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CONTENTS

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40 Women in Architecture: A Progress (?) Report and a Statistical Profile

Results of a recent and a past survey compared.
 By Nora Richter Greer

42 Women in Architecture: Individual Profiles and a Discussion of Issues

As more move into leadership positions in firms.
 By Andrea O. Dean

52 Eleanor Raymond: Early and Indomitable

An exhibition recognizes one of New England's first successful women architects. By Robert Campbell, AIA

54 Ada Louise Huxtable: 'A Question of Quality'

In a new book, a pre-eminent American critic talks about her career—and her values.

56 Energy is the Theme of a World's Fair

Knoxville's 1982 Expo rises determinedly from the mud.
 By Robert A. Ivy Jr., AIA

62 Five Maxims on the Energy Crisis and the Design Response

They are drawn from a conference remarkably free of customary 'hype.' By Robert Campbell, AIA

67 Images of Energy in Engineering

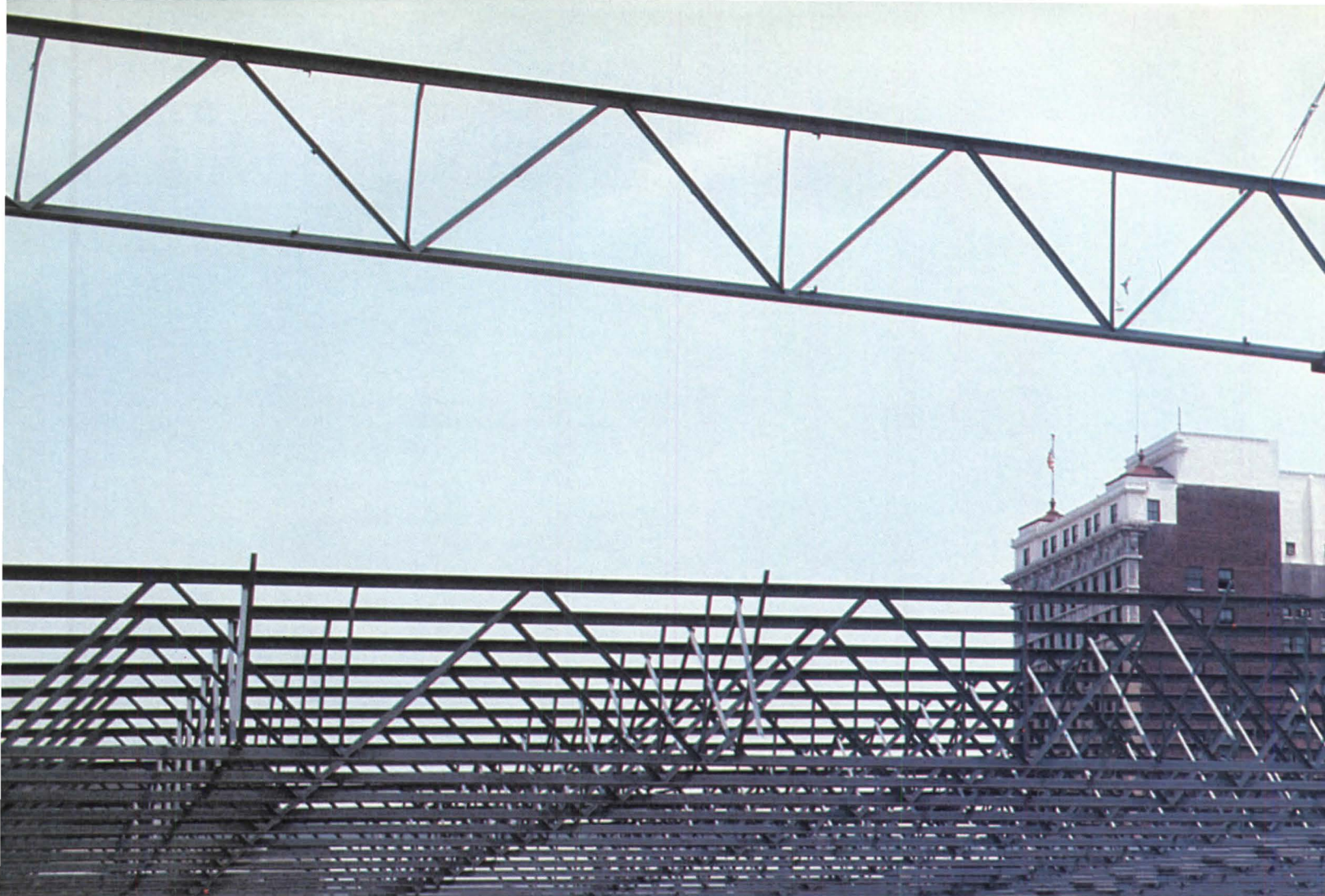
A portfolio of photographs by Jet Lowe

6	Events	74	Books
6	Letters	94	Furnishings
13	News	102	Index

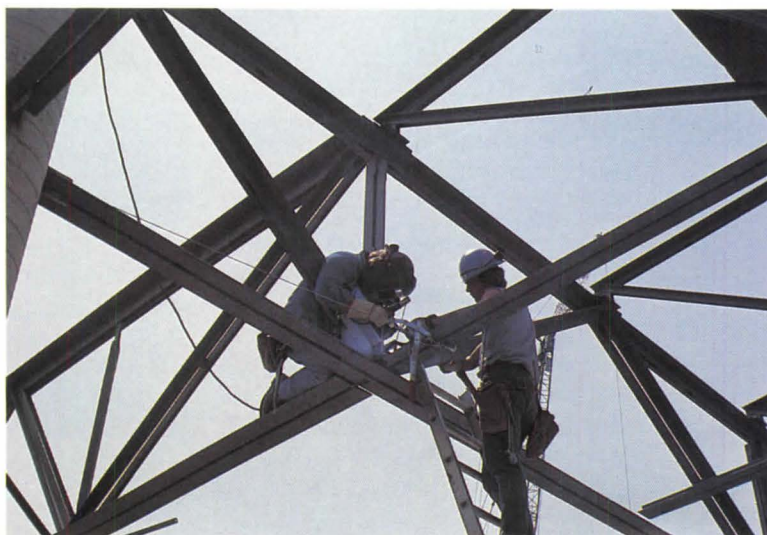
Cover: View toward Boston from the catwalk of the Tobin Bridge Administration Building by Andrea Leers Browning Associates (see page 42); photograph by Gunars Viksnins.

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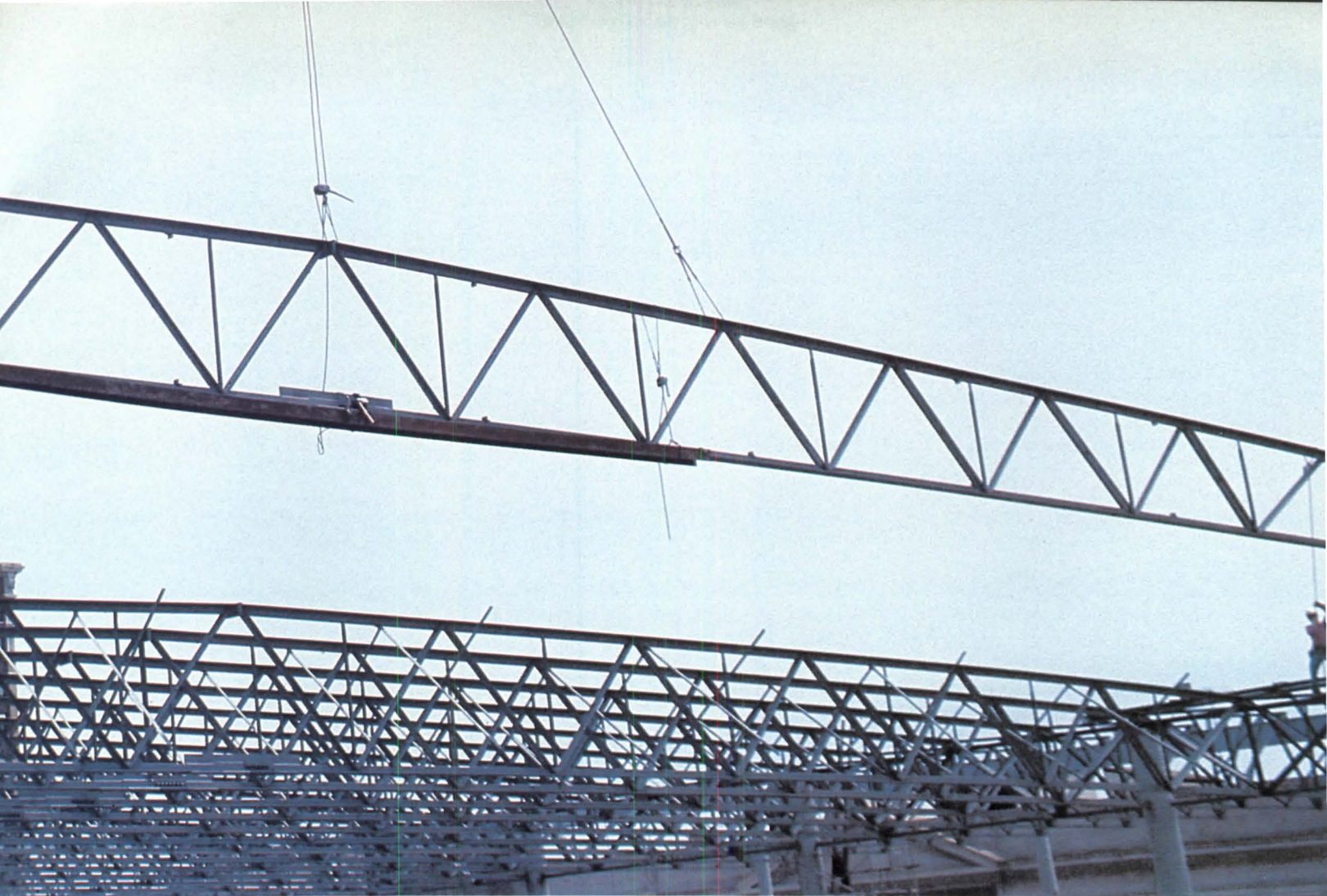
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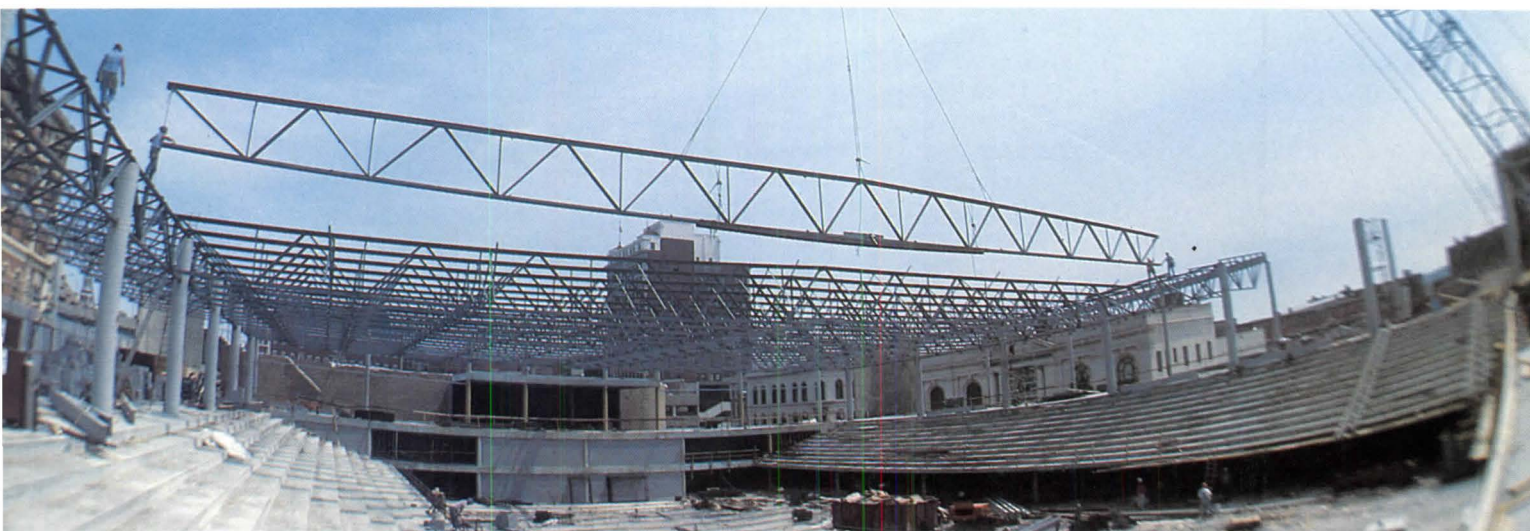
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EVENTS

Jan. 26: Design Professionals' Liability Course, Dallas. (Repeat courses, Feb. 10, Atlanta; Feb. 25, Albuquerque, N.M.; Mar. 24, Portland, Ore.; Mar. 25, San Francisco; Apr. 16, Norfolk, Va.; Apr. 30, Boston; June 2, Minneapolis.) Contact: Office for Professional Liability Research, Victor O. Schinnerer & Co., Inc., 5028 Wisconsin Ave. N.W., Washington, D.C. 20016.

Jan. 26-27: Business Management Seminar, Houston (second session Mar. 2-3). Contact: Director of Professional Development & Meetings, American Consulting Engineers Council, 1015 15th St. N.W., Suite 802, Washington, D.C. 20005.

Feb. 1-2: Conference on Preservation Tax Incentives, Boston. (Repeat conferences Feb. 15-16, San Francisco; Feb. 19-20, Los Angeles; Mar. 1-2, Atlanta; Mar. 8-9, New York City; Mar. 22-23, Chicago.) Contact: Educational Services/Tax Conferences, National Trust for Historic Preservation, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

Feb. 3: Course on Financial Management for Small Firms, San Francisco. (Repeat courses Feb. 10, Atlanta; Mar. 3, Boston; Mar. 16, New Orleans; Mar. 17, St. Louis; Mar. 26, Denver.) Contact: Don Thompson Associates, 3247 Embury Hills Drive, Atlanta, Ga. 30341.

Feb. 3-10: Constructa '82, International Building Trade Fair, Hanover Fairgrounds, Hanover, West Germany. Contact: Hanover Fairs Information Center, M. A. Delia, P.O. Box 338, Whitehouse, N.J. 08888.

Feb. 5: Project Management and Profitability Workshop, University of Wisconsin, Milwaukee.

Feb. 5-6: AIA Energy in Design: Techniques Workshop, Palm Beach, Fla. (Repeat workshops, Feb. 12-13, Billings, Mont.; Feb. 19-20, Tallahassee, Fla.; Feb. 26-27, Syracuse, N.Y., and Cincinnati.) Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.

Feb. 8-10: Urban Ventures School, Portland, Ore. (Repeat course May 10-12, Chicago). Contact: National Housing Rehabilitation Association, Suite 310, 1300 19th St. N.W., Washington, D.C. 20036.

Feb. 8-11: Seminar on Specifications and Construction Contracts, Portland, Ore. Contact: Richard Singer, Construction Specifications Institute, 1150 17th St. N.W., Washington, D.C. 20036.

Feb. 10-12: Workshop on Passive Solar Design Tools—Small Computers, University of Wisconsin, Madison.

Feb. 10-13: Conference on Taste in Design and Elsewhere, San Francisco. Contact: National Center for Architecture and Urbanism, 2000 P St. N.W., Suite 413, Washington, D.C. 20036.

Feb. 12-16: 32nd Annual International Masonry Conference and Educational Trade Show, Orlando, Fla. Contact: Mason Contractors Association of America, 17W601 14th St., Oakbrook Terrace, Ill. 60181.

Feb. 15-16: Symposium on Evaluating Occupied Designed Environments, Georgia Institute of Technology, Atlanta.

Feb. 22-24: Course on Energy Auditing for Light Commercial Buildings, University of Wisconsin, Madison.

Feb. 23-24: Workshop on Solar Additions and Remodeling, Pittsburgh. (Repeat workshops Mar. 10-11, Valley Forge, Pa.; Mar. 27-28, Fairfield, Conn.) Contact: Mid-Atlantic Solar Energy Association, 2233 Gray's Ferry Ave., Philadelphia, Pa. 19146.

Feb. 28-Mar. 2: Construction Industry National Legislative Conference, Washington, D.C. Contact: Construction Industry National Legislative Conference, 5530 Wisconsin Ave. N.W., Suite 750, Washington, D.C. 20015.

Mar. 5-6: AIA Energy in Design: Practice Workshop, Birmingham, Ala., and Washington, D.C. (Repeat workshop, Mar. 26-27, Dallas.) Contact: Brenda Henderson at Institute headquarters (202) 626-7353.

Mar. 5-6: AIA Energy in Design: Process Workshop, Ames, Iowa. (Repeat workshop, Mar. 12-13, Indianapolis.) Contact: Brenda Henderson at Institute headquarters (202) 626-7353.

June 6-9: AIA National Convention, Honolulu, Hawaii.

under Walter Gropius in the first class to admit women to the university. Having enjoyed a successful practice and having received some honors, some awards, I realize none of these professional achievements would have been possible without the contribution of Diana. With the exception of some five years spent to see that our three children were all safely in school, we have worked together in our offices in New Haven and Guilford since 1946. She is responsible for a large part of the architecture we have done and has been a major influence in the designs created by our offices.

I remember Diana and Jean Coolidge cornering Alvar Aalto on his first visit to this country and asking him how his wife managed a career and a home. He recalled that there were times she was out of the office when the children had "the measles, the chicken pox." I think women in architecture have surmounted tremendous odds. My hat's off to them. They have done more than their share.

*Carleton Granbery, FAIA
Guilford, Conn.*

Intern Program: I read with interest the news article "ASC/AIA Continues to Withhold Support of Intern Program" that appeared in the November issue (p. 31). The article does a fine job of clarifying the issues; however, two statements were made that need to be clarified.

The first statement appears in the second paragraph on p. 32: "(Most state architectural registration boards require that a candidate for the NCARB examination have three years of experience and a degree from an accredited university.)" Currently, most state boards do not require an accredited degree for admission to registration examinations; only Puerto Rico, Florida, Indiana and Michigan now have such a requirement. However, between now and 1990 a number of additional states will require the accredited degree. Illinois, in 1985, will require a baccalaureate degree as their minimum education standard. And, a number of other states are considering revisions to the education standard.

The second statement appears in the final paragraph on p. 84: "He [Robert Rosenfeld, NCARB director of internship programs] also maintains that the interns completing IDP's training requirements are performing better on the NCARB examination." The specific examination Mr. Rosenfeld refers to is Section B of the Professional Examination.

*Samuel T. Balen, FAIA
Executive Director, NCARB*

Correction: A. Levy, AIA, and James T. Fraser Jr., FAIA, were mistakenly listed in the deaths column of the October issue. Our apologies.

LETTERS

Women In Architecture: There was a time in the '30s when one could turn around in the middle of Times Square and see more than a dozen theaters. They were all designed by Thomas Lamb. His chief drafter supervised a staff of 30 or 40 architects. She was a Miss Dorn.

Among those doing work in New Haven we have had Jean Coolidge, Margaret Vilas, Augusta Breed, Carina Mortimer and from out of town Clothiel Smith. Patricia Tetrault is now manager of architecture and engineering for Yale University. And there must be many more unsung.

For early pioneers in the modern movement one thinks immediately of Victorine Homsey, Sarah Harkness, Jean Fletcher, Aino Aalto, all of whom were principals in their own offices.

Diana Allyn and I were married shortly after she graduated from Bennington College. The wedding bells had hardly stopped ringing before the Navy sent me to the South Pacific in the war with the Japanese. Then it was that Diana decided to go to Harvard to study architecture



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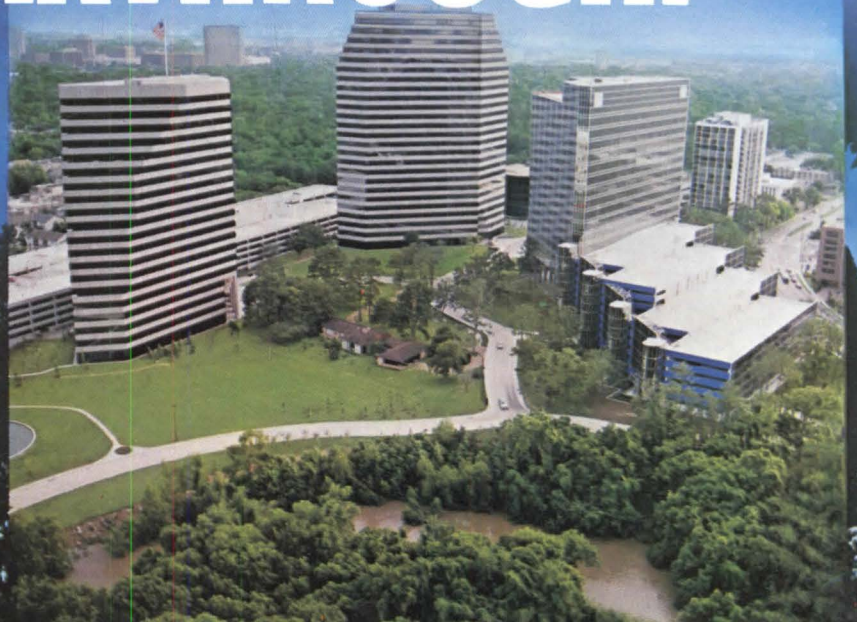
THE RIGHT GLASS HELPS TRANSFORM A BAYOU



The IBM South Regional Service Center was designed by Caudill Rowlett Scott/Houston, Texas.

The Union Texas Petroleum and Internorth buildings were designed by Morris☆Aubry Architects/Houston, Texas.

INTO A BREAKTHROUGH.



Houston's West Side now boasts a glittering architectural landmark in the midst of a once-bleak bayou landscape.

At the heart of the 28-acre complex is an imposing group of three new office buildings bound by a graceful visual harmony.

The right glass strikes the keynote. Tying the complex together are the silver tones of two different high-performance glass products from PPG.

A spectacular, jewel-like curtain wall of PPG Solarcool[®] Gray reflective glass lets the new IBM Southern Regional Service Center mirror its setting on all three sides. Even the three-section garage enhances the parklike atmosphere, since it's clad in the same reflective spandrel glass.

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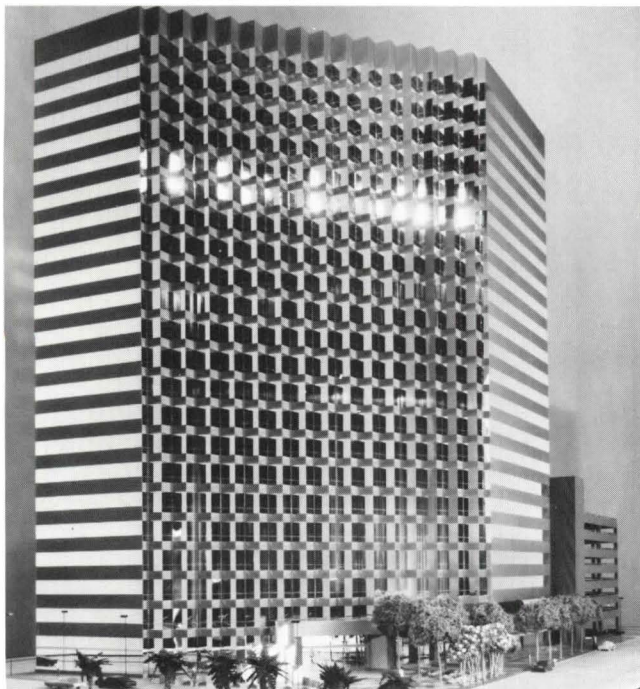


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News About Insulating Glass

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The recently completed 1555 Poydras building was developed by Westminster City Center Properties and Coleman Development Company and designed by the architectural firm of Sikes Jennings Kelly, Houston, Texas.

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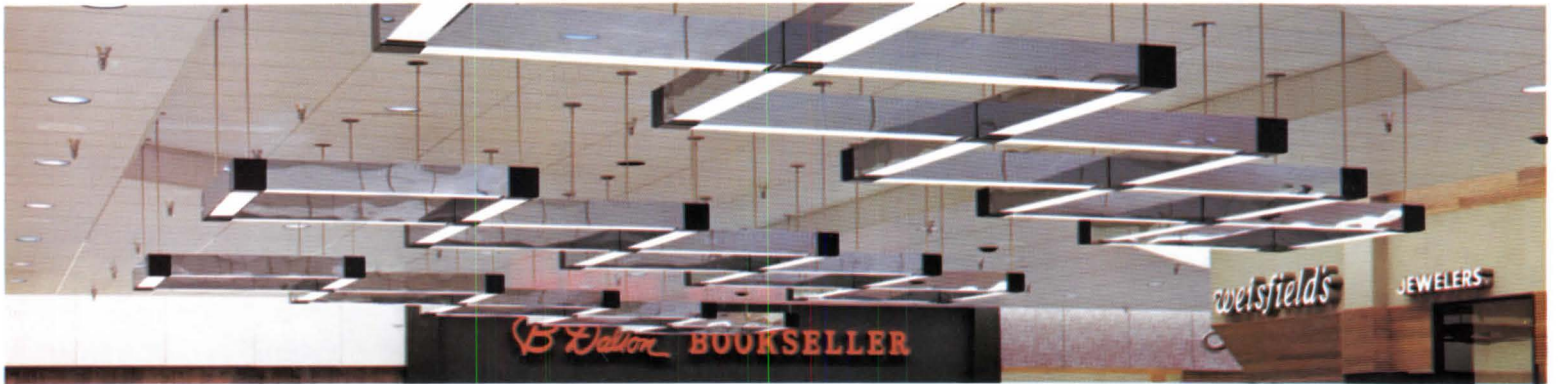
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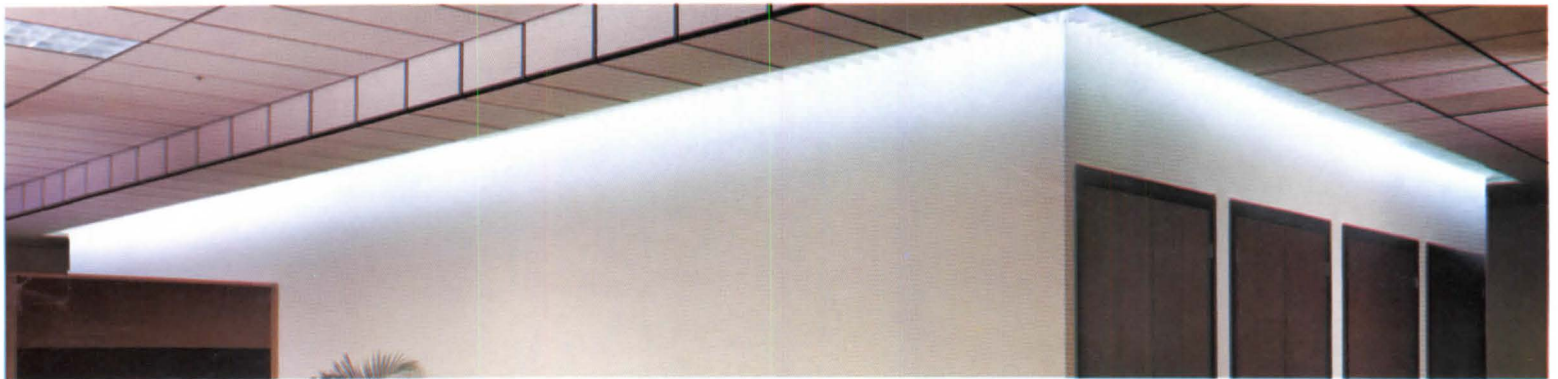
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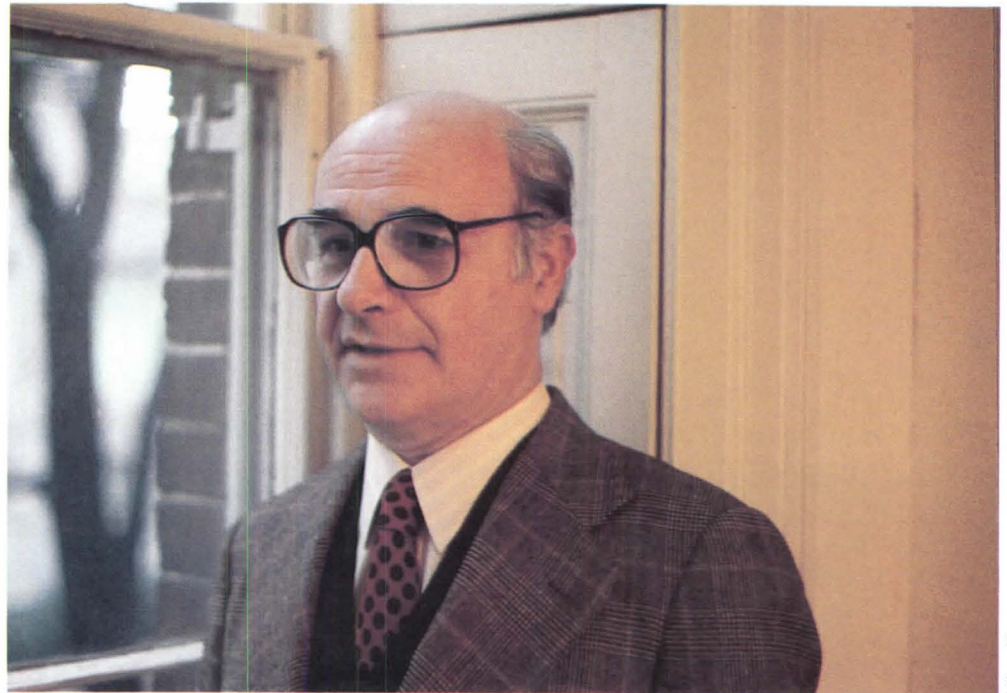
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Giurgola Selected as AIA's 43rd Gold Medalist

Romaldo Giurgola, FAIA, partner in the firm of Mitchell/Giurgola and Ware professor of architecture at Columbia University, has been selected as the 43rd recipient of the gold medal. It is AIA's most prestigious award and can be given to an architect from any part of the world "in recognition of most distinguished service to the architectural profession or to the Institute."

