

# AIA JOURNAL

FEBRUARY 1970





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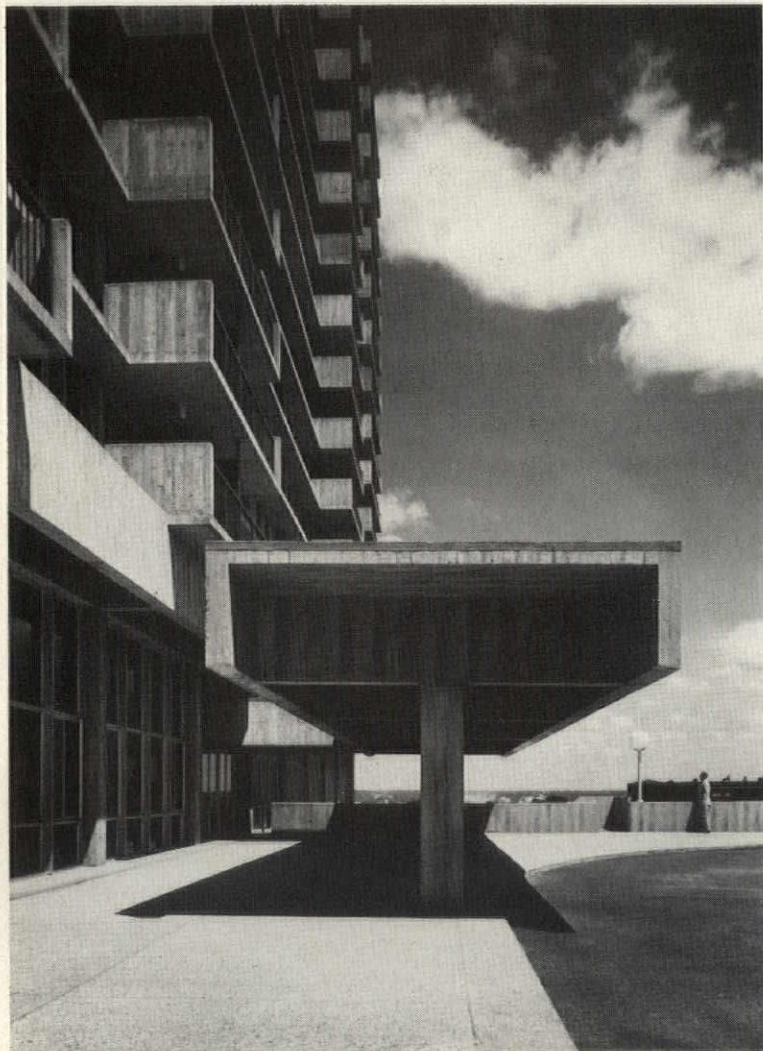
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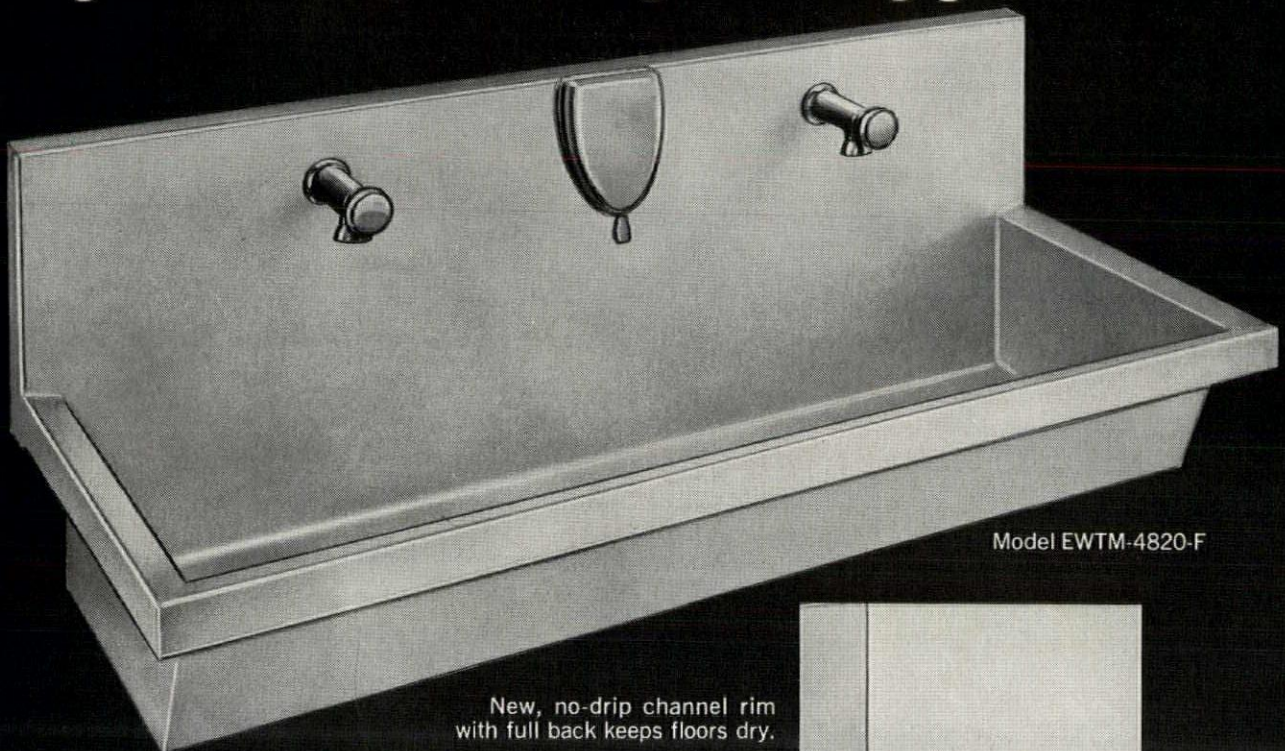


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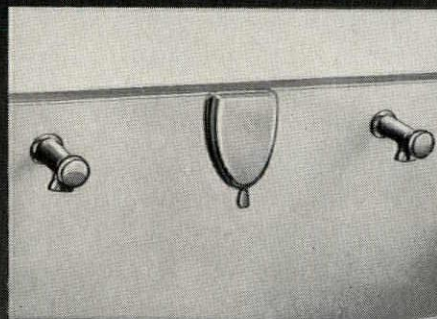
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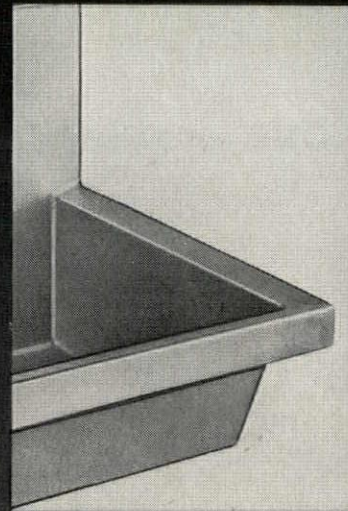


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Main auditorium at the College of Technology in Otaniemi near Helsinki, Finland. By Alvar Aalto and his wife Elissa. Photo Ingervo.

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VOL. 53, NO. 2

## comment and opinion

AN ARCHITECT TELLS IT AS IT IS: Mountains of words have been, and are being, written about our changing profession; likewise the Institute itself is going through a period of change as it explores new ethics, studies causes behind urban problems, examines more realistically the business side of practice and, for the first time in its more than 100-year history, is engaged in an advertising campaign. Most architects, however, litter up their reports, their papers and their speeches with a lot of gobbledygook and clichés. But once in a while an architect addresses his colleagues so succinctly and clearly that even the layman understands. Such was the case when Thomas A. Bullock, AIA, talked before the East Kentucky Chapter AIA last year. To the Houston architect, a partner in Caudill Rowlett Scott, all this change means:

1. That the AIA should not be a trade union or social club. Instead, the profession must be made up of individual architects practicing mostly together in small and large teams, dedicated to solving problems in a creative way, developing capabilities unmatched by other professions, and based on very expert research and work, whether urban studies, building types, programming, planning or computers.

2. That architectural firms are not alike, never have been and will be less alike in the future. The AIA standard documents were never intended to imply a standard architect. Instead, I believe we should stress our differences and broaden the profession by encouraging more practitioners to extend their skills into new areas of practice. There is strength in diversity.

3. That individual practitioners must invest in research and development to increase their skills—and to survive.

4. That we must communicate the knowledge gained by new experience to others. An openness in practice would strengthen the total profession.

5. That no more is the urban field an "if" concern to architects. It IS our concern, both the large and small city.

6. That we will develop the skill to manage time and money as well as we have developed skill in design.

7. That, due to changes in our society and the world, the process of solving problems will become as important as the solution itself. No longer can we be leaders in the art of preconceived design solutions—solutions arrived at before analysis is made as to whether the project is to be executed or not. In the future, the evaluation of a completed project will not only take into account what is built, how it looks at a given time, how fine a structure it is but, more importantly, what effect it has. (My partner, Herb Passeur, is convinced of this and says the architectural profession should be in the business of developing a process rather than a product.)

8. That, as our clients are demanding more and better service, so are our students. There is no way the architect can abdicate his obligation to educating architects. This must be our first priority, even before continuing education. There must be a way to transmit techniques of changing practice to the architectural schools. There must be as much emphasis placed on technology, process, programming, management and systems approach as has been—and still is—devoted to design. As much as we want to shout that design is everything, it is really only one part of it. There must be teachers with experience and ability in these other parts to match the expertise in the design laboratories.

Tom Bullock's eight points make sense in our book.

ROBERT E. KOEHLER

## NEXT MONTH

"For architects and facilities planners, the two-year college offers problems and challenges that, if not unique, are certainly different. In few other sectors of higher education do you find whole campuses and even multicampuses being planned and developed in one full swoop, often within the space of months rather than years." So writes Edmund J. Gleazer Jr., executive director of the American Association of Junior Colleges, in the March issue. His review of this exploding movement is accompanied by plans and photographs of the winning projects in the initial Community and Junior College Design Awards program, of which the Institute is one of the sponsors.

It's Expo time—March 15 is the opening date—and the first to be held in Asia is sited in the rolling Senri Hills near Osaka, just three hours away from Tokyo by superexpress. Kenzo Tange has used the grounds as a sort of laboratory to experiment with new concepts in city planning. What is in store for fair-goers is suggested by a portfolio of models and construction shots.

Also next month: a professor of city and regional planning takes a good hard look at low cost residential real estate as he debunks "The Myth of the Slumlord"; a California architect describes, step by step, his office's "design system" for producing contract drawings, thereby eliminating to a great extent the archaic practice of redrawing identical elements for site plans and buildings; and the package deal is explained and explored in a brief piece reprinted from the Australian magazine *Architect*.

## ASIDES

The article in this issue entitled "The Office Environment People Prefer" points up to the ever-growing importance of the behavioral scientist in the field of architecture and interior design. The study on which its contents is based was carried out by Dr. Lawrence Wheeler who has undertaken many psychological investigations for Ewing Miller Associates, an architectural-planning-engineering firm of which he is an associate.

The office in Terre Haute, Indiana, has had, for the past nine years, a continuing program of behavioral research to implement and improve its design decisions. Here is one example cited by Dr. Wheeler:

"An early problem concerned the complex office operations in a set of trucking-company terminals. Several were to be built, and the different managers, having different backgrounds in the trucking industry, each wanted a considerably different type of office arrangement. Our position was that the job functions in the offices of all the terminals were probably substantially similar and that there should, therefore, be an optimum office design applicable to all.

"On this basis, we undertook systems analysis in terms of flow of communication among the various job functions in several trucking offices. We were able to show that despite differences in management style, there was an important degree of similarity among the operations of the offices we studied." □

### ACKNOWLEDGMENTS

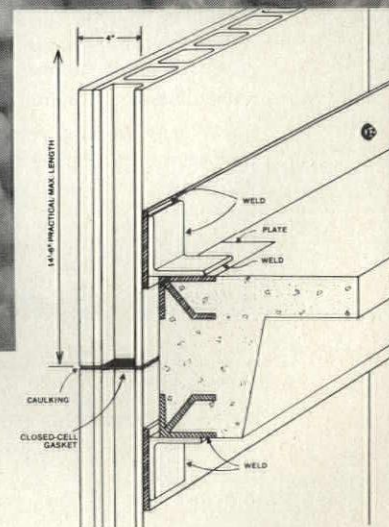
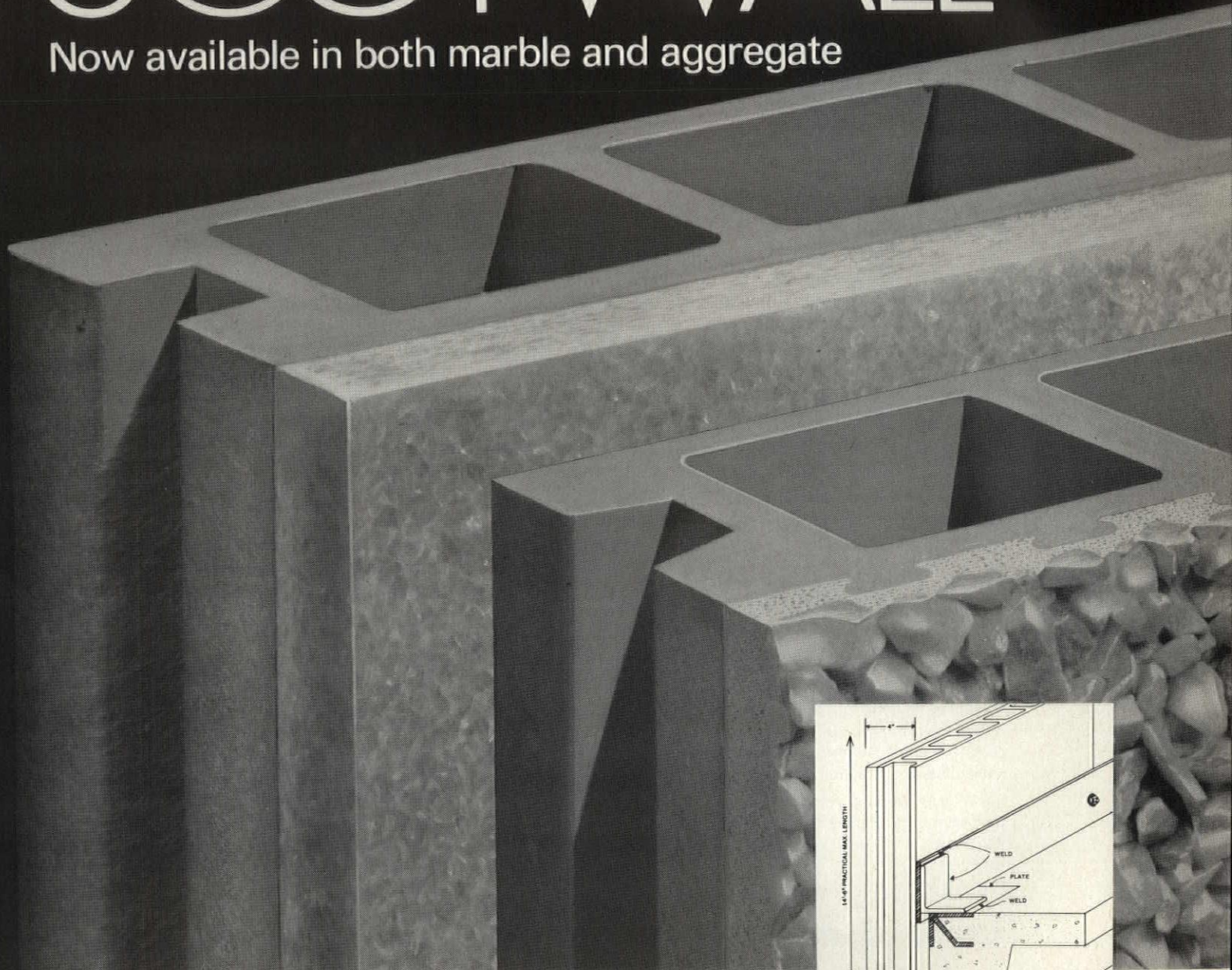
10—center, Construction Photography  
26—above, Ed Roseberry  
39—left, Billbrona  
41—Phokion Karas  
45—second from below, Hastings-Willinger & Associates  
45—below, Bill Engdahl, Hedrich-Blessing  
54, 55—Gregory H. Lawson, The Perkins & Will Partnership  
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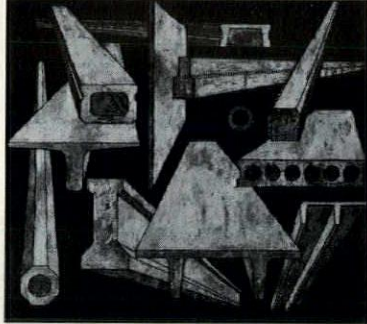
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**Purpose** of the PCI Annual Awards Program is to recognize excellence in design using precast and/or prestressed concrete.

**Attention in judging** will be given to the use of precast and/or prestressed concrete to achieve aesthetic expression, function and economy. Importance is placed on the use of the structural system as an expression of design intent and to enhance the function of the project.

Interesting methods of systems integration will also be recognized as will ingenuity in the use of materials, methods and equipment to reach an outstanding solution.

**Bridges** will be judged as a separate category.

**Any kind** or type of structure in the United States or Canada using precast and/or prestressed concrete may be entered. Structures completed within the last three years, or those that are substantially completed now, are eligible for this year's program.

Because of broad diversity in the nature of problems offered to architects and engineers, no first place Award will be made, but all Awards will express equivalent recognition of a high level of excellence.

**ELIGIBILITY:** The Awards Program is open to all registered archi-

ects and engineers practicing professionally, and government agencies, in the United States, its possessions, and Canada, except Directors of PCI and all Active Members and their employees.

**SUBMISSION OF ENTRIES:** Entries must be made by the designer of record. An entry shall consist of the following:

1. The first page of the entry will be a "fact sheet" stating the following:

- A. Type of project.
- B. Size in total square footage, or in the case of bridges—the length.
- C. Number and dimensions of precast components and prestressed components (and whether the latter are pretensioned or post-tensioned).
- D. Special design features you wish emphasized for the purposes of judging.
- E. Date structure was completed or is scheduled for completion.

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4. Design computations and specifications if they show to a greater extent the design aspects of the entry.

5. Anonymity of entries will be preserved throughout the judging. A sheet giving the proper name of entry, type of structure and location, names and addresses of architect, engineer, and owner, and the date of completion shall be sealed in an envelope affixed to inside back cover of the entry.

All the above to be bound in ring or other type binder, approximately 10" x 12". **Entries to be received not later than July 1, 1970**, at the Prestressed Concrete Institute, 205 W. Wacker Drive, Chicago, Illinois 60606.

**NOTIFICATION OF AWARD:** Notification of Awards to entrants will be made as soon as practicable after judging is completed.

**OWNERSHIP AND PUBLICATION OF ENTRIES:** All entries and all material submitted with entries shall become the sole property of PCI.

Since one of the purposes of the PCI Awards Program is to encourage new and advanced architectural and engineering approaches in the use of precast or prestressed concrete, the Prestressed Concrete Institute shall have the right to make all entries and all material submitted with the entries available through publication and dissemination editorially, or in advertisements in its own or other publications. This shall include the right to publish photographs and names of any and all Award recipients without compensation.

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# outlook

## VISTA Architects and Planners Seen As Staff Aids to Design Centers

The Chicago convention saw the launching of a number of AIA activities that, taken en masse, have been called the professional responsibility program. One of the major budget items set up for the 1970 program was the allocation of \$30,000 to provide materials, promote and raise money for community design centers.

What is a community design center? It is any place—unused ghetto storefront or AIA chapter office meeting room—where people concerned with their neighborhood but who are too poor to hire an architect may go for “architectural aid.” Such help is offered to individuals, groups or communities in nearly the same sense as lawyers offer legal aid.

There are two types of community design centers: those that are endemic to the particular area, growing up from within the neighborhood itself, and those of an extrinsic nature which are staffed by professional and student volunteers from outside.

A great deal of the AIA effort directed toward CDC includes the matching of available help with cities that need it most. Under the direction of 24-year-old Steve Cram, an ex-Veterans in Service to America volunteer, three groups—students, practicing and retired architects, and other professionals in the design fields—are being recruited to join VISTA and will be funneled where needed most.

The AIA effort will focus on recruitment of recent architectural graduates.

## AIA's 1970 Gold Medalist Fuller Goes 'One Step Beyond' His Geodesic Domes

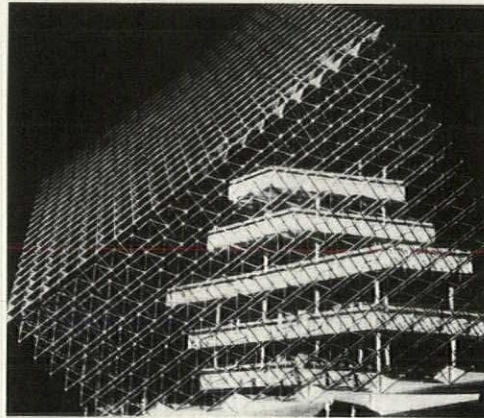
When R. Buckminster Fuller receives the AIA's Gold Medal at its Boston convention this June, he will become the first non-architect to be honored with the Institute's highest award. He already holds honorary memberships in the AIA and the Royal Institute of British Architects.

Fuller, who as a scientist, engineer, lecturer and author is the recipient of 20 honorary doctoral degrees ranging from humane letters to architectural engineering, designed the highly acclaimed US Pavilion for Expo 67 (AIA Honor Award, '68) and 10,000 other geodesic domes which have been built in 50 countries around the globe. He presently is involved in the construction of a new massive cube—which he calls “one step beyond” the geodesics—for the South Carolina Tri-centennial, due to open in Greenville this April.

Formally known as the Piedmont Center, the huge structure which is taking form on the summit of Roper Mountain is basically a cube standing on one end. Inside are five terraced slabs which depict, through a series of

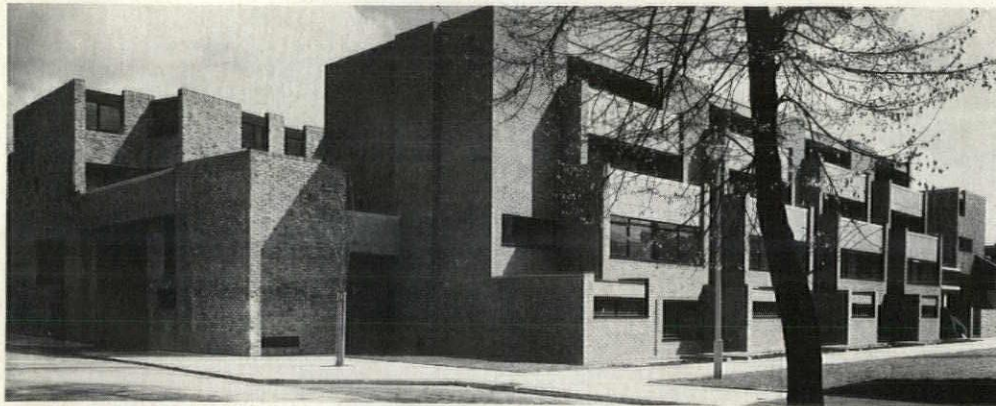
dramatic juxtapositions, the story of South Carolina, “now and beyond.”

The exhibition itself is the work of Kissiloff & Wimmershoff, Inc., a New York industrial design firm also in charge of implementing the pavilion's theme throughout.

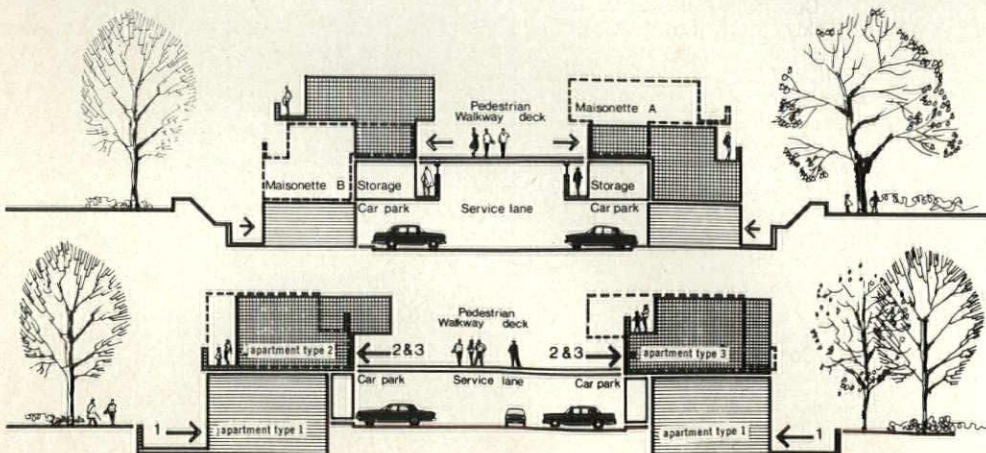


Fuller's terraced slabs within massive cube.

## Washington Studies Britain's Low-Rise System as Solution to Slum Problem



English “high deck” housing (above, center) and US version (bottom).



Can a British housing scheme be transplanted in the nation's capital to help rebuild its slums? An answer to that question is being sought by the Architects' Coalition, a consortium formed by two District of Columbia firms—one white and one black—and a third from England under a \$15,000 Ford Foundation grant awarded by the Reconstruction and Development Corporation.

The Washington firms of Brown-Wright-Mano and Sulton & Campbell, which already have underway a project employing a new concept in mixed-income, federally financed housing developments, have joined with Higgins, Ney & Partners of London, a firm that has been successfully rebuilding deteriorated sections in its home base.

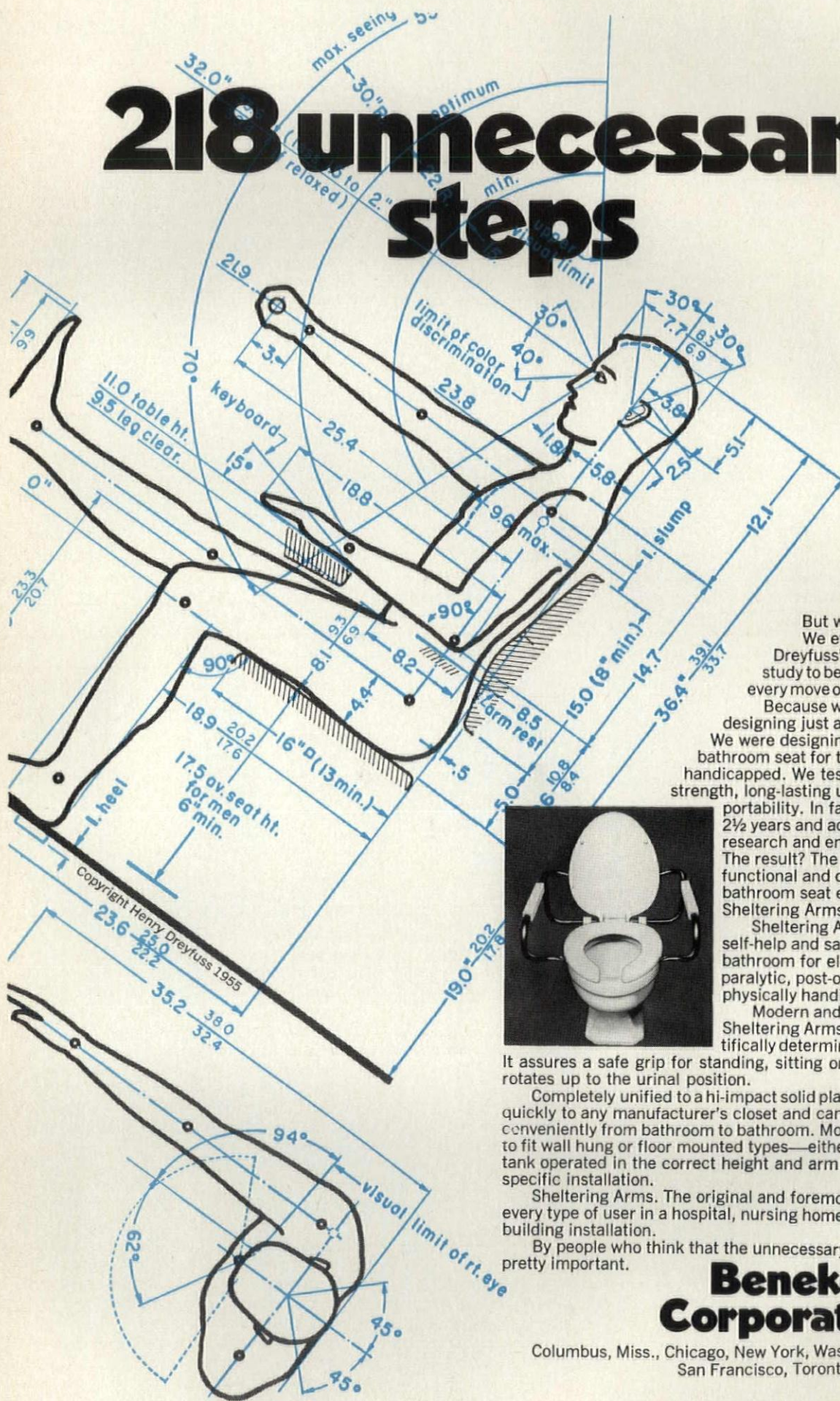
The funds will be spent to determine the cost of reproducing a “high-deck” housing project in the District, including a comparison of costs, building codes and community acceptance in the two countries.

Developed by H. Cassius Higgins of the London firm, the basic plan of the high-deck scheme is keyed to a raised plaza between two rows of apartment housing, with parking underneath. On the street side there would be two-story apartments with front doors slightly below grade; over them would be two more floors of apartments but with their front doors opening on the plaza.

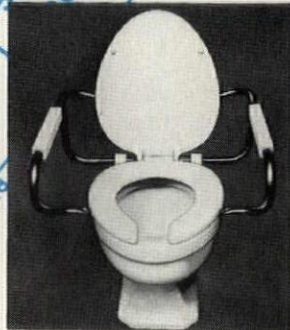
The project is planned to be built in stages so that a minimum of moving is required among the residents. An area may be “infiltrated” by new housing gradually.

*continued on page 14*

# 218 unnecessary steps



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High-deck housing was first built in a re-developed portion of London where a prototype for 34 families was completed in the spring of 1968, and that complex is now housing 120 more families. The units may be one or two stories and may have any number of bedrooms.

"This design system allows a wide potential in density range and is particularly adaptable for deteriorated townhouse sections of American cities," comments Higgins, who currently is filling the chair of director of the Center of Housing and Social Environment at the University of Virginia.

"It is possible to house 330 persons per acre and still leave an allowance for roads,

sidewalks, shops, meeting rooms, day-care centers and stores," Higgins continues. "The advantages of 'repeat construction,' normally associated with high buildings, can be utilized also in the less costly low-rise construction."

Meanwhile, Capitol View Plaza, by the two Washington architectural firms, is coming out of the ground in the northeast part of the District. It will ultimately furnish homes for 2,000 persons of low and moderate income levels.

Joseph Burstein, assistant counsel for the Department of Housing and Urban Development, calls Capitol View "the only comprehensively planned development in the country that combines the various HUD programs to create a mixed economic-level, home-ownership and rental complex. It includes within

it public housing for the elderly, public housing for home ownership (for the first time in Washington) and subsidized moderate income housing under FHA 221 (D)(3)."

When completed, the project also will include a shopping center, a school containing 40,000 square feet of continuous space on the shopping plaza level in an apartment building, playground areas and other neighborhood facilities.

### Gulledge Gets Bigger Role in Housing Production as HUD Revamps Itself

With the announcement of a major organizational overhaul of the Department of Housing and Urban Development, Secretary George Romney has moved to streamline management and boost productivity by the combining of related functions and the decentralization of responsibilities.

Of particular significance to the architectural profession is the establishment of Assistant Secretary for Housing Production, a post

#### HUD Initiates Newsletter

A biweekly publication called the *Newsletter* has been issued by HUD, reporting on events in the housing and urban fields. It is available from the Superintendent of Documents, US Government Printing Office, Washington, D.C. 20402, at a subscription rate of \$2.50 per year; foreign, \$3.25.

which has gone to Eugene A. Gulledge who recently became FHA Commissioner and Assistant Secretary for Mortgage Credit.

Gulledge, former president of the National Association of Home Builders, continues as FHA Commissioner in addition to his new position.

In a message to HUD's employees, Romney noted that the present departmental structure promotes a general lack of cohesiveness and efficiency by its arrangement of relatively restricted, and many times isolated, program areas. HUD's structure "reflects an accumulation of separate bureaucracies, created by independent legislative enactments over the years, rather than the well-planned functional alignments," Romney said, adding, "Our task is not to reorganize, but to organize for the first time."

Major responsibilities grouped at the higher echelon, besides housing production, are metropolitan planning and development programs; upgrading of the model cities program; and urban renewal and housing management programs.

A number of HUD field offices will be established under the jurisdiction of regional offices, the number and area of these field offices to be determined by such variables as available work force, volume of workload and the need to assure continuity of ongoing programs.

