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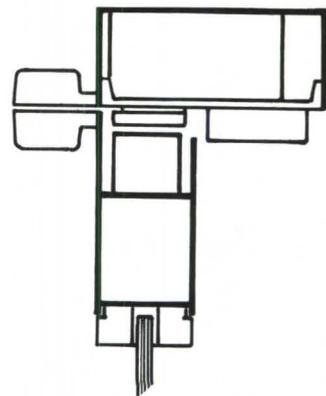
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# THE FACTS ABOUT STAGGERED TRUSS — THE LOW-COST, HIGH-RISE, STEEL FRAMING SYSTEM.

Many high-rise residential buildings have been built with the Staggered Truss steel framing system. In fact, in recent years over fifty apartment and hotel type structures have taken advantage of the Staggered Truss.

This system for high-rise structures affords an efficient and economical use of structural steel, with far greater flexibility than is possible with other portal framing systems.

## HOW THE STAGGERED TRUSS WORKS

The innovative Staggered Truss Steel Framing System consists of story-high trusses that span the full building width at alternate floors of each column line. The trusses are supported only on the two rows of exterior columns and are arranged in a staggered pattern on adjacent column lines.

## ARCHITECTURAL FLEXIBILITY

Since columns are needed only at the exterior of the building, the full width of the building is column-free, providing the maximum useable floor space. And with trusses starting at the second floor level, large clear span areas are available at ground level. As a result, the ground level can be more efficiently utilized—for parking, promenades and playgrounds. Also, construction within air-rights over existing facilities is made more simple.

Complete architectural units can be placed between trusses, and by varying truss spacing the number of unit sizes within the spacing can be varied.

For example, in apartment house construction, one, two or three bedroom units can be arranged on a single floor by varying truss and column spacings. And the Staggered Truss system is not only applicable to the basic rectangular configuration: it can also be applied to curvilinear or circular building, or to combinations of offset rectangles.

Trusses can be constructed with any practical distance between chords, so any floor-to-floor height can be met—which might present difficulties with conventional framing methods.

## WHY IS STAGGERED TRUSS ECONOMICAL?

To start with, foundations are only needed for the exterior column lines. This means savings in excavation, concrete costs, and the time spent for foundation construction.

High-strength steel can be used economically, because strength rather than deflection controls the truss design.

With minimum types of truss members, important savings can be made in shop fabrication—which in itself accommodates the maximum use of mass-production. And with fewer pieces to handle in the field, erection time and costs can be cut.

All this helps make Staggered Truss more economical than other systems. For example, in a typical twenty story apartment building, we might expect that the steel requirement for a staggered truss frame is only about 60% of

that required in a conventional framed structure. A possible saving of up to 40%!

Naturally, shorter erection time results in faster occupancy—and this means lower-cost construction loans and earlier rental income for owners.

## THINK ABOUT IT

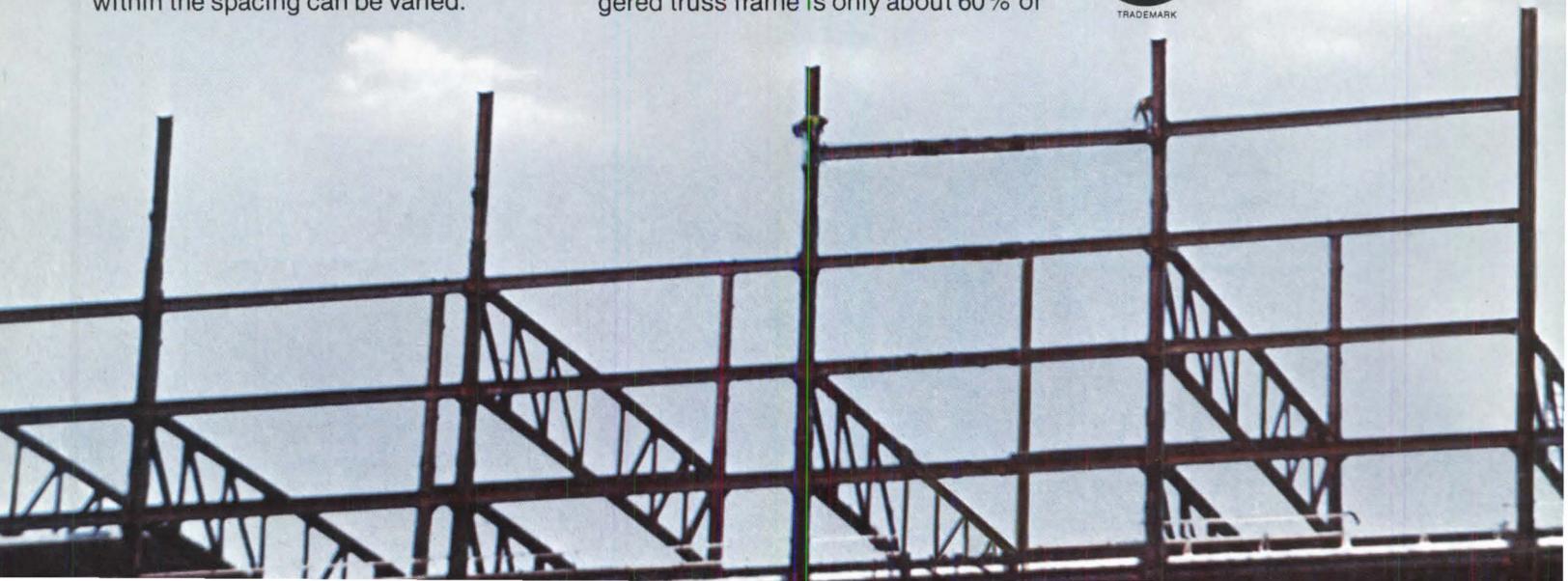
The benefits of the Staggered Truss system are many, but its biggest advantage is the ability to resist lateral loads. So the value of the system increases as the building becomes higher, and this is why it has been so successful for high-rise residential buildings such as apartments, condominiums and hotels.

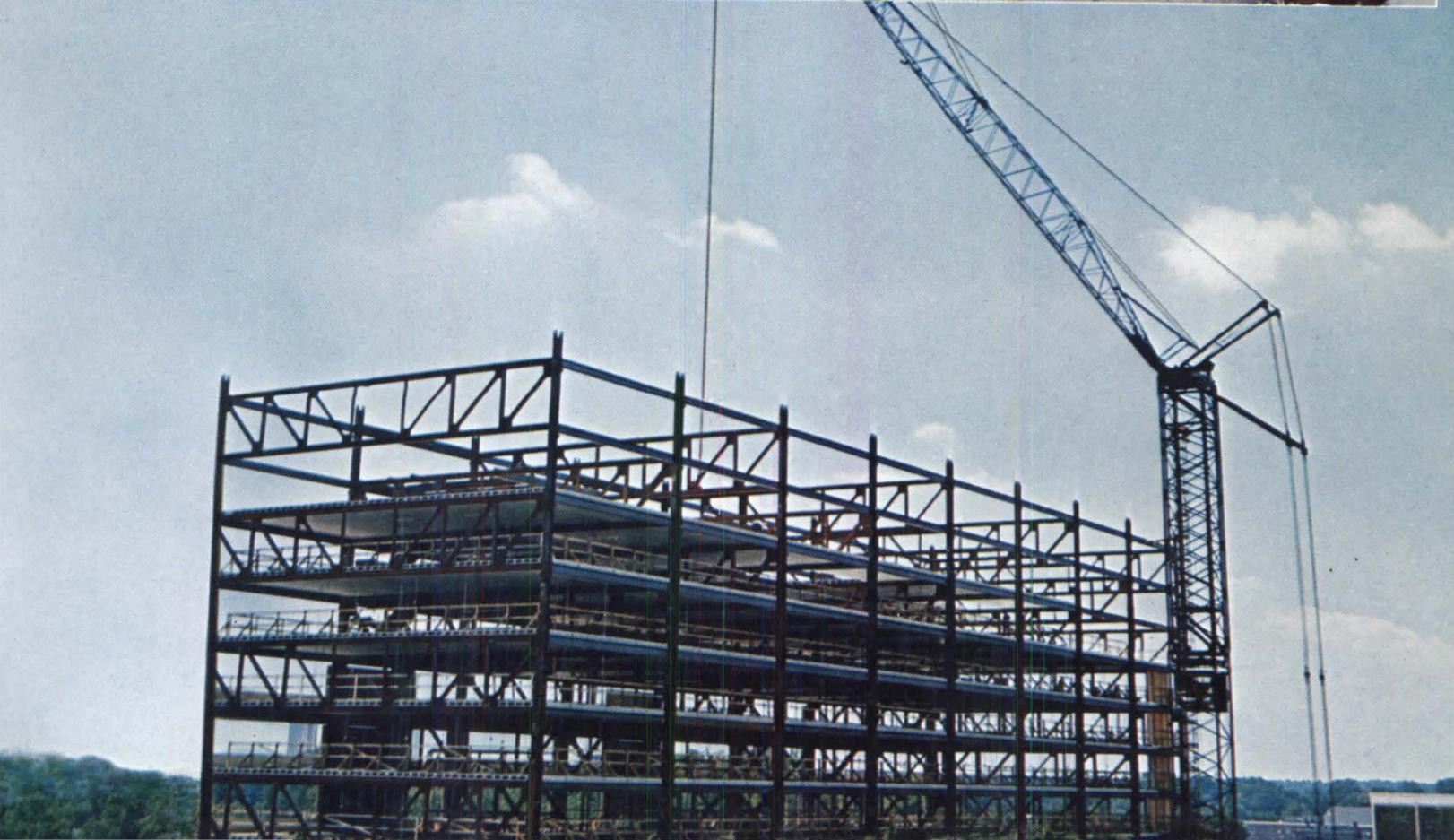
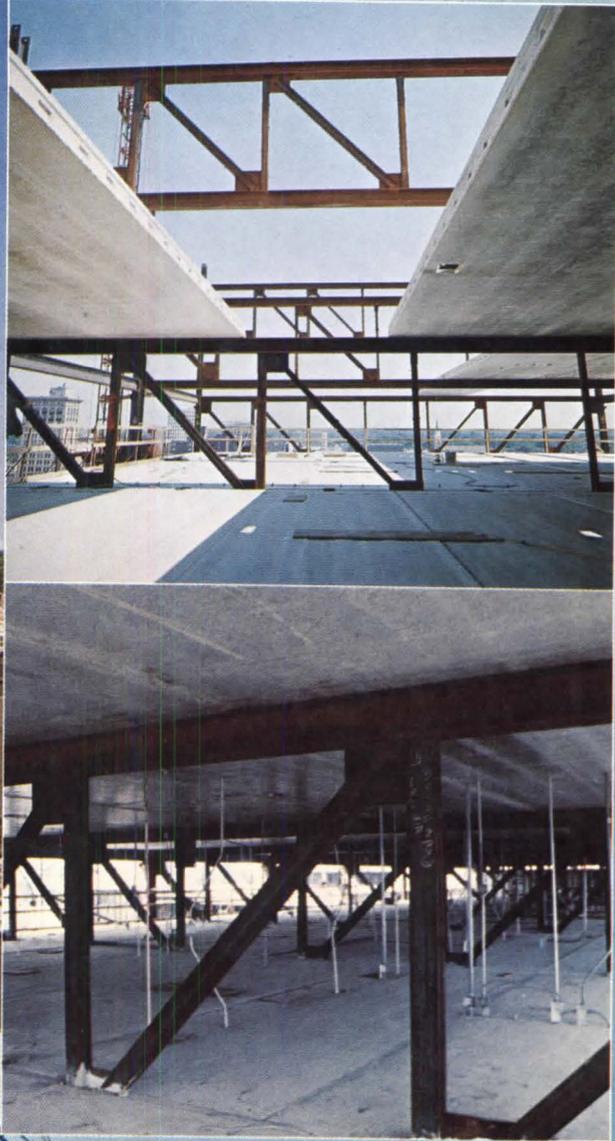
Staggered Truss is worth thinking about. In many recent projects, when evaluated against other systems, it has proved to be the fastest, the most practical and the most economical. You'll be surprised how easy it is to work with.

For more information on the design of Staggered Truss structures, contact a USS Construction Representative through your nearest U.S. Steel Sales Office. Or write for our booklets, "Staggered Truss for High Rise Building" (ADUSS 27-5227-02), and "Staggered Truss Framing System-Design Considerations and Commentaries" (ADUSS 27-7165-01), to U.S. Steel, Box 86, (C776), Pittsburgh, Pa. 15230.



**United States Steel**







Residence: Walnut Creek, California. Architects: Conifer Crossen & N...

## Red cedar shingles make a difficult site a natural.

The steep site chosen for this residence provided the architects with a challenging problem—to say the least. And on a major part of the design, both exterior and interior, the natural solution was red cedar shingles.

“Our reasons for using cedar shingles were numerous. Aesthetically, we felt that the natural, weathered color of the shingles would blend well with the natural colors of the site.

“The texture of the shingles is in proper scale with the masses of the forms, and their rustic appearance relates to the informality of the structure.

“Functionally, the shingles are long-lived and require no maintenance.”

What’s more, the superior insulating quality of red cedar is especially important to the occupants of a home on such an exposed site.

If you’re figuring on a project with a little different slant, consider a natural solution.

Consider red cedar shingles or handsplit shakes.

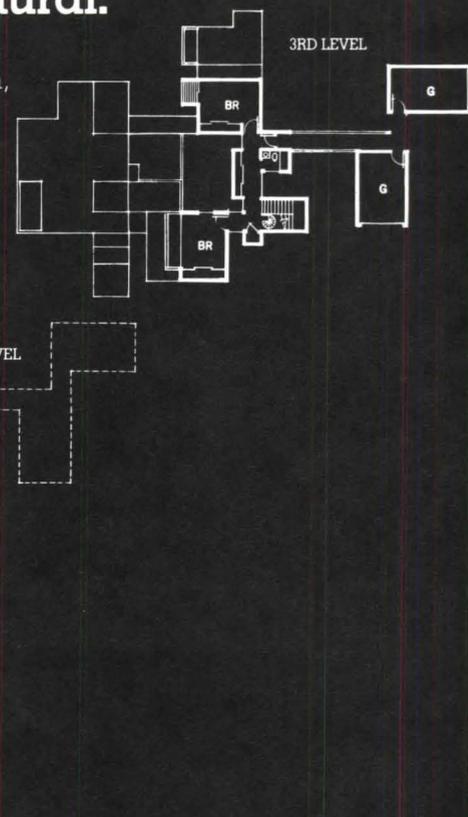
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**Cover:** Photo by Phokion Karas of Peabody Terrace, Harvard University, by Sert, Jackson & Gourley

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## EVENTS

**May 31:** Call for papers deadline, for symposium on the structural use of wood in adverse environments, to be held May 15-18, 1978, at the University of British Columbia, under the sponsorship of the Society of Wood Science and Technology. Contact: R.W. Meyer, Department of Materials Science and Engineering, Washington State University, Pullman, Wash. 99164.

**June 2-4:** Course on Deterioration of Wood: Causes, Prevention and Cure, San Diego. Sponsored by Association for Preservation Technology and AIA committee on historic resources.

**June 3-4:** Course on Solar Energy for Buildings, Houses and Pools, University of California, Berkeley. (Repeat course: Sept. 8-9.)

**June 4-5:** Association of Architectural Librarians annual meeting, Sheraton Inn-Airport, San Diego. Contact: Susan Cosgrove, AIA Library.

**June 5-9:** AIA annual convention, San Diego (reconvened convention and study mission to Guatemala and the Yucatan and Cancun, Mexico, June 9-19).

**June 5-9:** Architectural Secretaries Association annual convention, U.S. Grant Hotel, San Diego. Contact: Marjanne Pearson, Robinson & Mills, 1005 Sansome St., San Francisco, Calif. 94111.

**June 6-10:** Course on Principles of Color Technology, Rensselaer Polytechnic Institute, Troy, N.Y. (Course on Color Technology for Management, June 13-14, and on Advances in Color Technology, June 20-24.)

**June 8-10:** Conference on Technology for Energy Conservation, Sheraton-Park Hotel, Washington, D.C., sponsored by 10 federal agencies and organizations. Contact: Information Transfer, Inc., 1160 Rockville Pike, Suite 202, Rockville, Md. 20852.

**June 9-10:** Seminar on Energy Conservation in Industrial Plants, Toronto, sponsored by New York University. (Repeat seminars: Aug. 18-19, Washington, D.C., Oct. 20-21, Chicago, and Dec. 15-16, Miami.) Contact: New York Management Center, Department 14NR, 360 Lexington Ave., New York, N.Y. 10017.

**June 12-19:** International Design Conference, Aspen, Colo. Contact: Mary Apple, IDCA, Box 664, Aspen, Colo. 81611.

**June 19-25:** Course in Designing for Solar Energy, Harvard Graduate School of Design, Cambridge, Mass.

**June 19-27:** Annual World Game Workshop, University of Pennsylvania, Philadelphia.

**June 20-22:** Construction Specifications Institute annual convention and exhibit, Denver. Contact: CSI, 1150 17th St.

N.W., Washington, D.C. 20036.

**June 20-24:** Air Pollution Control Association annual conference and exhibition, Sheraton Centre Hotel, Toronto. Contact: APCA, Box 2861, Pittsburgh, Pa. 15230.

**June 22-24:** NEOCON 9, Merchandise Mart, Chicago. Contact: James Bidwell, NEOCON, Merchandise Mart, Chicago, Ill. 60654.

**June 26-29:** Annual assembly of the Royal Architectural Institute of Canada, Saskatoon, Saskatchewan, Canada.

**June 27-July 8:** Course on Environmental and Demographic Aspects of Aging, University of Southern California.

**July 5-7:** National Interfaith Conference on Religion and Architecture, Pfister Hotel and Tower, Milwaukee. Contact: Dorothy S. Adler, Guild for Religious Architecture, 1777 Church St. N.W., Washington, D.C. 20036.

**July 10-29:** Summer School in England. Contact: Victorian Society in America, The Athenaeum, E. Washington Square, Philadelphia, Pa. 19106.

**July 25-29:** Conference on Solar Energy for Heating and Cooling, University of Michigan, Ann Arbor.

**July 31:** Entries deadline, Owens-Corning 1977 energy conservation awards program. Contact: G. N. Meeks, Owens-Corning Fiberglas Corporation, Building Products Operating Division, Fiberglas Tower, Toledo, Ohio 43659.

## LETTERS

**Firms' Financial Operations:** I enjoyed Neil Harper's article on financial data in the January issue, but I am concerned that some points may be misleading to the readers:

- Information presented in Table 1 would be more useful if position descriptions were defined. Perhaps AIA could develop a table of job descriptions for adoption by interested professionals.
- Information in Table 3 is an analysis only of the "paid time off" portion of indirect time.
- Harper indicates that "gross overhead ratios shown in Figure 6 are computed by dividing total firm overhead by direct salary expense." Terminology now common to all components of the AIA Financial Management System refers to "indirect expense" rather than to "overhead." Also, some firms may wish to express indirect expense as a function of direct personnel expense, rather than direct salary expense.
- In referring to Figure 8, Harper refers to construction supervision; construction administration is preferred.
- On page 48, Harper refers to "the rule of thumb of \$1 for direct salaries, \$1 for overhead and 50 cents for contingency

and profit." We have serious reservations about the presentation of outdated and inappropriate rules of thumb which may deceive professionals who do not have a comprehensive understanding of their financial operations.

Harper is to be commended for the article. As more and more professionals come to understand the financial aspects of their practices, the kind of data presented will become more available, more representative and more useful. Interested readers may wish to refer to "Compensation Guidelines" or later to "Financial Management: Manual Applications" (accounting) and "Financial Management Principles," which are currently being prepared for publication. *Peter Piven, AIA Chairman, Financial Management Task Force*

**Charlesview Evaluation:** The review by Andrea Dean of the Charlesview housing research (Feb., p. 20) done by John Zeisel was well balanced, pointing out shortcomings and strong points. I hope architects will take the message of the findings and fight for those amenities. Too much designing is done by financial dictates.

An aspect that Ms. Dean failed to touch on needs comment. While everyone can be thankful that efforts such as the Charlesview research are being made, why does such research have to depend almost entirely on the determination of a college professor and his students? Why aren't evaluations being supported from several government agencies? As Zeisel pointed out to the reviewer, he himself had to cut out "amenities" and lost a lot of data because he didn't have the resources to do a more thorough job. As long as post-occupancy evaluation is thought of as a curiosity rather than a necessity, we must be grateful for little gems like this one. But if there were even small funding packages available for such evaluations and the implementation of the knowledge gained, the mistakes of Charlesview would not have to be repeated. *Robert B. Bechtel, Environmental Research & Development Foundation, Tucson, Ariz.*

**The Wedding Cake House:** I was interested in the drawings by Robert Miles Parker in the article entitled "A California Artist's Architectural Odyssey Across the Nation" in the January issue. I was surprised, however, at the caption given to one of the drawings.

The last drawing was referred to as "Kennebunk House, Kennebunkport, Me.," whereas its much more famous name was not even mentioned. It has been known as or has been called "The Wedding Cake House" because of its obvious similarity to a gaily decorated  
*continued on page 96*



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## Post Office Competition Will Test GSA's New Level 3 A/E Selection

The General Services Administration has launched the first test of the so-called Level 3 method of selecting architects and engineers. The method is being used to select a firm to adapt Washington, D.C.'s old post office building on Pennsylvania Ave. to new use.

Under the Level 3 test, three Washington firms, two of them in joint ventures, have been selected from a field of about 100 applicants to prepare preliminary designs. Each firm has been separately commissioned to produce preliminary designs, and each will be paid an equal and equitable fee, reported unofficially to be about \$46,000. Each of the design solutions will be evaluated and a final selection will be made with the winning firm becoming the project architect.

Level 3 in GSA's selection process was initiated in 1974 by Arthur F. Sampson, then GSA administrator (*see* July 1974, p. 4). At that time, Sampson said: "Instead of depending exclusively on an evaluation of professional competence and reputation, GSA will begin a process of awarding architectural and engineering design contracts on the basis of project proposals. . . . Ultimately, GSA will award A/E contracts on the basis of fully developed project proposals: proposals that will include evidence of technical and professional distinction; estimated fees, construction and life cycle cost estimates, and planning and design 'concepts.'" AIA endorsed the process and commended Sampson for his action.

Level 1 of GSA's A/E selection method requires the submission by prospective firms of standard forms 254 and 255. Level 2 in the screening process is based on experience-related information contained in SF254 and 255, as well as information on design management. On larger and more complex projects, GSA says, both levels are inadequate for evaluation, "if we wish to be assured of selecting a firm that can achieve design excellence on

the project, while successfully controlling time and cost invested."

The Committee on Federal Procurement of A/E Services, on which AIA has representatives, has worked closely with GSA in establishing its A/E selection procedures. COFPAES' interagency task force, chaired by Robert L. Durham, FAIA, has objected, however, to the selection of the old post office building as a test for Level 3, considering it more appro-



appropriate for a final test of Level 2. Durham says that a "clearly stated program is vital for a Level 3 test," and that there is no stated program for the old post office building.

In a letter written several months ago to Nicholas Panuzio, commissioner of GSA's public buildings program, Durham said on behalf of COFPAES: "The nature of the restoration of an existing building requires an abnormal amount of early research and investigation of mechanical and functional equipment which leads to a serious doubt as to the usefulness of this particular project for a Level 3 test." It is important to the design profession, Durham said, "that there be effective procedures with the fewest number of variations" in the Level 3 test. COFPAES is closely monitoring the results of the Level 3 effort.

The three Washington firms selected to prepare preliminary designs for the restoration of the old post office building are: Arthur Cotton Moore/Associates (in joint

venture with McGaughy, Marshall & McMillan of Norfolk, Va., and Associated Space Design, Inc., and Stewart Daniel Hobson & Associates, both also of Washington); Hugh Newell Jacobsen, FAIA (in joint venture with the Boston firms of Shepley, Bulfinch, Richardson & Abbott and Desmond & Lord Inc.), and Faulkner, Fryer & Vanderpool.

The winner reportedly will receive a \$1 million fee for the estimated \$16 million renovation. The old post office building, designed by W. J. Edbrooke and completed in 1899, is a Romanesque revival structure. It has housed many agencies in addition to the post office department, more recent tenants being the FBI and the U.S. Information Agency.

Some planners have called for its demolition, but articulate forces have campaigned to save the building. The 1974 Pennsylvania Avenue Plan endorsed its continued use as a mixed-use public structure, with offices for the national endowment for the arts. According to present GSA plans, the building's upper interior spaces will be used for offices, with spaces below for restaurants, shops, craft centers, etc. The aim, says GSA, is to adapt the old building to modern use while preserving and enhancing its original architecture and to establish a facility that will serve as a center for federal agency offices "interested and involved in fine arts, historic preservation and urban planning."

## R/UDAT Leader Straka To Receive Kemper Award

Ronald A. Straka, FAIA, has been selected to receive the Institute's Edward C. Kemper award for 1977. Established in honor of the late executive director of AIA, the Kemper award is given annually to an AIA member who has made an outstanding contribution to the Institute and to the profession.

Straka, currently chairman of AIA's committee on urban planning and design, heads his own design consulting firm in Boulder, Colo. He was chairman of AIA's Regional/Urban Design Assistance Team

*continued on page 12*

# Architects and Engineers E&O.

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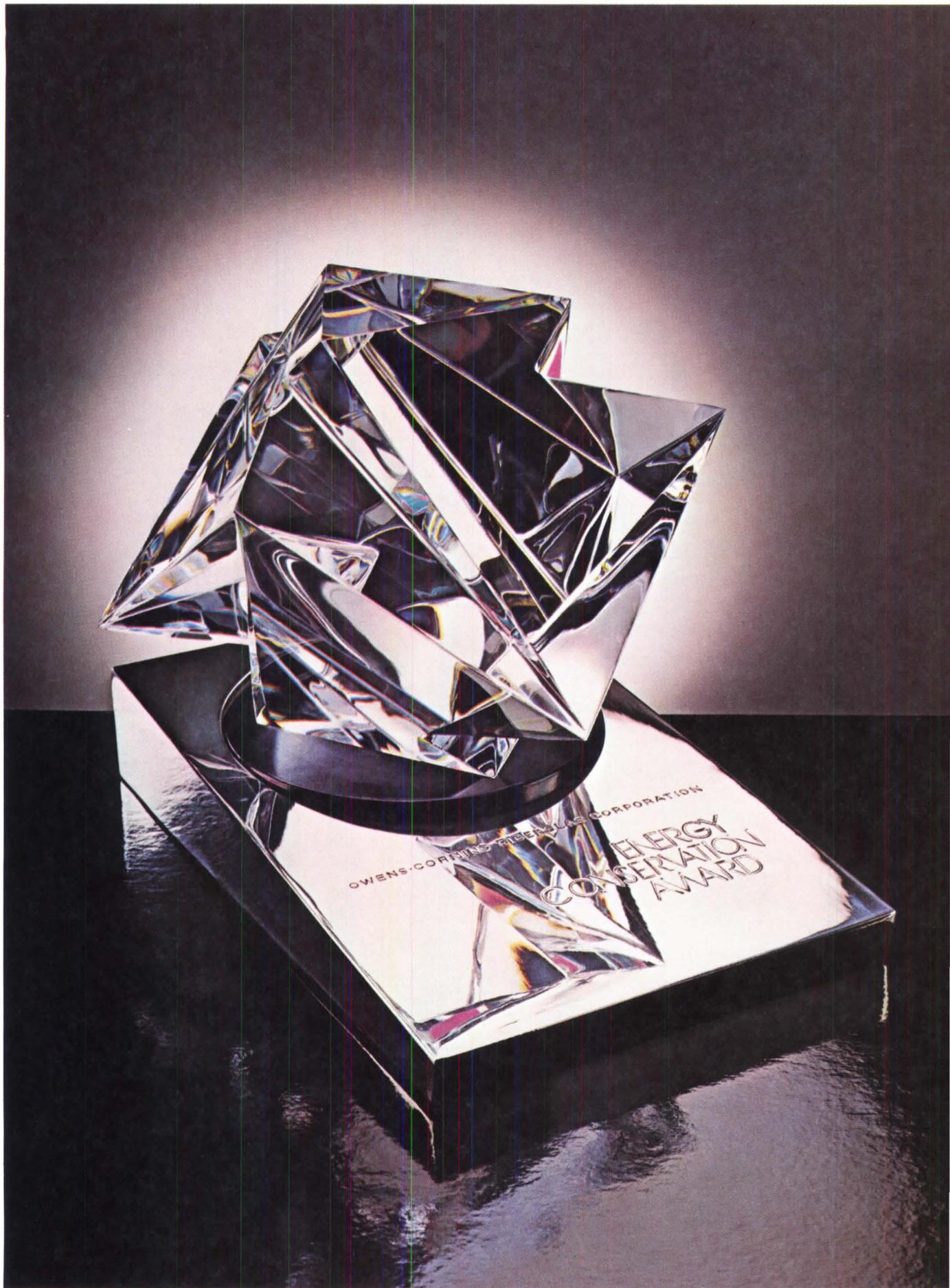
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# Announcing the 1977 Owens-Corning Energy Conservation Awards Program

(because America urgently needs more designs that save energy)

When Owens-Corning announced its first Energy Conservation Awards Program in 1972, architects and engineers responded with dozens of energy-saving designs.

And each year the flow of ideas has continued to pour in.

But this past winter brought a cruel fact to light. Despite all the energy-saving designs that have already been created, and despite all the energy conservation measures that are already in effect, it's nowhere near enough.

Our country still needs more designs that save energy.

## Do you have a design that saves energy?

Show our Awards Jury a building design that doesn't waste energy—and you could receive one of the Energy Conservation Awards Owens-Corning will present in 1977.

The Awards Jury will be looking for design excellence and significant energy conservation features and/or systems.

This will be the 6th annual competition in Owens-Corning's Awards Program.

By continuing the Energy Conservation Awards Program, we hope to stimulate even more ideas to conserve energy. It also

lets us recognize—and honor—those who do the best job of designing buildings and mechanical systems that help conserve our nation's energy.

## Five entry categories

Up to now, there have been four entry categories in the Owens-Corning Energy Conservation Awards Program. This year winners will be selected from *five* design categories:

**Institutional**—schools and hospitals, for example.

**Commercial**—office buildings, shopping centers, retail stores, and similar structures.

**Industrial**—including manufacturing plants, research centers, and warehouses.

**Governmental**—post offices, administrative buildings, military structures, to name a few.

**Special**—new or existing buildings, projects, or complexes that are not included in preceding categories.

## Who can enter

Any registered architect or professional engineer practicing in the United States is eligible.

As an individual. Or in a team.

But to qualify, your entry must be a commissioned building project—in the design process,

under construction, or a completed structure.

Although Fiberglas\* products are an excellent way to conserve energy, their use is not an entry requirement.

## The Awards

Winning architects and/or engineers will receive "Triangles," the handsome Steuben crystal sculpture shown at left. Owners or clients will receive other Steuben crystal awards.

## The Awards Jury for 1977

Outstanding professionals in architecture and engineering will serve as the Awards Jury to select the winners.

## Send for entry details now

Completed entries must be submitted by July 31, 1977. Winners will be selected and notified in early October.

For a brochure with details on how to enter your energy-saving designs, write: G. N. Meeks, Owens-Corning Fiberglas Corp., Building Products Operating Division, Fiberglas Tower, Toledo, Ohio 43659.

This program has been approved by the American Institute of Architects and is patterned after its Honor Awards Program.

◀ *The Owens-Corning Energy Conservation Award. "Triangles," a Steuben crystal sculpture that captures and reflects light from multiple triangular planes.*

Owens-Corning is Fiberglas



Going On from page 8

in 1974-75. R/UDAT, one of AIA's most successful public service programs, brings together interdisciplinary teams to help communities with design and planning. The volunteer teams have visited 39 cities and towns, helping them and making recommendations for community action.

Straka has served as chairman of four R/UDAT teams and has been a team member on four other visits. He has been instrumental in involving other professionals in the team effort and has also fostered the participation of architectural students in R/UDAT visits.

Straka, who has taught architecture and urban design at the University of Colorado, Ohio State University and Kent State University, is currently working on urban design projects for several Colorado communities.

## Fifty-Six Named Fellows For Investiture on June 5

With the exception of the gold medal, which may be presented each year to one architect from any part of the world, fellowship is the highest honor AIA can bestow on its members. Fifty-six members were recently elected to the college of fellows, a lifetime honor bestowed for outstanding contribution to the profession. Formal investiture of the new fellows will take place on June 5 at the Institute's convention in San Diego.

The following have been advanced to fellowship:

Lavone Dickensheets Andrews, Houston  
Eugene E. Aubry, Houston  
Jack Sherman Baker, Champaign, Ill.  
Richard E. Baringer, Christiansted, St. Croix, Virgin Islands  
Edward Charles Bassett, San Francisco  
John H. Bickel, Louisville, Ky.  
Richard Patrick Blake, Milwaukee  
Richard L. Bliss, Kirkwood, Mo.  
Robert C. Broshar, Waterloo, Iowa  
John H. Burgee, New York City  
Lo-Yi C.Y. Chan, New York City  
John S. Chase, Houston  
John D. Cordwell, Chicago  
James D. Cowan, Seattle  
Warren J. Cox, Washington, D.C.  
John Morris Dixon, Stamford, Conn.  
Kermit Parrish Dorius, Corona del Mar, Calif.  
John P. Eberhard, Bethesda, Md.  
Aaron Freed, Seattle  
James Ingo Freed, Chicago  
James A. Greene, Tampa, Fla.  
Jordan L. Gruzen, New York City  
Arthur Howard Hoag Jr., Mount Dora, Fla.  
James Mathews Hunt Sr., Elberton, Ga.  
Jeh V. Johnson, Wappinger Falls, N.Y.  
Julian Eugene Kulski, Marshall, Va.  
Zeb Vance Lackey, Valdosta, Ga.

Joseph Newton Lacy, Bloomfield Hills, Mich.

Richard D. Levin, Dayton, Ohio  
Alan G. Levy, Philadelphia  
William Kirby Lockard, Tucson, Ariz.  
Carl F. Luckenbach, Birmingham, Mich.  
Frithjof M. Lunde, New York City  
Robert J. Lynch, Malden, Mass.  
Henry J. Magaziner, Philadelphia  
Robert Eastwood McConnell, Tucson, Ariz.  
Edwin Keith McPheeters, Auburn, Ala.  
Thomas M. Payette, Boston  
Edward G. Petrazio, New Orleans  
Frank Blair Reeves, Gainesville, Fla.  
Robert Reinheimer Jr., Texarkana, Tex.  
Mildred F. Schmertz, New York City  
George A.D. Schuett, Milwaukee  
Charles E. Schwing, Baton Rouge, La.  
George Whiteside Shupee, Arlington, Tex.  
Howard F. Sims, Detroit  
Saul Charles Smiley, Minneapolis  
Paul D. Spreiregen, Washington, D.C.  
George W. Sprinkle, Phoenix  
James Edgar Stageberg, Minneapolis  
Ronald A. Straka, Boulder, Colo.  
Albert Homer Swanke, New York City  
Robert Tyler, Tarzana, Calif.  
Thomas W. Ventulett III, Atlanta  
Joseph A. Wilkes, Silver Spring, Md.  
Harry C. Wolf III, Charlotte, N.C.



## New Subway's 1901 Facade

Five Points station, the central station in Atlanta's MARTA rapid transit network, will link the city's past with the present. The facade of the 1901 Eiseman Building (above) has been dismantled and

will be reassembled as the new station's focal point. The old building stood on the site of the Five Points station in what was once Atlanta's retail district.

The 844 pieces of terra cotta from the old building's facade have been carefully dismantled, numbered, drawn to scale and photographed for reassembly inside the Five Points station. When reassembled, the facade will be 67 feet wide and 33 feet high, and an escalator from an upper level to a lower level will pass through one of the large, arched openings where the windows were.

Designed by Finch-Heery, a joint venture of Heery & Heery, Inc., and Finch, Alexander, Barnes, Rothschild & Paschal, Inc., the Five Points station will cost \$40.2 million.

## NSPE Bidding Prohibition Ruled an Antitrust Violation

The National Society of Professional Engineers' ethical guideline which prohibits competitive bidding for engineering services does not meet antitrust standards, according to a recent opinion rendered by the U.S. Court of Appeals, District of Columbia. The court, however, struck down as unconstitutional the lower court decision which enjoins NSPE from the adoption of a policy statement that opposes competitive bidding as not being in the public interest. This, the appeals court said, is unconstitutional and in violation of the First Amendment.

Judge Harold Leventhal's opinion for the panel of three judges of the appeals court said that NSPE's guideline might meet antitrust standards if revised to be "more closely confined to the legitimate objective of preventing deceptively low bids," suggesting that a more limited provision be submitted for modification of the decree. "We do not say or imply that there is no room in antitrust law for ethical rules of practice for the learned professions, to prevent harm to the lay consumer and general public," Judge Leventhal said. "What we do say is that the rationalization offered by the society does not justify the broad ban on competitive bidding which the society has attempted to enforce."

NSPE reports that its legal counsel, Hogan & Hartson, is studying the opinion preliminary to a determination of further legal steps to resolve the case. The suit against NSPE by the Justice Department was initially filed in Dec. 1972. The case has been considered twice by the D.C. court and once by the Supreme Court.

In June 1975, the Supreme Court remanded the case to the D.C. court in light of its decision in the Goldfarb case. In that case, the Supreme Court held that

*continued on page 16*

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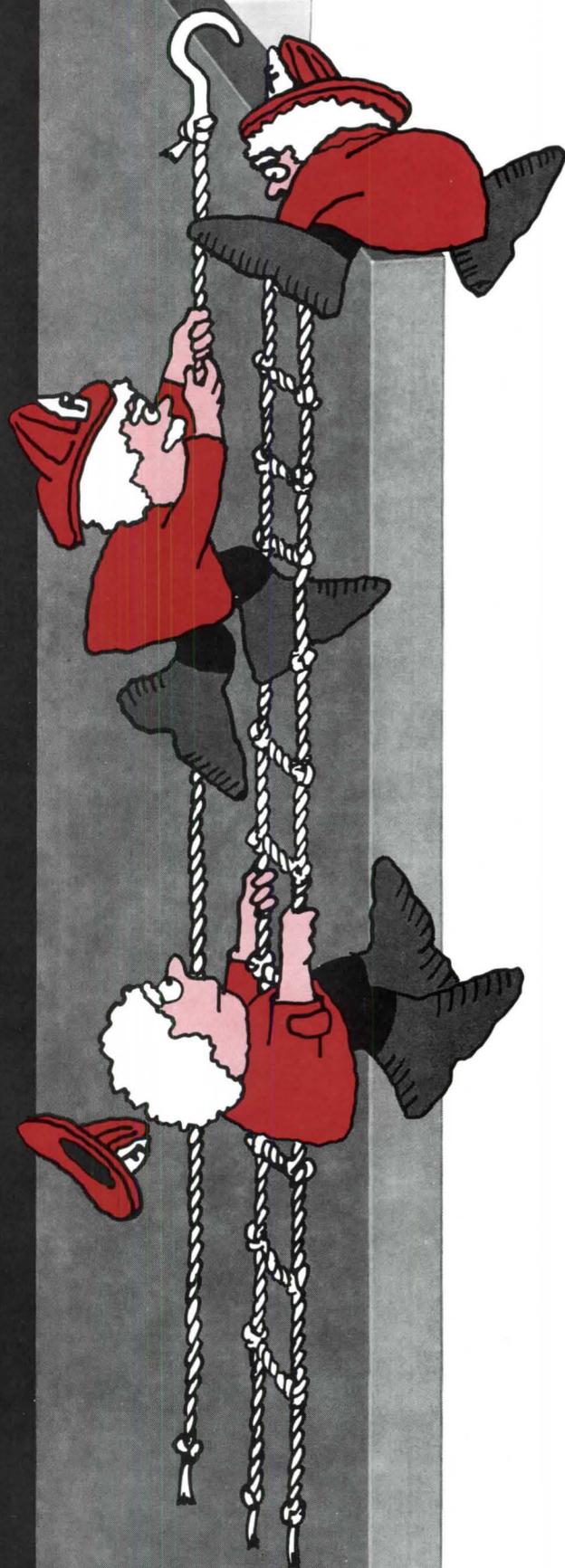
Ask the specialists who originated the door frame concept of the combination detector, holder, closer:

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 Düsseldorf, W. Germany / Accra Hotel, Accra, Ghana / Life of Jamaica  
 Building, Kingston, Jamaica / U.S. Embassy, Tokyo, Japan / Armuli 1  
 Building, Reykjavik, Iceland / Hotel Colon, Quito, Ecuador / Hotel Holiday  
 Inn, München Gladbach, W. Germany / Holiday Inn, London, U.K.  
 Saipan Continental, Saipan / National Theater Project, Lagos, Nigeria  
 Hotel Intercontinental, Bucharest, Romania / University of Libya, Tripoli,  
 Libya / Chase Manhattan Bank Building, San Juan, Puerto Rico  
 Holiday Inn, Strand, U.K. / Managua Airport, Managua, Nicaragua  
 Jahn Center, Düsseldorf, W. Germany / Canadian Embassy,  
 Pakistan / Hippodromo Nazionale, Caracas, Venezuela  
 French Embassy, Lagos, Nigeria / Hotel Intercontinental,  
 Frankfurt, W. Germany / Enlisted Mens Bachelor Qtrs.,  
 Agana, Guam / Italian Embassy, Kabul, Afghanistan  
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 Ethiopia / Santo Domingo International Airport, Santo  
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 pala, Uganda / Park Central, Caracas, Venezuela  
 Montego Bay International Airport, Montego Bay,  
 Jamaica / VIP Lounge, Lagos International Airport,  
 Lagos, Nigeria / Black Arts Festival Village, Lagos,  
 Nigeria / Hotel Intercontinental, Cologne, W. Germany  
 Curaçao International Airport, Curaçao / Hotel Holiday  
 Inn, Ingolstadt, W. Germany / International Trade  
 Center, Agana, Guam / Canadian External Affairs  
 Building, Islamabad, Pakistan / U.S. Embassy, Jakarta,  
 Indonesia / Sonatrach LPG Plant, Algeria / Moscow  
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 Center Dhahran Dental Clinic, Dhahran, Saudi Arabia  
 Al Hasa Medical Clinic, Hofuf Al Hasa, Saudi Arabia

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Going On from page 12

ethical restraints imposed by a profession may be distinguished from restraints agreed upon by commercial businesses. The opinion stated: "The public service aspect, and other features of the professions, may require that a particular practice, which may properly be viewed as a violation of the Sherman Act in another context, be treated differently."

## Seismic Design Proposals Evaluated by the Institute

AIA has reviewed the final draft of a document recommending seismic design provisions for buildings. A six-page letter from James Dowling, AIA director of codes and regulations, to the Applied Technology Council of Palo Alto, Calif., which prepared the draft, offers general and specific criticisms of the document.

An earthquake code for all buildings in areas of moderate and major earthquake risks (39 states) is likely, the letter says, and such a code raises serious questions for architects and engineers. For example, how will the A/E's role change in the conceptional design stage and what will be the liability and/or ability of the architect in developing a quality assurance plan for inspection of critical architectural elements and systems?