As William Marlin wrote five years ago, Giurgola's works "go to the heart of the tough questions facing the practice of architecture today, for they ask the toughest question of them all. Namely, what is its purpose?" The answer Giurgola gave as early as 1965 in the essay "Reflections of Buildings and the City" served as prologue to today's prevailing ethic of contextualism and inclusiveness. He wrote, "Order cannot be confused with theory elaboration and its consequences: visual formalism. Order comes, rather, from a realistic apprehension of the facts that make the city—facts that extend from the historical experience of human events to the functional logic of its structures."

From his mentor Louis Kahn, Giurgola absorbed an attentive attitude toward history and brought it once more into harmony with the realities of everyday, modern life. And like Kahn too, Giurgola's thinking, though often expressed in riddles or opaque free verse, is grounded in the nitty-gritty of specific situations and their requirements. He talks about architecture as providing "an itinerary among fragments, always different, always respond-



Allen Freeman

ing to differing instances of life and to natural conditions." Architecture, for him, is an accommodation to the complex interrelationships of program, site, available materials, social, political, economic and historical circumstance.

As a consequence, perhaps, some of his most satisfying buildings are often his most modest. And as Paul Goldberger has written, it is rare "that Mitchell/Giurgola designs something that drives you to passion, but it doesn't matter, because they're always so intelligent." Ching-Yu Chang wrote of Giurgola's buildings that they "do not participate in the profession's preoccupation with intra-architectural arguments; instead they emerge from a clear synthesis of external constraints." And "while many people enjoy instant happenings, Mitchell/Giurgola continues to fight for the importance of the process."

Like three of the last four gold medal winners, Giurgola was reared abroad and came to the U.S. as a young man. Born in Rome 61 years ago and educated at the school of architecture of the University of Rome, he earned a master's degree from Columbia University in 1951. Seven years later, he founded the Philadelphia firm of Mitchell/Giurgola with Ehrman Mitchell,

FAIA, president of the Institute in 1979. When Giurgola was appointed chairman of Columbia's department of architecture in 1966, the firm opened its New York City office.

In the statement of nomination for the gold medal, Giurgola was described as a "practitioner and partner in a firm whose record of awards and competition wins is outstanding." Mitchell/Giurgola first received national attention in 1964 when it won the design competition for a new AIA headquarters building. Though commended by most critics and called "brilliant" by Ada Louise Huxtable, the scheme was rejected by the District of Columbia fine arts commission for "being out of keeping with the feeling of the Octagon." After revising the scheme and having it again turned down, the firm withdrew. The rest is history. Among other competitions won by M/G were the 1974 contest for the Wainwright building addition to the Missouri state office complex in St. Louis, and most recently the international competition for Australia's new parliament house in Canberra.

The firm's list of national AIA honor awards includes Columbus East High

continued on page 16

<i>Giurgola named gold medalist</i>	(above)
The Institute	
<i>Board approves reorganization, creates Service Corporation</i>	16
<i>Boney wins Kemper award, Chase the Young citation</i>	16
Government	
<i>GSA names new commissioner of public buildings service</i>	22
<i>Energy guide for historic buildings</i>	25
Practice	
<i>New guidelines for accessibility</i>	25
<i>Steel awards</i>	28
<i>Localities hold competitions</i>	31
<i>An expanded Kennedy Center?</i>	31



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News from page 13

School, Columbus, Ind.; the Adult Learning Research Laboratory, Bryn Mawr, Pa., and the Penn Mutual Life Insurance Co. Tower, Philadelphia.

In addition to practicing and teaching architecture, Giurgola has written extensively about design and urban planning. Most notable is his book of 1975, *Louis I. Kahn*, with Jaimini Mehta as coauthor.

In response to his award, Giurgola says, "I regard the gold medal as having been given to me for my *role* as a respon-

sible architect rather than for any particularities of design, for a sense of professional integrity and obligation to society. If you act as a professional in the best sense, you don't have a design *preference*. I decry the self-complacency of much current architecture with its assumption that all there is is fashion and the exhilaration of the moment. Architecture has always been based on aspirations that surmount the style of a particular time; trying to translate these into building has been my principal focus."

The Institute

Board Approves Reorganization Creating 'Service Corporation'

At its December meeting AIA's board of directors approved reorganization of the Institute and voted to acquire as an investment a building in Virginia. A new slate of officers, headed by Robert M. Lawrence, FAIA, was installed in ceremonies Dec. 4.

The board in essence ratified the reorganization plan presented to it last August (see Nov. '81, p. 18). This restructuring consolidates all of AIA's business functions under a new corporate entity, the AIA Service Corporation; combines the charitable, educational, scientific and research activities of the AIA Research Corporation and the former AIA Foundation under the AIA Foundation, and keeps the AIA primarily involved in professional membership programs and activities. The changes took effect with the new year.

Under the former organization structure, the sole function of the AIA Corporation was to manage the Institute's headquarters building in Washington. The new Service Corporation assumes that function, plus ownership and management of a 61,260-square-foot warehouse/office building in Arlington, Va. The board approved the \$1.5 million purchase primarily as a real estate investment; the Institute will use a portion of the warehouse space and lease out the remainder. The Service Corporation's finance committee is also considering other capitalization/financing plans. Production Systems for Architects & Engineers, the AIA JOURNAL, other publication functions and the business management and word processing activities of the Institute are now part of the AIA Service Corporation.

Under the structure approved by the board, the Institute's executive committee and board serve those same functions



Outgoing President Vosbeck (left) and President Lawrence (right) at installation.

for the Service Corporation. Staff changes connected with the reorganization include the appointment of Charles R. Ince Jr., former president of the AIA Research Corporation, as president of the new AIA Foundation. Earle Kennett, formerly the Research Corporation's director of programs, is the foundation's research administrator. C. Christopher Kelly, former Research Corporation director of finance, becomes business manager of AIA Service Corporation.

Jeanne Butler Hodges, president of the AIA Foundation since 1972, has resigned as of the end of 1981.

New officers of the Institute were installed in ceremonies held while the board was meeting in Washington. The new president, Robert Lawrence of Oklahoma City (see Dec. '81, p. 22 for a summary of his plans for the year), is joined by Robert C. Broshar, FAIA, of Waterloo,

Iowa, as first vice president/president-elect. Other vice presidents are Ellis W. Bullock Jr., FAIA, of Pensacola, Fla., James R. Nelson, AIA, of Wilmington, Del., and William A. Rose Jr., FAIA, of White Plains, N.Y. Harry Harmon, FAIA, of Long Beach, Calif., is secretary and Henry W. Schirmer, FAIA, of Topeka, Kan., is treasurer.

The new board members installed are, by region: California, Harry C. Hallenbeck, AIA; Central States, Larry K. Edmondson, AIA; Florida/Caribbean, Ted Pappas, AIA; Illinois, Donald J. Hackl, AIA; Middle Atlantic, Samuel A. Anderson III, AIA; New York, Peter Thomson, AIA; Northwest, L. Jane Hastings, FAIA; Pennsylvania, Melvin Brecher, FAIA; Texas, James A. Clutts, FAIA, and Nancy R. McAdams, AIA, and Western Mountain, Philip Wade Dinsmore, AIA. The new public director is John Naisbitt of Washington, D.C. Serving ex officio as chairman of the Council of Architectural Component Executives is James P. Cramer of Minneapolis.

In other action, the board approved partial funding for completion of the Richard Morris Hunt collection project. Negotiations are under way with several museums, including the National Gallery in Washington and the Metropolitan in New York City, for an exhibition of Hunt's drawings in 1983.

Among the reports to the board, one covered the status of the energy professional development program, for which workshop attendance figures rose steadily during the first four months of the program. Another report set forth the goal to bring AIA's membership, both regular and associate, up to 50,000 by the end of 1983. Current membership is approximately 38,000.

Additional plans for AIA's 125th anniversary celebration were announced, including the commission of a work by artist Robert Indiana.

Boney Wins Kemper Award, Chase the Young Citation

Leslie N. Boney Jr., FAIA, of Wilmington, N.C., has won AIA's Edward C. Kemper award for 1982, and John S. Chase, FAIA, of Houston has been named to receive the 1982 Whitney M. Young Jr. citation. The Institute's board selected Boney and Chase at its December meeting; presentations will be made during the annual convention this June in Honolulu.

The Kemper award recognizes a member "who has contributed significantly to the Institute and the profession." Boney is the immediate past chancellor (1980-81) of the Institute College of Fellows. As

continued on page 22

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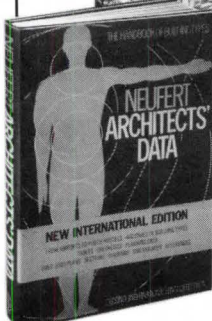
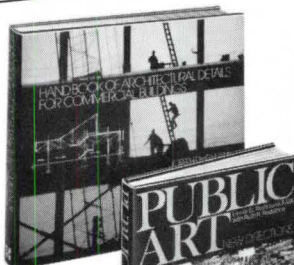
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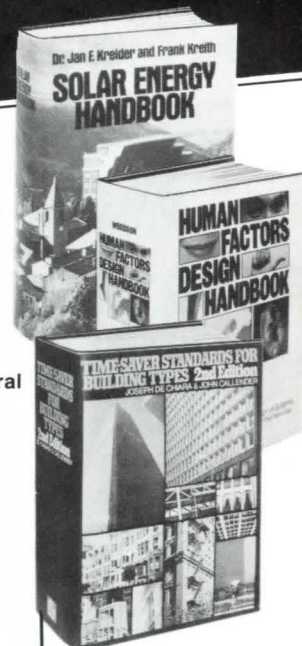
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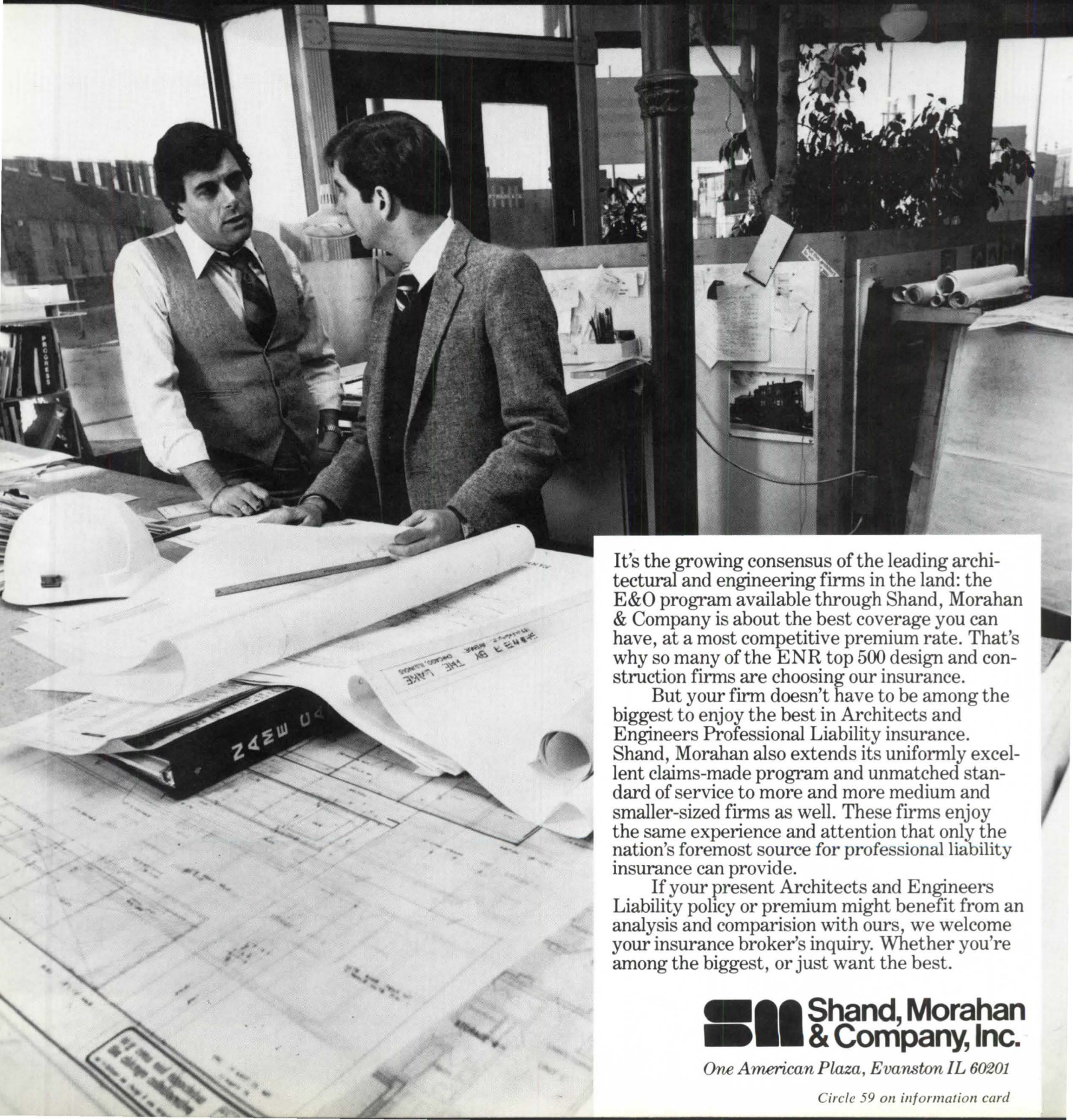
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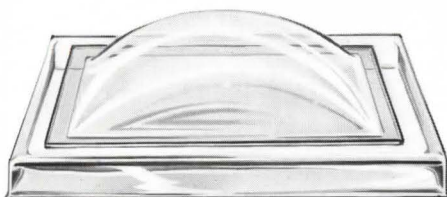
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The Institute from page 16

chancellor, he has been a leader in a project to publish, through McGraw-Hill, a book about the AIA gold medal and its recipients.

He has also worked with the University of North Carolina Television Network to produce a program featuring interviews with living gold medalists.

A past member of the AIA board of directors representing the South Atlantic region ('74-'76) and of the AIA Foundation ('78-'79), Boney has also served on AIA's national energy study commission, commission on government affairs, national judicial board and on AIA committees on federal agencies, schools and educational facilities, and esthetics. He chaired the state government affairs and resolutions committees and testified for AIA before Congress against attempts to alter the instructions of the names of states on the Lincoln Memorial to include Alaska and Hawaii. He also was instrumental in the funding of the AIA's Richard Morris Hunt collection project.

Boney, a partner in a family-run practice in Wilmington, is a former president of the North Carolina Chapter/AIA; he helped organize the Eastern North Caro-

lina Council/AIA, for which he also served as president.

The Whitney Young citation recognizes "significant contributions . . . toward meeting the architectural profession's responsibility to the social issues of today." John Chase, who heads a Houston firm bearing his name with a branch office in Washington, D.C., was the first black to enter and graduate from the University of Texas. He received a M.Arch. degree there in 1952. He subsequently became Texas' first black member of AIA (1960) and of the National Council of Architectural Registration Boards.

Chase was president of the National Organization of Minority Architects in 1975 and has served as secretary and as a director of the Houston Chapter/AIA. He also has served on the boards of the Houston Area Urban League, of Hampton Institute, where he received his undergraduate degree in 1948, and of Huston-Tillotson College. He was appointed in 1980 by President Carter to serve on the board of the District of Columbia fine arts commission, which reviews plans for public buildings, parks and other architectural elements in the capital and for private structures in certain parts of the city.

Government

Realtor-Appraiser Heads GSA's Quiet Public Buildings Service

Richard O. Hasse, a Washington, D.C., realtor-appraiser and real estate broker, is the new commissioner of the public buildings service, the GSA division responsible for construction, leasing and maintenance of space in 10,000 federal buildings nationwide.

Hasse, who took over the job last month, succeeds Albert R. "Mike" Marschall, a Carter administration holdover who resigned last summer.

The resignation was reportedly because of disappointment that there is no major building program planned for GSA.

President Reagan's appointee to head GSA, New Hampshire businessman Gerald Carmen, said shortly after taking office last June, "We know we are not going to be able to go ahead with any big building program. . . ." The agency's budget for fiscal year 1982, as set forth in a Congressional continuing resolution until appropriations are made final, calls for only \$57,791,000 for construction of new buildings and acquisition of existing post offices. Repairs and alterations are budgeted at \$198 million. "It is not a very exciting year," says David Dibner, FAIA, GSA's coordinator of design and con-

struction, "but it hasn't been very exciting for a long time."

As president of a firm bearing his name, Haase performed appraisals of office and apartment buildings, hotels, shopping centers, housing subdivisions, condominium conversions and land parcels. His clients included mortgage life insurance companies, savings institutions, government agencies and banks. He also has been involved in investments, renovation, construction and consulting, and he was an independent consultant to the District of Columbia department of finance and revenue to hear real estate tax appeal cases.

General Services Administrator Carmen, in announcing Haase's appointment, mentioned the appointee's "private sector expertise" and GSA's efforts to make the agency "run more efficiently, economically and businesslike."

Hass, 47, is a 1958 Naval Academy graduate who served in the Air Force. He was the choice of the White House personnel office. The position does not currently require Senate confirmation, although pending legislation would require that. *Government continued on page 24*

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The real thing. A Sloan Flush Valve. For real water savings and real-life dependability.



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Historic Buildings Energy Aid

The problems of balancing energy efficiency requirements with design considerations in historic buildings are addressed in a new booklet, "Energy Conservation and Solar Energy for Historic Buildings: Guidelines for Appropriate Designs," prepared for the National Park Service.

The guidelines elaborate on the Secretary of Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" with specific regard to

energy conservation measures and solar energy applications. The new booklet deals with the issues of sensitive placement of new exterior elements such as active solar collectors and skylights; interior considerations such as dropped ceilings and interior shades, and site modifications for maximum shading, etc. Included under each subject are drawings, photographs, "design guidance" and reference sources for further reading.

The booklet is available for \$6.95, prepaid, from the National Center for Architecture and Urbanism, 1927 S St. N.W., Suite 300, Washington, D.C. 20009.

Practice

U.S. Board Adopts New Slate Of Accessibility Guidelines

The 22-member Architectural and Transportation Barriers Compliance Board has adopted a new slate of proposed minimum guidelines for making federally financed buildings more accessible to handicapped persons. The technical revisions bring the guidelines closer to the American National Standards Institute's accessibility standard. After a 45-day period of public comment, the board is expected to ratify the guidelines in early spring.

The unanimous vote came last month after nine weeks of compromises worked out between the board's two major factions: those backing the standards published last January (all but one of the board's public members) and those wanting guidelines less costly to implement (the board members representing federal agencies, plus one public member). The guidelines apply to new construction, additions, alterations and leases. They provide requirements for parking, entrance doors, assembly areas, washrooms, elevators, tactile warnings for blind persons, telephones and telecommunication devices for deaf persons, etc. Once minimum guidelines are adopted, it is the job of the agencies involved to write the implementing standards.

The January 1981 guidelines, while receiving support during the period of public comment that ended Nov. 6, were opposed by the federal agencies most affected by them—GSA, HUD, the Defense Department and the U.S. Postal Service—as well as by AIA and others. Those guidelines differed substantially from ANSI's accessibility standard.

ANSI standard A117.1 ("Specifications for Making Buildings Accessible to and Usable by the Physically Handi-

capped"), first approved in 1960, was revised in 1980 after a \$500,000, five-year research effort sponsored by HUD and involving more than 55 public and private organizations concerned with accessibility. The '60 version has been adopted by almost every state, and many states are revising accessibility standards to include the revisions of '80.

The board's guidelines adopted last January borrowed from the ANSI standard yet differed in technical requirements and format. This summer, 12 of the board members voted to open the guidelines to public comment, a move considered preliminary to rescission. The 12 in the majority consisted of all 11 representatives from federal agencies, plus one public member. In September, two days before a scheduled vote on killing the guidelines, Mason Rose, the board's chairman and a handicapped attorney from Los Angeles, secured postponement of the vote until December. Then for nine weeks, compromises and concessions were worked out between the factions.

Two aspects of the guidelines were at issue: technical requirements, i.e. the width of doors, etc., and scope of implementation. In writing the January 1981 guidelines, some critics contend, the board failed to consider sufficiently the cost of the scoping provisions. (The ANSI standard does not deal with scope.) A task force of the four federal agencies most involved has worked independently of the board ironing out minor technical difficulties in the 1980 ANSI revisions. The task force also dealt with scoping provisions based on their understanding of the building sector.

Within the board, the minority favoring *continued on page 28*



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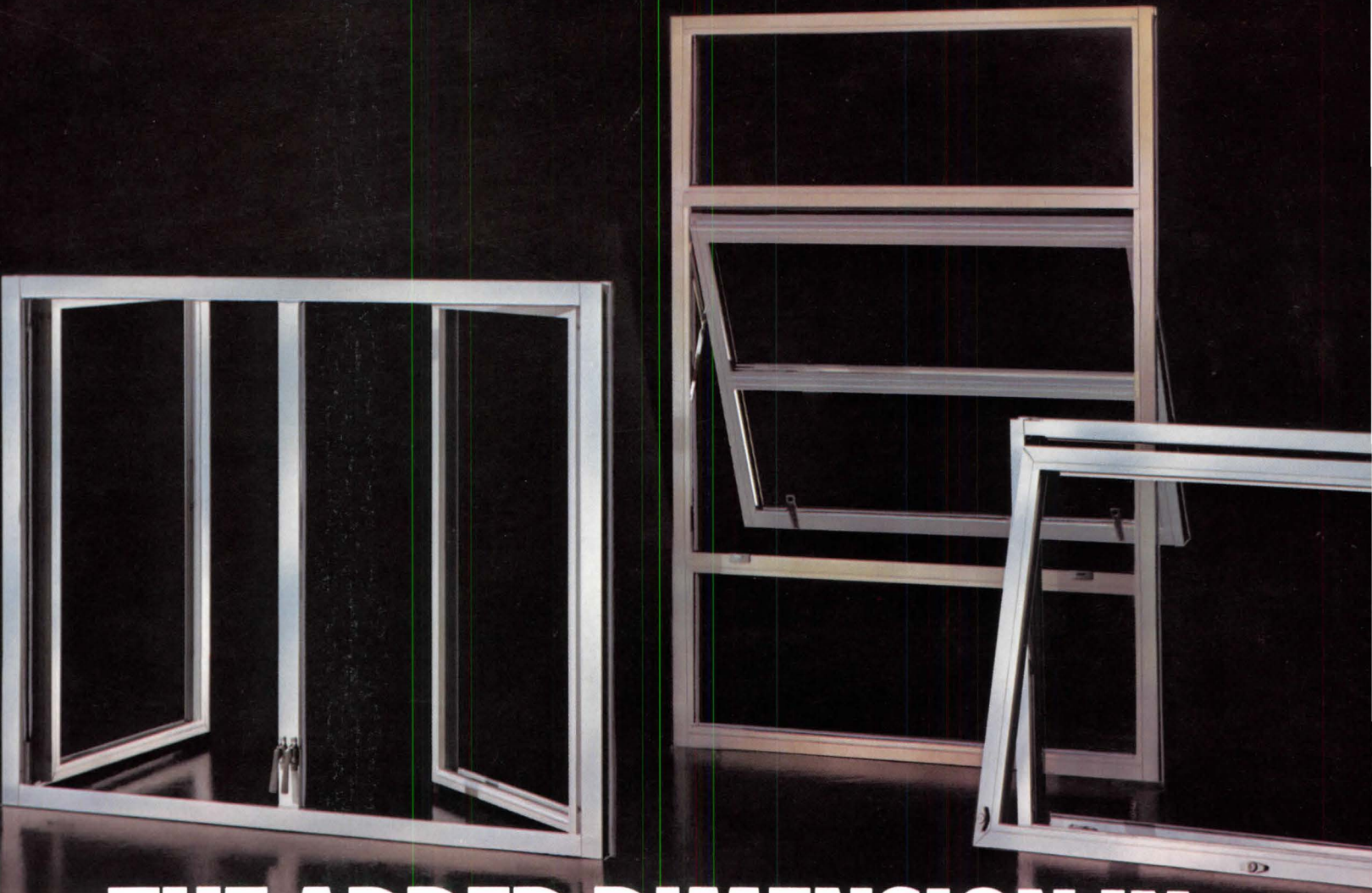
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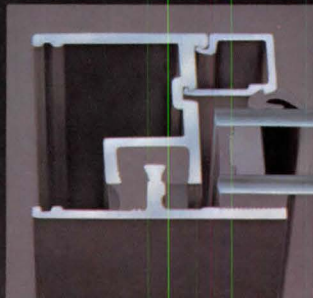


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Practice from page 25

the January 1981 guidelines saw compromise as the only way to salvage part of their work (the board was set up in 1978). "We had to give up some of the more expensive items," said Rose, adding that he hopes the board will consider these measures "on an independent basis and get cost-effective access." The majority, meanwhile, recognized that if the entire package were scrapped, new guidelines would have to be written. Said William Reynolds, assistant attorney general for civil rights, "There was a lot to be said for modifying these guidelines and putting them into conformance with" the ANSI standard.

The board's revised guidelines were being prepared for publication in the *Federal Register* as the *Journal* went to press. A spokesman for the board said that corresponding sections of the ANSI standard would be printed in proximity to each guideline proposal, along with notations on substantive differences.

"For the technical provisions, which are primarily what ANSI deals with, the board has made a real attempt to be consistent with ANSI throughout," said Sally Free of the board staff. "We have deviated where we have found that the cost data or the current research is such that we don't have enough information to support (concurrence with ANSI). Tactile warnings and door closures are two good examples.

"We have made some modifications in scoping provisions that address concerns expressed by some of our member agencies. However, we don't think it has sacrificed a great deal of accessibility in the process."

Steel-Framed Buildings Cited

Six buildings have been selected by the American Institute of Steel Construction for its 1981 architectural awards of excellence. The winners are:

- James D. Ferris, FAIA, J. D. Ferris & Associates, Chicago, for the Briggs and Stratton Distribution Center and Manufacturing Facility, Menomonee Falls, Wis.;
- Bruno D'Agostino, AIA, Benjamin Thompson & Associates, Cambridge, Mass., for Harborplace, Baltimore;
- Robert A. Fowler, AIA, Fowler/Ferguson/Kingston/Ruben, Salt Lake City, for Mountain View High School, Orem, Utah;
- Jay Bauer, AIA, Caudill Rowlett Scott, Inc., Houston, for the Herman Miller Seating Manufacturing Plant, Holland, Mich.;
- Keith Olsen, Krueck & Olsen, Chicago, for "Steel & Glass House," Chicago;
- Jack R. Yardley, FAIA, Harwood K. Smith & Partners, Inc., Dallas, for the Reunion Arena, Dallas.

continued on page 31



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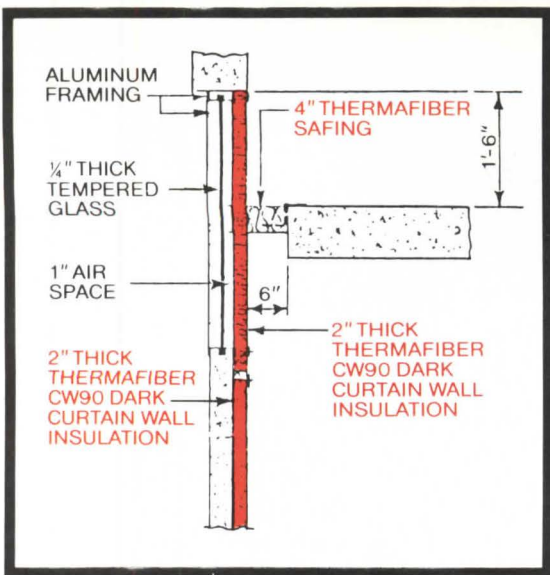
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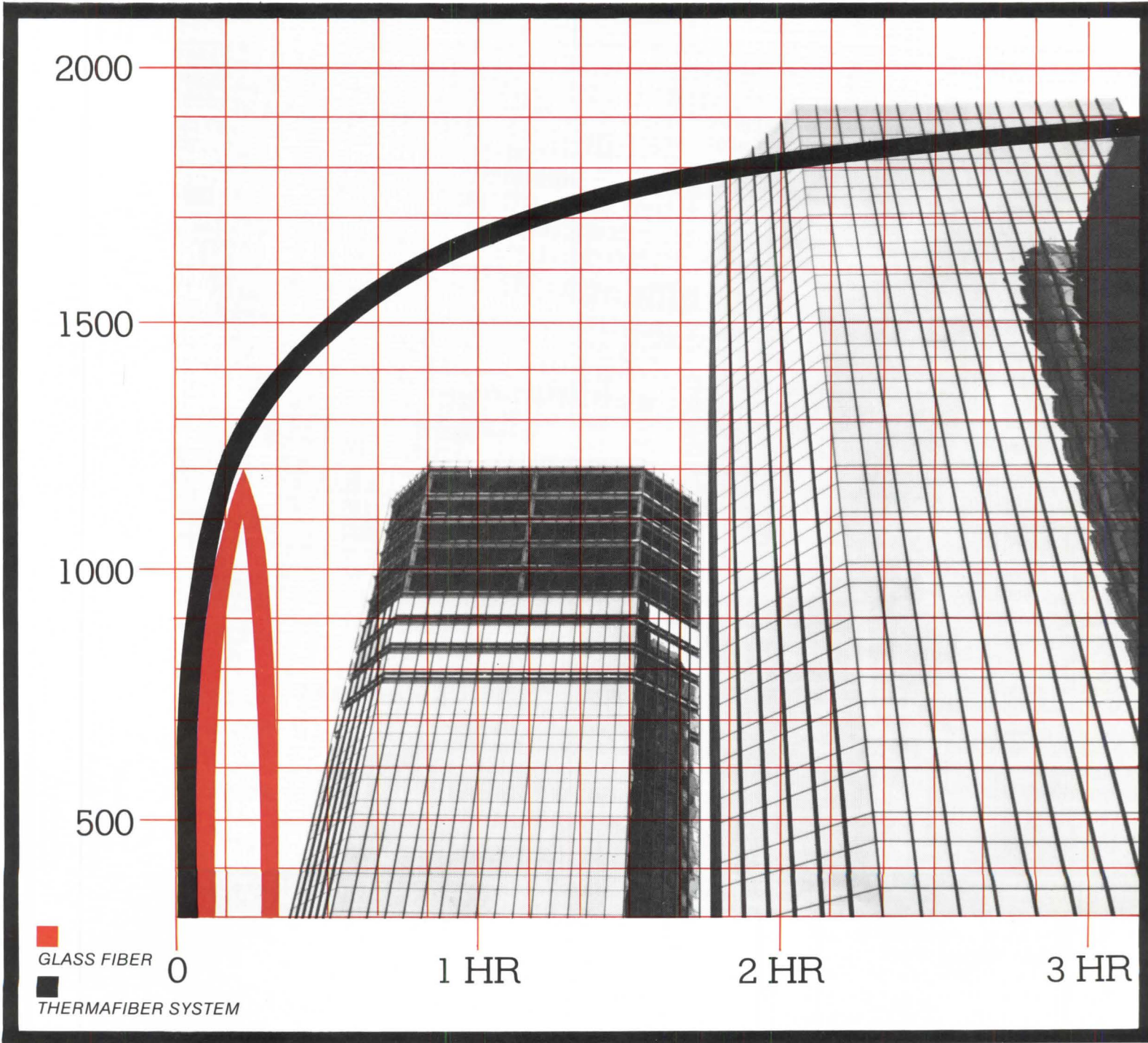
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UNITED STATES GYPSUM
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Practice from page 28

Judges for the awards were Jacques C. Brownson, Bruce J. Graham, FAIA, Philip J. Meathe, FAIA, Walter P. Moore Jr. and R. Randall Vosbeck, FAIA.