Some Federal Housing Administration insuring offices will become part of the area facilities, and those not incorporated into area offices will continue to carry out present

*continued on page 22*

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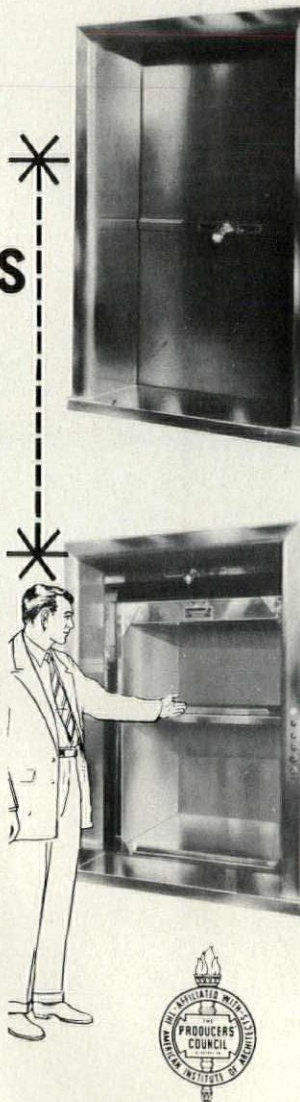
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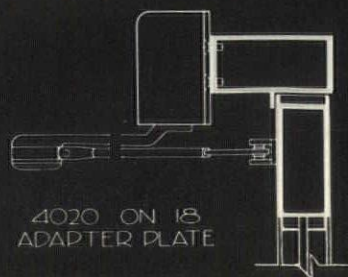
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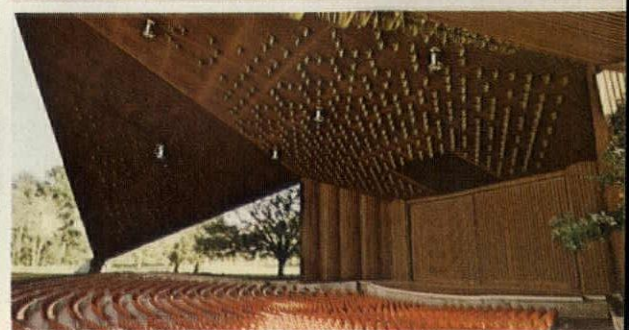
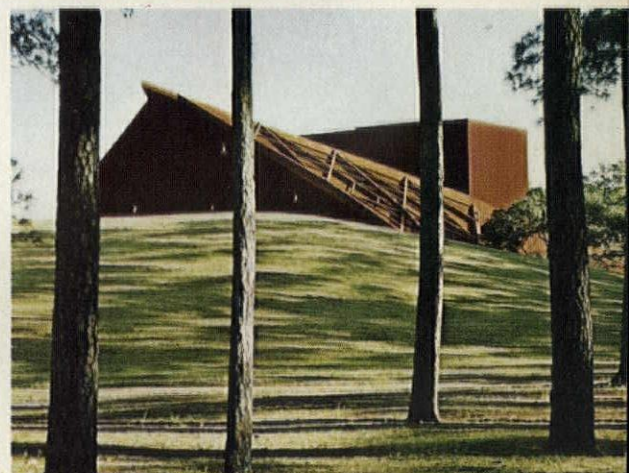
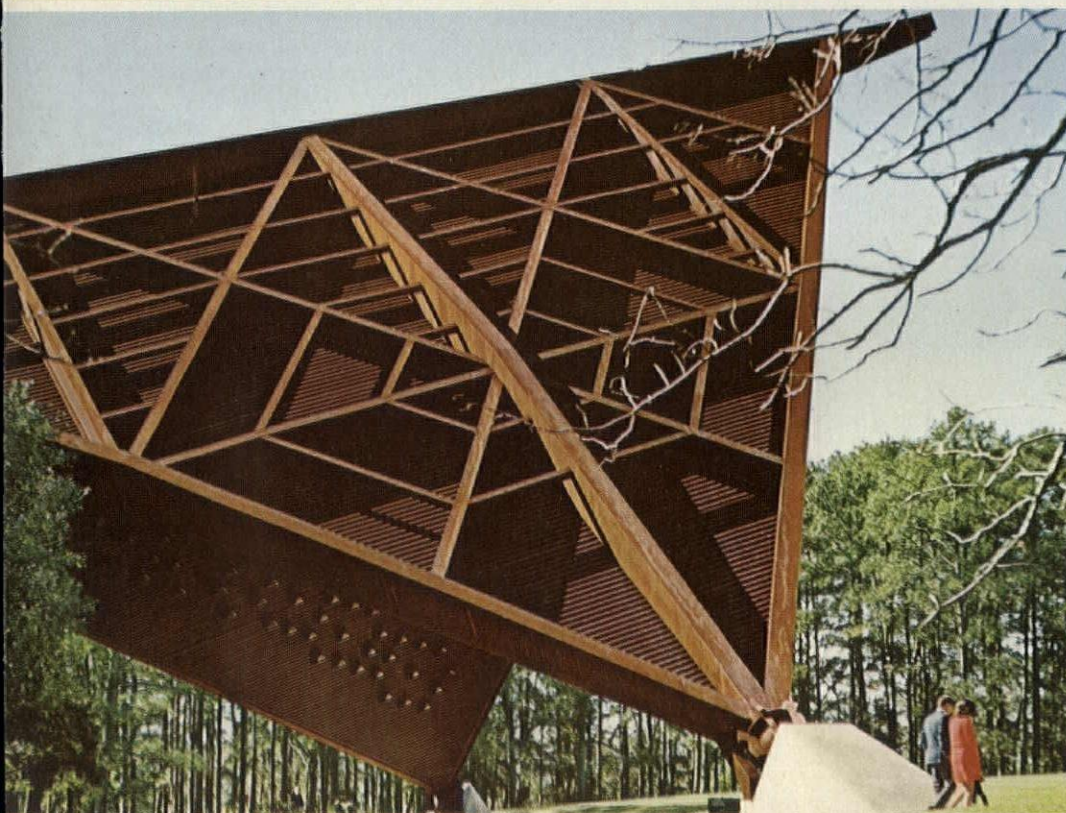
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outlook from page 14

functions but will be placed under jurisdiction of regional offices.

The new field structure will be adjusted to the impending changeover from seven to ten regional offices.

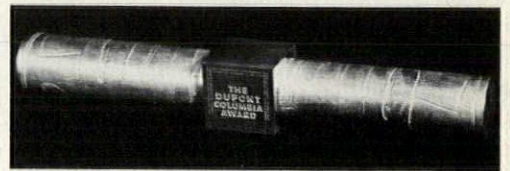
The new organization of the Washington headquarters will be completed within a month or two.

In the field, the new regional offices and an initial group of HUD offices will be put into operation by September, with additional area offices being added later.

## Broadcast Journalists Are Honored With Silver Sculpture by Kahn

Winners of the new Alfred I. duPont-Columbia University Awards in Broadcast Journalism are the possessors of a silver sculpture designed by Louis I. Kahn, FAIA, with artist Stephanie Scuris as his collaborator.

In describing the design, Kahn says in part: "The surface of the scroll has imprinted on it hands in offering. The tie cube is slightly bigger than the diameter of the scroll which affords a base allowing the scroll to lift



Louis Kahn's 12-inch long silver sculpture.

slightly above the surface upon which it rests in its horizontal and receiving position."

"On the cube embracing the stamp of the award is the following etched statement of Edward R. Murrow: 'This instrument can teach, it can illuminate; yes, it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise, it is merely lights and wires in a box.'"

Among Kahn's latest commissions is the Paul Mellon Center for British Art and British Studies at Yale University, for which construction will begin in the spring of 1971. It will form the most comprehensive center of British culture outside the British Isles.

The Philadelphia-based architect also is the subject of the 26th publication in the Architecture at Rice series entitled *Louis I. Kahn: Talks with Students* (Rice University, 1969).

## Virginia's Architectural Students Find More Than Classrooms in New Home

As students at the University of Virginia's School of Architecture get settled in their new building, they anticipate a chance to emphasize practice as well as theory. For one thing, they will have the use of a tunnel to test the abilities of their models to withstand wind.

The students will even be able to mix their own concrete and control the heating system as they gain practical experience with materials and methods.

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continued on page 26

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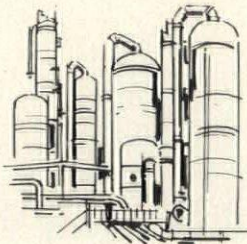
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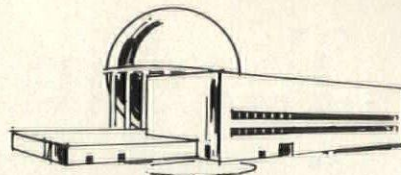
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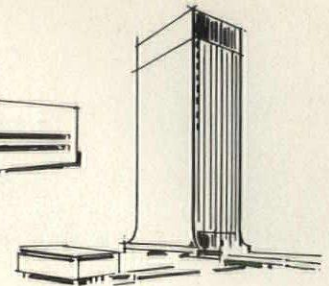


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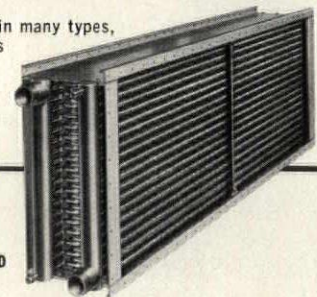


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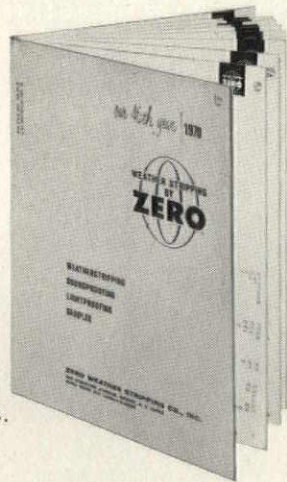
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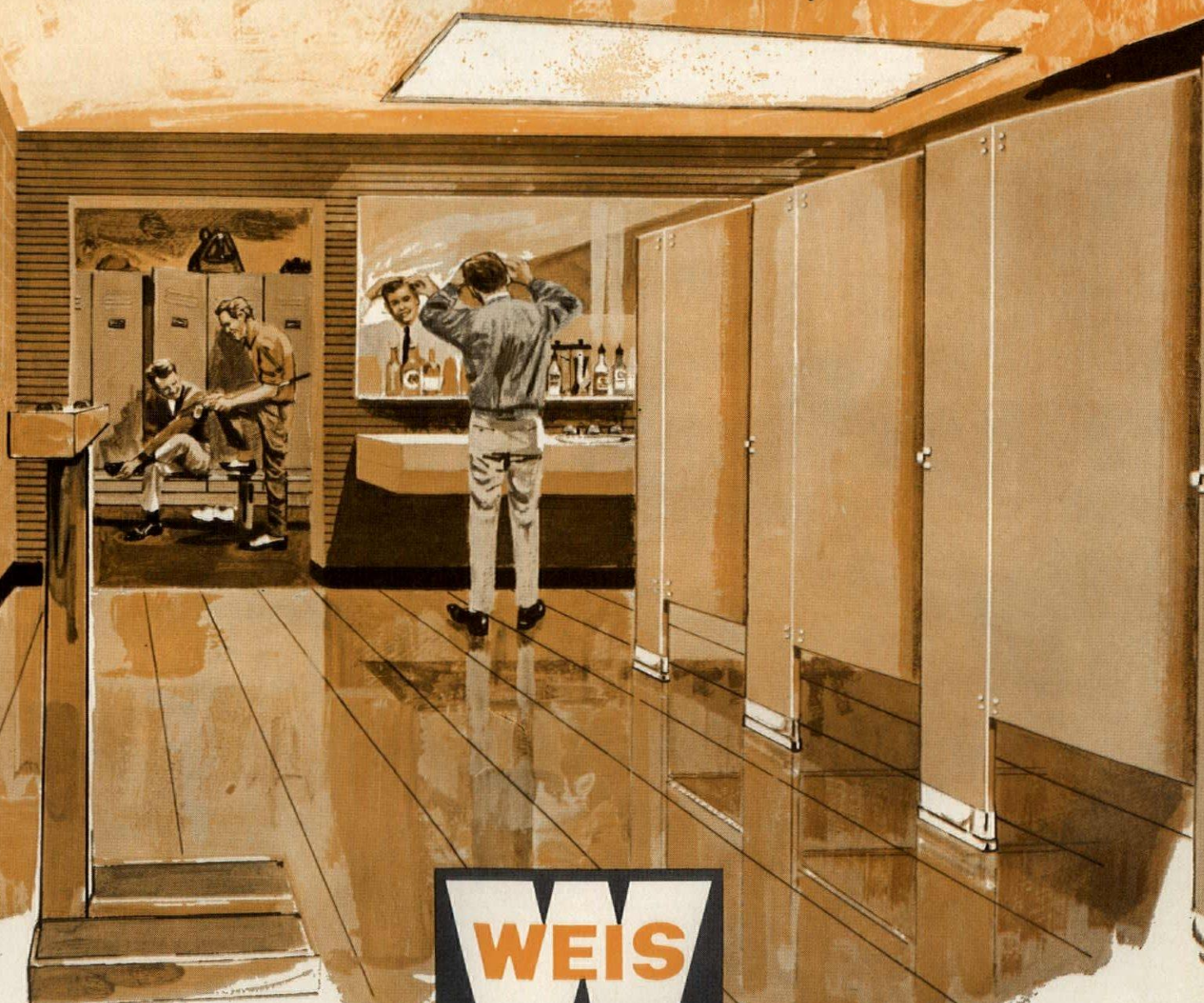
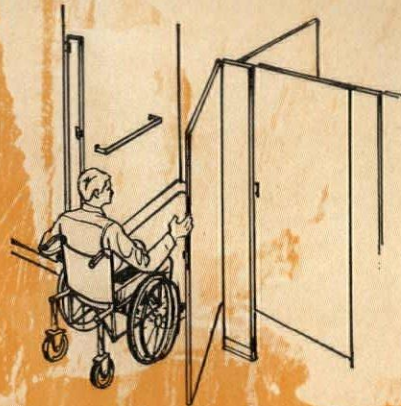
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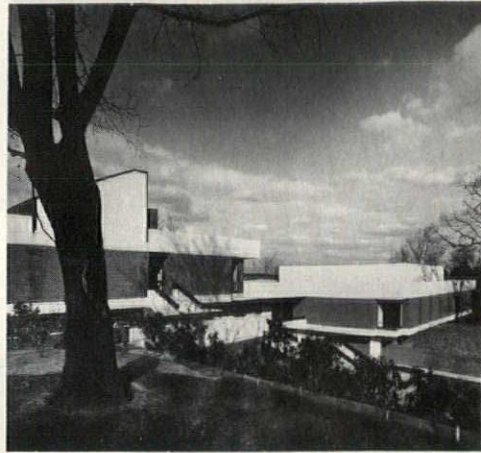
*Circle 141 on information card*

crete building are the two classrooms where professors will be able to demonstrate such environmental elements as light, temperature and air flow.

"These environmental laboratories are probably the most comprehensive at any architectural school in the country," says Dean Joseph N. Bosserman, AIA.

The building is the work of Pietro Bel-luschi, FAIA, and Kenneth DeMay, AIA, of Sasaki, Dawson, DeMay Associates, Inc., As-sociated Architects for Design, Watertown, Massachusetts.

The Department of Art, formerly housed in Cocke Hall, is moving to the quarters pre-viously used by the School of Architecture.



University of Virginia's new School of Architecture building; at right, the drafting room.



### Sullivan's Ornamentation Embellishes Chicago's Centennial Medallion

Louis H. Sullivan's system of ornament is being perpetuated in the form of a bronze medallion, 3 inches in diameter, to commemorate the 100th anniversary of the Chicago Chapter AIA. It has been struck from dies cast from a medal originally done by the architect for the Northern Oratorical League of the University of Michigan in 1895, with only the lettering changed.

"It is generally conceded that no one has ever succeeded quite so well as Sullivan in



The Chicago Chapter AIA's bronze medallion.

developing such a unique personal system," a Chicago Chapter spokesman points out.

First offered during the national AIA convention in Chicago last June, when the host chapter celebrated its centennial, the medallion is now available through the chapter's offices at 101 S. Wacker Drive, Chicago 60606, at \$5 each, plus 75¢ postage and handling. Illinois residents should include 25¢ state sales tax.

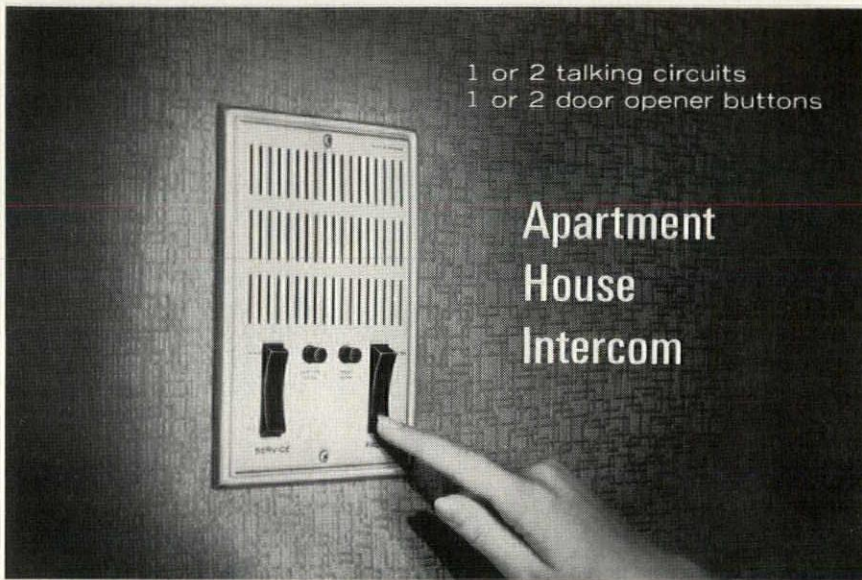
### Engineers Under Attack Discuss Concern For Environment During National Week

Architects, it seems, are not the only profes-sionals to hear from the public about their responsibilities to mankind. The nation's en-gineers increasingly have come under fire as a result of a trenchant broadside of public wrath aimed at the technological assault that threatens to destroy the US environment.

A five-member panel which met as part of the winter meeting of the National Society of Professional Engineers drew attention to recent attacks and outlined steps it could take to meet and eliminate them in the future.

One of the steps resulted in the theme for the 20th annual National Engineers Week, slated for February 22-28, honoring

*continued on page 30*



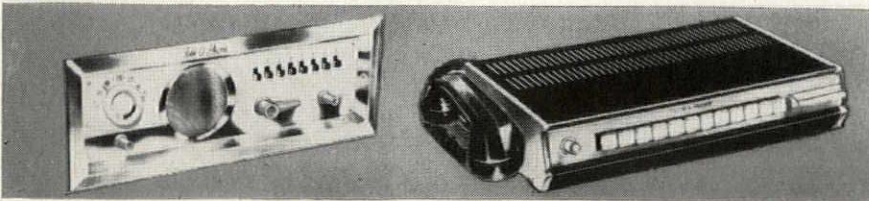
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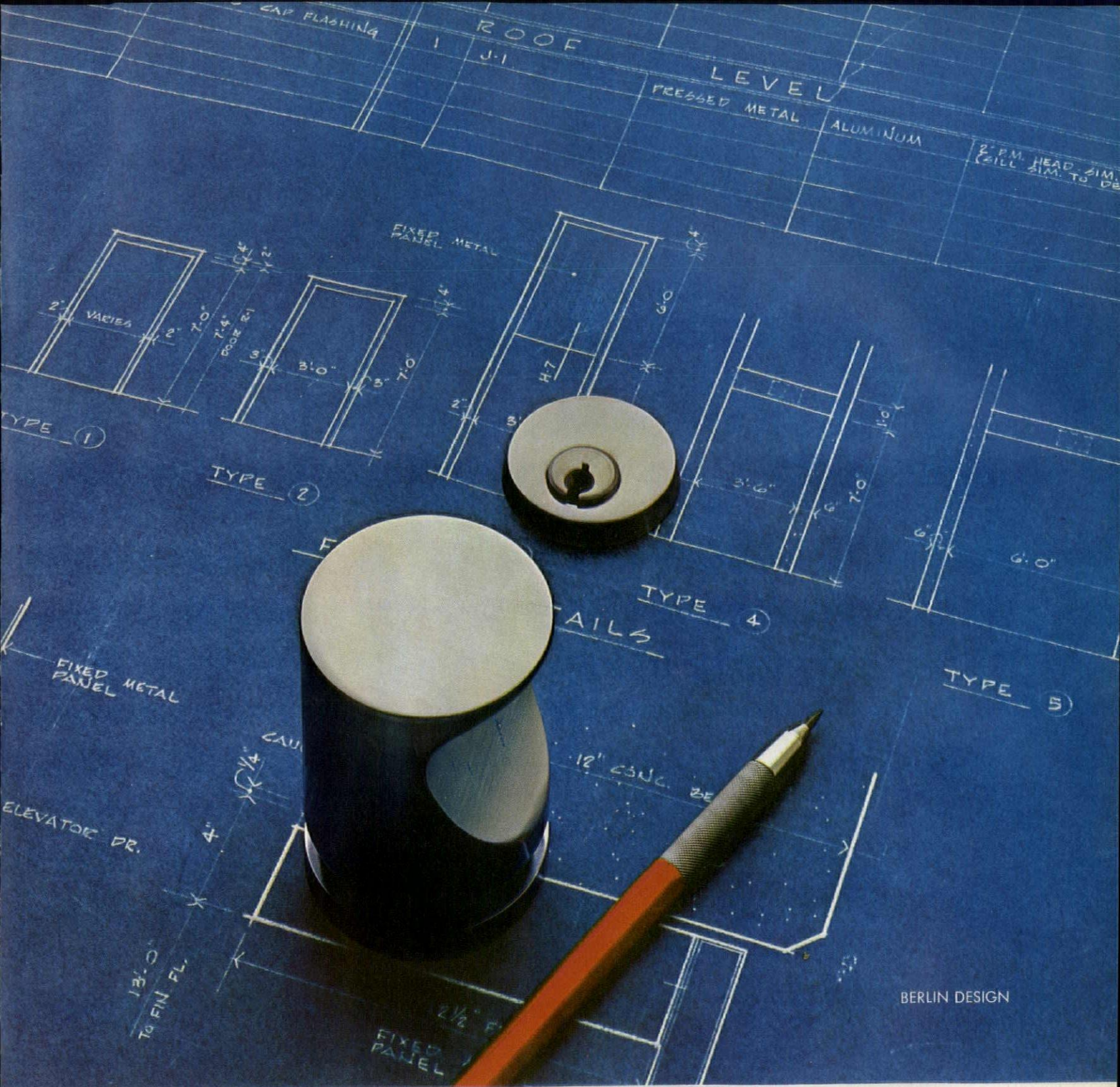
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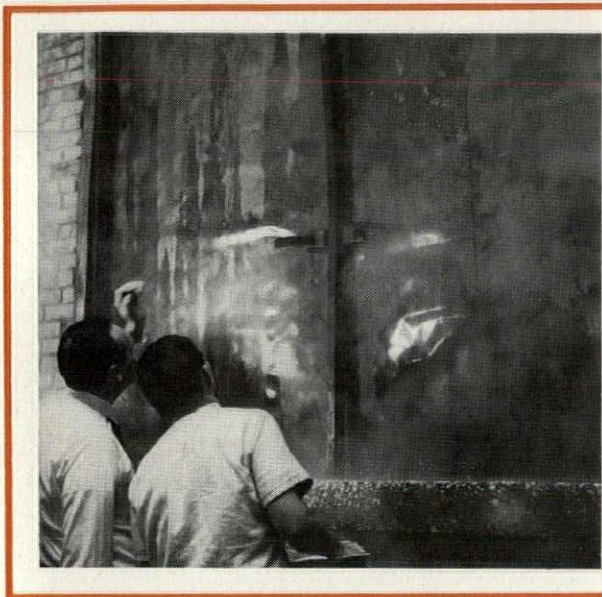


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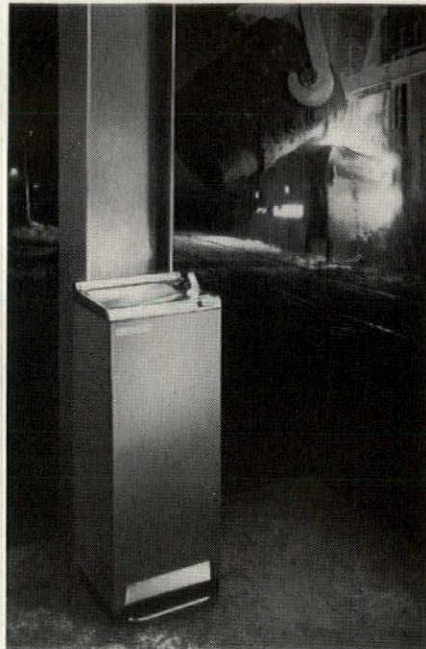
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Architect: John D. Bloodgood  
Roofer: Iowa Sheet Metal Contractors, Inc., Des Moines, Iowa





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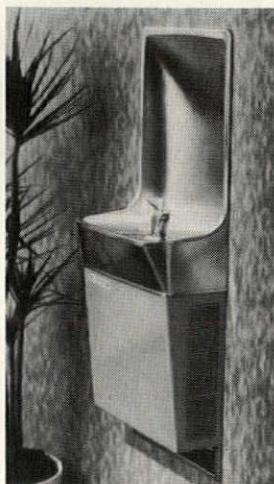
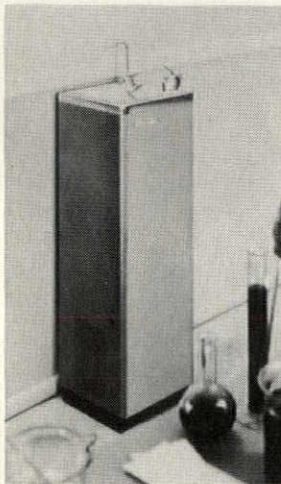


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the 150,000 members of the profession: "Engineering—Environmental Design for the 1970s."

During the week, which is sponsored by the NSPE, the engineers will call for a total national commitment to halt the deterioration of our environment and the disappearance of open spaces and recreational areas. The profession will stress that present technical know-how for restoration of the nation's environment is readily at hand.

As an example, the engineers note that an estimated \$26 billion would be required to get all of America's rivers, lakes and streams up to water quality standards by 1973. This estimate is based on current technology primarily to build sewage treatment plants.

Major emphasis will be placed on the 142 million tons of smoke and noxious fumes that are pumped into the atmosphere every year, the mountains of discarded automobiles and junk, and the colossal pollution of our rivers, lakes, and seashores. As an answer to many of these problems, the engineers will stress creative technical design to protect and preserve our natural resources.

Commenting on the 1970 theme, the national chairman of the week, Lee R. McClure, vice president of Algernon Blair, Inc., Atlanta, says:

"The beginning of a new decade is a good time to call attention to what the 1970s will mean for man, his technology and his environment. . . . Professional engineers in the 1970s are going to design machines and systems in which people and their human needs are part of the equation. We have the technical ability to bear on this problem, and I believe we will eventually reverse the processes which are degrading our environment."

### Scientists Foresee Use of Plastic Girders in Buildings and Bridges

Plastics may soon be used as structural elements in buildings, bridges and vehicles of all kinds, according to a man acknowledged as one of the "founding fathers" of modern plastics.

Dr. Herman Mark, Dean Emeritus of the Faculty at Polytechnic Institute of Brooklyn, joined with other scientists and engineers in presenting a "Technology Forecast for 1980." He said radically new uses for synthetic materials will depend largely on adjustments of properties and costs.

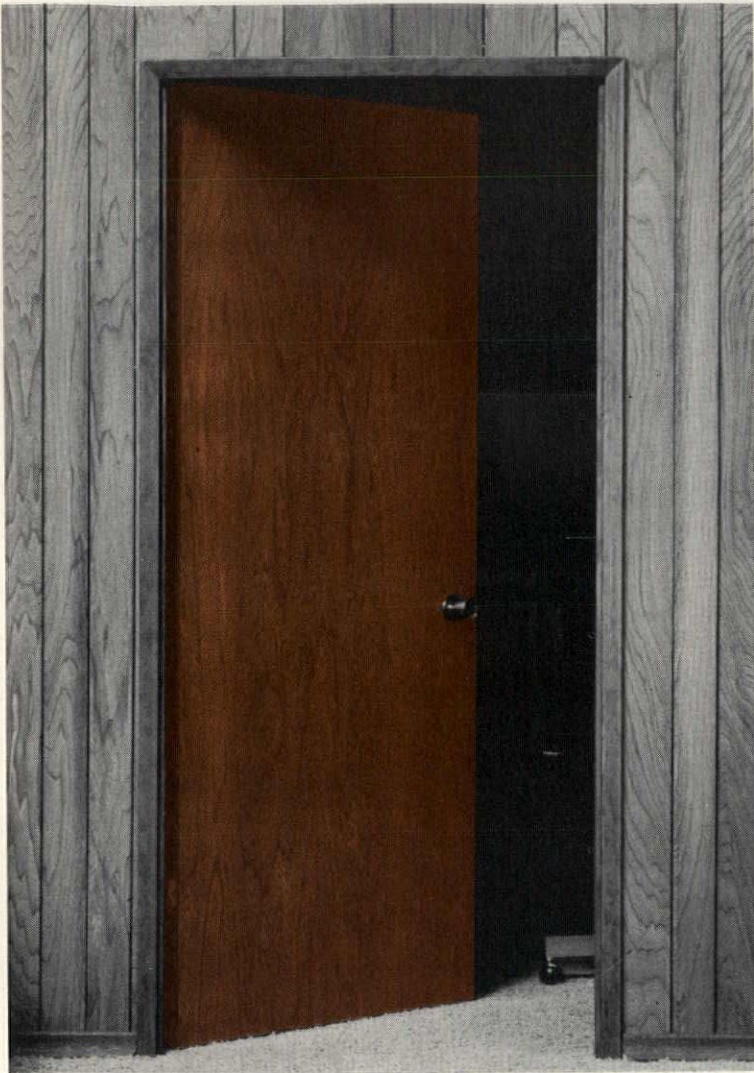
More conventional applications for "organic polymer materials"—synthetics made of giant molecules—are in textiles, packaging, printing and plastics, he explained. But these industries are currently supplied with so many competing materials that they "do not offer a very promising outlook for substantial further expansion of polymers."

Dr. Mark said the ability to "tailor" the properties of polymeric materials to fit the requirements of a particular application will open the way for expansion in the number and type of applications for which synthetics may be used in the future.

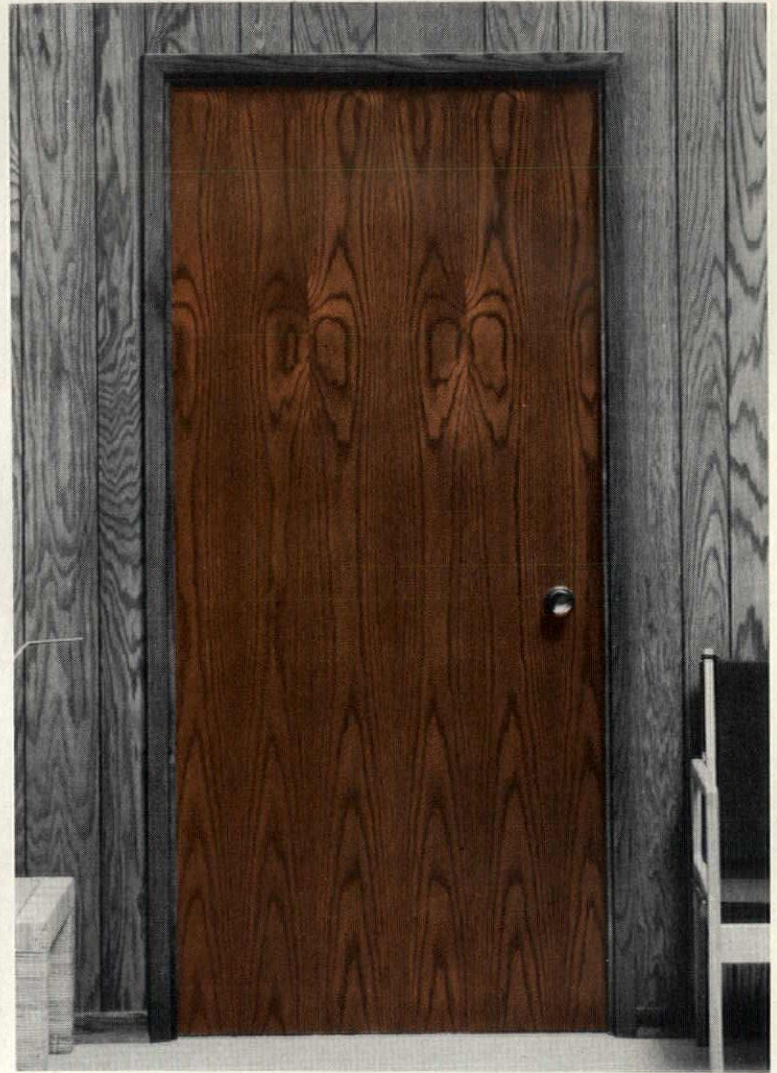
(For an article on "Plastics: New Pillar in Construction?" see p. 65 this issue.)

continued on page 32

# Which door makes an open and shut case for itself?



**Solid Staved Core**



**Solid Wood Flake Core**

<b>No</b>	<b>Lowest Cost</b>	<b>Yes</b>
<b>Yes</b>	<b>Guarantee</b> Interior Lifetime	<b>Yes</b>
<b>Yes</b>	2-Year Exterior	<b>Yes</b>
	<b>Special</b> Resin-impregnated fiber sheet in place of normal crossbanding on walnut doors. (Eliminates light line. Gives door edge uniform appearance.)	
<b>No</b>		<b>Yes</b>
<b>Yes</b>	<b>Telegraphing</b>	<b>No</b>

The Weyerhaeuser solid wood flake core door has features found in no other type of solid core door.

It does not telegraph. And it costs less than the solid stave core door.

In addition, it's positively identified by a gold-red-gold dowel set into the edge of the door. And it comes in a wide variety of finishes and sizes.

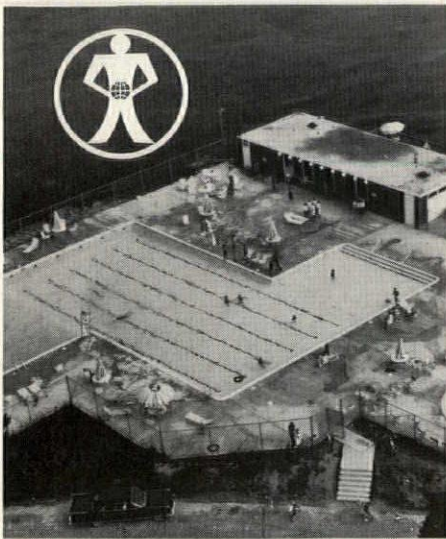
Weyerhaeuser solid wood flake core doors are available through a network of Architectural Specialty Dealers who can tell you about custom finishing, custom machining and a full line of matching Weyerhaeuser wood products.

For additional information, write: Weyerhaeuser Company, Box B-6739, Tacoma, Washington 98401.



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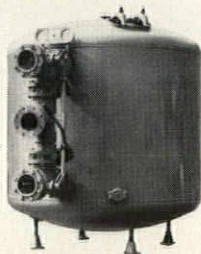
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Circle 137 on information card

outlook from page 30

## California Will Simulate Earthquakes In Its New Berkeley Campus Facility

Civil engineers on the University of California's Berkeley campus will use information gained at a unique earthquake research facility, now under construction at the Richmond Field Station, to create more earthquake-resistant designs for structures ranging from buildings and dams to offshore drilling rigs.

Work on the main building, which will house a large shaking table having the capability of simulating earthquakes almost twice as strong as California's strongest measured quake, began in December 1969. Construction of the \$189,000 structure should be completed in June, and installation of special equipment finished by September.

The simulator is part of Berkeley's new Earthquake Engineering Research Center, started a year ago with state and federal funds and directed by Joseph Penzien, a professor of civil engineering.

The 30-ton shaking table will float on a cushion of air produced by special blowers. Four pumps, driven by motors with a total of 600 horsepower, will feed hydraulic rams which will shake the table in an up-and-down and side-to-side motion.

Instruments will note the performance of structures bolted to the top of the table and weighing up to 60 tons during the simulated earthquakes.

Meanwhile, the Department of Housing and Urban Development will join with the Department of the Interior in a joint three-year, \$3.1 million environmental and resource study of the San Francisco Bay area.

The pilot study, directed by the US Geological Survey, will encompass such things as landslide potentials, earthquake fault hazards, response to earthquake shock and flood prone areas.

## Architect's Sour Grapes Become Sweet Art as Retrospectives Enhance Merit

If an architectural background is evident in the work of artist Oscar Bluemner, little wonder. He began his career as a German architect, emigrating to the United States in 1892 in search of some jobs.