Concerning the document's content and format, Dowling's letter remarks on "serious shortcomings philosophically for practicing architects" in that the document is designed to function both as a "quasi-minimum code" and as a manual of acceptable practice. "The two approaches should be distinct," the letter says, because the dual orientation forces the architect to straddle the fence between public safety versus professional liability.

The critique also finds provisions in the document "highly inflexible," saying they tend to give little attention to providing a "reasonable degree of professional freedom" in complying with the provisions.

The Applied Technology Council is writing the document, "Recommended Comprehensive Seismic Design Provisions for Buildings," under the joint sponsorship of the National Science Foundation and the National Bureau of Standards.

## John Hirten to Head AIP

John E. Hirten, an urban planner who has held administrative positions in the Department of Transportation and is currently directing a project for the government of Iran and the Tehran Development Council, will become executive director of the American Institute of Planners June 15.

Hirten, 52, was at DOT from 1971

through 1975, where he first was deputy administrator of the urban mass transit administration and then was assistant secretary for environment and urban systems.

Before joining DOT, Hirten was executive vice president of San Diegans, Inc., a private nonprofit business development corporation to plan and rebuild the center city. He also was president of AIP's California chapter in 1970 and 1971. From 1959 to 1969, Hirten was the first executive director of the San Francisco Planning and Urban Renewal Association.

AIP will celebrate its 60th anniversary at its conference Oct. 8-12 in Kansas City.

## Brooks Approach Sought in Model Procurement Code

A quiet struggle over the issue of A/E selection is going on within an American Bar Association-sponsored model procurement code project.

AIA and the national engineering societies are seeking the deletion of a competitive fee alternative in the proposed A/E selection section of the code, which is directed at state and local governments. The design professions favor another selection alternative, based on qualification and competence similar to the federal government's Brooks bill procedures.

The A/E provisions became the most controversial portion of the code at a series of public hearings around the country. Both alternatives are expected to be contained in the second draft of the code, due out this month. A third approach, the use of competitive fee selection on simple projects and selection based on qualification for "significantly complex" projects, has been informally proposed by project chairman F. Throwbridge von Baur and rejected by the A/E organizations.

A six-member coordinating committee may decide which proposal to include in the code. The final draft will be presented to the ABA board of governors next February. Meanwhile, Kentucky, New Mexico and Tennessee have been selected as pilot states to test the code.

## Carter Asked to Release Housing Program Funds

Saying no new or reorganized housing programs are needed now, delegates to the National Housing Conference have urged the Carter Administration to release authorized funds and to streamline processing of current programs.

More than 300 delegates, meeting in Washington, D.C., and representing both private and public interests in housing and community development, seek rebirth of a "national commitment to meet housing and community development needs"

backed by adequate staffs in HUD and the Farmers Home Administration to handle increased numbers of applications in existing programs.

Among other recommendations to the Administration were the following:

- Broaden the market for Section 235 subsidized single-family housing by permitting a range of interest rates from 5 to 1 percent, as allowed by law, and lower down payments.
- Open up Section 236 multifamily housing by permitting increases in subsidy and construction cost limits on existing applications, by increasing the percentage of units to be allowed under rental assistance payments and by obtaining a broader economic mix through adjustment of income limits and requirements.
- Establish housing guidelines for the entire Presidential term with an eye toward making up for the shortfall in achieving housing goals of the last several years.

## Union's Product Boycott Ruled Illegal by Court

By a vote of 6 to 3, the Supreme Court has made a ruling that will limit secondary product boycotts by labor unions. The decision before the court was whether a union agreement with a subcontractor allowed workers to refuse to install prefabricated equipment that had been specified by the prime contractor. It was ruled that the prime contractor had control over the equipment he specified and that the union was engaged in an illegal boycott.

The dispute involved a project in New York City for which the Austin Co. was engineer and prime contractor. The firm specified that airconditioners with factory-installed pipes were to be used. The work was to be performed by the subcontractor, Hudik-Ross. Its employees, members of a steamfitters union, refused to install the equipment because there was a work preservation clause in their contract which required that the piping be done on-site.

The prime contractor claimed the refusal to work was an unlawful secondary boycott and filed charges. When the dispute was reviewed by the National Labor Relations Board, it was found that the prime contractor had "control" of the specifications of the equipment. The U.S. Court of Appeals, however, ruled that the subcontractor had entered into a contract that was in conflict with the agreement with the union.

The Supreme Court ruling says that the NLRB's "right-to-control" test should be used to determine whether there is an illegal secondary boycott in a work preservation dispute. The dissenting justices said that the pressure of unions to pre-

serve the work as "traditionally" performed by union members "can only be regarded as primary." They called the decision of the court "a serious setback for national labor policy."

## \$1.8 Million Disbursed For Endowment Projects

The architecture + environmental arts program of the National Endowment for the Arts awarded 143 grants and contracts totaling \$1,868,616 for fiscal 1976. According to Nancy Hanks, Hon. AIA, chairman of NEA, in their nature and number the grant applications show an increasing concern for design excellence throughout the country. As illustration she points to the public education and awareness category in which grant applications have risen from 175 in 1974 to 400 in 1976. Of these, 71 were awarded to individuals, nonprofit organizations and cities in 27 states and the District of Columbia in 1976, and totaled \$728,387.

Under its academic and professional research category, NEA awarded 45 grants totaling \$439,219. Among the winners were a sourcebook on the potential reuse of old movie theaters, a study of the architectural history of Georgia courthouses and research on development of soft indoor play environments for normal and handicapped children.

Consistent with its attempt to promote improvement in the design of government buildings, NEA awarded 11 grants, totaling \$372,920 under the program's federal design category.

In the assistance to state arts agencies category, NEA funded broad-based programs for six state and regional arts agencies in Alabama, Illinois, Minnesota, New York, Vermont and the Western States Art Foundation.

One grant went toward a study of career choice by architectural students, a second toward development of a project on national certification for landscape architects and a third toward a study of architectural education (and alternatives to traditional architectural practice) under the services in the field category. Together the three grants amounted to \$48,000.

## Women's Work on Tour

The Architectural League of New York has mounted an exhibition titled "Women in American Architecture: A Historic and Contemporary Perspective." The exhibit documents 200 years of achievements by women architects, including Julia Morgan, Denise Scott Brown, Chloethiel Woodard Smith and Mary Otis Stevens. A book based on the exhibit, edited by Susana

*continued on page 18*

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Torre and published by the Whitney Library of Design, will be reviewed in a later issue of the AIA JOURNAL.

The exhibition opened at the Brooklyn Museum and will now travel across the country. The schedule: May 6-June 18, the Massachusetts Institute of Technology Hayden gallery; Aug. 15-Sept. 30, the Colorado Springs Fine Arts Center; Oct. 20-Dec. 4, the Houston Public Library; Jan. 10-Feb. 28, 1978, the Chicago School of Architecture Foundation. Other locations will be added to the schedule.

For additional information, write: Marita O'Hare, Architectural League of New York, 41 E. 65th St., New York, N.Y. 10021.

## U.S., Soviets to Share Expertise on New Towns

Following a visit by a Soviet Union delegation to new towns in the Midwest and East, the U.S. and the Soviet Union have signed a protocol whereby the two countries will exchange technical experts on new town planning and construction. This is the first exchange of experts for on-site studies of new towns in the two nations.

President Carter has nominated William J. White, executive director of the Massachusetts housing finance agency, as general manager of HUD's new community development corporation. White, who is the U.S. co-chairman of the working group on new towns under the agreement, says both nations will benefit from the exchange.

"The Soviets," White says, "have had a great deal of experience in building new towns in remote parts of their nation for energy and mineral resource development under extremely severe climatic conditions. We face the same problems, particularly in Alaska and the West, as we begin to exploit our energy resources located in similar areas."

The Soviets, White says, will benefit from observation of "some of the techniques and management systems which U.S. developers use in planning and building new towns and other large-scale developments."

## AIA Seeking Flexibility In Model Energy Code

AIA's codes and standards committee's subcommittee on energy, chaired by Herbert W. Eisenberg, AIA, has reviewed a preliminary draft of the "Model Code for Energy Conservation in New Building Construction."

It recommends changes to the National Conference of States on Building Codes and Standards (NCSBCS).

AIA's recommendations are aimed at providing more flexibility in this code's administration.

Among the recommended changes is a provision that "those jurisdictions which may adopt the code should have a means of hearing appeals by those who have grievances. Such appeals should be heard by a board of technically competent individuals who are appointed in a democratic manner with a majority of public interest members."

AIA also suggests that means be provided whereby the code can be kept current with new energy technology and science. "At such times as energy performance design criteria are developed, the prescriptive code can be phased out in favor of the performance criteria," AIA says.

Although the energy research and development administration is guiding and giving support to the effort, the model code reviewed by AIA has resulted from the pooled resources and experience of organizations which will be responsible for its enforcement. NCSBCS is coordinating contributions made by the Building Officials and Code Administrators International, Inc., the International Conference of Building Officials and the Southern Building Code Congress International, Inc.

The model code, designed for adaptation by states and localities, is based on the American Society of Heating, Refrigerating and Air-Conditioning Engineers' standard 90-75. AIA's review and comments "in no way endorse or support the codification of ASHRAE's standard," the Institute says. Comments on the preliminary draft have also been solicited from others in the building industry, as well as federal, state and local agencies involved in energy conservation measures in new construction.

James R. Dowling, director of AIA's codes and regulations center, says that ASHRAE and AIA have sometimes disagreed on the matter of prescriptive criteria, but now the two "have agreed to formal cooperation in the field of energy standards development. A liaison committee and an energy budget committee have been formed, consisting of representatives from AIA, ASHRAE, the American Consulting Engineers Council, the Illuminating Engineering Society and the National Society of Professional Engineers. The two committees will consider the development of AIA's energy budget concept with technical input from the professional organizations.

Dowling says the committees also will aim at the "cooperative development of performance standard alternatives in future revisions of ASHRAE's standard 90-75 and development of ASHRAE's 100-P standard for existing buildings."

## 'Batcolumn': 200 Tons, 100 Feet Tall, \$100,000

One of the world's tallest sculptures has been installed in the plaza of Chicago's new Social Security Administration building which was designed by Lester B. Knight & Associates. The artwork, a 100-foot-tall baseball bat, was created by sculptor Claes Oldenburg, who will receive an AIA medal for artistic achievement related to architecture at the Institute's convention next month (*see Mar.*, p. 12).

Called "Batcolumn," the artwork was commissioned through the General Services Administration's art-in-architecture program which provides new federal buildings with contemporary works of art. The sculpture is the third artwork GSA has placed in Chicago. Four murals by Ilya Bolotowsky were dedicated at the Social Security Administration building last November, and Alexander Calder's 53-foot "Flamingo" stands on the federal center's plaza. Since 1968, GSA has commissioned 94 artists to create sculptures, murals and tapestries for new federal buildings across the country.

"Batcolumn" contains 1,608 pieces of welded steel weighing 20 tons. Oldenburg says it "could be called a monument both to baseball and to the construction industry . . . a celebration of steel construction" as well as "to the ambition and vigor Chicago likes to see in itself."

Artists are selected for GSA commissions in cooperation with the National Endowment for the Arts. Panel members for the Oldenburg commission included representatives of the architect, Milwaukee Art Center, Chicago's Museum of Contemporary Art and the Art Institute of Chicago. The architect's fine arts recommendation and panel nominations form the basis of the selection process. Under GSA's art-in-architecture program, a portion of a building's estimated construction cost is set aside for artworks. Oldenburg's commission of \$100,000 covered the design, fabrication and installation of "Batcolumn."

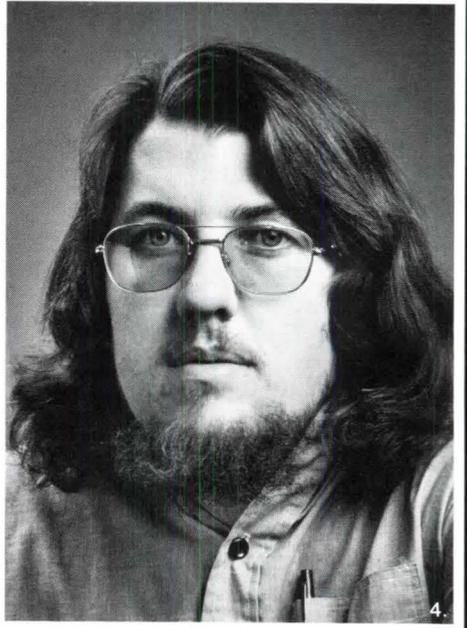
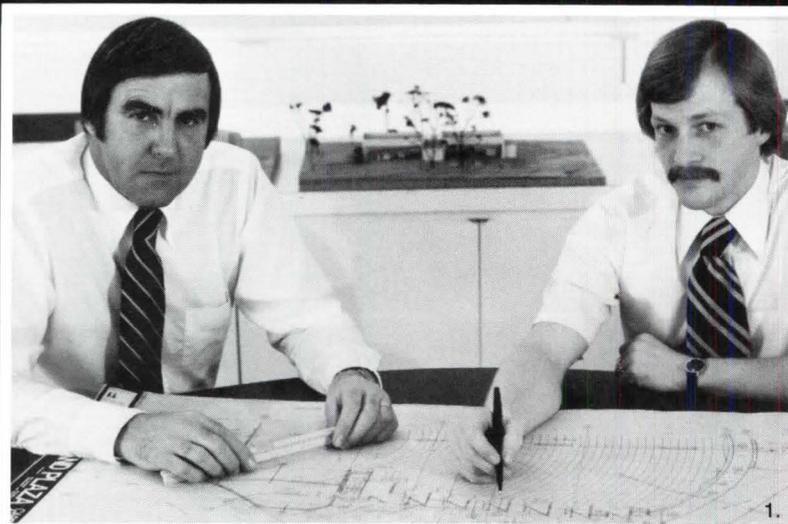
## More Work in New Jersey

There is an increasingly large amount of commissioned work on the drawing boards of New Jersey architects, according to a recent survey by the New Jersey Society of Architects/AIA. The society says there is a "very encouraging turnaround from the past four years," and predicts an upswing this summer in the state's depressed construction industry.

J. Robert Gilchrist, AIA, who compiled the results of the survey of the society's member firms, says that the architectural profession in the metropolitan New

*continued on page 98*

# The Winners: 1977 Plywood Design Awards



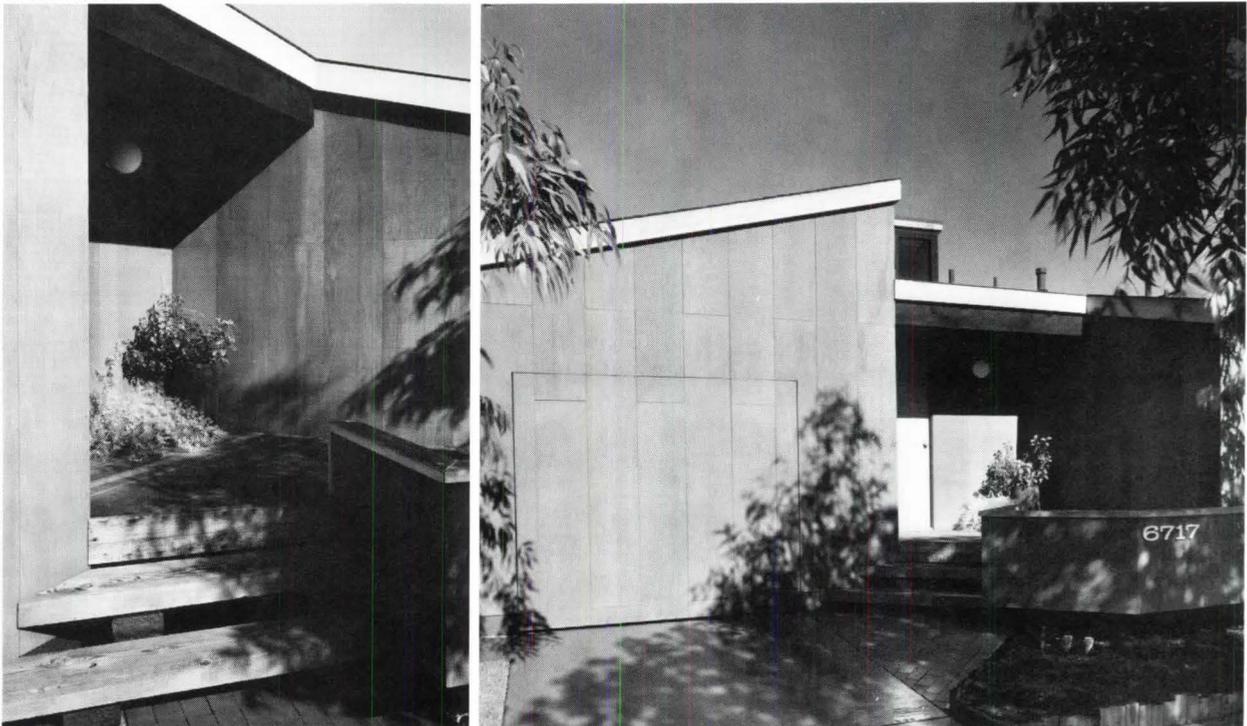
1. Charles Herbert Bryan Shiffler  
2. Diana Crawford Don Sandy Jim Babcock  
3. Ted Palmer Bill McCulloch  
4. William Bruder

## Residential/Single Family

**FIRST AWARD:** William McCulloch, AIA, McCulloch Architects. **LOCATION:** Long Beach, California. **JURY:** "The handling of simple materials, the detailing, the use of natural light and the transformation—outside and inside—of a tract house to an effective piece of architecture is an honest use of plywood in an organized fashion. Plywood was a logical choice because of the need to sheath existing walls."

**CITATION:** E. Fay Jones, Euine Fay Jones Architect. **LOCATION:** Little Rock, Arkansas. **JURY:** "The variety of ceiling heights helps achieve a great sense of warmth in the interiors, despite the vast spaces. There's a serenity, a repose, a completeness to the house."

FIRST AWARD



CITATION

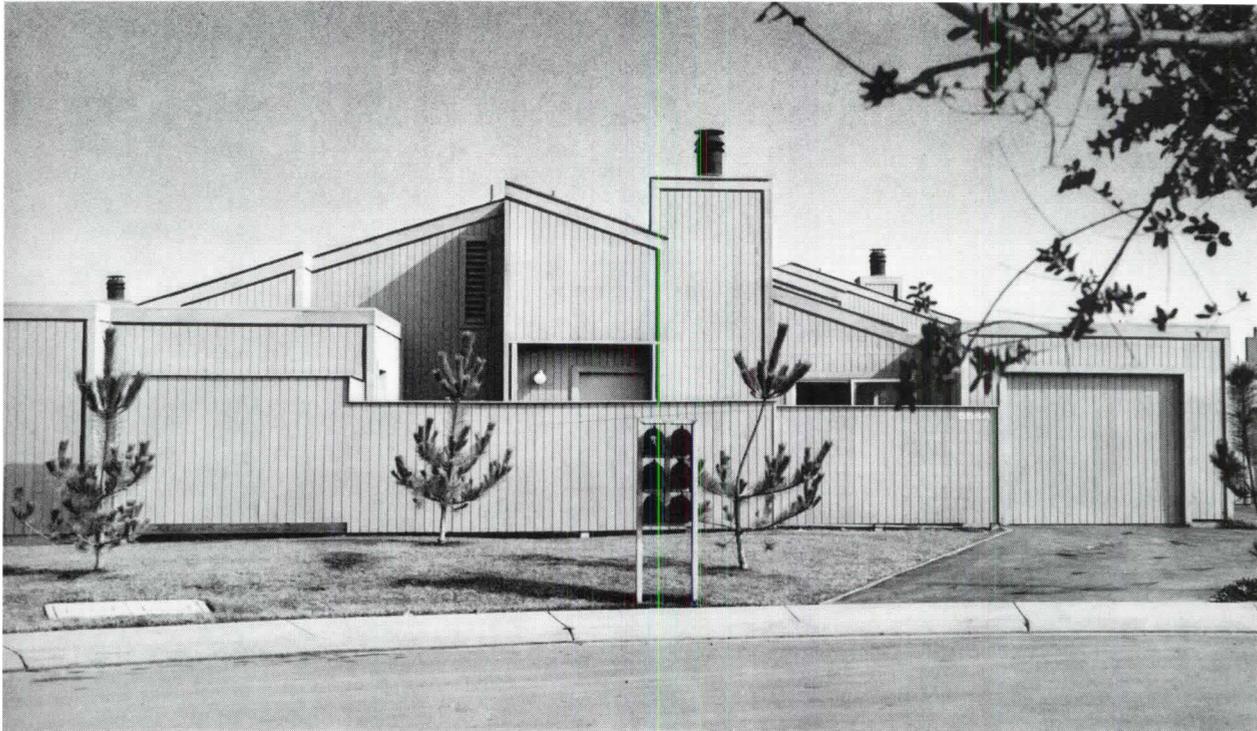
**JURY:** Paul Rudolph, Chairman, FAIA, New York, New York; William Bain, Jr., FAIA, Bellevue, Washington; John D. Bloodgood, AIA, Des Moines, Iowa.

# Residential/Multifamily

FIRST AWARD: Donald Sandy, Jr., AIA, James A. Babcock, Architects/Planners. LOCATION: Stockton, California. JURY: "Developing the land to the maximum use, the architects have given a great sense of privacy to the townhouses through separate entries, garages and courts. The uniform use of the plywood on walls, garage doors, fences and chimney enclosures gives the project an intimacy that's appropriate to the residential scale."

CITATION: Gwathmey-Siegel Architects. LOCATION: Purchase, New York. JURY: "Two-story entry porches break down the scale of this project and give it character. Detailing and careful joint placement make the apartments an admirable piece of architecture, especially considering the budget."

FIRST AWARD



CITATION

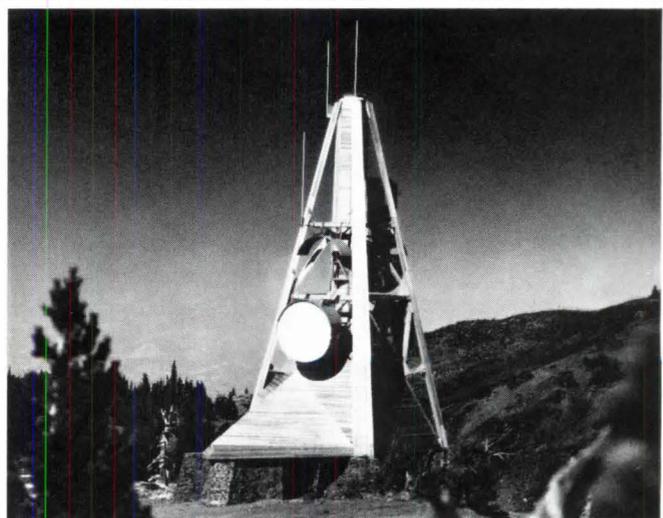
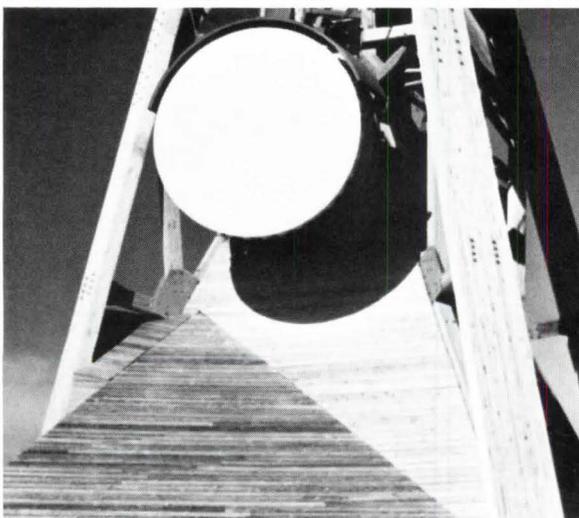
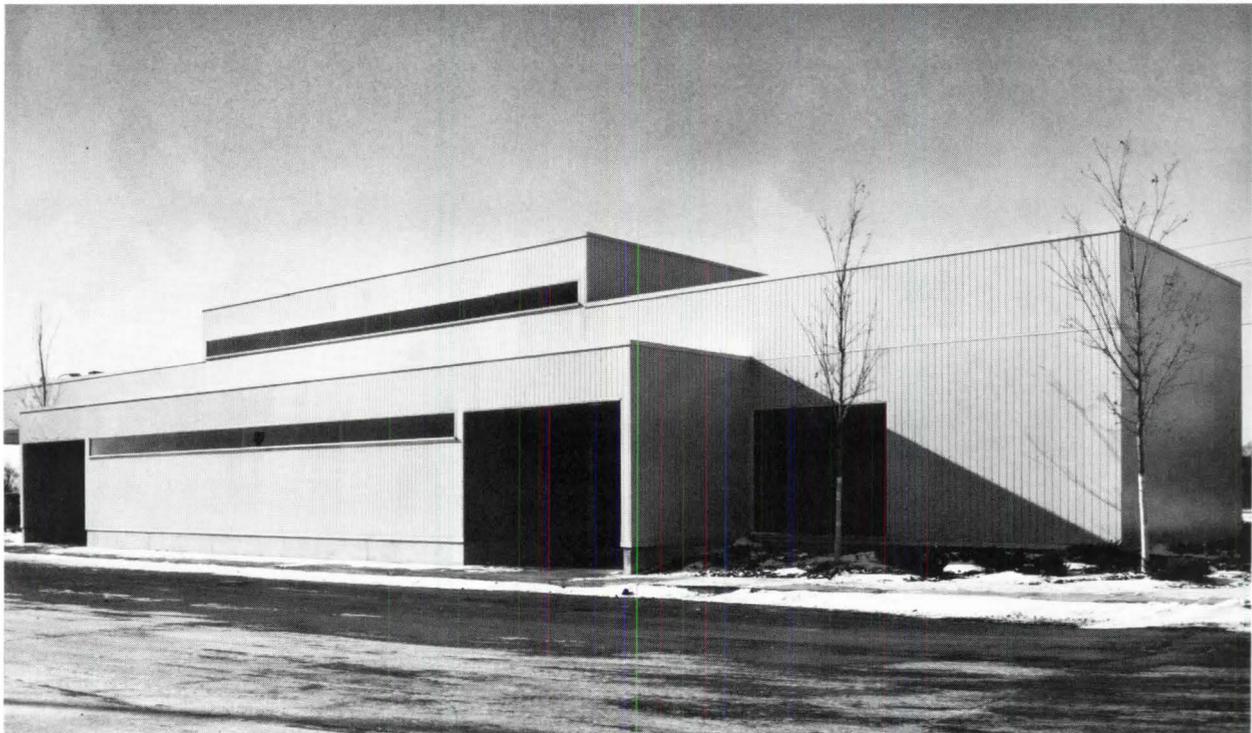
## Commercial/Institutional

FIRST AWARD: Charles Herbert and Associates.

PROJECT: South Des Moines National Bank, Wakonda Branch, Des Moines, Iowa. JURY: "The simplicity of this structure makes it stand out against the automobile forms in the parking lot. The jury admires the boldness and simplicity in handling exterior volumes."

CITATION: Shavey Schmidt DeGrasse Shavey, Partners in Architecture. PROJECT: Mission Peak Microwave Tower, Wenatchee, Washington. JURY: "A combination of ruggedness, romanticism and the need to solve mechanical and scientific problems, the tower is a kind of sculpture dominating a very rugged landscape. Once seen, the tower is hard to forget. The use of plywood facilitated construction in a hostile—and virtually inaccessible—environment."

### FIRST AWARD



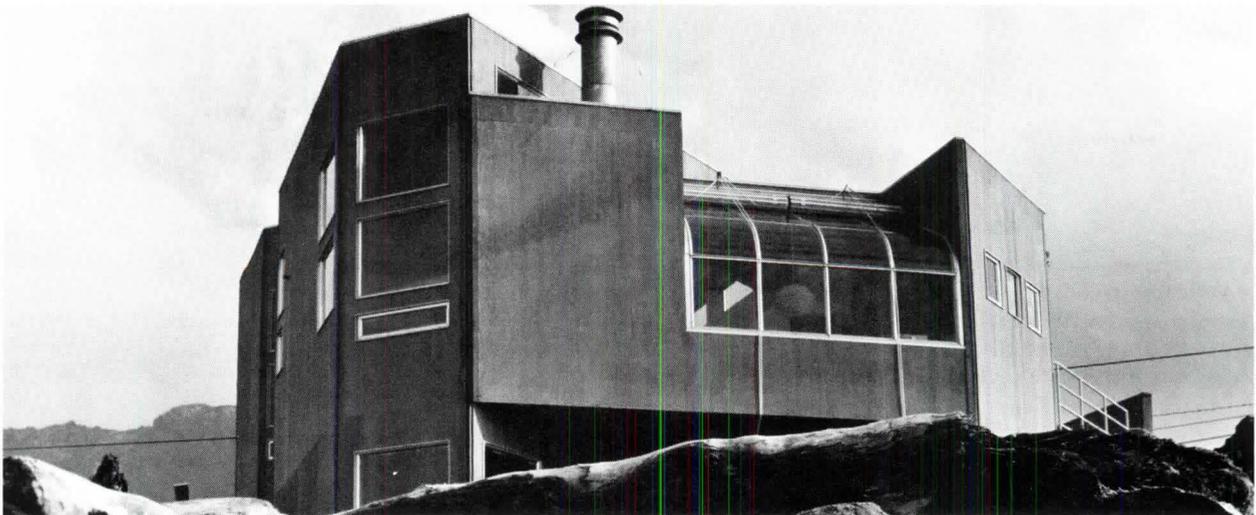
### CITATION

# Vacation Homes

FIRST AWARD: William P. Bruder, Architect. LOCATION: Pinewood, Arizona. JURY: "There's a great variety of spaces; the interior is intimate while it soars. The small amount of glass, appropriate for the site and the home's intended use, is used to the best advantage. The cabin is very direct, without pretensions. It uses materials in a very dignified way, and nothing about its economy smacks of cheapness."

CITATION: Barnett Schorr Company, Inc., AIA. LOCATION: Arch Cape, Oregon. JURY: "Though not totally consistent, this weekend house has a spirit of lightness which would give joy. The plan of the house is very good, complete with quarters for the owners on the upper floor and space for youngsters below."

FIRST AWARD

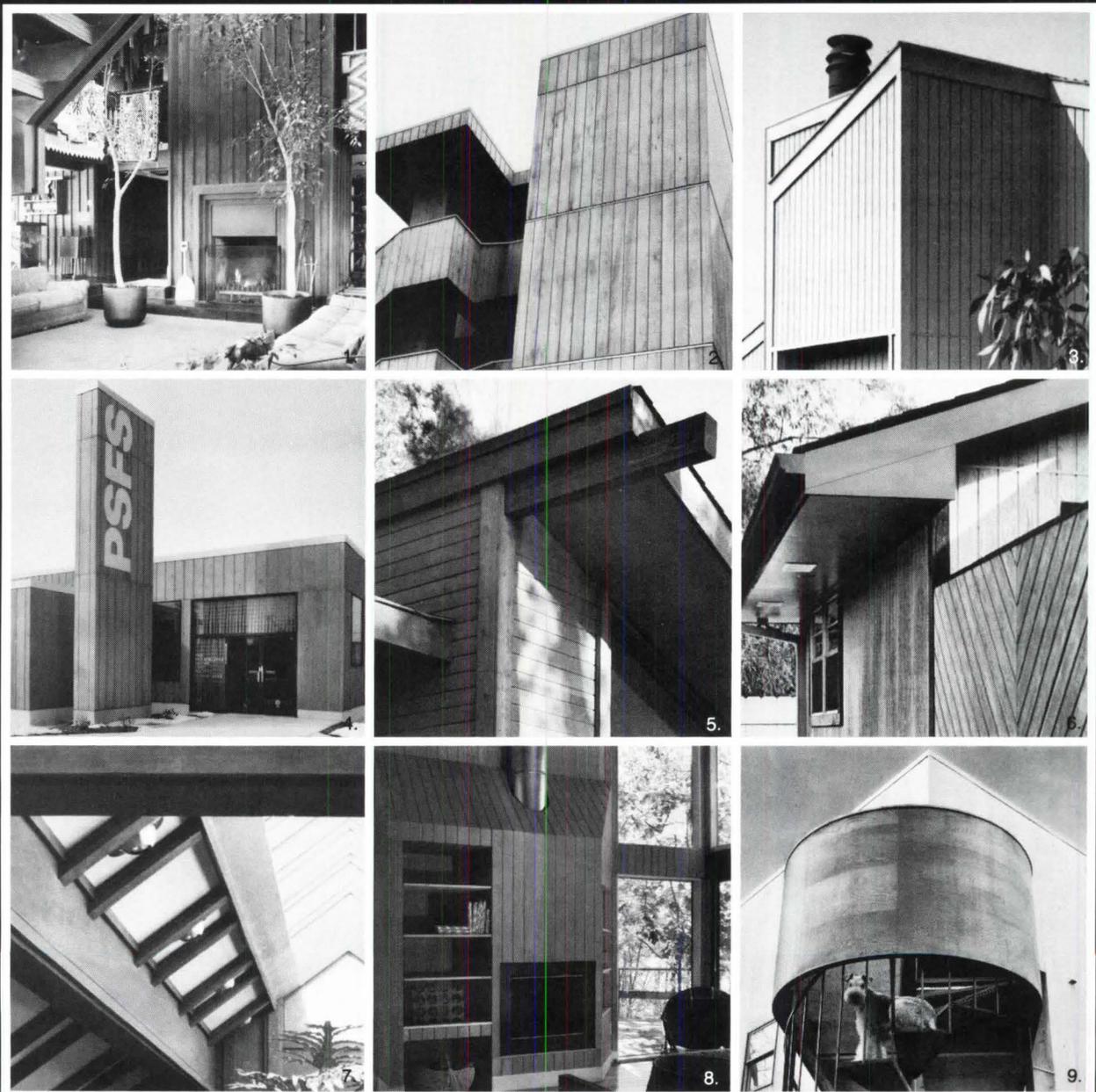
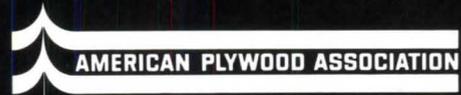


CITATION

## More Ideas

1. E. Fay Jones, Pallone residence, Little Rock, AR.
2. David Kenneth Specter, Yardarm Beach Condominium, Westhampton Beach, NY.
3. Donald Sandy, Jr., AIA, James A. Babcock, Architects/Planners, Tree Swallow Court, Quail Lakes, Stockton, CA.
4. John A. Fatula, Philadelphia Saving Fund Society Branch Office, Richboro, PA.
5. Frank Y. Peteet II, River House, Browns Ferry, Georgetown, SC.
6. Frank Lopreore, Mesa Four-Plex Apartments, Metairie, LA.
7. E. Fay Jones, Pallone residence, Little Rock, AR.
8. Joanne Goldfarb, Singer vacation home, Lake Linganore, MD.
9. D.J. Pierce and C.H. Bone, Kiss residence, Chester-ton, IN.

If you'd like even more design ideas using plywood and plywood systems, please write American Plywood Association, 1119 A Street, Dept. AA-057, Tacoma, WA 98401.



The Plywood Design Awards Program is sponsored by the American Plywood Association and Professional Builder & Apartment Business Magazine.



## Call for Entries Plywood Design Awards

Outstanding aesthetic and structural uses of softwood plywood will again be honored by the 1978 Plywood Design Awards.

The program, approved by the American Institute of Architects, is sponsored jointly by the American Plywood Association and Professional Builder magazine.

First Awards of \$1,000 plus Citations of Merit are given in each of four categories: residential/single family, residential/multi-family, vacation homes, and commercial/institutional.

Jurors will be John Field, FAIA, San Francisco, California; John D. Bloodgood, AIA, Des Moines, Iowa; and Victor Christ-Janor, AIA, New Canaan, Connecticut.

December 1, 1977, is the deadline for entries.

*Circle 12 on information card*

For rules and entry forms, mail this coupon to  
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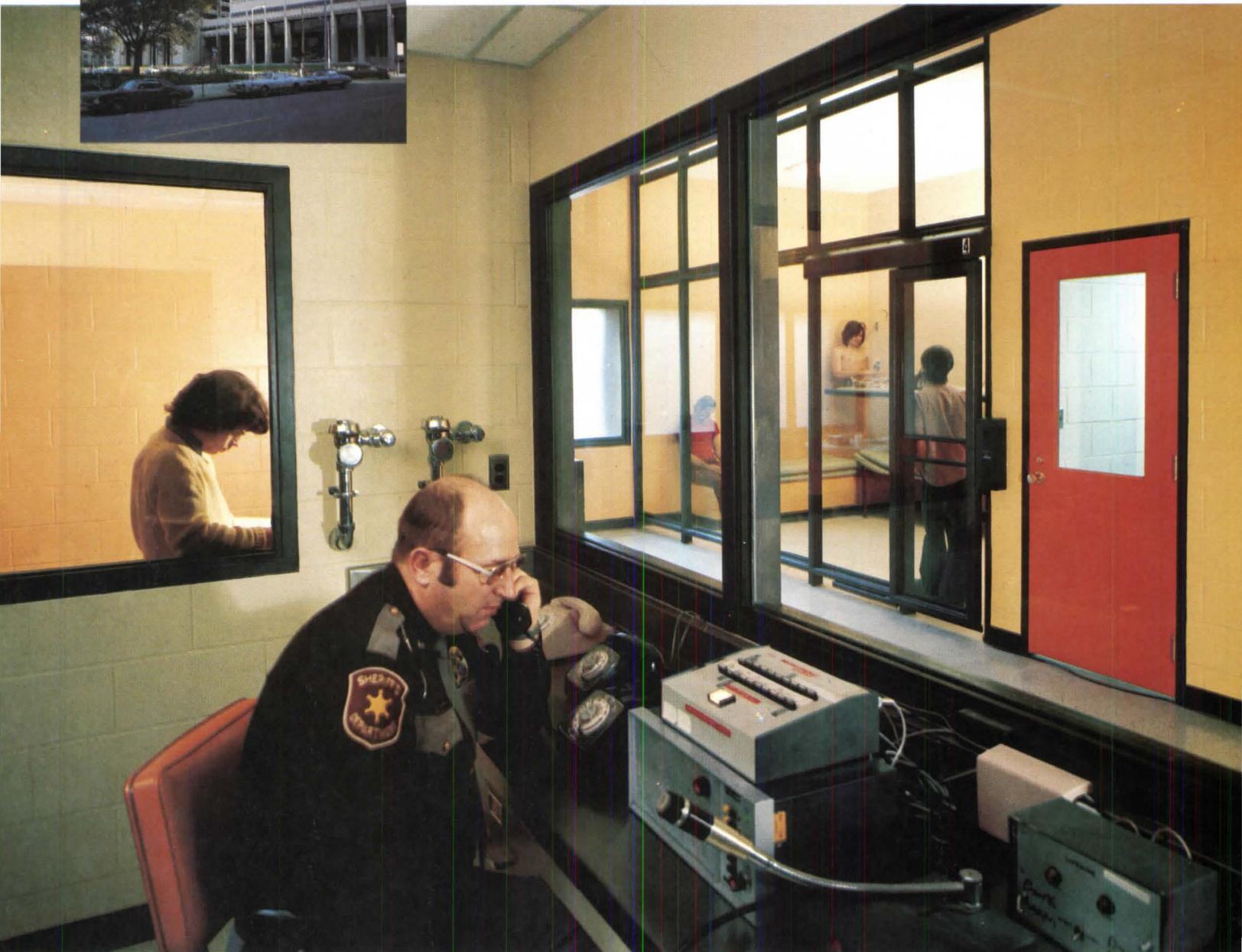
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SEE OUR CATALOG IN SWEET'S **S**

## On Defining Architecture

A favorite form of reading in our office is an occasional dip into a long past issue of the JOURNAL, perhaps especially the pocket-size version of the 1940s and 1950s edited by the wise and witty Henry H. Saylor, FAIA. On the latest such excursion into the past, we were looking at the May 1952 issue, its being an even quarter-century old.

In it, fortuitously, we came across a posthumously published essay by Charles Whitaker, illustrious editor of the JOURNAL from 1913 to 1927, in which he examined various definitions of architecture. The essay, of course, is particularly pertinent to the present moment, since the soon-to-climax debate over ethics is, in essence, an exercise in defining, or redefining, the profession of architecture.

Mr. Whitaker examined definitions of the term architecture in several dictionaries, including one published in 1661 which noted that "this science did begin with Cain." He took Samuel Johnson severely to task, terming the definition used in the good doctor's 1755 dictionary a "strange assortment of old wives' tales."

The early dictionaries, Mr. Whitaker noted, "defined architecture (sometimes spelt 'architectory') as a word of building; the architect, as a master-worker or supervisor." He contrasted such definitions with the one in the then-current *Britannica*, which "boldly tells us that mere good building is not architecture. That we can't

have architecture without the intent to have it, and that only an architect can give it to us." Mr. Whitaker theorized that this definition almost certainly was written by an architect.

His researches left him convinced of the need for a wholly new definition. Out of the earlier ones and conversations with his co-professionals Mr. Whitaker put together the following:

"Architecture, far better called the art of building, and regarded as a basic task in any effort to achieve a civilization, must rest on the wise use of land as the first imperative; then, on the wise choice and use of materials that are in economical and harmonious relationship with the locality in which the building is to stand; then, on such conditions as will make good workmanship the pleasant and even happy ambition of every worker. Failing such conditions, the act of building becomes an antisocial, anticultural process that as steadily lowers the self-respect of all concerned as it steadily degrades the quality of both buildings and people.

"The result, in a structure based on these imperatives, will be a building in which form grows, not out of the use of historic and meaningless patterns, but out of the will to build rightly and honestly for the purpose, and the equal and even the controlling will to fit all buildings into the basic plan out of which alone can there grow a steadily improving general welfare. So only may the art of building—as the noble tool it is—serve faithfully to give outward form to a civilization of steadily growing order, comfort, pleasure, and the beauty that cannot but result." D.C.



# The 1977 AIA Honor Awards

*And a 25-year award to a classic church. By Mary E. Osman*

"The heightened sense of awareness of being some place that is 'special' is a gift that architects can make to our 'world of increasing similarities,'" said the 1977 AIA honor awards jury for new structures. The awards program honors these "special" places that merit recognition because of the excellence of design solutions to given ground rules. Seventeen projects were chosen from nearly 500 submissions. Six of the projects won awards for extended use, a category established in 1976 and judged by a separate jury panel.

The extended use jury also selected Christ Church in Minneapolis (photos these pages) to receive AIA's 25-year award. This is the seventh architectural complex at least a quarter-century old to be honored for its "enduring significance." The church, designed by Saarinen, Saarinen & Associates (Hills, Gilbertson & Hayes, associated architects) was Eliel Saarinen's last completed work.

The jury called the church's "architectonic character" its greatest value. Structural, acoustical and mechanical elements are "integrated into the form with no compromise. Few examples of religious architecture illustrate this attribute so well. The asymmetrical quality of the plan challenged conventional expectations, setting up a balance of the practical and the esthetic which carries through the entire structure," the jury said.