Three More Localities Conduct Competitions

The use of local competitions is increasing around the country, and three recent examples in Portland, Me., Anchorage and Savannah, Ga., demonstrate a diversity of purpose and range of results.

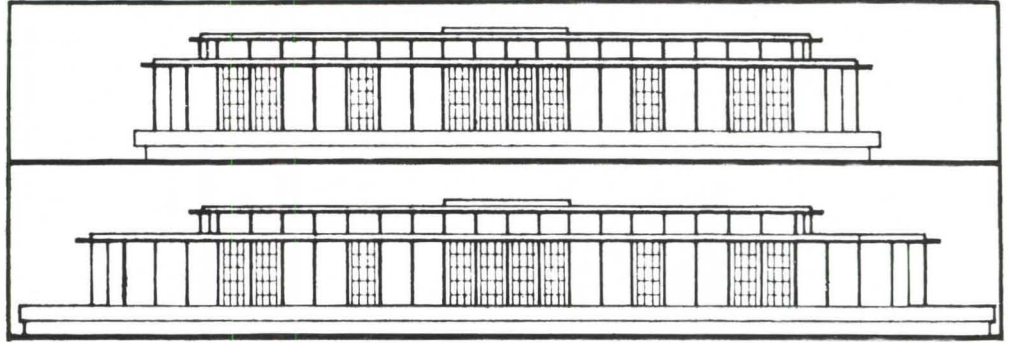
In an unusual two-stage competition of ideas, the City of Portland, Me., garnered 106 plans for development of a downtown block; from these, a "technical panel" of architects and others selected five schemes. Now, after receiving detailed plans from the five, a committee of local citizens has awarded honorable mentions to two of them, and the city council is considering revision, based on the recommendations, of design guidelines for the site. It is a one-acre triangular urban renewal parcel in the center of downtown Portland.

The technical panel—comprised of three architects (Harry Cobb, FAIA, Eaton Tarbell and George Terrien), a landscape architect (Paul Friedberg), a market analyst and a cost analyst—selected five relatively densely built designs, a decision based on the site size, surrounding uses and sizes of buildings.

The awards committee found none of the five finalist designs worthy of the "excellence" designation, but thought the two receiving honorable mention illustrated "well-conceived, honorable solutions to the planning and design problem." One, by S. Fiske Crowell of Concord, Mass., includes a large central glass-roofed court surrounded by a low retail structure on the long side of the triangle opposite an L-shaped 12-story hotel. The other is by John Whipple and Mitchell-Dewan Associates of Portland. Their submission also places a hotel tower at the northern corner of the site and includes a retail mall.

The competition in Alaska, for a new headquarters library for the City of Anchorage, was a more traditional two-stage competition. The first stage drew 14 entries, from which five firms or teams were chosen to participate in the second stage. The winner was the Spokane, Wash., firm Environmental Concern in association with Cole-Thompson of Anchorage. Their design centers on an atrium lobby from which radiate circular plan forms, one of which will house a theater and lecture hall, the second a special Alaskan collection and the third traditional library activities.

For a look at the five winners in Savannah's competition for infill housing in a Victorian row, see page 36.



Supermegabox? In a feasibility study to provide space for a new conservatory of music and theater in the Kennedy Center in Washington, D.C., long the dream of Chairman Roger Stevens, George Hartman, FAIA, has suggested that both ends of the already elongated building by Edward Durrell Stone, FAIA, be extended 60 feet. Hartman's concept, still under study, also would convert some of the parking space in the building podium to classrooms, practice rooms and service spaces. He suggests that a (relatively) small building be constructed on adjacent land for student housing.

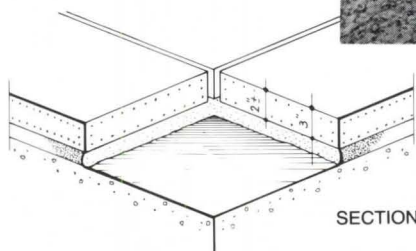
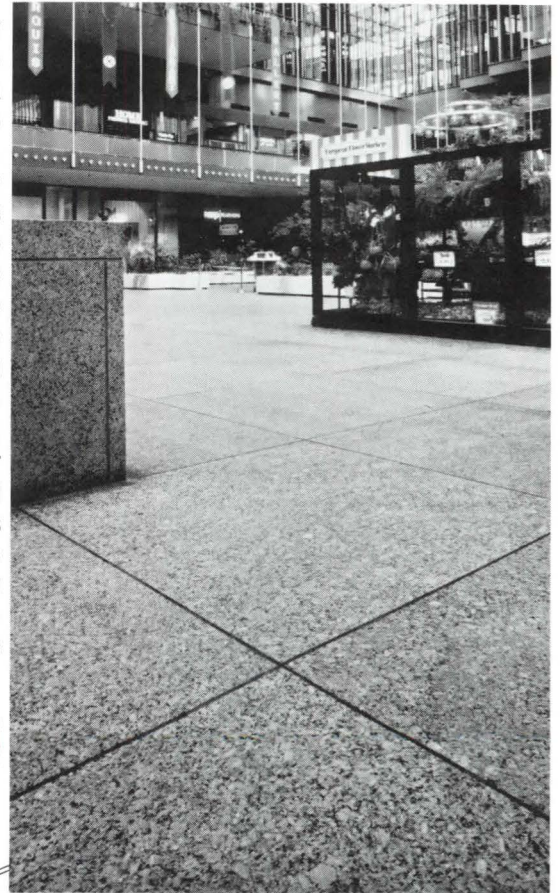
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Briggs and Stratton Corporation planned to build a 744,000 square foot distribution center and manufacturing facility on a 64-acre sloping site along Highway 41-45 in Menomonee Falls, Wisconsin. They wanted their building to project a contemporary image for the company. Their requirements: 420,000 square feet for light manufacturing, 300,000 square feet for warehouse and parts distribution center, and a connected 24,000 square foot office building.

Erection speed was essential because of Wisconsin's severe winter weather. Construction started in April, 1979. Completion was scheduled for June, 1981.

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As many as eight panels per day were installed, starting as soon as the structural steel frame was erected. The panels went up so fast that Briggs and Stratton moved in six months ahead of schedule, in December, 1980. This wall system not only contributes to the building's high energy efficiency, but the panels are readily removable and re-usable for future expansion. One more example

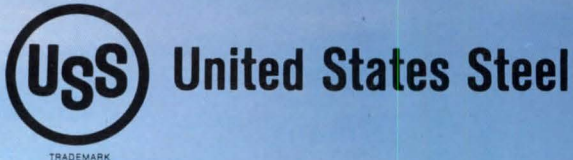


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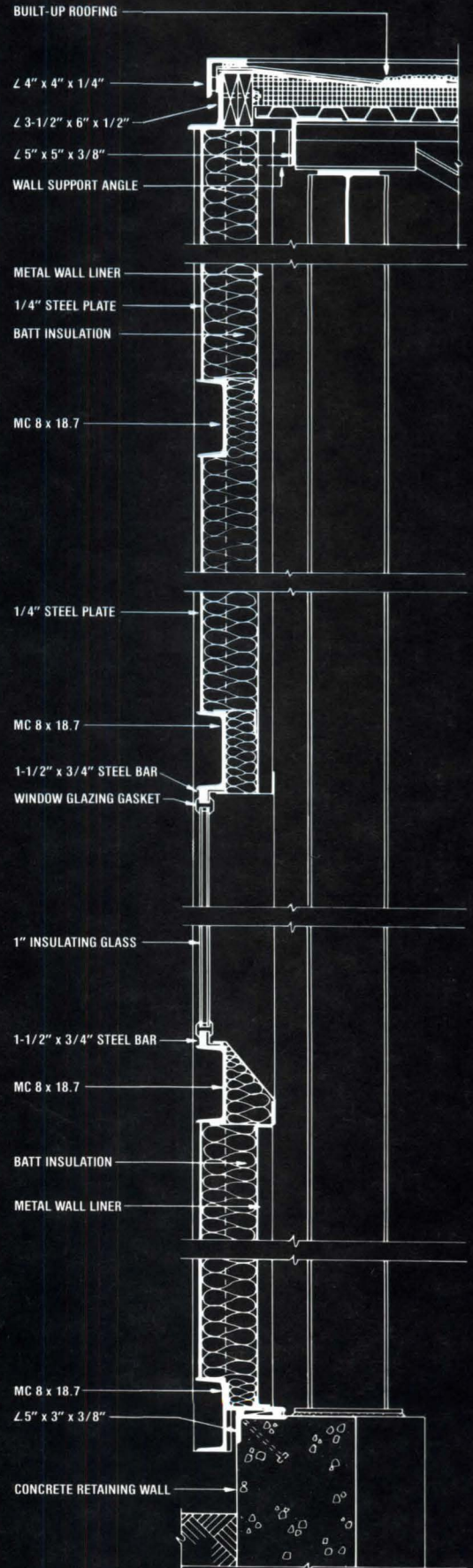
To find out more about this impressive new building, contact a USS Construction Representative through your nearest U.S. Steel Sales Office. Or write for a copy of the USS Exposed Steel Design Data Sheet B.3/2a to United States Steel, P.O. Box 86 (C1675), Pittsburgh, PA 15230.



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STRUCTURAL ENGINEER: Gillum-Colaco,
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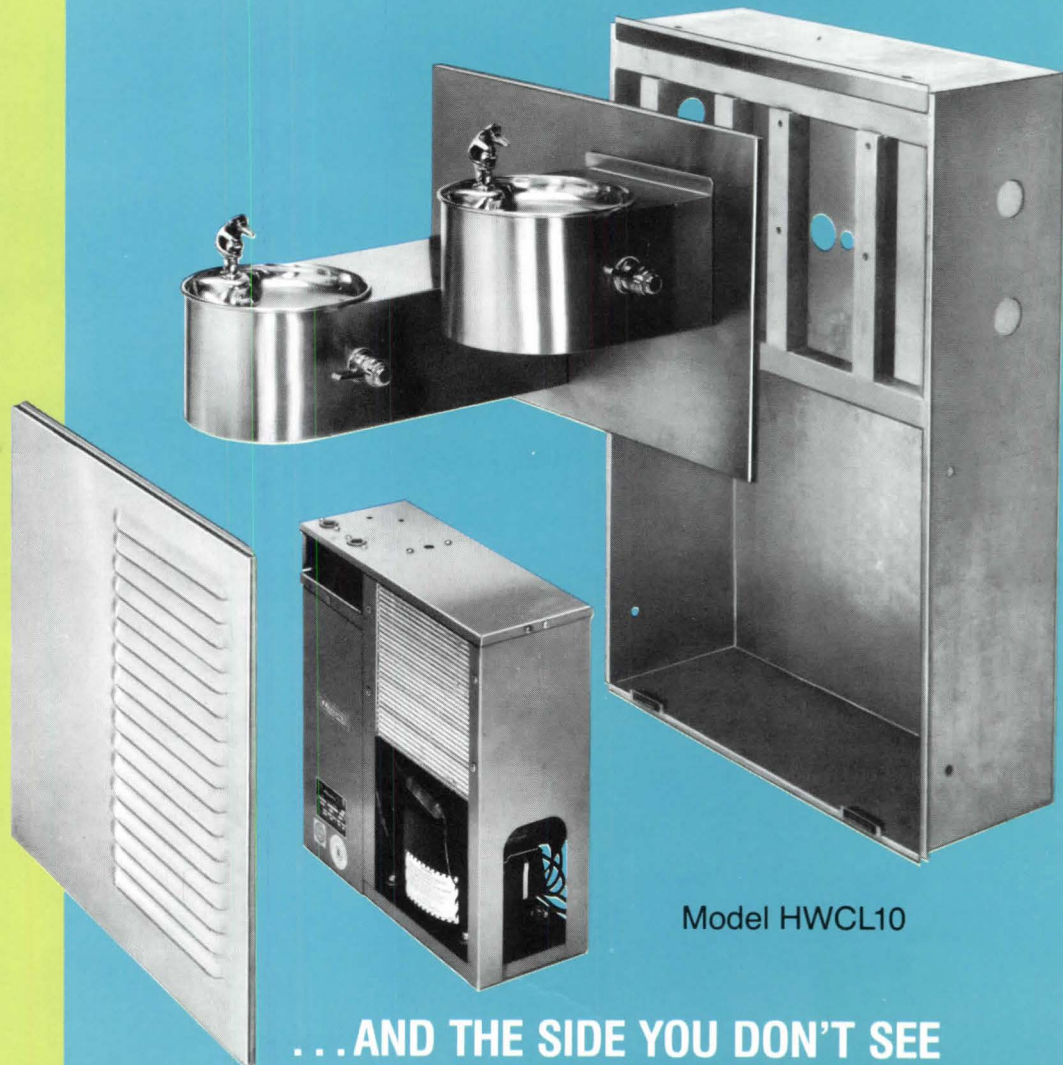
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Savannah Infill: Historic Savannah Foundation has chosen five winners from 50 entries in an unusual conceptual competition for infill housing in the city's Victorian District. The competition was to develop designs for a compatible eight-unit condominium in a designated block bounded by flavorful old buildings (far left and right in perspectives) "with the desire that the winning solutions would attract interested developers and individuals and encourage new construction in the district."

The winners responded with a remarkable variety of approaches. They are (1) Neal I. Payton and Stuart Burgh, Burgh Associates, Charlottesville, Va.; (2) W. G. Clark, Charleston, S.C.; (3) Robert Burnham, Manhattan, Kan.; (4) Warren W. Gresham, AIA, Atlanta, and (5) Nagle, Hartray & Associates, Ltd., Chicago.

Professional adviser for the competition was John R. Eiter, AIA, and jurors George M. Notter, Jr., FAIA, Louis A. Sauer, FAIA, and Harry C. Wolf, FAIA. The competition was partly funded by the National Endowment for the Arts through a design demonstration grant to the foundation. *News continued on page 99*



5



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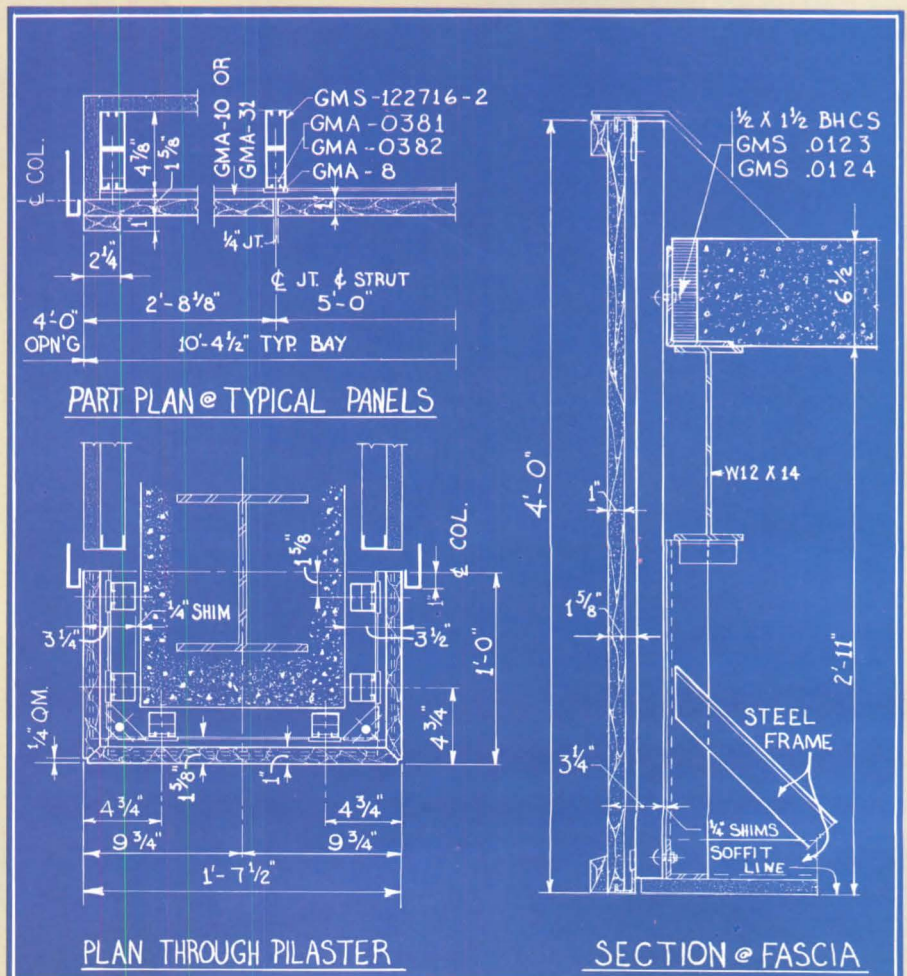
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AIA JOURNAL

This issue, in a sense, celebrates the death of two fads. In the 1970s, the energy crisis and the women's movement both had their major moments: capturing media attention, stimulating political action, creating scapegoats and superstars.

Now, in terms of public attention, both have abated somewhat. Temporary energy gluts obscure the long-term crisis; the female majority is categorized as a minority for all practical purposes and afforded the same forms of neglect, benign and otherwise, in a period of rampant majoritarianism.

We welcome their decline as fads because both are showing signs of genuine durability as movements. Energy concern has embedded itself deeply in the architectural consciousness, as one author points out in this issue, and surely the same must be true in other segments of the population. Also in this issue is an account of how a growing number of women are moving into positions of leadership in the architectural profession, and the same kind of progress, we are told, can be seen in other fields.

Both movements face problems and obstacles, but both seem to be gaining the strength and sticking power to meet them. *D.C.*

Women in Architecture: A Progress (?) Report And a Statistical Profile

By Nora Richter Greer

There are now more female architects and they are rising through the ranks faster, yet more feel the effects of discrimination. This was one finding of a 1981 replication of a 1974 survey of women in the profession.

The earlier survey was conducted by AIA's task force on women, the current one by the AIA JOURNAL. The questions on the two were virtually identical. The task force survey went to 1,600 women in the profession, 78 percent of them AIA members, and drew 571 responses (it was sent as well to 1,100 men with 201 responses). The AIA JOURNAL survey went to 1,700 women, 77 percent members, and 829 responded.

The "profile" that emerges from the recent survey is that the majority of women in the profession are between the ages of 26 and 38, are more likely to have a B. Arch. than a M. Arch. degree, work in an architectural firm with 50 or fewer employees, earn an annual salary of \$27,000 or less and are more likely to live in areas with large cities (such as California, New York, Illinois, Texas Pennsylvania and Massachusetts).

A comparison of the results of the 1974 and 1981 surveys shows that the mean age of respondents has dropped from 39 to 34. This reflects the increasing number of women entering the field in the intervening years. According to the U.S. Department of Labor, the number of female architects rose from 3,010 in 1975 to 6,030 in 1980. Yet, in 1980 women only represented 6.7 percent of the profession compared to 4.3 percent in 1975, the Labor Department reports, since the total number of U.S. architects by its estimate has risen from 70,000 to 90,000.

There is every indication that the number of women in the profession will continue to increase. In many schools it is reported that over 50 percent of those studying for undergraduate and graduate degrees in architecture are women. However, nationwide the number is probably smaller. The National Center for Educational Statistics reports that in the 1979-80 school year 17 percent of the B. Arch. degrees awarded went to women (compared to 9 percent in 1974-75), as well as 21 percent of the M. Arch. degrees (13 percent in 1974-75) and 12 percent of the doctoral degrees (14 percent in 1974-75).

A further comparison of the two surveys indicates that the majority of women are married, as was the case in 1974 (59 percent now, 54 percent then). The percentage of women with children has dropped from 44 percent to 37 percent.

More women indicate they work full time than did in 1974 (85 percent now; 69 percent then). The average number of years working is less (nine compared to 14 years). Respondents indicate that they have been with their present firm for five years (compared to six years in 1974) and in their present position for three years (compared to five years in 1974). As in 1974, the majority work in architectural firms. Fifty-nine percent of the recent respondents are registered compared to 57 percent in 1974.

Nor have women's pay or positions in their firms significantly changed. In both surveys 26 percent indicated that they are principals or partners. The number of associates has risen from 9 to 11 percent. In the recent survey 20 percent report they are project architects and 20 percent designer/drafters. The median annual salary for women has increased from \$14,700 in 1974 to \$23,000, but given an 8 percent annual pay increase, a \$14,700 income would have increased to \$24,191. The men's median annual salary was \$23,700 in 1974, which adjusted by 8 percent annually would have increased to \$40,618.

The number of women participating in professional development programs has increased only from 74 percent to 78 percent. Areas of interest have changed from environmental design as

the first preference in 1974 (followed by design, architect/developer and ecological issues) to design as the current favorite (with construction/financial management next).

The recent survey results indicate that a significantly greater number of women report being subject to various discriminatory practices. Fifty-six percent of the 1981 respondents found discriminatory practices in their work experience (40 percent in 1974), 46 percent in their school experience (24 percent in 1974) and 42 percent from such sources as coworkers, clients, contractors and construction workers (23 percent in 1974). One reason for the change may be, as one respondent put it, "Discrimination is relative and a matter of perspective." But it may also be a general discovery that, as another woman says, "I believe that discrimination exists in varying degrees, depending on whom you are dealing with. The scary thing is that most of the time it is undetectable on the surface and bit by bit is revealed."

Some women indicate that their rise through the ranks has not been different from their male colleagues. As one respondent put it, "I have not really experienced discrimination. I have always found that if I could do the job that was needed I was always treated and paid fairly." Others find that as women in a male-dominated profession they are all the more challenged to succeed. A few say they have experienced preferential treatment.

The area in which the greatest number of respondents found discrimination is salary (62 percent). As one respondent said, "I've been told by employers that 'women are a good buy because they are so pleased to get a job they work very hard and they don't want so much money. . . . Also, a man of the same qualifications should get more money to support a wife and family.'"

In the 1981 survey, 57 percent of the respondents report they have experienced discrimination in advancement, 54 percent in work assignments and 51 percent in hiring. Also, many women acknowledge that they have found, as one respondent notes, "a persistent tendency in firms to steer women away from building design and into 'auxiliary' areas such as interiors, public relations, programming and planning."

Many of the respondents comment that discrimination has hurt their sense of self-esteem and self-confidence, as one put it, "by having to re-prove myself in each new situation, rather than being accepted without questions as a competent professional." And many women state that it is difficult, if not impossible, to move to managerial positions in some architectural firms. "It is extremely difficult to continue to grow within a firm in terms of management, scope of responsibility and salary," one respondent says. "Most men become threatened when a woman gains competence in their areas."

Fifty-one percent of the respondents indicate they have experienced discrimination from coworkers and 53 percent from employers. "Being a woman in a man's field, often you are not taken seriously or are assumed to know less than men in your own field," one respondent says. Others note backstabbing by male coworkers or not being accepted into the "boys' club."

Women also report subtle discrimination in architectural schools, such as lower expectations from professors and lack of support through scholarships and fellowships. Forty-six percent of the recent respondents cite discrimination from schools and 47.6 from teachers.

Another difficulty women face in architecture, as well as in other professions, is how to integrate motherhood and career. In the recent survey one-third of the women report that their offices

had maternity leave and flexible working hours for mothers, while only 1 percent provided day-care and allowed partnership jobs, in which two part-time employees share the same office and sometimes the same work. So it seems that the decision to raise children and continue professional work is an additional strain. As one respondent put it, "The conflicts are great and the guilt is tremendous. It is very difficult to be 'good' at both. . . . Support from the profession would be a tremendous help."

Many respondents felt that they had been hurt psychologically from discrimination. One put it this way: "It seems to me that most discrimination is psychological, causing one to doubt oneself as a professional, and in most instances to disregard the person who created such doubts as 'male' with the male aggressive and domination characteristics obvious."

Yet, while acknowledging these problems, 69 percent of the respondents say they would choose architecture again, 67 percent say that greater opportunities exist today than in 1975 and 66 percent say that discrimination has not caused them to alter their professional plans, although a good number of respondents have started their own firms. And 76 percent would encourage other women to enter the profession. (Many respondents say they would encourage neither males nor females to enter the profession because the field is overcrowded, the hours are long, the pay is low and the current economic situation is bad for architects.) Yet, asked whether they felt a more active program should be developed to recruit more women into the profession, the answers were mixed; 46 percent said yes, 42 percent no.

Based on its survey, in 1975 the AIA task force on women secured board adoption of a five-year affirmative action plan for the Institute with specific goals of increasing the number of women in the profession, increasing the public's awareness of the contribution of female architects and to promoting equal access to employment for women. The survey had shown, the task force said, that among women architects, and particularly the young, "it is common to find dissatisfaction with the Institute, lingering suspicion and mistrust of the sincerity of its commitment and even doubts about its ability to address itself to women's issues in the profession and in society in general."

The fate of the affirmative action plan in the years between the two surveys has done little to dispel such feelings. Anna Halpin, FAIA, who served on AIA's board between 1977 and '79 and later as an Institute vice president, says: "In my years on the board there was never any reference made to the affirmative action plan." One past member of the task force says, "Basically I think that AIA at the national level breathed a sigh of relief and said, 'Well, we've dismissed that. We don't have to think about it for a while.'" The task force adjourned, leaving a number of embittered women in its wake.

When Elmer Botsai, FAIA, became president in 1978, he reconvened the task force to update the affirmative action plan. But the members choose instead "to single out areas where we could begin to make an impact as a committee, to get things done nationally and through AIA components," says Laurie Maurer, AIA, former task force member.

Its first efforts were to develop a clearinghouse of information for and about women, monitor AIA's committee and jury assignments and offer a list of women who would be interested in participating. A survey was conducted to determine the number of women in architectural schools and those teaching architecture, and for the first time firms were asked to indicate on the AIA survey the number of women on their staffs, as Maurer puts it, "to let the schools and firms know that the Institute was interested in the numbers and watching." The task force also attempted to strengthen the role of the woman's caucus at the AIA annual convention and put together a network of women within the AIA structure. "Across the country we have repeatedly heard that women do not feel welcome in AIA component activities. I would bet that half the men don't either, but make it their business to engage in them," Maurer says.

In 1980 the women's task force became part of the affirmative

action committee along with the minority resources committee. Because of the "clout" of the National Organization of Minority Architects, the change has been beneficial, says former task force member Virginia Tanzmann, AIA. During the past year, the committee established an "outreach" program to recruit high school minority and women students into architectural schools. Through the program students are brought to a nearby school of architecture where they are introduced to the profession by local women and/or minority architects. The availability of scholarships and architectural schools' requirements are discussed.

The committee is also working on a professional development program on management, an area where women have acknowledged a need. And the committee is putting together a list of women who have teaching experience and who would like to act as visiting critics or lecturers.

Women now comprise about 3.6 percent of AIA's membership, compared to 1 percent in 1973. As for AIA's responsibility to bring more women into its ranks, Tanzmann says, "I think that as long as AIA is doing its job in answering the issues of women it will be a natural evolution. And when that natural evolution isn't taking place it is appropriate for there to be a conscious effort."

At a time when affirmative action quotas are being shunned by government and industry, the responsibility of integrating women into the profession and into AIA seems to be shifting to women themselves. Says Maurer, "I think it really does behoove the women members of the profession to become a little more active. I know that a lot of women have expressed concern about becoming 'militant' so that the success they have met within the profession might be somewhat in jeopardy. I think that it is not going to change without that. . . . It is unrealistic for women to assume that they are going to feel welcome out of the goodness of anybody's heart. It's going to be the women who make it happen and it's easier if they join together."