In 1902 he won the commission for the Bronx Borough Courthouse, but his partner took the job away and built the project, using Bluemner's scheme. "This probably had a part in his giving up architecture and concentrating on his art," one critic observes, even though Bluemner won a suit over the design in the New York Supreme Court 10 years later.

Many exhibitions of Bluemner's work have been held since his self-inflicted death 31 years ago, the most recent being a show of 90 paintings and drawings at the New York Cultural Center which runs to March 8.

Although each has added to the reputation of the artist, "nevertheless, as one of the great pivotal figures in American art, Bluemner has never been accorded the recognition that his contributions merit," declares curator Alfredo Valente. □

## An Organic Architecture:

The Architecture of Democracy

by Frank Lloyd Wright

In May 1939, when London's architecture could only wait helplessly before the coming destruction, and man's spirit—and spiritual claims—were at low ebb, Frank Lloyd Wright delivered four talks to some young British architects. In these talks he affirmed his belief in the future with a positive conviction that was reinforced by the derision with which his acidulous wit reacted against the sterilities of the past.

In speaking to Londoners at this point in their history and at this point in his own development, Wright is prompted to universalize his concept of organic architecture. Perhaps more than in his other books, the emphasis shifts from an American—Usonian—architecture growing indigenously from the soil of the American heartland to a more general concept of an architecture that can take root in many landscapes as an honest expression of both the nature of diverse materials and the nature and living needs of diverse men. \$5.95

## Arcology: The City in the Image of Man

by Paolo Soleri

The sprawling, essentially flat cities and suburbs that are eating up the surface of the earth are "utopian" in the negative sense that they are absurd and unworkable, asserts Paolo Soleri. He proclaims an alternative, one that is utopian in the positive sense of an ideal against which to measure the direction and extent of future change. Although the need for change is immediate, Soleri's concern embraces the possibilities of human life on this planet over a time period almost cosmic.

In the opening part of the book, Soleri presents his indictment and his alternative verbally and with prophetic fervor. After this, he proceeds to give his vision concrete form and visible reality in drawings that illustrate a new man-made earthscape: the arcologies. Soleri's drawings may be considered purposive sketches—but not final, detailed plans. Their value is in their suggestiveness and adaptability.

Soleri envisions a population implosion—the flat stretches compacted in many folds into a true solid, into a city-building—a work of total architecture, a fact of neo-natural ecology: an arcology. "Man must make the metropolitan landscape in his own image: a physically compact, dense, three-dimensional, energetic bundle, not a tenuous film of organic matter." Complex, insulated from entropy, self-sustaining, miniaturized, the city and its people become as one, an involuted/evoluted super-organism. Nature at large, at the doorstep and immediately accessible, returns to its "natural state," undefiled and in harmony with its own ecology.

It is certainly worth noting that while arcology contains its own implicit aesthetic, the free-flowing invention that Soleri—imagination's architect—has worked into his realizations is fantastic. \$25.00

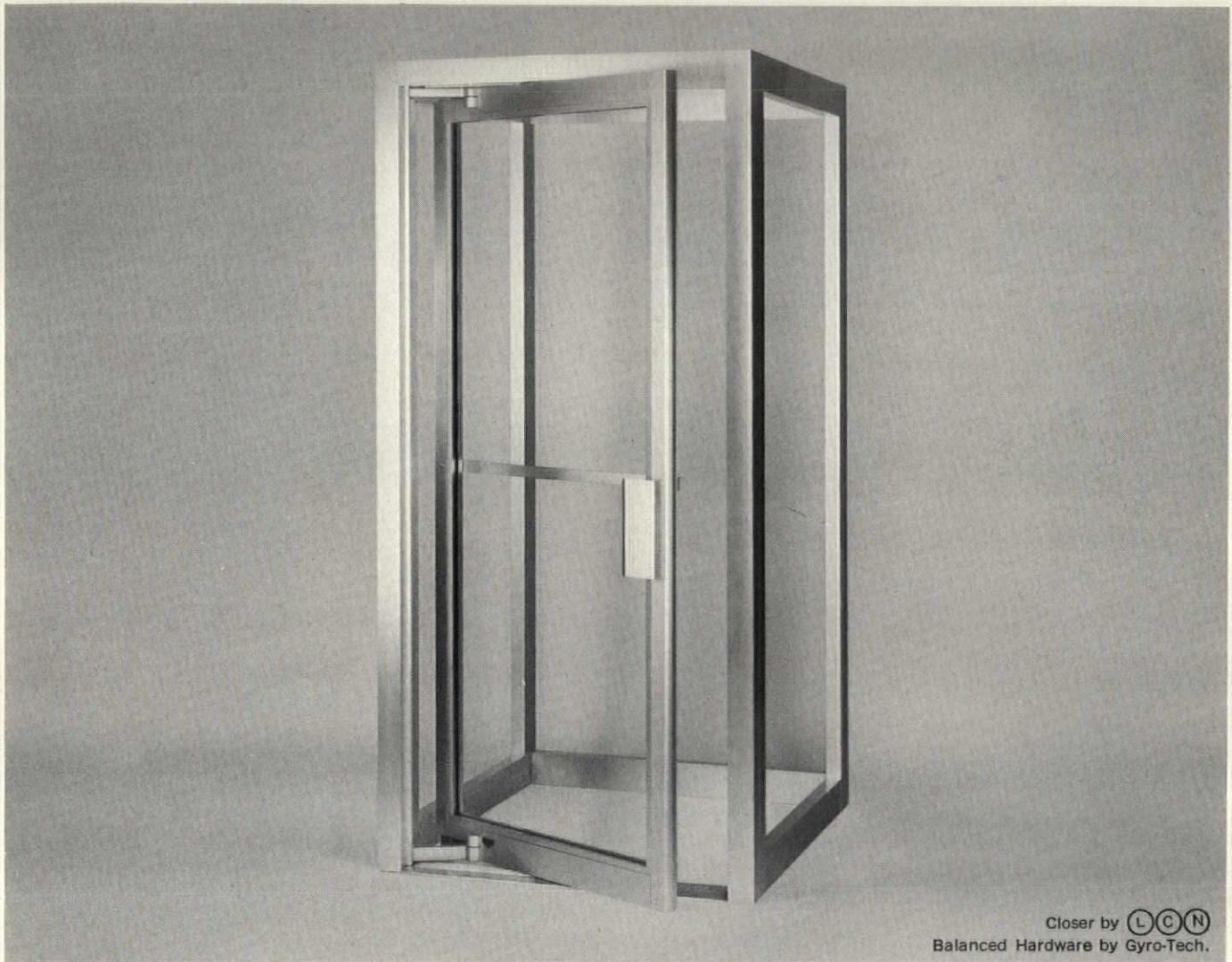
## The MIT Press

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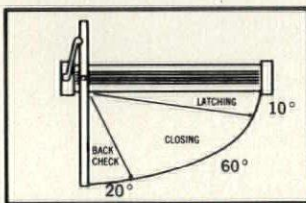
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# The \$15 Million Question

by HUGH M. ZIMMERS, AIA  
*Consultant to the AIA Task Force  
on Professional Responsibility to Society*

At the Chicago convention the AIA accepted a student challenge to make a massive commitment to programs dealing with the urban crisis. Shortly after the convention, AIA President Rex Whitaker Allen appointed a task force to take up the challenge and translate it into a program that would deal with problems realistically and involve the Institute at the scale indicated. As appointed, one half of the task force members are students and one half are practitioners. One half are white and one half are nonwhite, which reflects the origin of the challenge and AIA's concerns.

Now, after seven task force meetings and two heated Board of Directors' meetings, the first part of a program is underway, and at least some of the many questions that have been raised can be answered.

The task force has accepted its challenge by creating programs in two broad areas—equal opportunities and community action. It was also given a figurative stick of dynamite, namely the figure of \$15 million as an Institute commitment, which has upset many an architect and questioned the sanity of the convention. However, I feel that an honest description of the task force's views will persuade many members that what we are doing is both desirable and practical.

First, the \$15 million figure was derived from the principle of tithing. It was based very simply on our 23,000-membership, with the idea that four hours a week per man should be given toward the effort. The students challenged us to generate this in cash to make these actions stick and provide money for minority scholarships, community design centers, training, teams to help remove building restraints, etc. The convention delegates accepted the challenge. To back away from either the principle or the dollar at this juncture is neither honest nor necessary.

The first steps taken to implement the new program were described in the recent "AIA Special Report" mailed to all AIA members by William Slayton, AIA executive vice presi-

dent. (\$50,000 as a 1970 AIA appropriation to AIA's Scholarship Fund for Equal Opportunity to get the program underway in September 1970; \$20,000 as seed money for the educational improvement of six schools of architecture which turn out the majority of the black architects in the United States; \$30,000 to provide material, promote and raise money for community design centers; (\$45,000 for personnel services.)

The task force, the students and the Institute officers agree that the projects approved for 1970 are just a beginning and that it is results we are after, not money. This objective rules out assessment and puts the responsibility on the Institute's membership to support programs that will accomplish something. This support will generate many times these amounts in outside financial grants. This is not empty conjecture. It is based on the experience of chapters now operating CDC's and the first tangible expression of the Institute's program—the AIA/Ford Equal Opportunity Scholarship Program that will provide \$1 million in matching funds to the education of minority architects.

Aside from this, the new projects mainly provide "seed money" to analyze program requirements and finance the search and application for outside funding.

The Philadelphia Chapter AIA has generated \$570,000 in funds over the last several years for professional responsibility programs that have also received generous allotments of time from chapter members.

When the federal government spends less than 1 percent of its research funds on the environmental sector, we must realize that part of the reason lies in our own previous lack of commitment and initiative. This is where the AIA staff will concentrate its efforts, in the professional responsibility program persuading friendly foundations and government funding sources to begin filling this gap.

The community design centers are a good

*continued on page 84*

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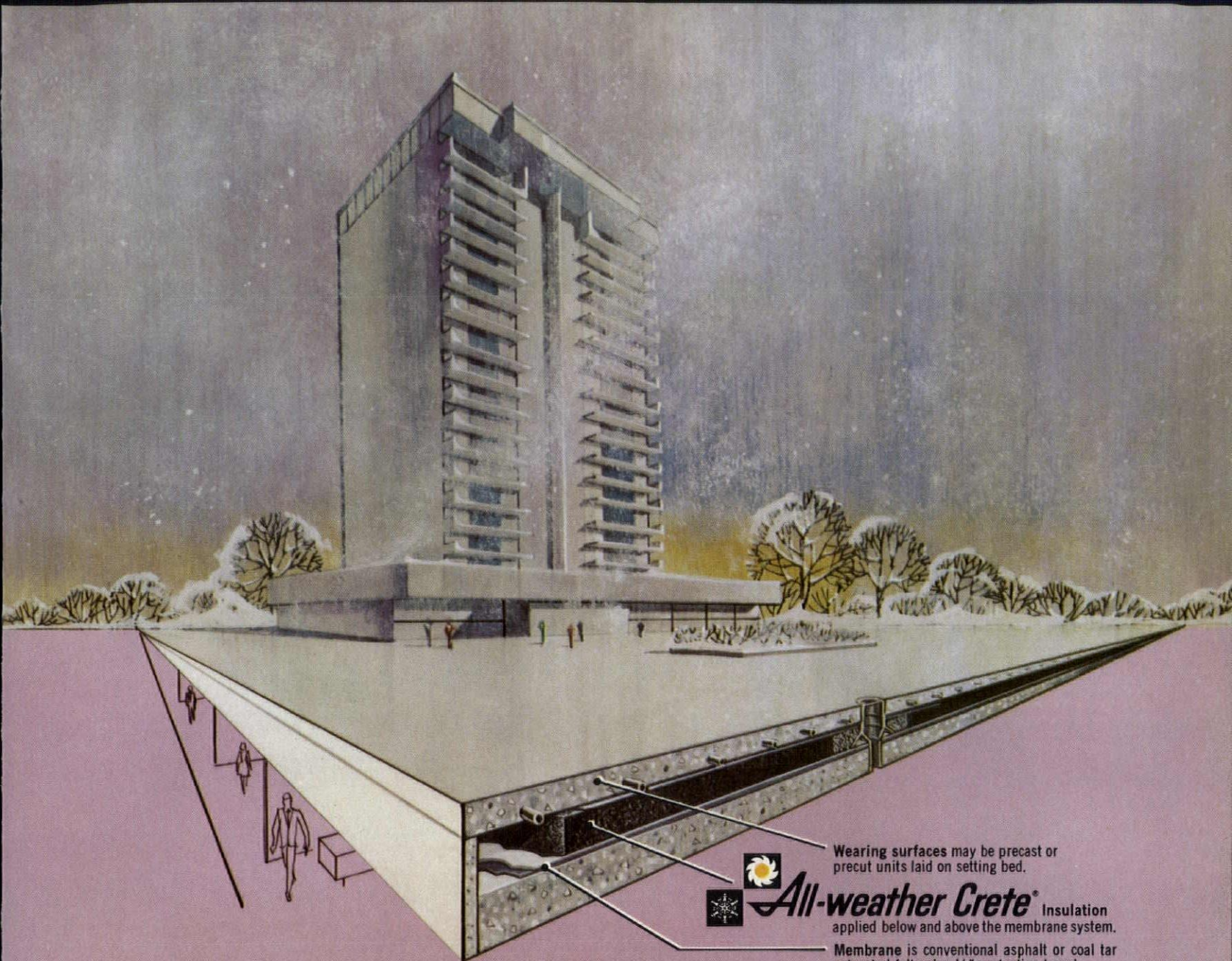
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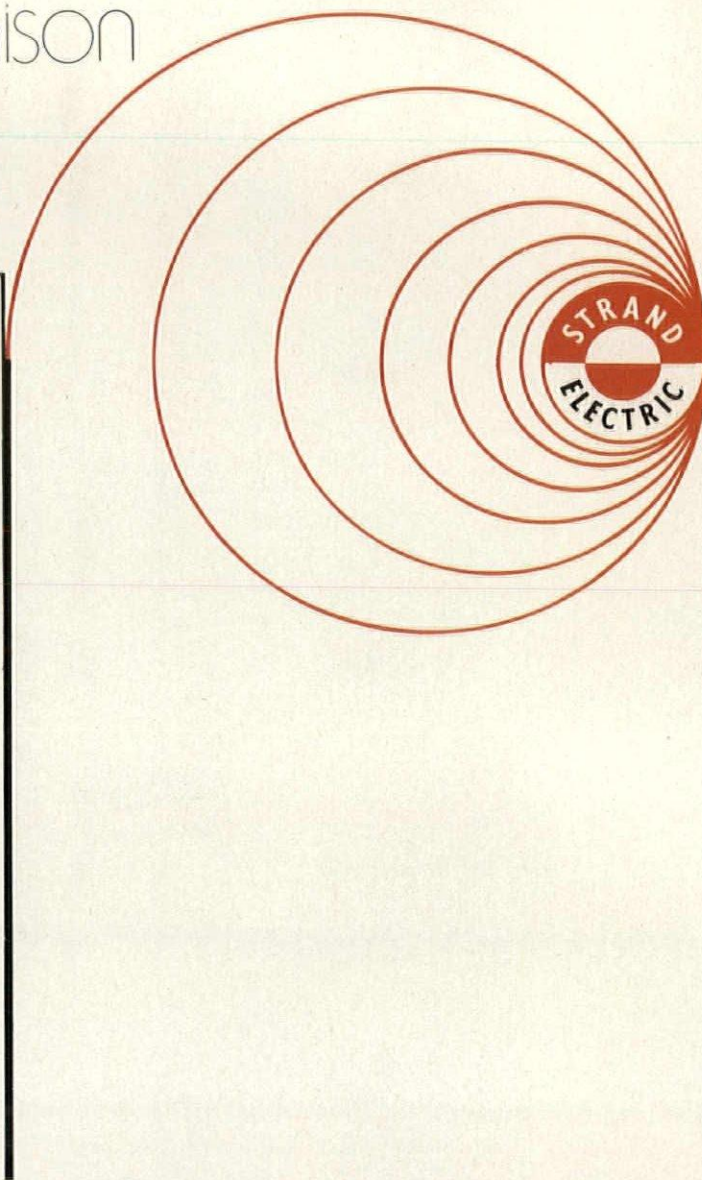
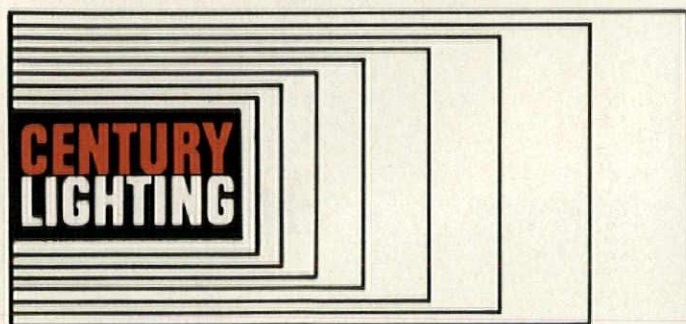


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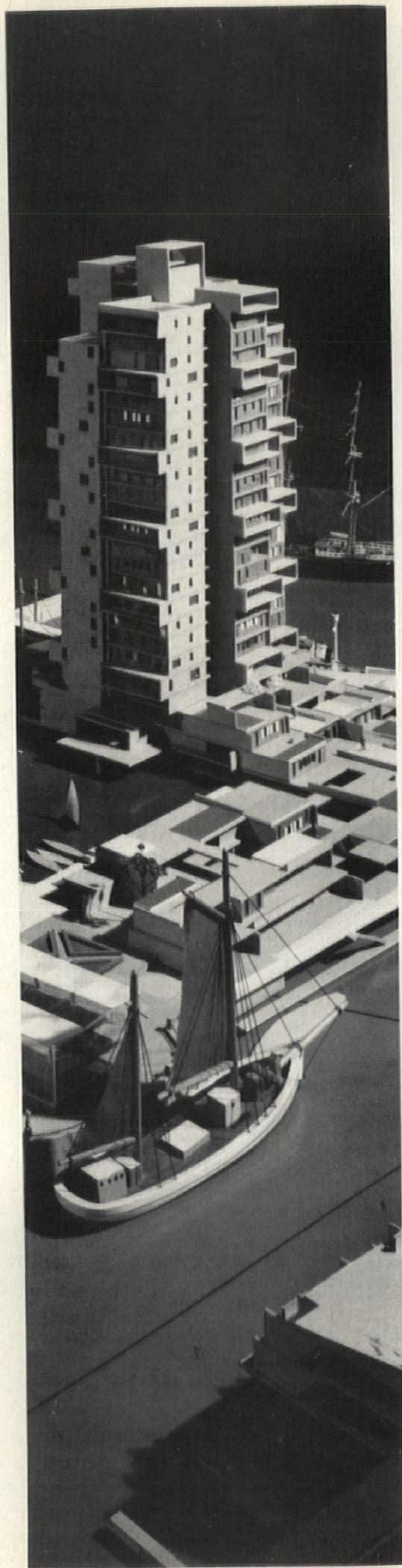


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# A PHILOSOPHICAL APPROACH TO INDUSTRIALIZED HOUSING

by CARL KOCH, FAIA

Above all else, the city dweller craves from his city a sense of continuity in time and a sense of opportunity in space.

Continuity is as vital to the city as it is to men whose every action is based on prior experience. New buildings and new modes must be adapted and related to what has gone before, and the "what has gone before," the old buildings, streets, views and spaces of historical or associational value, must be husbanded accordingly.

Integration is a meaningful mixture of activities and atmosphere, the kind of mixture which through the centuries has made people-magnets of the great cities. Cities must offer a vast array of choices and chances for everyone, and the better it does this the stronger its magnetism and its claim to the title of city.

So much for a personal view. Now for a professional view, that is to say, for a view that appears to be generally shared throughout the profession. It is a view which holds that:

1. The well-being of our cities is crucial to the survival of our civilization.
2. The planning and governmental processes on which this well-being depends must be overhauled.
3. The building industry, if it is to help restore our urban well-being, must be reorganized.

It is also generally agreed that architects must play a vital role in the reshaping of planning processes and in the reconstituting of the building industry. I concur. But I submit that the architect had better play a vital role within the city too. And this requires that he commit himself to the city, that he commit his life, his family, his vote and his professional and financial resources.

He must become part of the city. His clients, rich and poor, public and private, can be pardoned for tiring of hearing him suggest that they do as he says and not as he does. Preachments are fine (and I realize that I'm in the pulpit myself, right now) but



the proof of our sincerity and effectiveness in righting the miserable urban condition lies in our *doing* something about that condition.

It is in this "action context" that I will tell of the work of my architectural associates and myself. It is work which for the most part remains to be accomplished, however, and so we present ourselves with little more than a set of goals—and I admit they are goals which we may not have brains, luck or stamina to achieve.

**Lewis Wharf offers the opportunity to build a prototypical microcosm, a city that responds to the great crisis of our urban society.**

Our commitment to continuity and integration is focused on what must be the most dramatic central urban spot left in America: Boston's waterfront—and more precisely, Lewis Wharf. Here we plan to combine, on a 16-acre site, several of Boston's finest old granite and brick buildings and the wharves on which they stand with an eventual \$60 to \$100 million complex constructed of Techcrete, a building system that our office has developed and about which I will go into detail later.

It is our purpose to create a city within a city and to restore the liveliness that once marked the original mercantile heart of Boston. It is also our purpose to demonstrate the ability of Techcrete to

live compatibly with tradition while providing new housing, offices, shops and most of the cultural and recreational facilities needed to make a complete and contemporary urban setting. A five-minute walk from Boston's city hall and financial center, Lewis Wharf offers the opportunity to build a prototypical microcosm, a city that responds to the great crisis of our urban society.

Lewis Wharf, which took form between 1836 and 1840, was built by a coalition of Boston businessmen who by ferry and junction railroad linked its spacious warehouses with the rail terminals of East Boston. Thus importers could bring in foreign goods and send them on their way to interior America. Ships from ports throughout the world put in at Boston and yielded every imaginable commodity from pins and blankets to Madeira wine. Lewis Wharf exuded color and energy—qualities which we hope to keep instilled in our design approach, for the sake of continuity.

We are not trying to imitate or reproduce the past, but we are trying to recall it so that what once was can be sensed over even a greater distance in time. By the choice of facilities, by architectural treatment and through the presence of the sea, the flavor of another time can be created from elements that are vital and valid today. The connectedness of Boston harbor with ports the world over presents an opportunity to create a cosmopolitan urban complex.

The three important present buildings at Lewis Wharf impose

on us high standards of quality in both design and craftsmanship. The main building, bearing the name Lewis Wharf, is a 400-foot-long, six story structure of granite, brick and wood. Its load-bearing masonry runs from 16 to 30 inches in thickness and its 10x4-inch floor beams span about 24 feet. When cleaned down to its original surfaces, the building will offer excellent space for offices and shops which will be served by elevators and new central corridors.

Another of the three structures, the much smaller Pilot House, with its arched windows, long spans and brick bearing walls, will provide highly desirable apartment, studio and office space and will have, on its ground floor, an ideally located restaurant.

But from the microcosm standpoint, the third structure may be the most exciting building of the lot. This is the massive, 10-story brick and concrete Cold Storage Warehouse. Once earmarked for demolition, it may now remain to park 1,000 or more cars and, in addition, yield 100,000 square feet at rentals low enough to suggest workshop, studio and educational uses as well as do-it-yourself apartments for the creatively inclined. If this building works out as planned, it will do more to make Lewis Wharf an integrated community than anything short of massive federal subsidies.

Let's consider integration for a moment. We are increasingly aware of its absence in our lives. Poverty and affluence, war and peace, morality and license, art and technology, science and the humanities—word pairs that suggest the ferment in our society that is splitting apart families, institutions, values and beliefs. Increasingly, large numbers of our youths and the more perceptive of our elders are concerned with the widening integration gap between work and play, art and use, money and satisfaction, community and individual.

Architecture as an art and a technology has theoretically and traditionally borne an essential relationship to many of these basic life conditions. And yet in our time, a time when architecture's esthetic and functional powers are desperately needed, especially by our cities, we architects are justifiably fearful for our survival.

Urban design is torn to pieces between pressures for greater returns on private investment—which are now running at better than 10 percent—and government's general inclination to use its bureaucratic power to forbid or kill but not to help or lead.

The continuing disintegration of urban areas, a situation in which we have high income housing and growth industries in the suburbs and ghettos and palaces of commerce downtown, has been quickened, rather than slowed, by the federal government. The Department of Housing and Urban Development, despite the "Urban Development" in its title, still operates on the premise that housing is separated from other uses.

Lewis Wharf is intended to demonstrate the reverse of this fragmentation. We want to provide people with the opportunity to live where they work and to play where they live.

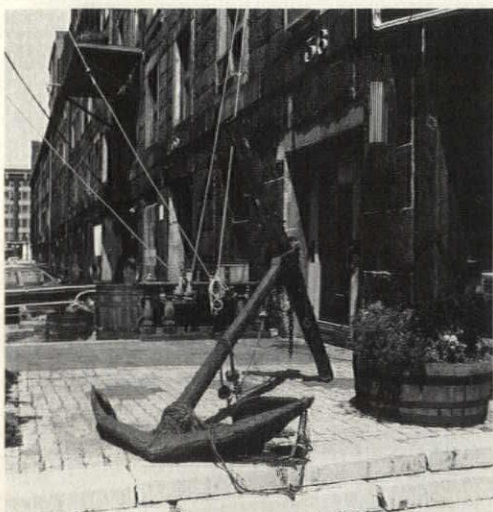
Eventually, its apartments will total well over 1,000. They will be contained in several large dwelling arms thrust right out into the harbor. They will enhance, rather than restrict, the views from the old buildings by providing a lively middle ground of human activity.

The new buildings will be as colorful and varied as the people who will live in them, at the same time satisfying the need for coherence through strong structural rhythms and a controlled palette of materials in keeping with the old granite and brick buildings. Every effort will be made to provide a rental range from public rent supplement to luxury housing and to offer both condominium and rental units.

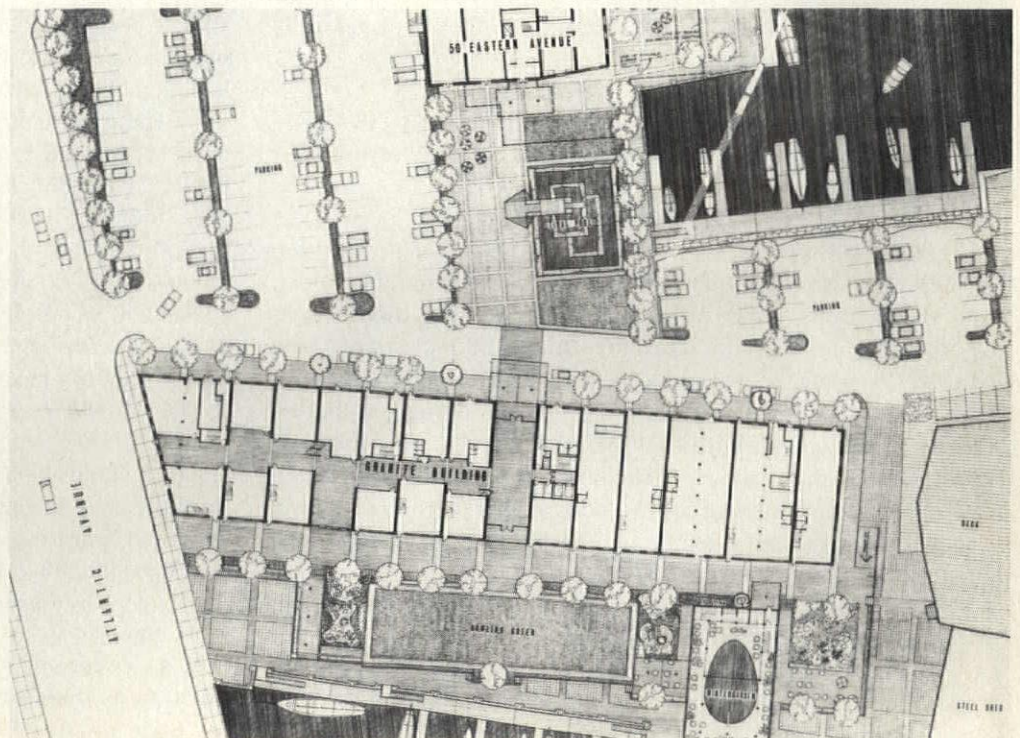
The buildings will be connected horizontally by arcaded streets, each with several levels along which residents will walk or ride to the apartments. (These levels will be vertically connected at key points by large, glazed view elevators.) Though the garage facility will be within a two-block walking distance of the farthest apartment, we are planning small, silent electric cars for auto-to-apartment transportation.

The layered streets will also accommodate neighborhood and specialty shops, eating places, studios and professional offices serving the traffic which the waterfront and its facilities will draw from the immediate neighborhood and beyond.

The complex of activities that is Lewis Wharf seems well conceived to draw tourists, visitors from other countries and holidayers, as indeed it should, but its principal aim is to create an experience that can be integrated into the everyday leisure pattern of the people of Boston. It should be a place that they will visit for no better reason than just to be there, to perhaps idly watch the



Phase 1 of the Lewis Wharf project, shown in its entirety at the left, will concentrate on the remodeling of the Granite Building. It will eventually hold 144 apartments and 28,000 square feet of commercial space, including Koch's own office, the entrance to which is seen above. Also to be remodeled is the brick Pilot House (50 Eastern Avenue), for offices and a restaurant.



boats plying the harbor waters. The nature of the place should promote browsing and meeting people.

Those who live and work in Lewis Wharf will be living in the center of the city, close to all the advantages that the city offers. The old granite buildings will be the center of a work and recreational pattern that is truly urban. But here, also, a short walk from the financial district, will be a habitat for man that is within reach of nature and the sea.

**Our firm is helping to organize a consortium we hope will become one of the important national housing manufacturers of the 1970s.**

Now let me shift gears from the broad brush strokes of city design to the nuts and bolts of building systems.

Here is why I think some architects ought to concern themselves in this area: There is little argument that the only way to provide the 26 million housing units required by the nation over the next decade is to industrialize the building process. At the same time, the architect has done little or nothing to assure his future place in this certain shift from a one-at-a-time, labor-intensive industry to one having relatively few large and competing manufacturers of systems fighting for chunks of the nation's most important and largest single mass market. Things will be different from the present situation in which not one of the thousands of small builders has more than 1 percent of the \$26 billion housing market, a market projected to grow to \$60 billion by 1978.

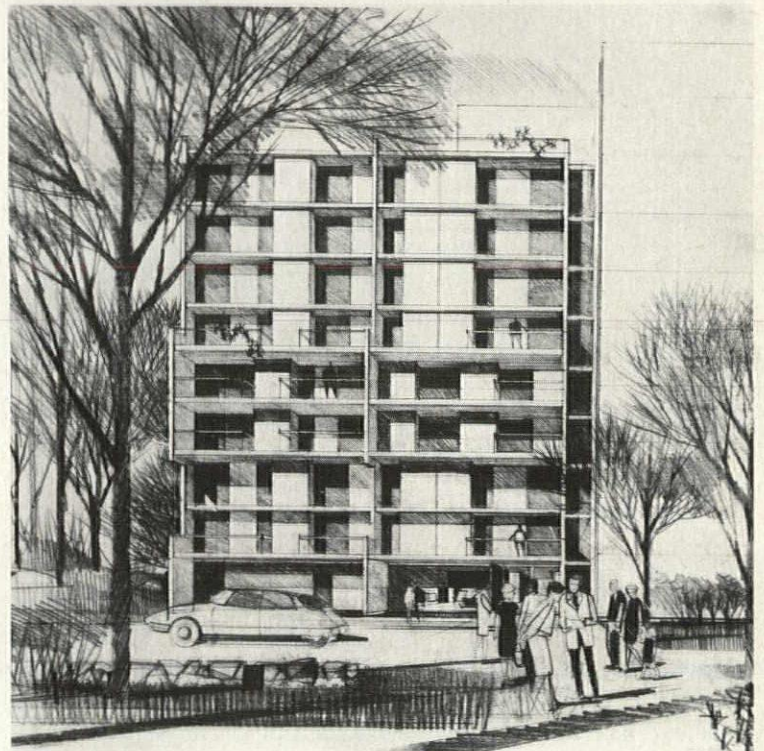
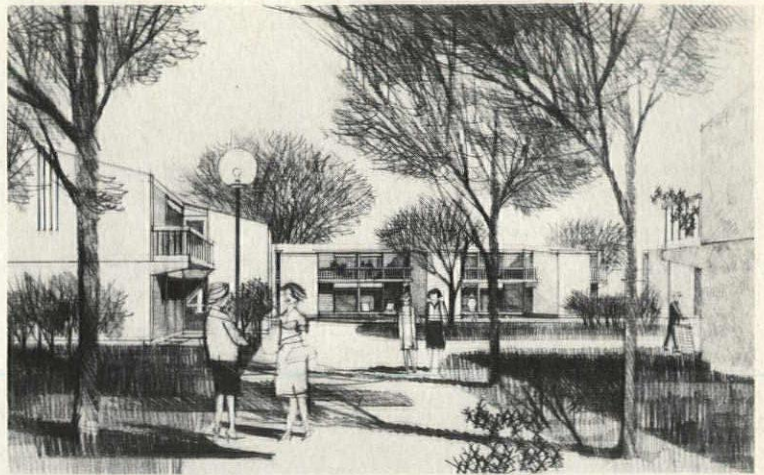
I suggest that it should be possible for us architects to reinterpret our ethical code, to participate as designers, entrepreneurs and system builders in an emergent major industry that will affect the environment of millions of people. To do this is to render a service to both the profession and the public.

Our firm is helping to organize a consortium we hope will become one of the important national housing manufacturers of the 1970s. The consortium's members are a national management consulting firm, one of the 12 largest manufacturing companies in the country, an engineering firm, a law firm, one of the biggest investment banking houses, a developer-builder of national reputation, one of the largest life insurance companies in the country and Techcrete, Inc.—an independent corporation begun by our firm and which will now manage, market and further develop the Techcrete building system.

**The important fact is that this is not all fantasy; the descriptions are more real than not. Techcrete is an absolutely real building system.**

Let me now pose a few what-ifs. Suppose that the consortium had unlimited capitalization and that its initial program were to build 10,000 units a year of industrialized, low and moderate income housing in five major cities for which land had already been acquired and plans approved by local regulatory bodies, the Federal Housing Administration and HUD. Suppose, further, that the housing could be built with the Techcrete system and mass produced on a national scale for little more than half present costs in a high-volume prototypical factory designed by Techcrete, as well as in existing precasting plants across the country according to Techcrete's specifications.

Hundreds of the urban poor would be employed in the factories starting as unskilled laborers. Teams for fabricating plumbing trees from components supplied by a national manufacturer would be approved by the unions. Additional teams assembling electric harnesses and heating equipment, along with other ad-



vances possible now in the construction process and capable of being integrated with the Techcrete structural system, would also have union approval.