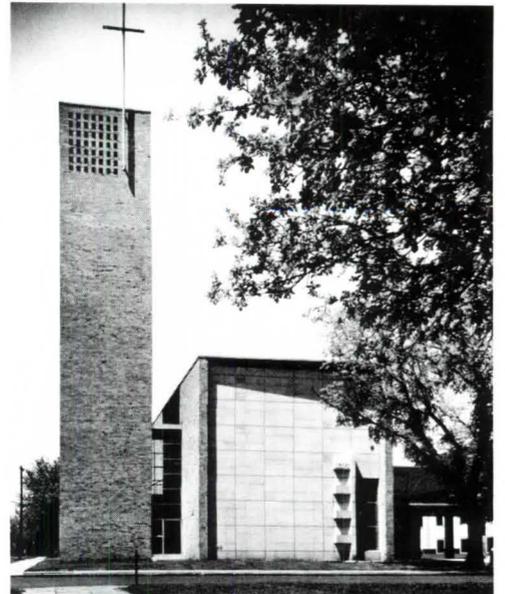
The jury for current projects was chaired by William Turnbull Jr., FAIA; other members were Lewis Davis, FAIA; Henri V. Jova, FAIA; Charles F. McAfee, AIA; Richard G. Stein, FAIA, and student Jann C. Wolfe. The jury said: "Perhaps 1977 can be looked at as a turning point for pragmatic attitudes toward building design. Architecture is at a watershed, intellectually and functionally; most practitioners have seemingly forgotten completely the Vitruvian concept of 'delight.'"

The jury on extended use, chaired by Ralph Rapson, FAIA, examined 73 entries in categories of restoration, rehabilitation and adaptive use. The jury found the number, quality and diversity of the submitted projects to be a "strong indication" of the growing importance of recycled structures. "Society is recognizing that we can no longer waste this valuable resource," the jury said. In its selection of award winners, the jury placed emphasis on projects which demonstrate sensitivity and imaginative design while responding to "existing or changing functional, technological, economic, esthetic or environmental concerns." In addition to Rapson, this jury consisted of Max

Brooks, FAIA; Robert L. Durham, FAIA; Huson Jackson, FAIA, and student Kyle T. Hallsteen.

Five honor award winners also received Bartlett awards as outstanding examples of barrier-free architecture. They are: 1199 Plaza, Navy Pier restoration, Mercantile Wharf Building, the Bronx Development Center and the Humanities and Social Sciences Building, Southern Illinois University. The jury expressed gratification that "most of the projects recognized the need and made provisions for accessibility." The jury, members of the committee on barrier-free environment of the Potomac Valley chapter/AIA, consisted of William Baltzar Fox, AIA, chairman; Thomas J. Clark, AIA, and Edward N. Noakes, AIA.

For the first time, this year's awards program considered energy conservation features as an important aspect of overall design excellence. Richard G. Stein served as adviser to both jury panels in this regard. Because an eight- to ten-year span is required to bring a large complex from conception to completion, Stein says that many submissions were designed before the energy crisis and therefore without intense concern for energy implications. They "may well be the last of the buildings with a design philosophy representative of the '50s and '60s." Stein said some projects were a "pleasant response" to their environmental settings, citing the housing project for the elderly in Puerto Rico (page 47) as an "especially beguiling solution." Conversely, he considers glass-skinned towers as a "final expression of Mies' dream of the '20s" which now place burdens on "our finite energy supplies that are required to effectuate the dream."





## Spelman Halls, Princeton University, Princeton, N.J. I.M. Pei & Partners

A primary objective of the designers of these 58 units of apartment housing for 220 men and women students was to preserve the natural wooded site. Other equally important aims were to relate the eight interdependent houses, arrayed along pedestrian streets, to the campus, following the informal sequence of open space and building enclosure, and to foster a community spirit among the residents without sacrifice of privacy.

The jury said: "The diagonal circulation through these cubistic forms follows the old foot patterns of the campus. The houses maintain a geometric relationship to the existing highly ornamented dormitories; the resulting tension between the two systems sets up a special sense of place. The plans are tight, but the environment provided is pleasant and continues the tradition of entries and suites in university housing."

Each apartment has a corner balcony, living and dining area, kitchen, bath and, typically, four private study-bedrooms. Six apartments adjacent to the building arcades are for married students and have a single larger bedroom. The dominant architectural element around which each house is organized is the entry stairway which opens to the full height of the structure and is skylighted.

Concrete was selected as the primary construction material because of its compatibility with the stone masonry and limestone trim of other campus architecture. Precast concrete floors and wall

panels were shop-fabricated and field-assembled, thus reducing the normal time of construction of such a project from over two years to less than 13 months.

Energy conservation is achieved by individual apartment temperature control with efficient part-load heating performance. There is one exposure with reduced glazing in each apartment.

Client: Trustees of Princeton University. Architects-in-charge: Harold Fredenburgh, AIA; Preston Moore, AIA, and Andrew Gorczynski, AIA. Structural engineers: LeMessurier Associates. Mechanical and electrical engineers: Flack & Kurtz. Landscape architects: Clarke & Rapuano. General contractor: Lewis C. Bowers & Sons, Inc. Completed in 1973.





## Penn Mutual Tower, Philadelphia. Mitchell/Giurgola

Sited just behind Independence Hall in the center of a major national historical area, the tower is a 21-story addition to an insurance company's office complex. The facade of an existing Egyptian revival building, designed in 1835 by John Haviland, has been preserved as a four-story, freestanding sculptural wall (left) which defines the granite-paved entrance plaza. Banking facilities, semi-public offices and a restaurant open on to the plaza, from which the visitor may take a glass-enclosed elevator to an observation level overlooking the city.

To further relate the new building to the old, the floor-to-ceiling heights of the existing structure were maintained, allowing the use of steel trusses that afford a clear span of 70 feet.

Construction is of slipformed concrete

core, cast-in-place reinforced bearing walls and clear-span steel trusses. Energy conservation features include insulating, tinted, reflective glass, a concrete sun screen on the east wall and individual controls for every three floors for selective off-hour use.

The jury said: "Broken massing and window penetration recall, at a different scale, the previous architectural endeavors. The complementary use of color and materials, in conjunction with the scale, provides a sensitive addition to the historic area."

Client: Penn Mutual Life Insurance Co. Structural engineers: Skilling, Helle, Christiansen, Robertson. Mechanical and electrical engineers: Robert J. Sigel, Inc. General contractor: Turner Construction Co. Completed in 1975.

## William J. Campbell Courthouse Annex, Chicago. Harry Weese & Associates

One of three metropolitan correctional centers in the federal prison system, this 27-story highrise occupies a square block in Chicago's south Loop. It is designed with a humanitarian respect for its inmates. Each prisoner is provided with a private room with such amenities as toilet facilities, carpeted floor and places to store possessions.

There are no cell bars, and each room has a five-inch vertical window, the maximum opening allowed by prison bureau standards.

The jury said that the center is an "architectural attempt to overcome the traditional barred jailhouse image. The narrow windows in random pattern indicate a special use, but one does not find an inhumane correctional facility image projected on the community. Color and

good furnishings help to brighten the interior atmosphere."

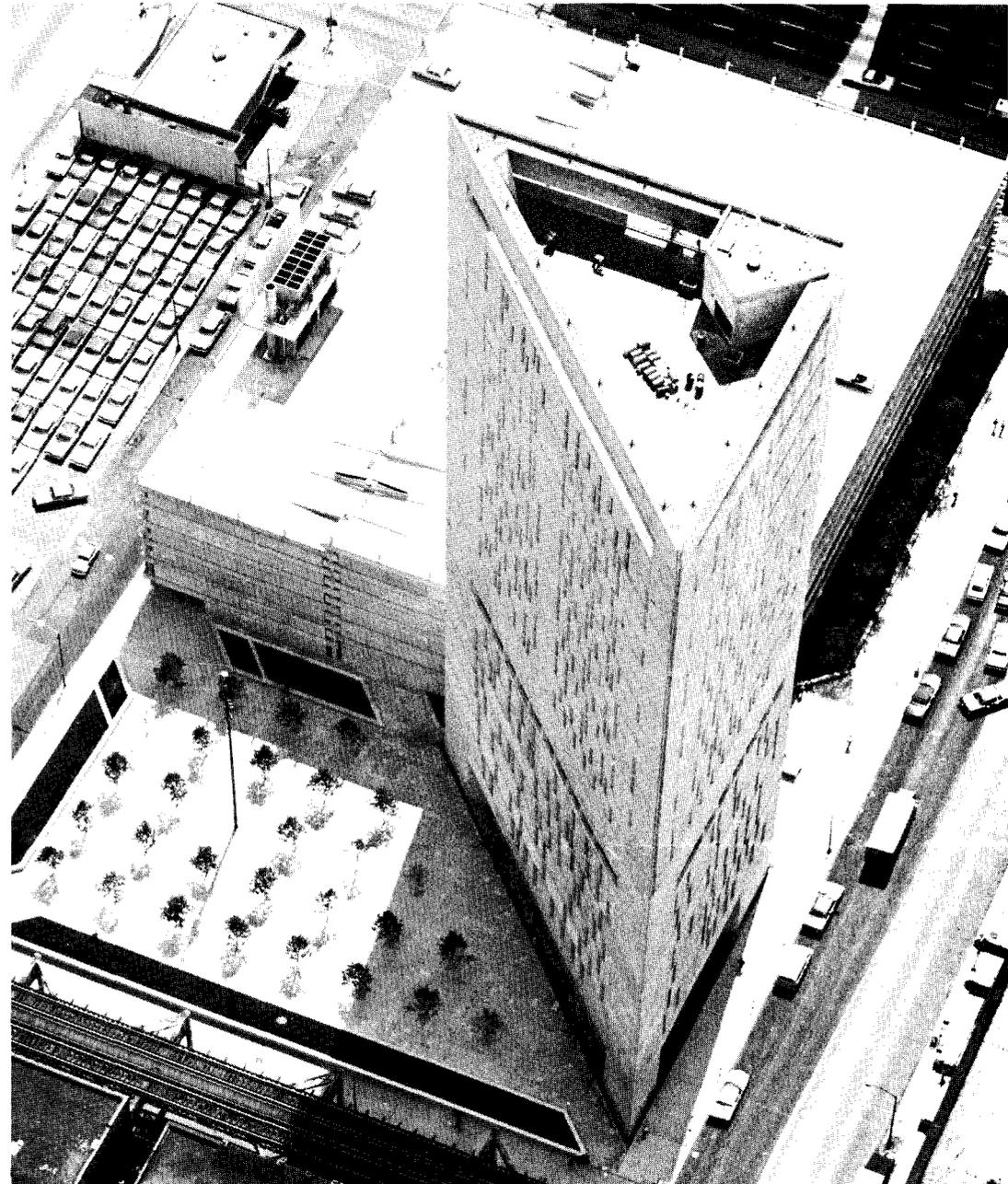
The lower half of the highrise contains administrative and social spaces. Prisoners live in the upper portion where there is a roof-topped exercise yard. Each core multipurpose space serves 44 people. The module contains inmates' rooms, exercise space, lounge, kitchenette, dining room and visitors' rooms. The size of each module allows for separation of men and women, old and young, crime repeaters and first-time offenders.

The structure's triangular plan minimizes the usual long corridors of most prisons and maximizes perimeter space for exterior windows with views of the outside world. The wedge-shaped structure and its connecting garage occupy most of the site, but there is also open

landscaped space to give another humane dimension, and to help make the structure a "good neighbor."

The basic structure is flat-plate construction combined with exposed concrete exterior walls. There are post-tensioned wall girders at the second and tenth floors, permitting spanning of walls by 100 and 150 feet. Prestressing was economical and a requirement for the maintenance of crack-free walls and random spacing of slit windows.

Client: General Services Administration and Bureau of Prisons. Structural engineers: Severud-Perrone-Sturm-Bandel. Mechanical and electrical engineers: H. S. Nachman & Associates. Landscape architects: Joe Karr & Associates. General contractor: Turner Construction Co. Completed in 1975.



## College Center, Vassar College, Poughkeepsie, N.Y. Shepley Bulfinch Richardson & Abbott

Main Hall, designed by James Renwick and completed in 1865, stands at the campus core. The design challenge was to retain old Main, a building of architectural merit and sentimental significance, and to add a new structure that would not overpower or diminish the landmark.

The jury said: "A carefully designed building of uncompromising modern design wrapped around this fine mid-19th century building succeeds in respecting the old building and in bringing new life to the restored structure." The U-shaped new building enveloping the Renwick structure provides enlarged space for many campus activities.

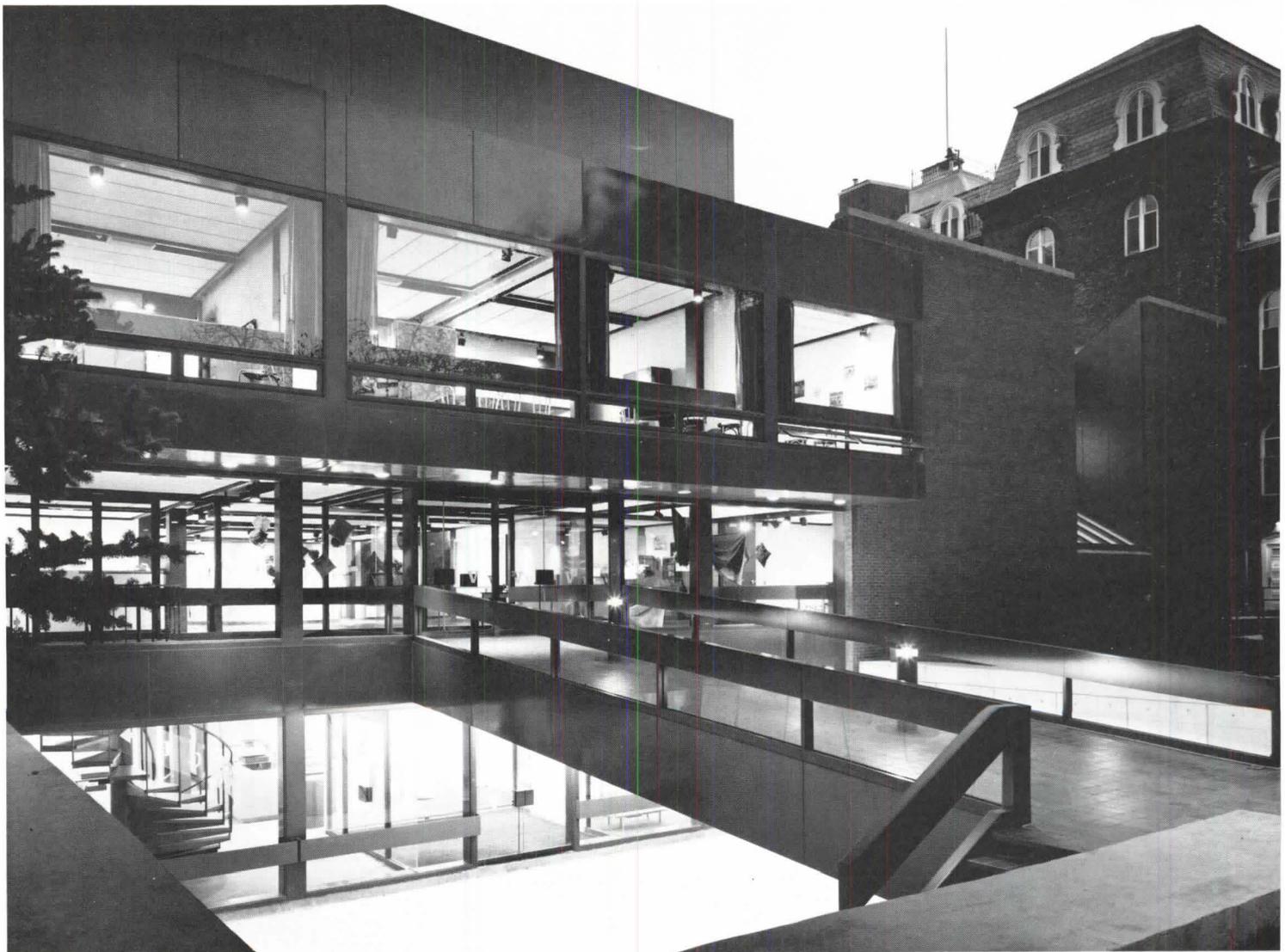
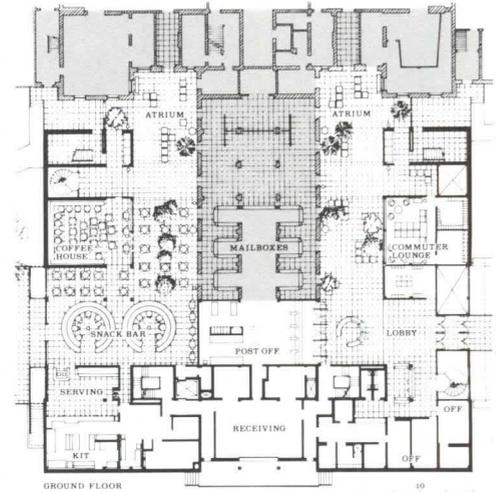
The addition is linked to the earlier structure by two glass-roofed atria. Dramatic landscaped interior courtyards are created by elevated bridges. The addition's second floor is connected by the bridges to the remodeled old east dining room which now serves as a multipurpose room.

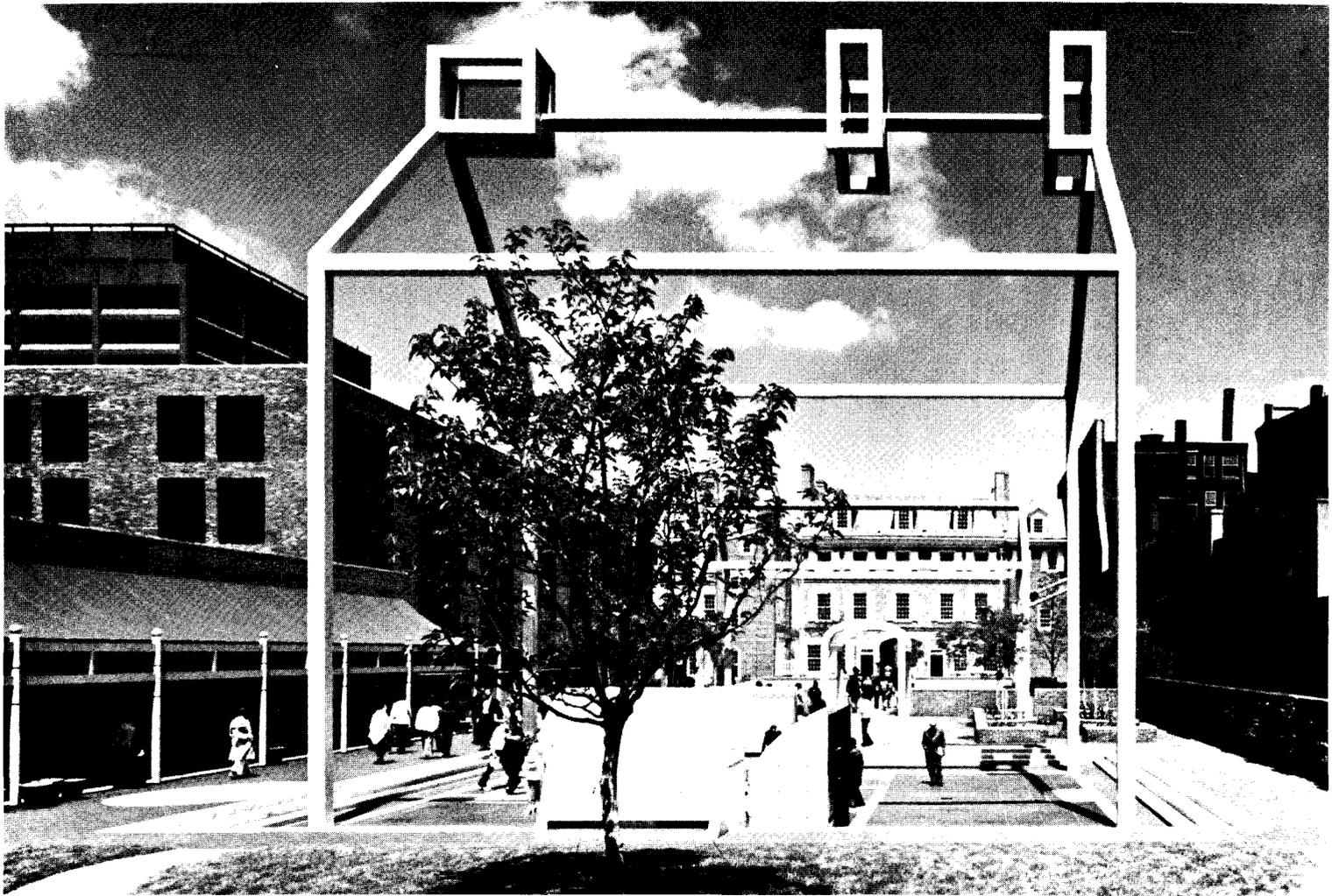
The new building's ground floor, with

a terrace to the south, provides things dear to a student's heart: post office, snack bars, lounge spaces. Below, a campus store is lit through the sunken court. The complex also now has space for art studios and an exhibit gallery, meeting and game rooms, student newspaper and radio station and offices.

Wherever possible, the architects left the facades of old Main intact, and they did not disturb the old building's structural integrity or its foundations. The addition has a concrete foundation and steel frame. The electrical system is integrated into the building with hanging ceiling planes; heat buildup in the lighting system is used for interior heating.

Client: Vassar College. Structural engineers: Nichols Norton & Zaldastani. Mechanical engineers: Stressinger & Adams. Electrical engineers: Thompson Engineering Co. Landscape architect: Elizabeth Carlhian. General contractor: Diemo Construction Co. Completed in 1975.





## Franklin Court, Philadelphia. Venturi & Rauch

A quiet oasis in an urban environment, this project in honor of that Philadelphia gentleman Benjamin Franklin is on the site of his home, built in 1763-64. Despite massive data accumulated in 15 years of architectural and historical research, it was impossible to accurately rebuild the house, torn down in 1812. The designers wisely decided to avoid an imprecise replica but rather to spatially evoke an impression. This they achieved by designing and landscaping a courtyard, blending historical shrine and interpretative exhibits into a public open space reminiscent of an 18th century garden.

Steel framework isometrically represents Franklin's house and print shop. The jury called this concept of "ghosting" old buildings no longer standing most interesting.

Five adjacent houses, two built by Franklin, facing Market Street have restored facades and new interior spaces. Aspects of 18th century life are captured in exhibits in the houses.

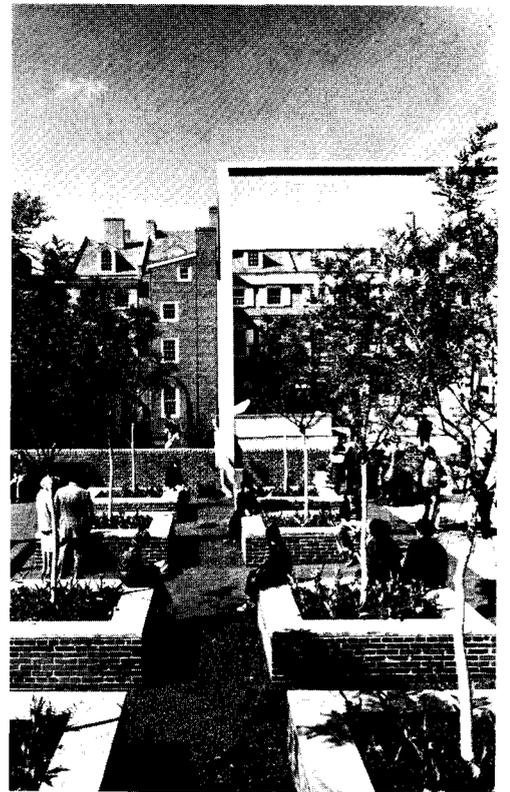
A large museum and a theater are placed under the one-foot-square structural steel tubes on the site of Franklin's home. There visitors may see documents relating to Franklin's life, models of his inventions, a sound-and-light tableaux, a

film and other things to make this remarkable patriot seem real to us today. Concrete hoods above ground shield glass-covered "peepholes," letting visitors see the remains of old foundation walls.

The jury called this a "most impressive and meticulously executed restoration and transformation of an historical area." Its strength, the jury said, "lies in the general concept."

Exterior materials are brick with cut stone. The underground museum/theater is constructed in reinforced concrete with gypsum wallboard on metal stud interior partitions. To minimize energy costs, the zoned mechanical system, with step control of heaters, provides for a 100 percent outside air cycle during spring and fall months. Because most of the complex is underground, less energy is consumed than in a similar facility above grade.

Client: National Park Service. Historical architecture: National Heritage Architects & Planners (John Milner, AIA). Structural engineers: Keast & Hood Co. Mechanical and electrical engineers: Vinokur-Pace Engineering Services, Inc. Exhibitory: deMartin-Marona-Cranstoun-Downes. Landscape architects: Synterra, Ltd. General contractor: R. M. Shoemaker Co. Completed in 1976.



## Bronx Developmental Center, New York City. Richard Meier & Associates

Designed as a total care residential facility for 380 physically disabled and mentally retarded children and as an outpatient clinic, the center is located in a blighted industrial district, bounded by a parkway and a network of railroad tracks. The center could not be related to the site in a conventional sense, and the strategy was to have the complex open inward, protecting the children from the ugliness of the outside world.

Despite the fact that intricate scientific and technical functions and procedures had to be given major consideration, the designers gave equal priority to the creation of a "sense of place" for the special

needs of the users.

The long spine contains administrative, educational and therapeutic spaces, as well as a cafeteria and an auditorium. The four residential units have a friendly, home-like environment, each floor of which has three suites for eight children.

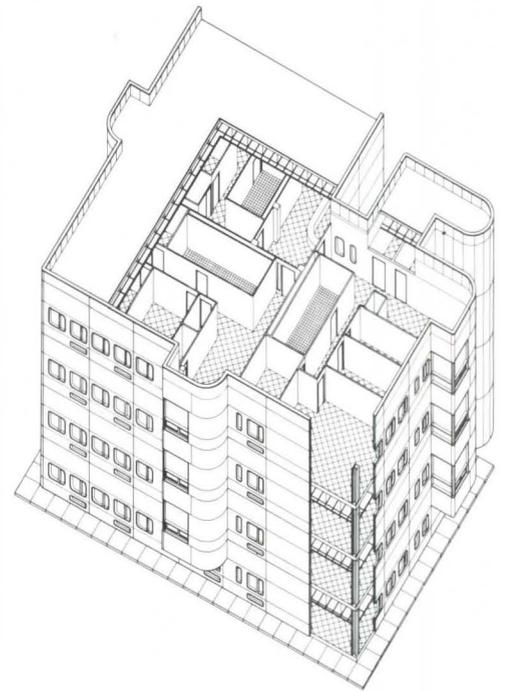
The steel H-pile subfoundations support reinforced concrete foundations and grade beams. The steel-framed structure has exterior walls of clear anodized aluminum sheet with clear glass. Interior walls are painted gypsum wallboard.

Said the jury: "This is a very elegant construction of aluminum and glass at a pleasing and communal scale. The posi-

tion of the structures on the landscape provides attractive exterior spaces, and the construction detail is elegant."

Designed for the handicapped, the buildings provide handrails, ramps for wheelchairs and light switches lower than the usual height, as well as other amenities to help make life easier for the residents.

Client: Facilities Development Corporation of the State of New York. Structural engineers: Severud-Perrone-Sturm-Bandel. Mechanical and electrical engineers: Caretsky & Associates. Landscape architects: Gangemi & DeBellis. General contractor: Starrett Brothers & Eken. Completed in 1976.



## John Hancock Tower, Boston. I. M. Pei & Partners

There is a definite design problem when a client asks for at least two million square feet of space on a small site in a large city's downtown and when the neighbors are to be such landmarks as Henry Hobson Richardson's neo-Romanesque Trinity Church (1877) and McKim, Mead & White's neoclassical library (1895). The solution: a structure rhomboid in plan, 790 feet high, sheathed in tempered reflective glass.

The 60-story tower not only respects but glorifies its older neighbors and is a unifying element for Copley Square. Its walls of glass, as one critic said, "virtually dissolve" in the reflection of "almost surrealistic images of the existing cityscape."

The jury said this was a "difficult building to premitate because of adverse publicity." The tribulations of structurally stiffening the foundations against possible future winds and of replacing panes of glass have resulted in extra costs and legal tangles. Original panes were replaced by tempered half-inch-thick windows which duplicated the heights and widths of the first.

The jury considered the tower in its context, admiring this "elegant, subtle shaft," which made much of "its very small site." The jury called the tower an

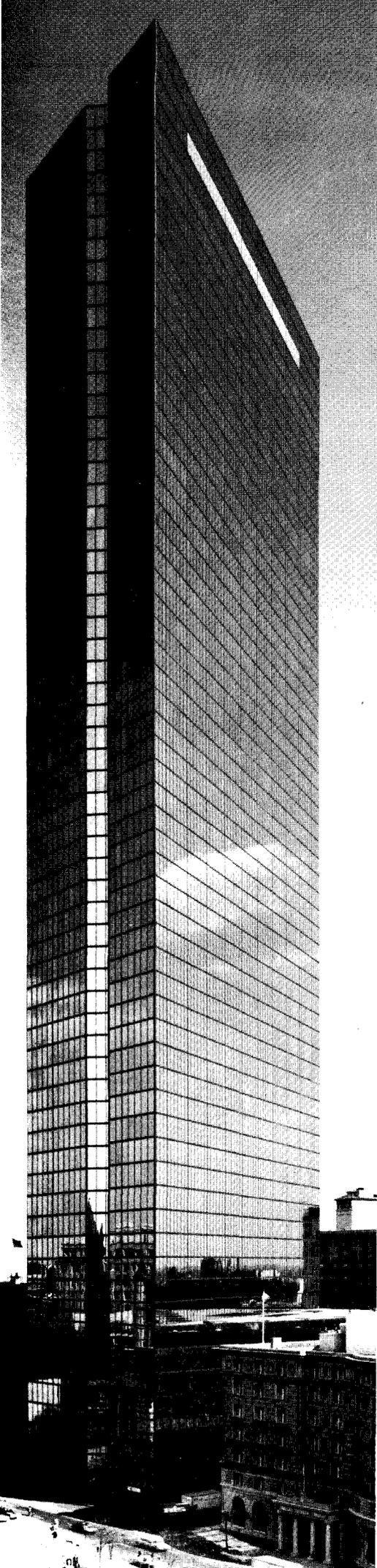
"effective new landmark for downtown Boston."

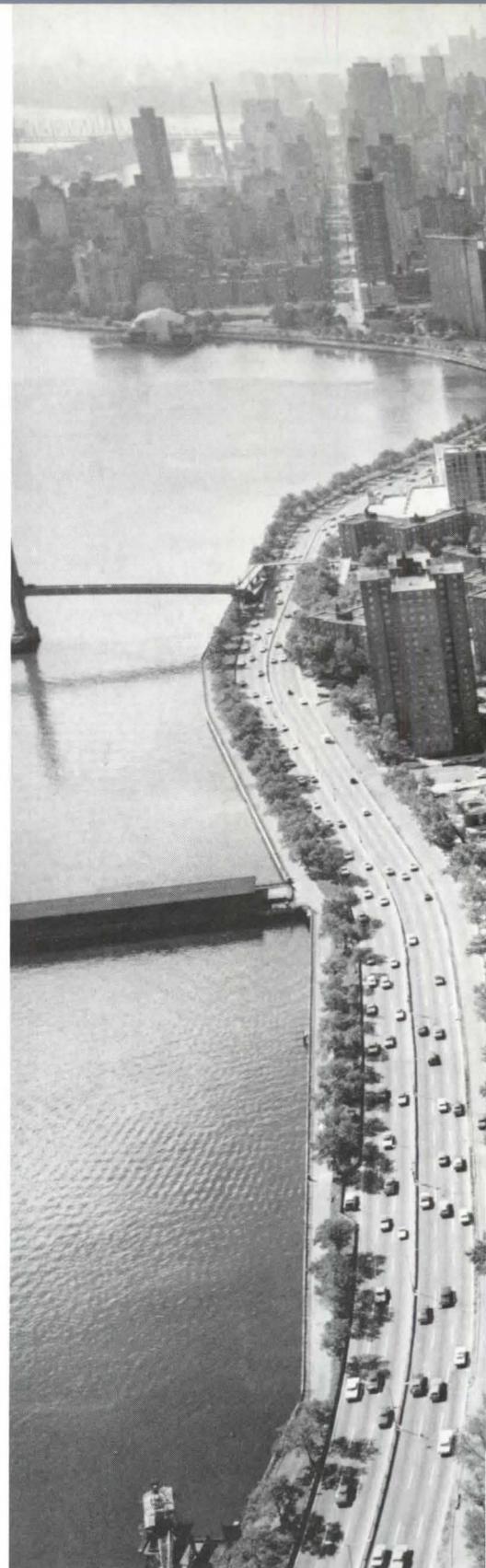
The tower's foundations are of steel H-piles driven into bedrock; the superstructure is of structural steel with metal deck and concrete fill.

Energy consumption is matched to the building envelope's heat gain or loss. All airconditioning systems are arranged to make use of outside air when weather conditions warrant it.

"It is perhaps the most handsome reflective glass building," the jury said. "History may show it to be the last great example of the species."

Client: John Hancock Mutual Life Insurance Co. Design partner: Henry N. Cobb, FAIA. Associate partner/project manager: Werner Wandelmaier, AIA. Senior associate/design: Harold Fredenburgh, AIA. Senior associate/building technology: Michael Flynn. Associate/job captain: Michael Vissichelli. Staff architect/design: Andrew Gorczynski, AIA. Structural engineers: Office of James Ruderman. Mechanical and electrical engineers: Cosentini Associates. Foundations: Mueser, Rutledge, Wentworth & Johnston. General contractor: Gilbane Building Co. Completed in 1976.





## 1199 Plaza Cooperative Housing, New York City. Hodne/Stageberg Partners

"This great brick construction is effectively a city within a city," said the jury. When a national design competition was held in 1963 for housing on a specified urban renewal site, the program called for a "fresh design approach to middle-income living." The buildings were to be "original and workable in concept" and yet "practicable in cost, realistic in the handling of necessary controls and, above all, highly livable."

The award-winning project was com-

pletely redesigned in 1968 in response to governmental parameters, developer requirements, sponsor objectives and user desires. The constants were: the same 12-acre site to accommodate 1,600 cooperative housing units; 80,000 square feet of shopping and community facilities, and garage parking for about 700 cars. It was specified that the complex was to be a safe place to live, have maximum sun and views, physically express pride of ownership, offer resident communication,

furnish a full range of human services and *provide as many large family units as possible.*

The jury said: "Its mass steps down toward the river front, giving the complex a sense of presence while relating to the surrounding environment. The grouping of lower-scale units toward the eastern portion of the site (left) introduces welcome variety, and views of the river are skillfully contrived for most of the apartments. Limited parking is handled under-



neath the structure so that the plaza area becomes pedestrian territory.”

The basic structural system is poured-in-place concrete columns and flat plate floor slabs. Exterior infill walls are 10-inch brick cavity construction, with 4x8-inch face brick used throughout. The parking garage has an independent concrete waffle slab system, allowing long-span spaces.

About 100 efficiency and one-bedroom apartments were designed specifically for the elderly and the handicapped. Central

airconditioning is provided only for certain ground floor areas; wall sleeves are supplied in individual apartments for optional airconditioning.

Client: District 1199 National Union of Hospital and Care Employees. Structural engineer: Robert Rosenwasser. Mechanical and electrical engineer: Arthur L. Zigas. Landscape architects: Herb Baldwin & Associates. General contractor: Starrett Brothers & Eken. Completed in 1975.





## New Melleray Abbey, Dubuque, Iowa. Hammel Green & Abrahamson Inc. and Willoughby Marshall, Inc.

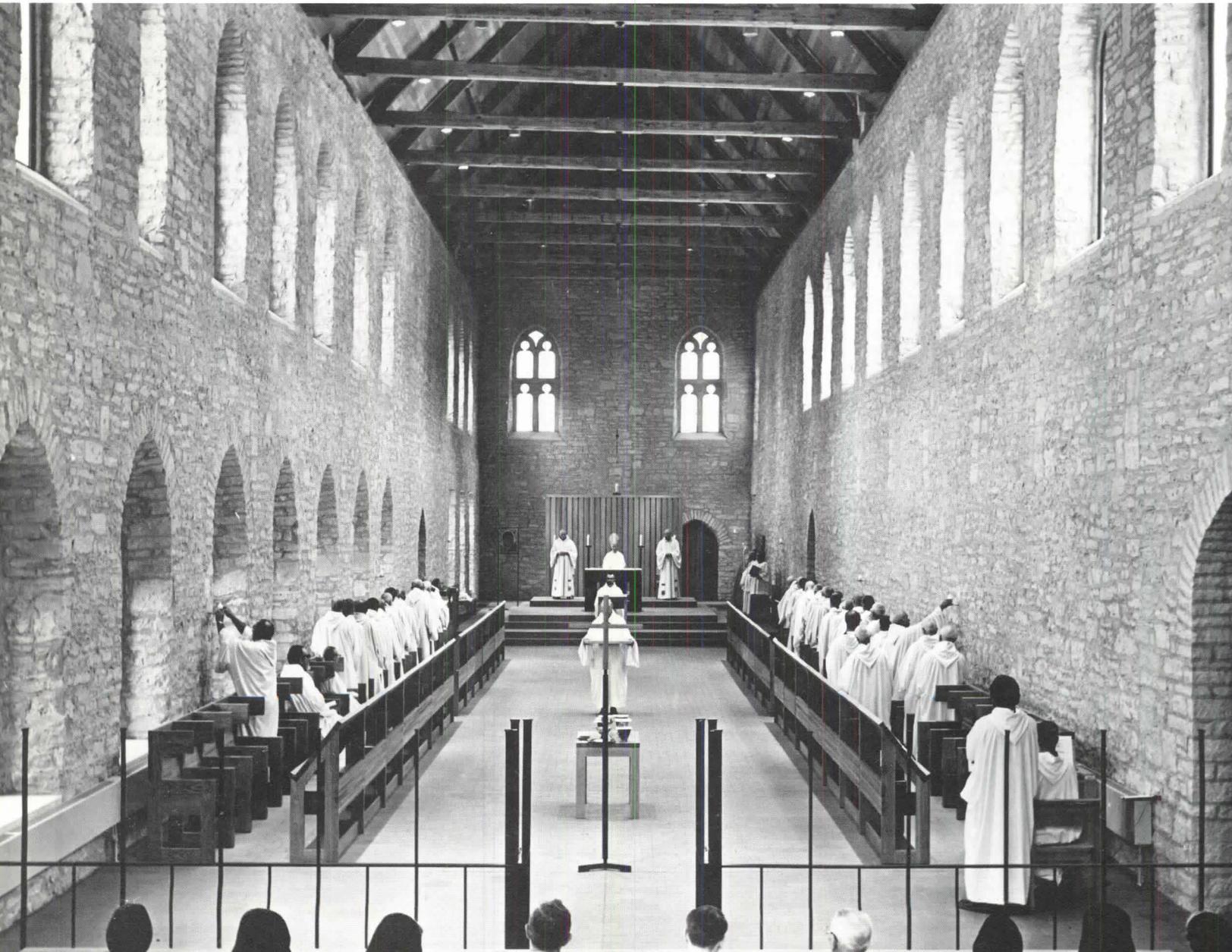
“Less is truly more in this stripped-down renovation which yielded an elegantly proportioned interior chapel,” said the jury. “The architects have taken a relatively drab, nondescript Gothic institutional building . . . and converted it into a chapel of remarkable distinction.” It is “truly unique space,” the jury said.

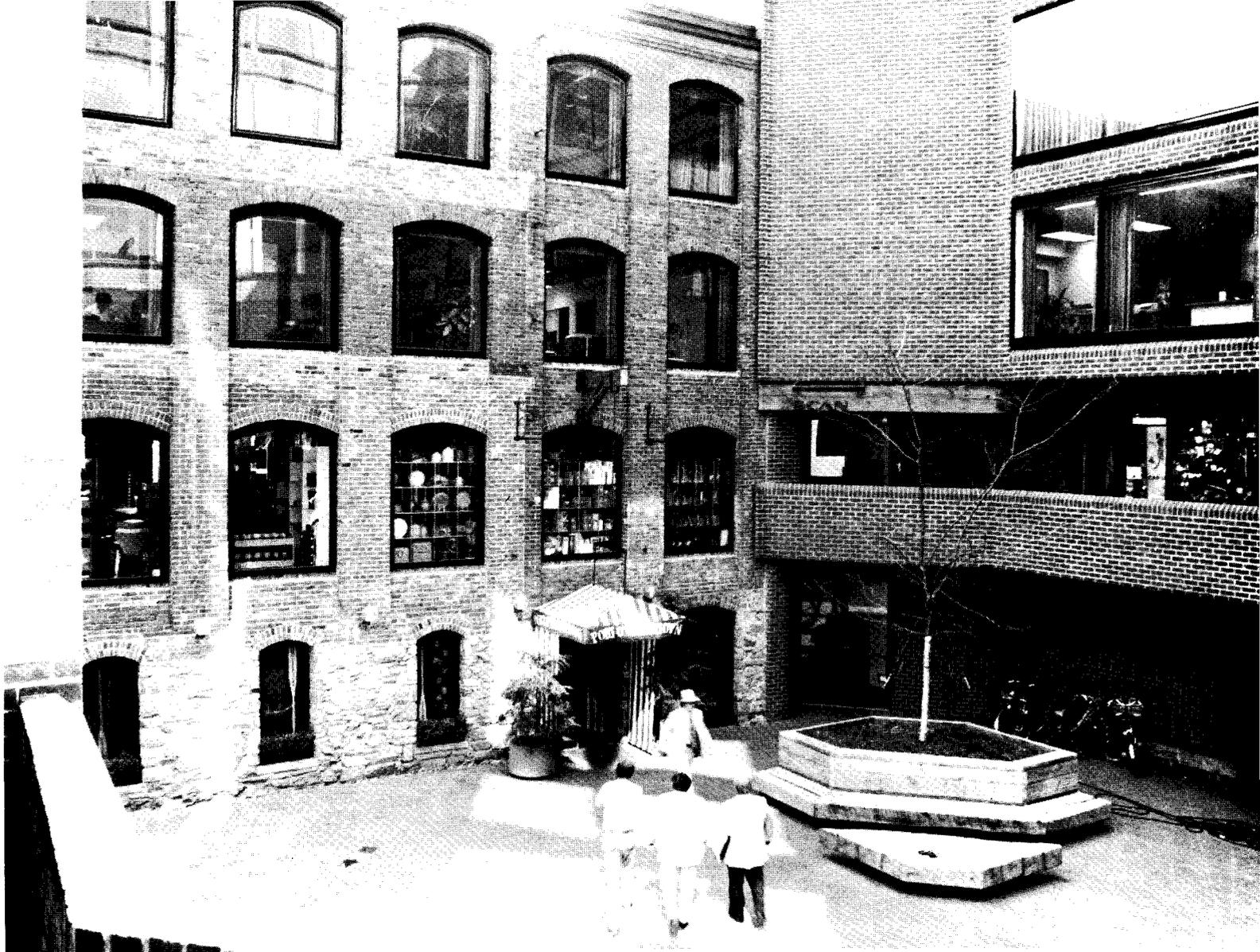
The stone exterior remains unchanged, and there is nothing to indicate the structure’s high interior nave. Floors on the second level were removed, allowing the abbey to soar upward. Plaster and interior moldings and stone dividing walls were removed, resulting in a long and high but simple space that serves as a continuing symbol of the faith of the Trappist monks who first made plans after the Civil War for a large, permanent monastery.