And more women are joining together. Forty-one percent of the respondents to the JOURNAL survey report that they belong to another professional group besides AIA (compared to 37 percent in 1974). Probably the best known is the Association of Women Architects. AWA was founded in 1918 at Washington University in St. Louis as a student group and in 1922 became a professional fraternity called Alpha Alpha Gamma. Eventually there were 17 chapters nationwide, both student and professional groups. In 1970 it disbanded and Los Angeles became its home.

Local women in architecture groups are located in Atlanta, Austin, Tex., Chicago, College Station, Tex., Denver, the District of Columbia, Houston, Minneapolis, New York City, Portland, Ore., Roanoke, Va., and San Francisco. There is also a number of other formal women's groups in which architects are active: Women in Design International, National Association of Women in Construction, National Business and Professional Women's Club, among others.

In 1975, the Women's School of Planning and Architecture was founded by seven women (Katrin Adam, Kathryn Allott, Ellen Perry Berkeley, Noel Phyllis Birkby, Bobbie Sue Hood, AIA, Marie Kennedy and Joan Sprague). Its purpose is to "create a personally supportive environment for the free exchange of ideas and knowledge and to encourage both personal and professional growth through a fuller integration of our values and identities as women with our values and identities as designers." A week-long intensive summer program, the school is held at university campuses throughout the country.

What does the immediate future hold for female architects? As the number of women in the profession keeps rising, their status will probably improve naturally. But as one 1981 survey respondent says, "I believe that the difficulties for women in architecture are very similar to the difficulties in any other male-dominated profession: Attitudes and opinions cannot be legislated. Discrimination will exist until attitudes have been changed. And *that* may take another generation." □

Women in Architecture: Individual Profiles And a Discussion of Issues

By *Andrea O. Dean*

Yes, I know, an article on women architects probably offends you if you are female, bores you if you are male. Most women designers feel, with good reason, that they will never be taken seriously as professionals so long as they are singled out by gender. Imagine an article headlined, "Men Architects," or "Men in Architecture." And why should the subject of women architects be of interest to men? Because, to turn Sir Edmund Hillary's famous phrase, "They are there." And in increasing numbers.

As recently as five years ago, women were a rarity in architecture schools; today they comprise up to 50 percent of enrollments. Moreover, in the last several years, a significant number of women in their 30s and 40s have risen to the level of principal or started a firm in partnership or on her own. This trend is bound to accelerate and significantly affect the profession as a whole.

Hence, the following short profiles of eight little-publicized female principals. Following it is a discussion of issues affecting women in the profession, in which the eight principals are joined both by neophyte female designers and such "stars" as Denise Scott Brown (Venturi Rauch & Scott Brown), Rosaria Piomelli (dean of the school of architecture, City College of New York), Sarah Harkness (The Architects Collaborative), Jane Thompson (Ben Thompson & Associates) and Susana Torre (Susana Torre, architect).

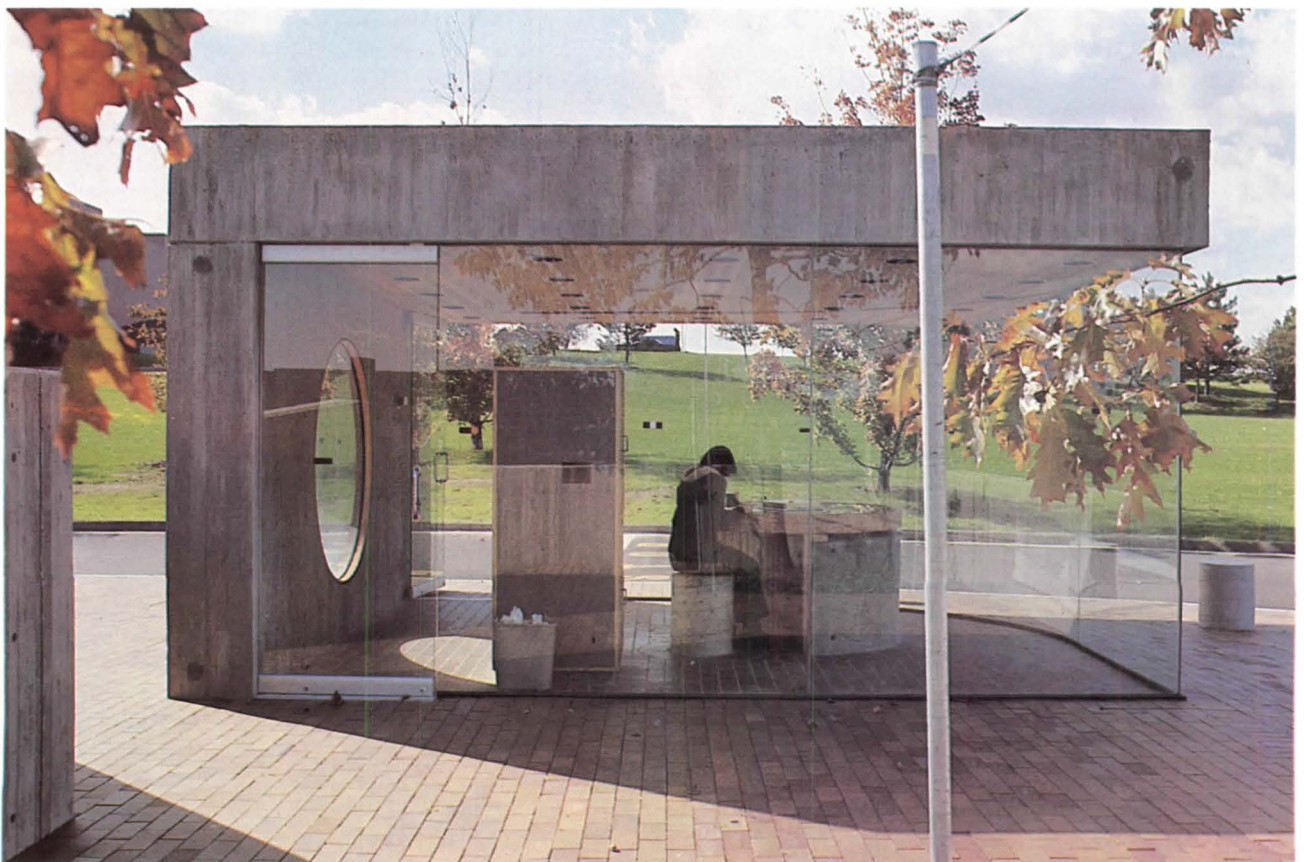
The eight principals were chosen primarily for their professional skills. They were identified by a nationwide survey, but all are in practice on the East and West Coasts. A full half work in California, which seems to be more hospitable to women than the East Coast, perhaps because the tradition of a male-WASP-establishment is less firmly entrenched there. But two are in Boston where the opposite is true. Only one practices in a small

city, and six were educated at competitive Ivy League schools. Most of the women have at one time or another worked for a firm that encouraged females, and four teach at universities with fairly liberal attitudes.

In searching for women principals, we found that a disproportionately high percentage were born and educated abroad (some thoughts on why this is so later). Because the relative number of successful, American-born women designers is likely to increase with rising female enrollments in U.S. schools of architecture, we chose only two women who are foreign born. We similarly found that an unusually large number of accomplished women architects are married to designers and work with their husbands. Because this tendency too is likely to decline as advancement for women on their own becomes easier, we selected only two architects married to architects.

One generalization can, perhaps, be made about the architects profiled below: They have been beneficiaries of their own high expectations. Otherwise, they are strikingly individual in experience, style and perceptions.

Macon/Chaintreuil is the only firm in Rochester, N.Y., with a female partner. Ann Chaintreuil, 34, graduated and then received her M.Arch. from Syracuse University. To help put herself through school, she worked summers for Eastman Kodak's architecture department and during the academic year for a Syracuse firm 20 hours a week. She also spent a year at the Architectural Association in London. After working for less than a year in Boston, she returned home to Rochester where her husband is a banker. Chaintreuil joined what was then the firm of Macon & Cunningham, "because I was interested in housing and they had a lot of Urban Development Corporation work." Robert Macon, 14 years her senior, became a sort of mentor,





in her words. "It's difficult for most women," she says, "because few become protégés, a role usually reserved for men."

In 1973, Cunningham departed the 12-person firm, leaving Macon to carry on with Chaintreuil as a silent partner. Four years ago when she felt she had enough experience to "ask for my name on the door," Chaintreuil was made partner, with 40 percent ownership in the newly named firm. "I always wanted ownership," she explains. "I had done a lot of work for a lot of people and wanted, like most people, to get credit for the work I did. And being a woman, in a sense, helped me," she recalls. "I didn't have to command a real income the first couple of years, because I had my husband to fall back on."

Macon/Chaintreuil struggled along until receiving a commission for a small information center for the Rochester Institute of Technology. After that the five-person firm became the first local office to design a major structure for the RIT campus, among whose architects are Eero Saarinen and Hugh Stubbins. Macon/Chaintreuil's Max Lowenthal building for RIT brought work from Cornell University and the National Institute for the Deaf in Rochester, plus smaller local projects. "Our work," says Chaintreuil, "is not what the magazines are covering now. The philosophy is somewhat Kahnian."

Andrea P. Leers, 39, is a graduate of Wellesley College and received her M.Arch. from the University of Pennsylvania. Before launching the firm of A&H Browning in 1970 with her then-husband Hugh Browning, she worked for Earl Flansberg

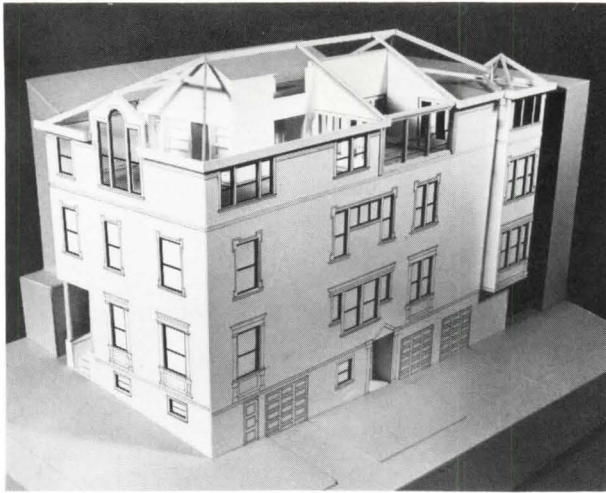
Macon/Chaintreuil's information center at Rochester Institute of Technology, left; Andrea Leers Browning Associates' Hebrew College library expansion, above.

and Arrowstreet, Inc. A&H Browning's first substantial job was a dormitory renovation for Wellesley College, which brought work from other Boston area colleges.

When the Brownings' marriage ended in 1978, Hugh left the area and Andrea continued the firm alone. She advised each client about the change, fearing that they would have reservations about committing their work to a woman and would feel there were now only half as many responsible people. "I had relied heavily on my husband," she says, "and was more apprehensive than my clients. More of them than I knew had relied primarily on me. To my surprise, I found it easier to make decisions on my own; the consensus process is slow and not always productive. I had more resources and sources of advice than I had imagined."

She also made a major effort to gain new clients, the most important of which was the Massachusetts Port Authority, for which she did a major reconstruction of an existing building at the entrance of Boston Harbor. Andrea Leers Browning Associates is now a six-person office. Most of its employees have been students of Leers, who has taught at Harvard, MIT and Yale. The office has benefitted from affirmative action programs. "We get asked to be on teams with big firms," says Leers, "and find ourselves on more lists than we otherwise might be." Among her firm's clients have been the Hebrew College, Brookline, Mass.; Wheelock College, Boston; Tufts University, Medford, Mass., and the Arlington, Mass., housing authority.

Cynthia Ripley, 40, graduated from Connecticut College, then "migrated west," as she puts it, to receive her M.Arch. from Berkeley. Her first job was with Skidmore, Owings & Merrill/San Francisco, which, she says was "a superb training ground



Varied paths toward roles of responsibility.

for learning the highest standards." In 1970, she followed her future husband, an architect, to Portland, Ore., where she worked on institutional and commercial jobs for ZGF and taught at the University of Oregon until 1974 when she returned to SOM, and to teach at Berkeley. "I found that teaching taught me to talk articulately about architecture," she says, "which is essential in being a principal. What you're doing is setting a style and philosophy."

Because she wanted more responsibility and "saw it wasn't at that time coming to women at SOM," Ripley went to work for three years at Kaplan McLaughlin Diaz, where she was project architect for a \$20 million hospital. Then, in 1979, "wanting ownership sooner than it was going to happen at Kaplan McLaughlin," she started her own firm and in July 1980 took on a partner, Lucia Bogatay. "The two of us generate two-and-a-half times more energy than I could alone," says Ripley.

Ripley/Bogatay's first major job came when Stanford University hired the firm to program an 800-unit housing complex on the recommendation of Esherick Homsey Dodge & Davis, architect for the project. Ripley had worked for EHDD as a graduate student and her husband was in the firm's employ. Ripley/Bogatay also marketed its services in the public sector because of its requirements for women-owned firms and received a major portion of a space planning contract at San Francisco airport. Because both partners had experience in hospital work, they obtained some studies and remodeling jobs for health facilities.

They also did small projects for people who, in Ripley's words, "didn't want to take their business to a big firm where they might get second shrift."

By the end of its first year of existence, Ripley/Bogatay had hired two associates, one male, with the hope of eventually having an even mix of men and women. "We think it makes the best environment," says Ripley. "Most important, we feel it's important to be able to respond to all kinds of clients, and some are simply more comfortable with men." By last June, the firm had also outgrown its tiny office and moved to a building occupied by EHDD and a landscape architect "where there is a community with other professionals we admire," explains Ripley. "And we can share services, Xerox and printing machine and a small computer." The move required going into debt, which Ripley says can't be avoided if you want to grow. She recalls that "after our bank refused to give us a line of credit, our accountant took us to a very aggressive lending institution that gave us a loan based on personal real estate. If we hadn't had some resources of our own and a fancy accountant who knew the ropes, we probably wouldn't have gotten credit." Since then, they have put a ceiling on the debt they will allow themselves to accrue before bailing out, and have managed to hold their own.

"Most important to my being able to do good architecture," observes Ripley, "have been good clients."

Martha Manevich, 41, was born and educated in Argentina and is the first professional in her family. She selected architecture as a career because her first choice, engineering, was closed to women in her country, while nearly half her graduating class in architecture at the University of Buenos Aires was female. After graduation, she followed her physician husband first to Montreal, then to Boston and has spent all but two of her working years at The Ritchie Organization, a 125-person firm with offices in Chestnut Hill, Mass., Birmingham, Ala., and Sarasota, Fla. Its specialty is health care facilities. When Manevich first looked for work in 1964, she recalls, "Firms simply wouldn't hire me because they thought women were trouble in the drafting room. TRO was willing to take a chance because I had done a hospital project in school that was fairly good. For a long time I was the only woman professional in the office; now there are about four of us out of 50 professionals in the Chestnut Hill office."

For the last several years, Manevich has concentrated on planning, "because I soon realized that the decision-making really happens at the inception of a project and its future depends on front end work, not on a designer working 20 different schemes for an elevation. I also found that what I do best is facilitate the process of making decisions, triggering ideas with clients, consultants and a team of architects. I can usually work with people in such a way as to get the best out of them."

Manevich's advancement "had a lot to do with my self motivation," she says. "I'm fairly aggressive." The Ritchie Organization allowed her to work part-time when her children were small, which she regards as unusual dispensation. "During those years," she says, "my career was slowed down, because I couldn't handle large projects, but I was slowly given charge of small jobs and resumed full-time work in the mid-'70s." Last spring, she was elected vice president in charge of planning.

At 30, S. Pearl Freeman is the youngest of this group of principals. The daughter of a waiter, she grew up in a Brooklyn housing project, is a graduate of the State University of New York at Buffalo and received her M.Arch. in 1976 from Washington University in St. Louis. "When I entered graduate school," Freeman recalls, "there were two women out of 22, and I had no architect as role model. But there was my aunt, a teacher, a very progressive and innovative person in our conservative family. I respected her. And my mother, in her own way, has done incredible things, like going back to college at night when she was 56, working fulltime, raising three children and taking care of her mother. She showed me that women can achieve whatever they set out to do."

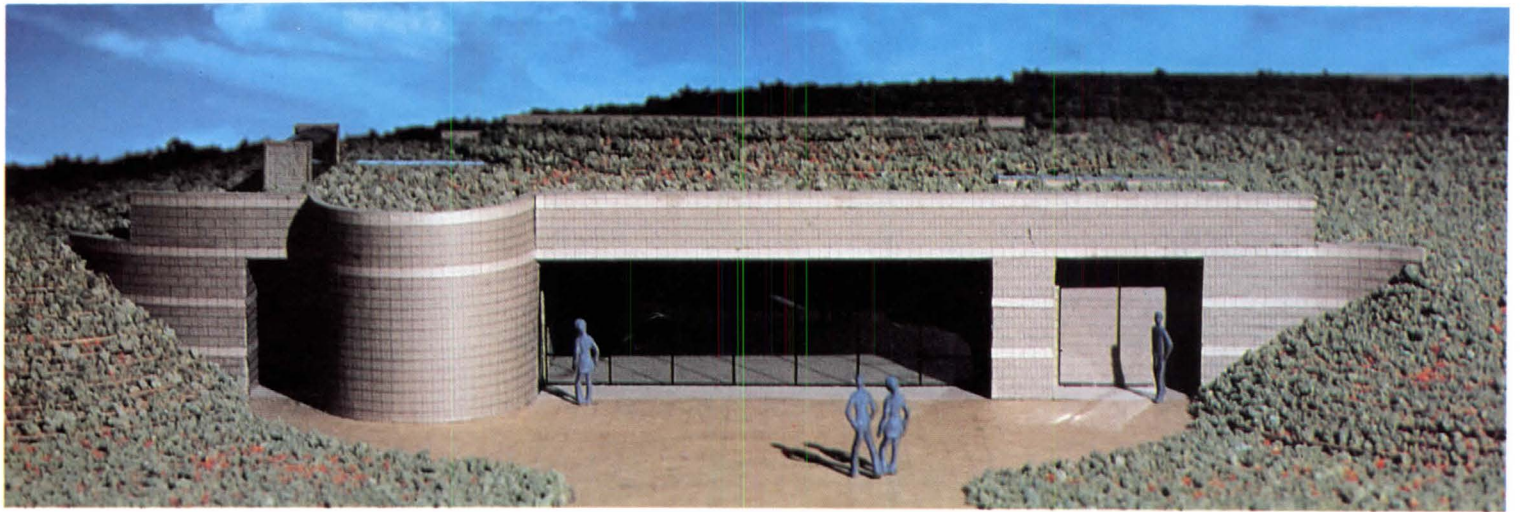
After finishing her education, Freeman moved to San Francisco where she worked first for ELS in Berkeley and then as an associate at Daniel Solomon & Associates, which has hired women professionals since its inception. In 1977, Freeman also began taking on freelance jobs with Robert Colyer, her future partner. His chief interest has been energy design, hers community advocacy work. In 1979, they entered the California passive solar design competition and won the best in state award for a multifamily prototype. The following year, both quit their jobs, feeling their abilities weren't being fully used, and were looking for employment when the State of California asked them to propose a design for a visitors center at the Antelope Valley poppy reserve in Lancaster.

"They gambled on us," says Freeman, "feeling, I think, that it was young people who were doing innovative work in energy design, and my being a woman probably didn't hurt. That project really started the Colyer/Freeman Group." It has won two national prizes, a first in this year's Owens-Corning Fiberglas annual awards, a merit award from the Underground Space Association in 1981 and it was a finalist in the fifth annual passive solar design conference competition.

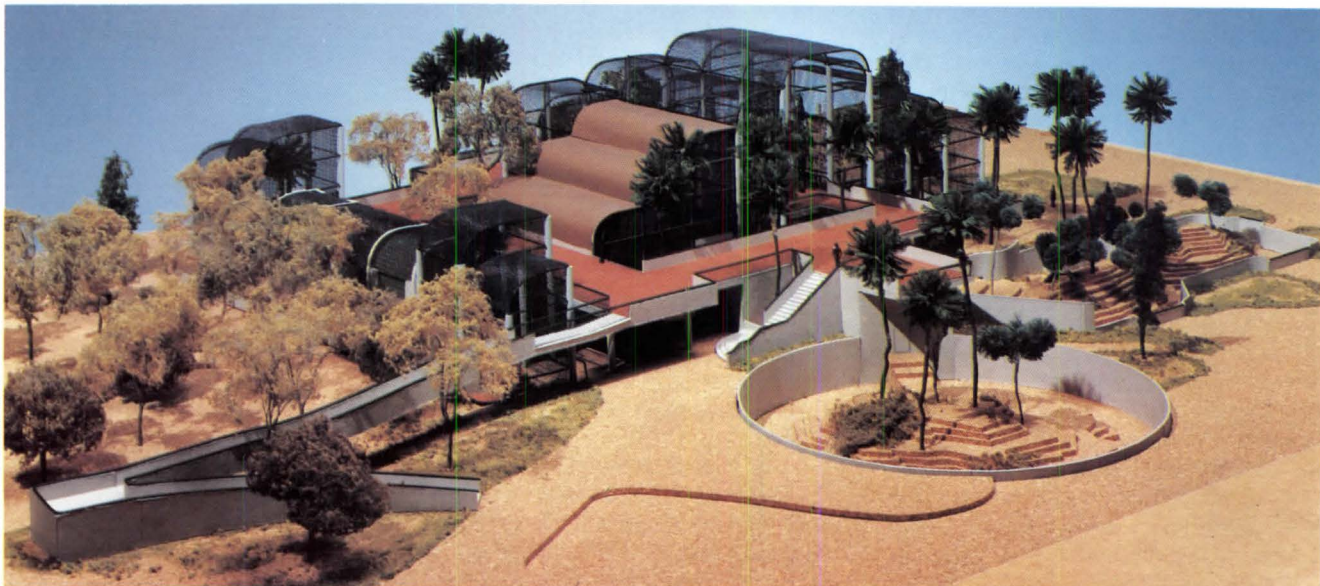
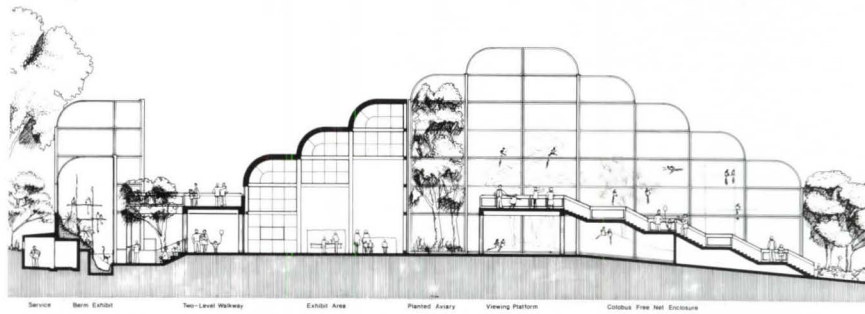
The firm has only two-and-a-half people. Among its ongoing projects is an energy efficient building for the California Highway Patrol, an energy retrofit for a residential hotel in San Francisco being used for artists studios, plus residential renovations and restaurant design.

Cathy Simon, 37, has worked principally as a designer since graduating from the Harvard graduate school of design in 1969. After a short stint with Cambridge Seven Associates, she moved to the Bay Area with her writer-husband because "we were East Coast people who wanted to try something else, and San Francisco seemed a good place for writers and architects." She worked first for Ezra Ehrenkrantz in San Francisco, then for MacKinlay Winnacker McNeil in Oakland, before joining Marquis Associates where she has been a principal with design responsibilities since 1976. Her responsibilities also include public relations and hiring, the last because of her university connections.

San Francisco condominium, Ripley/Bogatay, facing page, top; below it, addition to Lowell General Hospital, Lowell, Mass., Martha Manevich for The Ritchie Organization; above, Visitor/Interpretive Center, Antelope Valley poppy reserve, Lancaster, Calif., Colyer/Freeman Group; right and below, Primate Discovery Center, San Francisco Zoo, Cathy Simon of Marquis Assoc.



San Francisco condominium, Ripley/Bogatay, facing page, top; below it, addition to Lowell General Hospital, Lowell, Mass., Martha Manevich for The Ritchie Organization; above, Visitor/Interpretive Center, Antelope Valley poppy reserve, Lancaster, Calif., Colyer/Freeman Group; right and below, Primate Discovery Center, San Francisco Zoo, Cathy Simon of Marquis Assoc.



Below, University of California at San Francisco clock tower by Hansen Associates; right, house addition in McLean, Va., by Cass & Pinnell.



Since 1973, Simon has been a lecturer in architecture at Berkeley and thinks "people who have academic connections often have less prejudice. Perhaps it's because they realize that ideas can come from anywhere." Ehrenkrantz taught at Berkeley when Simon worked for his firm, and she felt no discrimination there. In the MacKinley office, she says, "I think I was the only woman architect, but people rather enjoyed having a lady around. I didn't feel this as discrimination, just a recognition that I was different and that it was nice to have me around."

When she joined Marquis Associates (then Marquis & Stoller) in 1974, "the firm was very unusual," she says, "in having two older principals who had been in practice for over 20 years and wanted to really change their office. There was a true open door policy when I came in." The firm now has 34 professionals; 12 are women and of these three are associates.

Fani Danadjieva Hansen, 38, is originally from Bulgaria, received her training first in her native land ("where half my class was girls"), then in Graz, Austria, where she was the only woman, and finally, at the Ecole des Beaux-Arts in Paris. She was the first woman hired by the Paris office of R. Creveaux and J. Tessler, where she worked for three years, specialized in educational facilities and rose to chief designer. She came to the U.S. in 1969, following her architect-sister who had won an international competition for a project in San Francisco. There Fani Hansen went to work for Anshen & Allen, where, she says, "I was again the first woman hired. When I arrived there I had a portfolio with about 10 educational projects and the office had a school to do but nobody there had designed a school before." During her 10 years with Anshen & Allen, Hansen was promoted first to partner, then to vice president in charge of design.

In 1980 she went into partnership with her husband and formed Hansen Associates. She explains, "I had started using computers to masterplan and found that established firms had difficulty with this approach." Her firm has 12 people: "two are

girls," she says. Hansen Associates has obtained most of its work through competitions, including the University of California's Davis Medical Center at Sacramento, the San Jose sports arena and the civic center and public safety facility in Petaluma.

Heather Cass, 33, studied art history at Mt. Holyoke College, knowing that she wanted to become an architect. "It was that transitional period when it started to be O.K. again to look at history. My personal bias is still that the best way to learn to be an architect is to go through a liberal arts program first and then have a professional concentration." She received her M.Arch. from Yale in 1972, worked for two years for Keyes Condon Lethbridge in Washington, D.C., then went to Japan for a year on a Luce fellowship to work for Fumihiko Maki. While working at the Keyes firm, she had started moonlighting on her own and when she returned to Washington in 1975 continued doing her own work while teaching at the University of Maryland. In 1978, she went into partnership with Patrick Pinnell; the two had studied together at Yale, taught together at Maryland. Cass & Pinnell is now a five-person firm.

"My decision to work on my own had several reasons," Cass explains. "I felt strongly and still do that it takes a very long time to figure out what one is about as an architect. So I was very committed to teaching as much for my own development as for what I could give to others. I wanted to study and write and being a principal gave me the flexibility to do so. Also the work opportunities seemed to be there. I kept running into people who asked me to do small projects, a house here, a church there." She has found that "when you know the buck stops with you, you grow, learn a lot more and faster. A lot of the women of my generation were raised to be bright and competitive up to a point, but to assume that someone else would have the final responsibility. It's been a very good experience for me to know that if a building is wonderful, I get the credit, and if the roof leaks I get the blame."

The issues: To begin with, a conundrum. Why are so many of our accomplished women in architecture foreign-born and educated? We have met two, Martha Manevich and Fani Hansen, and there are also Susana Torre (Argentina), Rosaria Pomelli (Italy), Denise Scott Brown (born in Zambia, educated in South Africa and Europe), among many others. In their own countries, none found themselves in a minority as women in architecture school; all were startled at the turnabout they found in the U.S. Their explanations for the discrepancy in numbers is based mainly on hunches and personal experience, which may be why they often contradict one another.

Denise Scott Brown believes that "in third-world countries that are very primitive or very patriarchal, you get the contradiction of women having more freedom, but it's probably only those with the power of a wealthy and influential family behind them." Piomelli is from poverty-ridden Naples but comes from a middle class family where there was, she says, "a tradition of women working, and it was taken for granted that the children are brought up by someone else and see their mother rarely." Manevich was the first professional in her family, and Hansen believes that in her country, Bulgaria, more women work, simply because it is economically necessary to do so.

Torre recalls that in Argentina "we had no counseling to advise us to stay out of architecture. About half my class was women, but most are not practicing now. They have tended to marry architects and become only nominal partners. It is taken for granted that their main obligation is to raise families." Yet Manevich, four years Torres' senior, recalls that "I not only had many female teachers in Buenos Aires, but many professional firms were run by women."

Scott Brown asserts that "In Venice, for example, a young woman couldn't even go out at night alone. But, if she could make the leap and become emancipated and make it, she was treated like a man." Piomelli sees the situation in her country quite differently, and was shocked when she came to the U.S. to find "that even among my colleagues there was a reluctance to go on overnight trips and leave the family. It didn't even occur to me in Italy that I couldn't follow the job and go to meetings

with clients—in my own country, abroad or on the moon. I don't think I was treated like a man."