The important fact is that this is not all fantasy; the descriptions are more true than not. Techcrete, for instance, is an absolutely real building system that has been under development in our office over the past five years. It has been used in construction totaling \$10 million, has \$30 million more under contract (including at least 1,000 units in New York City), and \$50 million under consideration. With the creation of an independently managed marketing corporation named after the system, we will overcome our conflict of interest and make the system more easily available to other architects. Let me briefly describe it.

So far the structural system consists of prestressed, post-tensioned concrete bearing walls of standard 8-foot height and 8-inch thickness but having varying lengths and fenestration patterns. Extruded, prestressed concrete floor planks span 32 feet between bearing walls. Eight inches thick but hollow-cored, they weigh half that of conventional slab. They come in widths of 1-foot multiples up to 4 feet.

The system employs post-tensioning rods that run through the walls from foundation to roof, clamping floor panels and bearing walls together to create a rigid frame. For heights over five



An early Techcrete project built in the Roxbury section of Boston and two under construction in Maine: both housing for the aging.

stories, shear walls are used to stabilize the structure. A precast concrete stair unit completes the basic structural shell.

Major subsystems presently include a panel-type curtain wall system, a standard bathroom, a plasterboard sandwich interior partition system, and a kitchen assembly. Several alternate heating and heating/cooling systems are now being developed by cooperating manufacturers.

Of the plethora of systems being promoted nationally, Techcrete is the only one that already has been used at more than prototype scale. It works—particularly in medium- and high-density urban construction. And it is adaptable to almost any unit plan, site, climate, density or local preference—and it is also adaptable, potentially, for use in building types other than housing.

In its present form, it has no conflict with labor practice in Boston, although it is designed to accept further innovation as rapidly as practical. It already has FHA approval and has encountered few problems with local building codes. It is a *right now* system that can compete with frame construction in cost terms even without the enormous advantage of a national market making possible mass production and low per-unit costs. It has relatively low capital requirements for conversion to large-scale production. It can be fabricated right now in existing precasting facilities throughout the country. It cuts sharply into the time required for design

and construction and, as a consequence, reduces financing costs.

Our philosophy in creating the system has been based on the conviction that “the machine,” when creatively used, is an architectural tool; that it is an essential tool in achieving economy, quality and, yes, splendor. Our planning bisects the physical environment into, first, a series of interrelated buildings, spaces and services, and, second, into an absolute minimum number of standardized, mass-produced parts, components or subsystems designed to assemble easily in an infinite number of ways, thus allowing an endless number of solutions.

We hope that Techcrete will inspire urban developers to plan for this kind of evolution for it is one of the chief excitements in using a building system. Techcrete can form the big walls, the streets, utilities, floors and ceilings and then, if the planning has been done well, block by block, floor by floor and unit by unit the subcommunities will blossom through the efforts of people who will want to feather their own nests within the urban tree.

It is also our hope that about 30 percent of the dwellings to be built at Lewis Wharf will be finished through self-help projects organized by cooperatives. We would erect only the three-dimensional components and let the users “do their own thing.” The result would not be a series of unrelated experiences because the common visual scale and component dimensions inherent in the

system will prevent the project from becoming another giant urban *non sequitur*.

It is perhaps over-romanticizing the possibilities of the system to hope that it will adapt to future changes as did the massive old granite building on Lewis Wharf which, when renovated, will be a great place to work, to live or just to be, even though it was designed originally for an entirely different purpose.

Why do we keep tearing down permanent buildings in order to put up temporary ones? Old buildings of real quality can be adapted to new purposes and thus provide the continuity which our bodies and souls crave.

**The architectural profession may well be pushed aside inasmuch as it has so far proved a far more significant roadblock to building innovation than is generally realized or admitted.**

It should be clear from the foregoing that the pattern I have been describing is not yet woven. In fact, it has a strong tendency to unravel! In many ways it is presumptuous and foolhardy (if not worse) to think that our cities can be saved by individual private group efforts, or that building systems through the miracle of good design alone will build better physical environments.

I sense on the part of both government and private industry a growing feeling that the answers to today's urban problems lie with scientists and businessmen and not with design professionals—except perhaps for putting an attractive wrapper on the product.

Corporations can produce the components to our specifications and sell them at a profit, which is really all they want to do. But if they are forced to push us aside, either because we are in the way or because we can be of no help, rest assured that they will. And the architectural profession may well be pushed aside inasmuch as it has so far proved a far more significant roadblock to building innovation than is generally realized or admitted. Though lip service is paid by the profession to technical innovation, the general tendency in practice leans toward esthetic license coupled with a lead-footed resistance to any and all standardization.

Our profession is in sincere and justifiable panic over the possible burial of human values in the inexorable and uncontrolled

march of industry and general technology. We are acting not completely unlike the Luddites in a futile attempt to smash the looms rather than understand and control them.

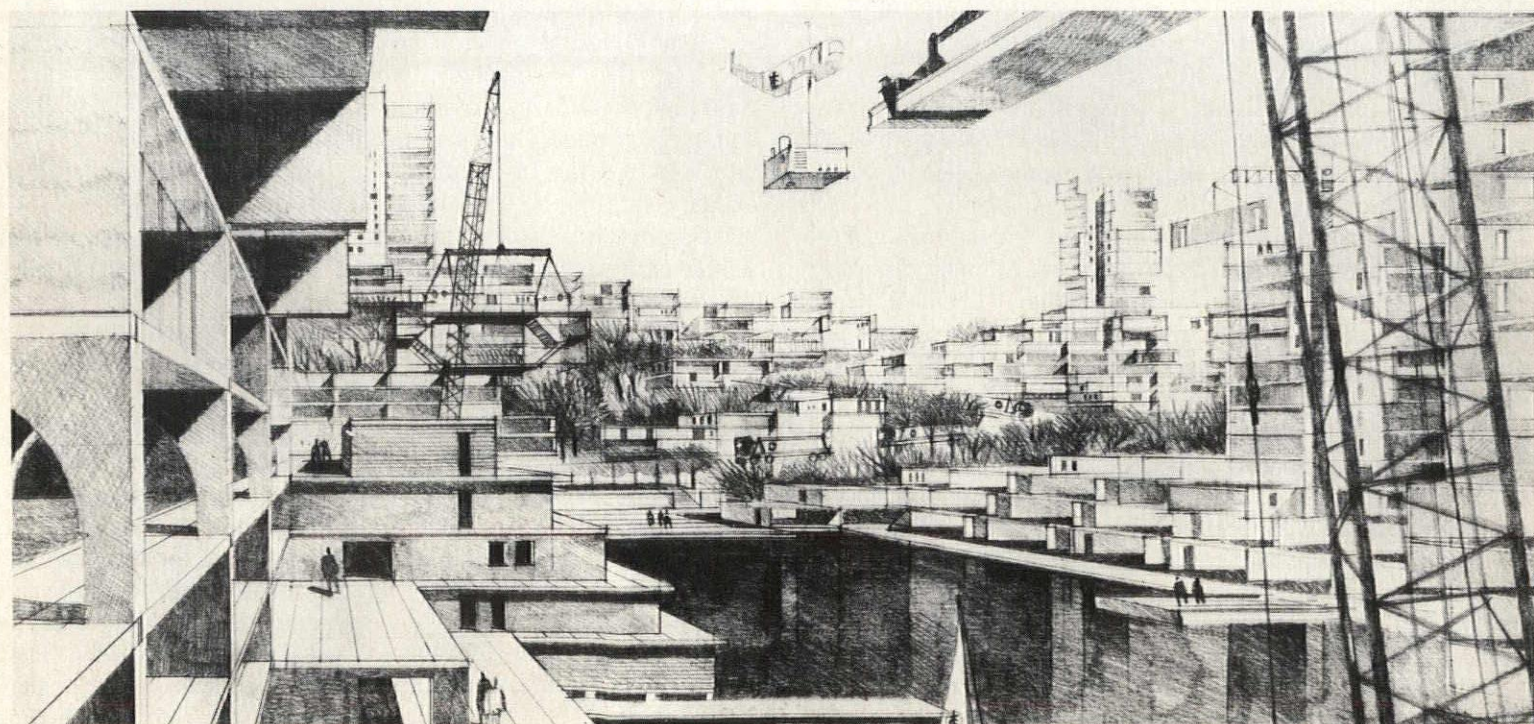
And yet architects still have—for a few more precious moments—the opportunity to take a position of effective leadership in a new building technology.

The solution of the urban crisis demands low cost construction; architects, on the other hand, are usually paid a percentage of the cost of construction. What we have here is an economic circumstance that militates against professional leadership and concern in finding cost-reducing solutions. In low cost construction, the percentage-of-cost method of payment asks the architect to forgo the profit incentive that motivates the rest of the building industry. Sadly but understandably, architects have not rushed forth to contribute to cost improvements in building.

It should be clear to everyone by now that a better way of relating design to the whole process of housing production is a necessity if building innovation is ever to happen. A new kind of architect is demanded; so is a new attitude on the part of his professional organization. While not actually preventing architects from breaking with traditional practice patterns, the ethics of the AIA do in fact serve as a negative deterrent. It should be possible for the AIA to lead the profession into an era of new building technology by providing positive incentives for architects to take effective positions—either within the corporations tooling up for mass production of urban housing, or in consortiums or partnerships with developers and contractors.

In short, the AIA ought to change the ethical standard prohibiting the architects from having "financial or personal interests which might tend to compromise his obligation to his client," and, as I understand it, we may have a chance to do that at the Boston convention in June. The problem can indeed be solved by requiring the architects to inform his customers and clients on where he stands in relation to the products or systems he recommends. It is the architect, responsive to both design and production problems and possibilities, who is often uniquely qualified and motivated to innovate, to catalyze and to literally move back into the factory where realization begins.

The ethics problem is also tied into the whole definition of





professionalism, a definition which currently prohibits the architect from entering into businesses related to his practice, or businesses in which he stands to make a profit through practice decisions. Architectural education is rooted in this definition and, as a consequence, seldom includes business training. The importance of such training is the fact that most of the environment is designed and built by businessmen developers—without architects.

**Our client relationships would differ from those of other architects using the system only in that we happen to be part owners of the Techcrete corporation and we have had a long familiarity with the components.**

To defray the cost of developing Techcrete into a full building service, Techcrete plans to charge each project using the system a per-square-foot royalty. The royalty level will be related to the services performed by Techcrete for the individual project; that is, it will depend on whether computer programs are used, the number of Techcrete personnel involved, their time, etc. Our architectural firm will serve as consultants to Techcrete, Inc., and in addition we will be among the architects specifying the system. Our client relationships would differ from those of other architects using the system only in that we happen to be part owners of the Techcrete firm and have had a long familiarity with the components.

Any architect who makes an honest effort to use the system without changing the standard elements can reduce considerably his own costs in the design of a project. Now we have the fee structure entering again with the implicit suggestion that the architect's fee should be cut. But the architect's fee need not be cut; instead, architectural services can be expanded into the site and social and public facility considerations for which there is seldom time, opportunity or budget on typical jobs.

Unquestionably, the thoughtful architect will devise better ways of using the system, ways that free him from the nuts and bolts aspect of design, than we have been able to foresee to date. There are still bugs in the system which each new project does something to eliminate. Furthermore, new developments in concrete technology, such as polymerized concrete, and new subsystem technologies, which our office alone cannot fully develop, will

excite designers and, if built in sufficient volume, further reduce costs and improve the system.

There will always be custom design in which the architect continues as the completely objective arbiter of the claims of the client against all the material, equipment and construction inputs. But in more and more of our building projects, this objectivity has become too costly to be willingly borne by the client.

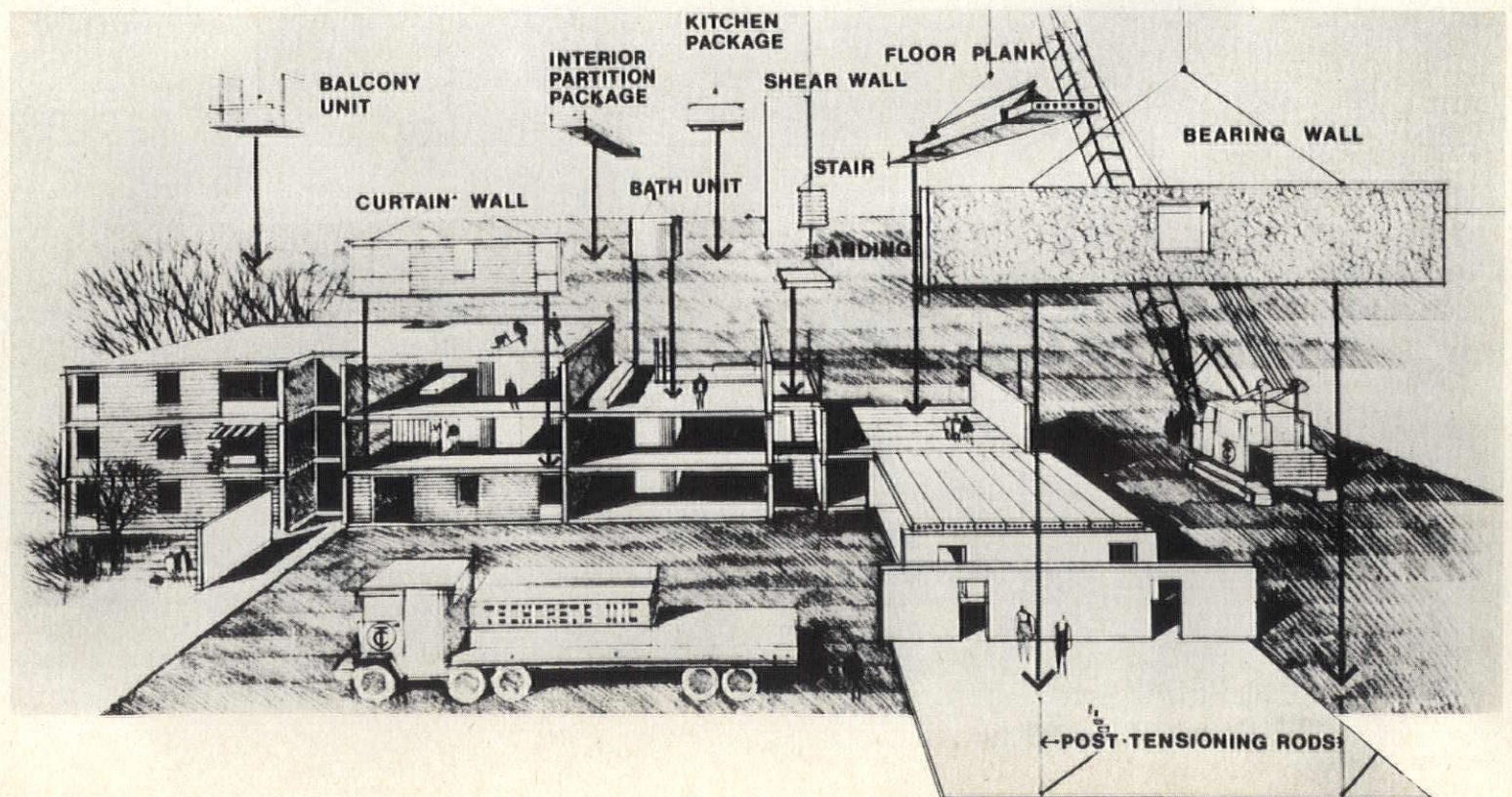
Single-family houses designed on a custom basis are almost double the cost of a project builder's houses of equal construction. Fewer and fewer buyers can afford this kind of luxury. The elimination of the architect, for all practical purposes, from any important role in housing is both an indication of his failure to meet the housing challenge and a forewarning that he may lose the opportunity to make effective contributions to urban neighborhood design as well—and it is the people who will suffer.

Numerous and sophisticated inventions of recent decades have changed the basic institutions and lifestyles of the Western World. The simplest needs of man are now discussed in mass-production terms. There is one exception, however: housing. It was impossible to feed, clothe, educate, entertain, employ and house even the much smaller population of less than a century ago because the technology of the time was based on one-at-a-time methods and handcrafted parts. Now it is possible to do all that and much more and everyone who is awake knows it. Some are demanding that this in fact be done—and their numbers are growing.

**The mass production of highly designed, repeatable building elements will not necessarily result in the brutal and visually paralyzing repetition of standard elements so familiar in "modern architecture."**

In summary, and in an attempt to put Techcrete and Lewis Wharf into a rather hopeful perspective, we see both as a tentative beginning of a meaningful response to those angry and anguished demands.

Finally, let me say this: Cities constitute the basic module of our present civilization. Urban neighborhoods, each having a special form of its own, are the modules of cities. Largely determining

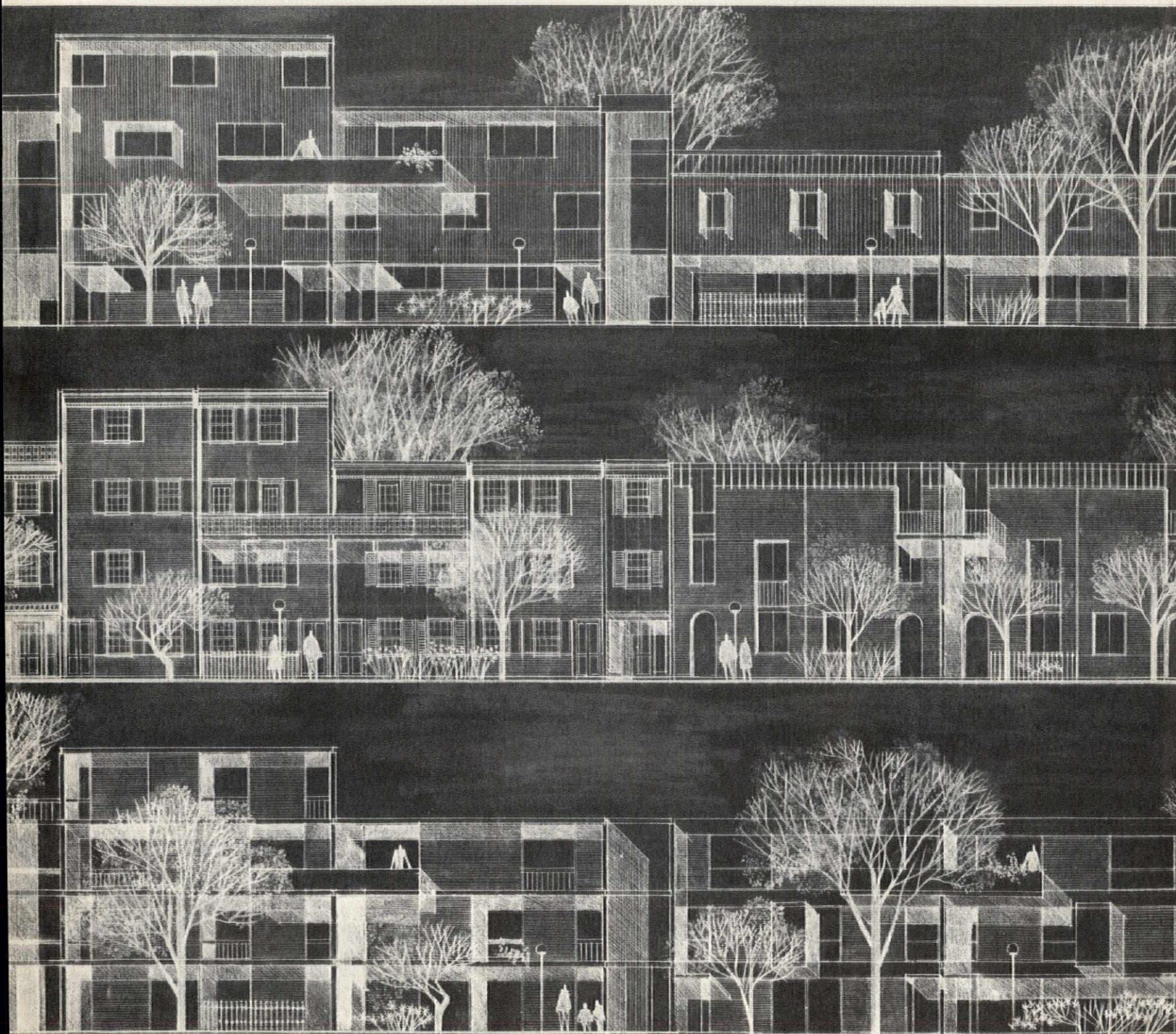


the special character of neighborhoods are groups of houses—modules of the neighborhoods. And building technology will provide still another modular dimension to the urban scale through a series of mass-produced components turned out by machines directed by artists in the functional esthetic demanded by an age that has placed men on the moon. Perhaps, too, a totally new esthetic will emerge as systems building grows in both complexity and precision. After all, men who have achieved a weightless and effortless grace jumping about the face of the moon might have new sorts of dreams.

The mass production of highly designed, repeatable building elements will not necessarily result in the brutal and visually paralyzing repetition of standard elements so familiar in "modern architecture." If the profession involves itself in the design and manufacture of building systems, the designed components could

heighten the sense of individuality within the spaced rhythms of housing groups, neighborhoods, cities and constellations of cities, purely by adding a new dimension. An almost contrapuntal visual rhythm might be possible, architecturally. A sense of community might also be created (it is almost nonexistent today in urban design) out of complex hierarchy of spaces and scales, causing each man to feel both very much an individual and very much an integral part of a larger order and discipline—like the tribal awareness of having a secure place in an ordered universe.

Visions of the kinds of environments industrialized architecture might yield will be realized only through a rational and precise building technology, a redirected architectural profession and a long-awaited (and not yet foreseeable) government commitment to a high technology which has the purpose of improving, rather than destroying, man's life on earth. □



## Carl Koch: A Capsule History



When Boston's Carl Koch received the Industrial Arts Medal from The American Institute of Architects last year, the citation noted his untiring work "for many years to incorporate prefabricated building materials into his designs with variety and imagination. He has worked closely with corporate clients, endeavoring to meet the needs of society in urban housing, and has demonstrated a knowledgeable grasp of one of our most pressing problems." A recap of his efforts in industrialization would surely include the following:

- **SNAKE HILL**, Belmont, Massachusetts, 1941: Design and construction of a group of hillside houses using common detailing and materials, the architect's first community project.
- **ACORN HOUSE**, 1946-49: Design and construction of a completely prefabricated and prefinished house, transported from factory to building site on a flatbed trailer and originally erected in Concord, Massachusetts.
- **LUSTRON**, 1948-49: Design of new Concord, Massachusetts and a study of the company's production capabilities, followed by the design of new components and accessories using porcelain-coated steel where practicable.
- **CONANTUM**, 1951: Design and site planning for a 100-house development along the Sudbury River in Concord, Massachusetts, one of the first examples of a residential community using the cluster principle of siting.
- **TECHBUILT**, 1952: Design of the original house based on a 4-foot module and all subsequent models through 1963, with supervision of design thereafter; and design of the Techbuilt vacation cottage and modular furniture.
- **NATIONAL STEEL**, 1957-59: Research project for the Stran-Steel Division, developing and modifying its standard components.
- **FERRO**, 1959-60: Design and construction of a research house demonstrating the uses of porcelain enamel in residential construction.
- **LOCKHEED**, 1960-61: Research and development project for the Housing Division in which it produced a new building system based on a 16x16-foot bay with a hyperbolic paraboloid roof system.
- **ARMCO STEEL**, 1961: Research and development project to adapt its standard components and to develop supplemental projects for use in multifamily housing.
- **ALCOA-CIT**, 1961-62: Research project investigating needs and standards for college dormitory construction plus evaluation of three construction systems.



Snake Hill



Acorn House



Ferro

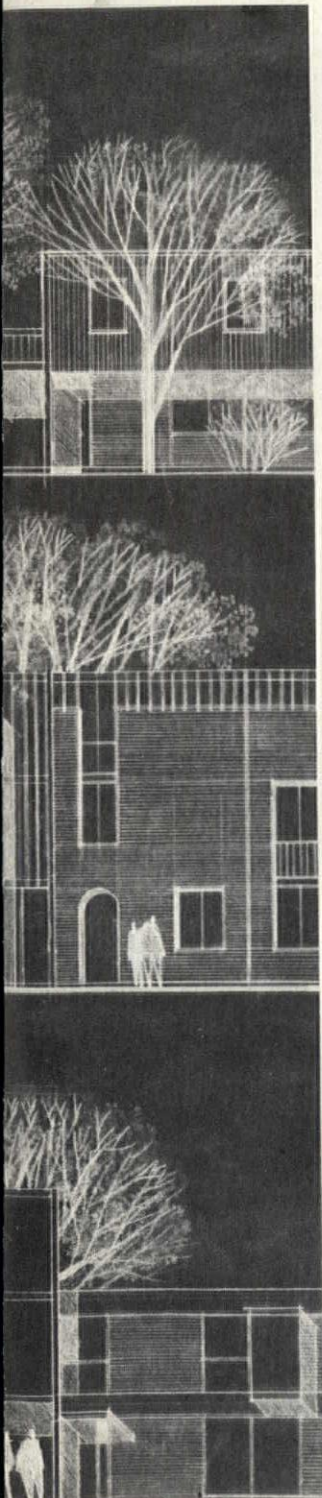


Armco Steel

Today, Koch, principal in the firm of Carl Koch & Associates, Inc., is involved in what he regards as his most challenging project to date: Lewis Wharf, purchased in 1966 by the Boston Waterfront Development Corp., which he helped to organize with his architectural associates and "friendly and incredibly patient businessmen," as he puts it. Says Koch about Lewis Wharf: "Further commitments took the form of moving our architectural offices to the wharf four years ago and suffering the resultant continuous turnover in secretaries who persist in seeing the waterfront as it is rather than as it will be!

"For those who know me, it will be no surprise to find that my self-built cruising yawl *Jen*, which has conveyed my family and me some 25,000 miles of port-to-port research here and in Europe, has been committed to Lewis Wharf to brave the present pollution, both air and water."

THE EDITORS



# A Piece of the Action

by ROBERT ALLAN CLASS, AIA

**New dimensions in the architect's role in the primary decision phase of the building process are described in this report from a working session of the Committee on Professional Consultants.**

To join the team creating new building projects, architects must first learn the language of finance: the words, their meaning, their application. That is just what a small group of architects did in Washington, D.C., recently. Joined by members of other disciplines to develop a team-oriented pilot project, the group's vocabulary expanded to include such words and phrases as "equity position," "debt service," "residuals," "subordinate," "constant" and "net net."

The occasion was a working session attended by practicing professionals in the disciplines of finance, real estate, law, engineering and architecture, hosted by The American Institute of Architects' national Committee on Professional Consultants. The meeting was called to explore the "Team Approach to Conceiving and Initiating Building Projects." Special consultants to the committee included representatives of the Mortgage Banker Association of America, the US Savings & Loan League, the National Association of Real Estate Boards, the American Society of Real Estate Counselors, the bar, the National Society of Professional Engineers, the Consulting Engineers Council of the US and the Institute.\*

From its former traditional position of dealing with mutual concerns between engineers and architects, the Committee on Professional Consultants is broadening its horizons by including various groups whose influence is felt in the decision-making area of the building construction process, and it resolved to start pilot programs on the team concept in order to provide leadership and guidelines for action at the local level. At earlier meetings, the committee has established excellent rapport with realtors, financiers and lawyers. The first pilot program was the subject of the recent meeting.

To provide a framework for the session, a scenario was written with a cast of participants assuming specific roles in a hypothetical situation. A critical path analysis of cash flow, time schedule and program was started to help plan the project. The task was the simulation of the step-by-step process of preparing a joint

venture proposal for building and leasing a 2,500-person research and development facility for a drug company in a typical Midwest city. The goal: a greater understanding of the contributions of all disciplines to the conceiving/initiating process.

Referring to the scenario accompanying this report, the task force, composed of a banker, a realtor and an architect, first identified the community, its characteristics and its outlook for the future. It was thought that a college town was essential for the kind of resources needed by a research team.

Discussion then centered on the need to identify available talent and means within the community to implement the proposal and on the potential need for securing additional resources from other communities. It was determined that further information on the drug company was required, such as its involvement in community affairs and its seat of decision making, as well as relationship to economic balance of the community and other possible plant locations.

Based on specific experiences of some of the participants, the potential of joint venture involvement in a related development (housing, commercial areas, schools, for example) was explored and found to be a feasible enterprise as part of a larger package for easier financing.

Even though all of the detail figures and the critical path analysis were not fully completed, substantial progress was made in developing an excellent working team. Emphasis was placed on the need for prompt action once the decision was made to embark on a joint venture. It was suggested that legal counsel, to advise on business relationships and regulatory constraints, be consulted at the venture's formative stages.

The following steps for drafting a proposal were suggested, not necessarily in priority order:

1. Establish basic corporate framework of joint venture. Determine capabilities of partners for full or partial input of talent, money, land.
2. Contact drug company to determine present and future requirements in terms of quantity and quality of space; ascertain its disposition toward leasing versus purchase or lease with purchase option; determine its location preference and alternatives; determine, if possible, the source and type of competition the joint venture will face.
3. Determine local government officials' attitudes toward possible necessary zoning and code changes and their opinions of the present and the foreseeable tax climate (not only real estate but total taxes). Determine extent of cooperation for installation of utilities and access road.

Mr. Class is director of Technical Programs for the AIA.

\* Participants at the AIA Committee on Professional Consultants meetings: Harry T. Maulding, senior vice president, H. G. Smithy Co., MBAA; Thornton W. Owen, president, Perpetual Building Association, USSLL; Frederick A. Marsteller, president, Washington Board of Realtors, NAREB; Boyd T. Barnard, chairman, Jackson-Cross Co., ASREC; E. A. Prichard, attorney for Gulf Reston, Inc.; Milton F. Lurch, general counsel, NSPE; William A. Sowers, consulting engineer, Sowers, Rodes & Whitescarver, CEC; Cecil M. Tammen, AIA, chairman, CPC; Carl R. Blanchard Jr., AIA; Robert L. Clemmer, FAIA; Russell O. Deeter, AIA; David R. Dibner, AIA; Herbert E. Duncan Jr., AIA; Joseph H. Flad, FAIA; David N. Yerkes, FAIA; Frank L. Codella, AIA, administrator, Department of Professional Services; Robert Allan Class, AIA, director, Technical Programs.

4. Determine approximate size and cost of facility and land area required.
5. Secure options on possible sites for minimum deposits, said options to contain extension clauses with additional deposits. "Option land" should include land for future related development.
6. Explore possible money sources—not limited to banks and savings institutions—based on maximum borrowing.
7. Prepare budget estimates on probable total land costs (including utility and road installations), basic building costs (not including work required by tenant), and indirect costs (including legal fees, interest during construction, financing fees, title transfer fees, architectural fees, taxes, other charges during construction).
8. Develop a net rent to the tenant based on estimated costs and probable financing terms and conditions. The net rent figure should result in a return on equity to be determined by the partners, with consideration given to the competitive market for similar space.
9. Firm up a joint venture agreement.
10. Prepare graphic sales tools to complement presentation of proposal to the drug company. Graphics could include facilities analysis diagrams, site plans and community plans.

It was strongly recommended that the first four steps should be accomplished in the afternoon of the day of the "Chamber of Commerce luncheon" referred to in the scenario, and that the fifth step should be completed quickly and discreetly.

The architect members brought up the point of possible conflict with established ethical standards. The ensuing discussion indicated that the architect in this case would be rendering services to the joint venture corporation and not to the drug company. It was suggested that full disclosure of the architect's interest in the project be made to the drug company for the purpose of avoiding any potential implications of conflict of interest.

The traditional architectural approach is necessarily fee-oriented, whereas the traditional approach for a businessman is to weigh long-term capital gain against immediate earned income. The implications are that it may be wise business judgment to consider the potential of capital gain in the practice of architecture, without reduction in the quality of professional services.

To use the language of the day, "getting a piece of the action" involved an equity position in this simulation. While equity positions were a stimulus in the discussion, action-oriented meetings on the team approach could be equally rewarding without the equity element.

The guest consultants all indicated that they would welcome the architect's participation in this type of concept, and it was observed that architects generally would be in a stronger position than at present if they take the initiative in conceiving projects. This can follow many avenues, such as finding the client, finding the money, finding the land, combining the team.

The thought was expressed that all of the disciplines represented at the meeting should make an effort to get to know each other personally to develop full confidence in each other.

The group made a strong recommendation that similar meetings be held around the country and urged the local components of the various associations represented to initiate such meetings without waiting to receive the final results of the pilot meetings.

The committee contemplates further broadening of contacts with other groups which have influence on the decision making process. This progress report only outlines possible steps in the process; we hope to add flesh to the bones in future reports.

The meeting underlined an important future facet of the profession with this basic premise: "If we can learn to talk with 'them,' we can learn to work with 'them.'" □

## A Task Force Case Study on the Team Approach to Conceiving and Initiating Building Projects

### Scenario

A banker, a realtor and an architect meet at a Chamber of Commerce luncheon where a new grant for a Department of Health, Education and Welfare research project on lung cancer is announced. The location is a Midwest city of 100,000 population.

A large AA drug firm was brought to the city five years ago through the joint efforts of the chamber and the city's development coordinator. The drug firm has a growing part of its research and development laboratory devoted to lung cancer and has attracted a growing group of specialists in this field from around the country. The firm has gained a good nationwide reputation in the field of research. Much of its research to date has been with company funds and with a few government and foundation grants.

As a result of Congressional pressure, a massive 10-year program for lung cancer research has been announced by the President and the Secretary of HEW. Congress has passed a resolution supporting the research, thus giving reasonably good assurance of continuing funding. HEW has determined that research should be carried out in the private sector, with year-to-year goals and the approximate amount of personnel needs programmed. Industry proposals have been sub-

mitted and the local drug company has been awarded the bulk of the HEW research grant; in addition, it has had firm indications of substantial support from foundations.

The company's facilities will be adequate for the next three months, and it will be able to lease facilities to take it through an additional 15 months, when its hiring schedule will require new facilities and equipment.

Present R&D staff numbers 500. The program will require that total staff be increased to 1,000 by the end of the first year, to 1,500 by the end of the second year and to 2,500 by the end of the third year, where it is expected to remain static for 10 years. However, depending on the cumulative results of the research, there is a possibility that further expansion will be required.

Both the chamber and the development coordinator are working hard to assure that the additional facilities are constructed in the city. The major subject of the luncheon is the announcement of the HEW grant and the drug company's plan of need.

The banker, realtor and architect know each other through service on the United Fund and other civic endeavors. They have mutual respect for each other. They have had a few minor business contacts between individuals but they have never worked together on a building project. As a result of their

luncheon conversation, the three agree to form a joint venture to make a proposal for building and leasing an R&D facility to the drug company for a 10-year period, with each having substantial equity positions. Each will personally put up \$10,000 to cover initial expenses and will contribute personal expertise. As each is a majority stockholder in his firm, he will be able to call on staff assistance as needed, with staff time reimbursed by the group at cost.

### Task

Initially, one of three persons will be assigned the role of each of the three parties to the joint venture to get the ball rolling for input. Each of the other persons may put himself into the role he chooses from time to time, to provide cross-fertilization and expertise.