Local quarried stone, made originally

into bearing walls by the monks, was sandblasted and tuckpointed to give a monolithic appearance. Original hand-hewn simple A-frame trusses and purlins were also sandblasted and left in their natural state. Choir stalls, doors, tabernacle house and furnishings are of red oak butcher block. The simplicity of this house of worship makes it singularly appropriate for its site in the midst of open farmland.

Client: New Melleray Abbey. Spatial concept and preparatory work: Willoughby Marshall, Inc. Final development: Hammel Green & Abrahamson Inc.; Theodore Butler, principal in charge. General and liturgical design and detail: Frank Kacmarcik. Engineers: Richard Cole, Rossiter & Hamm, Roberge & McGrath. General contractor: Total Structures, Inc. Completed in 1976.





## Canal Square, Washington, D.C. Arthur Cotton Moore/Associates

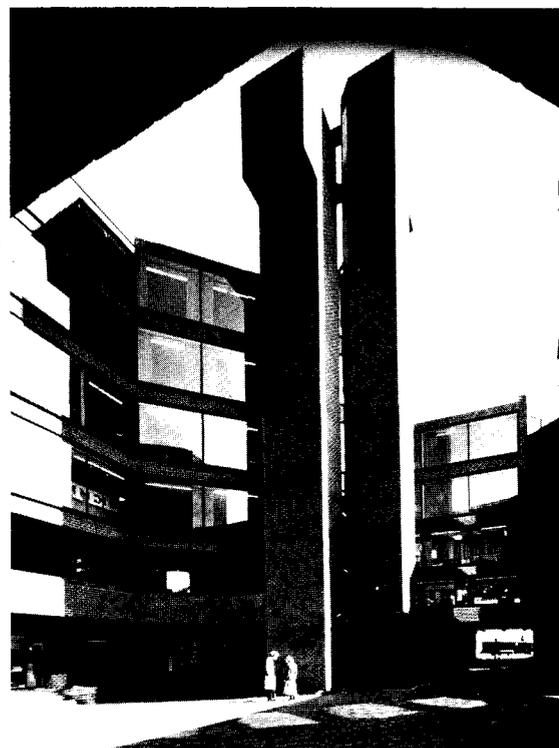
Sited on the Chesapeake & Ohio Canal in Georgetown, this purely pedestrian square has successfully reclaimed what was once an industrial slum area and turned it into an urban amenity. An old timber and brick warehouse was fated to become another parking lot until it was saved by a development team, of which the architect was a member. The design problem was to develop a speculative office building and shopping area, making maximum use of allowable zoning and integrating the whole into the character and scale of Georgetown.

The jury said: "By exploiting the resource of an old warehouse, particularly its heavy wood framing and brick structure, along with new structures, the architect created a pedestrian, privately developed 'town square.' Although the square has limited side street frontage, the project connects to the larger context by an ingenious narrow shopping arcade. The project integrates well into the overall Georgetown area through its scale and character."

Offices, boutiques and a restaurant are grouped around an introductory open-air interior plaza which is frequently the scene of concerts and other public events. Except in inclement weather, there are nearly always people sitting at tables in the outdoor cafe or meandering through the plaza as they windowshop.

In the overall development of about 150,000 square feet, approximately 20 percent of the old warehouse has been preserved, with 78 percent new construction and 2 percent devoted to the shopping arcade to M Street. Columns, beams and planking of the old warehouse are exposed. Benches, sign spaces, elevator buttons, etc., were fabricated from the salvaged original planking. The new construction is poured-in-place concrete, flat slab and brick.

Client: Richard Bernstein. Structural engineers: Milton Gurewitz & Associates. Mechanical and electrical engineers: Cotton + Arey + Wareham. General contractor: Coleman & Wood Inc. Completed in 1971.



## Humanities and Social Sciences Building, Southern Illinois University, Carbondale. Geddes Brecher Qualls Cunningham

This classroom and office building is the focal point of a campus which came into existence in the 19th century. Over the intervening years, the campus had become spatially disorganized. The structure's massing introduces a new order, delineating boundaries. At the same time, the small units of its facade vary the volume, contributing to its humane design.

The jury said: "This long spine-like building extends down the campus, acting as a link to the varied and disparate older structures on the edges. Its rhythm is varied, allowing penetrating cross-campus

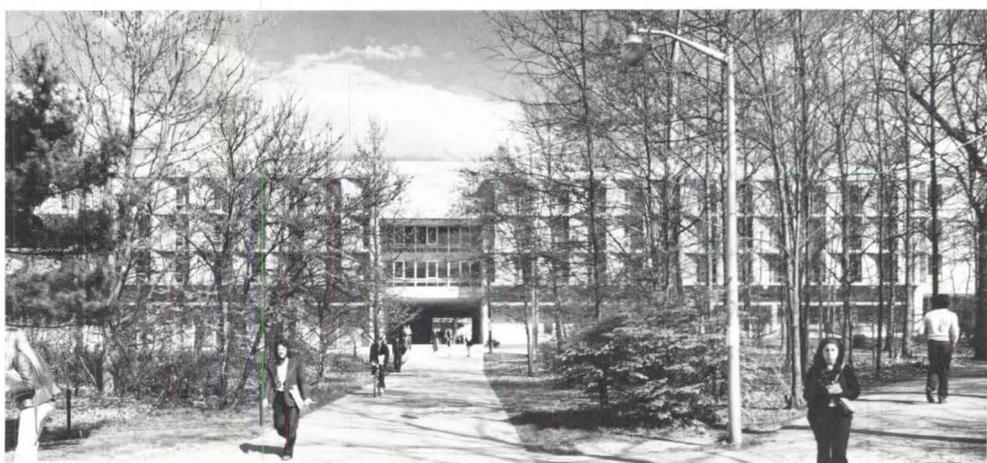
walkways, and providing classrooms and offices on several stories." The jury commended the structure as an example of how new construction can synthesize and organize an older environment.

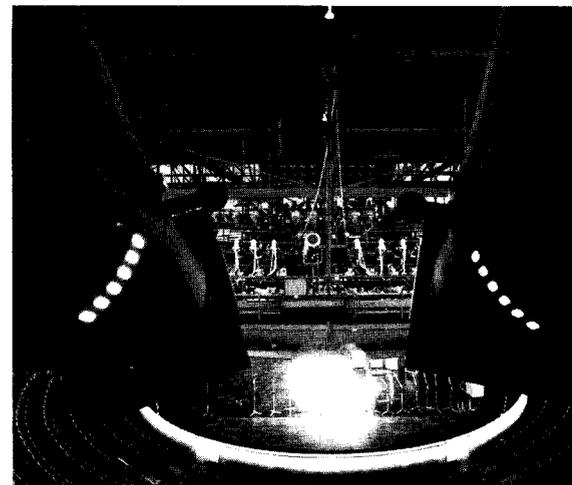
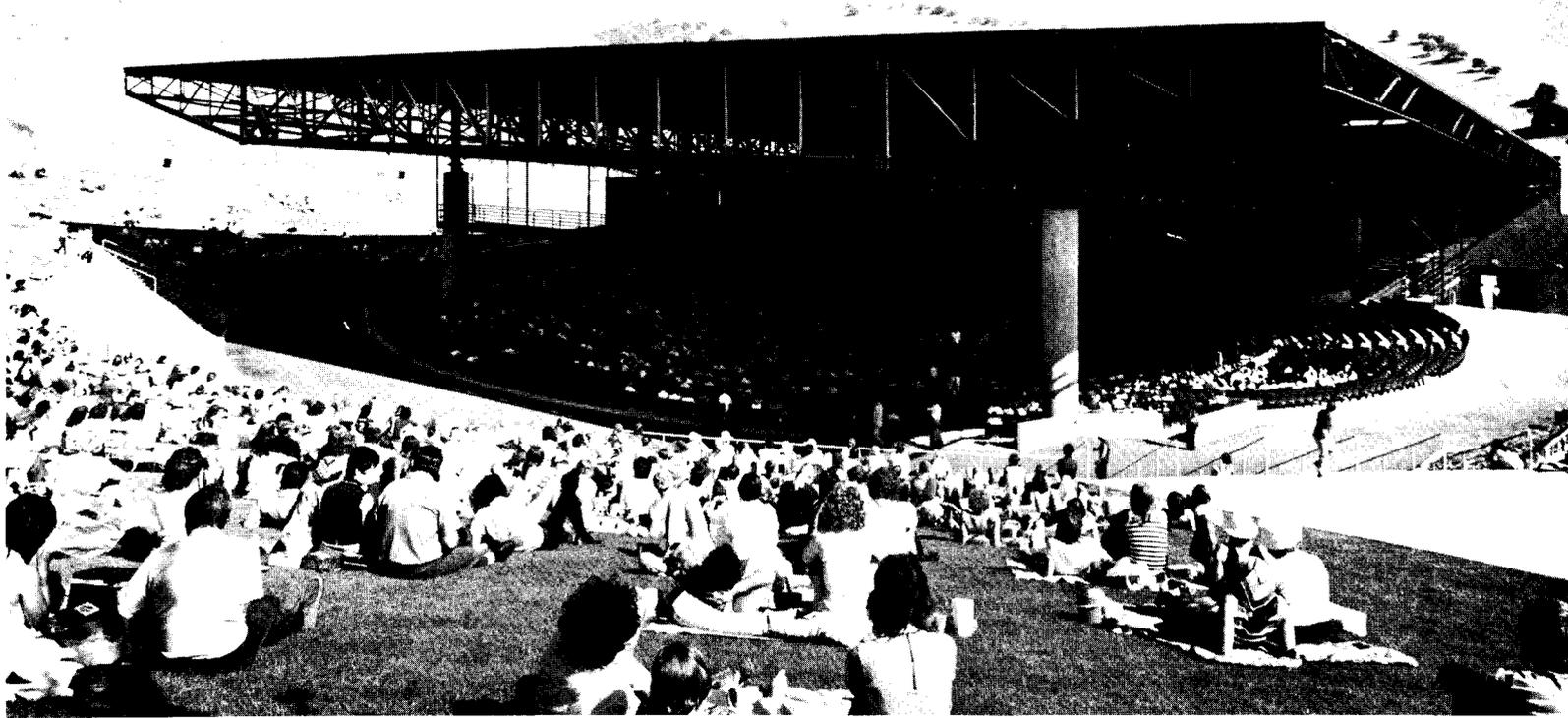
The building serves a number of academic functions. On the first level, adjacent to an open gallery, are classrooms, laboratories and a museum. Seminar and meeting rooms and departmental and faculty offices are on the upper floors. Faculty offices, located in generalized loft spaces on second, third and fourth levels, are separated from student activities to

afford privacy, but close enough to permit student/faculty encounter. The offices, organized by departments, are linked by "community spaces" to administrative blocks.

The 250,000-square-foot structure is built of poured-in-place concrete. Concrete sunshades reduce heat load and glare.

Client: Illinois Building Authority and Southern Illinois University. Structural, mechanical and electrical engineers: United Engineers. Landscape architects: owners. General contractor: J. L. Simmons Co. Completed in 1974.





## Concord Pavilion, Concord, Calif. Frank O. Gehry & Associates

The pavilion accommodates a variety of activities: musical performances (from symphony to rock), theater and ballet, plays, public rallies, graduation ceremonies. It is sited on exceptional natural terrain, adjacent to a highway. The designers feared that intrusive noise would disturb performances and they designed a crater-shaped amphitheater to make the best use of the topography and to deflect the noise of traffic and high winds while containing performance sounds.

"The rolling California hills are emulated by the earth berms shaped to form a natural bowl and enclosing a central stage," the jury said. "Over this is sus-

pending a steel-framed roof housing various acoustical components and speakers." The thick rear wall hides the backstage and support facilities.

The pavilion can seat 3,500 people under its 200-foot-square steel truss roof and an additional 4,500 people on the grass. The basic stage configuration adapts to proscenium stage, thrust stage, arena and theater-in-the-round. The orchestra pit, surrounded by an open acoustical moat to aid sound amplification, is located directly understage. An entire seating bay can be removed to allow trucks to drive on stage to unload props and equipment.

Designed to capitalize on the moderate local climate, the pavilion provides no heating or airconditioning for audience or performers. They are protected from sun and rain by the roof and from winds by the earth berm (photo lower left). The only heating is in backstage areas.

Client: City of Concord. Acoustical consultant: Jaffe Acoustics. Structural engineers: Garfinkel & Kurily. Mechanical engineers: John Kerr & Associates. Electrical engineers: Irving Schwartz & Associates. Landscape architects: Sasaki-Walker Associates. General contractor: F. A. Lathrop Construction Co. Completed in 1975.

## Navy Pier Restoration, Chicago. Bureau of Architecture, City of Chicago, Jerome R. Butler Jr., AIA, City Architect

Designed by Charles S. Frost and built in 1916, this Chicago landmark stretches three-fifths of a mile into Lake Michigan. After many years of various uses, numerous alterations left physical scars that obliterated the original architecture. The first phase of the task of returning the pier to its first use as a public recreational and cultural center involved the restoration of east end buildings (below). A second phase, now underway, calls for restoration of the pier to the west, including freight and passenger sheds.

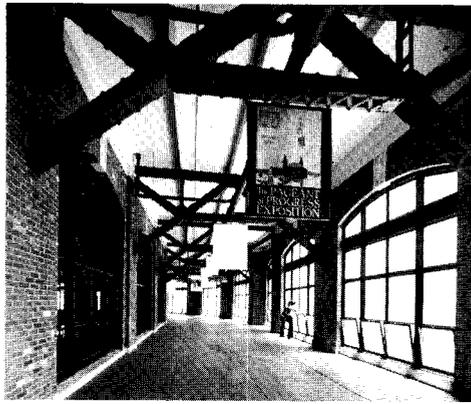
"The reclamation of the pier represents a significant contribution to both the esthetic and cultural life of Chicago," the jury said. "The architects corrected physical abuses by carefully removing the deteriorated material and blending new material with the old. This restoration-rebuilding, accomplished with considerable fidelity to the spirit of the original structure, has restored a valuable resource to the community."

The basic structural systems, exposed throughout, were load-tested and rein-

forced or replaced as required. Concrete blocks and masonry were removed and replaced with steel and glass window walls. When possible, the original ornamental cast-iron windows and door frames were reused and all new ones were carefully fabricated to match the old. The copper roof was replaced with a copper-clad stainless steel roof, whose patina matches the original dome.

A solar mechanical system, consisting of 8,000 square feet of solar collector panels, designed to provide about 35 percent of the heating needs of one of the east end buildings, will be installed this year. There are provisions also for solar cooling.

Client: Public Building Commission of Chicago. Structural and electrical engineers: Bureau of Engineering. HVAC: Environmental Systems Design, Inc. Plumbing: Robert H. Samuel & Associates. Landscape architects: Bureau of Architecture. General contractor: Bureau of Construction. Completed in 1976.





## Mercantile Wharf Building, Boston. John Sharratt Associates, Inc.

Built in 1857 as a ship chandler's warehouse, the structure had 18 bays originally, six of which were demolished in the 1950s for an inner city expressway, leaving a building 300 feet long and 100 feet wide.

"The extraordinarily deep building width posed a difficult challenge to the architects and provided for a brilliant solution," said the jury. "By opening up the center of the structure as a multilevel open circulation core and garden atrium with continuous skylight (right), the architects have created an exciting atmosphere."

The adaptive use program called for shops on the ground floor and housing on the upper stories. Separation of residential and commercial spaces was achieved by a private entrance and lobby for residents. A bridge, surrounded by a pool of water, leads to glass-enclosed elevators. Entrances face a central garden.

The jury commented that the "exterior treatment respects the original facade and provides constructive relationships

with the existing waterfront community." Construction consists of existing masonry-bearing walls, heavy timber beams and granite veneer with wood deck and precast concrete slab.

Economy in energy consumption was achieved through the reuse of the building's masonry and granite construction and the addition of new rigid synthetic insulating materials.

The project was designed to be free of barriers for the handicapped. There are also apartments specifically for the elderly and the handicapped, and they have such special features as handrails and grab bars.

Client: James F. Sullivan, Edward C. Fish, Mercantile Associates. Project architect: John Sharratt. Project manager: Robert Meeker. Structural engineers: Engineers Design Group. Mechanical engineers: Wm. R. Ginns. Electrical engineers: Sam Zak Associates. Landscape architects: John Sharratt Associates. General contractor: Peabody Construction Co. Completed in 1976.



## Vacation House, Mount Desert Island, Me. Edward Larrabee Barnes, FAIA

The siting of this oceanside vacation house, some 75 feet from the cliffs, protects the shoreline. The house, barely visible from the sea, nestles into a spruce grove. An access road ends 200 feet short of the house, making this retreat seem even more respectful of its environment.

Friends and family come to stay for long visits, and their welfare and privacy have been taken into account in the design of the house. It also accommodates the scholarly and artistic interests of its owners.

The jury said: "The residence is a collection of four small structures organized in a field of wood decking. Simple, understated and restrained, these buildings as a group make a minicommunity out of a 'house' on very special pieces of the Maine landscape.

"Materials are used in a traditional way, and the joinery is a pleasant com-

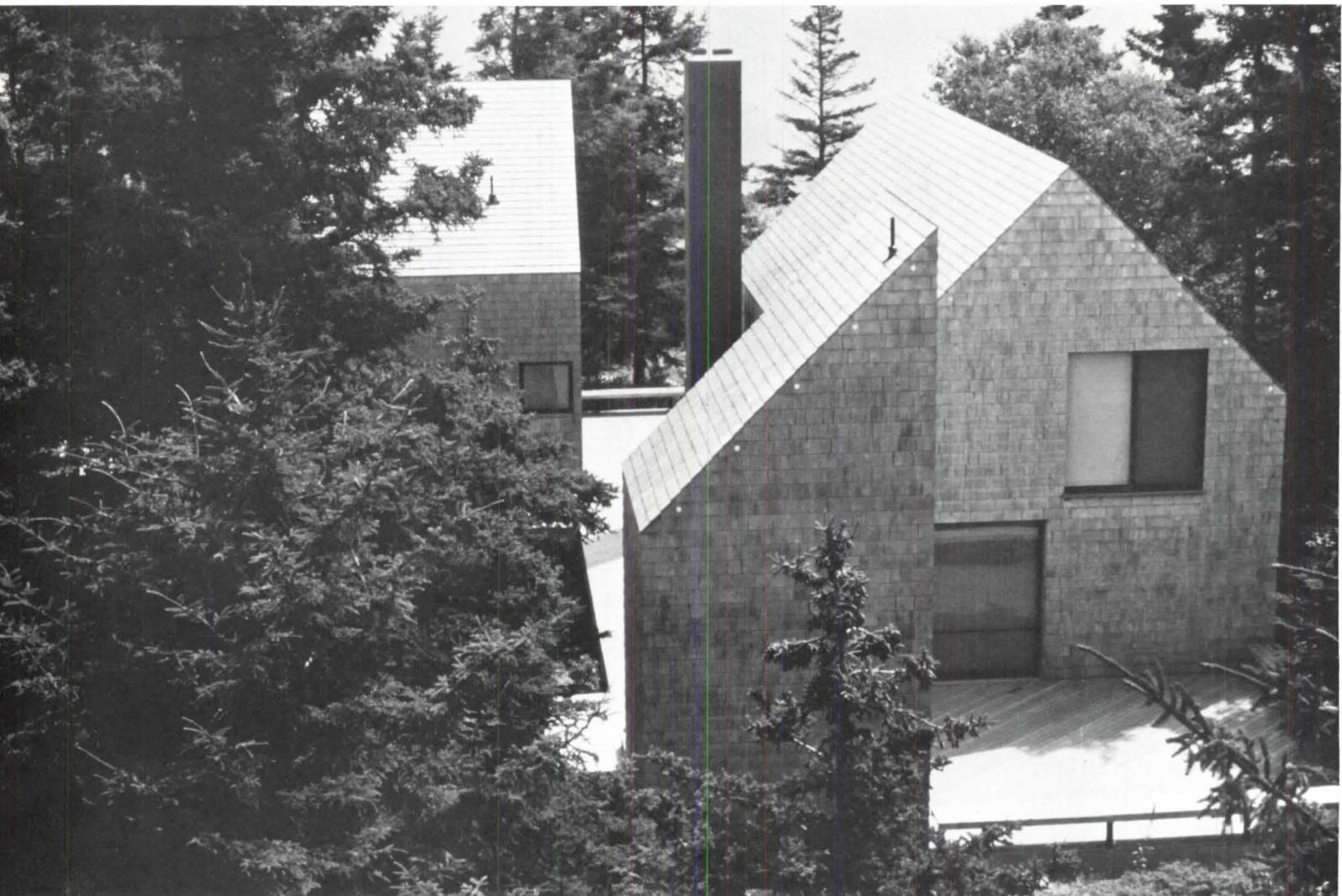
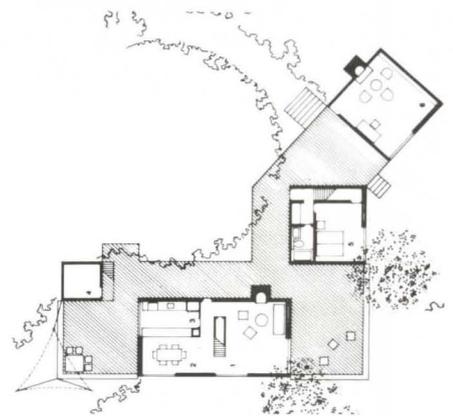
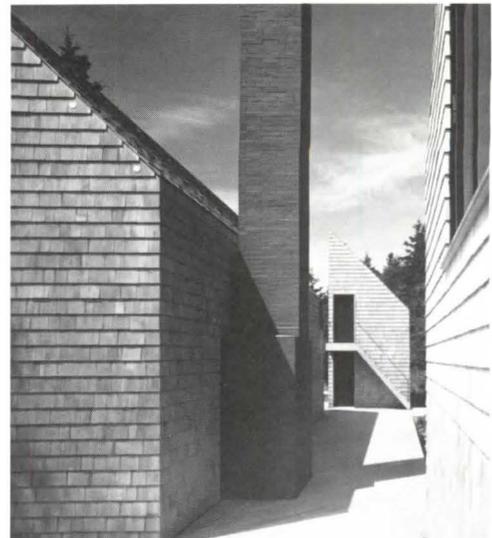
ination of the architect's expertise and that of the master builder. Modesty in a building is a delightful virtue."

There is a studio tower for the author/husband, with a laundry below. A one-bedroom unit for the owners contains living and dining rooms and a kitchen planned especially for the culinary pursuits of the wife.

A two-story guest house, with a high-ceilinged library, completes the complex. A shaded outdoor dining area is off the kitchen.

All are united by a meandering wood deck that widens into separate verandahs, providing vistas of the seascape.

Client: private owner. Design associate: John Lee. Structural engineers: Severud-Perrone-Sturm-Bandel. Mechanical engineer: Robert K. Bedell. General contractor: Horace Bucklin. Completed in 1975.



## Housing for the Elderly, Cidra Municipality, Puerto Rico. Jorge del Rio, AIA, and Eduardo Lopez

This residential complex for the elderly is sited on a 10-acre landscaped hillside overlooking the village of Cidra. Garden lots are located in a downhill area near the residential units, facilitating the agricultural pursuits of the residents, who are still able to perform work tasks for their physical and psychological benefits.

In the Spanish-American tradition, where leisurely walks in the sun are an essential element of daily life, there are intimately scaled plazas into which are clustered the 16 residential units. The vehicle-free plazas serve as meeting places for the residents. Another focal point is the community building which faces the principal plaza, underscoring its importance to the residents.

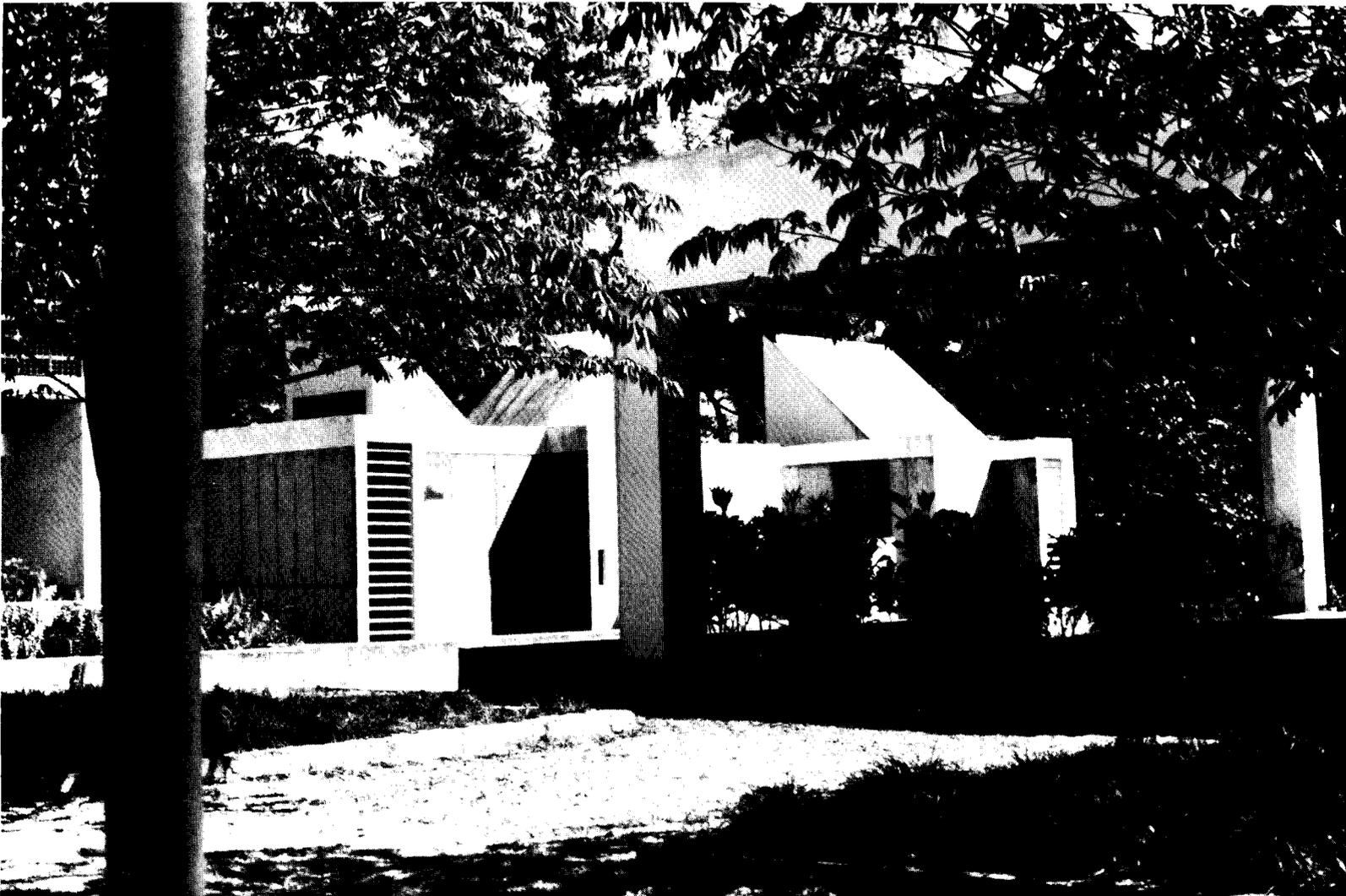
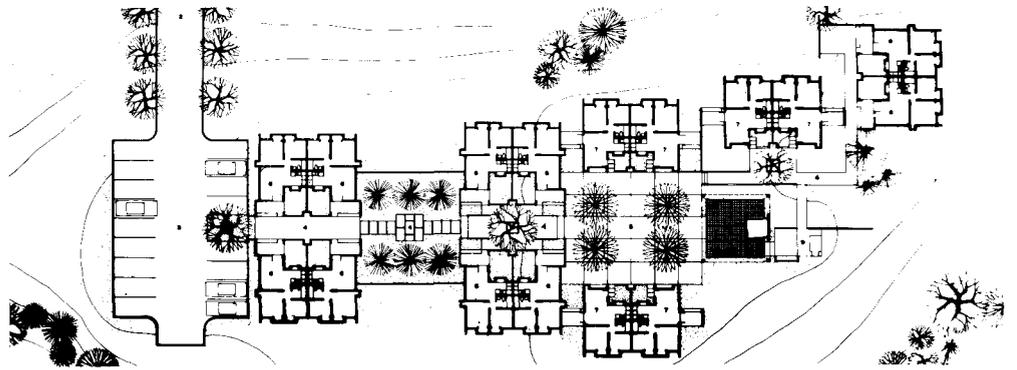
The jury said: "This charming little complex exemplified the manner in which the problem of a restricted budget, restricted scale and, very likely, restricted quality requirements can be overcome to produce a pleasant residential environment. The modest but delightfully scaled

project is organized around a pedestrian pathway on top of a hill overlooking the rural countryside. Repetitive porch towers mark each unit and provide open-air ventilation. Intimate and pleasant in the lush tropical environment, the project demonstrates that federal housing projects need not be inhumane or unattractive."

Cost of construction and the social significance of the project were major design considerations. The units are built of reinforced concrete, and exterior and in-

terior partitions are of concrete plastered with white stucco. Total construction cost was \$250,000.

Client: Sociedad Agricola de Agronomos. Project architect: Eduardo Lopez. Structural engineer: Narciso Padilla. Mechanical engineer: Jorge del Rio, AIA. Electrical engineers: Argentino L. Miñana & Associates and Emilio Hospital. Landscape architect: Jorge del Rio, AIA, and Eduardo Lopez. General contractor: Alvarez & Zabala. Completed in 1968.



## Pennzoil Place, Houston. Johnson/Burgee and S. I. Morris Associates

Sheathed in glass with aluminum mullions spaced two feet, six inches on center, this 36-story twin-towered complex is the linking block between Houston's cultural center and business district. Highly visible on the skyline (an important factor for the client), its distinctive angular shape is easily identifiable. Developed for a major tenant who would occupy half of the 1.8 million square feet, the twin tower design resulted from the requirement of attracting a second major tenant desiring separate identity.

Said the jury: "This speculative high-rise managed to create a special place by the juxtaposition of two towers at their

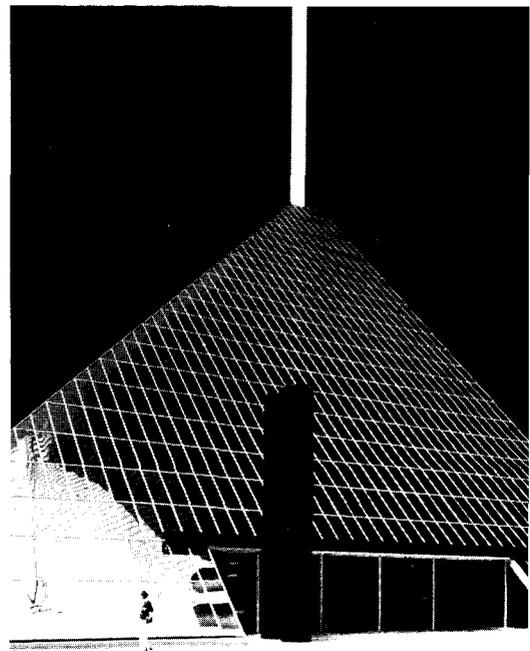
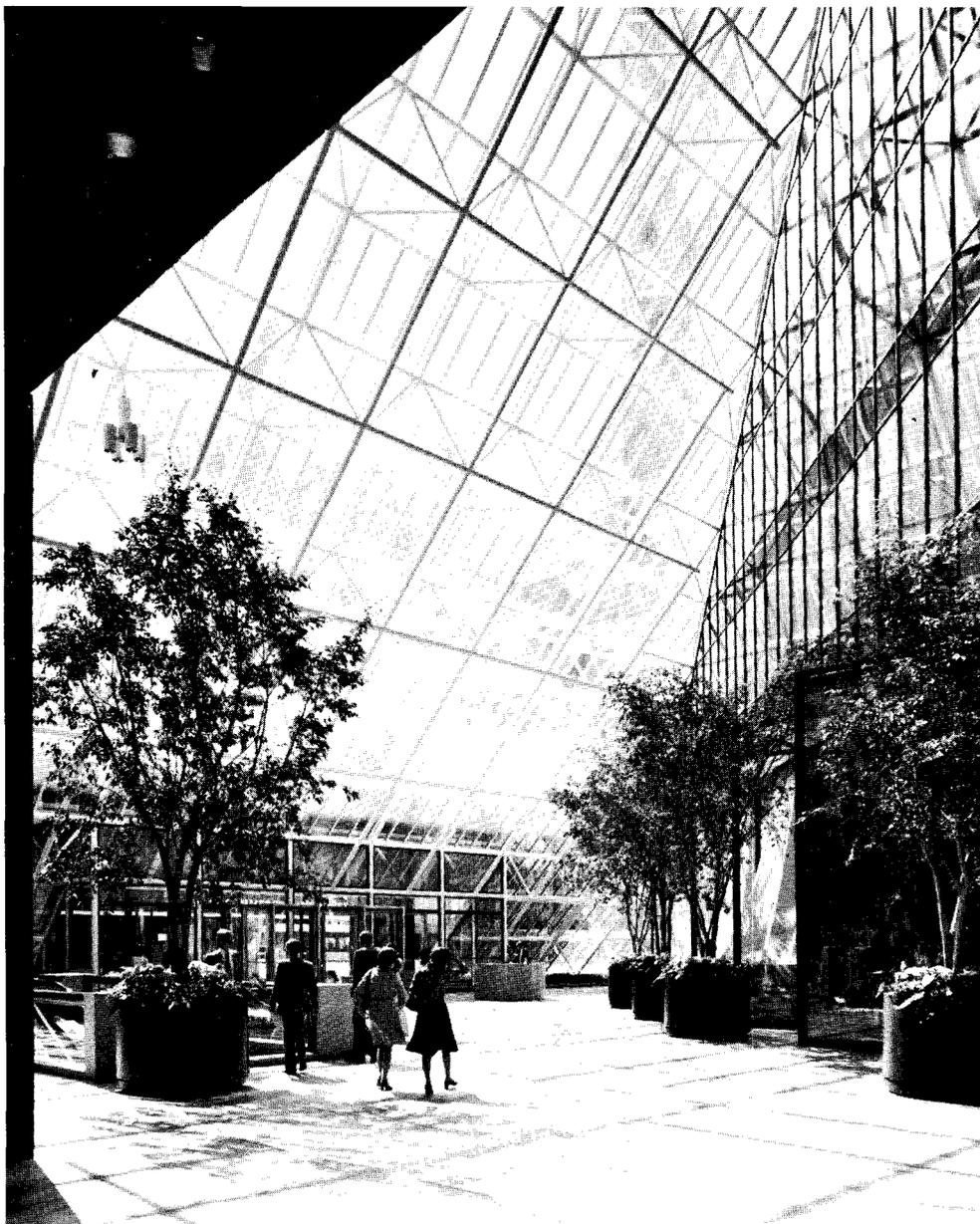
diagonal corners. The tension between the two structures is captured by the multistory greenhouse entries (below). The building is a sophisticated urban composition that dominates in a pleasant way from a distance and enhances the human environment at close range. It is a skillful example of the possibility of providing a client with a satisfying corporate image and the citizen with an exciting sidewalk amenity."

The steel frame structures rest on a nine-foot-thick concrete mat foundation. The exterior wall, with bronze-tinted, mirror-coated vision panels, is an aluminum stick system. The glass's special

coating reduces the exterior visual reflection and at the same time reflects the heat. The floor framing's stub girder system permits the mechanical systems to penetrate the structural framing in each bay.

Although the construction cost was slightly higher than other speculative buildings in the area, the distinctive nature of the complex helped to rent the space at premium rates.

Client: Gerald D. Hines Interests. Structural engineers: Ellisor Engineers Inc. Mechanical and electrical engineers: I. A. Naman & Associates Inc. General contractor: Zapata Warrior Constructors. Completed in 1976. □







*Characteristically, the firm's nearly 300,000-square-foot undergraduate science center at Harvard steps back out of respect for its older neighbors and opens from a court linked to existing campus spaces. Opposite, Sert (top), Jackson.*

# The Urbane and Varied Buildings Of Sert, Jackson & Associates

*A profile of the recipient of the Institute's architectural firm award for 1977. By Andrea O. Dean*

For Sert, Jackson & Associates of Cambridge, Mass., the starting point in architecture is urban design. The firm's work is urbane and sophisticated yet still retains roots in the age-old patterns of building that gave the villages and cities of José Luis Sert's native Spain their sense of liveliness and community.

Sert, the founder and guiding spirit of the firm, works on the assumption that "to have a really urban pattern of life you have to pull services and activity centers close together." Despite a recently spreading general aversion to tall buildings, Sert believes that compact highrise development is often unavoidable and even desirable in land-hungry areas, that some people still like living in highrises and should be afforded the opportunity to do so. "What is important," says Sert, "is a balance between different heights and densities, open spaces and built spaces, people and trees and people and cars."

Consistent with an attempt to create an architecture of relationships and balance is the 28-person firm's emphasis on liveliness and variety.

Singling out the Peabody Terrace apartment complex in Cambridge, which SJA designed for Harvard, principal William Lindemulder, AIA, says, "We tried to introduce as much variety as possible," arranging around courtyards of different sizes and shapes high towers placed next to stepped-down lower buildings, using variously sized windows, differently positioned balconies and sun screens and unexpected spots of brilliant color. "In order to obtain as many different types of housing units as possible and the best views and ventilation, we design from the inside out," adds principal Paul Krueger, AIA.

"We do not make static monuments," says Huson Jackson, FAIA, who recently became the firm's president when Sert changed his own status to "consultant to the firm." The architects express movement by underscoring elements where movement takes place—arcades, ramps, bridges, footpaths, stairs, elevator shafts and access corridors.

The broad approach of Sert and his colleagues to architecture, urban design and housing has led naturally to a team

approach, with consultants being called in as needed, and everyone in the office being required to be able to handle almost everything related to planning, design and production.

Sert recently retired as dean of the Harvard graduate school of design; Jackson and principal Joseph Zalewsky, AIA, have both taught at Harvard for many years. As a result, the university's classrooms have served as laboratories and staging grounds for SJA's ideas.

Models, rather than drawings, are used even in early design stages, and the prevailing method for solving problems is discussion—frequent and protracted discussion. "Sert comes from a Mediterranean background where talk, the turning and sharing of ideas are very important," says Jackson, a long and lank former Pennsylvanian.

A past president of the Boston chapter/AIA and a respected designer, Jackson is in charge of SJA's operations, but does not function in the traditional role of administrator. In fact, the firm has no such person. Administration remains something of a vacuum, which all principals and associates occasionally and reluctantly step into, only because someone must. Until recently, marketing too was a largely neglected activity; work came into the office unsolicited. Beginning three years ago, however, when SJA's workload began to decline drastically, the firm has actively sought work and now has jobs in Indonesia, Saudi Arabia and Spain.

Of the firm's three principals, the most senior, Zalewski, contrasts sharply with Jackson in personality and in the role he plays at SJA. A Polish émigré and retired professor "who was much loved by his students at Harvard," according to Sarah Harkness, AIA, of The Architects Collaborative (a next-door neighbor to SJA). Zalewski acts as the omnipresent critic. "He masks his shyness in deep dark pessimism," says associate James Harold, AIA, "and where José Luis considers almost anything possible, Joseph's reaction is more likely to be: Perhaps that is *not* impossible."

The younger principals, Krueger and Lindemulder, both former students of Sert, have the prime responsibility for

implementing the plans conceived and patiently hashed out in the famous discussions, on schedule and within budget constraints.

Sert is as different from his colleagues as they are from each other. An enormously energetic, cheerful and articulate man with broad-ranging interests, he looks younger than his 75 years, and despite being short in stature gives the impression of being "taller by far than a tall, tall man," as novelist J. D. Salinger once described a fictional character. Sert's personality and life experiences—his personal involvement with Le Corbusier, with CIAM (Congres Internationaux d'Architecture Moderne), with such seminal artists as Miró and Picasso and with Mediterranean folk architecture—continue to animate and direct the work and thought of the office. To fully understand the firm of Sert, Jackson & Associates, one must be familiar with the remarkable career of its founder.

José Luis Sert, FAIA, was born in Barcelona, Spain, to an aristocratic and artistic Catalan family. He began his own



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## Among the major influences on Sert's work were Le Corbusier and the folk dwellings of Ibiza.

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career as a painter, before commencing architectural training.

While studying architecture in Barcelona in the 1920s, Sert joined a student protest movement, which opposed the prevailing Beaux-Arts training and committed itself to tackling housing and other social problems, which were ignored by the architectural establishment of that day.

In 1926, while visiting Paris as a student, Sert came across Le Corbusier's *Vers une architecture* and was profoundly impressed. The next year at Sert's invitation, Le Corbusier delivered a series of lectures in Barcelona.

In 1929, with his architectural degrees in hand, the young Spaniard set out for Paris to study with his Swiss mentor for two years. During this period, he also met and absorbed the ideas of artists with whom he would later collaborate, including Fernand Léger, Alexander Calder, Picasso and Miró. Sert's longstanding and intense involvement with CIAM also began during this time. He attended his first CIAM congress in 1929, in Frankfurt, Germany, where he met Walter Gropius, Alvar Aalto and others.