Piomelli's explanation for the apparently greater acceptance of women professionals in Europe is based on history. America, she points out, experienced a strong backlash to the feminist movement of the early 20th century, which called for dramatic changes in the home. By the 1940s, the feminists—who proposed liberating women through communal kitchens, laundries and day-care centers—were regarded as socialist, even communist. The postwar period was, of course, a time that stressed traditional values, saw the rise of red-baiting and of suburbs, which, says Piomelli, "created isolated prisons for women. The ideal was a pastoral, beautiful castle with women spending time on the swing in the yard freed by machines from work. And the male got forced to discriminate against office women, because they were seen as competition by the housewife." In Europe, by contrast, suffragette ideas had surfaced in the 1840s, when the continent was rife with revolution. And there was scant backlash. Unlike the U.S., many European countries have long and strong traditions of socialism. And in the 1940s, Italy, along with other countries in Europe, saw the beginnings of a strong feminist movement, which won for women such tangible benefits as leave time during pregnancy.

Concludes Piomelli, "It seems to me now that we can't in good conscience ask for equal opportunity if we are not ready to put in equal time. American women often hesitate to take on equal responsibility with men because they see it as conflicting with their obligations to family." Piomelli and her physician husband have shared responsibility for raising their two children, aged 8 and 21.

Most of the women we spoke with are married and have children. Only those with very large families, namely Jane Thompson (who, though not an architect, is a principal in a design firm) and Sarah Harkness, took any length of time away from their offices to have children, and both work in the same firm with their husbands. Jane Thompson, who has four children

Bates College Library, Lewiston, Me., Sarah Harkness of TAC.



Balancing demands of family and worklife.

from a prior marriage and inherited five when she married Ben Thompson, took "three or four years off from any kind of office situation," she says, but during that time worked on community projects. "Inevitably," she says, "you feel you're cheating one or the other, the family or firm. It's just terribly tough, but it helps if the children are interested in what you're doing. Ours have all worked here; they've been able to learn something about what we're doing. They're respectful of it." Sarah Harkness, mother of seven, says she took off "more and more time with each child, two years off with the twins, which was my longest and last absence from the office. I had the benefit of a protective firm and, given what my life was at home, it would have been pretty hard for most offices to put up with."

Being a principal seems to allow women the flexibility needed to have a family while practicing, but the added responsibility severely restricts the time they can give to children or, in some cases, even the number of children they decide to have. Cathy Simon, for instance, has limited her family to one child, because she wants to care for her own family and feels "the creative person has only so much energy." She uses day-care programs, but has no housekeeper, sees her 4-year-old daughter only about three hours a day, has supplemented the time with at least one long summer trip and "feels no guilt toward my child, though I would if I felt she was unhappy. But she's flourishing." Simon does, however, forego travel assignments to avoid being away from her child for long periods of time.

Heather Cass, on the other hand, says, "If I'm traveling, I'm just not there. If my husband, a lawyer, is traveling, he's just not there. What tends to happen is that when I get very, very busy, I just am out of the picture and it falls to Dick or the housekeeper or grandparents to care for our 3-year-old. I don't think I have it any harder or easier than my husband. But it's always a balancing act. At any given time there are three places I should be, and I'm always making a decision to ignore two things I should be doing. I'm more prone to guilt than Dick, because both of us were raised in households where the father traveled."

Cynthia Ripley is now expecting her first child, wanted to start a family earlier but felt she couldn't afford the time. "I'll take two or three months off," she says. "I frankly don't see how I can take more, because I don't think the firm would survive if I did. If I were an employee, I might feel quite different, but I also have much more flexibility without guilt as an owner." Her partner, Lucia Bogatay, is unmarried and "very supportive and able to compensate," says Ripley. Ann Chaintreuil had her first

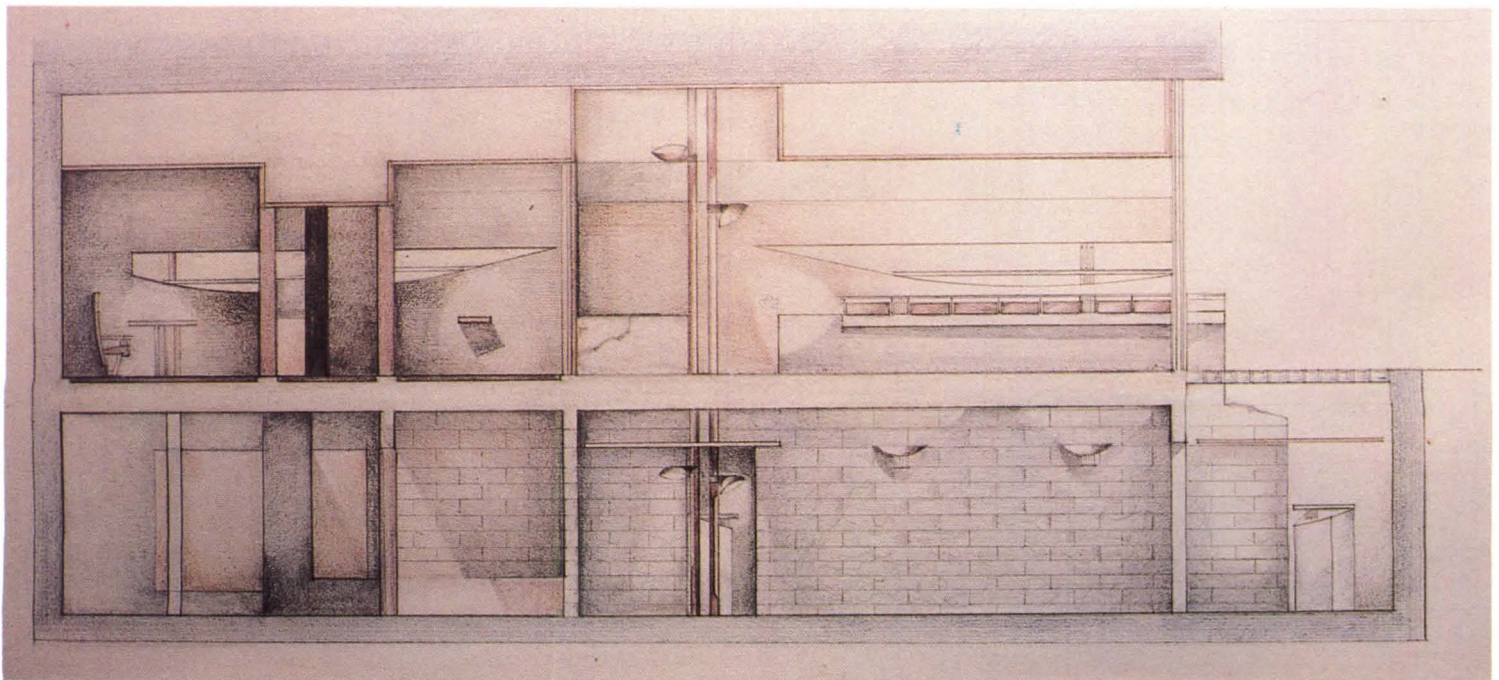
baby just a year ago, was away from the office for two weeks and then took the infant along to work for another month and a half. "I had a business that I couldn't let flounder, but I also didn't have anyone saying, 'You can't bring that little guy in here,'" she says. Fani Hansen "worked to the last moment" during her pregnancies and took no time off afterward. "That wasn't very easy, she recalls, "but I think it's the natural way and it's always going to be. Part-time in architecture doesn't work." Her children, now 5 and 10, go directly to the office from school and, says Hansen, "participate in what's going on."

So it is evident that more and more women in architecture are already living the thesis of Betty Friedan's recent book: that in the next stage of feminism men and women will cooperate to change both the workplace and domestic life so that each partner can be fulfilled in both family and worklife.

Another thesis relevant to many women designers is that of Denise Scott Brown; it has to do with what she calls "the star system" in architecture. Because people have trouble with design and it isn't measurable, she says, it is surrounded by a lot of magical thinking and spawns a need for gurus. One of the most venerable, of course, is Scott Brown's husband, Robert Venturi. "As a wife," says Scott Brown, "I am very happy to see my husband honored, but as a collaborator I feel very unhappy to see my work attributed to Bob. The world thinks there is a genius and the genius does everything."

"I think people believe I married Bob when I was a graduate student. I gather that's what Tom Wolfe thinks. The truth is I was a professor and had published and formulated my own ideas and contributed half. We have developed a body of theory together that owes a great deal to both of us. It is difficult to unseam it. Certainly the historic material I owe him 90 percent. But it was I who introduced him to the notions of popular culture and everyday environment when he wrote, 'Is not Main Street almost all right?' Few architectural historians are secure enough to say that Denise Scott Brown is key to the understanding of Venturi, Rauch & Scott Brown." To the extent that the star system and sexism hurt her, says Scott Brown, they also hurt other strong people in the office, including John Rauch and Steven Izenour.

The guru is appointed by the critic/historian, according to Scott Brown. "Criticism is big business; you manufacture reputations and build movements, and in so doing you build yourself," she says. "Giedion was the scribe of the modern movement. He made it and defined it and thereby made himself. The critic/historian wants to be a kingmaker, and he can't crown a woman king. It wouldn't help him with his gang, which he wants to





Facing page, project for a jewelry store interior by Andrea Brown of Jon Michael Schwarting Associates; left, a New York City apartment renovation by Cynthia Rock and B. Kenneth Sanden.

impress. He would be a laughing stock among his crowd if he said a woman is the best architect in New York.”

Is that how Torre sees it? “I agree very much with Denise’s appraisal,” she answers. “Doing the exhibition of Women in American Architecture in 1977 was both exhilarating and depressing. It showed a rich history of accomplishment, but that the work of the earlier women took place in a critical vacuum. Reviewers noted only that tiny Julia Morgan was capable of erecting buildings that would not fall down in an earthquake. There has been some change of attitude lately, but this is not something that can be taken for granted.”

Cathy Simon too believes that Scott Brown “is probably right,” but that the East Coast is the locus of the star system. “When I was in school,” she says, “women tended to do quite well but were rarely recognized as excelling. I think it’s difficult for women to get credit for their work. The discrimination was very subtle and students were loath to mention it because it might open them to the professor saying ‘you’re really not as smart as he is.’”

Jane Thompson, who is very relaxed about her role vis-à-vis her husband, agrees and regrets that there is a star system bred by critics and manipulated by architects. “But,” she qualifies, “Susana and Denise may not be feeding the press with the values it’s looking for—they may not be giving the critics like Tom Wolfe hot stuff. They may be dealing in ideas that are too sophisticated, complicated and low key. I don’t think Susana is riding the showmanship circuit. If she were Ayn Rand or equally outrageous, they might make her queen. But I think it is a fair assumption that they’re looking for kings rather than queens. I think critics are looking for the latest gimmick and as long as architecture is seen as creating monuments or as building the most for the bucks, it will be viewed as a male field.”

And that brings us head-on with the two major issues we’ve been inching toward. Are women architects different, somehow, in their approach or emphasis? And is architecture still a male field; is there still palpable discrimination? Not surprisingly, perhaps, the women who think there are no apparent differences in what men and women bring to the profession, and that there shouldn’t be, also tend to feel that there is little overt discrimination. Most of these tend to be younger women. Emblematic are the contrasting views of Jane Thompson and Ann Chaintreuil.

Says Thompson, “Training and experience tend to suppress the fact that there are and should be differences, and I find this very unfortunate because women can bring something special to architecture. Their different kinds of perception are needed, yet their work tends to be as hard, unsensuous and unsympathetic to human concerns as that of men they’re trying to impress. If

women allow themselves to think naturally, they see and conceive of things that do not dawn on men. I’m not blaming men, but certain things are intrinsic to their upbringing. Men think of formal and external aspects, women tend to think more functionally, more in terms of how things feel, of detail.” Chaintreuil, by contrast, holds that “There are different ways varying personalities approach architecture, but I don’t think it breaks down along lines of men and women. To be successful you have to have a good academic grounding; you have to be a hard-driving, competitive, healthy person. You also have to be generous. I don’t think that breaks down along sexual lines.”

Scott Brown, though convinced that women bring particular and added sensibilities to the field, believes females tend to deny their differences, “because they’re trying to get with it. Like architects from an ethnic or low income group, they take on the coloration of the dominant culture even more strongly than the ones who are secure.” An analogy that may spring to mind, and shouldn’t be carried too far, is that of Germany’s Jews, who prior to World War II assimilated themselves to the point of being more German than their Aryan neighbors.

Scott Brown’s logic, perceptions and personal experience lead her, of course, to the position that discrimination against women persists, though its forms seem less apparent, and that it is in women’s interest not to see it.

In Scott Brown’s opinion, “If you take the sequence for a bright young woman, she comes out of undergraduate and graduate school where she’s been in the least prejudiced society she’s ever going to be in. Then she enters the work world and is at the greatest parity she’s ever going to know. The more senior she becomes, the more discrimination she finds, because she will be working with older men who have changed little and because where the stakes get higher, prejudice comes out more.” Torre, 13 years younger than Scott Brown, says, “I have removed myself from some situations where discrimination is most likely to occur. But the fact that I have absented myself from it does not mean it doesn’t exist. Women architects are notorious throughout history for not being able to describe or see their own condition. If predominant values tend to make men ignore certain problems, women will also, unconsciously. In the end, if one cannot see the world outside of one’s own experience, then the historical dimension of one’s existence is lost. If I refuse to see that certain doors are being closed to women of an older generation, I will be unprepared and defeated by the problems.”

The predominant reaction among younger women to such statements is, “Yes, that may be true, but it’s changing.” Says 30-year-old Freeman, “Women who are now in their 40s and

Breaching the large firms vs. ownership.

50s paved our way. No doubt women and men are treated differently, but we've learned to use the differences creatively. As men become more involved in the home, they will discriminate less and less. Things change slowly. We are less angry now because things are easier." The only disadvantage Freeman says she has had as a woman was "not being able to take courses in mechanical drawing, shop and the like in high school, with the result that I felt less well prepared for architecture school than men." She notes, along with others, that women, perhaps because they don't grow up playing with building blocks, tend not to make models, but instead draw. "What I did in the early years of architecture school," she recalls, "was build furniture, learn to use power tools and things like that. I really wanted to get my hands dirty to make up for lost time."

Twenty-eight-year-old Andrea Brown received her M.Arch. from the University of Virginia, spent a year at the American Academy in Rome, and has worked for Mitchell/Giurgola Associates and Jon Michael Schwarting. She says, "Often I still see women being asked to do more creative thinking and not being required to do as much production. Often I have to beg for production work. I also find men are less critical of my work, because I'm a woman, and that's a detriment to my credibility. Stereotypes persist. But there is more work visible now with women's names attached, so that women are seen expanding into the total realm of architecture rather than being restricted to interiors." Like most young female architects, she remains aloof from the women's movement. "I don't want to offend men. A lot of feminist activity among architects is women putting together publications for women; I find that annoying because it's only evidence that there is a problem. I find that most women who go on about feminism aren't very feminine; I don't want to be seen as a man or androgynous or practice reverse discrimination."

Cynthia Rock is 34, has worked for Hellmuth, Obata & Kassabaum, Susana Torre and Kliment and Halsband and is now employed by I. M. Pei & Partners. "I doubt if anyone has as many women on his staff as Pei," she says. "About three years ago, when the firm was going after the [New York City] convention center commission, we hired about 40 women, I guess to show good affirmative action. They are now at the bottom of the totem pole and it will be interesting to see in future years whether any are advanced to the top." Her experience in other firms as well is that "The people who are advancing the fastest have been handpicked by various partners, and the protégés still tend to be very WASPy males. But the guys in my generation are different. They're surrounded by women and kind of forget who's female and who's male."

It will take time for women to be accepted into the highest levels of large, prestigious firms, at least on the East Coast, which is one reason why more and more women are going into business for themselves. How readily are they accepted by clients, by contractors?

The experience of most women is, as Simon puts it, that "10 years ago going out on a building site was still regarded as funny—the men leered and made jokes. That doesn't happen now. In the experience of women in our office, contractors make a big effort to be fair." Or, as Harkness puts it, "To a great extent you get treated the way you expect to get treated."

Problems with clients are often related to the client's perception that construction is man's work. As Cynthia Ripley says, "One of the stumbling blocks we ran into in getting our first major building is that when clients think of the construction phase they get nervous about a woman-owned firm. We point out that we are absolutely scrupulous about documents to eliminate problems in the field. That's helped." Says Manevich, "I think one reason why I've leaned toward planning is that clients tend to be less nervous about recommendations that have nothing to do with the technical aspects of the building."

There are still other reasons why clients hesitate about hiring women architects, especially when it comes to big bucks. Says Scott Brown, "Corporations are in general presided over by elderly men. I doubt very much that I could go to a group like that as principal and not be supported by John Rauch. There are cases where I probably could, but I'd have to watch very, very carefully." Torre feels that "discrimination is currently more prevalent on the part of clients than colleagues. Historically, the only women architects in this country who have been able to develop long and fruitful careers were able to do so through the support of other women, such as Phoebe Hearst, who was patron to Julia Morgan."

And yet, institutions headed by women are often as leery of giving big projects to female architects as are male clients. Andrea Leers, for instance, who did a large renovation for her alma mater, Wellesley, found that when the college decided to make a major addition to its campus, it hired a big, established male firm. "I think," she says, "that they would be cautious about giving a big commission to any woman-owned firm." She adds that a year ago Radcliffe College decided to hire a woman as designer for a substantial renovation. "They felt they should do it but were more afraid than all our other clients combined," recalls Leers. "They asked all their male architect friends to recommend women they could trust and asked things in interviews they never would have asked a man."

Enough of all this negativism. There are tangible assets to being a woman in architecture, and, surprisingly, the first is often with clients. Freeman says, "Some men think it is absolutely fantastic that a young woman has a business and is an architect and I think sometimes that is a reason we get a job, though I can't claim it as fact." Cass finds that "clients are no trouble at all. Because they come to us knowing I'm older than my male partner and own more of the firm, I presume that anyone who has a problem with women simply wouldn't come to us. I think a fair number are interested in us because I am a woman. There is the professional woman who prefers to patronize other women. And there are clients, men and women, who feel a man would not be as responsive to their ideas." Manevich feels that, working in health care facilities, she has an edge as a woman. Among hospital staff members a majority are usually women and "feel freer to open up and give me a lot of input," she says. "I don't intimidate and can relate more easily to them." As Scott Brown says, "Women have been socialized to be more perceptive; they are better at interviewing, for instance."

Another advantage is, of course, affirmative action. "I would say that we get to present ourselves more frequently because I'm female," says Leers. Or as Simon puts it, "While it's hard to excel and be a star, it may be somewhat easier to be recognized because you're unusual, to be asked to be on juries and panels. You're a bigger fish in a smaller pond. Warns Torre, "The short term benefits of affirmative action are very fragile and need to be defended constantly."

Without doubt, the situation for women in architecture has improved in recent years, if for no other reason than sheer numbers. Not only has the percentage of women students skyrocketed, but so also has the proportion of female teachers. Says Cass, "In my class at Yale there were four women out of 40. That was relatively high at the time. I would get left-handed compliments from jurors who felt my work was awfully good for a girl. I've been on juries at Yale and the University of Maryland. There's very little differentiation made today between men and women students. It's getting to the point where women can afford not to be the very best. They can be best and worst and average, just like men. That's progress. Also, 10 years ago, peoples' reaction to me made me very aware of being a woman architect. Now I'm rarely confronted with the fact. That's progress." As Simon says, "I think everyone is simply getting used to us, and as role models we can identify issues for students as no one did for us."

Piomelli adds, "I hear male faculty members saying, 'I'm



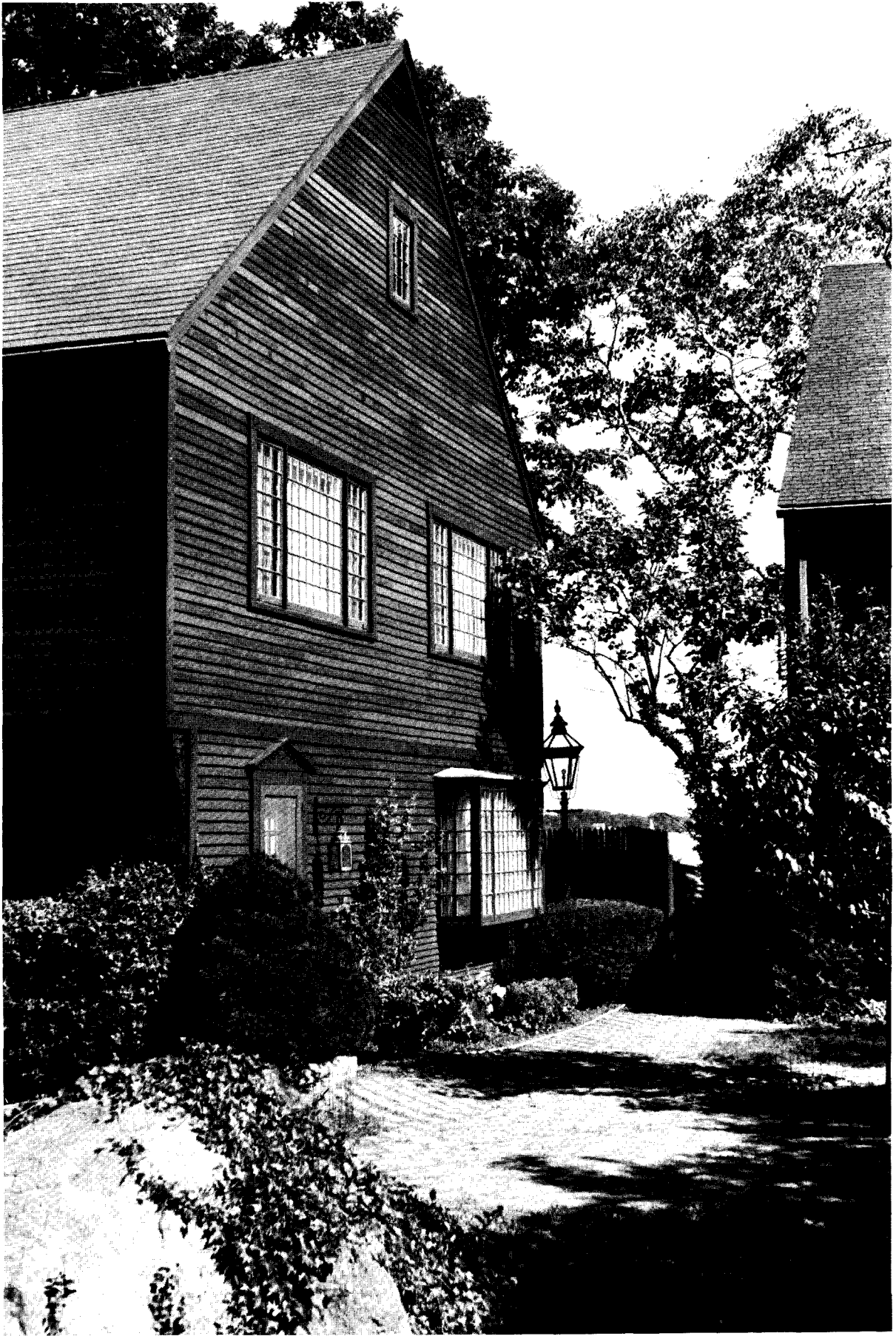
Ivory Coast consulate, New York, renovated by Susana Torre.

treating the women students right, hoping that my daughter is being treated equally well at college.' As their wives enter the professions and their daughters grow up, male teachers become more attentive to what it means to be a professional woman."

And, finally, what advice do Dean Piomelli and other women give their female students or women starting in the field? Says Piomelli, "I tell them to watch out for the fact that woman's labor is more economical than man's, and not to accept a lesser position than they think they deserve. If they tell me they are in a situation where they seem to have no opportunity to improve themselves, I tell them they should start making mistakes and explaining that the mistakes result from boredom, that they want more challenging work. If they are asked to get coffee, I tell them to mix up the orders. I tell them to absolutely separate their

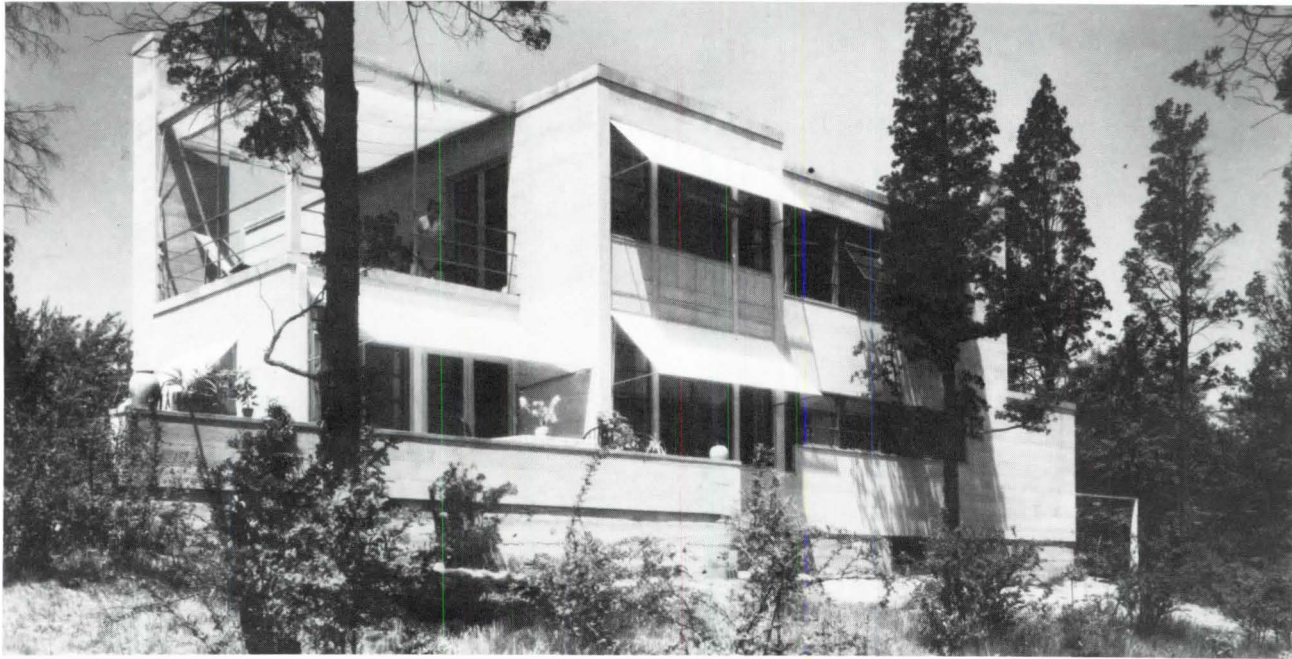
sexual and professional lives. And I advise them to get their license, because the easiest way to be discriminated against is not to have it. I also tell them that architecture is just perfect for women." Simon adds, "I tell them never, never to get near anything clerical. It's a signal of being willing to accept second best." Says Freeman, "Don't be as competitive as men are. Be a nice person. I find architects—both the men *and* women—are generally arrogant and competitive. Thank goodness, we are merited for the quality of our work and not for how pushy we are."

It is not an exaggeration to say that most women architects identify themselves as architects first and are only secondarily concerned about women's issues. Still, Torre advises her students, "Involve yourselves in the political process on behalf of all women, because it is not in the exceptional achievement of the few but in the steady advancement of the many that real progress is measured." □



Eleanor Raymond: Early and Indomitable

Her houses were made of 'human perfections.' By Robert Campbell, AIA



The Eleanor Raymond exhibit at the Institute of Contemporary Art in Boston was, on one level, a symbolic tribute from the feminist architects of today to an indomitable woman architect who forged a successful career at a time when to do so was rare.

But the tribute was an implicit one, without any polemics. Raymond's work was presented simply as an architect's work. As such it stood up rather well. It also offered insights into the kinds of strategies that went into the making of a practice as a woman architect in the middle decades of this century.

Eleanor Raymond was born in 1887, opened her own office in 1919, designed her last house in 1973 and today surveys the architectural scene with sharp attention from an apartment high above the Charles River in Cambridge.

So long a span of involvement in architecture alone commands respect. But the work does, too. Almost all of Raymond's projects are private houses, many done for friends. The implied limitation to "women's work" bothers Raymond not at all.

"Houses were the things I liked," she says now. "I couldn't imagine doing an office building, where offices would be rented and you would never know the people who were going to occupy them. I like the personal contact with whoever is going to use what I design."

Raymond's houses aren't particularly striking or photogenic. Instead they demand that we look closely. We must imagine ourselves into the booknook by the window, the blue bench in the carefully patterned garden, the seemingly accidental corner of the lawn that is so suitable for summer dining. Raymond designed her houses by heaping up many such small human perfections. She did not derive designs downward from large formal ideas.

Her philosophy is very clear. "I do not hold by the theory," Raymond once wrote, "that the architect's job is to create a building which he believes to be a work of art, and then let the human beings fit themselves in as best they can. I believe I must take the owner's desires and *make* them beautiful."

Do these approaches to design suggest "a woman's touch?" Yes-and-no is probably the only safe answer to this explosive question. It's a question, however, that the creator of the exhibit, Doris Cole, a Cambridge architect who has also written a book on Raymond, fully intends to raise. Cole believes there is strength as well as limitation in the traditional sex-role assigned to women.

Mr. Campbell is a practicing architect in Cambridge, Mass., and architectural critic for the *Boston Globe*.

Women architects, she believes, should make sure they bring this strength with them as they move on to broader responsibilities.

Raymond loved technology and mastered construction. One of the amazements of her career is the speed with which she glommed onto new ideas. Her International Style house for her sister Rachel (above), for instance, dates from 1931, years before Gropius and Breuer descended upon New England. Raymond visited the Bauhaus herself and met Gropius in 1929. In 1949, she and Dr. Maria Telkes of the Massachusetts Institute of Technology designed a successful active-solar house.

All of Eleanor Raymond's career was conditioned by two sources of strength. One was a small private income, an aid she quite seriously recommends to all architects. The other was and is a support group of other professional women, many of whom first met in the teens of the century at the old Cambridge School of Architecture and Landscape Architecture, a school for women. Raymond lived communally with some of these friends for many years in a house she remodeled in Boston.