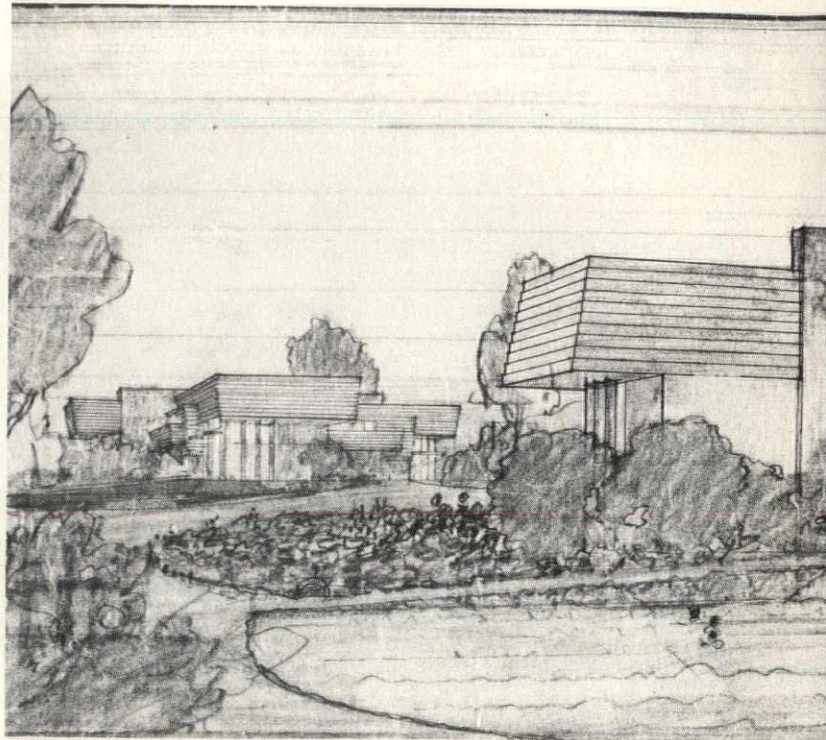
Effects on housing, education, shopping, recreation, transportation and other elements of community planning should be considered, as well as the social responsibilities of those involved in the project. Discussion is anticipated on pitfalls, alternatives and evaluation of risk.

Aided by a graphic critical path network analysis, the goal is the identification of suggested steps to be taken and understanding the contributions of all disciplines in the conceiving/initiating process.

# FLLW *versus* the USA

by TALBOT WEGG, AIA

**A personal chronicle about Frank Lloyd Wright's first and only experience of having the United States as a client—an ill-fated attempt to design a housing project for the Federal Works Agency back in 1941.**



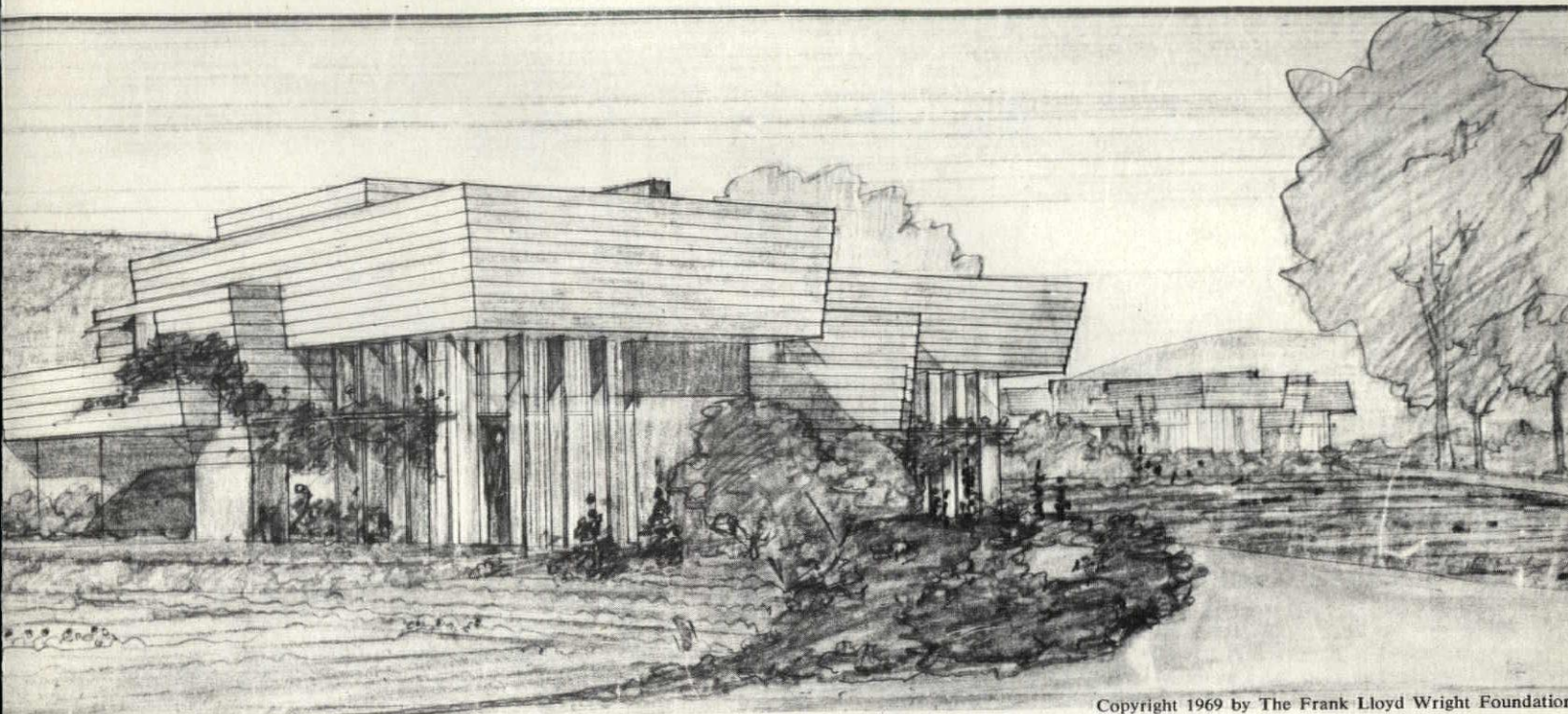
Ten o'clock of a stifling, humid morning, typical of Washington summertime, in August 1941. The unairconditioned office of Dr. Clark Foreman, director, Division of Defense Housing, Federal Works Agency, where the doctor and the chief of the division's Planning Section are awaiting the arrival of an important visitor.

A buzz and over the intercom, a metallic female voice: "Mr. Wright is here for his 10 o'clock appointment; shall I send him in?" "Please do," replies the debonair Foreman, with the faintest trace of a Georgia accent.

Enters FLLW, striding, quite oblivious to the steaming cauldron of the Foreman office. He carries a cane, wears a jaunty porkpie hat, gloves, an Inverness cape, pepper and salt tweed suit, Hoover-style starched collar and Windsor tie. Approaching the offered chair he slips off his cape, doffs the hat, strips the gloves and settles down, resting his chin on the top of the cane. An entrance which only a Barrymore could have matched.

After introductions and the customary amenities, FLLW comes quickly to the point. "What is it you wish of me, Dr. Foreman? I am 74 years old and do not have much time left. I have much to do and no time to waste."

Foreman explains the division's determination to make its housing program not merely a contribution to the nation's defense but also to its architecture. He cites the mediocrity of most existing



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public housing and his conviction that, by employing the nation's leading architects and giving them maximum freedom within cost limitations, the stigma on government housing may be eliminated. He mentions some of the architects already commissioned: Gropius, Breuer, Eliel and Eero Saarinen, Neutra, Wurster, Stubbins, Raymond, Louis Kahn, Stone, Stein, Gruzen. Could we detect a look of distaste from FLLW at the mention of Gropius and the Saarinens? In the light of later conversations it is quite possible.

Yet, in response, FLLW is less guarded and shows even a flicker of warmth. "My country has never before called on me. If you are serious and want me to work for you, I will do it and you will be proud of the results."

The broad outlines of the proposed project are quickly sketched: 100 dwelling units for workers at an ordnance plant producing rifles, situated in the rolling Berkshire Hills at Pittsfield, Massachusetts. Most defense housing projects were, of necessity, located in the drab surroundings of Allegheny County in Pennsylvania, Hudson County in New Jersey, or Detroit, and opportunities to achieve a harmonious environment were severely limited.

By the end of the meeting, FLLW has shed the armor of skepticism and positively exudes enthusiasm for the new venture.

Once the basic premise and promise had been accepted, the

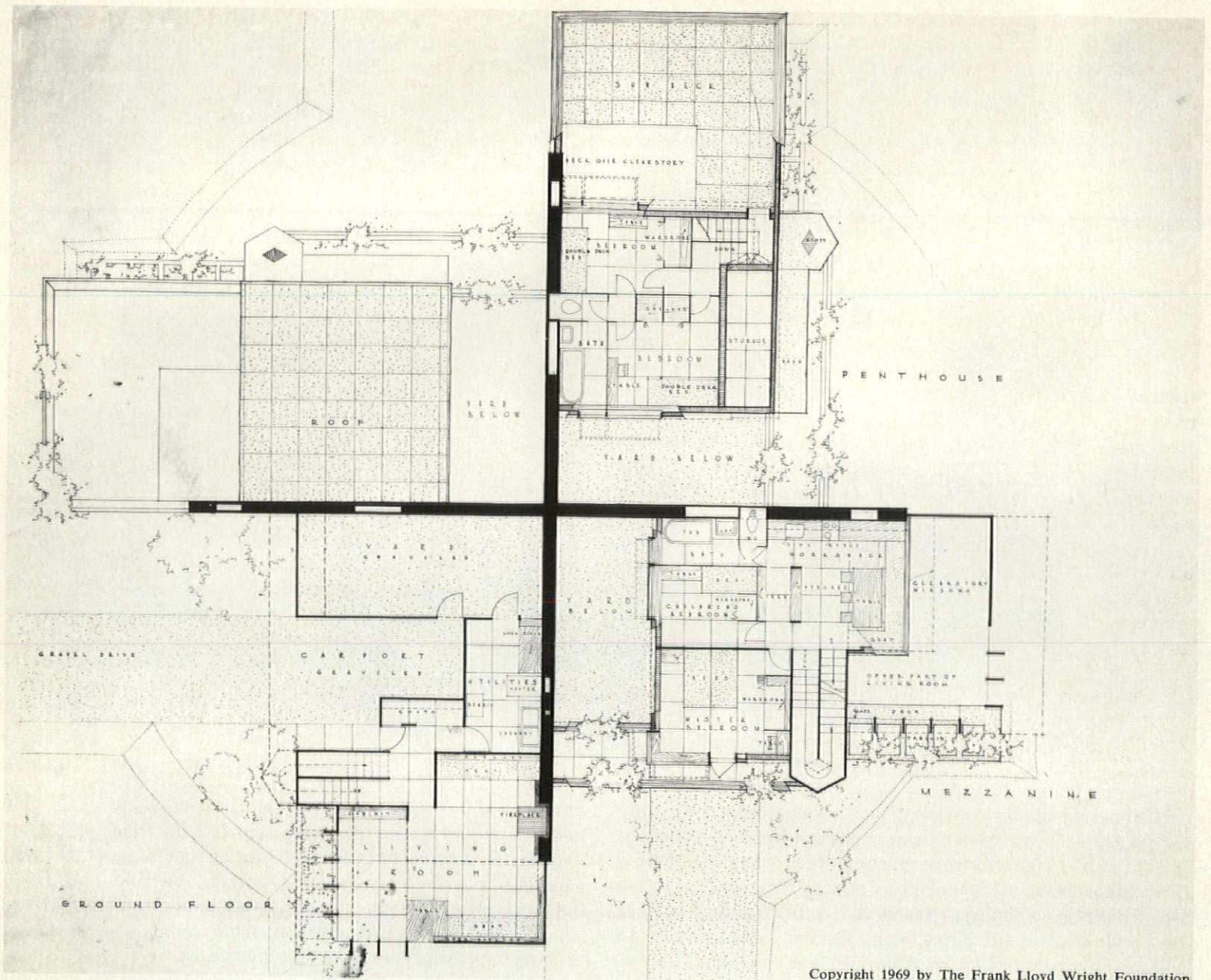
meeting with Foreman was closed on a note of happy anticipation and FLLW was turned over to the chief of the Planning Section (hereinafter referred to as the CPS) for consideration of the "nuts and bolts" requirements, contract, working schedule, cost limitations, travel regulations, etc., the bureaucratic minutiae toward which FLLW exhibited an utter and abiding indifference which was to cause future problems of no little complexity.

Almost without reading it, he signed a contract which bound him to practices and behavior completely foreign to his customary professional operations. The CPS, somewhat knowledgeable of the master's past and fully aware of the incipient booby traps, begged him to ponder over the obligations spelled out in small print before committing himself, but caution was not FLLW's way. He had a contract with the United States of America; his country had, at last, seen fit to recognize him, and he was on his way!

While the general location of the projected development was Pittsfield, the specific site had not yet been selected, and it was decided (as an unusual departure from normal procedure) to have FLLW participate in the site selection. Preliminary reconnaissance had been made and four potential sites had been lined up.

As the brilliant New England fall burgeoned, FLLW and the

Mr. Wegg carries on his practice from Bainbridge Island, Washington.



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CPS met in New York and rode a dirty day-coach to Pittsfield, a trip which would have been miserable without the master's lively reminiscences and opinions, occasionally prompted by questions but more often poured out without reserve.

Naturally, the conversation revolved about architects and architecture, like this:

CPS: "Whom do you regard as the best architect in the country today?"

FLLW, without hesitation: "Albert Kahn."

CPS, with amazement: "Why do you select him?"

FLLW: "Because he has more work and is probably richer than any other architect."

CPS: "Do you think there are any other good men?"

FLLW: "Yes, my son John has learned something from me. He's pretty good."

CPS: "Who are some of the good, younger men coming on?"

FLLW: "Don't know of any, and why bother with them while I'm still working?"

He believed American architects and the public to have little understanding of architecture. Witness the failure of The American Institute of Architects to recognize him while so many foreign countries, France, Germany, the USSR and now Britain, had given him official honors. He described, with relish and frank delight,

the recent ceremonies in London when H.M. George VI had invested him with the Gold Medal of the Royal Institute of British Architects. (The AIA awarded him the Gold Medal in 1949.)

Almost without changing pace, he turned to glum observations on the meager financial returns of his own professional life. He cited, with envy, the cushy berths occupied by Eliel Saarinen and Gropius at Cranbrook and Cambridge, which they had gained primarily because they were foreigners favored by snobbery. To the CPS's misgivings, he stated his hopes that the government contract would pay enough to discharge disturbing fiscal obligations.

These mournful reflections were terminated by the arrival in Pittsfield, where there had been arraigned a veritable VIP red carpet reception by the mayor and local dignitaries. FLLW, responding to adulation with grace, benevolence and almost Papal condescension, charmed the Irish mayor with compliments on the beauty of his city and elated the Chamber of Commerce with a promise to confer national distinction on Pittsfield with the project.

A small cavalcade of cars was provided to tour the sites. The first, generally level and verdant, had once been farmed and the open fields would insure a pleasant environment as well as reasonable development costs. FLLW was not impressed. While the troupe examined it on foot, he remained in the car, restlessly.

The second site was on rough ground with great rock out-



croppings and not a sign of a tree. The moment he saw it, FLLW's eyes lit up. "Stop!" he cried and fairly leaped from the car. Moving with the grace and vigor of a youth, he roamed the hills and dales, clearly enraptured by the austere crags.

"This is it," he exclaimed. "This is it; *this* is New England."

"But, Mr. Wright, there are two other sites we should see," said the CPS, whose bureaucratic mind was tottering at the thought of the probable site preparation costs.

"No need to look further," replied FLLW. "This is where we shall build our project."

In abject retreat, the CPS asked, "This site will need a good deal of landscaping; what would you propose?"

"We'll bring in trees. Mature, beautiful pines and dogwood and evergreens. We'll make it the showplace of the Berkshires."

Well aware that he had already surrendered, the CPS numbly reckoned with the stark realities of justifying the site selection and costs to a hard-boiled General Accounting Office. With several years exposure to the GAO, he had no hope of stretching the rules to sanction the master's normal *modus operandi*. The only hope was to persuade him to change his ways and accept federal dictum word for word.

As an opening gambit in this campaign, the CPS wrote FLLW a carefully worded letter, expressing pleasure at the progress to date and suggesting that perhaps, occasionally, the personal preferences might have to be tempered somewhat to the (obviously) unreasonable requirements of fiscal regulations, etc., etc. Replied FLLW on November 8:

"My dear Wegg: Your good letter is reassuring and in turn I want to assure you all . . . of my very best. It is high time I took a hand in governmental building in my own country and co-operation with Dr. Foreman and yourself will be only the beginning, I foresee, of a real pleasure to me.

"My education as an architect has proceeded to the point where I should be a great strength to you in your endeavor, and the liberality and intelligence of that endeavor I respect. So don't worry about results. You will be gratified.

"The personal idiosyncrasy (whatever it may be) shall not get in the way, too much, and only serve to make work a little livelier and more interesting."

An inveterate optimist, the CPS preferred to believe from this letter that FLLW had got the message and all would be well, after all. During some weeks of silence from Taliesin, he preserved equanimity, but in early December the exigencies of a production schedule calling for submission of preliminary sketches and cost estimates within one month of the contract date began to intrude. The schedule, for compliance with which the CPS was held responsible by his superiors, showed the Pittsfield project a full

month behind. Mail and telegrams to Taliesin were not answered. But then, on a cold December morning shortly after Pearl Harbor, he picked up his phone to hear:

"This is Frank Lloyd Wright and I have sketches of 'Cloverleaf' for Pittsfield. How about lunch at the Carlton about noon?"

The CPS approached the meeting with mixed feelings: personal affection on the one hand, uneasiness on the other. He was greeted by an effulgent FLLW who had reserved a table in the plush dining room, crowded with Army and Navy brass. He ordered a sumptuous repast garnished with cocktails and wine and then, apparently more interested in the war than Cloverleaf, launched into a eulogy of the Japanese, drawing on his Tokyo years.

"They're a wonderful people," he said in what seemed to be unnecessarily loud tones, "Artistic, industrious, peaceful. They don't want to fight us. It's the British," he continued, "They sucked us into it, just as they did in 1917. They've been making fools of us ever since 1812."

Recalling the description of recent honors in Britain, the CPS had to observe, "Did George VI and his men perhaps suck you in, in London?"

FLLW guffawed, "That's right, absolutely right! And it just goes to prove my point." Having established the duplicity of our allies and the nobility of our enemies, he turned to more personally pertinent matters.

"I've just had a book published," he said, "and I want you to buy it. I won't give it to you because I cannot afford it, but I'll autograph it."

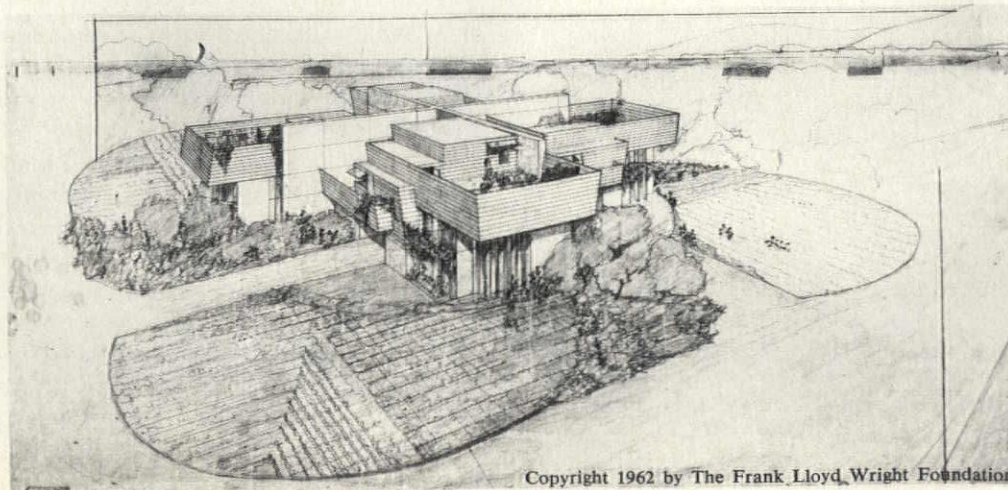
The check was brought (and paid by the CPS) and they were off to Brentano's where a copy of *In the Nature of Materials* was purchased and cordially autographed. With half the afternoon gone, they headed to the Planning Section office where a dozen mounted sketches of Cloverleaf were on display.

One look at these drawings was enough to affirm that FLLW was ever young, fresh, inventive and skillful enough to design dwellings which resembled no housing project of record. Here would be a project to honor Pittsfield and the USA.

On that day of apparent felicity, however, ominous clouds portending trouble for the whole housing program began to build up. First, a phone call from John W. McCormack, at that time Majority Leader of the House with clout second only to that of the Speaker, and a fierce, parochial concern for his Massachusetts constituents.

"Dr. Foreman, how come you've hired a Wisconsin architect for a Massachusetts project?" he asked.

"Mr. McCormack," Foreman replied, "I don't think Mr. Wright would be considered as a Wisconsin architect. He has a



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worldwide reputation and may be the greatest architect in this century."

"He comes from Wisconsin, doesn't he? And he's keeping Massachusetts architects from making a living, isn't he?"

Foreman attempted to explain the division's policy of fostering excellence in design, but the Majority Leader paid no attention.

"What's more, you've been hiring New Jersey architects for Connecticut projects and New York architects for Pennsylvania projects and Republican architects all over the country. The House is likely to take a pretty hard look at your operations before we appropriate any more money for defense housing."

Appropriations for housing, schools, utilities and other public facilities made necessary by the proliferating defense program were generated in a House Committee dominated by Southern Democrats; chairman was Fritz Lanham of Texas and vice chairman, Frank Boykin of Alabama. The interest of committee members in social and design aspects of the housing program had seemed to Foreman and his associates less marked than their interest in the selection of specific sites and the employment of specific individuals as surveyors, appraisers, housing managers, etc. Where Foreman suspected that the prospective site was owned by, or the prospective employee was a relative of, the committee member, he refused to go along. Foreman acted properly but hardly endeared himself.

The committee's mounting aversion was directed not only at Foreman but also at Nathan Straus, administrator of the US Housing Authority, which played a major role in the Defense Housing program. The torrents of loathing spilled over shortly after Pearl Harbor when the committee (orally and off the record) demanded the scalps of Foreman and Straus as a prerequisite to further appropriations for housing. On the record, they specified that:

- Future defense housing would be designed and constructed by the Public Buildings Administration, which had a huge staff of architects and engineers.
- No more projects would be assigned to the Division of Defense Housing or the US Housing Authority (the agencies which employed private architects).

When the battle smoke cleared, it was seen that Foreman and Straus were not the only victims. The CPS and his immediate

staff reported for work on the morrow of the massacre to find their furniture in the hall and their offices occupied by henchmen of the chief of construction, who had emerged as the new leader.

As for FLLW, the skirmish left him like a forlorn orphan, utterly helpless before the victors. Within two weeks he was informed in writing that his contract was terminated, that he would be paid for preliminary sketches but not for travel from Phoenix to Washington. The letter was signed by Baird Snyder, acting administrator of the Federal Works Agency. The bitter pill was slightly sugar coated by statements to the effect that "while we cannot use this design in Pittsfield, it is hoped that it can serve as a guide for project design in other localities. Increased use of the 'demountable' house is contemplated, and it is hoped that we can commission you to design a prototype of such a house."

The CPS, during the early months of 1942, was quarantined not only from participation in *l'affaire Wright* but also from any inside information of the consequences of the purge. Public reaction to the Lanham Committee's action apparently aroused the White House to action for, in April, a Presidential Executive order restored the US Housing Authority to legitimacy and dissolved the Division of Defense Housing, which meant the eclipse of the chief of construction and transfer of the prickly Wright problem to the lap of A. C. Shire, director of the US Housing Authority's technical division.

The CPS, although powerless to affect the outcome, kept FLLW informed of such tidbits as came his way. In June, a reply:

"My dear Talbot: Your kind letter duly received. I hope the money matter can be squared soon. We blew ourselves on the project pretty heavily and have been limping along borrowing here and there ever since.

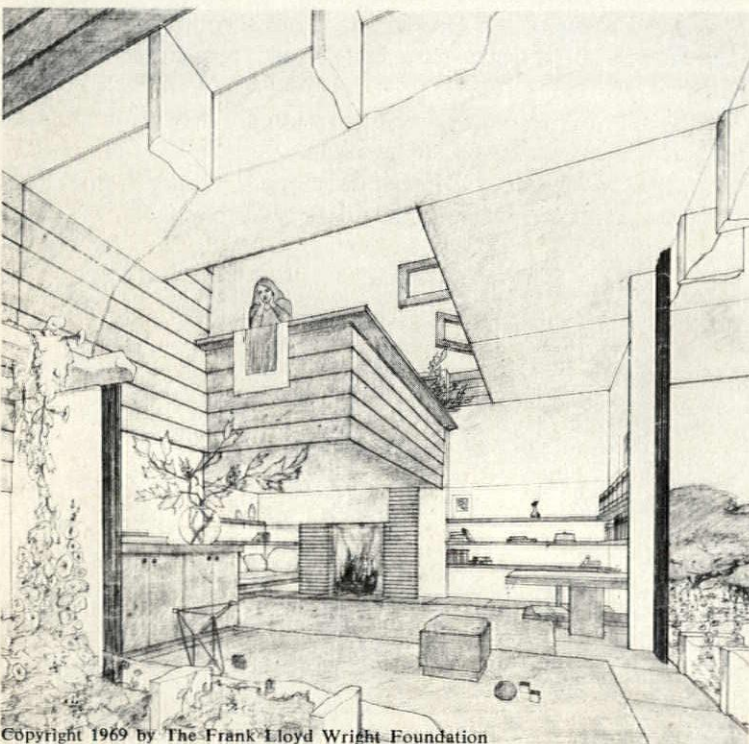
"What I fail to understand is, why after being recommissioned by Snyder himself to complete the project for use elsewhere (and use quite generally, he thought) there should now be this *meum et tuum* on tap regarding Pittsfield. I suppose it is because I didn't insist upon a new contract, believing the word of government good, as good governments' should be.

"And I wonder, too, why in the name of the same, shouldn't the hitch—if hitch must be—have occurred when the matter came up and when I was present in person when it might have been ironed out in 10 minutes instead of chugging along several weeks? Is it the nature of a bureau and therefore of bureaucracy to throw monkey wrenches into each other's acts to get something on the other fellow to add personal credit or discredit, to and fro, until desperation follows confusion? Or just what is it?

"Poor me—always an irregular! My guess is that Shire (if he was to speak truly) should not have quoted 'Wright is hard to get along with' but should have said, more truly, 'Wright is hard to go along with.' But I hope I am not to be victimized by any general bureaucratic effort to wash Rufe (first name of the chief of construction) out. Another question I have repeatedly asked which has met with the perfect bureaucratic answer—silence—is, what about Snyder's commissioning me for a demountable house? And unfair to ask you now, Talbot, I know. But whom do I ask? Since the bureau is so meticulous, looking gift horses in the teeth, I should like a look at the bureau where its honor is concerned. I suspect the answer to that one is that administration, being impersonal, has no honor nor really any responsibility."

And then a note in reply to a Christmas photograph of the CPS' family by its lakeside home, a melancholy epilogue:

"My dear Talbot Wegg: I am glad to see all "you Weggs" so beautifully situated . . . and it is good that all are so far away from Washington. As for me, I expect less than nothing from Washington at any time—past, present or future." □



# A New Application of Sprinklers

*How to install them in modular,  
flexible space in a highrise building*

by RICHARD E. RITZ, AIA

Recent years have seen a number of fires in highrise office buildings, resulting in major property losses and, in some cases, loss of lives. Many of these losses stressed the difficulties faced by fire departments in combating fires effectively and carrying out rescue work above the reach of truck-mounted aerial equipment, generally 80 feet, or about six stories.

In Portland, Oregon, we were experiencing a noticeable stiffening of requirements by building department officials and the fire marshal's office related to exits, flame spread of materials and combustible loads, particularly in tall structures. The central core building, so favorably received by owners and leasing agents because of its high ratio of rentable to gross area and the 100 percent use of wall perimeter for rental, was suffering from the building officials' request that the core be surrounded by a loop corridor which in a typical 15,000 square foot floor reduced the efficiency from as high as 85 to an unattractive 75 percent.

A few years ago, in the course of a meeting with the fire marshal concerning a current highrise project, he remarked, "Now, if you put automatic sprinklers throughout the building, we wouldn't ask for the loop corridor."

That started it. From there we went to a detailed discussion of the concessions which might come with automatic sprinklers. The following requirements were omitted or modified:

- Smoke shaft and vestibule at exit stairways
- Fireman's access stairs or ladders
- Wet standpipes
- Rated exit corridor enclosures on rental floors
- Dead end exit corridor length limitation extended to 40 feet
- Distance to exit stair limitation extended from 150 to 225 feet
- Loop corridors in central core building
- Fireproof core for wood paneling in tenant space
- Flamespread of 75 for wood paneling in tenant spaces modified to 250.

No relaxation of requirements was made for fireproofing as required for type I buildings. Also, the vertical exits were to be maintained in two-hour enclosures, with no combustible finishes.

Certain special requirements were also imposed, such as:

- The sprinkler system was to be designed in accordance with NFPA pamphlet 13.

- Each tenant floor was to be considered a separate fire area in designing the sprinkler system, with shutoff valve for each floor.
- A 1½-inch hose valve was to be provided at the sprinkler riser for fire department use only.

- The dry standpipes were to be retained and located in the stair and a supply of hose, nozzles, axes and other equipment to be stored in a closet near the standpipes at designated floors, five floors apart.

- An indicator panel with local supervision was to be located at the building entrance, easily accessible to firemen, designating by a signal the floor on which the sprinkler system was operating.

- At this same indicator panel, provision was to be made for take-over of control of one or more elevators by firemen and also provision to run at least one elevator on emergency power.

We agreed to make a detailed economic study, using as a basis a recently completed office building of the central core type, to see if the added cost of sprinklers might be sufficiently offset by concessions to justify serious consideration.

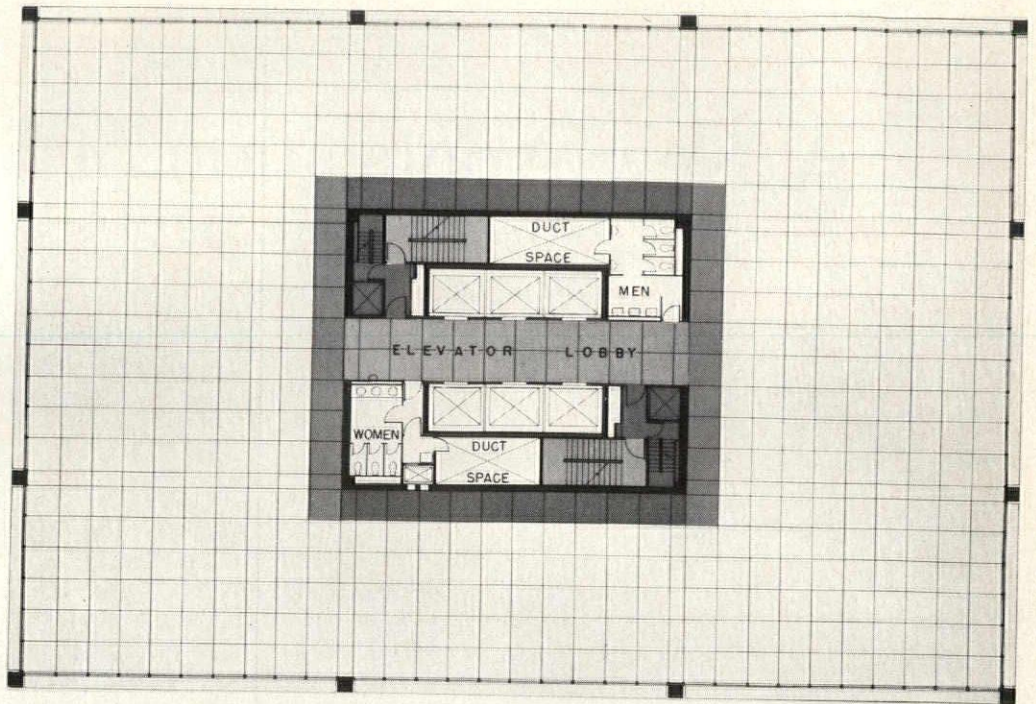
The results were startling. Assuming that we took the offsets which would be permitted if a fully automatic sprinkler system were provided throughout the building, the system could be installed in the 240,000 square feet of tower space at no additional cost. The annual gain from insurance savings and additional rental was approximately \$50,000 a year, amounting to \$2½ million over a 50-year building life.

Our opportunity to develop the idea soon came with the Georgia-Pacific Corporation headquarters office building to be built in Portland. Consisting of 27 levels above grade and three below, it was designed with a central core floor plan and completely modular rental space. Each 5-foot module square was complete with light fixture and supply or exhaust grille for air-conditioning in the ceiling. Outlets for electric and telephone service could be located in each module on the floor, served by under-floor ducts. Partitions could be located anywhere along the 5-foot module lines and then be removed and relocated without altering mechanical or electrical services, with the exception of

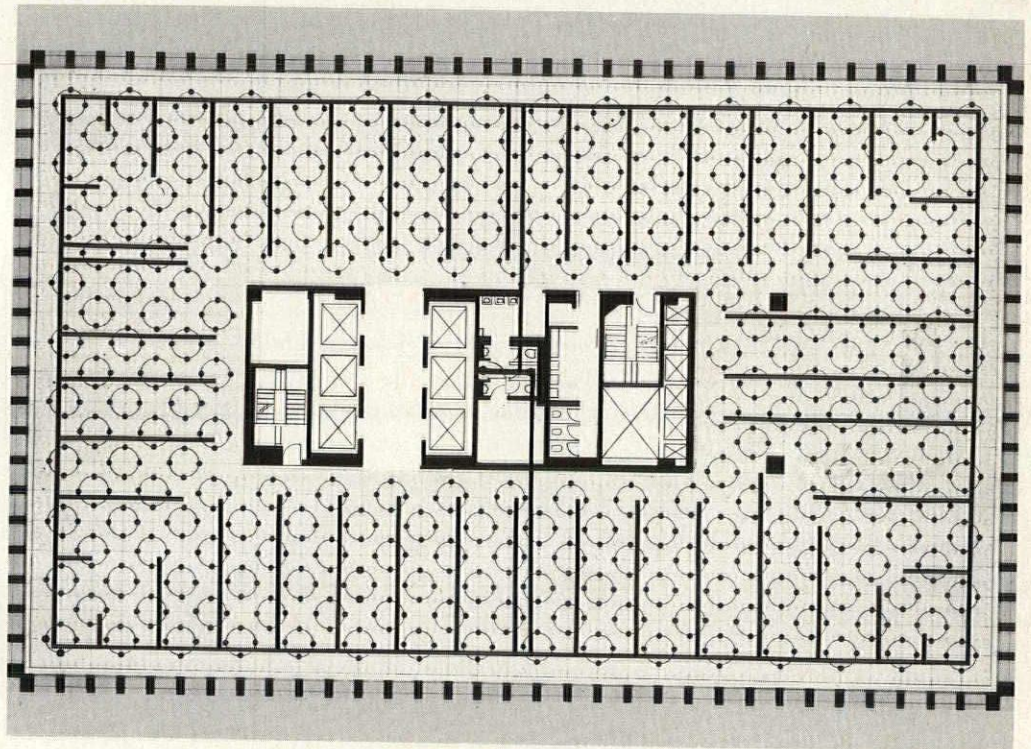
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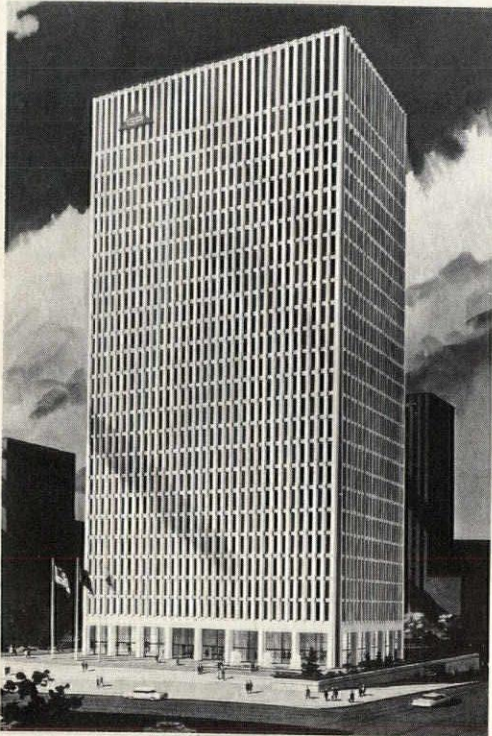
Typical floor of the building used as the basis of SOM's original study to determine economic feasibility of installing sprinklers in a highrise office building. Dark gray shows areas eliminated by sprinklers: loop corridors, smoke towers, vestibules and fireman's stairs. Medium gray shows the corridors needed to serve a maximum number of tenants in a sprinklered building. Light gray shows corridor needed to serve one or two tenants per floor in a sprinklered building; also needed will be the required stairs. Savings of construction cost on the dark gray areas and the additional area available for leasing made sprinklers pay for themselves.



