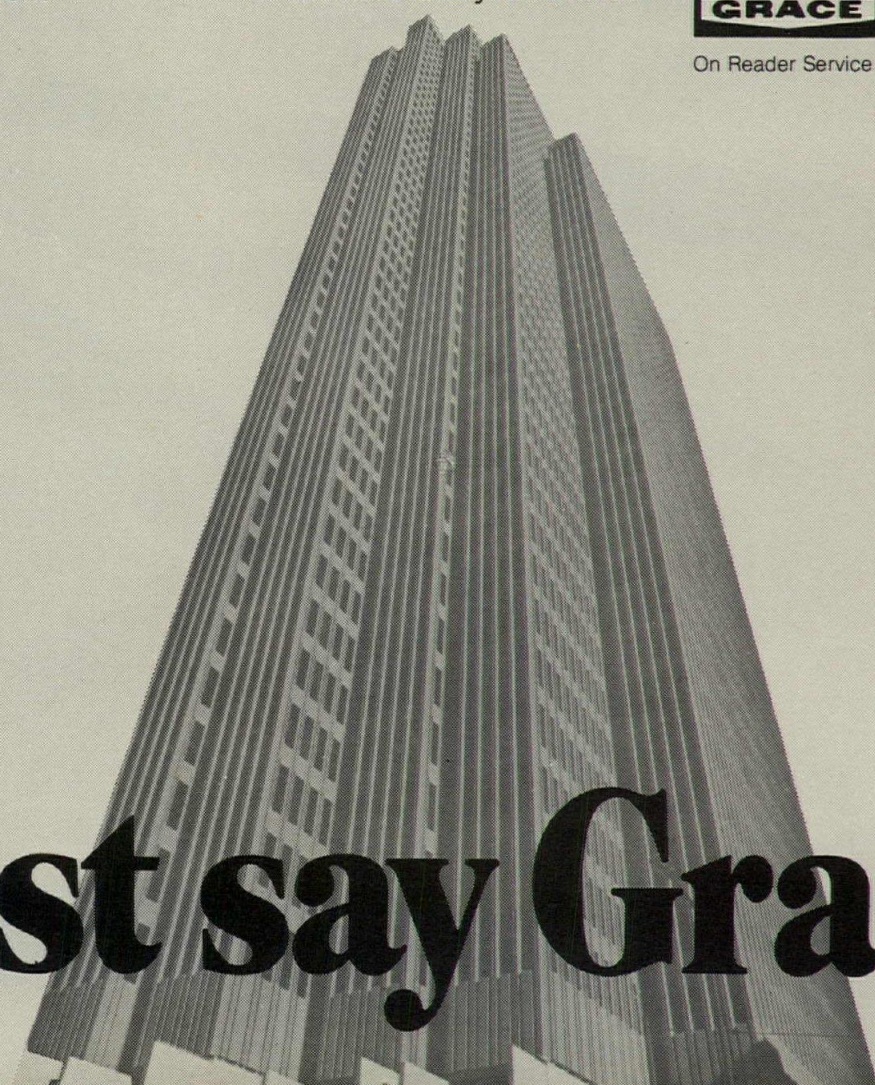
with fireproofing a steel-frame building, it can pay you to talk to the Grace-Zonolite man-on-the-job. When it comes to local building codes, specifications, and application techniques, he's the expert's expert.

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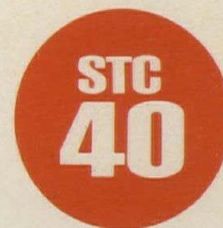
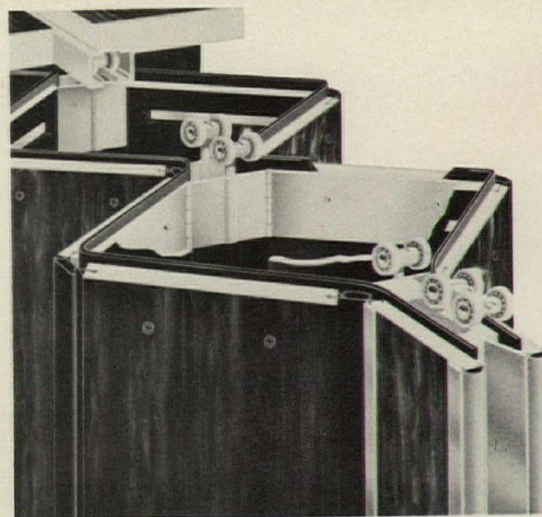
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Continued on page 150



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**LTV Ling Altec, Inc.** .....141  
J. Walter Thompson Co.

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**Duriron Co.** .....1  
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**Eastman Kodak Co.** .....19  
J. Walter Thompson Co.

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**Faber-Castell, A. W. Pencil Co.** .....145  
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Bozell & Jacobs, Inc.

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Motivation Dynamics

**Formica Corp.** .....45  
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Daniel & Charles, Inc.

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Wyse Advertising

**Grace, W. R., & Co. Zonolite**  
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**Harter Corp.** .....10  
J. G. Sullivan Advertising, Inc.