Most of the clients were women too. One of them, the wealthy Amelia Peabody, commissioned no fewer than 13 projects, including the Sun House. Another, Natalie Hammond, gave Raymond her largest job in 1942. This is a group of three houses (left) and a communal dining hall on a neck of land jutting into the Atlantic. Hammond and two friends wished to try an experimental life style in which each would occupy a separate house with kitchenette, then meet in the evening with the others and any guests for dinner in the commons. Adopting to a kind of 18th-century tight siting, Raymond clustered all major facilities around an almost urban court, leaving narrow slots open to the rest of the site with its fine views of Gloucester Harbor.

What made a woman want to be a professional in the era of virtually all-male architecture?

Raymond doesn't really know. At Wellesley she became interested in landscape architecture, which eventually led her to architecture. She speaks feelingly of the special value of houses. "I think houses are so important in the background of children that I feel important in doing their houses."

But when asked if there was such an important house in her own childhood, she says: "No, the house I grew up in was not important to me. I never had any of the mother and father love that people expect children to have. I got out of it just as soon as I could." It's suggested that maybe she was trying, in her career, to make that house she thought was so important but never had. "I guess that's it," Raymond says. □

Ada Louise Huxtable: 'A Question of Quality'

In a new book, a pre-eminent American critic talks about her career—and her values.

For me, becoming a critic was a straight-line path in a very funny way because there was no prescribed way to get there so I simply invented my own way. It was not in a conscious, "I'm going to follow this path," sense; I just knew what I loved, what interested me, and I didn't know where it was going to lead. It was art and architectural history. It was the experience of cities. I've always been a tremendous city walker long before I knew what the buildings were I was looking at, and I enjoyed them as a very young person.

I know I was visual from a very early age. I grew up in New York City. I lived in one of the oldest apartment houses in New York, the St. Urban at 89th Street and Central Park West. That was a time when you were much freer in New York than you are now. As a child, although I was carefully watched and protected, as soon as I was able to, I was allowed to walk down to the Museum of Natural History at 77th Street. I adored it. I think museums are places of discovery for children who are at all sensitive.

Then when I was a little older I was allowed to go across town through the park to the Metropolitan Museum of Art. I did all these things myself. I fell in love with the Egyptian collection. I thought I wanted to be an Egyptologist, and that kind of thing. And I fell in love with little limp leather-bound books that I saw in some department store. I picked them up, I liked the leather, the gold imprint on them, and I think they were 50 cents each, one dollar each, something like that. They were Emerson and Thoreau, so I read Emerson and Thoreau. One thing leads to another. Your whole sense of identity develops if you have that kind of curious mind. Maybe it comes from an appreciation for quality.

What I got at home was a sense of the authentic, a sense of quality. My mother was and is a woman of extraordinary taste, but it was never anything that was forced upon me. It was never

anything that we even discussed. You're really not too aware of this unless they become matters of attention, but I did grow up with real things, not with fake things. That's one very good way of finding out that real things have enduring pleasure and fake things go flat.

My sense of the city, the buildings, we were concerned about none of that at home. We would have been if my father had lived because even at a very young age he was guiding. I was an only child. He died when I was 11. He was a doctor and he was a playwright. He had a play produced on Broadway when he was quite young, after he was graduated from medical school. He had also won some kind of art scholarship. He had a very wide range of interests. When I was writing poetry at the age of 7, he had me writing it in those little marbled notebooks and he was teaching me iambic pentameter and how to scan at a very young age. I didn't really know what was going on and I wasn't sure whether I liked being severely criticized at that age. On the other hand, he had a strong parental interest in what I was doing. My mother was not interested in those things so that when he died they went out of my life.

My mother is very much a Victorian. She's now 94, and she came from Boston. She is a bright woman and a tasteful woman. Her philosophy of life was that women were background. It didn't mean that they didn't have minds and didn't achieve what they wanted to do, but the idea of a career woman was nothing her generation would have thought of at all. I know her feeling about me was that I seemed to be developing interests that were not anything that she had cared about but she approved of my having those interests and therefore I was encouraged, but it was not a matter of being pushed or of having things laid out for me or standards set to reach. It was just if that was the way I wanted to go, fine. I really set my own education. She wouldn't have cared if I'd gone to college or if I'd preferred not to. When I did want to go to college and there wasn't any money, I went to Hunter on a Regents scholarship and I did all my graduate work on fellowships.

While I was in college, I entered an interior decorating contest at Bloomingdale's with a friend. There was a \$100 prize. That was a lot of money for us. She did the drawings and I wrote the captions and we tossed a coin to decide whose name would go on it and my name came up. We won the \$100, and when I graduated from college and couldn't find a job I wrote to the president of Bloomingdale's saying I'd just won their interior decorating contest and I'd like a job in his store. He was nice enough to interview me himself.

They had a marvelous furniture buyer then who was very modern-design conscious. They were sponsoring the Museum of Modern Art design competition furniture and Bloomingdale's was setting up to sell that furniture. People like Eero Saarinen and Charles Eames had won the prizes and produced the designs, and Bloomingdale's thought it would be dandy to put someone of my background into the display and sales of that Museum of Modern Art furniture, so that was how I worked in

Ms. Huxtable has just retired as a columnist and editorial board member of the *New York Times*. This is an excerpt from *Particular Passions* by Lynn Gilbert and Gaylen Moore. Copyright © 1981 by Lynn Gilbert; by permission of Clarkson N. Potter, Inc., New York City.

Bloomingdale's. That was how I got a job when jobs were very hard to get, and that was where I met the man who eventually became my husband. Many young architects and designers came in to see the display. Many bought. My husband was an industrial designer. He was furnishing his bachelor apartment and I came along with the furniture.

I married right after graduation. Although I had a partial economic responsibility for my mother, there was no pressure on me to earn a living. Believe me, my husband and I lived in one and a half rooms and there was nothing to spare, but you're as rich as you think you are. I felt I had options at that point, and I then had the leisure to pursue my interests.

If you do love certain things you tend to look for knowledge, you look for information, you want to know more about them. I think it's a matter of (1) liking something and (2) being curious about it and then (3) finding a way to put it all together.

My way of putting my interests together was not so much making a conscious package but going to graduate school at the Institute of Fine Arts, taking all of the art and architectural history I could and confounding the professors with my papers, because instead of writing about Baroque churches, I was writing about the first public housing in New York. I wanted to write about the things I could see. I didn't want to write about something in Rome if I couldn't go to Rome and see it firsthand. At that time, 30 years ago, there was no such thing as modern architectural history at the institute. It just stopped dead with a survey course of the 19th and 20th century. The whole teaching of art and architecture has gone far beyond that now.

My first architecture job was assistant curator of architecture and design at the Museum of Modern Art. It was an incredible first job. I was so lucky; Philip Johnson hired me after contacting the Institute of Fine Arts and reading my graduate school papers. We did the Mies van der Rohe show at the museum in 1947 and I wrote all of the captions and worked with the photographic enlargements. Philip Johnson did the layout and the design with Mies, but I followed through and helped Philip in a routine mechanical way with the book that was published at the same time. I also did a lot of small shows completely on my own and found it absolutely fascinating, but felt I wanted to do more in a broader way. I left the job at the museum after I'd been there three years. I had learned a great deal, but I had a great deal more to learn. I really didn't ever want another institutional full-time job.

I applied for a Fulbright to Italy and got it. I traveled around the country studying "Stile Liberty," the Italian Art Nouveau and then looked at the perfectly fascinating early 20th-century architecture right up through the period of early modernism and Fascism. I thought I was just satisfying my own interests and curiosity. I brought back large photograph files of pictures nobody else had and nobody cared about, and then I find—that this proves it's good to live a while, things come around and get doubly fascinating—that the young intellectual architects in this country are now having a field day with work by Giuseppe Ter-

ragni of the late '20s and early '30s in and around Como, which I thought only I knew about! It's a very interesting style, pure, formal rationalism within the modern movement, something of very great interest to the younger architects now. So no knowledge is ever wasted, no pursuit, no research is ever wasted.

I started writing criticism for *Art News* magazine and *Progressive Architecture* when I got back from Italy. I discovered that was my interest and I guess my bent. I could only make about \$5,000 a year free-lancing but I was doing exactly what I wanted to do, studying, doing research, writing, working on scholarly subjects. I did a series of articles in which I simply investigated buildings which interested me because they were indicative of new things in design or structural engineering or an attitude toward the city, and it tied in perfectly with the magazine because they called the series "Progressive Architecture in America." Then I got a Guggenheim grant and worked on that project for a couple of years. I liked moving where my interests led me without being tied down to real deadlines and editorial responsibilities.

You know, everything in life is a trade-off—what you're getting for what you're giving up. When I became a critic for the *New York Times* I gave up my freedom. I gave up the freedom to pursue whatever interests fascinated me at the moment because something else was more newsworthy or more valuable or more critical to the public at large. I gave up the leisure of scholarly research for crisis fact-finding. What I have gained is a magnificent platform from which to work, a fascinating involvement with all the issues of the day. I think that's a pretty good trade-off, although at times I miss terribly being able to follow through on personal projects, books I'd like to write. I'm very torn because I believe this is a very important phase in the history and development of the art of architecture.

On the other hand, I can use my column to make the public aware of the question of esthetics. I'm not sure those are my most popular pieces of criticism. If I write something about an Aldo Rossi show, only a small handful of people know who Aldo Rossi is and what he's doing, but I have the news peg of two exhibitions at once so I can try to explain what the esthetic issues are that make people put on two shows at this moment, which is quite different from deploring the refacing of a fine old building on lower Broadway as part of the development of new office space down there.

A sense of values about what architecture is really ties those two questions together. Esthetics are important but that's only part of it. I'd say it's a question of quality. Quality of environment, quality of life in terms of how environment or architecture affects how we live and work, quality of life in the sense of esthetic pleasure as well as utilitarian response. Beauty has been shunted very much in the background by the problems we have today; there should be beauty in life. But I hate to even say that because it becomes so shallow and so superficial when people take beauty up for its own sake, but it is part of a whole that enriches life. □



Energy as the Theme of a World's Fair

Knoxville's 1982 Expo rises determinedly from the mud. By Robert A. Ivy Jr., AIA

Knoxville hums. The sound blends with jet engines circling McGhee Tyson Airport, swells with the rolling hills approaching the city and roars above the valley where the 1982 World's Fair is rising from the mud. If you strain, you can hear the faint but persistent cry above the construction's din: "I think I can. I think I can . . ."

The "Little Engine" is an appropriate metaphor for Knoxville, for this small city of 184,000 persons in East Tennessee seems to be accomplishing the impossible with independence, pluck and persistence. Despite early cries of "pork barrel!", despite guffaws of disbelief from Metropolis, an elevated skywalk will deliver the first visitor at the east gate of the fair this May, right on schedule.

Knoxville has pulled itself from the doldrums of reaction to the fast track, where the stakes are high but where the real energy is. Why and how the city did it is another story, for the question hovering above the event is "What will the fair be?"

A quick look at what it is not. It is no longer advertised as "Energy Expo '82," the brave new world that you may have dreamed of as an undergraduate with automatic answers to the energy crisis. According to KIEE, the Knoxville International Energy Exposition, this is now an international exposition with "energy as the theme," according to Mark Grossman of the fair's public information office. Today an abstract red flame burns above the words that announce the event—"THE 1982 WORLD'S FAIR." A subtle shift but a crucial one in understanding what this fair is all about.

World's fairs are actually marketplaces, the ultimate open shopping malls, for the motivating principle is commerce. They demonstrate the close relationship of government and a consuming, technological society, blending as they do a U.S. pavilion with modular barbeque stands and corporate exhibits. At the New York fair in '64, the Belgian waffle shared the limelight with

the automatic copy machine introduced by Xerox Corporation.

Officially sanctioned by the Bureau of International Expositions in Paris, Knoxville's is a Category II fair in which the host provides leased space for all 13 international participants. The host, KIEE, a private, nonprofit organization, masterplans the fair, provides shell space for international tenants, serves these tenants with utilities and monitors all improvements through a design review board. Tenants are asked to address the theme of the exposition in their exhibits—"Energy Turns the World."

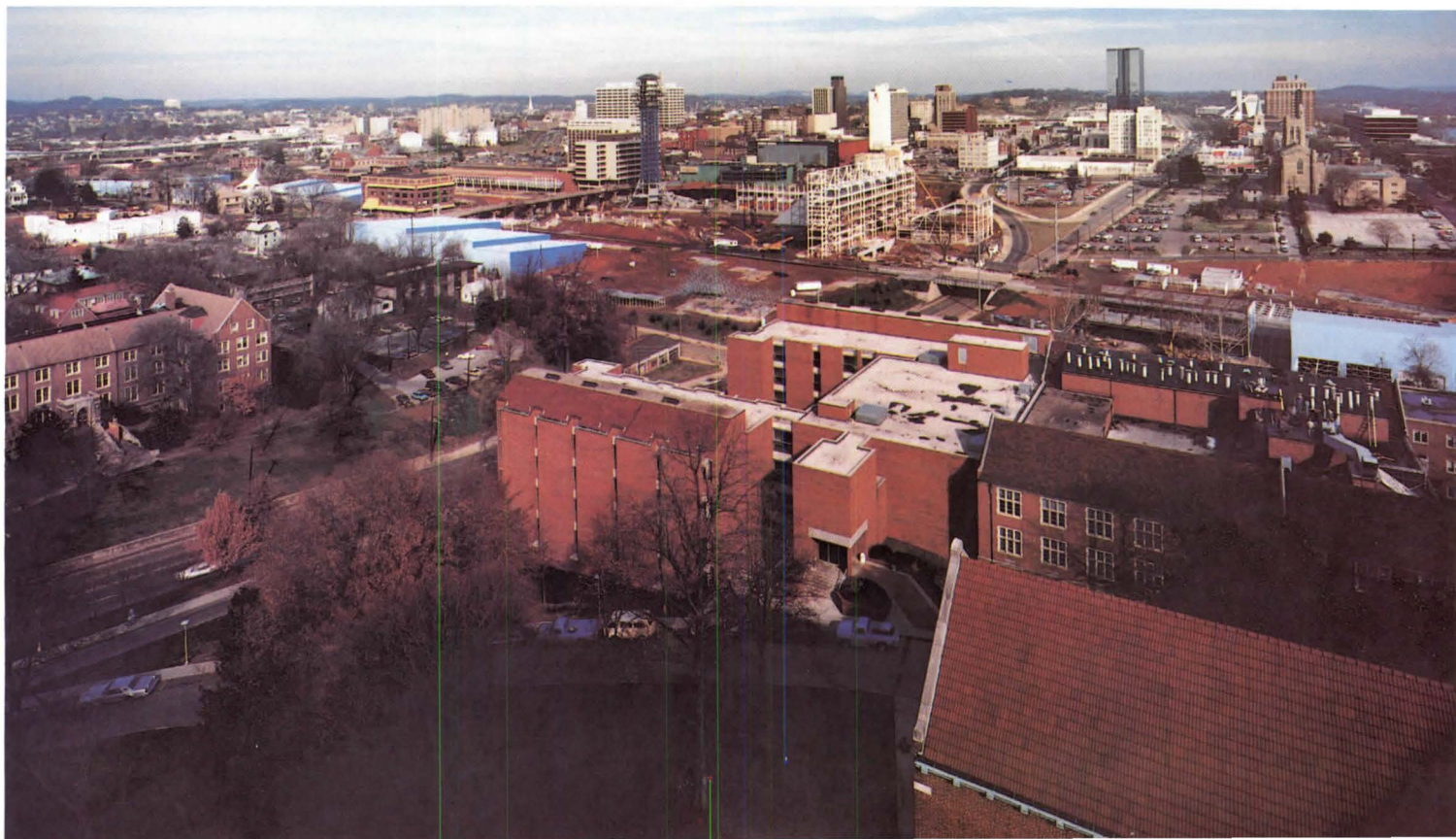
By using the energy theme, the organizers chose to spotlight east Tennessee as the energy capital of the U.S. That designation is derived from the proximity of an energy triumvirate: Tennessee Valley Authority, the nation's largest public utility, is located in Knoxville, as is the University of Tennessee, which conducts significant energy research, and nearby Oak Ridge is home of the National Atomic Laboratory, a leader in nuclear research.

The organizers further sought to revitalize Knoxville. The focus of their concern was a critical slice of 72 acres located between the central city and the University of Tennessee. Students at the university were isolated from the heart of the city by a valley filled with the remnants of railroading's heyday, a valley containing abandoned storage tracks, an old train station and depot, and approximately 180 low-rental commercial properties. The city was moving across the tracks, westward toward Oak Ridge, at a quickening pace. The goal was to transform the valley, to link the university and the community, to turn lead into gold. Federal grants from a variety of sources provided the bulk of the redevelopment funds that purchased the property. When combined with local contributions, \$24 million had been accumulated for urban rehabilitation.

The land lies in a valley approximately one mile long on the north/south route of Lower Second Creek. At its widest point, the site is a quarter of a mile wide; at midpoint, however, the land cinches in to a narrow ravine of 200-500 feet. Second Creek finds its mark in the Tennessee River on the site's southernmost boundary. The property doglegs at that point to the southwest



Top, a panorama of the fairground with the Sunsphere at the center and, to its right, the federal building and the international pavilions. Above, a before view of the site and surroundings. Below, the fair and downtown beyond, from the university.



Theme buildings and neutral pavilions.

and follows the river's route in a 250-foot-wide strip separated from the water's edge by Neyland Drive, an active auto artery.

It seems a small site when first viewed from the surrounding hills. Crossed on the east/west axis by three major roads (one of which will be blocked off and transformed into a pedestrian bridge), bisected by a railroad track (which will continue to operate a single train during hours of closing), narrowed to a 300-foot width and separated from the Tennessee River by an active roadway, the site can be grasped visually in one sweep.

Enter the architect. McCarty, Bullock, Holsaple, Inc., of Knoxville was chosen as architect for the fair in a selection process completed in the summer of 1976. Bruce McCarty, FAIA, became executive architect for the KIEE, and his son, Doug, became design coordinator. McCarty's firm was local, the first criterion established by the selection committee, and his firm had recently achieved prominence in a major competition held at the University of Tennessee in May 1975. Dean Roy F. Knight of the university's school of architecture proudly welcomes students and visitors to the final product of that competition—a new 160,000-square-foot art and architecture building.

McCarty's team, given the task of organizing the site, designing most major permanent structures as well as the abundance of temporary pavilions, food service and merchandising modules, ultimately included seven other firms. Barge, Waggoner, Summer, & Cannon, Inc., of Knoxville was named engineer, with William Cannon serving as executive engineer. Major consultants included Randy Duell & Associates, the firm that helped to plan Opryland and Six Flags theme parks, as site consultants, and Barton Aschman Associates, Inc., transportation and parking specialists.

The team was to provide a site that could comfortably accommodate 60,000-65,000 people a day for the six month's duration, as well as providing a site that would enrich the city in succeeding seasons. "The valley was the organizing element in that plan," stated McCarty in a tour of the site.

According to the planners, the site would be ringed with a blend of permanent and temporary structures, including the renovation of several existing buildings. On the city, or eastern slope, a complex of permanent structures would be erected, largest of which would be an exhibition hall (100,000 square feet) that the city could use after the fair. Rising above this horizontal element would be a multistory Holiday Inn, an office tower and a four-story precast concrete parking garage. All would remain after the party as a working link between commercial Knoxville and the newly redeveloped fairground.

Everyone loves a good recycling, and the popular hit in Knoxville may prove to be one of the remodeled existing structures that dot the site. The L&N railway station adjacent to the exhibit hall was a landmark no one wanted to lose. Restaurants will operate where tickets were once sold, in the architect's plan to save 12 old buildings. Their texture and detail add an accessible and universally understood language to the international fair.

Across the valley on the western border, where the Fort Sanders residential neighborhood commands the hilltop, renovated Victorian houses will serve as direct connections between a grouping of single family houses and the fair. Beneath these freshly painted, strait-laced cottages lie the international pavilions, temporary structures that will give way in October to proposed multifamily housing.

In its "Supplementary Design Guidelines: International Pavilions," KIEE states that the pavilions "are essentially large structures constructed . . . of components that can be disassembled and reused after the World's Fair. . . . (They are) constructed of insulated metal siding over steel support frames." Rectilinear shell structures, built on a 64 x 64-foot module, these buildings were an inexpensive (\$18 to \$24 per square foot) solution to a call for a repeatable, easily disassembled building.

The international pavilions form a receding and advancing line on the western border of the property, where they appear primarily as background structures when viewed from the bridges and hills that surround them. Their single-sloped roofs will serve as canvases for supergraphic names and flags of the participating countries; pavilion walls will be painted two shades of blue.

To the pedestrian at ground level, the pavilions will look dramatically different, for the storefronts of the buildings will reflect the designs of the inhabitants. Each country has been encouraged to express its national identity, and Saudi Arabia has already mentioned sand and camels.

At the heart of the site, running along the north/south axis, a 30-inch-deep, 3.4-acre lake was ordered, and from its southern boundary, the U.S. pavilion would command center stage. It would be the permanent, showcase structure in a nine-acre park to remain after the fair's closing. Flanking it would be a theme tower, the Sunsphere, on the east and a fabric tension structure, the Tennessee state amphitheater, on the west.

You cannot see the fabric of the Tennessee pavilion yet, but it will pop up to completion beside the pond in February. While its support services are housed underground, the 1,500-seat amphitheater actually will consist of seating on gently rolling earth beneath the shading of a fabric tension canopy. Its stage, which will extend into the water, will be the setting for the World Festival program, as well as for official events.

Across the "Waters of the World" from the Tennessee pavilion rises the Sunsphere, theme structure for the exposition. While some world's fairs have had theme structures inextricably linked with their identities, such as the Eiffel Tower (Paris, 1899/1900) and the Space Needle (Seattle, 1962), Knoxville's Sunsphere is peripheral to the '82 World's Fair theme.

Built of energy intensive materials from its base up 192 feet to the 74-foot glazed sphere at its summit, this is an amusement device. From the five-level sphere, people will dine or just view the landscape, which includes the Great Smoky Mountains.

One visual problem with the tower is its placement at the base of the valley. The true scale of the object is almost impossible to assess except as a pedestrian at the tower's base. The supporting tower's steel structure has been given added bulk to meet





code requirements that its shafts be enclosed, with a resulting appearance that one local resident, who admired the spirit of the enterprise, nevertheless thought "clunky looking."

Rising from the south shore of the Waters of the World is the sloped north wall of the U.S. pavilion, the most critically sited architecture on the property. It was designed by FABRAP, the Atlanta firm of Finch, Alexander, Barnes, Rothschild & Paschal, Inc., in association with Turner Associates of Atlanta, and Lindsay & Maples Architects of Knoxville after having been the subject of a national competition sponsored by the U.S. Department of Commerce. Marvin Housworth, AIA, led the team responsible for the pavilion project.

The team's goal was architecture, but an architecture subservient to several other needs: They realize that the building lay on a critical path, a bridge between the eastern and western sides of the site. It was also to serve as a backdrop for the entire fair, sited as it was at the termination of the Waters of the World. As a permanent structure, it had to be adaptable for whatever future uses might lie in store (conjecture centers on an arts center at this time). As pavilion architecture, it needed to incorporate the fair's theme into its formal, structural fabric. And it needed to mold space in a complementary manner for the exhibits as well as to provide a spatial experience for the fairgoer passing through its concourse.

The building that resulted from these efforts is organized along a linear spine, a shape dictated by the east/west bridging function of the building. Above this spine rises a steel wall that is

Design of university's architecture building (left) advanced selection of McCarty, Bullock, Holsaple Inc. as fair architect. Federal building (above) was designed through a competition.

essentially unfinished, a wall meant to recall Centre Pompidou and connote process, "becoming." This open south face allows sunlight to enter the main exhibit space during cool winter days while providing some summer shade. The north wall consists of operable glazing, designed to admit ambient light and to filter available breezes through the whole.

Enormous boxed trusses form the structural frame of the north wall of the triangular structure. Four of these trusses cantilever from the south wall in three ascending stairsteps, which gives the building the appearance of rising.

Visitors to the pavilion will enter from the east/west concourse that parallels the spine. Escalators will carry them to the upper levels, where they will view a range of participatory exhibits. The progression will be downward, through the exhibits, to the ground level. Across the concourse sits the IMAX theater, built to accommodate a 91 x 67-foot screen. There, a specially produced film by Francis Thompson will be shown.

Originally this building was to have been energy self-sufficient, a huge producing and breathing machine, an "energy umbilical" to which exhibits would be plugged. Budgetary restraints modified the original goals. When it was found that total energy self-sufficiency would cost twice the original estimates or more, a biomass generator and a power tower were cut from the program and the underground theater saw the light of day above ground.

This is a building that addresses the energy theme in its organization, however. According to FABRAP, the structure demonstrates that a combination of technology and common sense design can contribute greatly to the energy needs of building.

The sun will be tracked by roof-mounted focusing collectors, which will power an absorption chiller during warmest days. Auxiliary heat can likewise be gleaned from the gas fired boilers,



Smith, like other problem solvers, has met questions head-on and has found resolutions for them. The fair's executive architect, Bruce McCarty, described a particularly thorny question: "How to attract visitors through the narrow neck where the site tightens down" and Second Creek runs through a typical Tennessee ravine. The answer lies to the east. The extreme East, for the People's Republic of China will man the southernmost pavilion and provide a major magnet for the south end of the fair, where the river is.

Another difficult task for McCarty and the engineer, Cannon, was provision for the handicapped on a site that bears strong natural contours. They take pride in the fact that the site is accessible to all, with no major grade changes in pedestrian flow.

The accessible walks and the retaining walls that surround them reuse natural materials found on the site wherever possible. The architects designed new retaining walls from available stone found on the property, crafted by a Spanish stonemason located in North Carolina; railroad ties from the storage tracks were pressed into service as retaining devices, and granite found there was marshalled as a paving material.

Pavers and retaining walls can be reused a third time when the City of Knoxville receives its new park, where abandoned railroad tracks once sat. Knoxville will be the beneficiary of this fair, as will East Tennessee. Robert E. Farris, Tennessee's transportation commissioner, said in a recent public speech that the massive Interstate highway construction project at Knoxville, which would not have otherwise seen resolution until 1990 or beyond, was "18 to 20 percent ahead of schedule," and that the \$225 million highway investment should solve the legendary "Malfunction Junction" where three Interstates converge.

Frank Deller, executive vice president of the Knoxville Chamber of Commerce, sees more than the fruits of redevelopment in Knoxville. "The economy of Knoxville, which has always remained relatively stable, has maintained a high level of employment despite national trends. This is thanks in part to the massive redevelopment and construction programs which have brought \$500 million into the community."

Big budgets in a small city have dictated budget review boards and tight scheduling. They in turn have dictated occasional compromises, logic where a bold stroke may have held the real answer. Where is the imaginative leap that could have propelled the valley beyond the Tennessee mountains?

Perhaps it could have been achieved had Second Creek been channeled into a cascade powering a hydroelectric automaton or a grist mill. Perhaps the buildings on the periphery could have stairstepped down the valley, or the exhibition hall could have housed a stepped observation garden. Perhaps a theme structure could have been sited on an adjacent hilltop, connected to the fair site by aerial tram.

The primary criticism that can be made disregards conjecture, for it addresses the actual site. Scale is difficult to perceive in the valley. The multistory hotel, sitting on the crown of the eastern slope, actually shares equal visual prominence with the U.S. pavilion and the Sunsphere; the Sunsphere is impossible to relate to the human body, set deep in that valley.

The planners and organizers of the 1982 World's Fair have taken that valley, however, and transformed it. If the primary fabric of this world's fair will be conventional, it will also include a full portion of lighthearted metal and fabric tension structures that will sell food, drink and souvenirs. It will meet the demanding goals of function, economy and reuse, while addressing the energy theme, handling the people, channeling and luring them through, entertaining them and feeding them, and leaving Knoxville something lasting when the confetti has been swept up.

Knoxville's hope is to funnel the bristling energies that flow into its redeveloped valley into useful purposes, into residual uses, into renewed aspirations and assurance and into the bank accounts of its citizenry. It may take "bread and circuses" to achieve those goals in 1982, but the collective effort is producing an immediate energy that is audible. Knoxville is humming. □



Problems of scale in the valley site.

according to Newcomb & Boyd, the Atlanta based mechanical consultant. "State of the art" techniques such as computer control systems will monitor the building's energy systems. Perhaps not brave new world, but '80s pragmatism.

The \$12.8 million building has been "fast-tracked" under the management of Rentenbach Engineering, Knoxville, construction manager for the U.S. pavilion, for KIEE and for the entire fair. According to Sam Smith, project engineer for Rentenbach, the project is progressing on schedule, as is the entire fair. His mood is chastened, but upbeat.

Among the fair's emergent bright spots are the restored old rail station (top) and canopies of the international pavilions (above). Facing page, the Sunsphere and the sloping wall of the federal pavilion seen from the railway station balcony.



Photographs by Harlan Hambricht

James A. Cook /The Stock Market



Five Maxims on Energy and the Design Response

They are drawn from a conference remarkably free of 'hype.' By Robert Campbell, AIA

The AIA conference on design and energy was held in Denver, a site that seemed appropriate since Denver is visibly booming more energetically than it probably has at any time since frontier days.

Burly new office towers, many in reflective glass skins, stand all around the downtown. They look, as Tom Hine of the *Philadelphia Inquirer* put it, like a posse of sheriffs in mirror sunglasses preparing to hunt down Sidney Poitier. As you drive through the downtown at the end of the afternoon, the incredibly bright, low November sun bursts over the Rockies and ricochets off these mirrored towers, turning them into a row of firecrackers exploding in sequence.