Typical tower floor of the Georgia-Pacific Building with loop sprinkler main and laterals shown by black lines. Potential head locations are indicated by dots. The circles indicate how the swing-arm runouts can be made to connect to any of the potential head locations.



The Georgia-Pacific Building has moment-resisting frame of reinforced concrete using white cement, sand and white quartz aggregate, sand blasted to provide the finish.



the switching of overhead lights. The major problem was to devise a simple, economical method of locating and relocating sprinkler heads to fit varying and changing partition requirements and at the same time provide adequate capacity in the piping system to take care of additions and alterations to the system. Numerous approaches were studied including fixed locations at frequent intervals, underwriters-labeled flexible piping to provide for head relocation, and even provision of a sprinkler in each 5-foot module.

The system finally developed was separated into highrise and lowrise systems. The latter, serving the first six tower levels and three below-grade levels, uses city water pressure for primary supply. The highrise, from the 7th to the 27th level, takes primary supply from a 750 gallons per minute fire pump; secondary supply is a pressure tank located in the mechanical penthouse. This

tank, of 12,000-gallon capacity, holds 6,000 gallons of water and is charged with air to maintain pressure on the topmost floors. Fire department pumper connections are provided separately to highrise and lowrise systems to avoid subjecting the lowrise system to pressures necessary to service the top floors.

The system is a calculated design, and each floor is served by a loop main with piping sized with respect to operating pressures as well as the number of heads served. All heads have standard orifices. Laterals from the loop main are at 10-foot spacings with take-offs for swing-joint sprinkler runouts at 5-foot spacings. Swing-joint piping comes off the top of the lateral and piping can be disconnected and reconnected at flexible union couplings for head relocation by simply taking the pressure off the system and draining only a few feet of run-out piping. A shutoff at each floor permits the rest of the building sprinklers to remain in service. The run-out arrangement permits location of a sprinkler head at any one of the four sides of each module grid with 912 possible locations of heads per floor in the modular area. The average number of heads per floor, however, will be less than 150, approximately one-sixth of the possible locations.

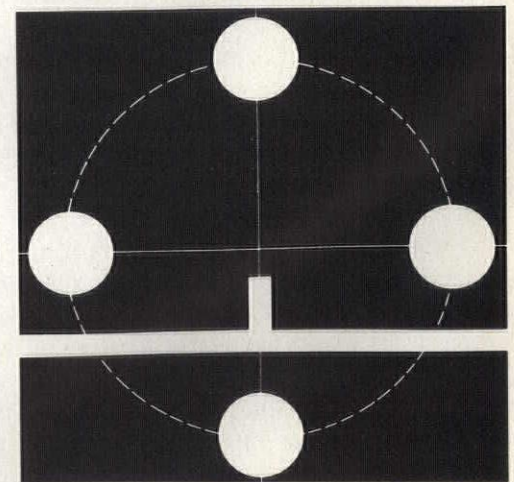
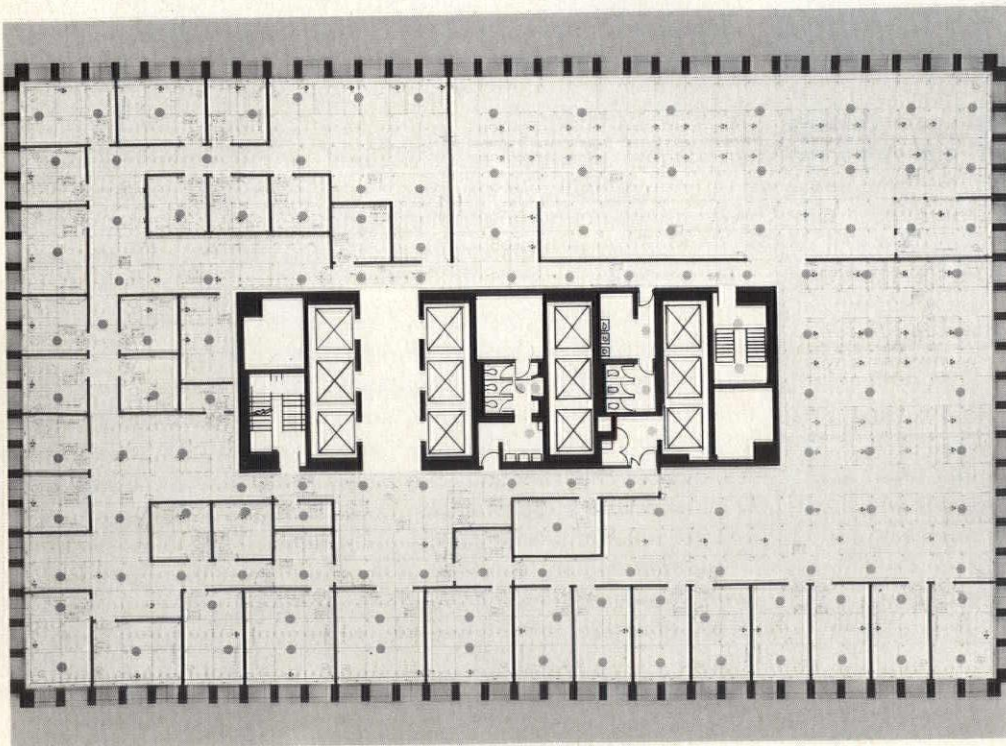
A shutoff valve and alarm system are provided for each floor. Alarm is provided by a flow-detecting device and registers a signal at panels in the main floor lobby and in the building engineer's office, indicating the floor on which the alarm has been actuated. The cost of the system was approximately \$0.70 per square foot, as bid in April 1968.

Our conclusions, of course, relate to a specific building solution and are developed under code requirements and jurisdiction of authorities applicable within its specific area. It remains for the system to be brought into service and the actual relocation of sprinkler head locations to confirm the merits of its design. □

FLOOR	CEILING ELEVATION	STATIC PRESSURE	RESIDUAL PRESSURE	SIZE OF LOOP MAIN	SIZE OF SUPPLY RISER TO LOOP
25	416	35	27	ORD HAZARD	
UNDER 25M	404	40	32	ORD HAZARD	
24	389	47	39	2 1/2	3 1/2
23	372	54	46	2 1/2	3
22	360	59	51	2 1/2	2 1/2
21	347	65	58	2 1/2	2 1/2
20	334	71	64	2 1/2	2 1/2
19	321	76	69	2 1/2	2
18	308	81	74	2	3
17	295	87	80	2	3
16	282	93	86	2	2 1/2
15	269	98	91	2	2 1/2
14	256	104	98	2	2 1/2
13	243	110	104	2	2 1/2
12	230	115	109	2	2
11	217	121	115	2	2
10	204	126	120	2	2
9	191	132	126	2	2
8	178	137	132	2	2
7	165	143	138	2	2
6	152	149	144	2	2
5	139	28	24	3	3 1/2
4	126	34	30	3	3
3	113	40	36	3	2 1/2
2	100	46	42	2 1/2	3
MEZZ	87	51	47	2 1/2	3
PLAZA	74	57	53	ORD HAZARD	
CONCOURSE	60	63	59	ORD HAZARD (FULL BLOCK)	
F & A	46	70	64	LIGHT HAZARD (FULL BLOCK)	
MECH	31	76	72	ORD HAZARD (FULL BLOCK)	

Variation in pipe sizes in relation to the elevation of the floor and its resultant line pressure. Up to the fifth floor the sprinklers are supplied by city pressure. Above, to the top of the building, they are served by the fire pump with the pressure tank located at the top of the building as a secondary supply. All risers are 6-inch pipe.

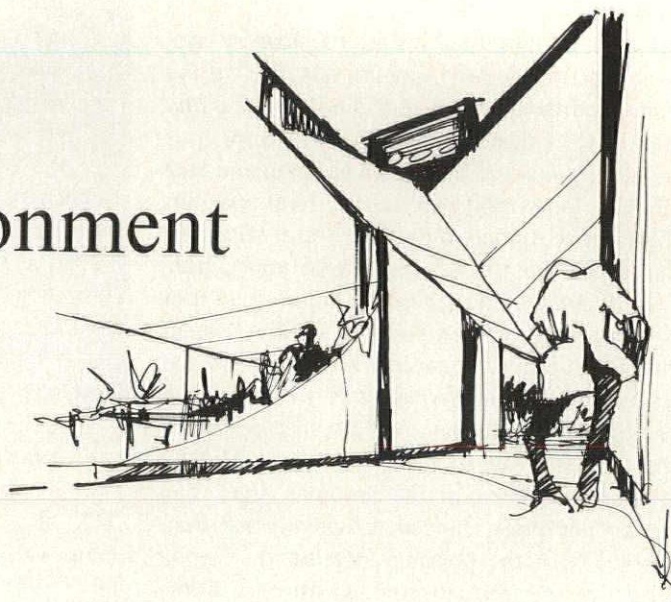
Typical floor without the piping, but showing a typical partition layout and the actual sprinkler head locations, indicated by dots. There are 131 heads in the modular area on this floor in 14,000 square feet; one head for 108 square feet. The number of heads could be reduced to 119 except for the extra foot of space outside the module line at the window, which increases the distance from this head position to 8½ feet. The area per head would then be increased to 118 square feet. SOM will work out this problem in next building.



Detail showing how one runout from the lateral can serve four possible head locations by swinging the piping about a single joint. The joint is made by a flexible union coupling to eliminate the possibility of leaks which might result from a threaded joint, particularly after relocation from the original installation.

# The Office Environment People Prefer

by KENNETH E. JOHNSON



**How do people react to their offices, where they spend so many hours of their lives? What aspects of the office environment are most important to them? Of the many parts of an office, which create the greatest problems, give the greatest satisfaction?**

To answer broad, general questions like these about the office environment, we recently commissioned a behavioral research study\* to survey the reactions of office workers to their offices. The results reflect answers from 358 respondents who represent 40 different departments of 18 companies that included banks, general offices, utilities and professional firms.

The respondents were divided in two ways: between executives and staff (managers and nonmanagers), and between those in, or not in, offices done by an interior design firm. Their answers produced more than 90,000 pieces of data from which emerged a picture of the "ideal" office.

The study is not, as is so much of the research in this field, an analysis of the possible variables inherent in a specific situation; i.e., we did not attempt to study which exact distance between desks would contribute to working efficiency. We merely wanted to establish what the occupants felt was important.

The resulting study is, we think, an interesting guide. We do not present it as an "instant blueprint" for the designer. But when added to the growing body of behavioral and other scientific information becoming available to the designers and architects who are concerned with the working environment of the 36 million men and women who spend most of the daylight hours in offices, it offers some specific answers to specific questions and perhaps directions to pursue for more intensive future study.

The environmental factors examined were, for convenience, organized into four categories of environment:

1. Spatial: windows, doors, walls, lighting, heating, color
2. Equipment: desks, chairs, files, telephones, business machines
3. Functional: specific work stations, conference areas, relaxation areas, eating places, restrooms, locker rooms
4. Interaction: spaces in which people or materials move—lobbies, reception areas, halls, stairways, elevators.

In terms of these categories, then, we found what the respondents of our study thought their "ideal" office should be. Answers of respondents appear in italics prior to my comments.

## Spatial Environment

*Proper heating, ventilating and airconditioning: This was the most important consideration for the majority of respondents. (The second: proximity of exterior windows; the third: arrangement of the work place furniture for maximum efficiency.)*

We knew that these factors were major ones in office design, but would not have ranked them as high on the list as the study shows they should be. Contrastingly, the study also shows that most people are satisfied with, and comfortable in, their chairs; a lot of attention has been directed to chair design and engineering. But not enough attention has been directed to the elimination of static electricity in carpeting, to acoustical problems.

*Location within visual distance of window: Most respondents felt that the function of communication should play a more important role than status in the allocation of windows. Thus, in the ideal office, people would be grouped for optimum communication according to related jobs. The exterior window wall office space would then be more or less evenly divided between managers and staff.*

\* Undertaken by Dr. Lawrence Wheeler, head of the Behavioral Research Department of Ewing Miller Associates, Terre Haute, Indiana.

Most clients want their management to be close to the windows, so clerical and general staff end up with no adjacency to them. However, in some cases we have been able to persuade the client to accept a plan with exterior perimeter corridors. In others, we have located a minimum number of executives on the outside wall, but left certain bays open so that general office people have an opportunity to look out. We feel that this question of adjacency to windows is extremely important because much of the general office staff is fixed to their desks. Executives, on the other hand, move around and get out of their offices, thus they have more opportunity to change their surroundings.

*Carpeting subdued in pattern and color: Managers, concerned with wearability, prefer carpeting in light traffic areas and hard flooring in heavy traffic areas. Vinyl flooring and strong colors are least liked by any group.*

For several years, our recommendation that carpeting be used extensively has been very positively received. However, there still remains the taboo that carpeting means luxury, status and prestige. We think it should be thought of as simply another floor material—as we think of tile and wood—but not as a prestige or luxury item. There is now adequate development of new types of fibers so that carpeting is generally more economical in the long run than other floor coverings. While usually carpeting is initially more expensive than hard-surface floor materials, studies show that in the long run carpeting is ultimately less expensive since it requires less maintenance.

*Pleasing proportions: Large, well illuminated rooms are preferred, with low, lightcolored ceilings that have good acoustical properties and are the same height throughout the room. Those in professionally designed offices showed a preference for ceilings with textural interest.*

The response to this question indicates that people are quite aware of room proportions. While the architect is also aware of proportions, we feel that he is not aware enough of ambient features such as lighting and acoustics. He is concerned with the total project—the structure, the monument, the construction budget, the coordination of all the expertise involved. The interior designer must be concerned with specifics—the work station, interdepartmental relationships, the functioning of the chair, the ash trays. But the interior designer also becomes involved many times in correction of certain architectural elements—for example, dealing with a lack of proper acoustical treatment by putting carpeting on the floor, by making sure that the drapery, if required, is dense enough to help absorb extra sound.

*Quiet colors, warmth: Quiet colors, with a few bright accents, and natural finishes, such as wood grain, are most appealing to everybody. People are comfortable with neutrals, except gray. Cool colors, blue or green, are preferred in large areas. While managers and staff don't differ much in color preferences, managers prefer large areas of white or off-white, seem less aware of color in their immediate surroundings than do nonmanagers.*

Color taste is becoming more sophisticated. Stigmas are being removed from materials once thought of as cold to the touch, such as glass, marble and tile. Plastic laminates, once considered cold, now have suede-textured finishes and people now think of them as warmer because they now feel warmer. The trend toward the use of natural materials, such as wood and brick, and earth colors is an attempt to create a human environment that will counteract the computer age: the hard, cold file cabinets, the decentralization

and specialization and slotting of people into a particular little function like key-punching. People don't have much human contact today; their contact is with the machines in front of them. It is becoming a function of design to counteract this.

*Some provision for privacy: The question of privacy is one of the most controversial between managers and staff. Few, however, like a completely open plan with little privacy offered. A small office with some degree of privacy was considered a pleasant and comfortable working environment by about one-fourth of the people queried. Managers, to whom privacy is a prime concern, found an arrangement in which office areas are divided by some form of screen partition or wall desirable. Secretaries and clerical workers on the other hand would rather be able to see others in the office, to interact. Managers find this distracting for all concerned.*

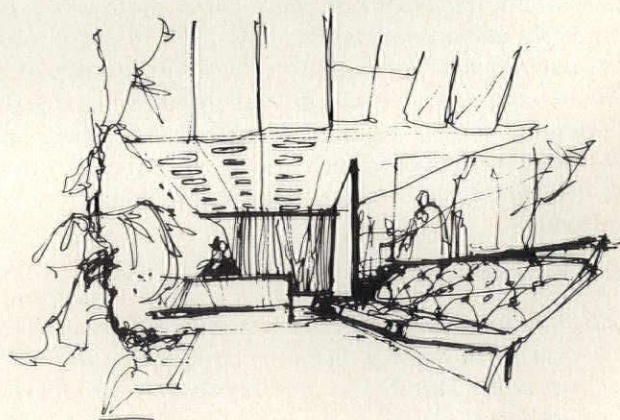
We have always tried to provide visual contact between an executive and his secretary, through interior glass windows or even, in a few cases, by placing them together in the same room. It appears from the study results that this visual contact would not be necessary if there were proper telephone connections or intercommunication. Accordingly, we will probably de-emphasize the use of interior glass partitions in the future although, of course, there are occasional justifications for their use.

*Formal layout: Most respondents liked the general office layout in which rows of desks face each other across the perimeter of the room but are separated by a row of desks running down the center and facing at right angles to the others. The arrangement which met with least favor was one in which desks are placed diagonally across the room, from corner to corner. Those in professionally designed offices preferred an arrangement in which all desks face the same way, in straight rows from one side of the room to the other.*

We prefer the latter arrangement. However, staff people may feel that they get more individual treatment if they aren't lined up next to someone on either side of them whose desk is facing the same direction. They feel that there is a certain variety of individuality inherent in being able to look at someone whose desk is facing in a different direction than theirs. This may explain some of the appeal of the office landscape concept.

### Equipment Environment

*Adequate work surfaces: Most people feel that a desk top alone does not provide enough working area. An arrangement with a desk in front and work table behind the individual is preferred by almost one-third of the respondents. Disliked was the boxed-in feeling given by a desk with connected work or typing surfaces on each side.*



Mr. Johnson is president of ISD Incorporated, an interior space design firm with offices in New York and Chicago.

Comments about arrangement of desks show that this is an area of dissatisfaction among many people who feel that they have to adapt to an unsatisfactory arrangement of desk and work space. In the future, desks or work stations will have electronic equipment built directly into them which will retrieve, via a control panel, the stored information from tape and show it on a screen or present it through a speaker.

Executive office arrangements can be flexible, offering options: The executive can be separated formally from the visitor by his desk or have the option of sitting with him at an informal lounge arrangement in another part of the room. Executives tend to use various locations in their office space to create a psychological effect—if they are buying, they may sit behind the desk; if they are selling, they may go over to the more casual area. Many executives have never before had this opportunity for flexible office arrangement; we recommend it because we know it will work.

Ample filing and storage space: *Most respondents agree that they must have filing space in or within reach of their desks. Managers are more satisfied with the amount and arrangement of filing space and business materials storage than the nonmanagers. Few people like tall files or consider them efficient. While material storage spaces may be large enough, poor arrangement of these spaces is the most frequent complaint from staff. Managers seem to feel that such spaces are reasonably adequate.*

We should make better use of closets. Too often closets are designed just to use up voids on plans. So often you open them and find them empty. In conference rooms also, you open elaborate, expensive cabinets and find nothing inside, or items that invariably are needed by someone not attending the conference. To combat this kind of waste, file and storage space should be programmed for the function of the adjacent work area; perhaps the best way to do this is to pay more attention to nonmanagers during interviewing.

### Functional Environment

Comfortable lunch-time seating: *There are considerable differences of opinion: Managers greatly prefer a subdued and quiet atmosphere, which nonmanagers dislike, nonmanagers want a comfortable place to eat carry-in food—managers disagree; managers have a slight preference for quick, efficient food service—nonmanagers disagree.*

Eating facilities offer another opportunity for the general staff to get away from the 'stalls' and go someplace that is hopefully a completely different environment and atmosphere.

Separate conference rooms: *Respondents want comfortable conference room chairs (uncomfortable chairs make short meetings) and feel that no special attention should be paid to colors and textures of materials in conference rooms. Interestingly, managers rate audio-visual equipment less important than do nonmanagers.*

Too much importance is put on the arbitrary idea of placing elaborate audio equipment in conference rooms and not enough on programming its need or actual use. There should be more flexibility in conference rooms and special attention given to the lighting to avoid, among other things, the "bald pate syndrome."

### Interaction Environment

Halls that orient: *Although many people feel uncomfortable in narrow halls, noise in hallways does not appear to be a problem. Nonmanagers view hallways merely as traffic areas, nonmanagers disagree.*

The architect is not aware enough of the need for interior signs; it should be included in the architectural budget along with exterior signs. So many businesses get off to a bad start when they don't have a proper sign program. They start taping temporary signs to doors and walls which sometimes end up becoming permanent. A lot more should be done with hallways in highrise developer-type buildings where there are long tunnels. These can be broken up with colored textured carpet inserts, by setting back the entrances to the offices at various depths, and by using different lighting designs, accenting only one wall in a corridor, throwing the light off center to one wall. Even if both walls are painted one will appear brighter and look different and add interest.

Handsome, comfortable reception areas: *Large, open waiting areas are preferred to provide a good image of the company. Few think that these spaces cost more than they are worth or that they are too luxurious.*

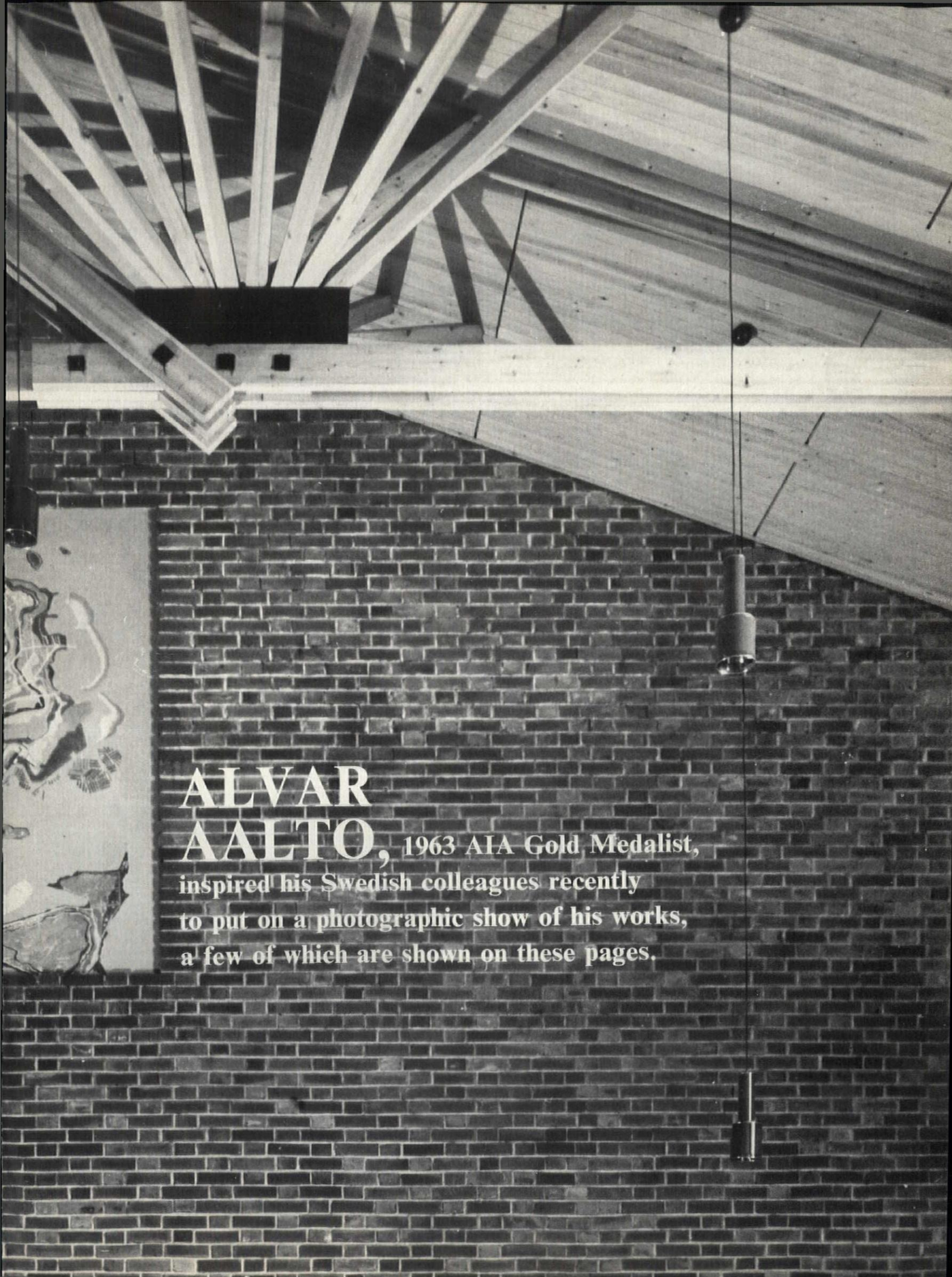
In the past, not enough attention was paid to reception areas. You would walk into an office and peer through a porthole to talk to a busy switchboard operator who was probably mad at the operator on the other end. Yet this first contact with the office sets the stage for your relationship with it in the future. The separation of switchboard and reception duties is well worth the money involved.

There is still a tendency to squeeze the space in reception areas, to seat two or three people so close to the receptionist that she is practically sitting in their laps. It is much more efficient when she is removed at a distance.

### What We Learned

- From a behavioral point of view, it is important to realize that people adapt to their environmental conditions. They accept less than optimum circumstances when any constant, negative factor is not too extreme. This ability of humans to accommodate may not be without its cost in terms of energy or efficiency. They may work as efficiently, but with higher cost in energy.
- In spite of adapting to a given situation, people are strongly opinionated about what they feel the optimum office design should be—and strong opinions can create large problems of morale.
- Individuals are often unable to judge accurately the needs and feelings of someone in another job.
- Before office designs are completed, most people want to be consulted on their individual preferences and needs for privacy requirements, general office layout and colors.
- The individual gives greatest importance to his micro-environment. Proper design of an individual's work area, regardless of his job, is essential. To enhance his own job behavior, everyone wants an efficient layout.
- The individual's reaction to his macro-environment has important effects on his entire attitude toward the office. Peripheral spaces such as reception areas, aisles and conference rooms are deemed important.
- There are significant differences in design preferences between managers and nonmanagers, especially in matters of acoustics, privacy, conference areas, lounge areas and eating facilities.
- Individuals who work in professionally designed offices are more sensitive to many aspects of their working environment than are those who work in nondesigned offices.
- Reactions to temperature and humidity significantly affect the individual's satisfaction with his office environment.
- Filing and storage spaces are important for both business materials and personal items, especially for nonmanagers.
- Professional interior space design produces measurable, positive effects on the office occupants. □





**ALVAR  
AALTO**, 1963 AIA Gold Medalist,  
inspired his Swedish colleagues recently  
to put on a photographic show of his works,  
a few of which are shown on these pages.

## AALTO

A very special purpose was behind a photographic exhibit of Alvar Aalto's work in Stockholm last year: to remind the profession, in this age of systems building and joint ventures, of the architect as an individual and of the importance, in team planning, not to lose sight of the effect as a whole. Wrote Bengt O. H. Johansson, head of the Swedish Museum of Architecture, and Pontus Hultén in the exhibit catalog:

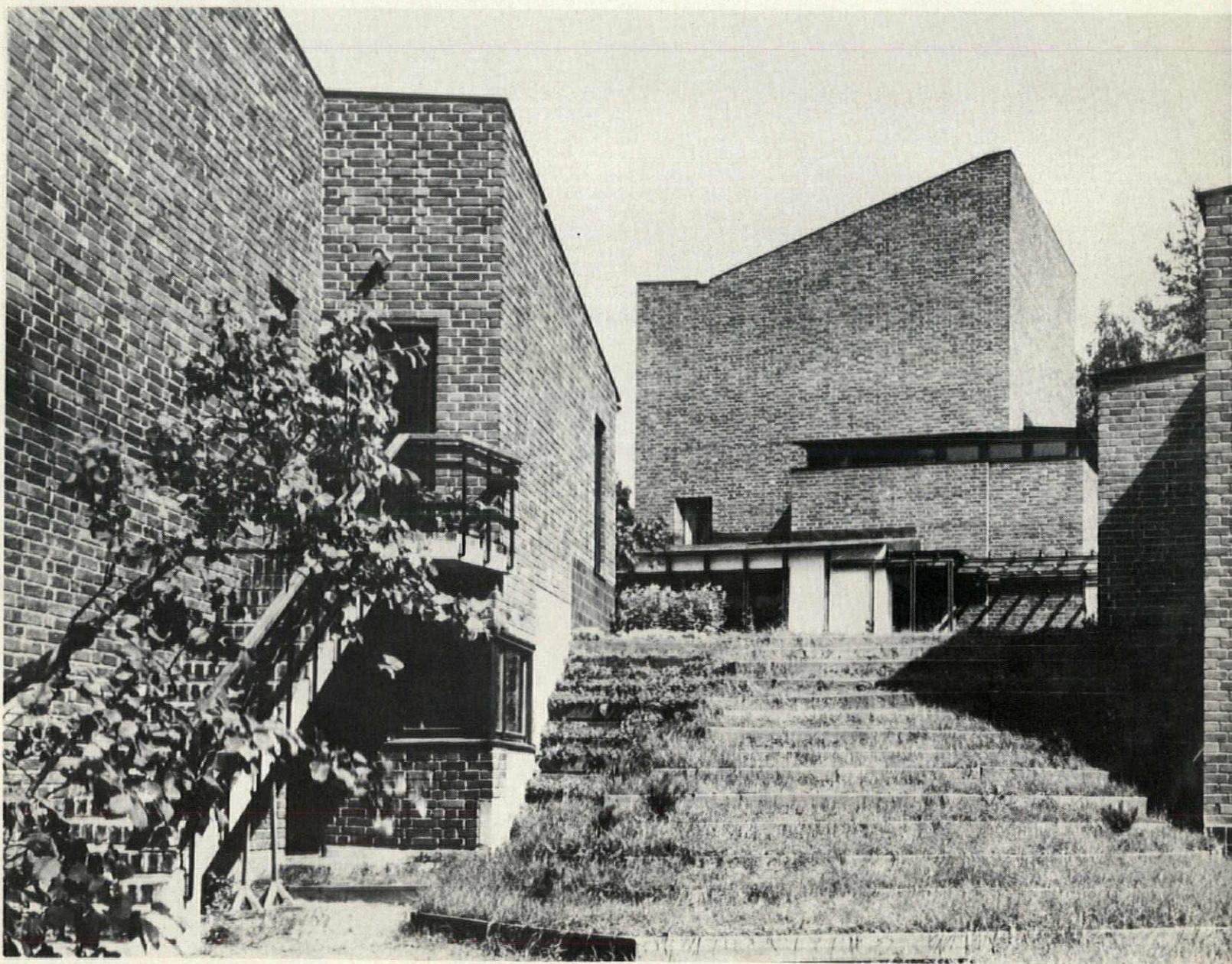
"Our architecture and urban planning here in Sweden are the visual and appropriate expressions of a process which in itself is perfect. It is a process in which all details of the building are handled by specialists within their fields, all of whom have strong possibilities of carrying out their standards and profit estimates—a process in which the architect, who has no specific specialty, is playing a part of diminishing importance; a process where the responsibility for the end product is so divided that it doesn't rest

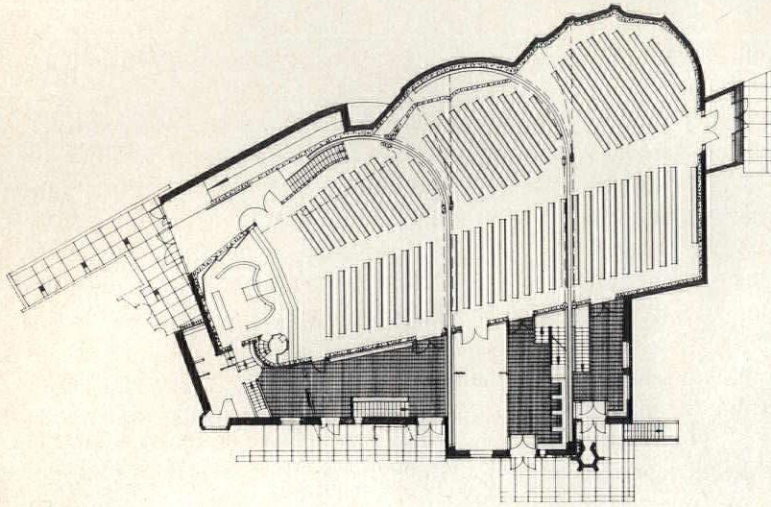
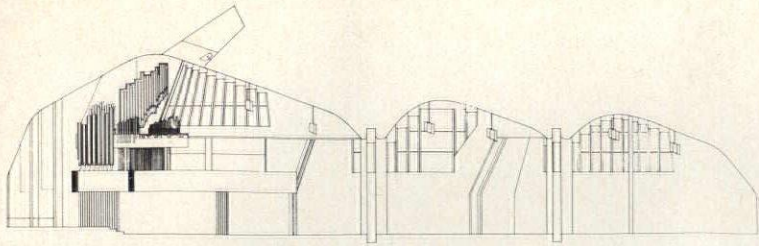
on anyone in particular; a process the result of which is team architecture.

"Therefore there is no Alvar Aalto in Sweden, and Swedish architecture as an art form is unknown to the Swedish public."