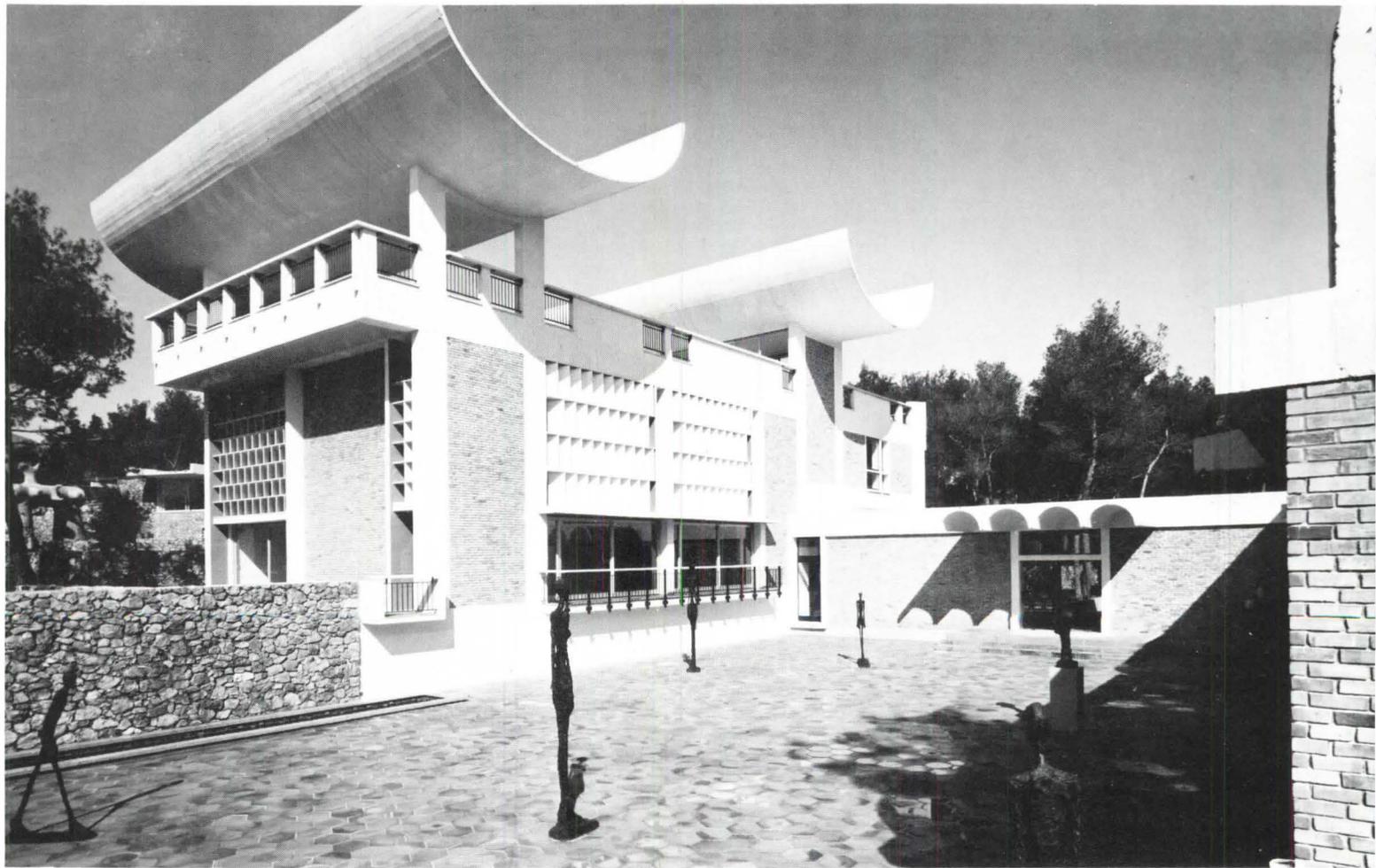
Sert's relationship with Le Corbusier continued until the latter's death, and the two collaborated on Corbu's only American building, the Carpenter Center for the Visual Arts at Harvard, completed in 1963. The influence of Le Corbusier on Sert's work and thought is readily apparent—in Sert's attitudes toward the design of cities and housing: in the importance he gave to pedestrian and vehicular circulation paths; his use of walls and windows to create visual accents and rhythms, and his employment of sun screens and shades to control light and ventilation.

But as one of his biographers, Maria Luisa Borrás, observes, "Even in those early days [Sert's] amiable but firm personality led him to reject immovable postulates, theoretical programs, any kind of dogmatism. Everything in his life and work since then has developed on the basis of firsthand, intensely felt experience."

In 1930, on returning to Barcelona from his tutelage under Le Corbusier in Paris, Sert opened his own firm and established a local version of CIAM, called GATEPAC. Some of the now almost 50-year-old proclamations of this group could as easily have been made just yesterday by Sert or one of his colleagues at SJA. Among GATEPAC's declarations, for example: "We should start by considering the different problems such as: programming of needs, use of materials,

space and light requirements, developing our designs from the interiors (functional) to the exteriors (facade) in a simple constructive way, seeking beauty in proportions, or in balance. . . ." The principal aim of the GATEPAC group was "to bring architecture to its natural expression related to actual technical, social and economic conditions."

One of Sert/GATEPAC's major projects was the redesign of the city of Barcelona and redevelopment of its slum areas (1933-35). Le Corbusier and his brother Pierre Jeanneret helped devise the





*Sert's Central Dispensary of 1935 in Barcelona (across page above) already showed characteristically varied fenestration. His studio for Joan Miró in Mallorca (top) was completed in 1955, his own house in Cambridge in 1958. Six years later, the first phase of the Maeght Foundation (left) was completed.*

plan. The principles underlying it, once again, sound a peculiarly contemporary note. Sert and his group criticized the prevailing piecemeal planning and lack of zoning, insisted that diseased slum areas be restored to health without destroying the character of the city, that original scale be maintained by rehabilitating old

structures and relating new construction to them and that the entire area be linked to a new transportation network.

During the 1930s, while Sert was still working in Barcelona, he visited the south of Spain with painter Miró. The age-old ways of building he saw there, especially on the island of Ibiza, impressed him as being fully as "modern" as any issuing from avant-garde Parisian ateliers. Ibiza's minimal patio-style houses typically had flat roofs, simple cubic forms, white walls, spots of bright color but no unnecessary decoration. Clusters of buildings were added as the need arose, with windows and doors of different sizes set side by side, which provided variety and allowed for future growth without destroying the original scale. Sert's principal biographer Knud Bastlund tells how the young architect was especially struck by the fact that windows and doors, "the eyes of the building," were carefully positioned to take advantage of the best views, the sun and winds, that rooms were scaled to the human figure and opened "to life and pedestrian movements in the streets, to the quiet cloister of the garden, to the distant horizon and the setting sun."

The first highrise housing complex designed by Sert clearly shows both the influence of Ibiza and that of Le Cor-

busier. Begun in 1934, Casa Bloc, as it was called, was a 200-unit low rent Barcelona housing project. Separate circulation patterns for pedestrians and vehicles were integrally linked to the existing city, and activity was organized around large courtyards. The project expressed a definite social program and contained a public library, workers' club, nursery school, children's library, play areas and spaces for shops and workshops. (A school already existed near the site.) Sert used a metal frame structure and sun screens, and was already employing the skip-stop elevator system to provide through-floor duplexes, which has become one of the hallmarks of SJA's recent housing developments.

Just as the Casa Bloc reached completion in 1936, the Spanish Civil War broke out, putting an end to the work of the GATEPAC group. Sert rallied to the Republican cause, and was enlisted by its government to design the Spanish pavilion for the 1937 Paris Exposition. The pavilion was intended to serve as an instrument by which to convey the plight and heroism of the Spanish people and the objectives of the Republican government. Picasso painted "Guernica" for one of its walls, Calder designed a Mercury fountain for the structure, and Miró painted a

large panel, entitled "Catalan Peasant in the Revolt," for the main stairway.

With the collapse of Republican Spain, Sert fled to America and in 1941 founded Town Planning Associates (TPA) in New York City with Paul Lester Wiener and Paul Schulz.

TPA's work consisted principally of the redesign of some major cities in South America (including Bogotá, Colombia) and the planning of completely new ones (three of which were designed in collaboration with Le Corbusier).

During his early years in the U.S., Sert remained active in CIAM, serving as its president from 1946 until its last congress in 1956. Now, more than 20 years later,

Sert as his successor. The recommendation was accepted despite the fact that Sert's past activities for Republican Spain made him, at the peak of the McCarthy era, "politically sensitive," as Mrs. Gropius puts it.

By 1955 Sert had opened a new firm in Cambridge, but continued to commute back and forth to New York until Town Planning Associates was dissolved in 1958. By 1963, Sert, Jackson & Associates had assumed its present form.

Shortly after Sert became dean and a member of the Harvard planning commission, the university entered a stage of physical expansion and retained SJA to design a number of its new projects. Sert's



he muses that "I continue to nurture my CIAM roots. While the roots are still giving something, why not continue?" But Sert admits that much of the early work now "looks sad and barren. Our ideas were sometimes too rigid, but that was a reaction to what was happening at the time." Today, the word he uses most often is "balance," the need to balance high and low densities, technical and esthetic considerations, new and old concepts, new and old structures, ambitious and modest ones.

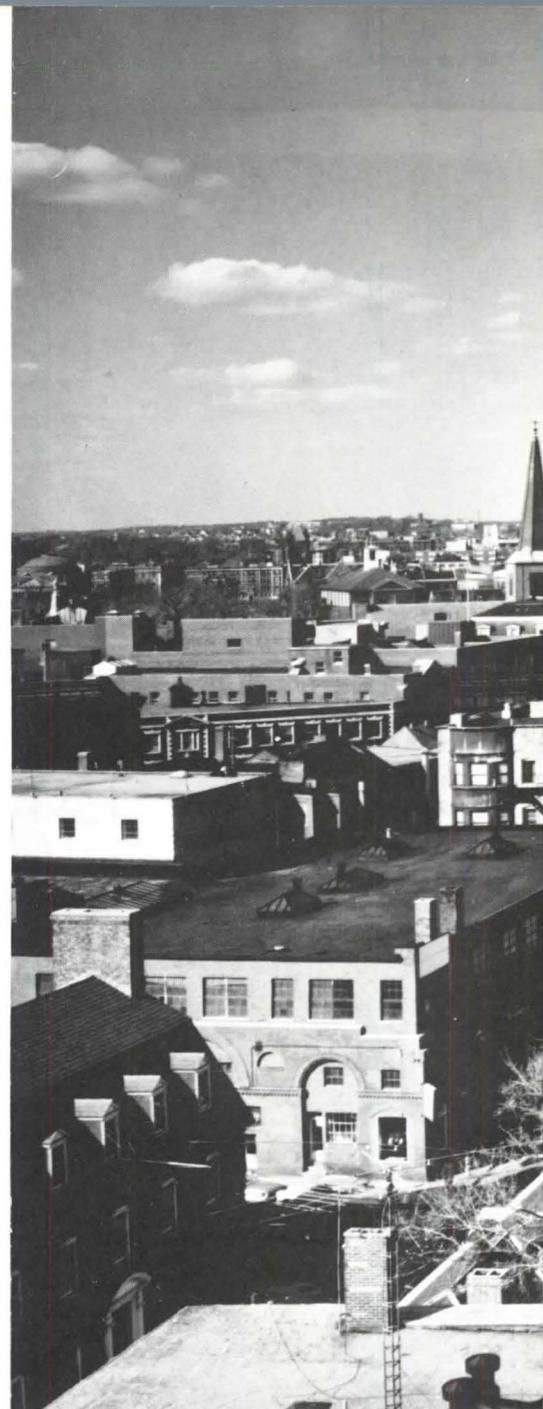
A sense of balance and the ability to maintain in balance often seemingly conflicting elements seem to characterize Sert's personality as well as his work. In reminiscing about the CIAM experience, the widow of Walter Gropius recalls, "The remarkable thing about Sert was that he could get these highly individual prima donnas to agree on things, to gather them under one hat."

When the time came for Walter Gropius to retire as dean of the Harvard graduate school of design in 1953, he recommended

ties to Mediterranean patrons in southern France and Spain also brought in commissions.

The northern and Mediterranean buildings "have one characteristic in common," says biographer Bastlund, "and that is the intent of bringing urban design factors into the plans wherever possible. Consequently, they are designed as parts of a larger growing complex. . . . Buildings tend to incorporate open spaces and courts into the total picture so as to appear larger, more complex and tied together rather than freestanding and differentiated."

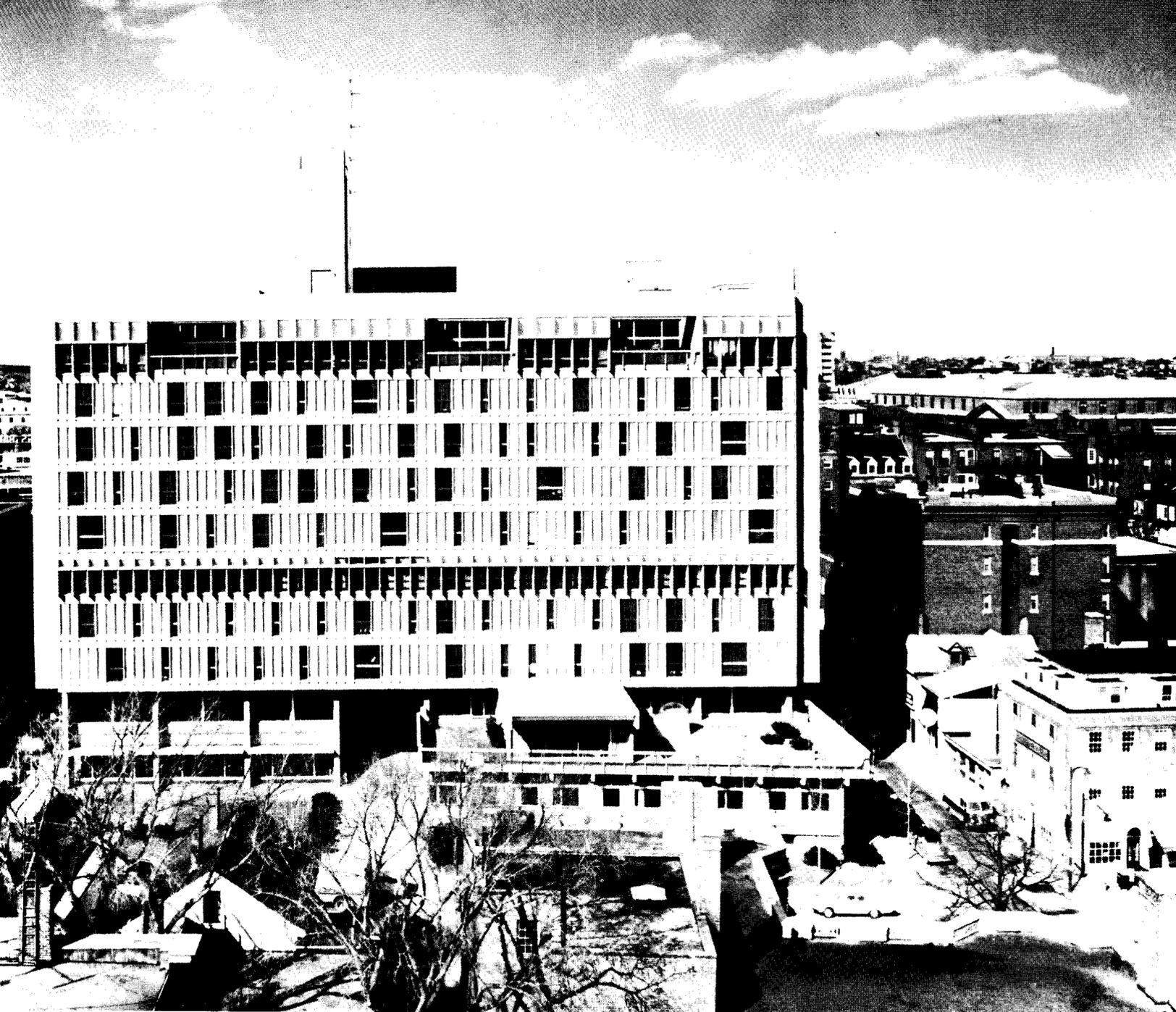
Thus, responding to very different sites and situations, Harvard's Holyoke Center functions as a sophisticated form of infill which introduces order into a chaotic urban setting; the towers of Peabody Terrace for married Harvard students virtually create a new skyline of their own while stepping down to meet the scale of the existing neighborhood; the Boston University complex is a bristling urban megastructure, and the design of the



### Rhythmic facades that respond to variations of interior use.

Maeght Foundation museum in St. Paul-de-Vence, France, reinforces the typical pattern of the villages which surround it.

The concept for Holyoke Center evolved out of a Harvard planning commission directive that scarce land be developed for intensive use, while the university's open space network of quadrangles and pedestrian paths be conserved, strengthened and linked to the existing spacial configurations of Cambridge and nearby Boston. Holyoke Center, which houses Harvard offices and health services, was intended as a bridge between the educational buildings and the student dormitories and houses on the Charles River. Surrounded by small businesses and shops, it occupies an entire, heavily trafficked block next to Harvard Square, the main entrance to Harvard University.



*The Boston University tower and adjacent elements are shown at left, Holyoke Center, with its arcade, on this page.*

Cutting through Holyoke Center is a pedestrian arcade on axis with the main path to Harvard Yard, lined with shops, entrances to medical services and elevator lobbies serving office floors. The arcade "thus becomes an animated street," in Sert's words. While low-standing elements of Holyoke Center abut side streets, its 10-story tower, in the shape of an H, is pulled back to provide more air and sun to neighboring low buildings. This configuration also means that it is viewed as a series of elements in the townscape, rather than as one bulky structure.

Says Sert, "The varied fenestration in facades is an expression of the variety of uses of inside space." South-facing glass is protected by precast brise soleils. The south facade is a rhythmic, almost random arrangement of modular panels, some clear glass and some translucent, the latter being sandwiches of glass fiber between two sheets of clear glass. The effect is to filter light in the manner of Japanese rice paper. The panels alternate according to the organization of interior



spaces and the desires of users. Bright color accents further enliven the composition. Sert says, "I have learned something about this from my friends Fernand Leger and Joan Miró."

Harvard's Peabody Terrace, consisting of 500 apartment units for married students, was SJA's first attempt at dormitory housing. In this project, says Sarah Harkness, Sert "solved one of the most perplexing problems of modern architecture: how to combine low buildings with high-rises without resorting to difficult banks of stairs and uneconomical elevators."

The firm made a detailed survey of prospective tenants' needs, discussed proposed ideas with deans and others, took models and studies to the community and then made revisions, according to Harvard planning office director Harold Goyette.

SJA kept the three 22-story high-rises back from the streets and made them slim

to minimize shadows. Stepped-down lower apartment buildings make a fluid transition from the towers to the adjacent community of older structures. The entire complex is linked by walkways and skip-stop elevators to the towers. The system of shared elevators and walkways offers elevator service not only to the tower tenants, but also to those living in five- and seven-story buildings. It prevented the architects from having to resort to a bulky slab scheme with many apartments per floor in order to justify the usually high cost of elevator installation. It also allowed all units to have exposure on both sides of the buildings, maximizing views and ventilation.

For purposes of economy, the architects used a standard repetitive unit—three bays wide by three floors high, with a central stair spine and common access corridor on the intermediate level—which accommodates the wide range of apartment types.

Variety in the facades is achieved by shifting the modular units, varying the positions and sizes of windows, and using balconies and color as accents. Window areas facing the Charles River have balconies protected by pivoting sun screens. On the south, window areas are smaller and have no louvers, but balcony overhangs shade the floors below them.

SJA's additions to the Boston University campus consist of a single tower surrounded by tightly related, interconnecting lower elements that form plazas and

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### Sert's consistent goal has been creation of 'a lively environment intended for enjoyment.'

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terraces. The new complex is sited toward the Charles River, and faces away from the 1920s Gothic structures of the old campus. It includes a student union, central library, central heating and equipment plant, law and education department tower and law library and auditorium.

Spaces in the law and education tower are grouped according to size, function and degree of use, which is expressed in the fenestration. The law and education departments have separate tower entrances, with law occupying the first nine stories and education being on floors 10 to 18. The tower is divided vertically by elevator shafts and horizontally by the larger classrooms and mock courtroom, which are double-height spaces.

The Maeght Foundation museum in France, the first phase of which was completed in 1964, gave Sert an opportunity to apply ideas about the relationship of art and architecture he developed back in the '20s and '30s in Paris with artist friends whose work was to be shown in the museum and who collaborated in its design. Among them were Braque, Miró and Giacometti.

Sert's village-like plan for the museum created numerous and different-shaped

volumes that hug the spectacular hillside site. Outside spaces are clearly defined as extensions of the buildings themselves.

The focal point is the main sculpture court (page 52). Paved with hexagonal terra cotta tile, it recalls a village square and opens to a view of the sea. Around it are clustered exhibition rooms of different sizes. The larger ones have only natural lighting, with concrete shells providing reflected and diffused light and acting as light traps. In smaller rooms, barrel-shaped shells provide channels for artificial lighting tracks. Ceiling heights in all rooms of the museum change to conform to the sloping site and to the varied configurations of skylights and shells. All rooms have splendid views. A roof terrace looks out on the entire complex and beyond it to the Alps and the Mediterranean. The main stairwell is topped by two large inverted parasol-like shells, which tunnel the breezes and provide shade, while serving as landmarks for approaching visitors.

Above all, this museum, which juxtaposes old and new concepts of design, is a lively, varied environment intended for enjoyment, which is the principal quality for which José Luis Sert has striven in his lifework. □

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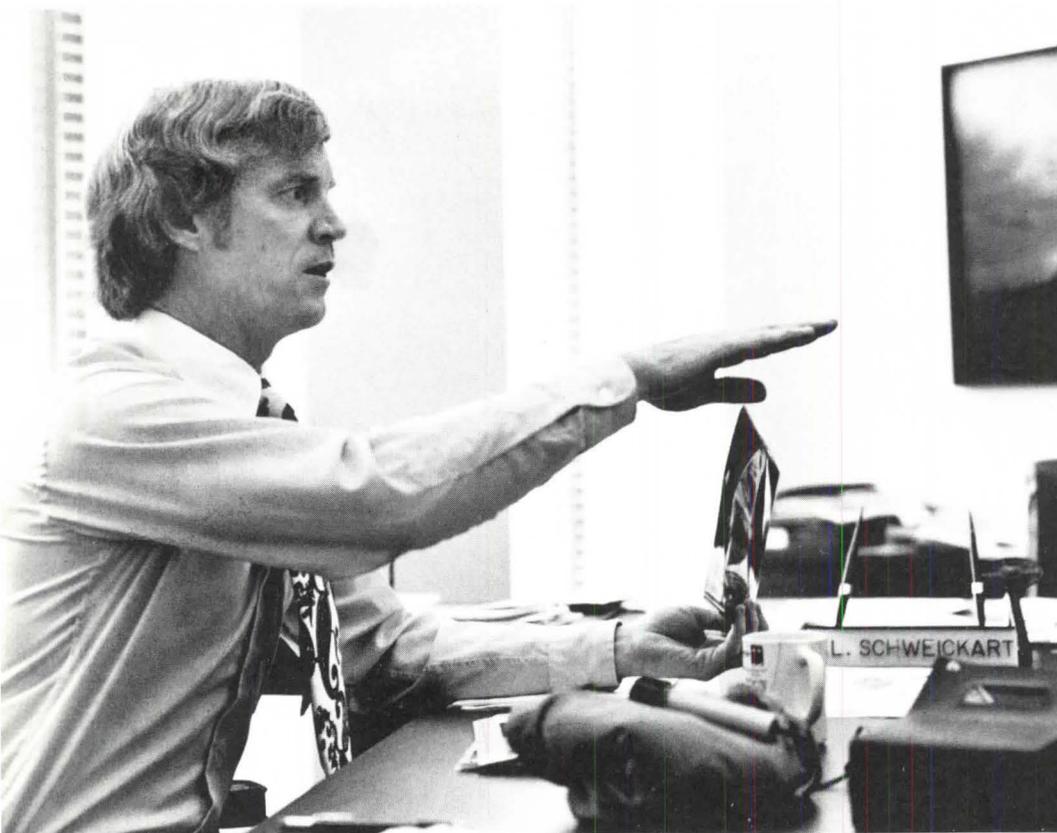
*Harvard's Peabody Terrace is seen below. Eastwood housing on Roosevelt Island, N.Y. (right), a "new town in town," was completed in 1975. It is for low- and moderate-income families.*





# Architecture in Outer Space: An Interview with an Astronaut

*Apollo 9's Russell Schweickart on the challenge of designing extra-terrestrial settlements. A.O.D.*



Russell "Rusty" Schweickart, former astronaut and speaker at this year's AIA convention, is convinced that "we will be seeing more or less permanent human habitats in outer space by the late '80s, maybe even the mid '80s. This will challenge the whole society, and especially architects."

He explains that "the work we have done in space in the past, and are engaged in now, clearly points toward the placement of very large structures into orbit that will require construction, repair, maintenance, modification and research by humans working and living in space. What we're talking about here is not science fiction by any stretch of the imagination, but concepts built on experience, on the economic realities and requirements of providing worldwide communications, weather forecasting, earth-resources monitoring and other services."

In March 1969, Schweickart served as lunar module pilot for Apollo 9, the first

manned flight of a lunar module. (This flight was followed by a lunar orbit flight in May, which preceded Apollo 11's lunar landing in July.) In 1973, he was backup commander for the first Skylab mission. Today, he works in NASA's Washington, D.C., office of planning and program integration, from which he fashions, with believable logic, a plan for the development of space as a place where human beings will soon work and live. Schweickart begins by explaining how space is now being utilized, then proceeds to what he thinks the foreseeable future is almost certain to bring and finally describes what we might expect still "further downstream" and what some of the implications of all this may be for architects.

"The earliest activities in space of a practical nature," he begins, "came in the development by NASA of communications and weather-monitoring satellites." Their economic advantages become clear,

he says, when you realize that satellites can observe half the world at a glance, and are much cheaper than running copper wires around half the earth's circumference. Weather-forecasting satellites can gather information from the polar regions and open oceans where weather originates and where other sources of information are scant.

A lesser known use of satellites is the monitoring of earth resources to provide information to agriculturists, foresters, land planners, oceanographers, coastal zone managers, environmentalists and others.

"That's where we are right now in the utilization of space," says Schweickart. "But already something has happened to revolutionize the use of space satellites." That something is a new form of transportation system for deploying satellites in space—the space shuttle, which was unveiled by NASA last September. "We are within three years," says Schweickart, "of having a transportation system in operation which can carry 65,000 pounds at one time into orbit."

The significance of this system is that it can not only carry payloads (equipment, satellites, research laboratories) into orbit, but is capable of going back up, recovering payloads and bringing them back down for refurbishment, modification or simply to clean up the sky. It can also transport technicians to repair or increase the capability of structures in orbit.

"Now this changes the basic character of the use of space. The payload bay is now as large as 65 feet long and 15 feet in diameter—that's a big volume—which means you can now begin to put very large structures into orbit," says Schweickart. He explains that the larger and more powerful the satellites in orbit—be they used for communications, weather forecasting or earth resources monitoring—the smaller, less expensive and consequently more numerous can be the antennas on earth. The large structures in space can best be serviced and modified by technicians working and living in orbit.

An area which holds great promise for revolutionizing the use of space in the foreseeable future, and which NASA is looking at now "in a fairly vigorous way," according to Schweickart, "is the conversion of solar energy into electricity. We've been doing this for 15 years in the space program, but only to serve our own satellites." He explains that theoretically there is no reason why one cannot put very large "arrays" for solar collection into space to convert solar radiation into electrical energy and then into microwaves, which can, in turn, be beamed in a narrow path to earth and transformed again into electrical power for public use.

Solar energy conversion in orbit would

require huge lightweight structures, says Schweickart, perhaps 15 to 20 miles long and 5 miles in diameter, with large numbers of people living and working on them for relatively long periods of time.

The advantages of this form of energy are many. Unlike nonrenewable fossil fuels, solar energy is inexhaustible. And harnessing the sun's rays in space eliminates such earthly constraints on solar collection as nighttime, overcast skies and weather of any sort. "The result is that you derive more power from the given investment," says Schweickart. Unlike nuclear energy, solar produces little waste material, and since its wastes are simply radiated away they do not affect the earth's atmosphere. Schweickart concedes that there may be some adverse environmental consequences from solar conversion in space that we do not yet know of, but says that for the moment "this form of energy appears quite competitive with others."

Although both NASA and private industry are working on solar energy conversion in space, neither is yet investing significant amounts of time or money in it. "But I suspect that if we see a nuclear incident, either intentional or accidental," says Schweickart, "there's going to be a great outcry by the public for alternative energy sources." He believes that "the solar thing may take off, due to circumstances now unforeseen, by the mid to late '80s."

Even if the solar power station idea does not work out, says Schweickart, "with all the other possible uses for satellites, there is no question in my mind that it is just a matter of time before we put large structures and large numbers of people into orbit for long periods of time."

If the creation of radically new space transportation, permitting larger, more complex satellites to be placed in orbit, initiated phase two of the Schweickartian concept, phase three will begin when "people realize that it is much more economical and less harmful to the earth's environment to use the moon, rather than our own planet, as a source of raw materials and a base for constructing, supplying and maintaining space satellites."

He explains that although it would take a major investment to establish mining operations on the moon, it is 20 times as costly to transport one pound of materials into geostationary orbit from the surface of the earth than from the moon, because of earth's much heavier gravity. "So at some point, we will recognize that the way to go is to use raw materials from the moon and process them there or, more likely, in orbit."

The result would be "large-scale construction and processing operations involving hundreds and thousands of people living and working in orbit in essentially

## 'What we're talking about here is not science fiction . . . but concepts built on experience.'

self-sufficient settlements," he says. "This is clearly something that is quite far away, far enough away that NASA cannot justifiably put much taxpayer money into research at present." But, he adds, there are already people outside of government thinking and experimenting with such concepts, and trying to define what these settlements might consist of and look like. Young people in universities around the world are beginning to study future uses of space, because "this is where their future is," says Schweickart.

He believes that it is certainly not too soon to introduce such concepts "to the people who have traditionally taken the responsibility for providing living environments for human activity, namely architects." He notes that the Skylab mission he flew in 1973 remained in space for 84 days. "And when you're in a place for that length of time, you're no longer visiting. Although Skylab worked relatively well," he says, "as a place to live it wasn't exactly homey by anybody's standards."

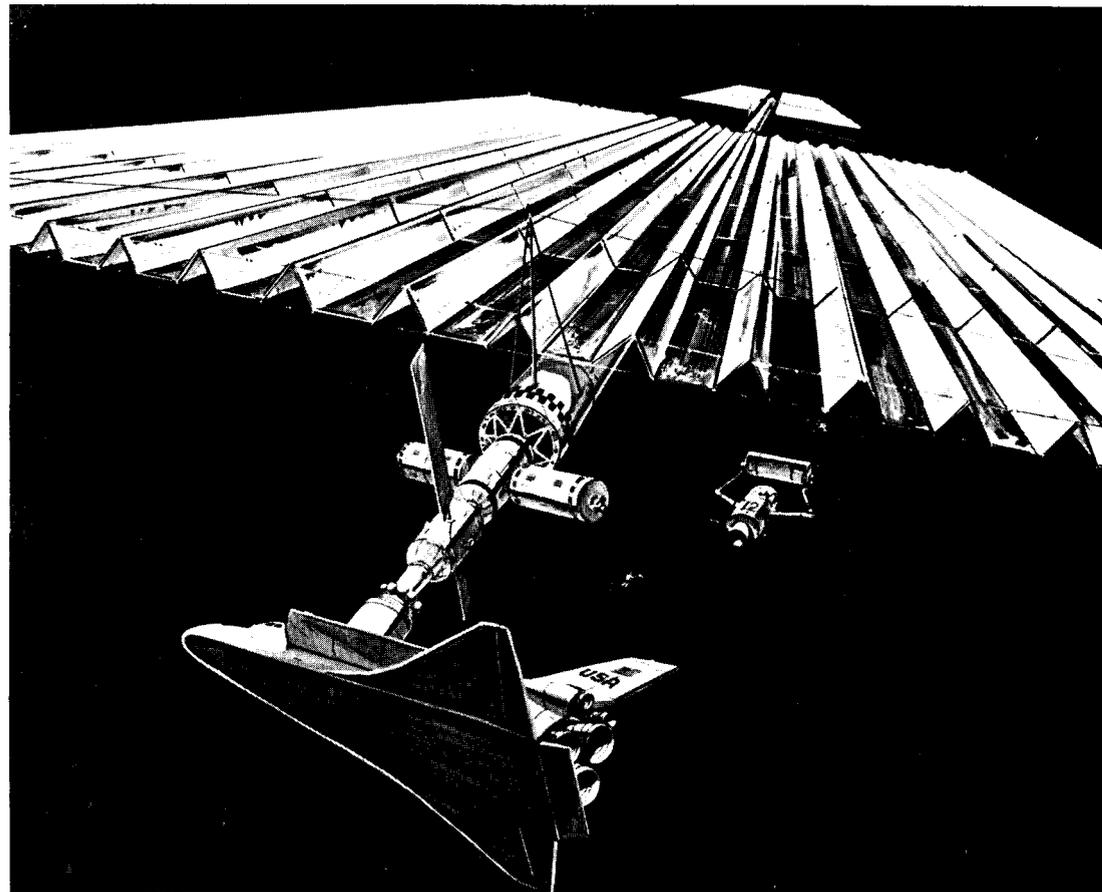
"As we move along in time," Schweickart continues, "we're going to see a transition, I hope, from the machine-like environment of Skylab toward structures and facilities that take into account the basic nature of human beings and their desire

for esthetically pleasing habitats." He is convinced that the domination of space activities by NASA has ended, or soon will, and that people from a variety of fields and disciplines will become more actively involved, including architects.

In thinking about what forms architecture in space might take, Schweickart muses that "new environments are always invaded at first by old thinking. When we started using plastic, we made it look like wood, and only gradually allowed it to look like plastic—and I'm no fan of plastic, by the way." In somewhat the same way, he anticipates that at first living environments in space will probably take on the appearances and forms of earth structures.

There are, however, certain characteristics of space which will alter design as we know it now. The first of these is, of course, weightlessness. Although earth's gravity will probably be simulated in some structures and especially in early space settlements, the work being done now indicates to Schweickart that some facilities will require weightlessness. "Manufacturing beams that are 10 miles long can

*A space shuttle attached to the construction base of this prototypical solar power station is delivering the equivalent of a crane or truck (with manipulating arms) to put parts in place. The troughs in the structure are solar cells, the inverted V-shaped elements are mirrors that reflect radiation onto the troughs to increase the amount of energy obtained.*



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## Weightlessness will offer 'a new freedom to deal with an architecture of volumes.'

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be accomplished only in a zero gravity environment," he says.

Because of earth's gravity, our architecture is planar rather than volumetric, he points out. "Architecture is the organization of surfaces. Look at this room. Everything in it is on a surface. Walls are simply there to hold up the ceiling, another surface. We don't talk about cubic feet in a building—though the heating and air-conditioning people might. We talk about so many *square* feet, the cost per *square* foot. By the time we get to the point of building and testing in orbit, there will be a new freedom to deal with an architecture of volumes."

Moreover, "zero gravity eliminates almost all concern for stresses induced by weight and mass. This almost boggles the mind in terms of how it relaxes design constraints."

The former astronaut's recollections of his own experience in weightlessness give an indication of how humans may respond to less than earth's gravity and how little we still know about the subject. Schweickart recalls that during preparations in Houston for the Apollo 9 mission, the command module was in an upright position, as was the lunar module.

Once in space, they were linked on the same plane in a horizontal position. "The first time through the tunnel from the command module you came into the lunar module upside down with your head emerging where your feet were during simulations on earth," says Schweickart. "Everything seemed upside down. That is, although you were weightless and just floating, there was a confusion of up and down, left and right—what side is that switch on? But then you quickly learned to say to yourself, as you went through the tunnel, 'reorient your own axis system,' and it was almost as though something physical happened. You could almost feel a kind of wrenching inside. Your whole system would go boynng, you would change, and everything would be okay. In talking with the guys who flew Skylab, I found they all did the same thing."

The way people respond to weightlessness may change with time, he adds, illustrating with a story about fish who were born in space and behaved quite differently in zero gravity than their earthborn parents. "Owen Garriott, who was on the second Skylab flight, took up a plastic bag with fish and water in it," he explains. "The fish always swam in large outside loops. The female gave birth to fingerlings and they never swam in outside loops, but

went wherever they wanted to go in straight lines across the bag. Their parents never quit swimming in loops."

A consequence of weightlessness which will profoundly alter the design of structures is the absence of convection in space. "On earth," says Schweickart, "the density of hot air is less than that of cold air, so hot air rises because it's lighter. That's a gravity effect and doesn't exist in weightlessness." With less than earth's gravity, very light and very heavy metals, which would instantly separate on the earth's surface, can be readily melted, resolidified and made into amalgams. "Up there you can mix all kinds of things," says Schweickart. "Theoretically, you can take steel or magnesium and inflate it with gas and form metal parts of almost any density."

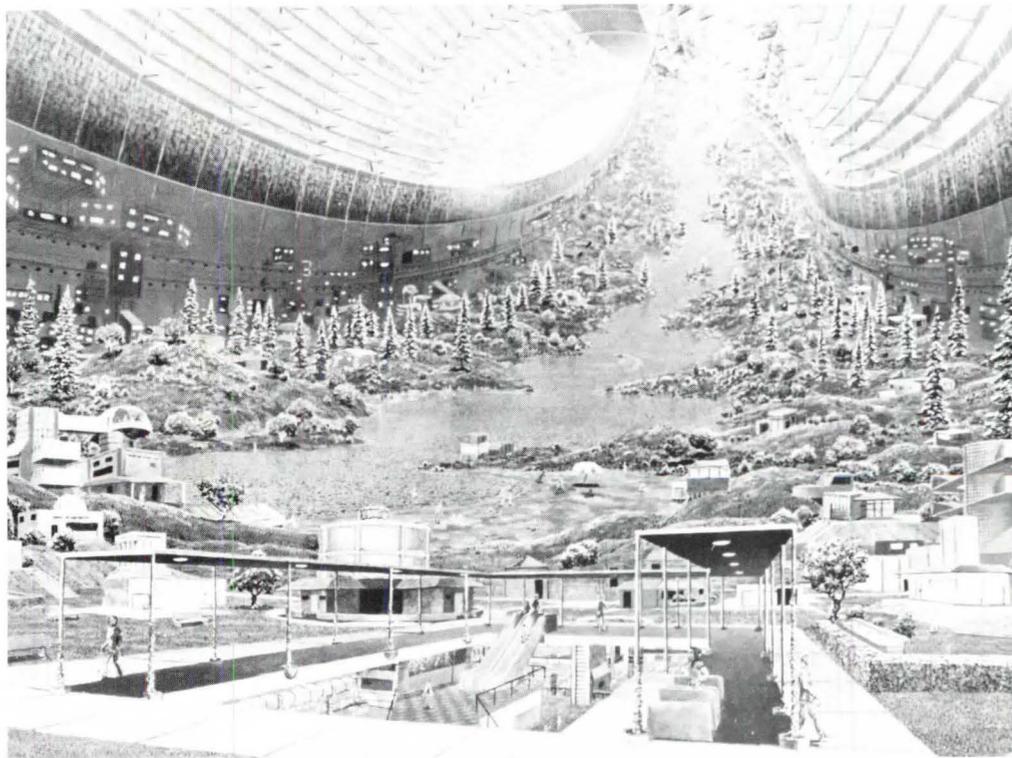
Another characteristic of space which will deeply affect design: The predominant stress on large structures is thermal rather than the pull of gravity. "You have near zero radiation on one side," says Schweickart, "and direct exposure to the sun on the other. And if you're going in and out of the earth's shadow, there will be strong heating and cooling effects which become a primary dynamic force." Moreover, if the structure is provided with artificial gravity by being made to rotate, rotational pressure will become an important factor in design.

What might be the nature of the self-sufficient ecological systems that Schweickart is convinced will exist in space in the

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*Artist Don Davis' conception of a space settlement, created at NASA's Ames Research Center, San Jose, Calif., in conjunction with a summer workshop on space colonization.*

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future? He can only point out that present thinking tends toward one of two extremes. One group of people foresees what Schweickart calls "a mechanical monster where everything is done by pumps, filters, fans, purifiers and molecular sieves." The other group contends that "you'll be generating an earth-like environment in total, most of which you bring with you." Schweickart's own guess is that a system (or combination of systems) between the two extremes may be adopted.

Schweickart is aware that some environmentalists view the idea of settling space with alarm. "They say that 'we've just begun to recover from the concept that the world is our plaything and we can mechanize everything and do anything we damn please with the environment. We're just beginning to realize that we are part of an ecological system here on earth and can't keep befouling our nest. And here you go again, NASA, moving off the earth, generating another frontier, the cowboy mentality all over again, using things irresponsibly.'

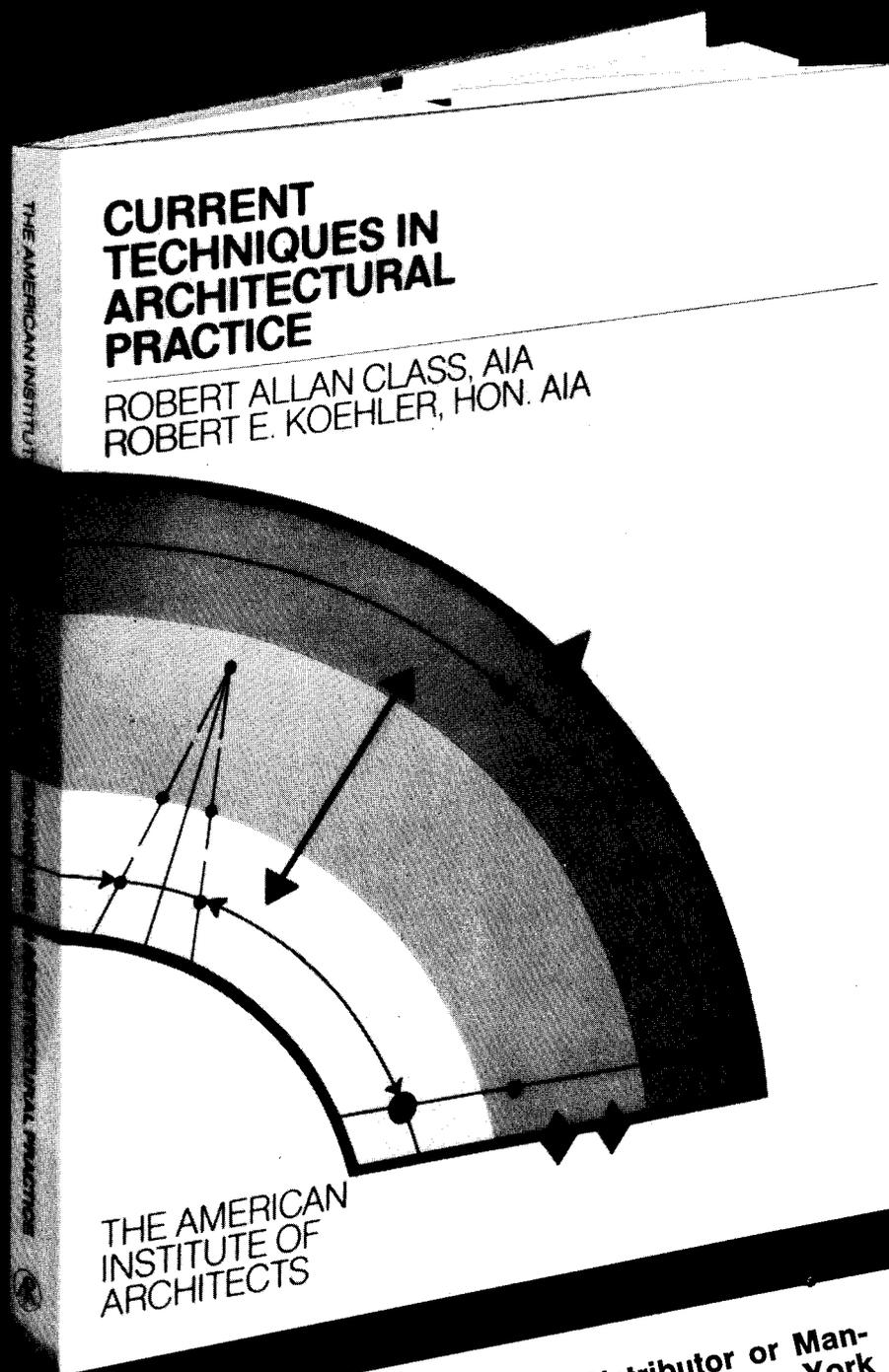
"I argue just the other way around," says Schweickart. "If you think of the basic nature of one of these hypothetical systems, you realize that the effect of its occupants on their environment is much more profound and immediate than on earth. Our earth is such a large system that we can continue downstream with ridiculous human behavior to the point where we're already 90 percent on the way to some absolutely unacceptable consequence before we see it. If you live in a spaceship, as I did, you learn to care for that ship in a way you never learn to care for the earth. Your life depends on it. The same is true here on earth, but we don't know it." □

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# Ethics Forum

*Final comments on proposed changes in AIA's ethical standards as they head for 1977 convention action.*

## 'The underlying issue is the question of professionalism.'

*Willard C. Pistler Jr., AIA*

Whenever architects come together to debate the proposed changes to the AIA Standards of Ethical Practice, the question of professionalism very quickly emerges as an underlying issue. Those who oppose changes in the present standards will invariably claim that contracting, advertising, free sketches, uncontrolled competitions, product endorsement and commission agents (to mention the principal points of controversy) are "unprofessional" activities, and therefore unbecoming to an architect. Often the debate reaches a fundamental impasse on this very point, since there is no clear understanding of just what professionalism really is.