These solar fireworks symbolize one kind of energy, a kind not being put to much practical use. The dark-mirrored buildings symbolize other kinds.

The towers are home to the corporations that are creating the Denver boom, most of which are directly or indirectly involved in the fossil-fuel business. They are working to develop the shale and gas resources of the western slope of the Rockies. South of Denver's downtown, in a charming counterpoint to the modernist towers, rise the wildly eclectic mansions of the new Denver corporate rich, set among grazing horses on a still-treeless moor. One such home, I was told, just finished, contains 20,000 square feet, including underground levels of squash courts and pools.

To one arriving, like me, from laconic New England, in other words, energy seemed to be manifesting itself in many ways in Denver, and the AIA seemed to have picked the perfect setting against which to develop the full import and irony of its topic.

I came to this conference, I admit, with certain mild prejudices. What a writer needs, Ernest Hemingway once remarked, is a goldplated foolproof shit-detector. This equipment is especially helpful in the presence of the alternative energy movement.

Energy in general, and solar energy in particular, has probably become the single most heavily hyped topic in American culture. Most architects can't find their calculators beneath the rubble of mailings from fast-buck promoters of "solar" products and services. (Like any great promotional slogan, the term "solar" is usefully flexible in meaning. "Solar glass" means keeping the sun out. "Passive solar" means urging it in. Either way, solar is good.) Publishers rush to inundate the professional with alternative-energy books so sloppily edited that they are (ironically, given the life style preferences of the solar movement) the literary equivalent of junk food. (Yes, trees are cut down to make these ecologically sensitive books.) So-called solar-greenhouses, now modish in New England, are responsible, it has been calculated, for a net energy outflow from the residential architecture of the region.

A few architects, whom we may call the energy Martians, see the energy crisis as yet one more excuse for formmaking, one more chance to hit the slicks and outscore the other architects with bizarre interplanetary shapes. The truly committed client of an energy Martian can now view the world through a trombe wall of waterfilled plastic tubes. (If he isn't committed, he probably should be.) Other architects see energy as a moral issue, an opportunity to be More Concerned Than Thou. Some architects build efficient passive-solar houses on south-facing slopes in Vermont, and then spend large amounts of gasoline traveling back and forth to Boston and New Haven to show slides of these very houses.

Such facts engender skepticism. Yet despite the posturing, the fact remains that there really is an energy crisis. And the brighter side of all the hype is that virtually every architect knows it. This understanding puts architects way ahead of both politicians and journalists. The problem has been figuring out what, if anything, we architects can do about the crisis besides exploit it for personal careerist goals. Up to now the record of the profession on this issue hasn't been that great.

The Denver conference put a lot of all this in perspective, for me at least, because it suggested that architects have moved beyond most of the old pitfalls. No one indulged in hype, only a few flashed fancy formmaking at us, and no one read us any moral lessons about how we'd better get in step with the future before it's too late. Just about everyone who spoke, in fact, went out of his or her way to say that energy concern must not become another fad or media gimmick, that it mustn't be allowed to warp the design process by pushing aside other concerns, that it must instead be carefully integrated into a serious design response to an increasingly constraining world.

The design and energy conference (held last Oct. 31-Nov. 3) was undoubtedly a success both in quality and in impact. A remarkable turnout of 538 architects came from all over the country. For two days, they watched and listened to speakers and panels discuss energy and architecture at every scale from the hut to the metropolis. Most of it was fascinating.

Conferences are hard to summarize. I'd like to try to gather up this one under five maxims that seemed to underlie a lot of what people were saying.

1. *The energy crisis can give architects back their lost credentials.*

I'd hesitate to say this in a form that seems so rude to architects except that Randy Vosbeck, FAIA, the AIA president, did it first in a very good speech that led the conference off on a note of amazing humility. Vosbeck said architects don't really have much influence on the built world but that the energy crisis can change that.

"For the first time in recent memory," Vosbeck told the conference, "the mortgage banker, the developer and the government official have a need for a service that only we architects can provide.

"We are for the first time in a position to act in a way that will have a real impact. Energy gives architects and engineers a unique opportunity to demonstrate conclusively to all potential clients just what it is that design can bring to the building process."

It wasn't clear, before, what design could do for the building process? This from the AIA president? Well, Vosbeck was dramatizing, of course, but the surprise is the fact that everyone else at the conference seemed to agree with him.

There was a general feeling that the profession has lost some of its credentials with society as a whole, that we are viewed as something of a luxury or an oddity or an expense, rather than a necessity. But now, this argument went, thanks to the energy crisis, people are going to have to turn to architects again. We're going to be *needed*, for heaven's sake, and not for futurist visions either but for solid professional skills. Just like doctors and lawyers.

This leads right into Maxim No. 2:

2. *The energy crisis is a chance for the real architects to take over from the showmen.* I don't think anyone actually said this but the inference was clear. The idea was that the energy crisis is a real problem, therefore it will require real problem-solvers. And the real problem-solvers are the workaday architects, the seasoned pros, not the people who grab media space with kooky designs or arcane theories.

Vosbeck hinted at this theme when he said that energy-conscious design is going to produce "a new design vocabulary that won't be weird or off-putting."

Richard Stein, FAIA, made the same point in a brilliant pocket history of recent architecture. After World War II, Stein said, architects stopped using the building itself as the primary way of controlling climate and instead handed that problem over to the mechanical engineers. This left the architects with the problem of designing facades that had no interesting purpose, facades that contained no information. Facades became mere blank paper for architects to doodle on. First they doodled

grids, now they doodle history. But in the future, Stein maintained, facades will have to become, once again, meaningful zones that will "mediate between climate and comfort" (as another speaker, Harrison Fraker, AIA, of the Princeton Energy Group, put it, quoting James Marston Fitch).

"Buildings that respond to energy won't be symbolic or bizarre," Stein concluded. He thus obliterated in a single phrase the Prismatic-and-Chippendale school of design on the one hand, and the energy Martians on the other.

Ben Weese, FAIA, took up the same attack when he chided the AIA JOURNAL for its recent issue on glass curtain walls, a form of enclosure which Weese, like Stein, regarded as a kind of irresponsible giftwrapping or graph paper. (The issue actually was about all types of building skin.—*Ed.*) Weese went beyond curtain walls to attack tall buildings as well, describing them as examples of the egotism of their hero-architects, calling them "selfish intrusions" and quoting Leon Krier's wonderfully abrupt statement that "all tall buildings are vicious and immoral."

To buttress his attack on architecture-as-fashion-design, Weese read us a recent and revealing item from a small-city newspaper, quoting the architect of its new (and only) skyscraper:

"There's an awful lot of glass because that's what the look is today. I want it to be the sharpest looking building in town but still rent in eight or ten years."

The conference as originally planned would have included a counterforce to the Weeses and Steins. Several very prominent designers and a historian, all known for their formal or academic interests, not for energy concerns, were invited to appear at the conference as a panel. None of them showed up.

Next maxim:

3. *The energy crisis gives architects leverage that can improve the whole design.*

This isn't as definable as some of the other maxims, but it was an important part of what a lot of speakers were saying. They argued that if an architect can deal with energy problems, he or she will gain clout with the client, clout that can be exploited to persuade the client to build better all-around architecture. Also part of this idea is the notion that a building designed with energy consciousness will simply be better environment, independently of how much fuel it saves or doesn't.

Sam Davis, AIA, of Berkeley, Calif., made this point when he presented eight office buildings developed as energy prototypes by the State of California. Davis and many others listed features that not only make buildings more energy-efficient, but also at the same time can make them "a more human workplace." Such features include natural light, arriving through skylights, through windows in longer building perimeters, and through multistory atriums; operable windows for natural ventilation; facades scaled down and humanized by sun-control devices such as awnings; plantings and water, and many others.

Davis noted some problems in these features too. Operable windows, for instance, in one California building have had to be locked because of hay fever problems and also because of the social problems of deciding who has the right to operate what window.

Harrison Fraker talked about energy-leveraged design when he presented a speculative suburban office building in New Jersey. Fraker claimed that a glazed atrium, created largely to reduce the lighting bill, had also given the building a focus and sense of place. He said the result was quicker rent-ups.

Fraker called this kind of thing "finding the latent formal content in the energy diagram." He contrasted such "latent content" with the "exposed power" of energy as seen in the mechanical systems made visible in a building like Centre Pompidou.

The problem, Fraker said, is that real energy conservation is invisible. You can only test it by measurements over time. The



Ben Shook/Joe Sengge

The first of California's remarkable series of energy conscious buildings (left) was designed under state architects Sim van der Ryn and Barry Wasserman, AIA, with Peter Calthorpe, Bruce Corson and Scott Matthews as principal designers. The state Department of Justice building (right), now abuilding, is by Marquis Associates.

Design is only part of the solution.

question of whether or not a building is good energy design is one that is removed from direct experience. That's why, he thought, evolution in the field has been slow: Architects aren't naturally good at it because we're naturally visual.

Clients aren't good at it, either, apparently, judging from the number of speakers and questioners from the audience who told stories about how hard it is to convince clients that energy-conscious design is worth the trouble, especially if it requires higher design fees or first costs (which some said it does, some said it needn't). Robert Marquis, FAIA, of San Francisco, a man who obviously knows clients, suggested that it's useful for the architect to retain an energy consultant, not only to help determine an efficient building form but also "to shuffle the numbers to make the payback come out right."

On to Maxim 4:

4. *Energy design shouldn't become an obsession.*

This means, of course, that energy issues shouldn't be allowed to squeeze out other design issues. It also suggests a kind of

humility, a sense that architects aren't going to solve the world's energy problems by manipulating their buildings. There are many factors that are a lot more important than architecture in determining how efficiently society uses energy. Architects should take their design blinders off long enough to recognize these factors and use them.

Preservation, for instance, is such a factor. Robert Marquis, commenting on a new Tennessee Valley Authority building in Chattanooga designed by Sarah Harkness, FAIA, of The Architects Collaborative and Charles Lawrence, FAIA, of CRS, suggested that more energy will probably be saved because of these architects' decision to preserve, instead of demolishing, some old warehouses near their site than is saved by all the solar collectors in Denver. Richard Stein, in a similar vein, said that it costs more than a million and a half BTUs to build one square foot of office space. He pointed out that this is more energy than the square foot may require for operation for the first 30 years of its life. Again, it was an argument for preservation.

Density is another factor. Stein described a study by his firm of the energy use of all the buildings in New York State. The



study concluded that the greater the density, the greater the efficiency, with the buildings of New York City coming out more efficient than those of upstate New York by 17 percent.

Transportation is another nonarchitectural factor. Stein noted that if transportation costs had been included in his study, New York would surely have done even better. Sarah Harkness also emphasized transportation at her TVA building, pointing out the energy saved by locating it in a city and providing no parking lot but, instead, a shuttle service.

This notion that architectural design is only part of the problem led George Crandall, AIA, of Skidmore, Owings & Merrill/Portland, Ore., to cite a study that concluded that if all new buildings in Portland from now on are designed to be ideally energy-efficient, the reduction to Portland in projected total energy cost over the next 20 years will be only 4 percent.

Not only shouldn't energy design be isolated from other energy issues, it also shouldn't be isolated from other design issues. Many persons talked of the need to integrate energy with traditional design concerns—urban form, function, circulation, scale, amenity, cultural meaning. Robert Marquis brought still

another kind of humbleness to the conference when he claimed it isn't up to architects anyway whether or not to concentrate on energy-consciousness in design, at least not for long.

"This is an exciting era when society will force architects to work by a mutually agreed set of values," Marquis said. He listed what he called "huge forces" that will soon face architects, ranging from changing life styles and demographics to the loss of agricultural land. With yet another blow at the absent Prisma-colorists, he summed up: "Society will soon no longer permit the present self-indulgence that exists in architecture today."

Fifth and last:

5. *Energy-conscious design means regionalism.*

Edward Mazria, AIA, of Albuquerque, N.M., made this one pretty clear when he started off his presentation with a slide of Mesa Verde and an analysis of its thermal mass, south orientation, overhanging shading cliff and long broken perimeter. Mazria then showed work of his own with similar properties.

Stein, replying to a question, put the issue into a syllogism: Energy-conscious design by definition is site-specific, therefore it's regional. This point of view seemed to be held by just about



Kristen Peterson

everyone. No one even bothered to point out that it is in total conflict equally with extreme modernism (glass boxes in Houston) and extreme postmodernism (Giulio Romano at Cornell).

Does this mean that the energy movement will lead to new regional forms? In some buildings presented at the conference, there actually seemed to be an emergence of just such vernaculars. As one small example, in both southern California and Washington, D.C., there were similar buildings based on the idea of maximizing the perimeter to encourage heat loss and provide daylight, whereas in chillier climates there was another group based on *minimizing* the perimeter—balanced (for access to daylight) by an interior atrium.

Almost the only designer who wasn't in some way regional was Michael Jantzen. Jantzen was also the nearest thing to an energy Martian. Jantzen builds dwellings and small workplaces

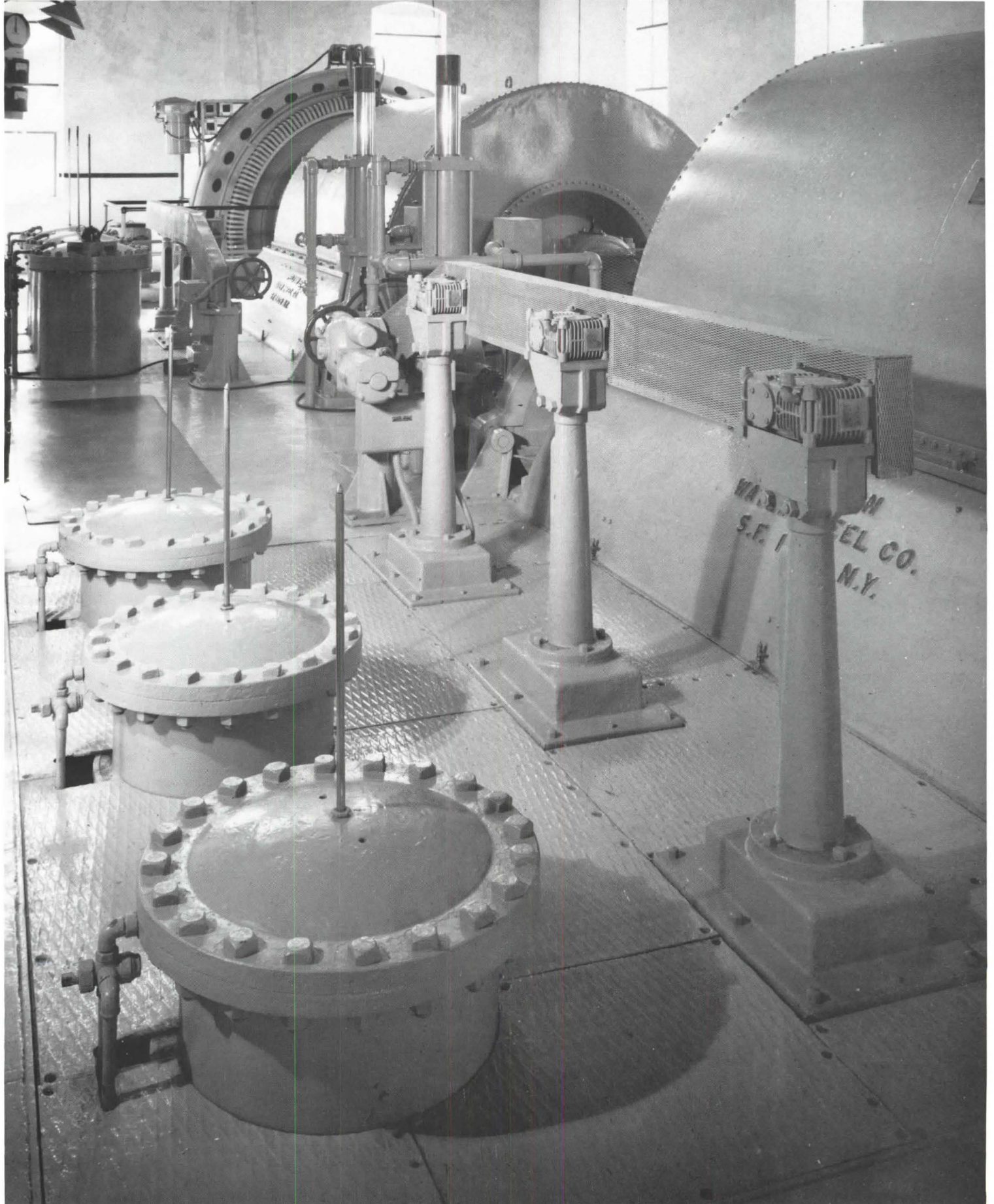
in southern Illinois out of found materials like silo parts ordered from catalogs. (One of his houses is shown above.) The energy-consciousness is in the obsessive minimizing of materials and square footage, in the manner of Buckminster Fuller. The results were often visually witty, but they lacked (also like Fuller) any interaction with context. Jantzen was fresh and vivid but seemed too idiosyncratic to offer anyone else any lessons.

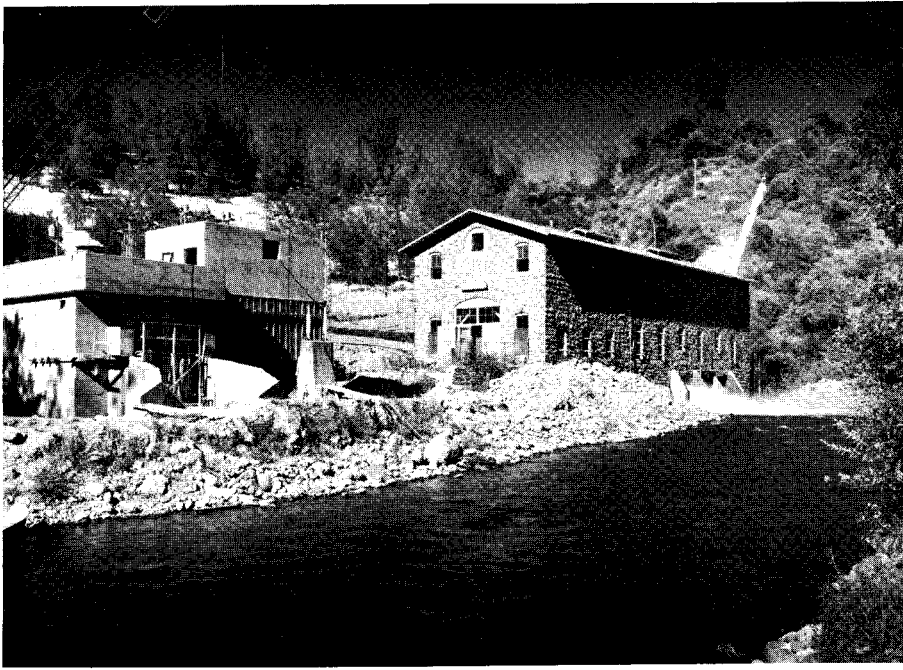
I hope these five "maxims" give some idea of the design and energy conference and its agendas both spoken and unspoken. For the sake of coherence, a number of people have been left unmentioned who I trust will be forgiving.

As a whole, the conference gave encouragement that architects are moving away from romantic gestures at energy-conscious design and toward a more sober, more testable and more holistic approach. I suspect most who came learned a lot. □

Images of Energy in Engineering

A portfolio of photographs by Jet Lowe



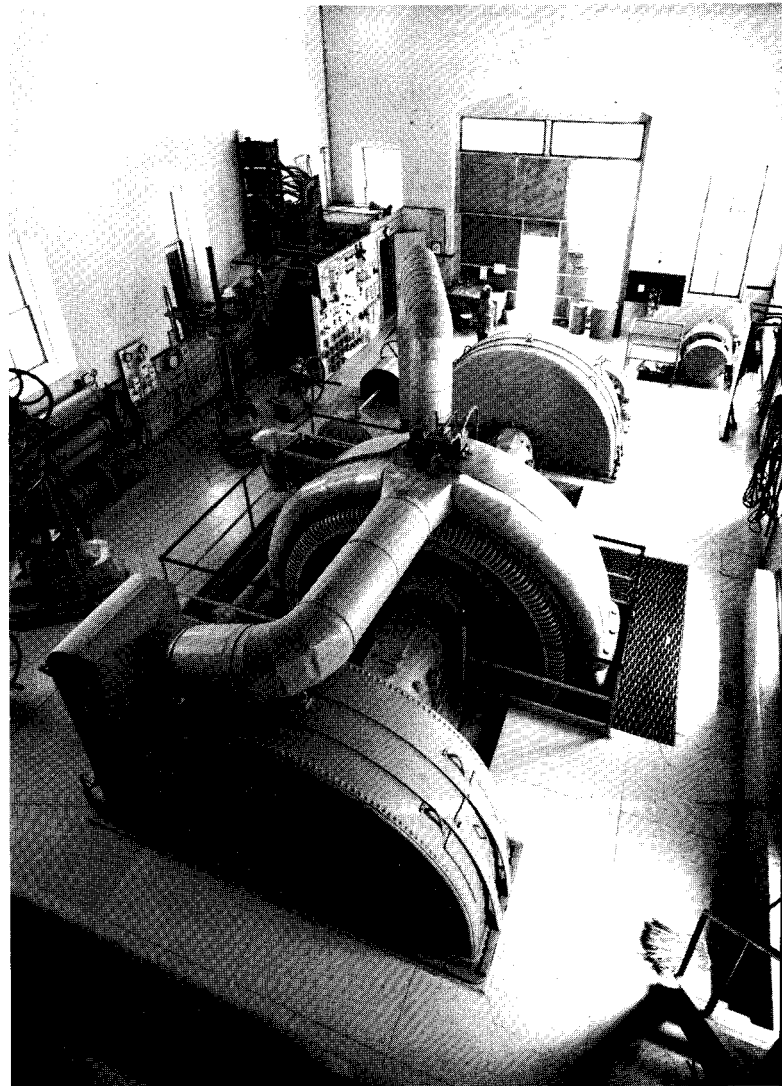


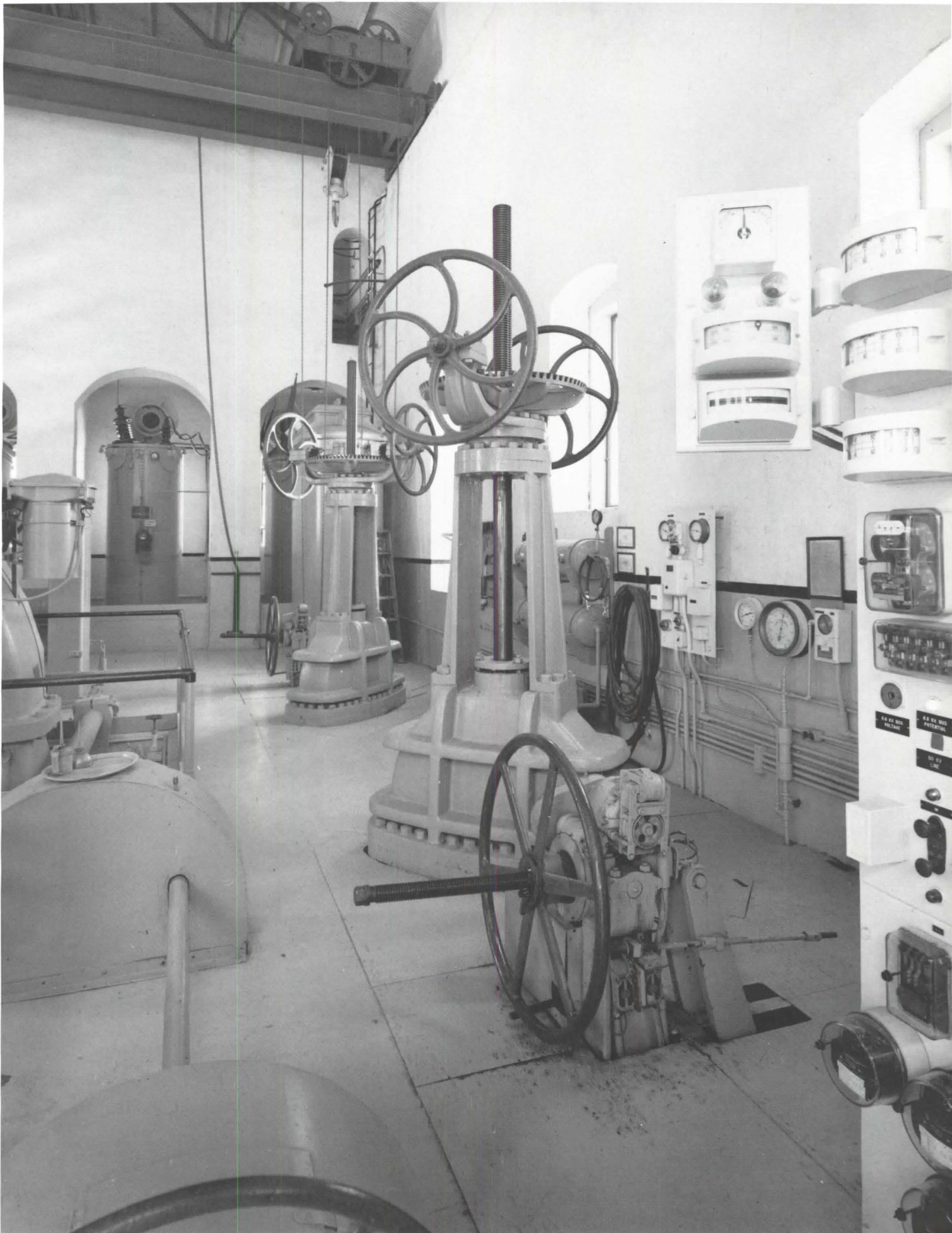
The Battle Creek Hydroelectric system in Northern California is a high head system, relying more on the fall rather than the volume of water for its power. The Inskip powerhouse on Battle Creek, at left, is being replaced by a new automated facility, as is the system's South powerhouse, whose interiors are shown here and on the preceding page.

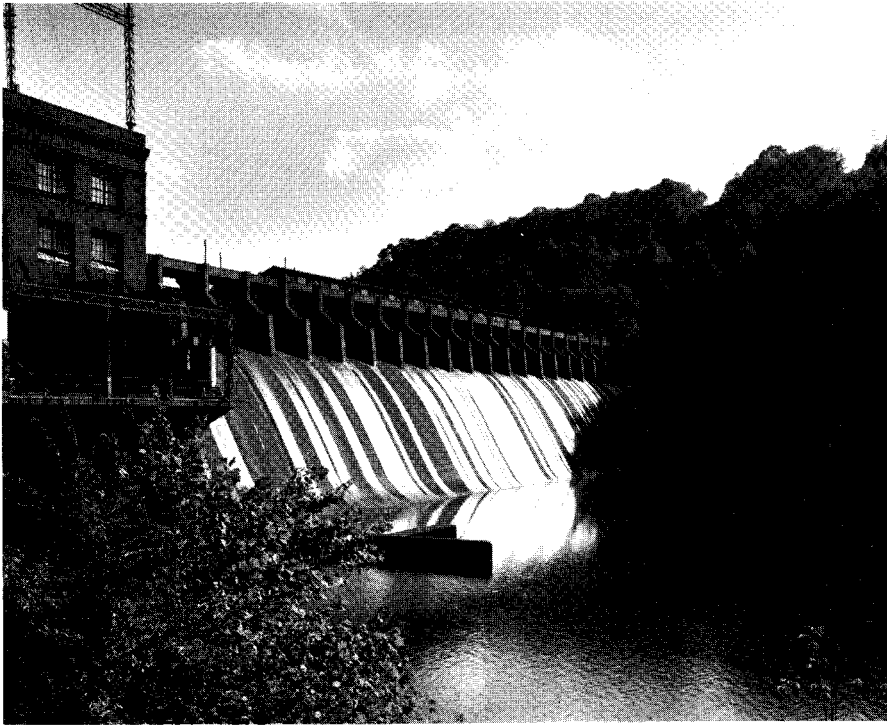
There are few more photogenic forms than those associated with industry, especially the energy industry—not just, or even mainly, its buildings, but the muscular machinery that the buildings house or that, in some cases, dwarf the buildings in size and power.

Documenting such artifacts is the task of the Historic American Engineering Record (HAER) of the National Park Service, less well known counterpart of the Historic American Buildings Survey and similar in mission. HAER records, in words and photographs, what it terms America's "extraordinarily rich and diverse history of technical invention" and the structures and industrial processes that it has yielded.