**Haws Drinking Faucet Co.** .....43  
Pacific Advertising Staff

**Hickman, W. P., Company, Inc.** .....140  
John H. Rosen

**Hillyard Chemical Co.** .....119  
Ayres & Associates, Inc.

**Holophane Co., Inc.** .....24, 25  
Adler, Schwartz & Connes, Inc.

**Home Comfort Products Co.** .....51, 52  
Hult, Becht & Heinrich, Inc.

**Infranor, Inc.** .....16  
Selwyn/Conway Advertising, Inc.

**Johnson Service Co.** .....Cover 4  
Hoffman-York, Inc.

**Jute Carpet Backing Council, Inc.** .....97  
Shaw & Associates, Inc.

**Kawneer Architectural Products** ...130, 131  
Garrison, Jasper, Rose & Co.

**KDI Paragon, Inc.** .....54  
Lloyd S. Howard Associates, Inc.



**Knoll International** .....101  
William C. McDade Inc.

**Koppers Co., Inc.** .....151-154  
The Advertising Center

**LCN Closers** .....137  
Alex T. Franz, Inc.

**Libbey-Owens-Ford Co.** .....104, 105  
Fuller & Smith & Ross, Inc.

**Limestone Products Corp. of America** ...143  
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**Lundia, Myers Industries, Inc.** .....135  
Hall, Haerr, Peterson & Harney, Inc.  
Advertising

**Matthiessen & Hegeler Zinc Co.** .....129  
Kenneth B. Butler & Associates

**Mo-Sai Institute, Inc.** .....108, 109  
David W. Evans & Associates

**National Gypsum Co.** ..... 95  
Fuller & Smith & Ross, Inc.

**Olympic Stain, A Div. of Comerco, Inc.** .. 56  
Kraft, Smith & Lowe

**Page Fence, Div. of Acco** .....106  
Reincke, Meyer & Finn

**Panelfold Doors, Inc.** .....147  
Bruce Agency

**Parker, S., Hardware Mfg. Co.** ..... 7  
Harry W. Graff, Inc.

**Pella Rolscreen Co.** .....17, 18  
L. W. Ramsey Advertising Agency

**Pico Safe Stairs Co.** .....134  
Marken Advertising, Inc.

**PPG Industries, Inc.** .....126, 127  
Ketchum, MacLeod & Grove, Inc.

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Frojen Advertising, Inc.

**Porter, H. K., Co., Inc.** .....149  
Ketchum, MacLeod & Grove, Inc.

**Rapidesign, Inc., Sub. of Berol** .....125  
Harry G. Willis & Associates, Inc.

**Rixson Closers div. of Rixson, Inc.** ..... 36  
Motivation Dynamics

**Rixson Inc. Firemark Div.** ..... 13  
Motivation Dynamics

**Royalty Designs of Florida** .....144  
Tinker-Pritchard Wood Associates

**R-Way Furniture Co.** ..... 35  
Geer-Murray, Inc.

**Sargent & Co.** ..... 38  
Hepler & Gibney, Inc.

**Shooting Equipment, Div. Kory Instruments, Inc.** .....125  
Moody & Harrison, Inc.

**Silbrico Corp.** .....124  
Elving Johnson Advertising, Inc.

**Sloan Valve Co.** ..... 99  
Reincke, Meyer & Finn, Inc.

**Soss Mfg. Co.** .....114  
Brewer Associates

**Southern California Gas Co.** ....18WB, 18WC  
Doyle, Dane, Bernbach, Inc.

**Southeastern Westbrook Elevator Co.** ....136  
Jack M. Doyle Advertising, Inc.

**Steelcraft Mfg. Co.** .....138  
Keller-Crescent Co.

**Swedlow, Inc.** ..... 2  
Ralph H. Jones Co.

**Symons Mfg. Co.** .....136  
J. W. Evans, Inc.

**Trinity Warmtone Div. General Portland Cement Co.** ..... 49  
Glenn Advertising, Inc.

**Trinity White, General Portland Cement Co.** .....Cover 3  
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**Turner Ltd.** ..... 26  
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Campbell-Mithun, Inc.

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Young & Rubicam, Inc.

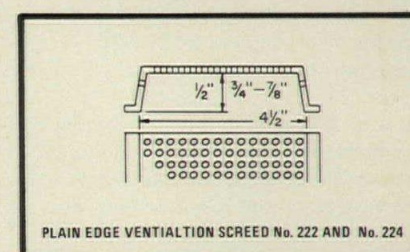
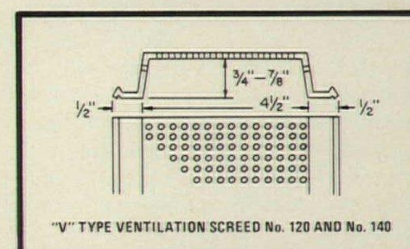
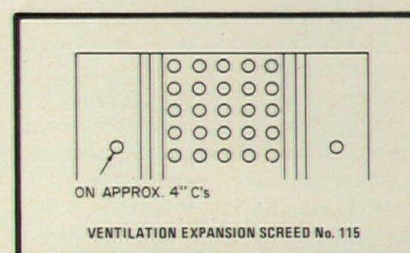
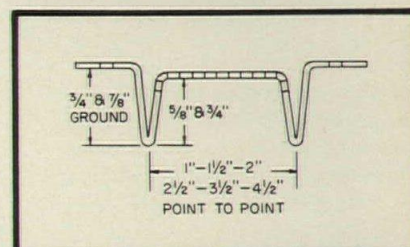
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Sweet & Co.

**Weyerhaeuser Co.** .....111  
Cole & Weber, Inc.

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Continued from page 147

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**Architect:** AIA, CSI, California registration, 25 year professional experience, now completing specifications for \$240 million nuclear laboratory complex. Prior design and construction superintendence experience: Educational, hospital, industrial, commercial, high-rise hotel, highrise residential and military facilities here and abroad. Seek employment with varied responsibilities including specification writing. Reply to Box # 1361-241, *Progressive Architecture*.

**Architect:** After 15 years in private practice successful architect wishes to relocate because of unstable political climate. Wants to invest, buy shares or join in active partnership where own record of excellent performance in design and promotion can be of value. Broad experience in design, management and production of residential, multi-family hi-rise and commercial work. Winner of design awards and author of nationally published articles. Large metropolitan areas preferred. All replies strictly confidential. Box # 1361-228, *Progressive Architecture*.

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