For the past several months, I have been investigating the term "professionalism" in the hope that a working definition could be found which would provide a more substantial basis for evaluating our ethical issues than has been offered up to now. Dictionary definitions are generally simplistic to the point of uselessness.

I quickly learned that the search is not a new one, nor is it easy. Morris L. Cogan, in an article entitled "The Problem of Defining a Profession," has confessed that "to define 'profession' is to invite controversy. The concept is extremely difficult to identify and describe." He stops with the statement that "a moral code is the basis of professionalism." What moral code? Will any suffice?

R. M. McIver of Columbia University said that a profession is like a craft; it requires an intrinsic interest in both process

**Mr. Pistler** is director of construction management and engineering for the Greater Cleveland Regional Transit Authority and a former member of the Institute's board of directors. **Mr. Carter** practices in Sacramento, Calif. **Mr. Nelson**, who speaks as a non-AIA member, heads his own firm of Charles E. Nelson Associates in Newton, Mass.

and product, as distinct from profit. It stresses individual skill rather than organizational achievement and does not draw distinctions between capital and labor, employer and employee.

That makes the professions sound quite different from profit-motivated business enterprise and leaves us with the impression that making a profit is somehow immoral. Moreover, it creates a dichotomy between business and the professions which makes it difficult to encourage one without condemning the other. Somehow this whole approach to defining professionalism seems to be based on an antiquated view of behavior on both sides. It fails completely to accommodate such modern professional phenomena as group medical practices, the large corporate law office, or the major A/E firm with a national practice.

Does a large organization and a desire for profit compromise professionalism? Social philosophers such as Thorstein Veblen and John Dewey said it does, and so did novelists such as Sinclair Lewis and Cameron Hawley. But Alfred Sloan of General Motors said that professional integrity lies in the individual: "Find an ethical boss and you will find a company with integrity."

Rabbi Louis Finkelman, writing in *Fortune*, says: "No institution will survive if it is dedicated only to self-preservation. A business has a goal beyond simple success. It is not a biological organism whose survival is a virtue in itself. Rather it is a man-created institution, an integral part of our culture, and as such must make a contribution of service to society (as well as a profit for itself) if it hopes to survive."

I like those words because they seem applicable to all kinds of organizations, from a one-man professional office all the way up to a giant corporation. Also, they make sense in terms of one's own experience. But they tend to completely obliterate any distinction between business and professionalism, and that doesn't seem quite right either. Can't we define professionalism in a way that recognizes the universality of Finkelman's injunction, yet identifies some unique characteristics

that distinguish a profession from other human pursuits?

It seems we can. Professor Abraham Flexner of Harvard did it in 1915. In fact, he provided us with three levels of definition. The most general of these he termed "an historical or lexicological definition." It says that a profession must have:

- intellectual operations coupled with large individual responsibilities;
- raw materials which are drawn from science and learning;
- practical application;
- an educationally communicable technique;
- a tendency toward self-organization;
- increasingly altruistic motivation.

Try that definition on today's practice of architecture and see if it doesn't fit very neatly yet comfortably. And see if it doesn't also make a reasonable differentiation between professionalism and business without drawing a hard and arbitrary line, and without implying that all non-professionals are charlatans.

Finally, see if any of the proposed changes in AIA ethics would force the practice of architecture outside of this definition. I don't think so. The proposed changes, and even the allowance of paid advertising, appear to be permissible within the broad basic tests of professionalism Flexner has given us.

His second level of definition is "persuasive" in nature. It seeks to define a profession in terms of commitment to the public good, so as to win public respect and credibility. The physician's Hippocratic oath is an example of such a definition.

There is a comparable statement for architects which was offered by Turpen Bannister in *The Architect at Mid-Century*. It has never been used, but it could be. Notice how well it meshes with the first definition:

"Humbly and proudly I profess my competence under the discipline of architecture.

"Upon my honor I promise unending devotion to the task of continually studying, learning, seeking, experimenting, that I may become ever better educated and trained for my work.

"Upon my honor I promise to my community undeviating adherence to the ideal of service to my fellow men, as the goal of my effort, that I may honestly and fully earn my living—my right to live among them.

"Upon my honor I promise to maintain that integrity in practice which will ensure to each client the finest possible stewardship of his interest.

"Upon my honor I promise in the execution of every commission to strive to create beauty as well as order, character as well as safety, spiritual value as well as convenience.

"Upon my honor I promise to join with my fellow architects to make our profession of the greatest possible usefulness and benefit to our society, to share and disseminate all valuable professional knowledge, and to pass on to the succeeding generation the full and fine discipline of our profession, enriched because of my dedication."

Once again, the moral commitment this oath requires is a sweeping one which does not deal in the minutiae of daily practice, but there is nothing in it which would prevent the proposed changes in ethical standards.

What then of Flexner's third level of definition? He calls it an "operational" definition, which meets the need for something observable and measurable. Here finally is a set of working rules for one's everyday activities, except that Flexner leaves it up to each profession, at any given point in time, to determine its own operational definition by way of educational and licensing requirements and rules of conduct. In short, there is no absolute operational definition of professionalism; it is whatever we wish it to be, so long as it meets the test of the other two definitions.

Conclusion: Those who would change the AIA ethical standards may pursue their convictions with assurance that there is nothing inherently unprofessional in doing so. Indeed, it is implicit that an operational definition will require changing from time to time, as the circumstances surrounding the practice of architecture continue to change. The real challenge is to discover that set of working rules (ethical standards) which will be most appropriate in a given time and place to the achievement of the loftier goals recited above.

## Against advertising, promotion and solicitation.

*John Harvey Carter, AIA*

To continue the discussion of ethics, we might ask ourselves: If we were in need of a serious operation, would we select the doctor who knocked on our door and said he was a great surgeon? Or, in need of legal advice, would we pick a lawyer on the same basis? Hardly. Soliciting work, in my opinion, is the single greatest evil of our profession. I am not naive enough to think it will stop, but we owe our potential clients and the cause of architecture a better shake.

The truth is that most architectural selection is based on the ability to solicit work and has nothing to do with architec-

tural capability. How many firms can you name that are mediocre and yet have a great deal of work because of their promotional efforts?

Would it be naive to suggest that AIA advertise extensively to promote the profession of architecture, but that individual advertising and soliciting be prohibited? We could have regional selection teams, perhaps on a chapter basis, with carefully prepared ground rules that would permit the client to make the final selection from several qualified firms. If we took one-tenth of the money spent by many firms and diverted it to promote the profession and not individual firms, we could greatly increase the quantity and quality of work performed by architects.

Solicitation and promotion, beside being demeaning, is expensive and frequently counterproductive. It would seem that AIA is at a crossroads. We will either become truly professional or fall farther into the trap of individual advertising and soliciting, with the ultimate end being, of course, pure commercialism.

At least it is time to stop kidding ourselves about what professional ethics is all about.

## In favor of involvement of architects in construction.

*Charles E. Nelson*

I have followed with great interest the JOURNAL's airing of the ethics question; it is the most vital reading in any architectural publication today.

John McGinty, FAIA, identified precisely the crux of the ethics question in focusing not on "what we do," but on "how we do it." [See Aug. '76, p. 31].

The most common stance of AIA ethics thinkers seems to be that of working toward an ethical code acceptable principally to the AIA membership, as opposed, say, to the ethical interests of the "client body" (without whose support there is nothing to have ethics about) or, perhaps, the ethical interests of the non-AIA architectural world. There are many reasons why architects choose *not* to belong to AIA, but one of the most important, surely, must be the existing unrealistic and obsolete ethical code. Unless AIA wishes to be "elite," as Harley B. Fisk, AIA, said it was in 1950 [Oct. '76, p. 64], then AIA must think in terms of the entire architectural community as potential AIA members and on this extremely important question should solicit opinion from those on the outside.

In my teaching experience at the Boston Architectural Center, I was struck by

the high percentage of students who have evidently thought about the kinds of architects they want to become and who, specifically, want simultaneously to gain professional architectural skills and general contracting expertise. They see it, perhaps naively, as a continuous and integral process that should be studied and practiced as a whole. What shall AIA say to these young people?

One of the weaknesses of the profession is that too many architects have an embarrassing lack of knowledge about the methods by which their designs might be realized. I firmly believe that a year in a construction trailer should be a mandatory prerequisite for fourth-year design studio. I find, on reflection, that I agree with those students.

I have returned to direct involvement in construction, partially for reasons of potential financial gain. That interest, however, is clearly overshadowed in my mind by the long-considered conclusion that a complete synthesis of the *vision* and the *fact* of building is possible, desirable and even necessary.

In this admission and belief is the root of the question of professional ethics. I don't think it is possible to separate the promotion of one's own needs from one's conception of the needs of those who might fill them. Let's face it: The architect working on a percentage has a vested interest in selling his client as much architecture as possible; his enthusiasm is tempered only by what he thinks his client can afford or reasonably use. The architect working on an hourly basis has a vested interest in preparing the most detailed, comprehensive and carefully worked out documents. The architect working on a fixed fee has a vested interest in giving as little as possible to satisfy the client that he has earned his fee. The architect working on speculation is a kind of gambler who is motivated by desperation, visions of glory and/or mirages.

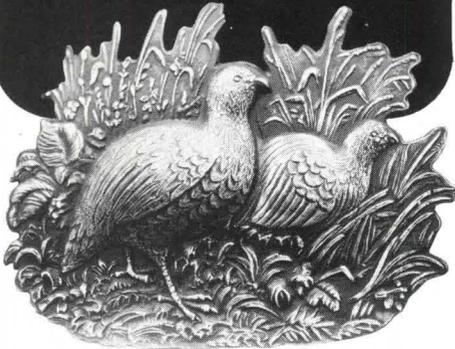
Actually, the above picture is probably inaccurate—but not because of any professional pious self-proclamations of higher values and moral purity. Perhaps fact lies closer to the idea that architecture is such a hard-scrabble profession that it would never attract greedy entrepreneurs—only visionaries need apply. If any real hustlers wander in by accident, they catch on quickly and switch to being package HVAC contractors or the like.

Perhaps if AIA accepted the premise that it is unrealistic to try to avoid conflict of interest (it is inherent in our professional lives) and then proceeded to design a code of ethics that addressed itself to the resolution of conflicts of interest, we might be better off.

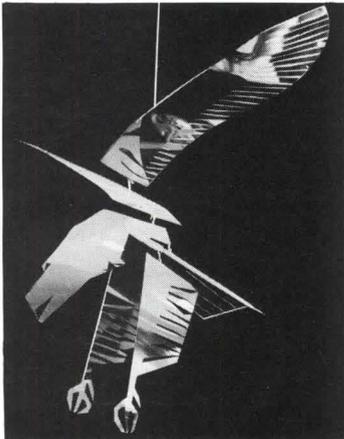
I am troubled by the very idea of the architect setting himself up as the judge

*continued on page 64*

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### *Ethics from page 63*

and arbiter between two parties who are presumed to have mutually exclusive interests, even though I do this myself with each commission. I find that position intrinsically offensive. For one thing, I cannot possibly see how an architect can assume that he will exercise his best efforts to ensure faithful performance by both the owner and the contractor, not showing partiality to either, when he is paid by the owner. Does one presume the owner would buy that concept if the architect were paid by the contractor?

There is also something reeking faintly of elitism in this position: Architects have a tendency to talk as though they are different from contractors, and the tone is that they are "more moral than." Perhaps this attitude is fostered by the fact that architects tend to take the contractors to task for nonperformance more often than they do the owners. If they were truly impartial, obviously they would do so only because the contractors were more often negligent in performance than the owners. I am suggesting that the inherent conflict of interest tends to warp the architect's sense of impartiality.

Prosperous, secure contractors credit their success not to submitting the lowest bids, but to giving full value, to honorable performance, to happy, repeat customers. So do prosperous, secure architects; so do all kinds of businessmen.

Contractors deal with questions of ethics on a daily basis, and architects are too quick to assume that contractors deal only short-sightedly with ethical questions; that is to say that contractors might tend to put immediate financial gain ahead of a reputation for integrity. Architects also face ethical questions frequently, but those in the field probably face them much more often than those cloistered in offices.

The nature of our business is that it is impossible to avoid opportunities for financial gain at our client's expense. The only difference for the designer/builder is that he faces a much broader array of opportunities to cheat the client. His reward for resisting these opportunities will be the growth of a reputation for integrity. His price for failure will be the loss of a chance for that reputation. His fortunes are certainly more closely related to his reputation than to the manipulation of his contracts. Is that so different from the situation of the traditional architect? Do we hang our hat on good design or on fair dealing?

My own opinion is that a person of dignity and pride will exhibit those qualities whether or not he is in a position of potential conflict of interest. A person without those qualities will not be one iota improved by giving lip service to a neat ethical code.

Slow curve ahead: I believe our whole ethics-mumbling is not at all a function of the beguiling temptations of the marketplace, but rather a function of a quasi-religious, self-denial/guilt connection that pervades the whole of Western thought. If we abandon the more or less capitalist attitude that whatever most benefits us also simultaneously detracts from those with whom we trade, and substitute it with the concept that whatever benefits our clients most also benefits ourselves most, then ethics becomes a positive teacher rather than a negative question.

I change hats from architect to builder, sometimes wearing both when it suits the interests of my clients. My experience is that being financially involved in construction is one of the most illuminating things that can happen to the design consciousness. Architects ought to forget about being tempted to take advantage of their clients. They ought to think of the possibility of falling into the grips of greed as a necessary precondition to the greater ethic of reaching for the fullest and most comprehensive inter-relationship of two parties, each of whose interests is best served by the self-interest of the other.

When a design change that no one but the designer will ever see comes right out of the designer's pocket, then the designer thinks twice about the "true" value of that change. Does the designer think so poignantly about the value of a design that comes out of a client's pocketbook?

I am experimenting with single responsibility design-build, performance-oriented contracts. This means that the client says, "I want this effect, I can pay this money." My goal as architect/builder is to create that effect as powerfully as possible, to fill that program fully and to do as few schemes and use as little labor and materials in as short a construction time as possible. On the result rest *both* my reputation and my fortunes. This impetus makes all the old dogma about good design seem archaic, even obsolete. Out of this complex experience comes a new sense of the professional ethic: a responsibility to be truly efficient in the use of time, materials, labor, even ideas. And this sense of responsibility is devoid of adversaries and antagonists. When I win, the client wins. I lose, he loses. Mistakes take on a new dimension; no longer can the pointed finger seek a victim.

One can only swallow hard and keep going.

I believe that the greater the breadth of responsibility, the greater the chances to abuse and undercut that responsibility. A conniving and avaricious architect will be a conniving and avaricious designer/builder. An incorruptible architect will be an incorruptible designer/builder.

As McGinty says, it is not what we do but how we do it that counts. □

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**Frank Lloyd Wright's Usonian Houses: The Case for Organic Architecture.** John Sergeant. New York: Whitney Library of Design, 1976. 207 pp. \$24.50.

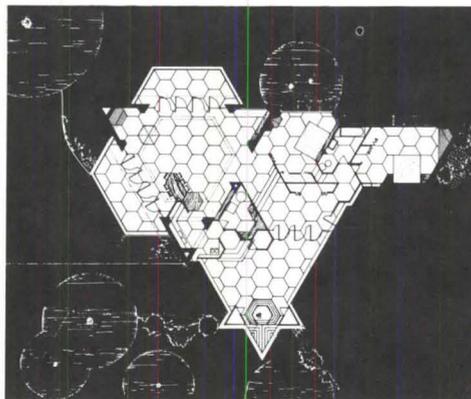
Something happens when you read about Frank Lloyd Wright's little houses that makes you want one. These are not his well-known Prairie houses, but his later, smaller homes which he called "Usonians." They were designed between 1936 and 1943 to meet tight budgets, but great expectations.

Sergeant's book presents an unusual opportunity to look at this period of Wright's work, and these fine houses, in particular. The Usonians are studies in economy—economy of cost gained through economy of design. The first one was the Herbert Jacobs house in Madison, Wis., 1,500 square feet, built in 1936 at a cost of \$5,500. Twenty-six Usonians were completed and 31 more were designed but not built. The Jacobs house and those that followed shared a modular planning grid, board and batten wall construction, and radiant heating provided by hot water pipes sealed into a concrete "floormat." There were no radiators, no basements, no attics, no downspouts and no gutters, and there was no plaster and no paint. Even in Wisconsin, there were no garages; cars did not require a room, Wright thought, so he devised carports for them.

Wright simplified the construction process to permit people to build as much of their houses as possible themselves. He simplified the components to make maximum use of prefabrication, though building codes hindered his efforts, and banks were reluctant to invest in such avant-garde features as cantilevered roofs and unpainted woodwork. Wright also asked his clients to simplify their own needs to make their living arrangements compatible with the design. The Usonians definitely were not designed for families with many possessions. Actually, for those lucky enough to own them, the houses themselves became most prized possessions. In 1940, Wright designed a house overlooking the Des Plaines River in Libertyville, Ill., for his friend Lloyd Lewis. "The tragedy that befell so many of my clients," Wright wrote, "happened

to the Lloyd Lewises. They just liked to stay in their house and didn't care to go out anywhere unless they had to."

Economy of design did not mean a lack of architectural innovation. In particular, Wright used these projects to explore new ways of conserving energy. He said his houses airconditioned themselves, and nearly all of his clients agreed. With careful site planning to catch breezes, and flat, overhanging roofs to create shade, he relied on the thermal mass of masonry and concrete to minimize extreme changes in hot and cold. He also relied on his



clients to dress properly for cold weather and not to expect their heating system to do the job of a sweater. As American homeowners scrutinize their thermostats 40 years later, there is much to be learned from Wright's experiments with what he called his "solar-hemicycle," a curved house built into an insulating hill of earth or rock on its exposed north side and glazed to amplify sunlight on its south side. As an example of this type, Sergeant illustrates the second Jacobs house, designed in 1943, but this and the others like it deserve much more in-depth attention than the glimpse that Sergeant provides.

Natural materials, exposed brick and cypress wood, used most of the time, gave the Usonian interiors a cozy and comfortable feeling. Scaled small, they had a remarkable spaciousness, due largely to the way Wright managed to create a flow between the inside and the surrounding exteriors.

The house plans, showing the intricate interlocking geometry of each design, are probably what makes this book most valuable to architects. Sergeant, a British

architect, visited the houses and put together this first such published selection, despite the fact that nearly all of Wright's plans, working drawings and papers still remain inaccessible in the archives at Taliesin. The many black and white photographs of the houses are essential companions to the plans. Obviously, it was difficult for the author to locate all the photographs he would have wanted, and the quality is not uniformly high. Some look as if he took them himself with a telephoto lens while concealed in a far-off shrub. Still, the visual materials alone make the volume worthwhile.

The text is more of a collection of facts and figures than a unified book. It does not pretend to be a biography but would benefit from a more complete picture of Wright and his work before the 1930s. The most intriguing tidbit about his early years is the reference to the Froebelian blocks he played with as a child and the way they set him thinking in terms of geometric modules.

Sergeant tries hard to separate the Usonian houses into categories according to shape, with "polliwogs," Ls, Ts, "heads" and "tails" in various combinations, but it is really the plans themselves which best reveal the underlying geometry. The Sundt house, for example, is based on a hexagonal module with layers of overlapping triangles. Sergeant notes that its "acute corners were to be brick masses containing fireplaces, ducts and storage." Although it was never built, Sergeant wisely includes its plan (left) and model. The dramatic geometry of the Sundt house bears a striking resemblance to I.M. Pei's addition to the National Gallery of Art, now under construction in Washington, D.C.

The booklet *The Pope-Leighey House* (published in 1969 by the National Trust for Historic Preservation) is a logical mate to Sergeant's overview. Loren Pope asked Wright to design for him a "Jacobs-style house" for \$5,500, and Wright designed the house in 1940. Taliesin released architect-client correspondence and drawings for the booklet, which also contains observations by the two owners, the Taliesin supervisor of construction and

*continued on page 72*



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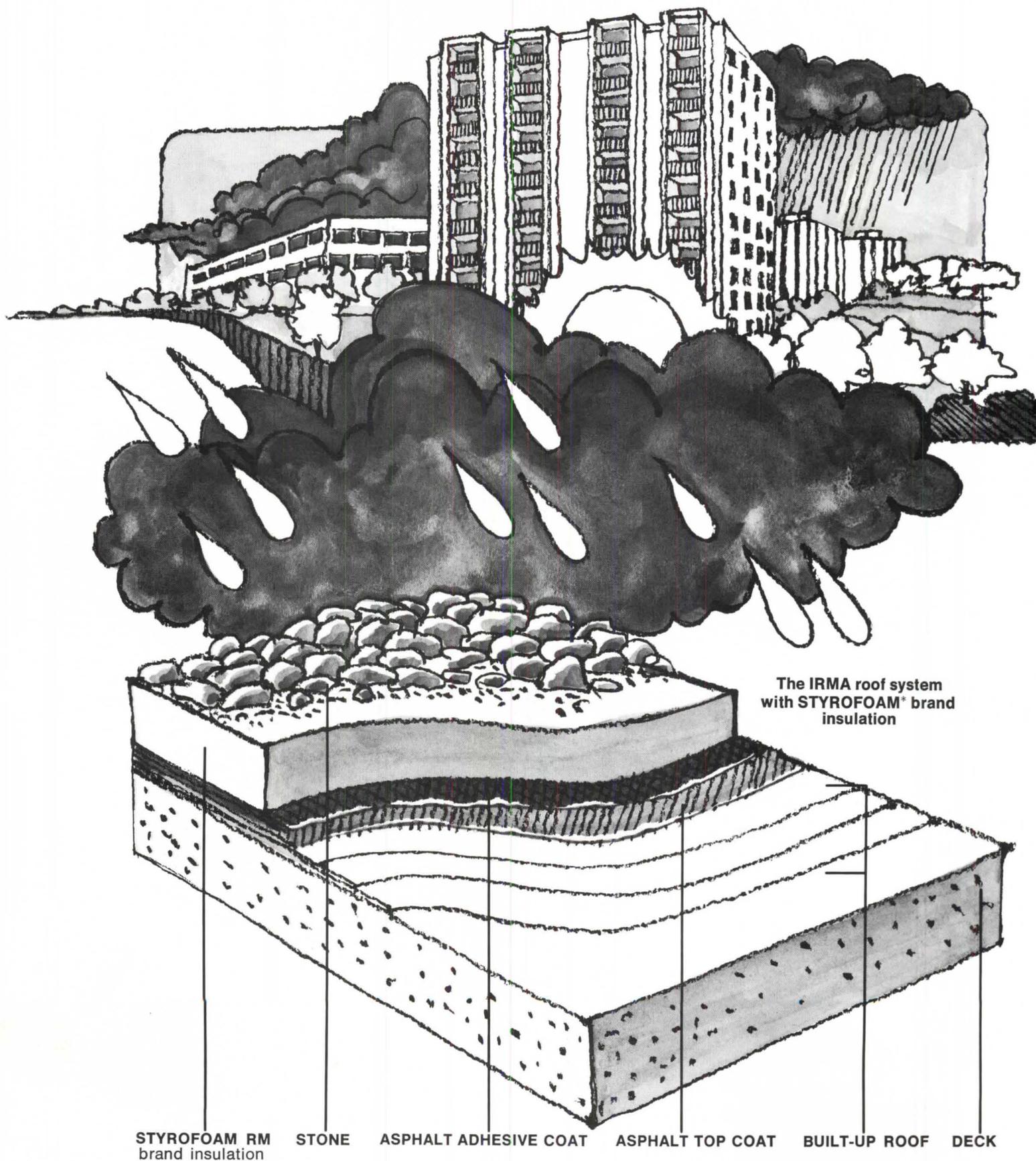


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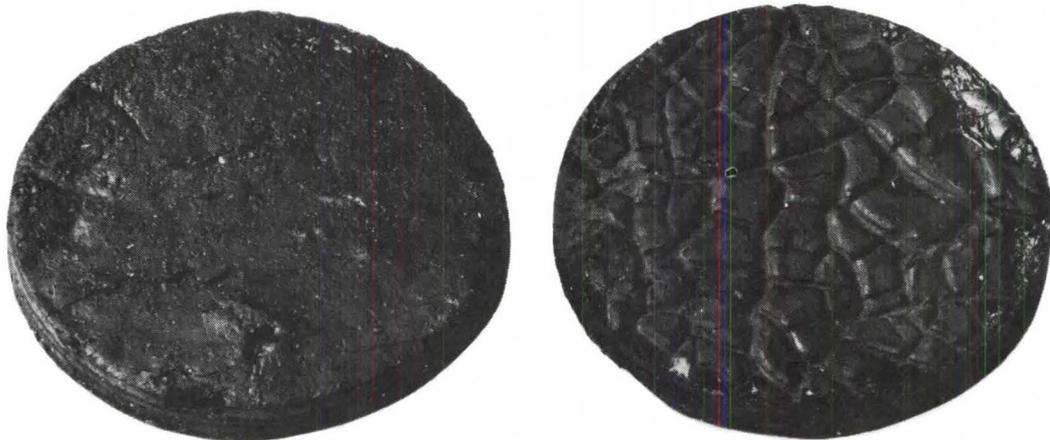
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*Books from page 68*

the master craftsman who built, dismantled, moved and rebuilt the house on the grounds of Woodlawn Plantation near Mount Vernon, Va.

Mrs. Marjorie F. Leighey, the second owner, offers a concise and moving comment on what it feels like to live in the house and the extraordinary demands it places on its occupants. "Comes a time of rebellion," she says, "an anger at any dwelling-place that presumes to dictate how its occupants live." It was not easy to live with no storage space, to entertain at most four guests for dinner or to do the laundry with no washer or dryer. But she and her husband accepted Wright's challenge, and gained a sort of spiritual satisfaction through it. These collected comments on the actual experience of creating and living in a Usonian house offer the best possible case for organic architecture. *Jane Canter Loeffler, Consultant in Planning and Design, Washington, D.C.*

**A Gift to the Street.** Photographs by Carol Olwell, commentary by Judith Lynch Waldhorn. San Francisco: Antelope Island Press (P.O. Box 31508, San Francisco, Calif. 94131), 1976. 212 pp. \$12.95.

This first publication of the Antelope Island Press is a handsome and com-

mendable contribution to the study of Victorian architecture. San Francisco has been blessed with its many carpenter-built



houses of the late 19th century, and here they are portrayed in all their glory. The commentary is readable and informative prose, and the illustrative materials, including details of doorways, windows, columns, newel posts, etc., add tremendously to the reader's pleasure. Congratulations, Antelope Island Press!

**Architecture, Problems, and Purposes: Architectural Design as a Basic Problem Solving Process.** John W. Wade. New York: Wiley, 1977. 350 pp. \$20.

Not many people who have written about design as "problem solving" have shown the respect (perhaps even reverence) that Professor John W. Wade, AIA, of the University of Wisconsin, Milwaukee, holds for the strengths of the traditional so-called intuitive process of designing buildings. He believes that the crucial element of design, the creative imagining of forms and spaces, remains a mystery resistant to analysis. The stated purpose of his book is not to provide a method or theory for design, but to provide a better way to analyze and explain the results of the design process.

Wade draws upon the concepts and vocabulary of systems analysis, decision theory and behavioral science for his method of describing and explaining architectural design. Although the book is liberally larded with examples of familiar design problems, Wade's main points are made at a rather high level of abstraction, such as one usually finds in discussions of scientific theory. And, at that level, the analysis is often elegant.

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*continued on page 77*

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## Reference points

**Studies in Italian Renaissance Architecture**

by *Wolfgang Lotz*

Introduction by *James S. Ackerman*

Wolfgang Lotz acquired his training as a scholar in his native Germany, and he has been for a number of years Director of the Hertziana Library in Rome, a major research center in the field of Italian art. All but two of the nine essays in this volume originally appeared in German or Italian and are now available for the first time in English.

The essays are illuminated by 130 illustrations, many of them plans and perspective and elevation drawings executed during the period.

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**The Mathematics of the Ideal Villa and Other Essays**

by *Colin Rowe*

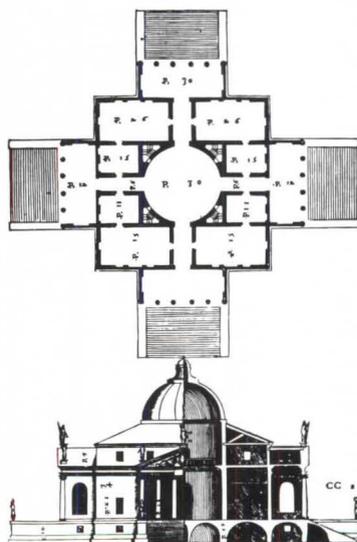
Charles Jencks wrote in *Modern Movements in Architecture* (1973): "... when Colin Rowe published his article 'The Mathematics of the Ideal Villa' in 1947, those who had been following the emergent Neo-Platonism, that is, those close to the Warburg [Institute], were not surprised. Here was New Palladianism fully born right from the top of Corbusier's head."

In addition to this influential essay, the book contains eight others on architecture, classical and modern.

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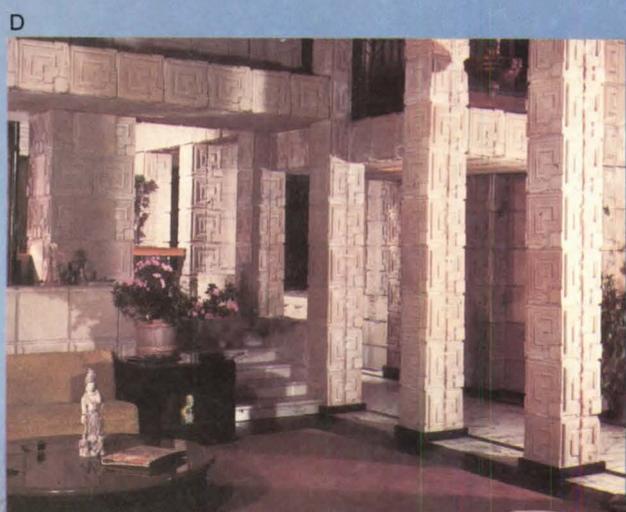
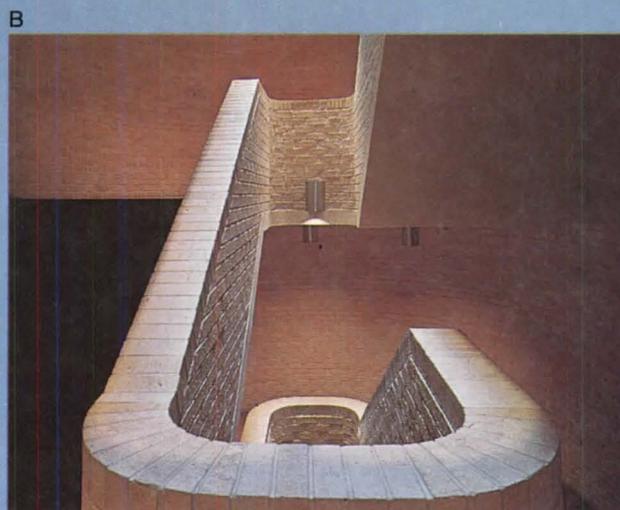
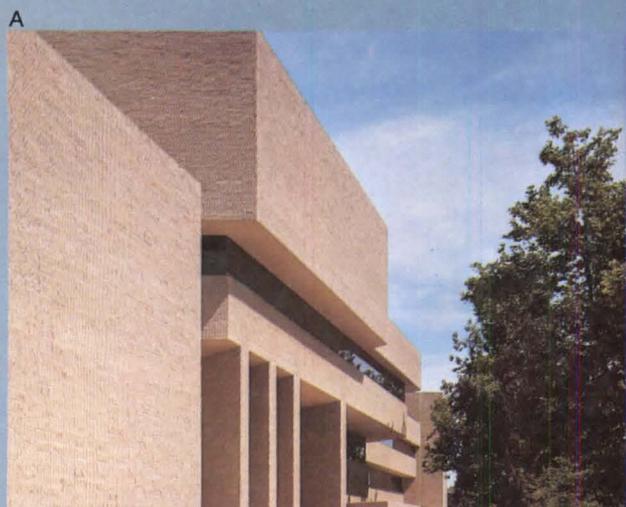
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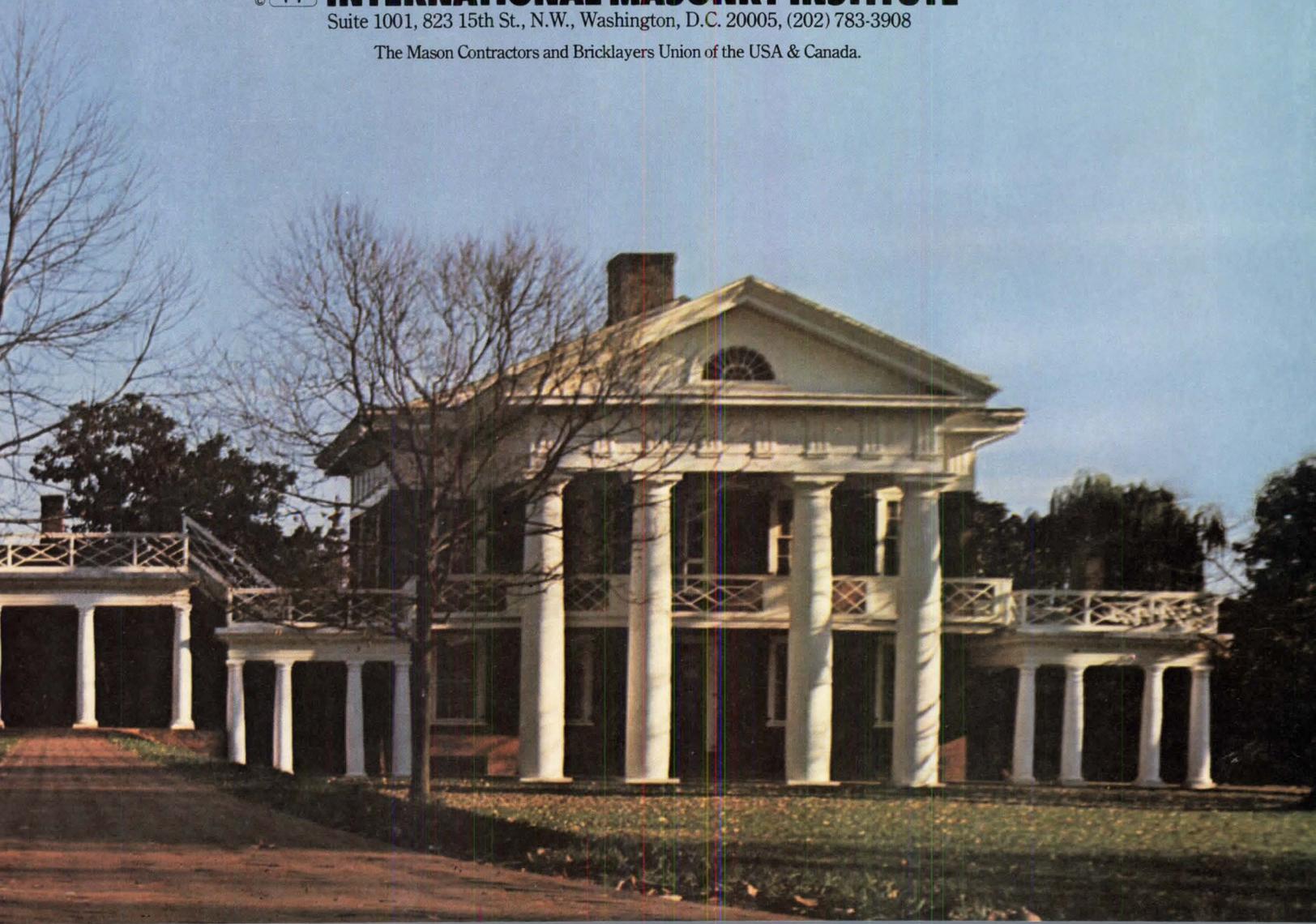
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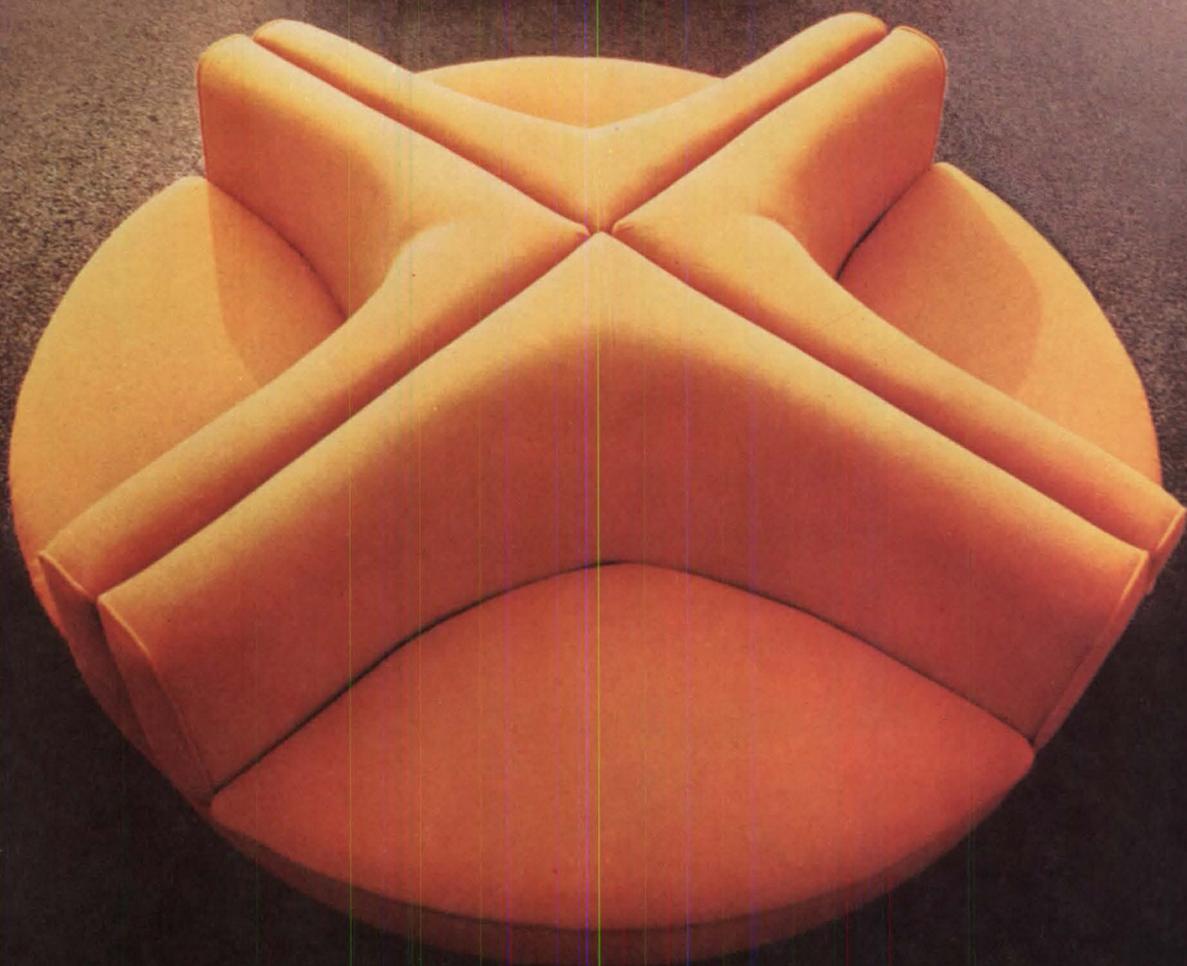
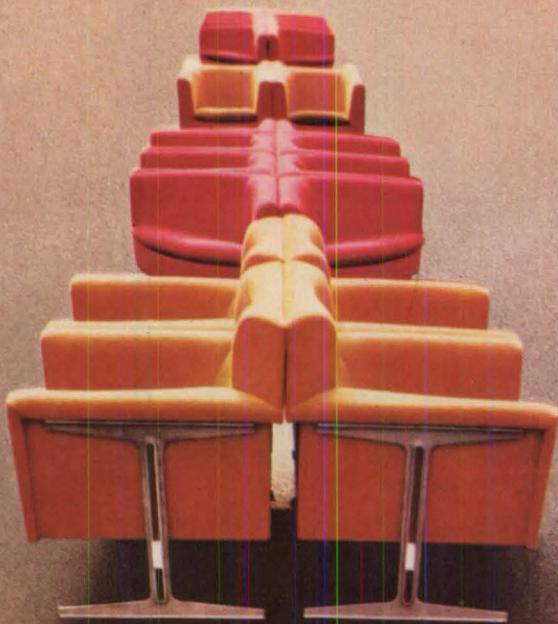


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*Books from page 72*

are numbered so that the lay reader can absorb the essence of the ideas, described in rather straightforward language, and skip the explanatory sections, directed at more experienced designers, and the so-called technical discussions, aimed at what Wade calls "serious students."

These technical discussions make up the bulk of the book and constitute its distinctive contribution. I am not sure why anyone who does not come to the book as a "serious student" would have the motivation to read it as he or she would be obliged to skip over the real meat. Wade points out that it is advisable to read as many as possible of the excellent selection of references provided. For a beginner with scholarly inclinations, this might require a year of dedicated and sometimes difficult reading. The more casual reader might need some years to learn to follow the specialized vocabulary which is used.

Nevertheless, the book will repay any amount of intellectual effort the reader may want to bring to it. Wade has used well his years of experience as a teacher to knit together ideas from three fields of study that are not easy to relate: architectural practice, decision theory and behavioral research.

In the introduction, Wade claims that the use of the combination of concepts

from these three fields will make more telling communication possible for the architect and bring the designer respect and credibility that is being lost to the profession. There are some signs that Wade may be quite right in this judgment. In fact, over the last 10 years many practitioners have drawn upon concepts from these other disciplines to help explain their designs to clients: systems analysis for the more bureaucratic, public agency or industrial clients and behavioral research for those who want the traditional humanistic explanations to have the reassuring imprimatur of science.

For anyone who would like to use these modes of explanation, John Wade's book will help them do so with a higher level of sophistication and coherence.