The exhibit, Johansson and Hultén went on, was not an argument for more power on the part of architects or for a return to the time when buildings and communities could be the result of one person's point of view. "Nothing could be better than the demands for team planning which are now heard across the world. But we must regain consideration for the result as a whole. A building is not equal to the sum total of its parts. For that reason it may be interesting to study Aalto's work."

The exhibition was produced by the Finnish Museum of Architecture and shown in collaboration with the Swedish Museum of Architecture and Stockholm's Moderna Museet. □





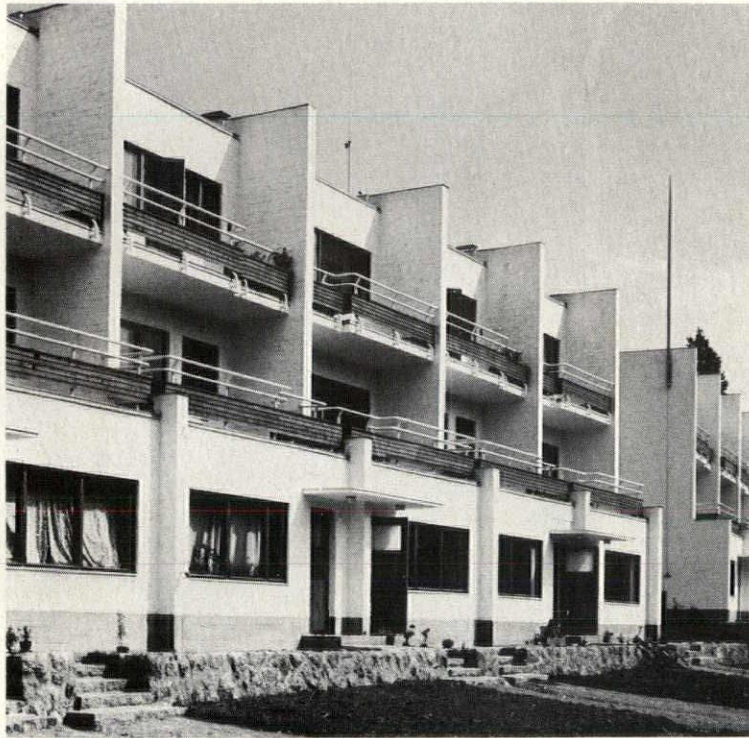
Church near Imatra—or the Vuoksenniska Church—consists of three rooms separated by movable concrete walls (this page). Each section has its own entrance; the one nearest the pulpit is reserved for church services while the two others are used for social functions. When the walls are removed, the church will seat 800 persons. Floors are of red quarry tile, the elevation around the pulpit of white marble slabs. The curves in the ceiling and walls are for acoustical reasons, so are the canted and specially shaped windows. The forms of all were perfected by Aalto through experiments with light. In this industrial area, abounding in tall factory chimneys, Aalto sought to distinguish the church tower with its architectural form rather than its height. The church, which is of white stucco with copper roofing, was completed in 1959.



Detail from the ceiling showing supporting roof structure in the council chamber of the Săynätsalo Civic Center (preceding page). The building, of red brick and wood with copper roofing, has a center plaza made of the earth dug out for the foundation. The plaza—or civic events courtyard—is one story above the surrounding area. A grass-covered stairway which is used for ceremonies (left) leads to the plaza, which has a surface of small stones set in grass. Aalto, 72 this month, won the commission for the Civic Center in a competition in 1949. All the works shown on these pages were built in Finland.



# AALTO



Workers' and employees' housing (left) of the Sunila Cellulose Factory, Karhula, is built on hilly terrain in the forest. Aalto uses the south slopes for dwellings only and keeps traffic in the valleys, while leaving the north slopes undisturbed. Built on the terrace principle, every unit has direct access to nature, and only the third floor has steps leading up to it. Design of these row houses started in 1936 and was improved upon as the houses were built. The one shown is from 1954. In terrace houses in Kauttua (below), completed in 1940, Aalto again makes use of the profile of the site instead of stairs. Each house uses roof of the lower one as a terrace.





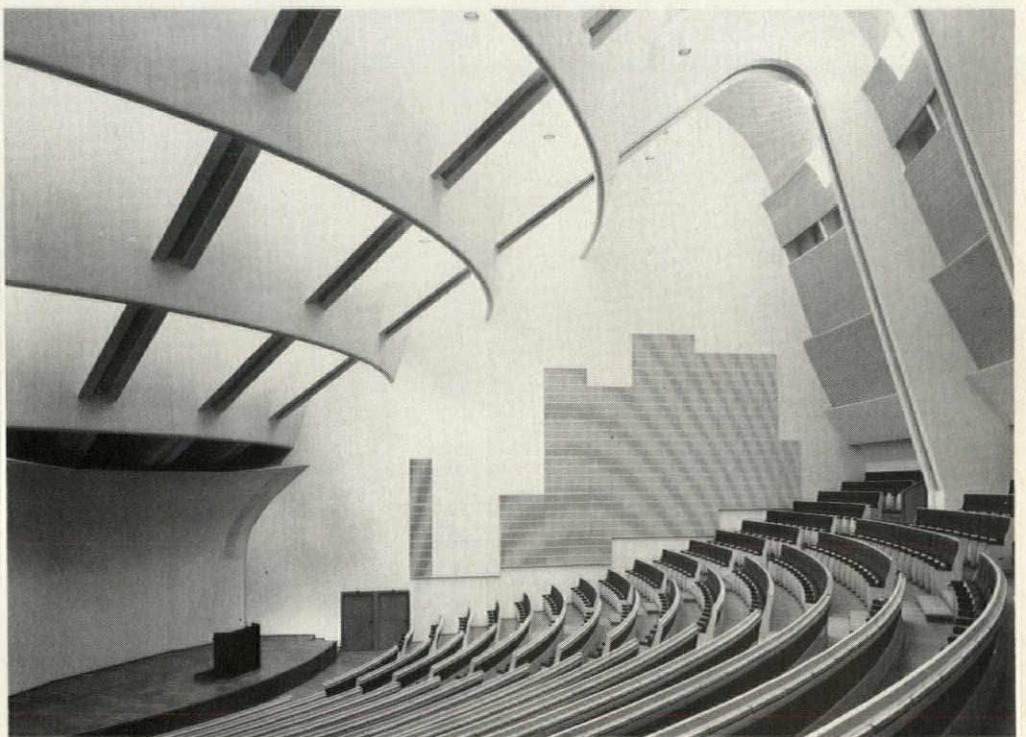
View from the main entrance of the Villa Mairea (above) near the industrial town of Noormarkku. Aalto designed the house in 1937-38. Sitting atop a hill in the forest, the U-shaped villa is a blend of teak and Finnish fir and has gray granite parapets, exterior teak sunshades. The entrance hall (right) with a fireplace corner, has ceiling of wood strips. The first floor of the villa has removable walls so it may be changed from a private residence to a gallery for the owners' art collection.



## AALTO



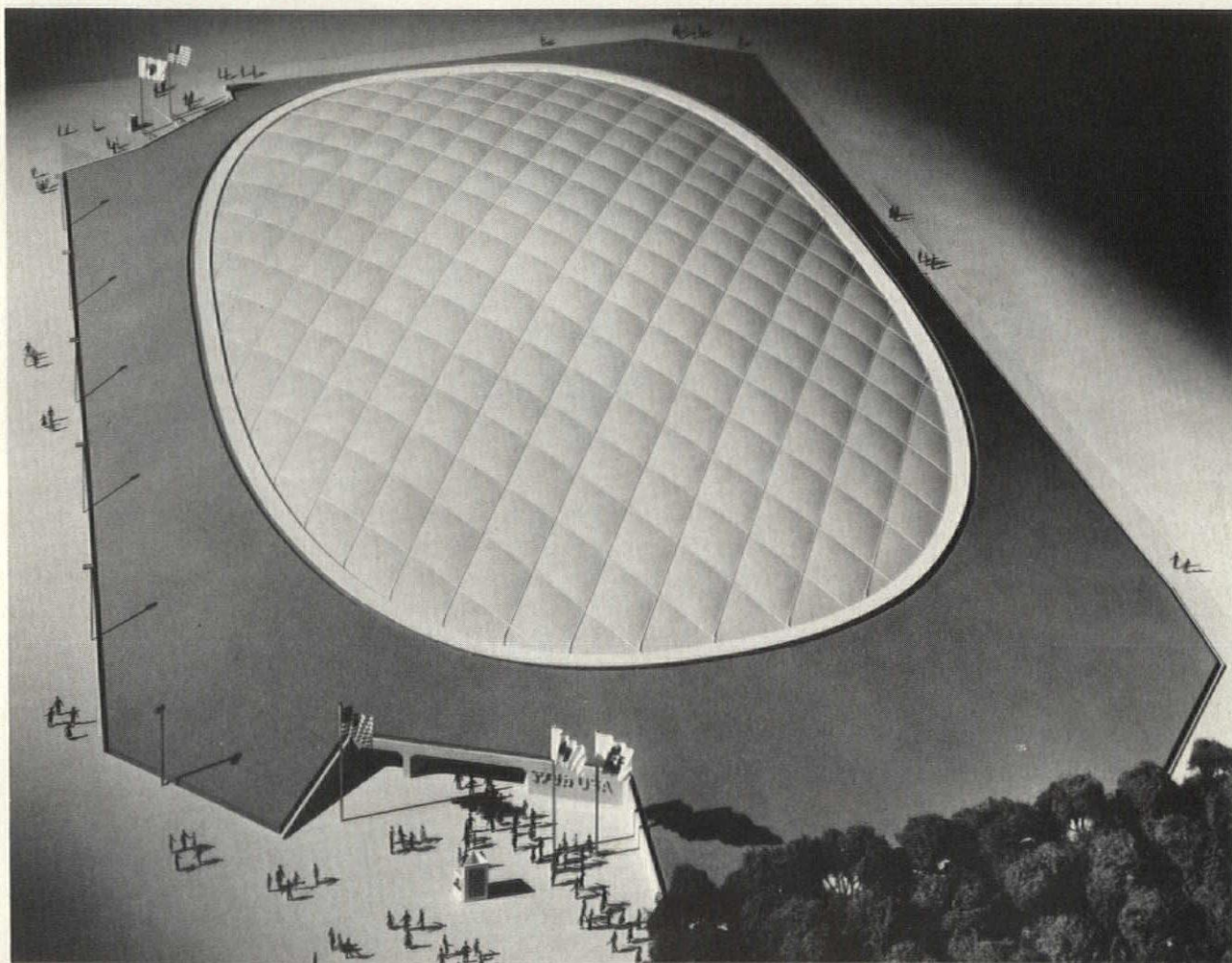
Sports Palace at the College of Technology in Otaniemi near Helsinki (above), built for the 1952 Olympic Games, serves all types of athletics and also has bowling alleys. The stands, with locker rooms underneath, are linear with seats facing both tennis court and stadium. It is constructed of nailed timber trusses, assembled on site. The college is built on a 250-acre site where farmhouses once stood, surrounded by stately trees and parkland, which was incorporated in the overall design of the campus. Aalto and his wife Elissa won a 1949 competition for the design of the main building of the College of Technology, but this was completed only in 1964. Its largest auditorium (right) is also shown on the cover.



# PLASTICS: New Pillar in Construction?

A brief wrap-up by experts:  
What's being done with plas-  
tics materials in construction;  
what may and should be done.

by ANNE HECKER



Putting the plastics picture into perspective, the *New York Times* wrote in a special supplement in May 1968:

"Plastics are molded, woven, pressed, stamped and intertwined into every facet of your life—you would not get through a day without them—but industry observers look on this as no more than the stumbling steps of an infant. The really stupendous growth lies ahead. By 1980, in a scant dozen years, the plastics industry will completely dominate many fields and provide such superior manufacturing concepts and products that its current \$7 million annual sales volume will multiply nearly eight times.

"Few persons grasp the wide extent of this plastics age. Yet plastics permeate every field and have a major role in such areas as construction, packaging, transportation, furniture, clothing, electronics, appliances, toys, agriculture, even art."

Modular houses which could be moved from place to place



Where no code restrictions are involved, plastics materials in all shapes and forms are used for construction. A case in point is pavilions on fairs around the world. The United States Pavilion at the Japan World Exposition (preceding page), which opens March 15, is enclosed by a translucent vinyl-coated fiberglass fabric membrane. Architects: Davis, Brody, Chermayeff, Geismar, deHarak Associates. The Bell System Exhibit at the New York World's Fair (left), with reinforced plastic skin. Architects: Harrison & Abramovitz. Seven-Up Pavilion, New York World's Fair (right), with reinforced plastic shell roofs. Architects: Becker & Becker. New York State Pavilion, New York World's Fair (below right), with reinforced plastic roof. Architect: Philip Johnson, FAIA.

and expanded as needed; continuous-building construction with filled epoxy foam; a compact, expandable, life-supporting structure for space exploration; new uses in siding finish; underground distribution, sewer pipe gasketing; and even artificial arteries are some of the projections for the future of plastics as the industry starts its second century. Since 1956, the industry has grown 12 times. By 1980, production is expected to increase by 800 percent.

One of the three major growth areas predicted for the plastics industry is in the construction field (the other two: automobiles and packaging). Here is how some experts view the prospects and problems, including those caused by plastics packaging.

#### Buying Systems, Not Parts

"Sophisticated consumers of systems, not parts," is the way Marvin E. Goody, AIA, pictures the "mass client" of the future.

Some of today's mass clients Goody lists as the School Construction Systems Development in California and other educational systems; the Veterans Administration, which has initiated a study of building systems to determine better ways of specifying and constructing \$200 million worth of projected hospitals; and the Urban Development Corporation of New York State.

Tomorrow's suppliers to building systems must be prepared to help solve problems arising out of crowded urban conditions, Goody thinks, and mentions such needs from the plastics industry as complete bathroom and kitchen units; plumbing trees; new flooring systems and underlayments; acoustical isolators; visual protection devices (screens, railings, shades); safety devices (nonskid surfaces, directional signs); coordinated illumination systems; and tamperproof, maintenance-free hardware.

Some more detailed product investigations, Goody says, are:

- the finishing of glass fiber for use as a reinforcement in concrete

- an incombustible inorganic foam that is moldable, lightweight and nonflammable
- a frothing machine that can operate in the field, thereby eliminating the usual pressure problems of foam-in-place techniques
- a marriage of plastics with cement asbestos to find a less brittle, more moldable—and fireproof—product
- hardwood flooring with organic binders
- case-hardened acrylic.

#### Fire—and Building Codes

More plastics are used in American construction than is generally realized, but changes in building codes to allow increased use of them frequently are hamstrung because proper information is not supplied building code administrators.

This according to Russell B. Akin, associate manager of the Technical Service Laboratory, Plastics Department, E.I. du Pont de Nemours & Co., Inc.

"Failures to achieve either new uses or larger markets for plastics are often blamed on rejection by administrators of building codes," Akin states, "Yet most of the time the materials are not rejected; they simply are not approved because their advocates have not provided the needed information to demonstrate compliance with the intent of the code."

In the past 10 years the growth rate of plastics in construction has been over 12 percent per year; each year the building industry takes about one-fourth of the tonnage of American plastics. Further expansion in volume and variety of use will depend, Akin declares, on reduction in flammability and ways to modernize building codes.

Mrs. Hecker is a Seattle writer/editor. This story is based on a Society of Plastics Industry, Inc., national conference.





"This is not necessarily relaxation of standards," Akin comments, "but rather recognition that greater safety can be attained by replacing present go-no-go limits for an overall occupancy with engineering judgment in use of present test data. This seems readily accomplished without making regulations more complex."

### Plastics for Steel

Predictions have been made that plastics will supplant steel in the national economy by 1984. James G. Periale, sales manager for Epoxy Resins, Reichhold Chemicals, Inc., believes that the success in developing streamlined processes during the next few years "will determine whether this forecast materializes."

As an example, Periale mentions a computerized filament winding continuous pipe machine with a reported winding-time of 2½ to 4 minutes for a 30-foot length of pipe. The regular method takes from 35 to 60 minutes.

He also calls attention to an announced concept of continuous-building construction with filled epoxy foam. Key to the system is a mobile erector truck with resin and hardener tanks, control systems, articulated boom and a traveling mold at the boom's end. Projected costs for a 1000-square foot building is \$3.80 per square foot, compared to \$7 per square foot for a similar steel structure.

Periale predicts that the instantaneous curing of epoxy-acrylic resins through high-energy radiation will become a common practice during the next 10 years.

The first major operational use of advance composite materials—high modulus carbon filaments and an epoxy resin—will be with the fan blades of the Rolls Royce air bus jet engine. But the outstanding growth, Periale says, will come in "reinforced plastics, electric power insulators, surface coatings and building construction."

### Architects Can Help

Construction industry suspicion about anything made of plastic must be overcome before the tremendous potential of the light construction industry can be realized, holds Edward P. Lindsay, manager, Fiberglass Reinforced Products, Home Building Products Division, Owens-Corning Fiberglass Corporation.

There is a great need to develop operative new ideas to help build better structures at lower cost, the way Lindsay sees it. But as an industry, he thinks, "we have failed to devote enough attention to this potential, primarily because we are dealing with an engineered material and can find greater acceptance of our ideas and greater help from our customers if they also are engineering oriented."

Markets which have contributed most to reinforced plastic products are automobiles, appliances, electrical equipment and marine products.

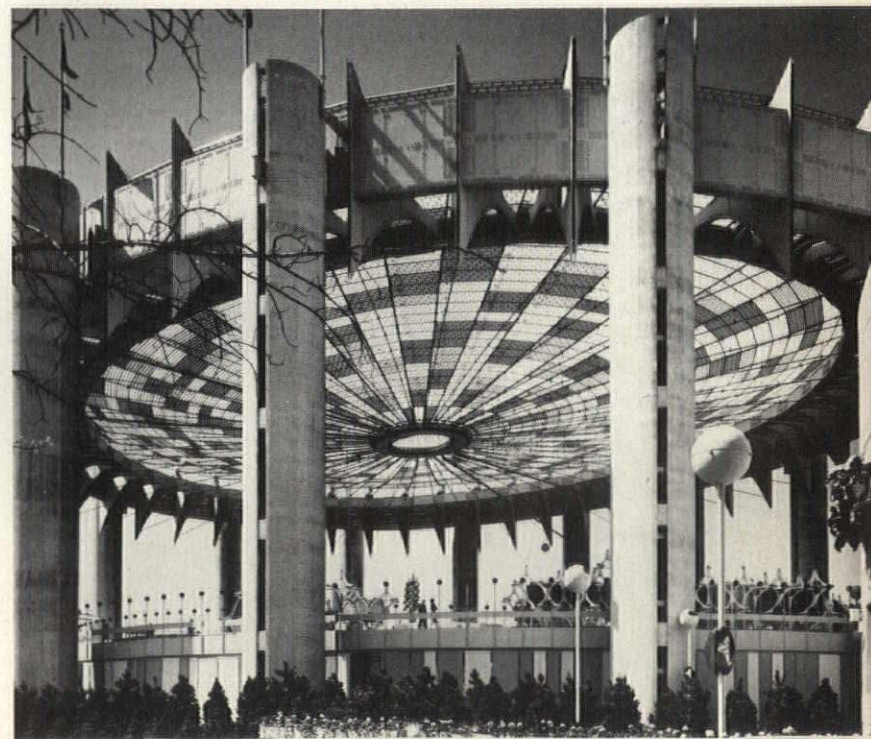
"On the other hand," Lindsay says, "the architect leans toward the artistic, and the builder is a craftsman. They have been influenced more by failures of plastic than by its successes. As a rule, they have not been as willing to work with us to help solve the technological problems which must be solved before fiberglass reinforced plastics will find their proper places in the construction industry."

But, Lindsay feels, the climate now is right for change. "How about building an entire housing project out of fiberglass reinforced plastic molded sections, using a slurry of polyester resin and fiberglass cloth, and injection molding sections which would be bolted together at the site?"

"Far fetched? Not so in the eyes of a southern company which claims it is ready to launch such a project."

With fiberglass reinforced plastics, Lindsay says, "we could possibly produce architectural specialties economically, such as ornamentation for office and commercial buildings which could be attached without requiring additional basic structural costs to the building itself."

Architects who are tiring of the curtain wall are looking toward the brutish look, he feels, and "should be amenable to decorative products which give a massive and formidable appear-





American National Exhibition, Moscow, with reinforced plastic roof and columns. Architects: George Nelson & Co., Inc. US Pavilion, Brussels World's Fair, with reinforced plastic roof, acrylic plastic walls. Architects: Edward Durell Stone & Associates.

ance but are actually light in weight. Investigations of product opportunity which save labor for the beleaguered builder might include the combining of a one-piece gutter, soffit and fascia."

The plastics industry still has problems to overcome before the potential can be realized, Lindsay concedes, but he adds that "there have been significant improvements in problem solving." Needed now is the application of technology on a massive scale.

### Structural Plastics

"Plastics materials have inherent characteristics which make them desirable structural components for building enclosure," says Dr. Frank J. Heger, principal of the consulting engineering firm of Simpson, Gumpertz & Heger, Inc.

Structural properties of plastics materials, according to Heger, "vary over an extremely wide range, although most plastics have strengths and stiffness characteristics far below the metals and other materials usually considered as primary structural materials. However, there are many applications for enclosure components where materials with low strengths and moderate stiffness can still be efficiently utilized.

"Sandwich construction, for example, provides a design approach to optimize the structural, architectural and economic characteristics of several materials in a single structural component.

"Furthermore, some plastics materials, such as the fiberglass reinforced plastics, provide a range of strength and stiffness properties comparable to the other primary structural materials. While these plastics materials have the desirable characteristics shared by the general plastics family—ease of moldability, desirable architectural finish, light weight—they also have structural characteristics which permit their use for primary structural elements.

"A successful and economically feasible design will generally exploit the inherent characteristics of the material."

At the present stage in the development of many plastics materials, however, accurate information on the significant structural properties of each material can be a problem for designers. Frequently the significant structural properties are determined by the materials manufacturer. For some of the more widely used structural plastics complete information is readily available. This is not the case with newer materials or those with less frequent structural application.

Heger points to another problem: the lack of authoritative structural codes or standards for the use of plastics materials. "There are no national structural specifications such as those promulgated for steel by the American Institute of Steel Construction, or for reinforced concrete by the American Concrete Institute, for wood by the National Lumber Manufacturers Association and for aluminum by the American Society of Civil Engineers."

The ASCE currently has several committees active in the development of structural criteria for plastics.

"However," says Heger, "there is such a variety of plastics materials with such widely differing structural properties that it is not likely that national specifications will be developed in the near future." Instead, the ASCE committees are working toward development of a manual on practices for structural design of plastics components, which will suggest design principles.

### It Won't Go Away

With all their promises, plastics materials nonetheless are beginning to pose a threat to our environment.

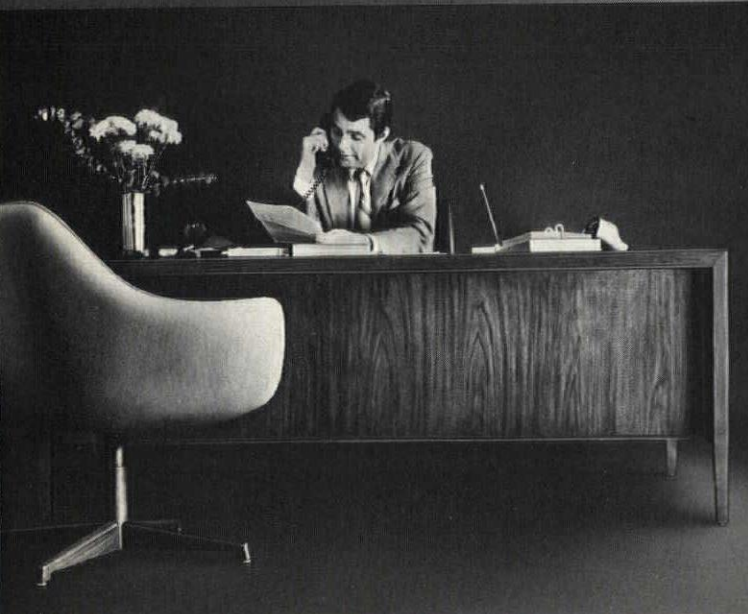
"Anyone visiting the beaches of this country, or for that matter any country where the tourist goes, is becoming well aware of the growing accumulation of plastic bags, bottles and foam articles which not only litter the shore, but also are to be seen floating in the water, ebbing and flowing with the tides," says Arthur J. Warner, president, DeBell & Richardson, Inc. "A large portion of this junk is hydrocarbon in nature which, especially for the foamed polystyrene materials such as cups, slowly absorbs the dirty oil films now so prevalent on all coastal waters, becoming in the process even less attractive and more polluting.

"The paradox is that the great success of plastics materials is partly due to the very properties which research, development and technology have generated: toughness and resistance to rotting or deterioration by natural means."

Warner suggests a levy on plastics producers and materials suppliers to finance a research program to seek out practical solutions to the problem. This program should be a prime responsibility of the Society of the Plastics Industry, Inc. Federal and local governments, Warner thinks, should not be charged with the responsibility, nor should the industry wait for legislation that might be more impalatable.

The plastics industry expects to maintain the high growth rate of business sales and profits and therefore, Warner asserts, should take the lead.

"Let us not stay in the position of always reacting late to a bad situation," suggests Warner, "but let everyone know what we are doing in this area and how seriously we view this matter." □



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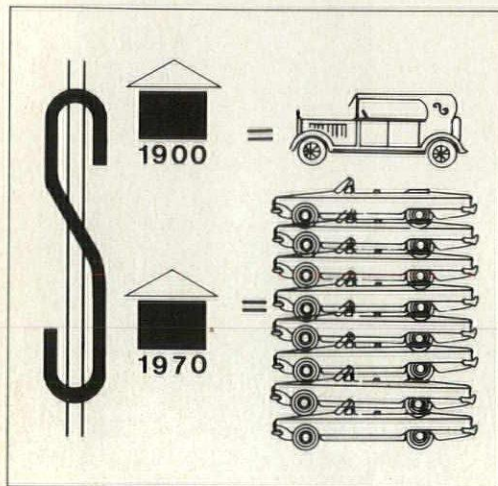
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# Toward Component Compatibility



Robert J. Cowling, AIA, of the Perkins & Will Partnership's White Plains, N.Y., office, has prepared this report on a conference called "Precoordination—the Basis for Industrialized Building," recently presented at the National Bureau of Standards by American National Standards Institute Committee A62. Mr. Cowling is a committee member.

A representative of the automobile industry reminded the conference of the contrast, but he did so indirectly and by implication; it remained for two architects, one an American and the other an Englishman, to point up the startling difference:

At the turn of the century, said Arthur R. Cogswell, AIA, of Chapel Hill, N. C., "one could buy a good middle-class automobile for \$2,000 or \$3,000. Back then, too, a standard middle-class house was going for around the same price. "You can still buy a good middle-class car for \$2,000 or \$3,000, but the price of a house has increased manifold."

Michael Clarke, the Britisher, saw it similarly. Fifty years ago a custom-built car was worth eight houses, he said. "Now the opposite is true."

The car-house cost comparison went straight to the heart of a conference concern. But there was another concern that was probably even more pervasive, and this was whether the building industry—irrespective of cost factors—could create the quantity of new buildings this society will require over the final three decades of the century. Indeed, a theme continually expressed by those who addressed the conference holds that new

methods of design and construction will have to be found if a critical shortage of buildings is to be avoided.

The man from the automobile industry, William K. Burton, manager of engineering facilities and services for Ford Motor Co., noted that buildings are composed of selected components interrelated empirically by the architect. Automobiles, on the other hand, are made of functionally and dimensionally *precoordinated* components with highly controllable interrelationships.

This kind of precoordination, as Burton illustrated, is essential to mass production, and since increased use of mass production techniques is essential if the construction industry is to produce the predicted volume of buildings needed, it follows that the development of precoordinated building components is a vital necessity.

Burton ended his keynote remarks with a reference to the metric study being conducted by the Department of Commerce. "The metric involvement should not be overlooked," he said, "in the development of new modular construction standards." If anyone questioned the connection, Clarke, who is head of the Construction Department of the British Standards Institution, cleared away the fog.

Efforts to rectify a dimensionally undisciplined situation in the United Kingdom had been unsuccessful, he said, because of "a lack of a broad opportunity for applying the theory in a practical way across the whole spectrum of building products and components." Then, in 1967, the opportunity arose with the decision of the British construction industry to change to metric.

"In other words," explained Clarke, "the industry had committed itself to making considerable changes in the dimensions of building products and components and it was only logical that if such changes were to be made they should be fully rational and coordinated. It therefore came about that as an integral part of its change to metric, the industry adopted on a very wide and all-embracing scale the dimensional disciplines implied by modular coordination."

Before the metric changeover, precoordination achieved little success in Britain; only in metal windows could any real success be claimed. Today, the British construction industry is well along in developing a system of precoordinated building products and techniques and is currently on schedule in its metric conversion which is to be completed in 1972.

"It is perhaps a remarkable thing," Clarke said, "that from one of the least industrialized industries example is being set to the whole of British industry in this exacting process of metric change."

Representatives of virtually every segment of the building industry were present for the conference which was set up to examine the basic standards prerequisite to industrialized construction using precoordinated compatible and interchangeable parts.

Open building systems appeared to be the conference's underlying favorite. Russell W. Smith of the National Bureau of Standards' Research Division, who is secretary of Standards Committee A62, gave as part of the scope of the committee's mission, assigned by

the Construction Standards Board of the American National Standards Institute (formerly the United States of America Standards Institute), "the establishment of guidelines for coordinating building systems." The committee's work, he added, is limited to "the interface requirements of components or systems, or both."

But Dr. A. Allan Bates, chief of the Office of Engineering, Standards Liaison, NBS, said in answer to a question following his presentation on industrialized techniques used in the Soviet Union: "We can produce low-cost buildings only with closed systems."

Noteworthy for its openness within a framework of tight coordination is the Danish catalog approach as described by Klaus Blach, head of the Building Techniques Department of the Danish Building Institute. The approach is based on an industrywide catalog of coordinated components.

These components numbered 300 in 1939, 15,000 in 1954 and today are estimated to run in the hundreds of thousands, Blach said. But in Denmark, modular components need not be used, and here is another aspect characterizing the openness of the system. Danish law says that design of housing *must* be modular so that modular components can be used; but if conventional on-site work is deemed more appropriate, this course may be followed.

Arthur Cogswell, a partner in the architectural firm of Cogswell/Hausler Associates and co-founder of Advanced Planning Research Group, warned that better information systems are crucial to the facile use of large, open systems of precoordinated components. And this calls, he said, "for nothing less than a complete revolution in techniques used by architects and engineers as they go about the process of building design."

Cogswell urged the use of "a highly automated design process equal in sophistication and flexibility to the components of the broad building system with which it deals."

Gifford H. Albright, who heads the Department of Architectural Engineering at Pennsylvania State University, predicted that a precoordinated building process is not only feasible but will become necessary—from programming through construction—and that a large national computer utility will arise to provide graphic, verbal and computational services to all industry segments.

The ultimate objective in using computers, according to Albright, is the establishment of the closest possible man-machine rapport. The increasing number and sophistication of input, interaction and output devices is bringing this objective ever closer to reality.

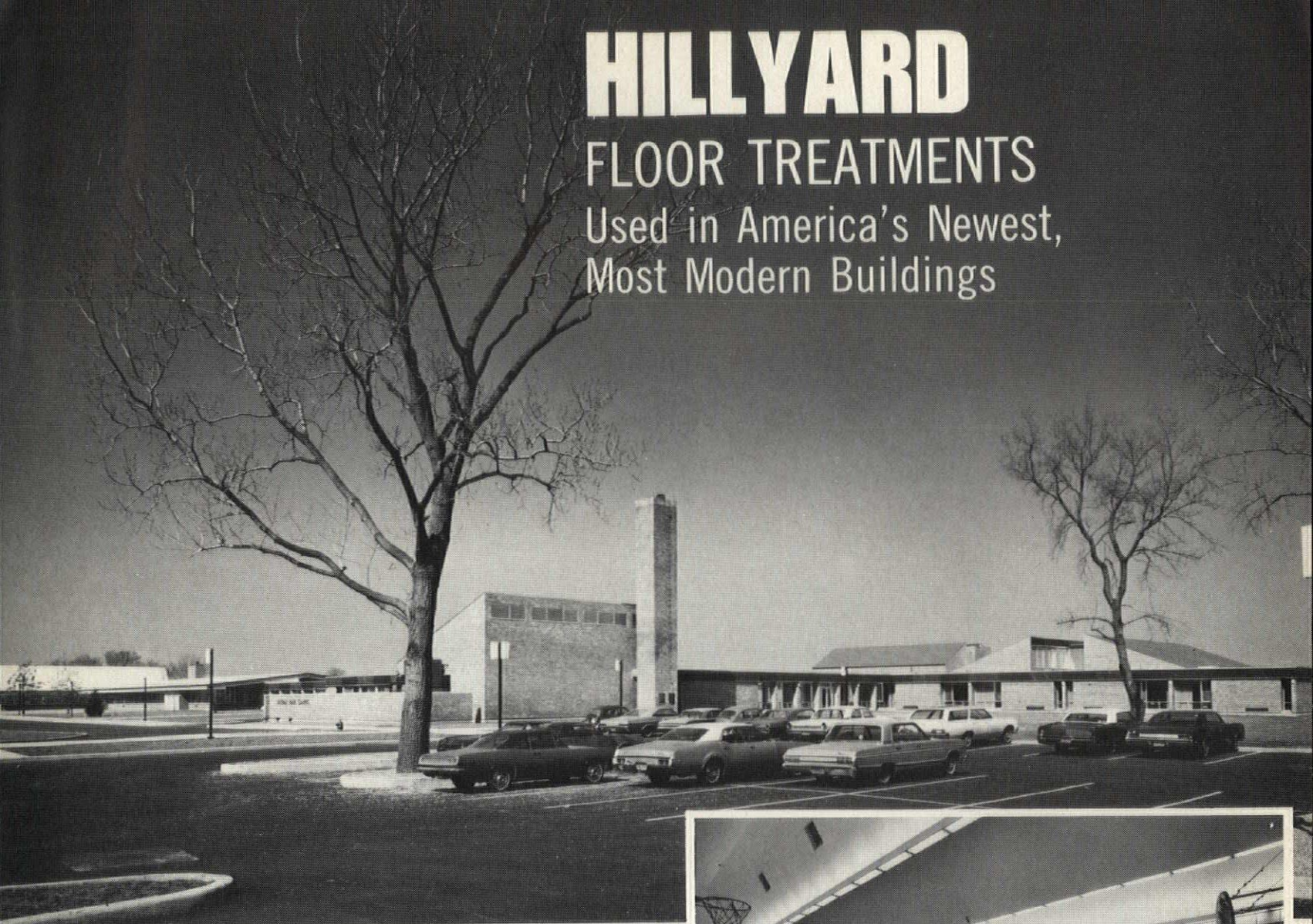
Standards Committee A62 is an autonomous and voluntary group made up of representatives of some 60 organizations within the building industry. NBS furnishes a secretariat and technical support, but does not control the committee. ANSI recognizes the committee but, again, does not control it.

Proceedings of the conference, which heard from a number of other building authorities from both this country and Canada, are being published by NBS and will be available next month. They may be obtained by writing to R. W. Smith, B122 Building Research, National Bureau of Standards, Washington, D.C. 20234. □

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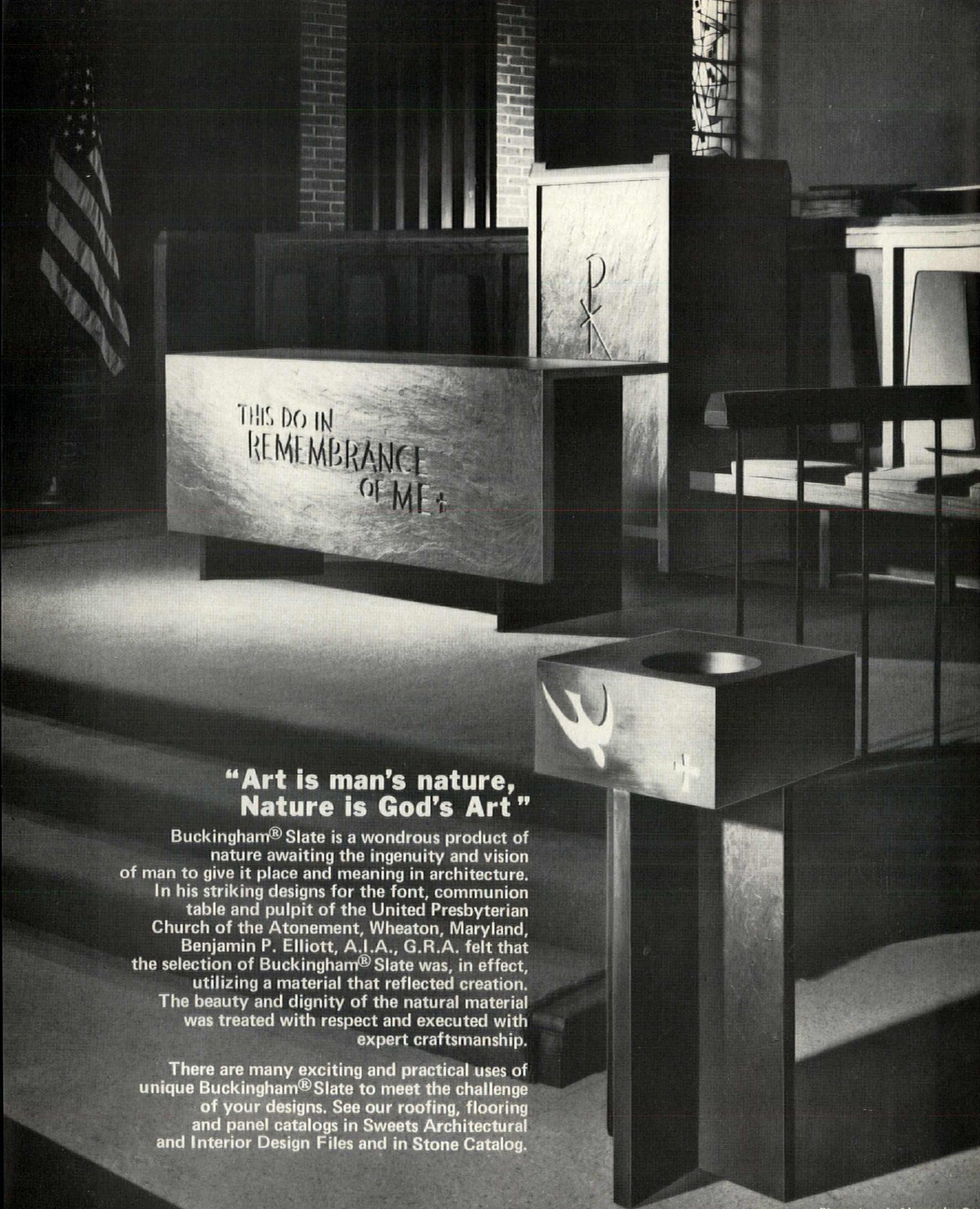
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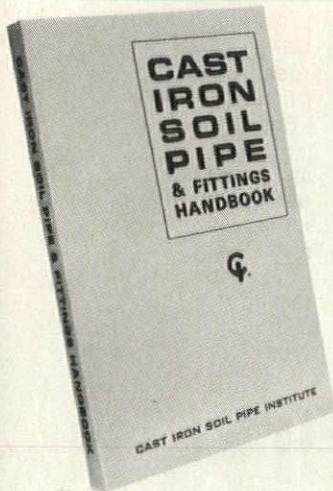


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## books

**Perspectives on Housing in a Developing Country.** George A. Hinds. Chicago: Center for Urban Studies, University of Chicago, 1968. 173 pp. No price given.

We are, all of us, spending a great deal of time on planning, designing and building for the "community." However, do we really know what the community wants and needs? An attempt to find an answer to this vital question is contained in this book by George A. Hinds, who prepared this study on contract to the Department of Housing and Urban Development.

The study is divided into three phases. The first phase consists of an analysis of what community housing needs entail. In connection with this analysis, a series of workshops were conducted in the North Kenwood-Oakland neighborhood in Chicago. The workshop techniques are described, and we can read the results in the answers to a questionnaire on housing needs and desires. Some elementary but incisive answers were received. For instance, 100 percent of the persons interviewed indicated that the kitchen should overlook the children's play area. How does that need tie in to plan after plan relegating the kitchen to a mechanically ventilated interior space? Another vital request is the need for visual surveillance of all stairs in all multifamily dwellings. How do we tie this in with the stringent requirements for fireproofing of stairways?

The second part of this book illustrates practically all prefabricated housing systems currently under consideration in this country. The reproduction is badly done and the diagrams are hard to read. For instant reference, however, this serves the purpose well. The third section of the volume consists of a bibliography which by itself is worth the price of admission. In fact, one is tempted to write away for each item noted in it. Architectural firms, gov-

### A Note to Our Readers

Anyone walking into the AIA JOURNAL offices will be able to visualize concretely the information explosion we hear so much about these days. Books for review are everywhere. We think it is important for our readers to have current knowledge about what is being published in our areas of concern, but critical reviews require much time in preparation. We have decided, therefore, to list a greater number of publications with only the briefest of annotations. Such annotations do not necessarily take the place of reviews, however, and some of the books we note briefly from time to time may be reviewed later in greater depth and with more perceptive comments.

ernment agencies and schools which intend to conduct workshops or are interested in meeting community needs are well advised to buy a copy. ABRAHAM D. LEVITT, AIA

**Progressive Grocer's Outstanding New Super Markets.** Edited by Leonard E. Daykin. New York: *Progressive Grocer Magazine*, 1969. 230 pp. \$14.95.

A panorama of the latest developments in supermarket design, depicting the most recent ideas in interior design and store construction.

**Scheduling Handbook.** Edited by James J. O'Brien. New York: McGraw-Hill, 1969. 598 pp. \$18.50.

O'Brien was author of the CPM section in the AIA publication, *Creative Control of Building Costs*. Here he presents a most comprehensive guide to almost every operational scheduling used in commerce, industry and government today.

**Modern Architectural Detailing, Vol. 4.** Edited by Konrad Gatz. New York: Van Nostrand Reinhold, 1969. 271 pp. \$20.

A pictorial survey of outstanding examples of detailing from the German magazine *Detail: Zeitschrift für Architektur und Bau-detail*.

**Architect's Working Details, Vol. 13.** Edited by D. A. C. A. Boyne and Lance Wright. London: Architectural Press, 1969. 160 pp. 30 shillings.

Included are working details of windows, doors, staircases, walls and partitions, roofs and ceilings, balconies, covered ways and bridges and furniture and fittings.

**Your Private World: A Study of Intimate Gardens.** Thomas Church. San Francisco: Chronicle Books, 1969. 202 pp. \$9.95.

Over 100 examples of gardens designed by Church are discussed and illustrated here, proving that even the smallest amount of space can be made a place of beauty.

**The Lighting of Buildings.** R. G. Hopkinson and J. D. Kay. New York: Praeger, 1969. 318 pp. \$10.

Basic architectural and engineering principles of both daylighting and artificial lighting.

**Upholstered Furniture: Design and Construction.** Mario Dal Fabbro. New York: McGraw-Hill, 1969. 215 pp. \$15.

The pictorial approach to the design, construction and upholstering of contemporary furniture.

**Heating and Load Calculations.** P. G. Down. New York: Pergamon, 1969. 253 pp. \$10.

A study of the physical and engineering factors affecting the heating and cooling load of buildings. □

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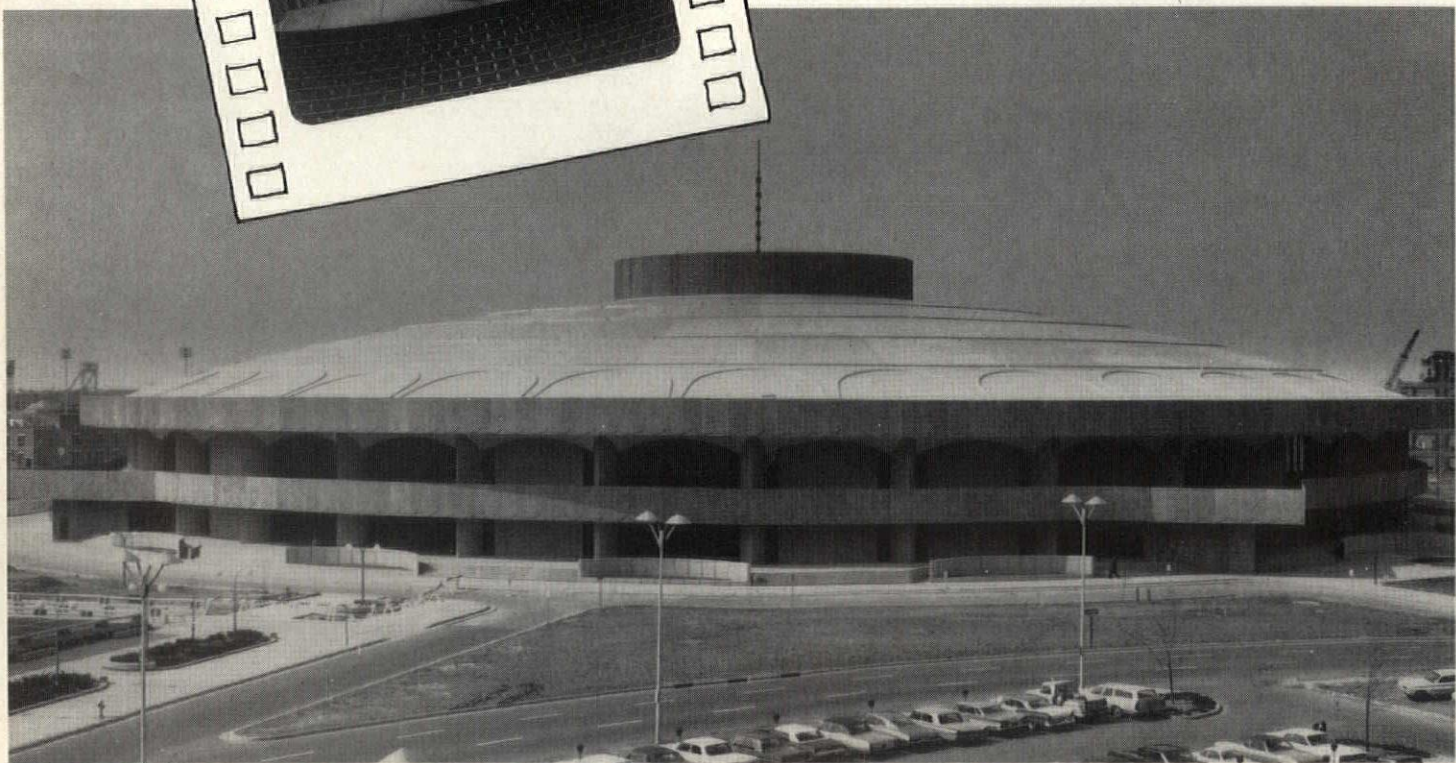
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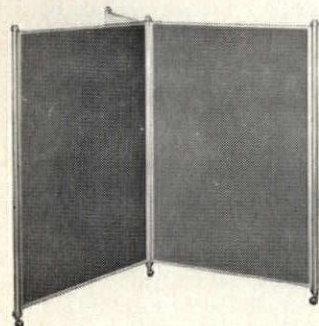
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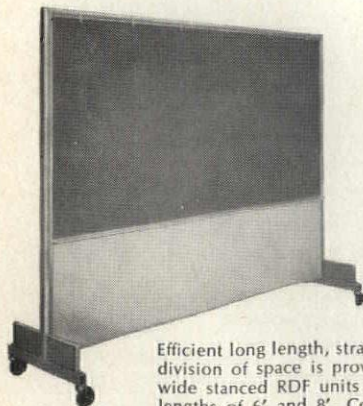
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## events

### AIA State and Region

- March 4-6:** Michigan Society of Architects, Pantlind Hotel, Grand Rapids  
**April 23-25:** Gulf States Region, Biloxi, Miss.  
**May 4-6:** North Central States Region, Lake Lawn Lodge, Delavan, Wis.

### National

- March 3-5:** Aluminum in Architecture Exposition and Seminar, Palmer House, Chicago  
**March 16-18:** Performance of Masonry Structures Conference, National Bureau of Standards, Gaithersburg, Md.  
**April 18-22:** National Conference on Religious Architecture, Marriott Twin Bridges Hotel, Washington, D.C.  
**April 19-22:** National Conference of States on Building Codes and Standards, Midtown Holiday Inn, Wichita, Kan.  
**May 24-26:** Annual Theater, Television and Film Lighting Symposium, Hollywood-Roosevelt Hotel, Hollywood, Calif.  
**June 21-25:** AIA Convention, Sheraton-Boston Hotel, Boston

### International

- April 12-18:** International Brick Masonry Conference, Keele University, Staffordshire, England  
**April 20-23:** North American Conference on Campus Planning and College Building Design, University of Illinois, Urbana

### Scholarships and Fellowships

- March 6:** Proposals due, grants in environmental design (individual nonmatching up to \$5,000 each and group matching up to \$10,000 each). National Endowment for the Arts, Architecture and Design Programs, 1800 F St. N.W., Washington, D.C. 20506.  
**March 11:** Submissions due (a simple modular shell with utilities), Le Brun Traveling Fellowship. Contact: New York Chapter AIA, 20 W. 40th St., New York, N.Y. 10018.  
**March 16:** Entries due, scholarships to the Fontainebleau School of Fine Arts, Paris, France. Contact: Portland Cement Association, Old Orchard Road, Skokie, Ill. 60076.

### Awards Program

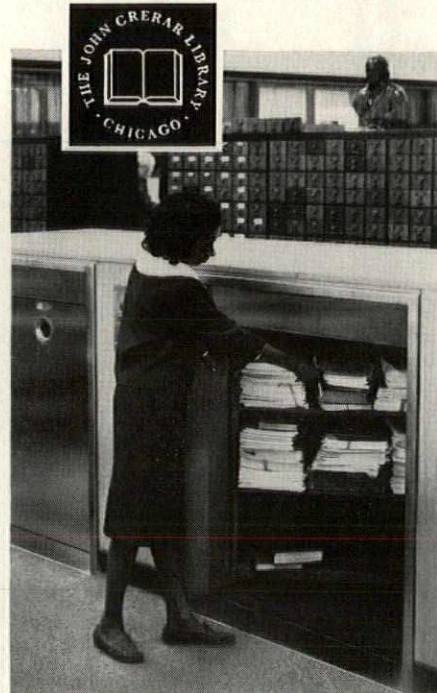
- April 1:** Entry information due, religious facilities completed after 1965. Contact: W. A. Gortner II, AIA, Chairman, Architectural Exhibit Committee, 8750 Georgia Ave., Suite E-125, Silver Spring, Md. 20910.

### Tours

- April 3:** Architecture and Garden Tour of Japan, departing from Vancouver, B.C., for 23 days with optional extension to Hong Kong and Bangkok. Contact: Kenneth M. Nishimoto, AIA, 263 S. Los Robles Ave., Pasadena, Calif. 91106 □

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## \$15 Million Question from page 34

case in point; they have generated many times their operating costs in architectural and planning resources given to the communities they serve. Most important, they have generated actual construction in their communities, creating buildings that otherwise would never have been built.

With these examples as our guides, the task force has set out to complete program writing and go after further funding before the June convention in Boston. This neither means that we will have \$15 million in hand come June nor that we can raise it in a year.

We do feel that by supporting programs in minority scholarship, community design centers, on-the-job training and increased political action, we can make the "massive com-

The newly appointed members of the Fund Drive Committee for the Task Force on Professional Responsibility to Society are: Nathaniel A. Owings, FAIA, chairman; George E. Kassa-baum, FAIA; Hugh A. Stubbins, FAIA; and David N. Yerkes, FAIA.

mitment" that the convention challenged us to make. If we address the problems of the physical environment by bringing our professional commitment into concert with others now in the field, \$15 million will quickly become a trifling sum.

How will we measure the results of what we have set out to do? The programs we have generated will begin to fill a gap. Yet no long-range urban improvement progress can be made without new national priority assignments being made to housing and the redevelopment of our cities. The total effort of the task force, when compared to the tasks set forth in the Committee on the Future of the Profession report (*Creating the Human Environment—Architecture's Future*), represents one small element of activity.

The frontline unit of the profession is the architectural office. Many offices have accomplished results in community improvement activities in a professional and meritorious manner. We intend to document these accomplishments, tell others about it and reduce at least this resounding Institute pronouncement to some personal flesh-and-blood examples with which the individual architect can identify.

The Chicago convention action is amazing if you consider how this nonverbal and sometimes retiring profession found itself joining forces with student activists after rousing sessions challenging not just the profession as an organization but the established priorities of our government. Instead of grumbling about over-extending the resources of the Institute, we have a lot to cheer about. Instead of seeing the younger members of our profession pull away from the Institute, we have an opportunity to work with them and challenge them to do their part. Meantime, we have the obligation of keeping our own word. We can accomplish this with member understanding and support, and with the willingness to help as individuals, working on a personal level with people in our communities. □

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CORE CONSTRUCTION --SOLID CORE --HOLLOW CORE	SOLID CORE	SOLID CORE	SOLID CORE HOLLOW CORE
MATERIALS--CORE --FACING --EDGES --STILES/RAILS --PANELS	SOFTWOOD/PARTICLE/FIBRE VENEERS, LAMINATES, O'LAY HARDWOOD/PINE	MINERAL HARDWOOD VENEERS FIREPROOFED HARDWOOD	WOOD/MINERAL VENEERS/PLASTIC MATCHED HARDWOOD
COLOR/FINISH PREFINISHED UNFINISHED SANDED SEALED/PRIMED PLASTIC-LAMINATE FACED COATED	PREFINISHED UNFINISHED SANDED SEALED/PRIMED PLASTIC-LAMINATE FACED	PREFINISHED UNFINISHED SANDED SEALED/PRIMED	PREFINISHED UNFINISHED SEALED PLASTIC-LAMINATE FACED
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## letters

### December: Hot and Lukewarm

Congratulations on your December issue with the triple punch on urban development. It is wonderful to see members of Congress address architects on the subject. It used to be the other way around. I know that every architect who gets the JOURNAL will read Mr. Ashley's piece with enthusiasm, but I wonder if every congressman and senator will get a chance to read it?

The precise description by Sir Hugh Wilson of the British new towns program should likewise be of interest to our legislators. It shows us that, as far as city planning is concerned, we are about 25 years behind.

Charlie Abrams' brief statement, practical and to the point (as he always is), comes up with a suggestion we should have pondered for some time: Let's concentrate on land acquisition and create the national vehicle to speed up urban development and redevelopment. Only, why should it be a NASA-type Urban Renewal Space Agency or a Bureau of Public Roads? Both are too limited in scope and operations.

Why don't we learn a lesson from our European friends and create something more comprehensive? Especially since we ourselves have had such a vehicle at one time, but have ditched it out of ignorance or fear for the future. I am referring to the National Resources Planning Board which was abolished by an act of Congress in June 1943. Why would it not be possible and practicable to dig it out, dust it off, bring it up to date and reinstall it by another act of Congress?

BERNARD WAGNER, AIA  
Washington, D.C.

I would like to make a few comments on the dual leadoff presentation in December.

In the article "No Greater Challenge," the analysis of failures, it seems to me, is one of our most favored American ways of thinking. There is a big difference in our approach to housing and that of Europe. Ours is due, to a great extent, to the individual procedures of administrations throughout the years, whereas in Europe the long-lasting civil servant serves as the backbone for technical advances.

In the article "The Architects' Contribution," the conclusions drawn do not emphasize enough that this planning over many years could only be achieved by a steady unchanging group of civil servants not influenced by the changing political scene.

I think that both articles were very worthwhile, but it would be of great importance to show, in a more positive manner, the way our administration should approach these problems.

JOSEF KOENIGSTEIN  
Architect  
Philadelphia

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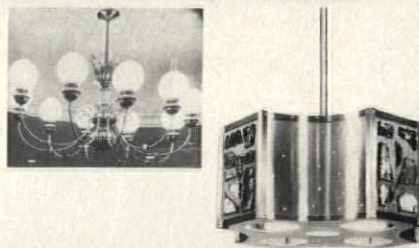
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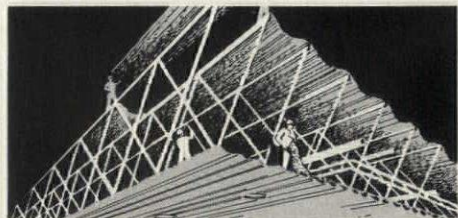


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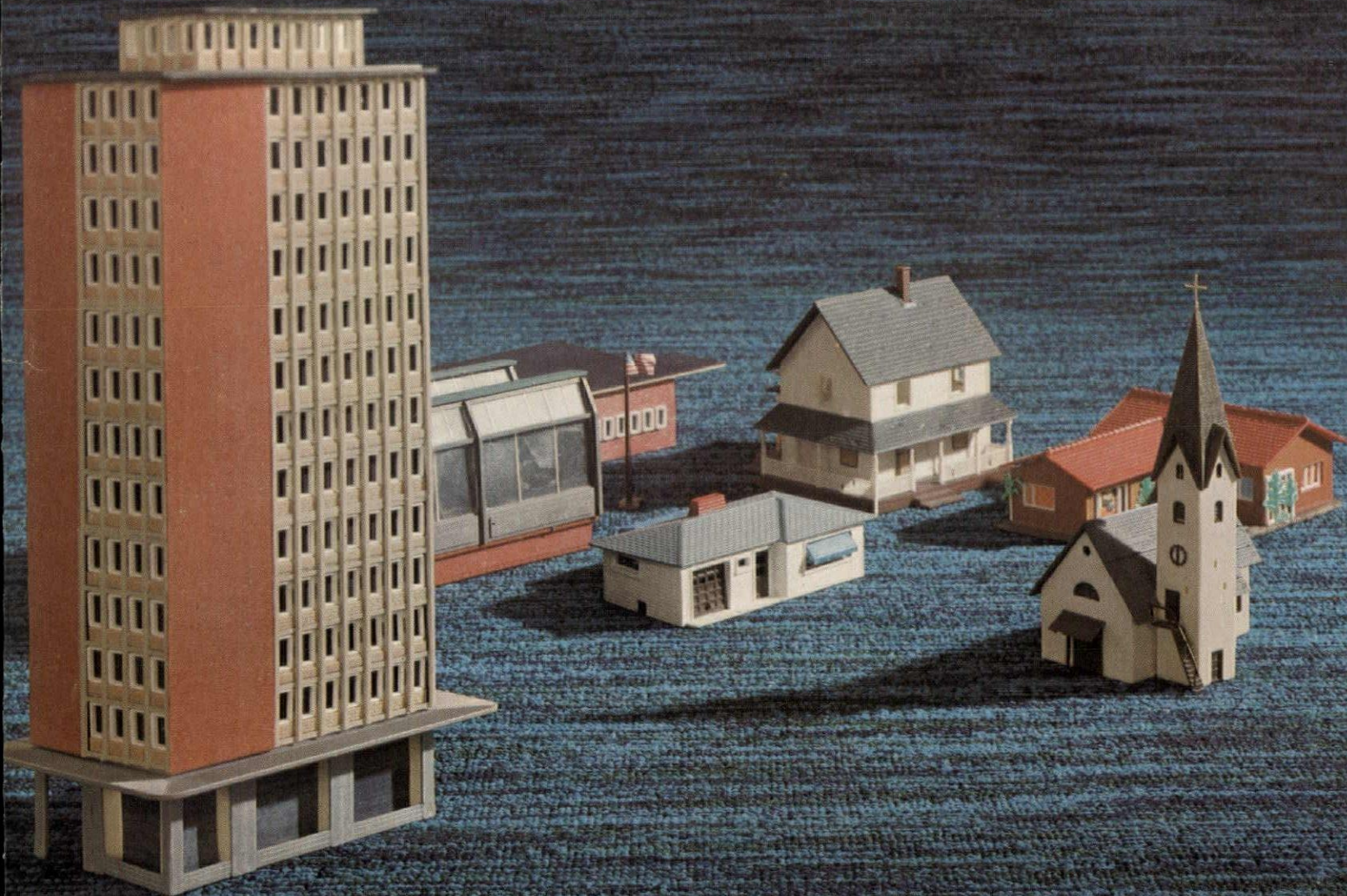
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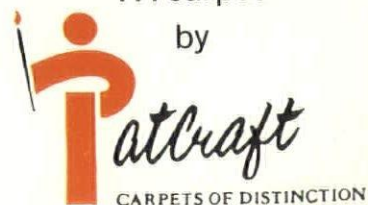
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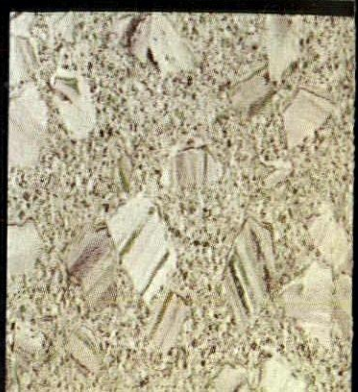
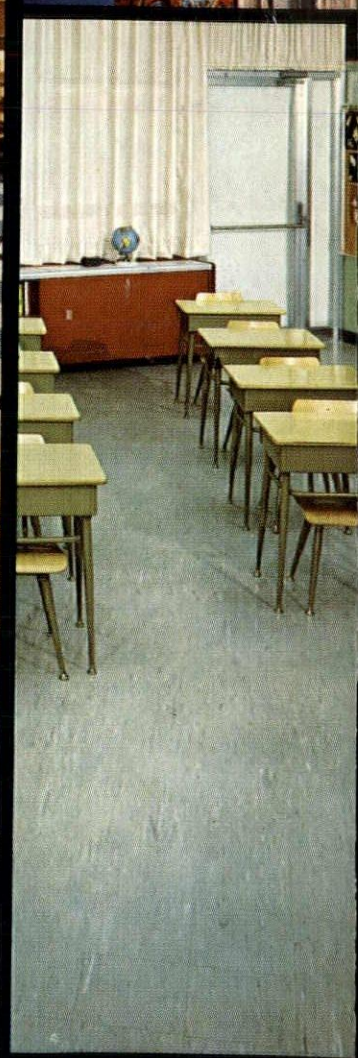
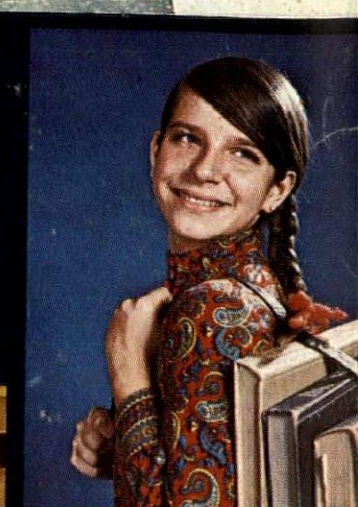
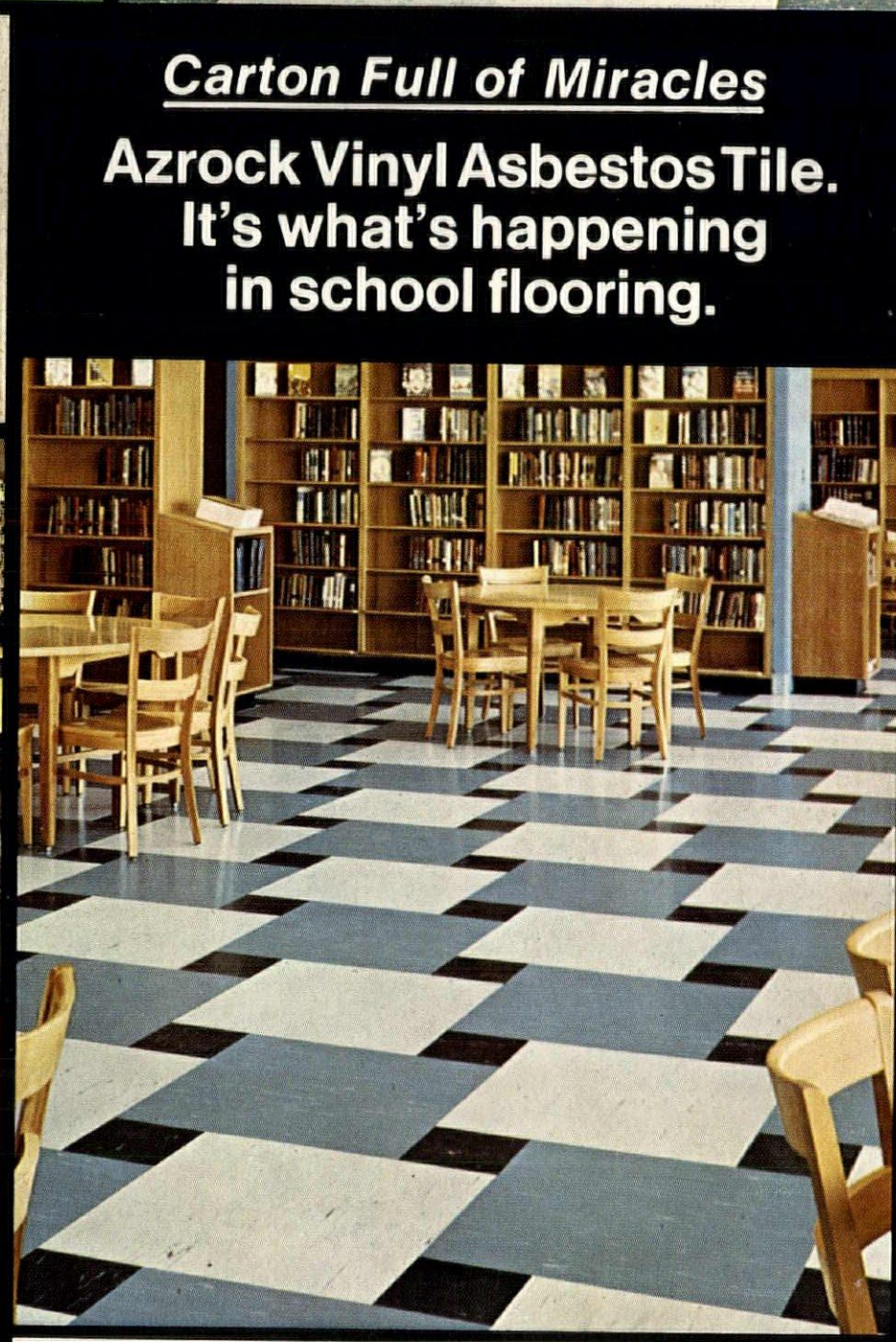
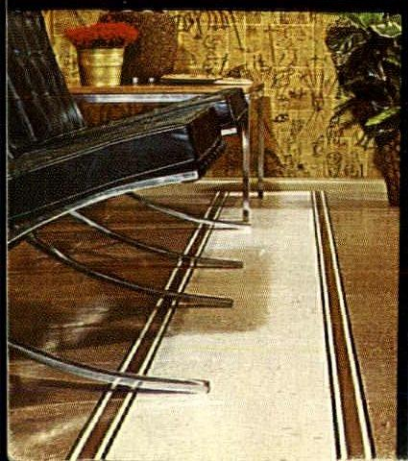
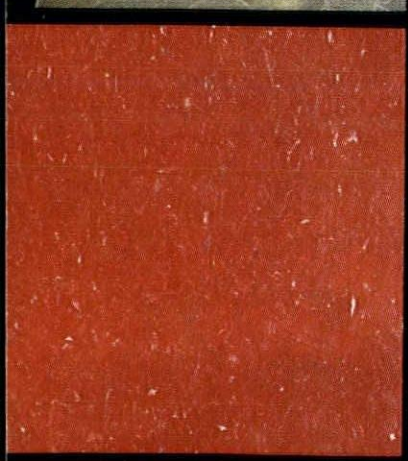
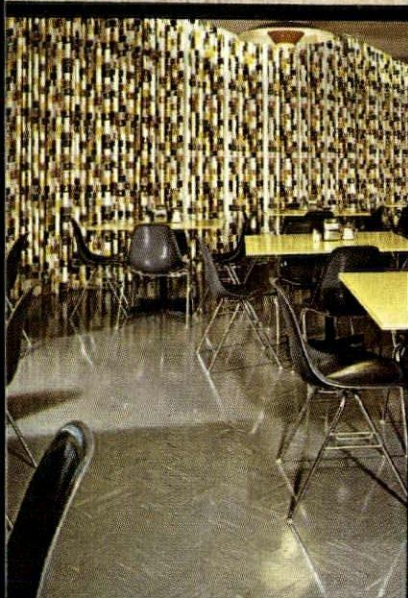
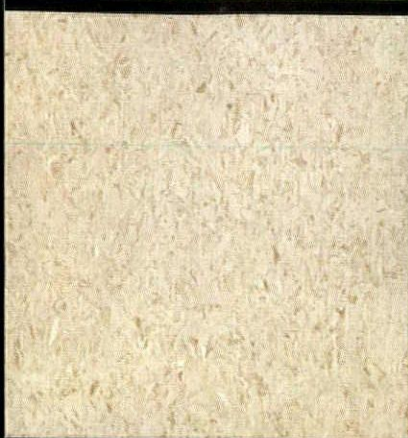
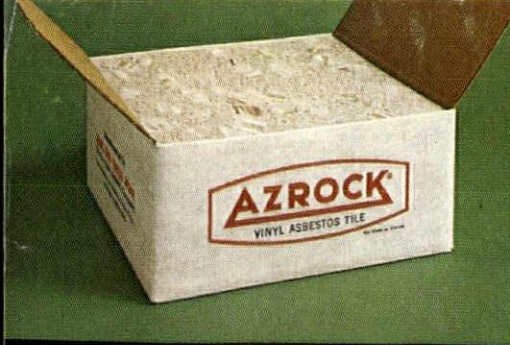
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