*Bernard P. Spring, FAIA*

**The Architect as Developer.** John Portman, FAIA, and Jonathan Barnett, AIA. New York: McGraw-Hill, 1976. 202 pp. \$22.95.

This handsome book, with its many photographs and drawings, is a record of John Portman's accomplishments as architect and developer.

In the opening section, Jonathan Barnett gives the highlights of Portman's career, telling of his achievement of prominence in the architectural and business world. Portman himself, in the sec-

ond part, describes the principles of design he has employed in the creation of his structures. A final section describes how architectural and investment decisions can be intertwined advantageously. Architect readers of the book will be particularly interested in the detailed case study of Portman's Peachtree Center Plaza Hotel in Atlanta which serves to combine the architect's methods and philosophies.

**Streetscape Equipment Sourcebook: Lighting, Traffic Control, Paving, House-keeping and Amenity, Signage, Safety and Security.** Center for Design Planning. Chicago: American Public Works Association, 1976. Unpaged. No price given.

Harold Lewis Malt, executive director of the Center for Design Planning, compiler of this book under a grant from the National Endowment for the Arts, is also author of the acclaimed book entitled *Furnishing the City*. He says in the introduction to this sourcebook that the term streetscape was used in his earlier book, suggesting that it means "perception by the pedestrian or motorist of the urban environment as an aggregation of all its elements."

This sourcebook is a compilation of streetscape items, or street furniture items. They have all been selected for

*continued on page 84*

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beautiful  
wood ...**

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STAINS**

Here is wood at its wonderful best. Cabot's Stains, so easy to apply, accent the grain, protect and beautify in a choice of 87 unique colors. Stains enhance the natural beauty of wood, are readily applicable to all surfaces: textured, smooth, or striated. A stained surface grows old gracefully, never cracks, peels, or blisters. Today the trend is toward stains ... Cabot's Stains.



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Cape Cod home; Architects: Bedar & Alpers, Boston, Massachusetts; treated with Cabot products.

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Circle 22 on information card

# Maybe the old address



Owner: Houston Chronicle Publishing Co./Architect: E. W. Slater/Curtainwall & Glazing Contractor: Binswanger Glass Co., Houston/General Contractor: A. M. Oakes & Co./Photos courtesy of Houston Chronicle.

*Circle 23 on information card*

# deserves a second look.

The location was ideal. But the Houston Chronicle Building looked as out of date as last year's newspaper.

The architect's solution? A "face-lift" with LOF Vari-Tran® coated glass. The home of the Chronicle was suddenly the talk of the neighborhood.

But Vari-Tran's beauty is more than just skin deep. Available in a wide variety of shading coefficients as well as colors, Vari-Tran can also reduce heat gain and cut air conditioning costs.

Maybe you know a building that could use some good news. A lot of people take note when creative architecture comes to the rescue of older neighborhoods.

For more information, write Ralph Hayward, Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43695.



# LOF



**NATIONAL BANK OF COMMERCE**, Lincoln, Nebraska.  
**Jury Comments:** "The clarity of the total building is well-achieved through the use of simple structural forms and proportions... reinforced concrete has been excellently exploited (in) large entrance."  
**Owner:** NBC Company, Lincoln, Nebraska.  
**Architect:** I. M. Pei & Partners, New York, N.Y.  
**Associate Architect:** Davis Fenton Stange & Darling, Lincoln, Nebraska.  
**Structural Engineer:** Weiskopf & Pickworth, New York, N.Y.  
**General Contractor:** H. C. Beck Company, Phoenix, Arizona.



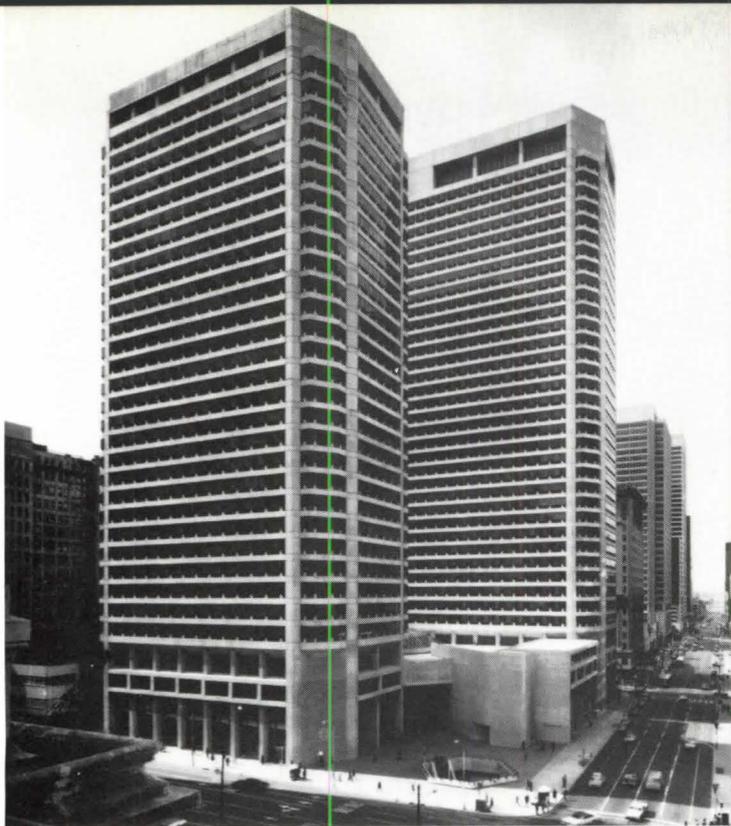
**HEADQUARTERS BUILDING, ARAPAHOE CHEMICALS, INC.**, Boulder, Colorado.  
**Jury Comments:** "Although there is a mixture of spaces, the visual unity achieved looks as though they were made for each other... an energy-efficient building with judicious use of glass."  
**Owner:** Arapahoe Chemicals, Inc., Boulder, Colorado.  
**Architect and Structural Engineer:** A. M. Kinney, Inc., Architects and Engineers, Cincinnati and Denver.  
**General Contractor:** Centric Corp., Lakewood, Colorado.



**NEW NORTH COMMUNITY SCHOOL**, Springfield, Massachusetts.  
**Jury Comments:** "Pleasant, cheerful, and exciting in spite of almost impossible site... top lighting and skylighting create bright, attractive interior surfaces."  
**Owner:** Springfield School Building Commission, Springfield, Mass.  
**Architect:** Perkins & Will Architects, White Plains, New York.  
**Structural Engineer:** Perkins & Will Architects, Engineering Division, Washington, D.C.  
**General Contractor:** Daniel O'Connell & Sons, Holyoke, Mass.

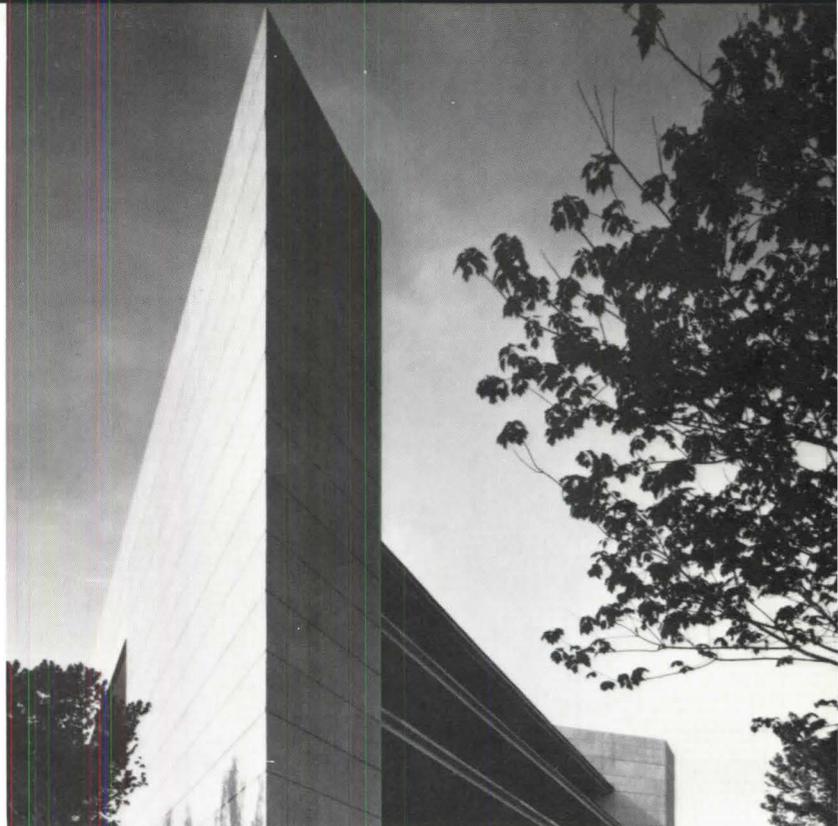


# Announcing the 1976 CRSI Design Award Winners.



**CENTRE SQUARE**, Philadelphia, Pennsylvania.

**Jury Comments:** "The linking together of the two office towers (with) the galleria becomes an exciting experience... lower levels are uniquely alive."  
**Owner:** Centre Square, Inc., Philadelphia, Pennsylvania.  
**Architect:** The Kling Partnership, Philadelphia, Pennsylvania.  
**Structural Engineer:** Farkas, Barron & Partners, New York, New York.  
**General Contractor:** Tishman Construction Company of Pa., Inc., Philadelphia, Pennsylvania.



**WOODRUFF MEDICAL CENTER ADMINISTRATION BUILDING**, Atlanta, Georgia.

**Jury Comments:** "Bold, dynamic architectural solution... use of concrete, both structurally and as a finish material, is sympathetic to functional needs."  
**Owner:** Emory University School of Medicine, Atlanta, Georgia.  
**Architect and Structural Engineer:** Heery & Heery, Architects & Engineers, Atlanta, Georgia.  
**General Contractor:** Batson-Cook Company, Atlanta, Georgia.



**GATEWAY PLAZA**, Newport Beach, California.

**Jury Comments:** "Pleasant, relaxed, and varied setting... excellent example of an economical and straightforward approach... wide spans offer great flexibility."  
**Owner:** The Irvine Company, Newport Beach, California.  
**Architect:** Robert M. Thomas A.I.A. & Associates, Newport Beach, California.  
**Structural Engineer:** Robert Lawson, Newport Beach, California.  
**General Contractor:** Swinerton & Wallberg Company, Los Angeles, California.

#### The jurists:

##### CHAIRMAN

**Louis deMoll, FAIA**  
 1976 President, American Institute of Architects  
 Washington, D.C.

**Ralph Rapson, FAIA**  
 Professor and Head,  
 School of Architecture &  
 Landscape Architecture  
 University of Minnesota  
 Minneapolis, Minnesota

**William W. Caudill, FAIA**  
 Caudill Rowlett Scott  
 Houston, Texas

##### Joseph Esherick, FAIA

Esherick Homsey Dodge and Davis  
 San Francisco, California

##### Dr. Fazlur Kahn, FASCE

Skidmore, Owings & Merrill  
 Chicago, Illinois

##### AIA REPRESENTATIVE:

**J. R. Kirkland, Administrator**  
 Institute of Component Affairs  
 The American Institute of Architects  
 Washington, D.C.

**A host of excellent designs for the Third Annual CRSI Design Awards Program.** Once again, the entries were many and the choices hard. The jurists gave prime consideration to sensitive use of materials and structure, successful environmental relationships and functional planning. Six distinguished structures were chosen to be recipients of the 1976 CRSI Design Awards.

All winners share equally in the Awards. There are no categories of award recognition in the CRSI Program. **Please write for the 1976 CRSI Design Awards Portfolio.** It describes structural systems and unique design features for each Award winner. Write CRSI, attention Victor A. Walther, Jr., Director of Marketing.



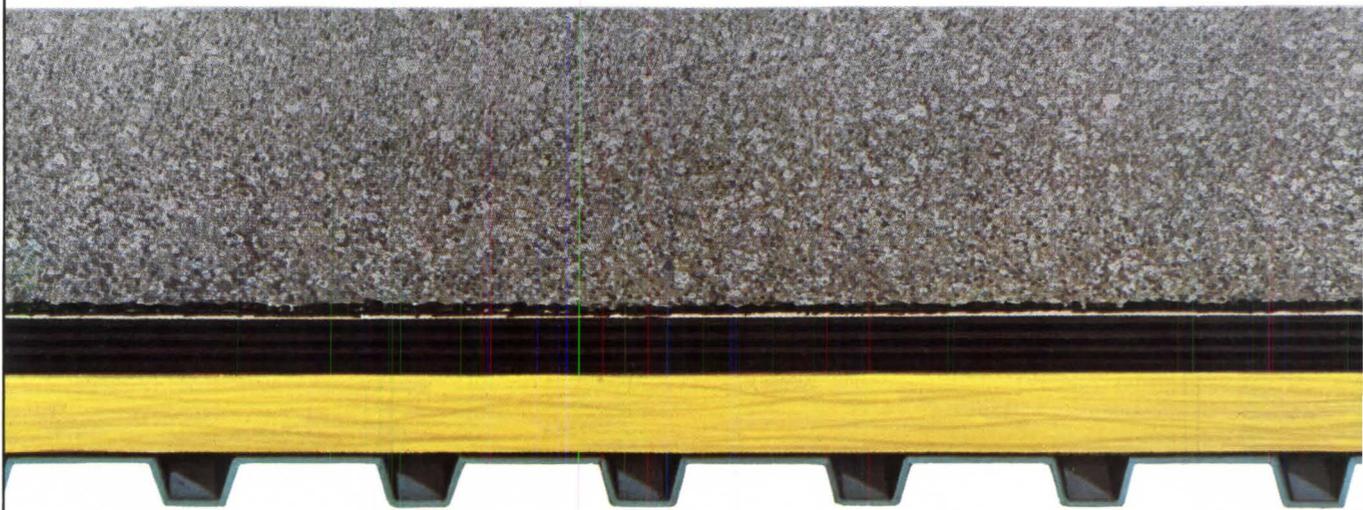
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180 North LaSalle Street, Room 2108  
 Chicago, Illinois 60601

For information on Professional Membership Program write to Director of Marketing.

**TESTS PROVE:**

**Of the leading roofing systems,  
Fiberglas Perma Ply-R withstands thermal shock  
better than any other**



©O-C.F. 1977 \*Reg. T.M. O-C.F.

**T**he results are in.

Grueling, independent tests by Bowser-Morner Testing Laboratories—using National Bureau of Standards performance criteria for built-up roofing systems—have proven what we've been saying all along:

When it comes to thermal shock performance, our Fiberglas\* Perma Ply-R built-up roofing system is superior to conventional systems.

As defined by the National Bureau of Standards, "The Thermal Shock Factor (TSF) is an indicator of the roof membrane's ability to withstand the normal temperature changes of its environment. Values of the coefficient of expansion, tensile strength, and load-strain modulus can be used to calculate the TSF."

The heart of our system is the unique, inorganic Perma Ply-R felt. It works two ways to give the system its strength.

First, when daily temperature changes cause a roof to expand and contract, Perma Ply-R is the best reinforcement it can have. That's because the Perma Ply-R felt is made of strong,

continuous strand glass fibers. So its physical strength characteristics are similar, both longitudinally and transversely.

Second, Perma Ply-R helps create a monolithic roofing system. The strongest kind of system there is. The reason: Perma Ply-R is a porous felt. So it meshes totally with the bitumen.

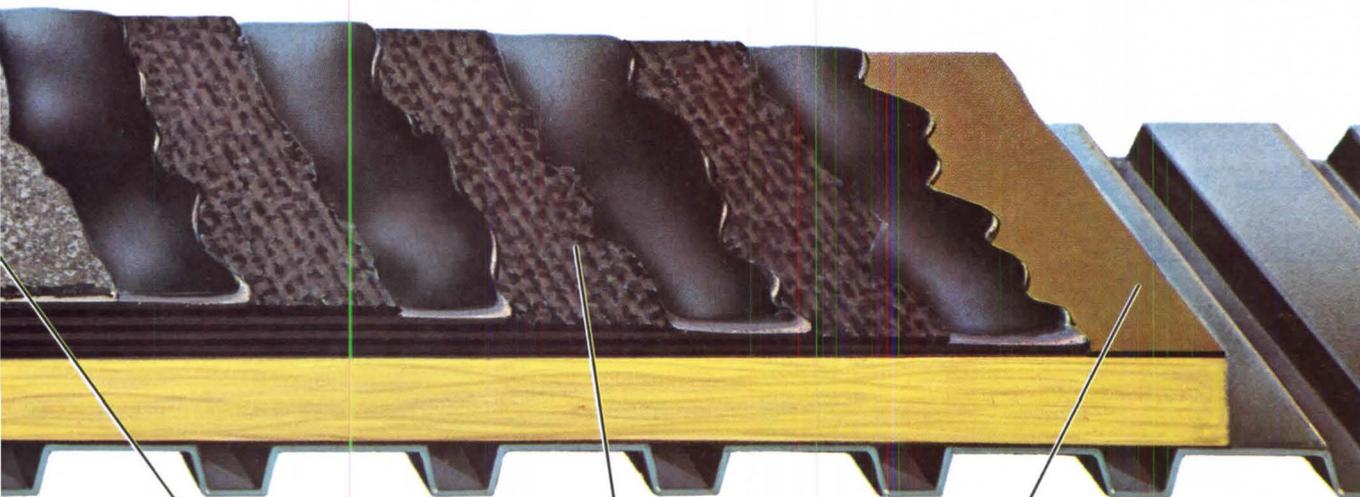
What does all this mean to anyone who's faced with specifying a built-up roofing system?

Simple.

Properly installed, our Perma Ply-R system minimizes the possibility of splitting, blistering, and internal deterioration of membranes. It has the potential to outlast any other BUR system money can buy.

If you want to see the "Thermal Shock Performance Comparisons," please contact your local Owens-Corning representative or write: M.I. Meeks, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

They've got the test results that prove every word.



Our Perma Cap surfacing sheet combines two materials: Fiberglas—so it's tough, won't warp or rot. And inert, non-combustible white ceramic granules that reflect sunlight and help minimize thermal shock.

Our Fiberglas Perma Ply-R is a porous felt. So it can mesh with the bitumen, creating a monolithic roofing system that minimizes interply blistering and adds to the roof's outstanding thermal shock performance.

Our Fiberglas roof insulation has its own Fiberglas reinforced asphalt cover. So the bitumen can be applied directly to it, making the insulation an integral part of the membrane.

**Owens-Corning is Fiberglas**

OWENS/CORNING  
**FIBERGLAS**  
TRADE MARK ®

*Books from page 77*

the quality of their design. The aim of the presentation is to achieve "a better planned, less cluttered outdoor public urban environment."

The book has resulted from a competition in which manufacturers and streetscape equipment submitted information and photographs. A jury of design and engineering professionals made a selection of those products which showed superior design quality. There are no examples of flagpoles, fire hydrants, pedestrian bridges, guardrails, public lavatories or mailboxes included, Malt explains, because such entries were "either absent or of inadequate quality." But there are examples enough of such things as bicycle racks, tree grates, planters and kiosks to make the book most useful to those responsible for improving the urban environment.

**Landscaping the Saudi Arabian Desert.**

Kathleen Kelly and R. T. Schnadelback. Philadelphia: Delancey Press, 1976. 182 pp. \$22.50.

"To put it simply, the things that work where it rains don't where it doesn't."

Although the Saudi Arabian desert was the basis of this beautiful book, we can draw many lessons for work in arid and desert regions anywhere in the world. Indeed, many references are made to conditions in Australia, Arizona and elsewhere. And the book is not just about landscaping; half of it is about architecture and planning.

So, even if you aren't among those participating in the \$140 billion capital investment in Saudi Arabia by 1980, this well-illustrated volume would certainly help sharpen the decision-making process almost anywhere.

The lack of diversity in the desert means that the relationships of its components are raised to extraordinary importance in a particularly subtle fashion. Buildings, like the anatomies of certain desert animals, should change shape or character to radiate heat or ventilate the interior naturally, as do Arab and Bedouin clothes, or to block out harmful sun rays when they are not desired—points long dear to me and expressed in my own book *Climate and Architecture*.

I commend this book to you. *Jeffrey Ellis Aronin, AIA*

**Practical Building Acoustics.** Sudbury, Suffolk, England: Sound Research Laboratories, Ltd., 1977. 226 pp. \$25. (Distributed in the U.S. by Halsted Press, John Wiley & Sons.)

The acoustics of a building is more critical than lighting, heating or any other aspect of the artificial environment, this book contends. Minor deficiencies in a heating system can be tolerated, but

minor deficiencies in the acoustic environment may be "totally unacceptable." This is an excellent manual on building acoustics, written in understandable prose, augmented by many easy to comprehend diagrams. The book begins with a discussion of the physics of sound, reminding the reader that "sound is not a mythic fluid," but due to the vibration of air.

The book then takes up in logical sequence how the fundamental physics of sound may be applied and how noise is transferred within rooms and from a building's exterior and interior. Design criteria are specified, and the reader is informed on how such things as mechanical services, equipment and furnishings can introduce acoustical problems. "If anticipated at the preliminary design

stages, these factors can be assimilated into the building design and thus avoid the noise and vibration problems which often materialize at a late stage of the project when remedial work is both difficult and expensive."

There is a chapter on problems with specific building types and a "brief run" is provided on how to avoid mistakes in designing for sound control in such buildings as auditoriums, hospitals, residences, offices, restaurants and industrial structures. Finally, there is a design guide and checklist that puts everything in a nutshell.

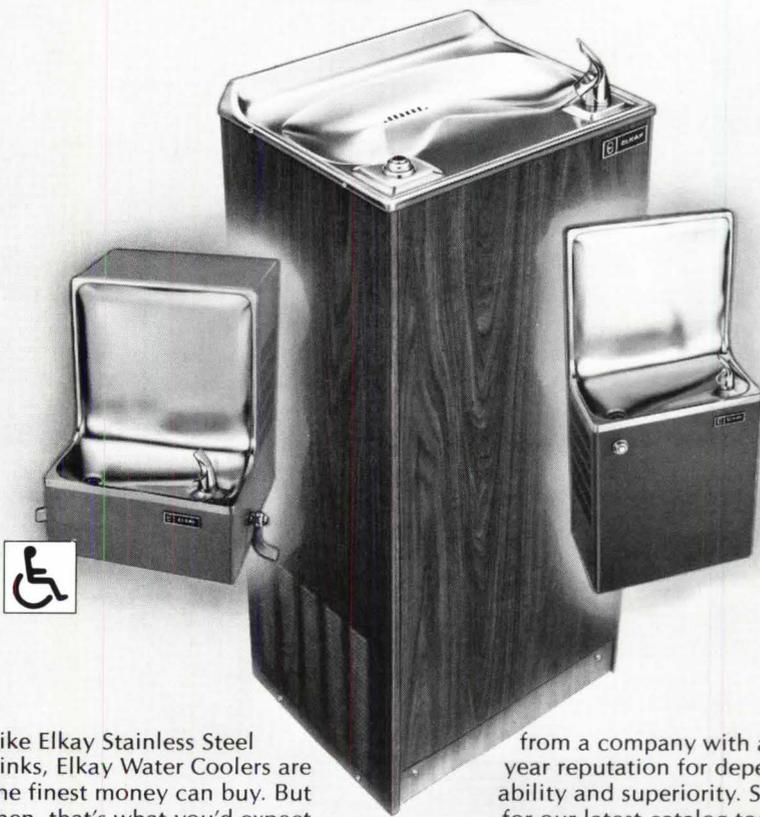
**Downtown Improvement Manual.**

Emanuel Beck. Chicago: American Society of Planning Officials, 1976. Various-



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Like Elkay Stainless Steel Sinks, Elkay Water Coolers are the finest money can buy. But then, that's what you'd expect

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**Elkay versus the ordinary. There's no comparison.**



MANUFACTURING COMPANY  
2700 South Seventeenth Avenue  
Broadview, Illinois 60153 Department 32-24

ly paged. \$19 (\$16 to ASPO members).

This is one of the most comprehensive downtown improvement manuals I have come across. In the foreword, the publisher describes the book as "... one of the best examples of '701'-funded work." The manual, developed by the Illinois department of local government affairs, is also one of the best examples of what the "701" program has been criticized for over the years, specifically, overlooking the fundamental social and economic conditions which cause urban conditions to deteriorate and change. This is not to say that a "fix-up" central business district book is not useful in making marginal changes in the urban structure which can improve the social and economic life in a city. Within these con-

straints, this book is a gem.

Prepared for communities in the state of Illinois, the book contains material which is highly applicable to CBDs throughout the country. Major chapters cover basic surveys, improvements, parking, circulation, malls, preservation and programs and processes to get all of this done. There is much useful information here, particularly for the recycling of small commercial areas and unique historic properties.

A chapter in the manual provides a checklist for CBD problems and for potential CBD assets. Peculiarly, the checklist completely ignores the importance of crime in the decline of commercial areas which has been documented to be at least as important to shoppers as parking,

paving and other pedestrian conveniences stressed in the manual. Perhaps Illinois is different. *Michael B. Barker, AIP, Administrator, AIA Practice and Design Department*

**The International Consultant.** H. Peter Guttman. New York: McGraw-Hill, 1976. 193 pp. \$16.50.

Architects and engineers are numbered among the experts who are being sought increasingly for work overseas. This book, written by the vice president of a consulting firm with many years of experience abroad, who is also chairman of a consortium of U.S. consulting firms working in Southeast Asia, has written a helpful book for those who want to break into the market of consulting abroad, whether architect, engineer, educator or planner. Guttman tells how to "zero in," as he expresses it, on foreign prospects, how to prepare proposals and how to negotiate contracts for overseas work. He also gives attention to staffing, financing and administering foreign work. There is information as well on such topics as joint ventures, financing agencies, termination of contracts, international arbitration, professional liability and insurance.

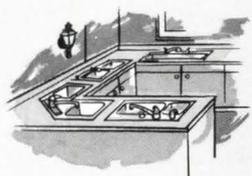
**Physics for Modern Architecture.** A. J. Buffa Jr. and D. W. Hafemeister. San Luis Obispo, Calif.: The authors, 1976. 207 pp. \$3.35.

About 75 percent of all architectural students prefer the design aspects of practice to its "technocratic" facets, say the authors of this manual, developed as a text for architectural students at California Polytechnic State University, where the authors were associated in the physics department. They cite five reasons why an architect should understand physics and its practical applications: to become architectural innovators; to learn how to ameliorate earthquake disasters; to understand the principles of energy conservation, and to realize the concept of the architect as a prototype of the "Renaissance man"—one who is completely educated in order to understand our world.

The first five chapters of the manual give the student a basic knowledge of physics, and concern simple harmonic motion, the complex exponential, damped oscillations, driven oscillations and resonance, and coupled oscillations and normal modes.

The remaining chapters are devoted to earthquakes and architecture; energy and architecture; electricity and architecture, and acoustics and architecture. There are problems at the end of chapters, and the appendices include laboratory problems on such topics as superposition in space and reverberation time.

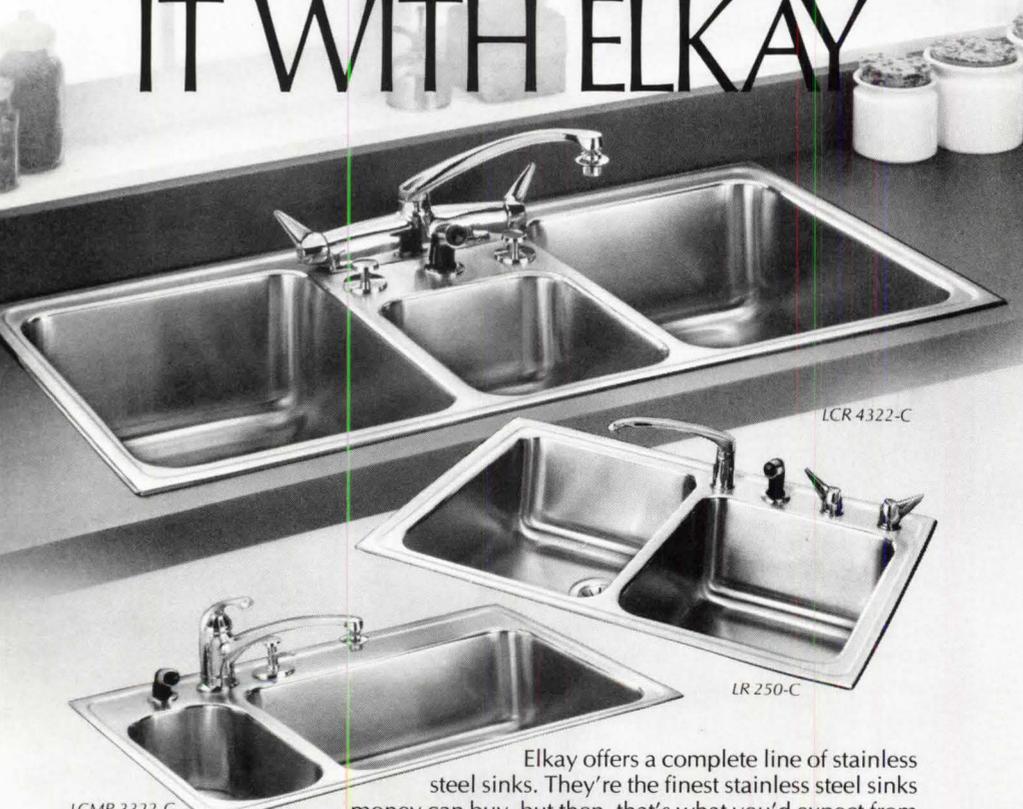
*Books continued on page 92*



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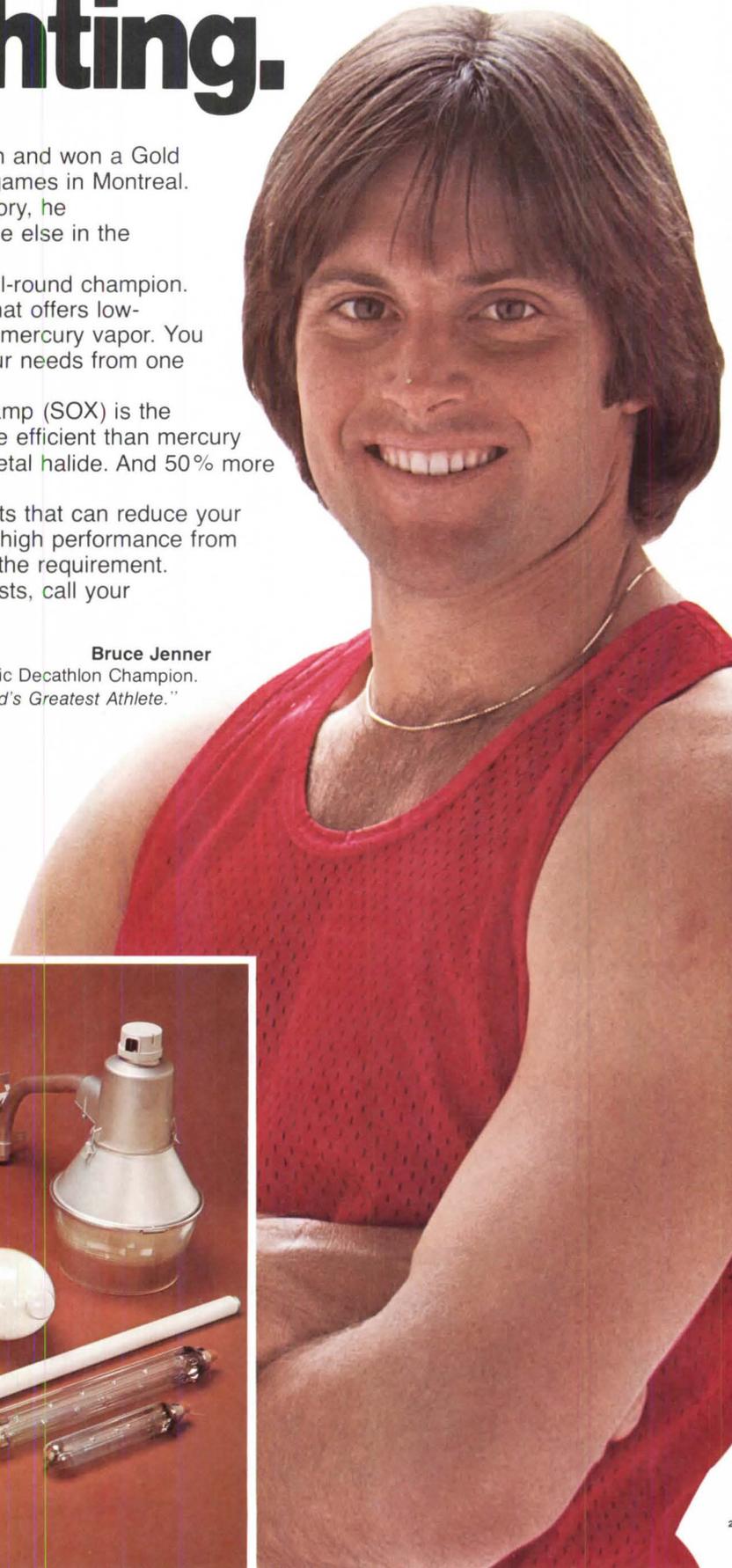
*We hustle harder for you.*

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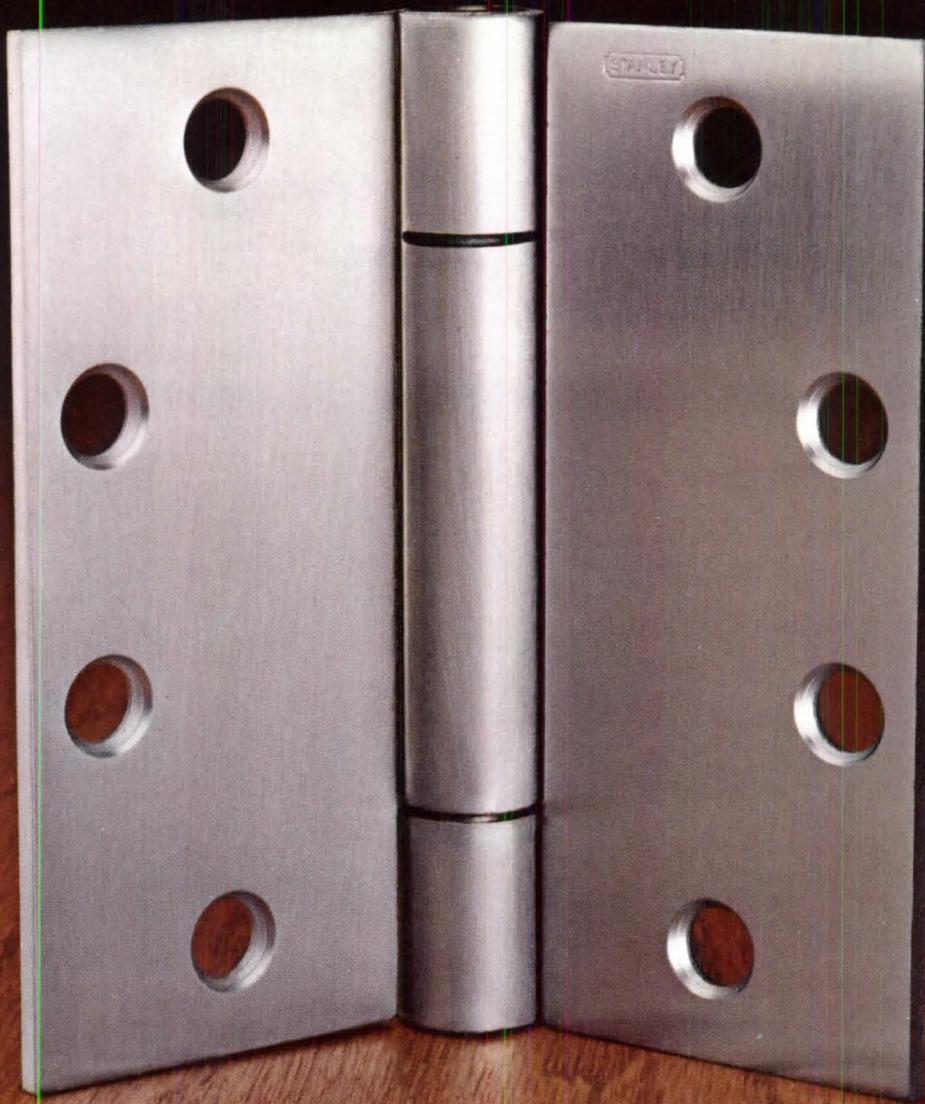
North American Philips Lighting Corporation  
Bank Street  
Hightstown, NJ 08520  
(609) 448-4000



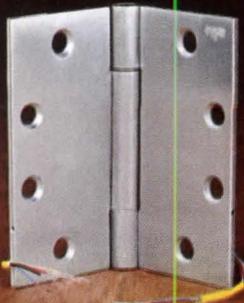
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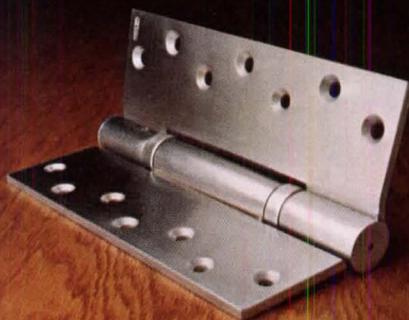


Stanley Spring Hinges, the original beauties! Meet building codes, have long life bearings, are adjustable up and down. Now in sizes  $3\frac{1}{2} \times 3\frac{1}{2}$ ,  $4 \times 4$ ,  $4\frac{1}{2} \times 4$  and  $4\frac{1}{2} \times 4\frac{1}{2}$ .



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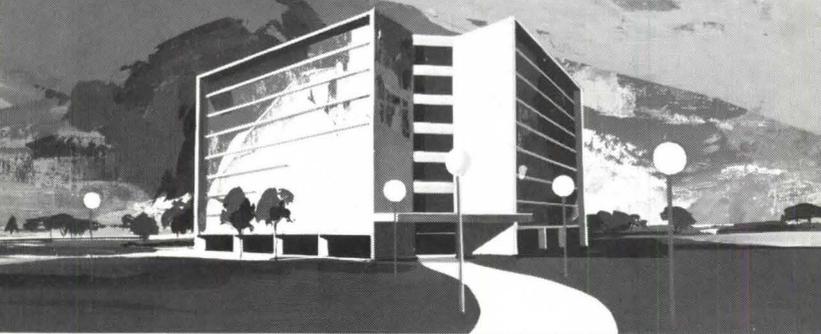
Stanley's extra heavy hinges swing lead lined doors, prison enclosures, or heavy gates up to 2,000 pounds.

Rely on Stanley for quality hinges that do the unexpected. When you have special needs, call on Stanley for the help and service that make your job easier. Stanley Hardware, Division of The Stanley Works, New Britain, Conn. 06050. In Canada: The Stanley Works of Canada, Ltd.

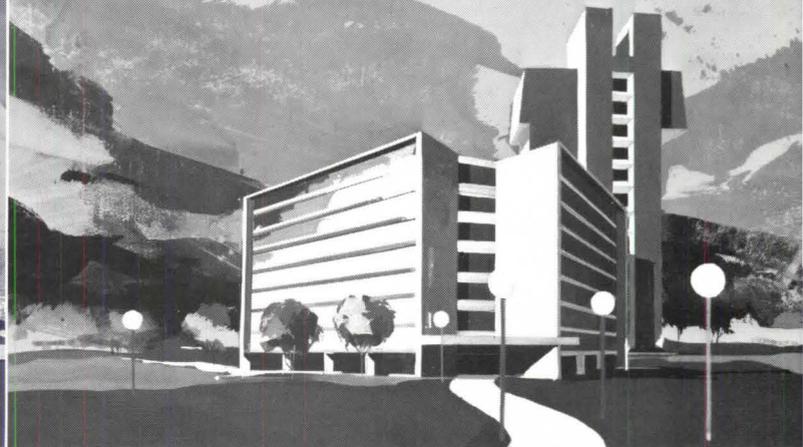
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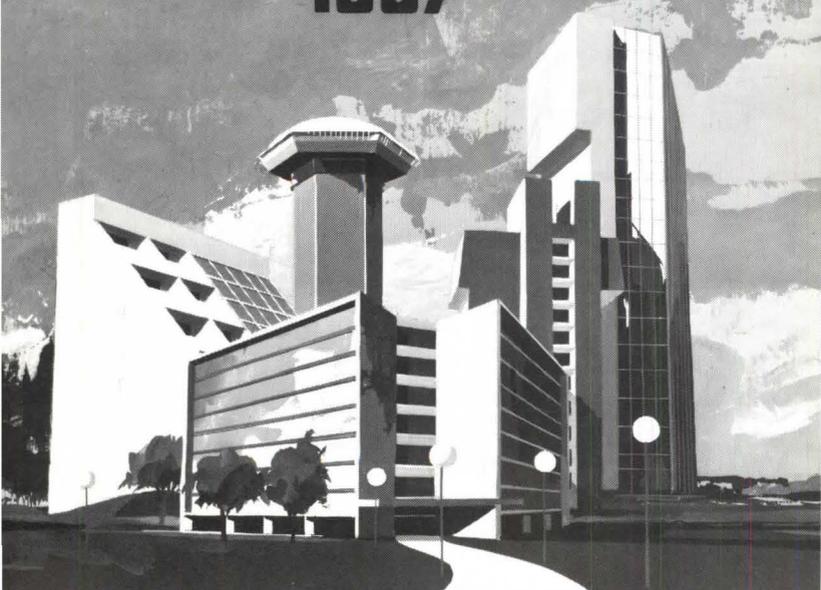
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**1992**



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**200?**



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No other plastic foam insulation resists moisture as well as STYROFOAM brand insulation.

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STYROFOAM brand insulation is backed by an exclusive written ten-year money-back warranty. Essentially, we will rebate 10¢ a board foot of your purchase price if it loses more than ten per cent of its rated insulating effective-

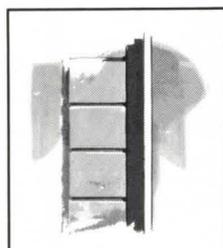
ness at any time within ten years.

For specific information regarding warranty details and conditions or for more information on how STYROFOAM brand insulation can help you, contact your local salesman or write: The Dow Chemical Company, STYROFOAM brand insulation, Midland, Michigan 48640.

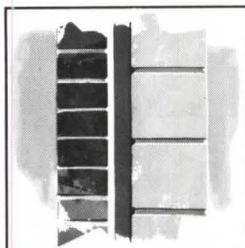
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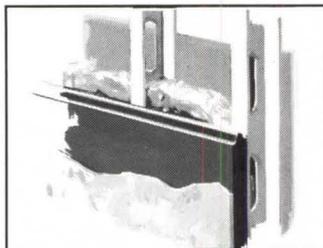
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Apply to the inside of masonry walls with STYROFOAM brand mastic No. 11.



Insert between interior and exterior walls in cavity type construction.

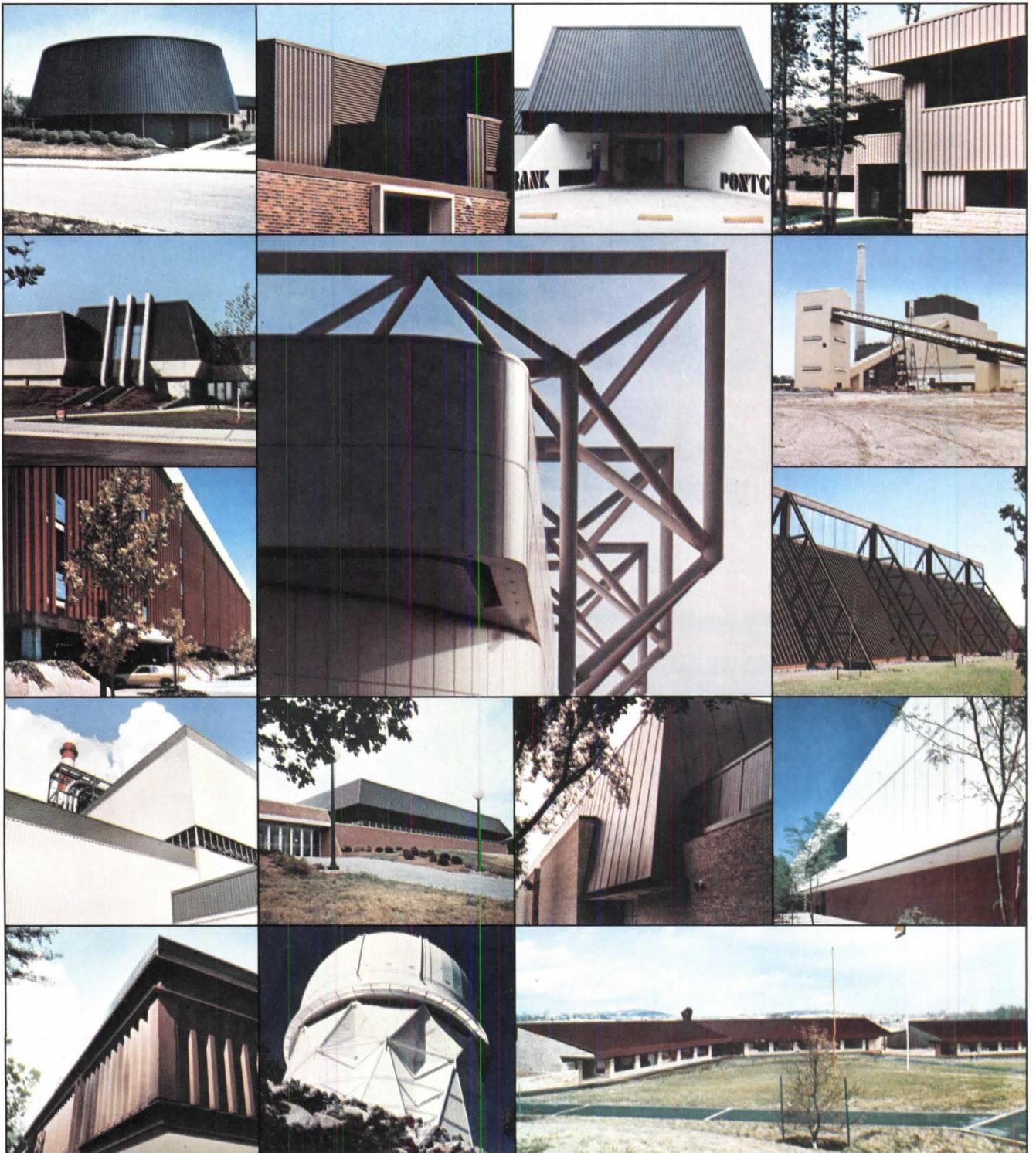


Apply to outside of studs just as you would apply conventional sheathing.

**WARNING:** STYROFOAM brand insulation is combustible and may constitute a fire hazard if improperly used or installed. It should not be left exposed or inadequately protected. Use only as directed by the specific instructions accompanying this product. STYROFOAM brand insulation contains a flame retardant additive to inhibit accidental ignition from small fire sources. During shipping, storage, installation and use this material should not be exposed to open flame or other ignition sources.

**SPECIFIC INSTRUCTIONS:** Gypsum board is regarded as an adequate fire barrier in most applications. For other alternatives and use instructions, see Dow literature available from your supplier or The Dow Chemical Company, Midland, Michigan 48640.

# Good Looking



# Hard Working

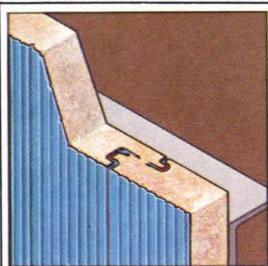
## Inryco<sup>®</sup> Wall Panels

Today, wall panels can't just look pretty... they have to work for a living. Help conserve energy. Fend off air-borne pollution. Make possible design economies. In other words, help pay off in savings: savings on fuel and equipment, on maintenance, and in original construction. Inryco wall panels help save money in all these ways.

### Conserve Energy

New factory-insulated Inryco/wall™ has a U-value of .064—six times as efficient thermally as an 8" block wall—and yet it's only 2" thick, with prefinished steel faces on both sides.

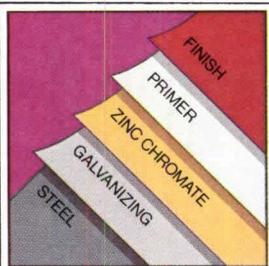
Inryco/wall's low heat loss factor helps reduce a building's energy consumption, making possible savings in heating and air conditioning—both in equipment and fuel costs. Important savings are also possible with Inryco field-assembled panels that have U-values in the range of .10.



### Resist Pollution

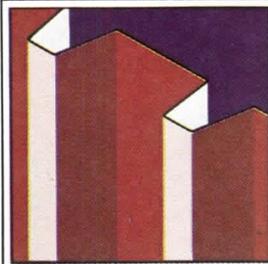
New Duofinish 700™ is one of the toughest wall panel finishes you can get—bar none. Its armorlike urethane surface resists even the most corrosive, abrasive industrial atmospheres (test data on request).

And like all Inryco Duofinishes, it is a two-coat, oven-cured, factory finish applied over ASTM G-90 galvanized steel. Duofinish 700 is a wall panel finish that doesn't just put up with pollution—it fights back. For less hostile environments, Duofinish 500, Inryco's two-coat, oven-cured, Kynar finish delivers reliable, long-life performance.



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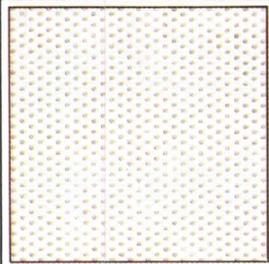
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Books from page 85

**Computer and Statistical Techniques for Planners.** Richard S. Baxter. London: Methuen, 1976. 331 pp. \$10, approximately.

As quantitative techniques have become increasingly popular and useful to the contemporary planning process, there has been a rise in the size and complexity of the problems and models being investigated and solved. Computer solution has become a necessity rather than simply a convenience in order to solve most of these problems efficiently and to fully utilize the available techniques. This, in turn, has given rise to the need for texts that describe these methods and their application to planning problems.

Baxter introduces computer techniques, placing particular emphasis on their use and relevance to the planning process. He also provides an introduction to basic computer hardware and systems, with emphasis on devices and environments that a planner might encounter. Since the reader may be unfamiliar with computer programming, Baxter includes a section on Fortran programming. The last half of the book is quite liberally sprinkled with Fortran programs and subroutines; hence, this section can be used to teach the reader the language. It should be noted that this choice of programming language appears more the result of predominant usage and (British) government recommendations than simple whim or

personal preference by the author.

Prior to introducing actual computer-based techniques, Baxter discusses and evaluates program packages and data base management systems. The emphasis is more upon the problems of using and obtaining software packages and graphic packages than upon the range of available systems and their use.

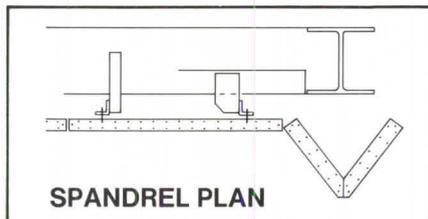
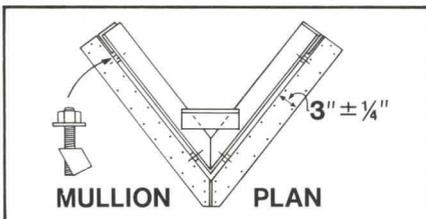
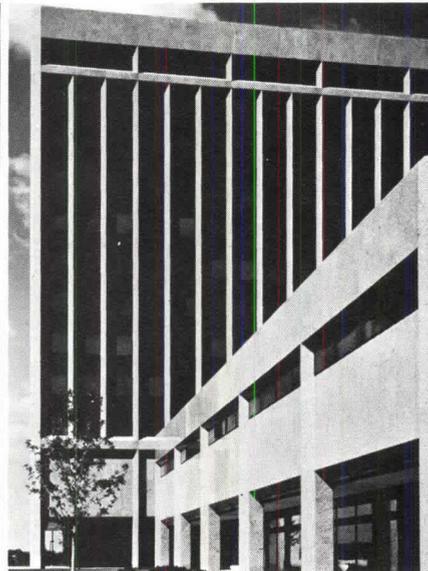
The book's second half is devoted to data processing and statistical techniques. Baxter successfully integrates application with theory and methodology to a degree rarely achieved in books of this type. In the chapter on data processing he describes how different types of data are stored, why the coding and storage methods differ, how one can efficiently retrieve information once stored and how data from files may be transformed and analyzed in the planning context.

While it is clear that there are quantitative techniques other than statistical for use in planning, e.g., algebraic, probabilistic and algorithmic (to use Baxter's terminology), the focus in the final chapter is upon statistical methods and entropy maximizing methods. The techniques described include univariate and multivariate methods—regression, correlation, factor analysis, curve fitting and cluster techniques. Examples of the use of these techniques in typical planning situations make this section far more valuable than the theoretical presentation and computer programs included. The final section, devoted to entropy methods made popular by Wilson, provides the reader with one of the few examples of the use of this theory and its application in planning situations.

As noted, the value of this book is certainly in its use of contemporary planning problems and actual applications to illustrate the use of methods described. Several other common techniques (linear programming, Markov chains, Monte Carlo methods, etc.), are omitted, but the book does provide a relatively inexpensive (by today's standards) addition to the library of any architect or planner. It can quite easily and effectively serve as an introduction to the use of computers and computer methods in the planning process. Although many traditional architects/planners have seriously questioned the usefulness and applicability of quantitative methods on a large scale within the planning process (often with good reason), there is no escaping the reality of the computer's presence and its ability to process the data necessary to make sound design decisions. The examples of real world applications, as well as Baxter's introduction to how computers work and are used in the planning environment, should provide answers to many of the questions that have been raised. *Elliott E. Dudnik, AIA* □

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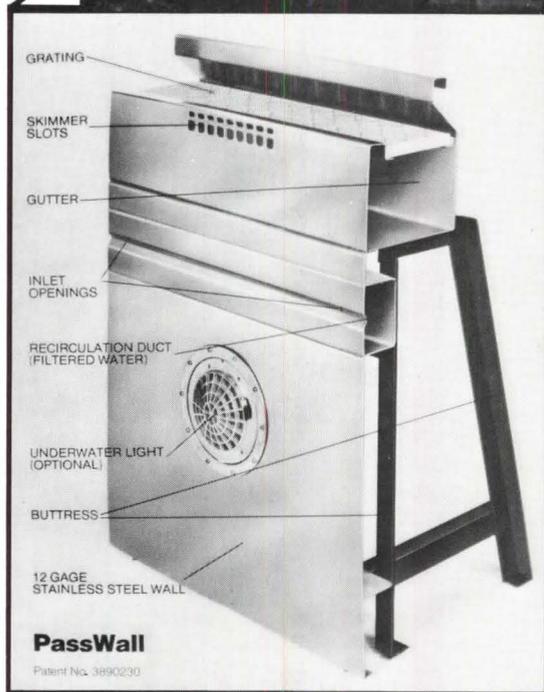
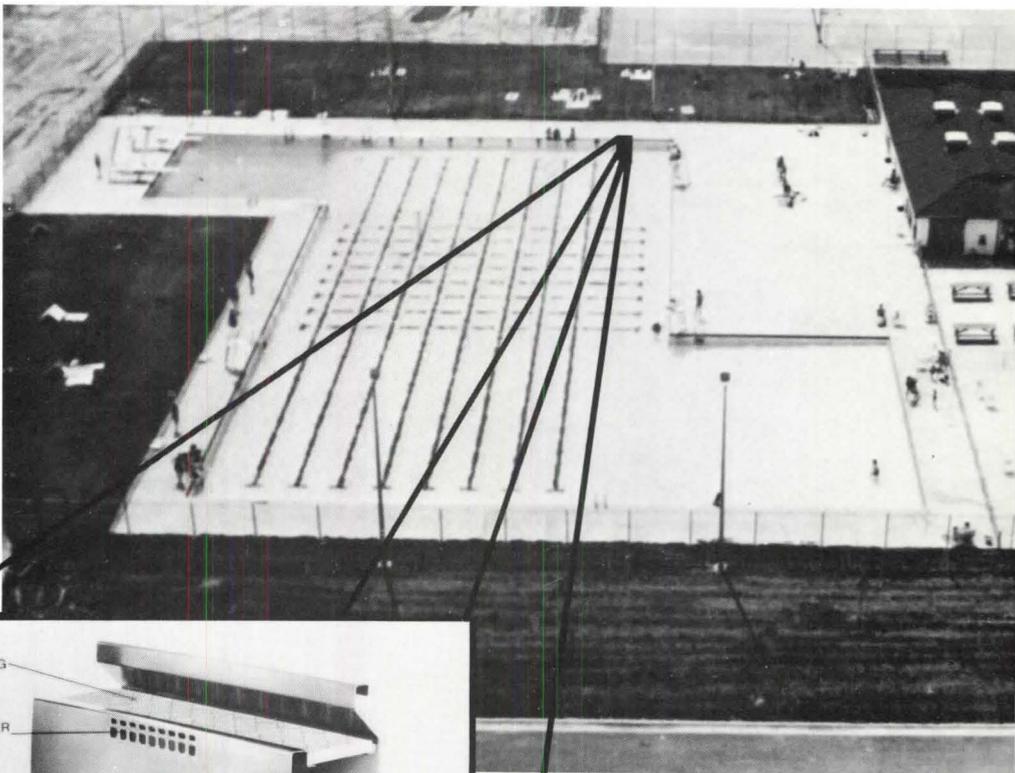
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# Steel permits redesign to meet seismic code change

Boston State College was bursting at the seams after enrollment leaped from 800 students in the 1950s to nearly 10,000 in the 1970s. The college found itself on the verge of losing its accreditation because its library threatened to fall below American Library Association standards.

Though Boston State was locked into a high-density urban area, the trustees decided to stay put. They asked the architects to develop a structure which would meet existing A.L.A. standards for space and number of volumes. They also wanted additional classrooms, a theater/auditorium complex, and other facilities in a building that would present a new image for the college. Quite a challenge: all this plus an oddly shaped site.

The architect's solution was to provide each separate function with its own level, resulting in a building of unusual configuration. It was originally designed in concrete.

## Late design change

When the design was about one-third complete, the site was declared applicable to Zone Two seismic code requirements. The structure had to be virtually redesigned to meet possible earthquake conditions.

Because of its irregular shape, a concrete frame and flat slab approach wouldn't work as a total moment-resisting structure. The architects decided on individual steel frames for each of the five main units of the building. They had to have the ductility that they knew steel would provide for earthquake design.

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Letters from page 6

wedding cake—the yellow portions resembling the cake and the frothy white top, center cornice and pinnacles as the icing atop each layer, with decoration applied as a finishing touch.

It has been called "The Wedding Cake House" in numerous books, and Maine natives in the area always call it by that name. This is why it seemed strange that Parker did not use the famous name. The house is meticulously cared for and seems almost in "mint" condition, if I may use a term that has culinary connotations to describe it. Such pictures always make a worthwhile addition to the contents of the JOURNAL. *Gordon C. Pierce, AIA Greensburg, Pa.*

**Amplification:** The legal committee of the Architects Society of Ohio has requested that I inform AIA JOURNAL readers of inaccuracies contained in the news story "Ohio AIA and Advertising" in the Oct. '76 issue (p. 21). The board did not vote to "lift the prohibition" but did pass this motion:

"That it is the intent of the ASO board of trustees to remove from our ethical standards, in appropriate form, the ban on paid advertising by our members. We feel this action to be in the best public interest. However, in view of the action taken by the AIA in Philadelphia to

undertake a year-long study of proposed changes to the current AIA ethical standards of practice, including the issue of paid advertising, the ASO shall delay taking official action until the results of said study are reported to the 1977 national convention. The president of ASO shall appoint a special committee to monitor and report on this national study. The minutes of this meeting shall indicate that our position was made known to AIA at the 1976 convention." *Neal Layne, AIA Executive Director, ASO Columbus, Ohio*

*We are happy to record more fully the Ohio action in advertising but find no discrepancy between the text of the motion and our account that the ASO board "voted its intent to lift the prohibition."* Ed.

**Low-Rent Housing:** The article by Louis Sauer, FAIA, titled "Differing Fates for Two Nearly Identical Housing Developments" in the Feb. issue was well done. As an old "houser" from the U.S. housing authority of the '30s, I am always interested that so few of the lessons that should have been learned from that program of "low-rent housing" have indeed been learned.

For instance:  
• It was established that parking spaces

should always be related directly to the owner's dwelling—for the reasons cited by Sauer.

- Identified "yards," front and/or back, usually received better maintenance than common areas (other things considered as well).
  - Tenant organizations are more effective than management in dealing with maintenance problems, such as vandalism.
  - Tenant organizations were repeatedly destroyed under the housing authority by a national policy of strict attention to tenant income. It is logical that the tenants most motivated to lead tenant groups are those most apt to "better" themselves. When a tenant's income reached the upper limit—out he went. This policy inevitably resulted eventually in projects being occupied by the lowest in energy, imagination and motivation.
  - Site planning which isolated the "project" was fatal.
  - Managers were routinely underpaid and received poor support from both local and national housing officials. This, of course, usually resulted in less than competent managers. This spurred the downward spiral that was very difficult to reverse.
- I hope we soon have some answers to the questions Sauer poses, although this will be difficult in the absence of a national housing policy. *Charles Wagner Accokeek, Md.*

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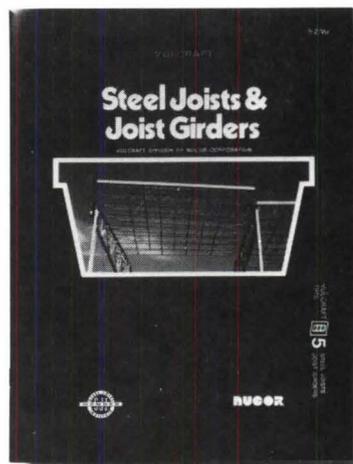


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Going On from page 18

Jersey-New York area "has been the hardest hit in the nation, and since we have obviously bottomed out and are picking up—remarkably, I might add—it is reasonable to speculate that designers and builders elsewhere may also be doing well."

Gilchrist calls architecture a "reliable indicator of the state of the economy. For example, on Jan. 1, 1973, the responding firms reported a total construction value of \$200 million for approved projects with construction drawings on the boards.

The following year, the figure dropped to \$173 million, then to \$140 million, and on Jan. 1, 1976, to a low of \$130 million." In Jan. 1977, the figure jumped "to an

amazing \$290 million," he says.

Of the \$290 million, 40 percent or \$116 million, was in foreign work, Gilchrist reports.

## Deaths

**Ronald Allwork, FAIA**, Boca Raton, Fla.

**Daniel Brenner, FAIA**, Chicago

**George Brigham, FAIA**, Ann Arbor, Mich.

**George C. Darrell**, Inver Grove Heights, Minn.

**Edward F. Neal**, Jackson, Miss.

**George F. Schatz, FAIA**, Payson, Ariz.

**Edward F. Sinnott**, Richmond, Va.

**Newell E. Wiedemann**, Waco, Tex.

## Newslines

**Welton Becket Associates**, headquartered in Los Angeles, has been selected by former President Gerald Ford as architect for a residence to be built about 10 miles from Palm Springs, Calif.

"**Applications of Solar Energy for Heating and Cooling of Buildings**" is the title of a new solar engineering bulletin published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers. Edited by Richard C. Jordan, the 200-page book covers solar energy assessment, systems components and performance, and heating and cooling applications. It is available for \$8 (\$4 to ASHRAE members), plus \$1 for handling and postage, from: ASHRAE, 345 E. 47th St., New York, N.Y. 10017.

**Lawrence B. Anderson, FAIA**, of Lincoln Center, Mass., has been elected to membership in the National Academy of Design, the second oldest art group in the nation organized and administered to advance the arts in this country.

"**Total Energy Management**," a joint publication of the National Electrical Contractors Association and the National Electrical Manufacturers Association, describes techniques for interfacing both energized and nonenergized aspects of a structure for maximum efficiency in the use of energy. A free copy may be obtained by writing on your letterhead to: NECA, 7315 Wisconsin Ave. N.W., Washington, DC. 20014.

A "library" of tapes about architects and their designs is sponsored by the Dallas chapter/AIA's historic resources committee. The autobiographical oral histories consist of interviews with Dallas' "senior" generation of architects. □



"What would I do with a million dollars? Why, I guess I'd just keep on practicing architecture until it was all gone."

Walter E. Kuykendall Jr., AIA. Courtesy of Texas Architect.

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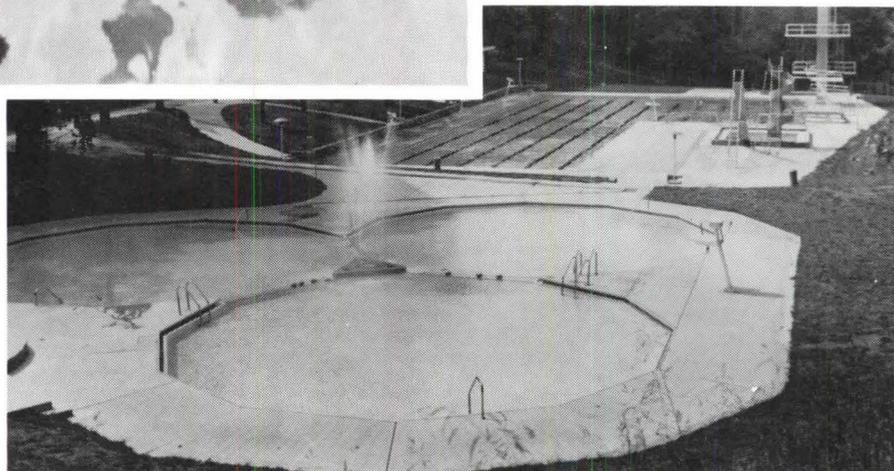
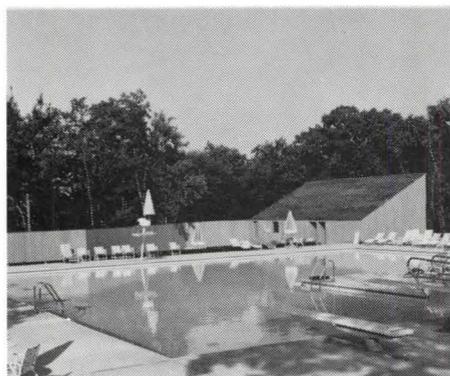
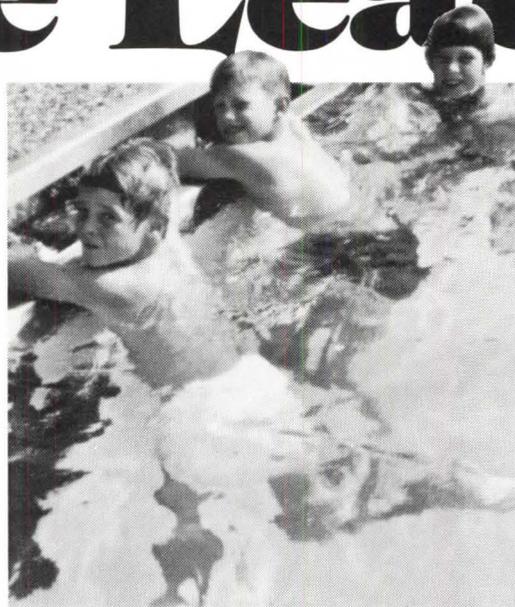
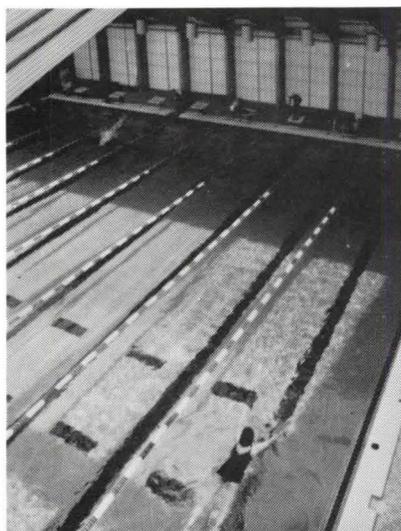
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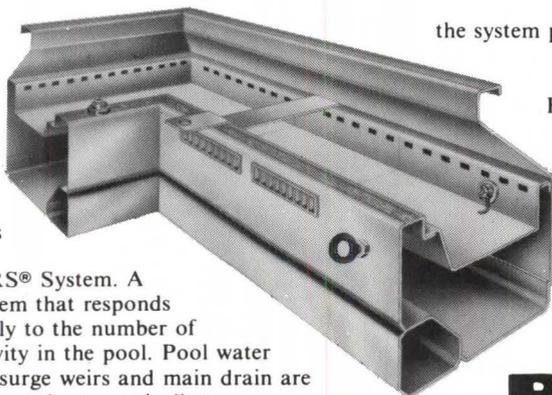
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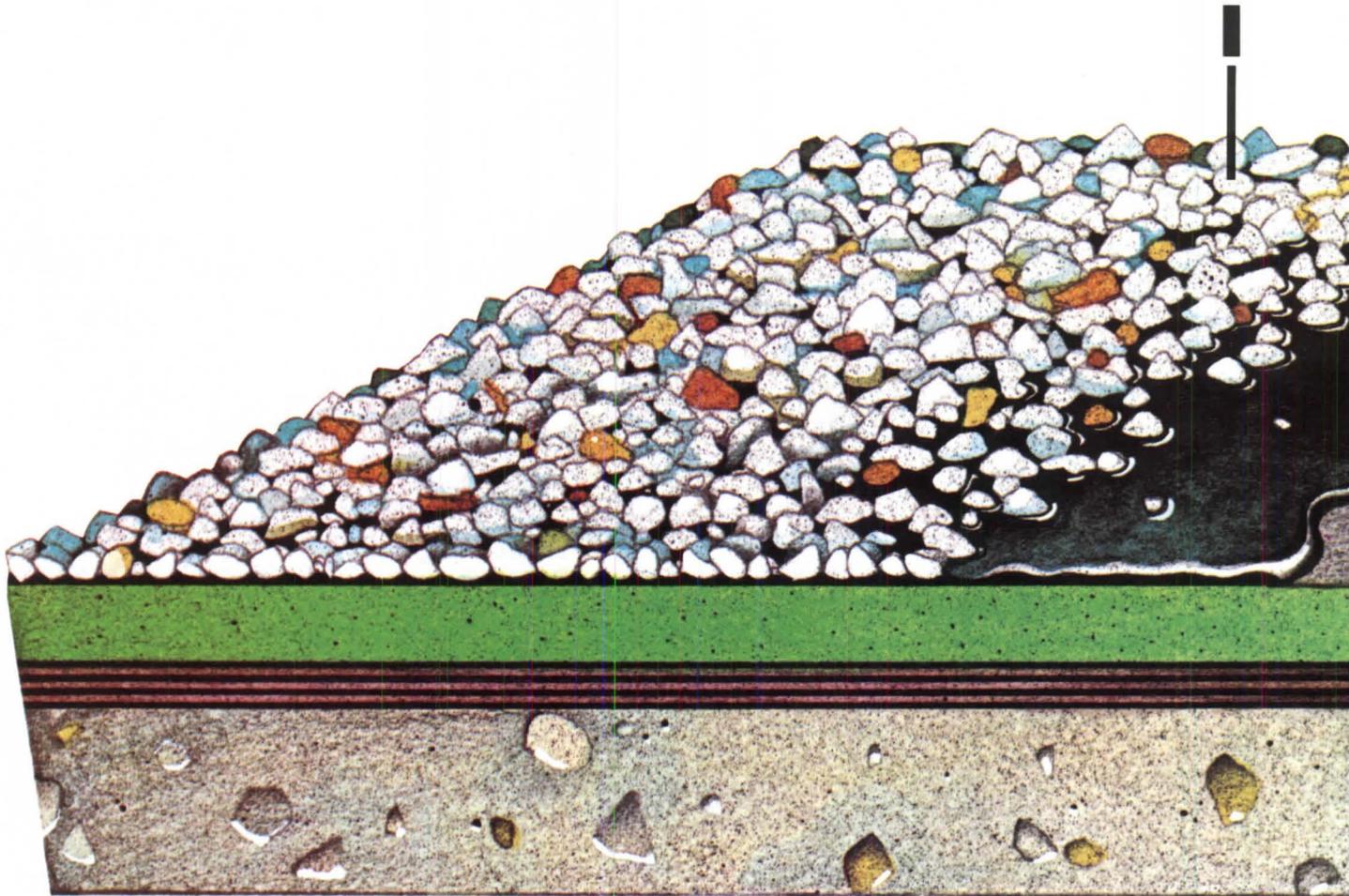
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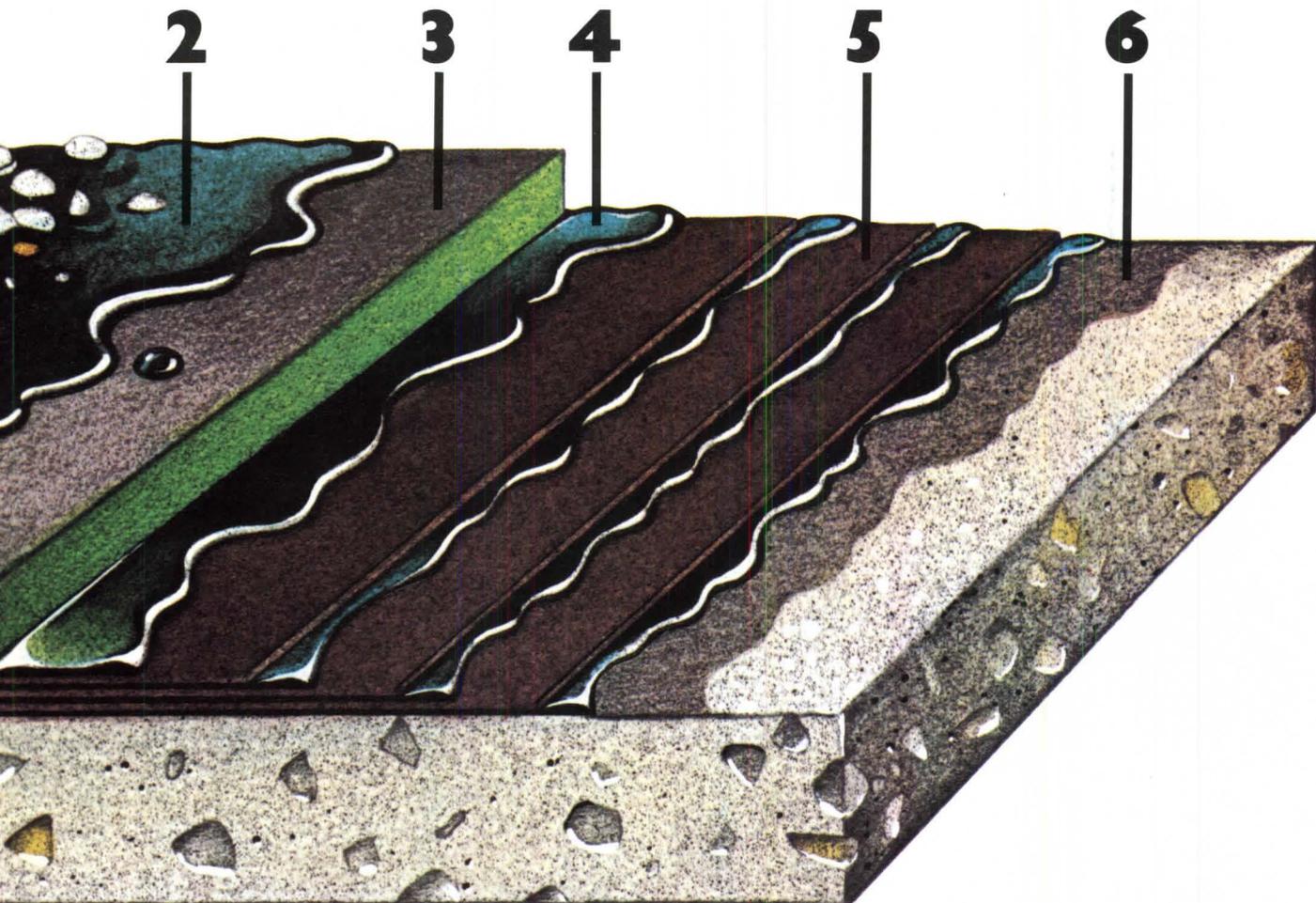
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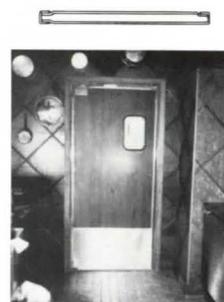
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**LWP 4:** Same as "LWP 3" except with decorative high pressure laminate both sides. Decorative doors are practical with protective accessories. Door illustrated has 24" high Base Plates and two sets of Bumper Strips.



**SCP 5:** A Solid Core Door 3/4" thick, Illustrated door has Anodized Aluminum, Top Panels, 18 gauge steel center panels (SS front, Galv. rear), 14 gauge high carbon steel kick plates. Write for options and other Solid Core Door models. Applications same as "LWP 3", a heavier door but same easy action.

**SCP 8:** A Solid Core decor door. Illustrated door has 18" high Base Plates and Edge Trim (18 gauge Stainless Steel). Decorative High Pressure Plastic Laminate above Base Plates to top of door both sides. For Food Service and other areas where Solid Core Decor doors desired. Write for other models and options.



**SCG 1:** Gasketed, Solid Core Door 3/4" thick. Illustrated door has Anodized Aluminum top Panels and 48" high 18 Gauge Stainless Steel Base Plates. For Refrigerated areas, Work Rooms, Processing and Cooler to Processing. Write for options and accessories. Ask about 1 1/2" thick Foam Core Doors.

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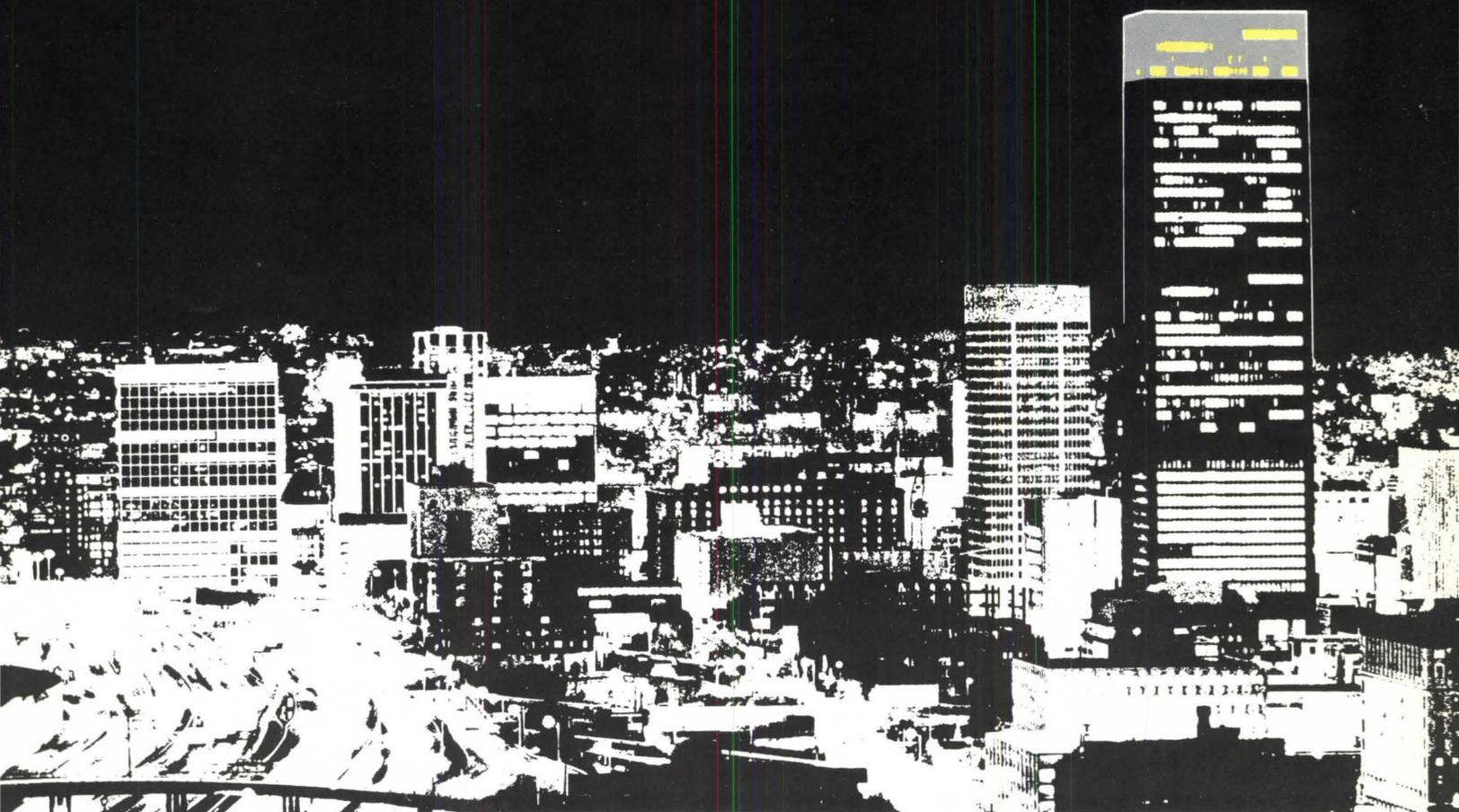
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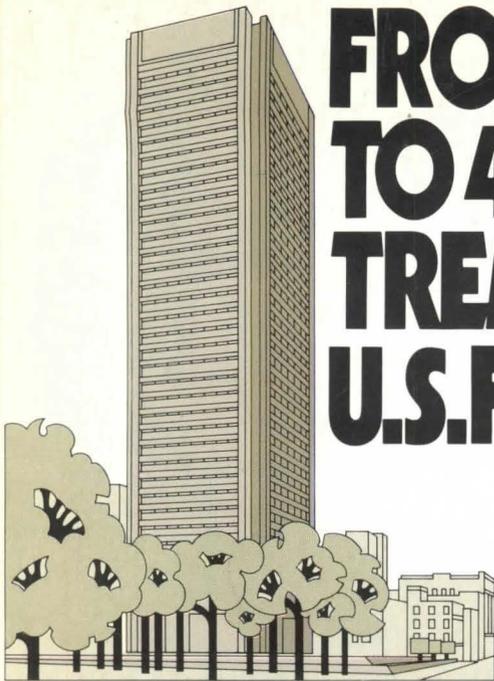


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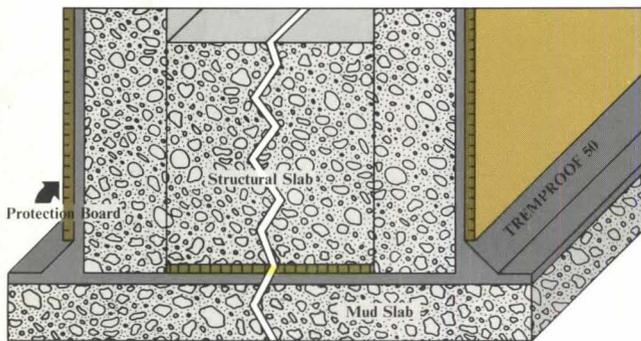
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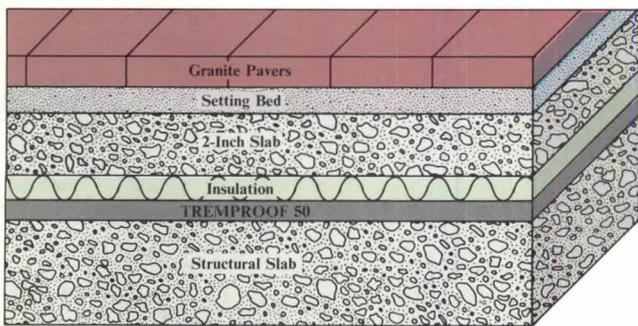
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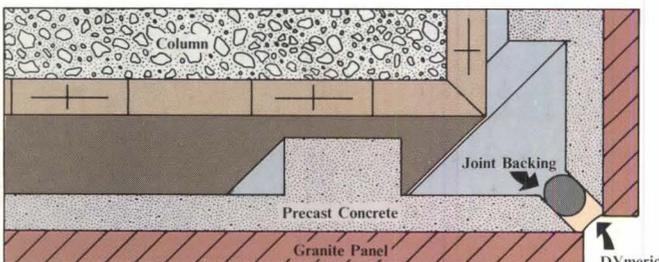
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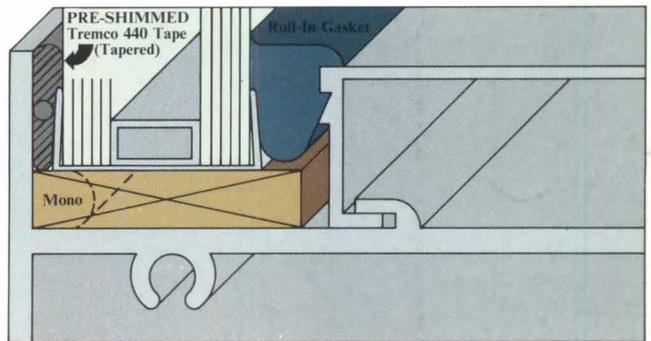
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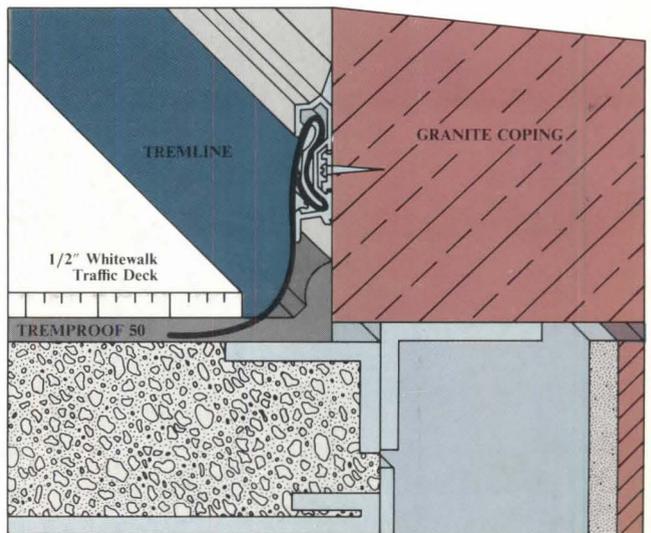
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