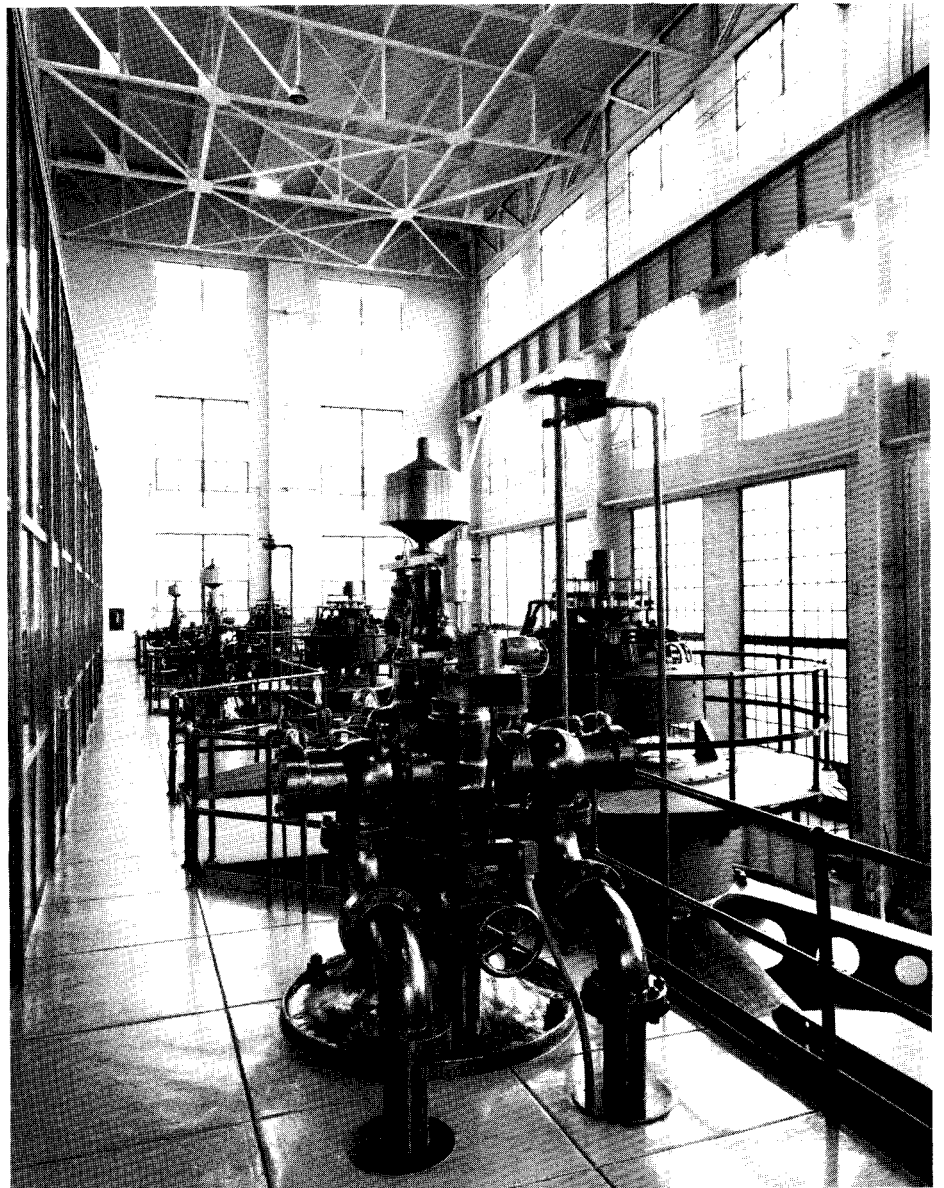
The results are often dramatic, as evidenced by the photographs on these pages by Jet Lowe, a staff photographer at HAER for the past three years (whose commentary accompanies the photos). They show a pairing of small powerhouses, and are only a modest introduction to the HAER treasure trove. We shall be returning to it, and to Lowe's photographs, several times in future issues.—*Ed.*

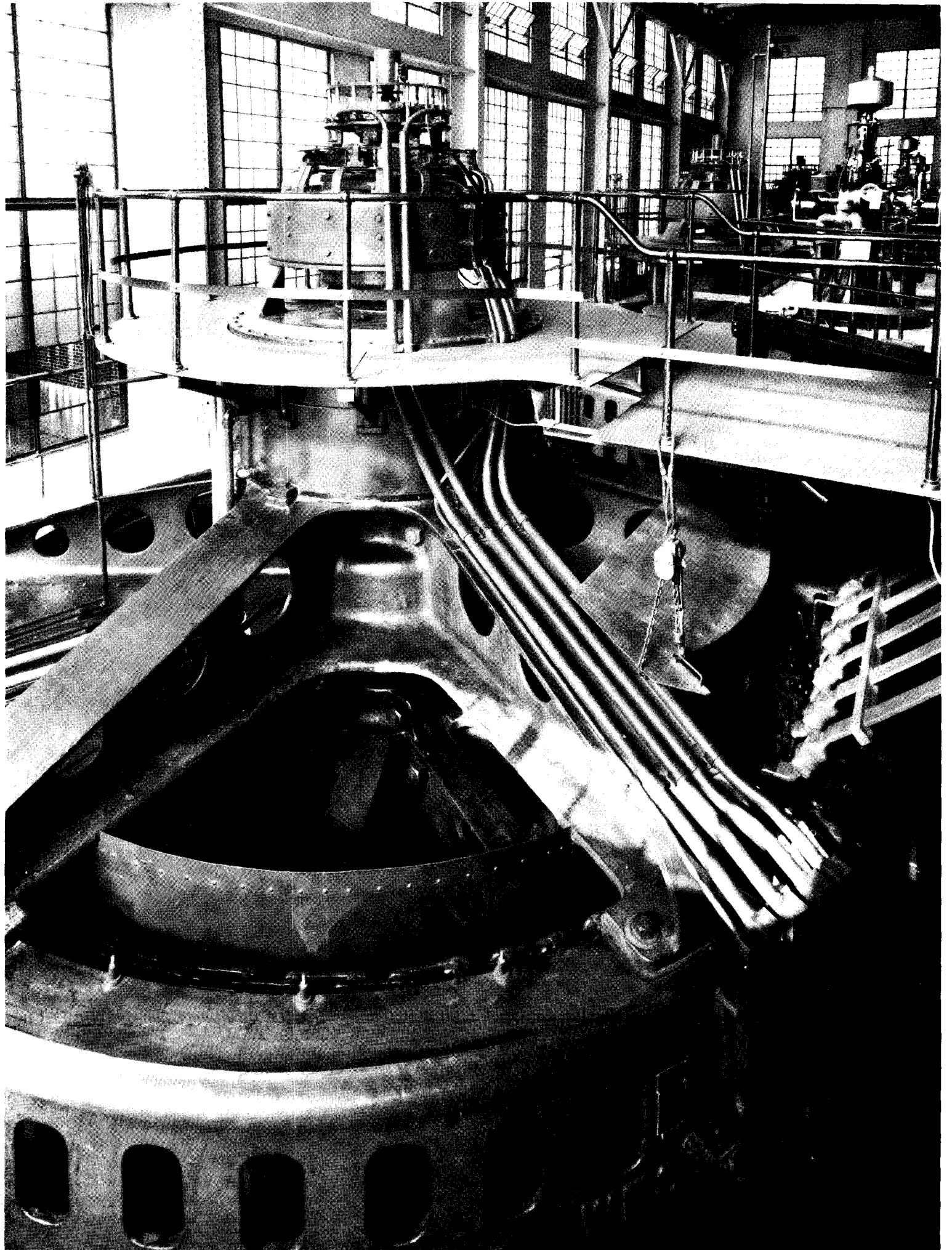






State of the art circa 1925—Lake Lynn hydroelectric powerhouse and dam on the Cheat River on the West Virginia-Pennsylvania state line. The dam, above, has flood gates all the way across its top since the Cheat is a 'flashy' river. Right, a robot-like governor in the powerhouse. Opposite, the generators. □





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BOOKS

Banham

Design by Choice. Reyner Banham. Edited by Penny Sparke. (Rizzoli, \$27.50.)

Reyner Banham is a unique phenomenon among writers about architecture. He thinks better, writes better and jokes better—much better—than most, but what really distinguishes his output is the range of its subject matter. Because of that range, a selection of writings gathered from his whole career is a more lively and more welcome collection than would be that of almost any other writer in the field.

Design by Choice includes pieces, most of them short, written by Banham during the past quarter century. Only about half of them deal with architecture or with urban design issues; the others examine such subjects as furniture, graphics, cars, computers, transistor radios and, looking into the future, “the machine that replaces your secretary and sets her free for full-time premarital sex.”

The fun is partly dampened, however, by the inappropriately pedantic device of grouping all the essays about architecture in the first half of the book and all the essays about popular culture in the second half. The reader who wants to read these pieces the way Banham wrote them, turning from James Stirling to pub decor, from Foster Associates to minicycles, relishing the variety and contrasts, will just have to rise above the book's format and skip about.

Wherever he lands, in either section of the book or in the appended bibliography of Banham's writings, he is likely to land on an article with an irresistible title: “A Designer's Pugwash,” for example, or “Form Fuddles Function,” or “Godzilla in Halifax.” Beyond the titles, the felicity continues: Buildings are perceived as being “symmetrical as a beetle,” or “broad-based like a blancmange,” or even as having “the confident convexities of a Buick.” These are never merely amusing; they always make a point, and they always ring true.

In Banham's quickness to perceive, understand, characterize and, if he chooses, parody the latest manifestations of both fine art and popular fashion, he is at least the equal of Tom Wolfe. But what a difference there is between the two writers! As George Nelson wrote here in his re-

view of *From Bauhaus to Our House* (see Dec. '81, p. 72), Wolfe's venture into the field of architecture was “neither history nor criticism . . . but malicious gossip.” Banham's sometimes fanciful flights, on the other hand, are founded on knowledge and scholarship. Near the beginning of his writing career, this foundation was evident in his 1960 book, *Theory and Design in the First Machine Age*, in which he corrected some of the oversimplifications of the accepted history of modernism, pointing out that, because of the distance between theory and actual practice, architecture in the first machine age had only rarely become architecture of the first machine age.

Since then, Banham has focused serious attention on subjects as varied as the role of mechanical equipment in architectural design, the freeway culture of Los Angeles, the concept and built reality of mega-structures and the symbolic value of grain elevators in modernist theory. In short, although Banham is a great kidder, his jokes are good jokes because they are informed jokes.

And they continue. As we were reading *Design by Choice*, the mail brought an issue of the *Journal of the Society of Architectural Historians* with a Banham review of Stanley Tigerman and Stuart Cohen's recent collection of “late entries” to the Chicago Tribune Tower competition. Banham, in mock despair, concluded that “most of us in the history-teaching profession have little alternative than to go hang ourselves from the nearest post-modern-classical acroterion.” Too late, obviously, for inclusion in the present collection of Banhamming, but a candidate, we hope, for the next one. *Stanley Abercrombie, AIA*

Southern Architecture: 350 Years of Distinctive American Buildings. Kenneth Severens. (Dutton, \$19.75.)

Such eminent Southern writers as Eudora Welty and Walker Percy agreed at a 1981 Chattanooga symposium on contemporary Southern literature that the South is unique in its “sense of place.” They also agreed that this sense of place is a powerful influence that inspires and motivates the work of Southern novelists. Kenneth Severens, architectural historian, associate professor at the College of Charleston in South Carolina and author of this ambitious book, also refers to this sense of place, believing that it is the

dominant architectural characteristic of plantation houses, which he calls “the roots of Southern life.” These houses, he contends, are “the pre-eminent contributions of the South to American architecture.”

In an introductory chapter on “the distinctness of the South,” Severens refers to a “recurring paradox”—romanticism and classicism—that prevented the South from developing an indigenous architecture despite its early recognition as a region. Every Southerner, and I am one, knows that the South thrives on paradoxes, and every Southerner accepts the contradictions. At any rate, Severens says that the romanticism that was expressed in all those white columns of antebellum houses helped the new planter to hide his humble origins in his aspirations to be like colonial Virginia and South Carolina gentlemen, and they also provided “an appearance of rootedness.” The classicism of them, he says, harked back to “the heroic ideals of democratic Greece and republican Rome, whose venerable political systems had been based on slave labor.” The message of plantation architecture, according to Severens, was to exonerate the South's “peculiar institution”—slavery—by its association with classical antiquity. This essay, one of the 12 to constitute the book, is provocative, revealing those contradictions that still abound in Southern life and culture.

Severens did not find it desirable to approach his subject in a strictly chronological fashion, he says, because of the South's geographical expanse, the traditionalism of its culture and the overlap in stylistic periods. He preferred to deal in broad categories, by building type or architect, with examples of “distinctive” buildings and projects at the core of his discussions. His examples are well known, having been covered extensively in other contexts. No one can quarrel with such selections as Monticello, Mount Vernon or St. Michael's Church in Charleston, S.C., but one can question his disregard for many buildings and architects who influenced the Southern landscape. For example, the only reference to Natchez, Miss., comes in his treatment of plantation houses when he discusses Longwood (1860-1861), that exotic “Oriental villa” designed by Samuel Sloan. No classical illusions here.

In addition to his extensive description
continued on page 76



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Books from page 74

of plantation houses, churches and colleges, Severens ranges through Southern cities on through time to today's architecture. Among the more interesting of his descriptions is that on urban planning. He describes the settlement of Jamestown, Va., and the planning of Charleston, Annapolis, Md., Williamsburg, Va., Savannah and New Orleans. Later in the book he gives more in-depth coverage to the two antebellum cities of Charleston and New Orleans. He points to the contrast between Northern and Southern cities, saying that the latter were planned from the start, unlike Northern settlements that "evolved into cities with less conscious planning."

Severens sees "the shaping of Southern life" in an essay on patrons and architects. Among the architects he discusses

are Ezra Waite (the Miles Brewton house in Charleston), William Buckland (Gunston Hall in Fairfax County, Va.) and William Jay (the Scarborough house in Savannah). He also devotes a separate chapter to George Washington and Thomas Jefferson, telling of Jefferson's influence in the planning of Washington, D.C. This city, he says, "displays a kinship to the idea of the plantation house—an expansive classical design in a natural setting."

He also delves into the architecture of the time when the South went from "picturesque ruins" after the Civil War "to progressive resurgence," touching on such subjects as Henry Hobson Richardson as a Southern architect, Richard Morris Hunt's Biltmore in Asheville, N.C., and Louis Sullivan's connections with Ocean Springs, Miss. Previously, he touches all

too briefly on the Westward expansion of Southern architecture across the Appalachians. This perhaps is as disappointing a chapter as one to come on contemporary architecture.

Meanwhile, Severens moves on to Frank Lloyd Wright's Usonia South, devoting half of the essay to a description of Auldbrass in Yemassee, S.C., and Florida Southern College in Lakeland. He concludes with a rather incomplete chapter on contemporary architecture and on preservation activities in such places as Old Salem, N.C., and Beaufort, S.C. He considers only some of the work of Paul Rudolph, Edward Durrell Stone, Odell Associates, John Portman & Associates and Charles Moore's St. Joseph Fountain in the Piazza d'Italia in New Orleans. Severens makes little attempt to comment on trends and directions in contemporary Southern architecture. His best contributions concern earlier periods.

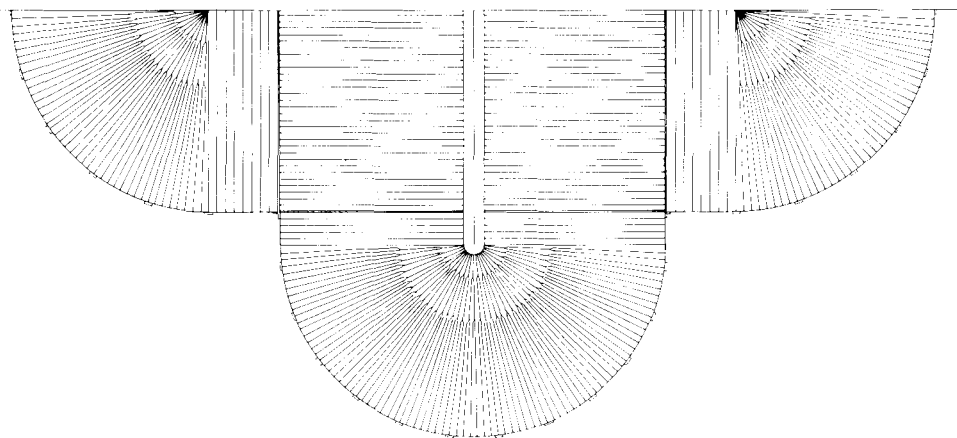
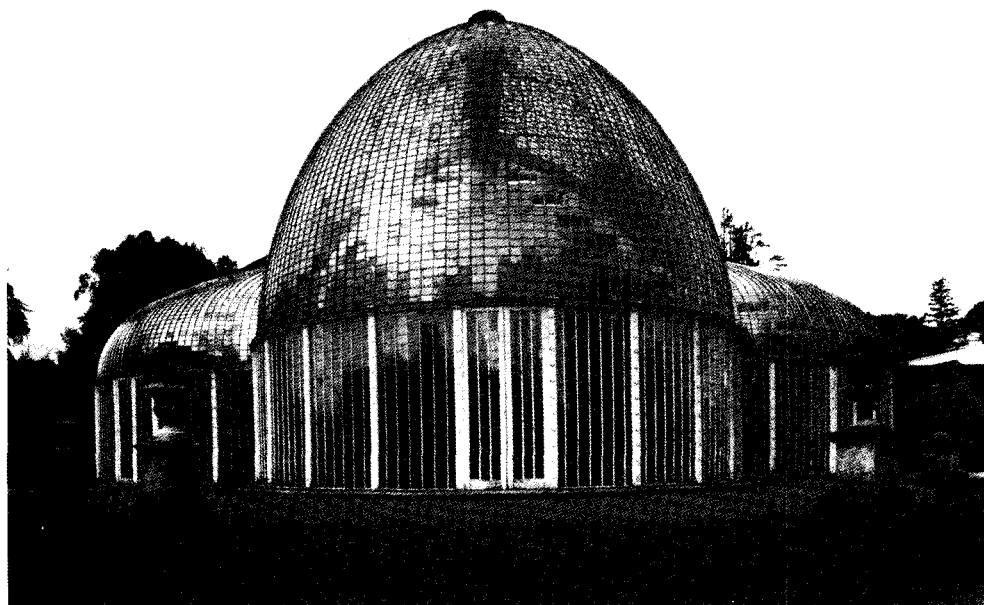
One of the book's most entertaining aspects are the many quotations by observers on the scene at the time of the building or project being discussed. Severens quotes from old newspaper accounts, old contracts, English and French travelers and an array of people such as Margaret Mitchell, Frederick Law Olmsted, Frank Lloyd Wright and Booker T. Washington. The book is replete with black and white illustrations, many of them being early views. There are extensive notes on all the chapters at the book's conclusion, but no bibliography.

Severens holds the attention of the reader, writing with verve and wit. Although the book is comprehensive in intent, it is somehow not comprehensive enough in its development. It would be interesting to know if Severens believes that the South still has a sense of place. Although he says that many of the finest recent buildings in the South "are only minimally related to historic styles or materials," one wishes that he had probed more deeply into whether there are differences between architecture in the South and architecture of the South. *Mary E. Osman, Hon. AIA*

Three Centuries of Notable American Architects. Joseph J. Thorndike Jr., Editor. (American Heritage Publishing Co., \$39.95.)

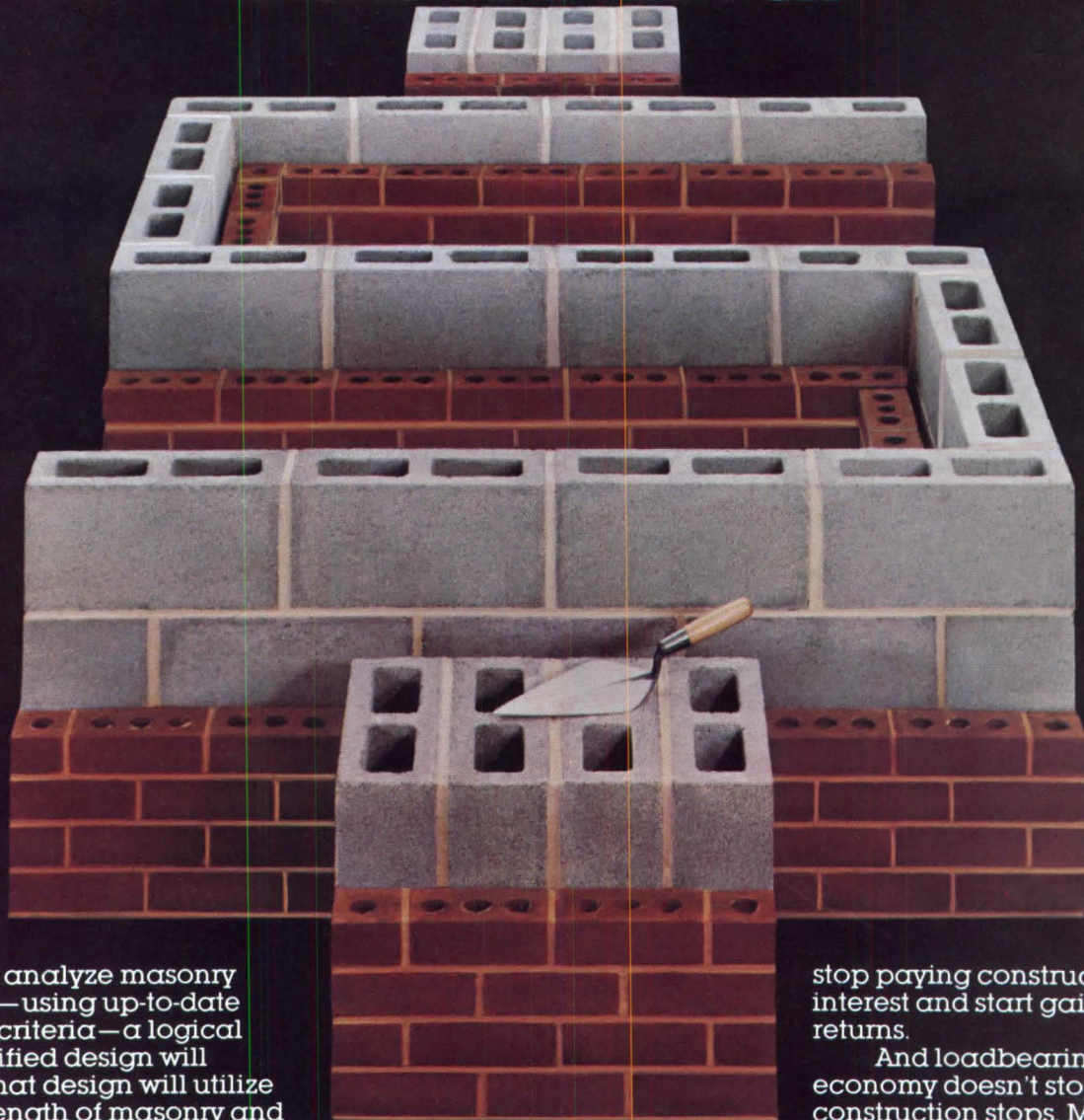
The superb illustrations in this book, many of them drawings, command attention and are what we have come to expect from the American Heritage firm. In spite of the scattering of eminent architectural scholars, historians and critics who are represented, this is a volume addressed to the general reader. Essentially, it comprises 15 biographical and critical essays on individual architects, a very short introduction by Vincent Scully and a *tour*

continued on page 79



Glasshouses and Wintergardens of the Nineteenth Century. Stefan Kopplekamm. (Rizzoli, \$29.95.) If Joseph Paxton's Crystal Palace was a high point of Victorian engineering, it was but one of many 19th century enclosures of glass and iron. In 112 pages, Stefan Kopplekamm examines the origins and development of the genre and details 17 European and American examples. Many of the 157 illustrations are roof plans, whose intricate traceries make fascinating geometric studies. One of the book's gems is the Palm House at Bicton Gardens, England (above). It is an example of "lean-to" glasshouses, writes Kopplekamm, which were built against a wall shielding it to the north. Its designer is unknown, but it is thought to have been built before 1838.

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Books from page 76

d'horizon of the contemporary architectural scene by Paul Goldberger. A portfolio of unrealized architectural designs is a surprising and valuable feature.

Once the exception of more comprehensive coverage is put aside, and one accepts the limits of space and detail imposed on the authors, one finds this a valuable work. Given the extensive research that has gone into its production, however, why should the editor shrink from including references and the bibliography that would have enhanced the book's value and strengthened the acceptance of many of its presentations? The lack of full credits for the illustrations is particularly to be regretted, especially when there are so many question-begging captions. I hope I will be understood correctly in calling this high-class architectural journalism; and worth the price.

Frederick Gutheim, Hon. AIA, Washington, D.C.

The Papers of Frederick Law Olmsted, Volume Two: Slavery and the South, 1852-1857. Charles Capen McLaughlin, Editor in Chief. (Johns Hopkins University Press, \$27.50.)

This volume, principally the work of associate editor Charles E. Beveridge, carries Olmsted through his antebellum travels in the seaboard states and the up-country, and his closely related New York literary career. It stops just short of his awakening interest in landscape design, under the influence of Andrew Jackson Downing, and the pivotal event of his association with the British emigré architect Calvert Vaux in their 1858 competition-winning design for New York City's Central Park.

While anyone with a professional interest in environmental design will be acquiring the complete set of volumes, it cannot be said that this particular volume with its high standard of detailed scholarship touches many of the architectural (as distinguished from the historical) aspects of Olmsted's life and career. But hang in there; the best is yet to come. *Frederick Gutheim*

Structural and Foundation Failures. Barry B. LePatner and Sidney M. Johnson. (McGraw-Hill, \$21.50.)

While this publication could be referred to as a "storybook with a moral," it is much more. Using 32 case studies built on a narrative along with a technical and legal analysis, the book is a readable explanation of what can go wrong at the construction site.

The authors' purpose is reportedly to cause every design professional to be aware of the repercussions of problems encountered during the design and con-

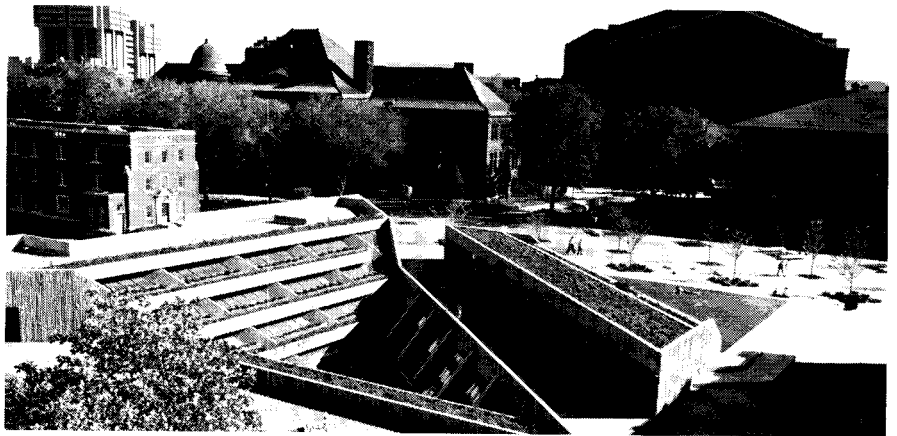
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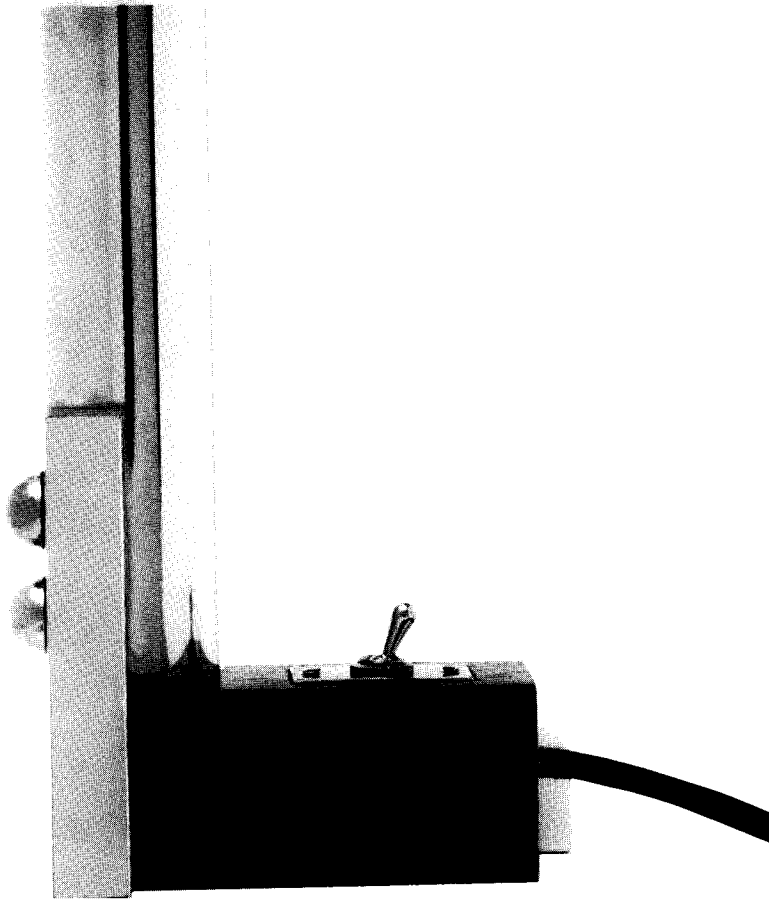
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Books from page 79

struction process. The case studies are well chosen for their diversity, and the narrative concisely explains the problems. The technical exposition is basic enough for the most rusty of design professionals, and the legal discussion points out courses of action that both helped and hurt those involved.

A second volume dealing with problems specific to architects presented in the same style would be a valuable complement to this book. *William D. Hooper, AIA, Director, Practice Division, Institute Headquarters*

Trees and Buildings: Complement or Conflict?

Edited by Tony Aldous. (London: RIBA and the Tree Council, \$11.25.)

It's hard to imagine anyone's hating a tree or that there would be an anti-tree lobby, but trees were blamed for damaging buildings in Great Britain in the aftermath of the 1975-76 drought, and an anti-tree lobby was formed. The lobby got grist for its mill in the circulation in 1978 of a draft standard by the British Standards Institution for the planting of trees near buildings. The "tree people" counteracted, persuading the BSI to rewrite the draft text and holding a conference in 1979 on trees and buildings, sponsored by the Royal Institute of British Architects and the Tree Council. This book contains the conference proceedings and includes papers on such subjects as the interaction between trees and buildings and trees in the inner city.

Ian White, a landscape architect, addresses the subject of trees in the inner city, saying that the benefits include the incentive to attract people back to the city. "Trees always have been an indicator of the quality of life, expressed and confirmed in country estates and suburban gardens, but in today's inner city areas trees should exist not as the final seal of success, but as living and growing evidence of our aspirations and standards for the future," he says. Bravo, Mr. White.

Human Factors/Ergonomics for Building and Construction.

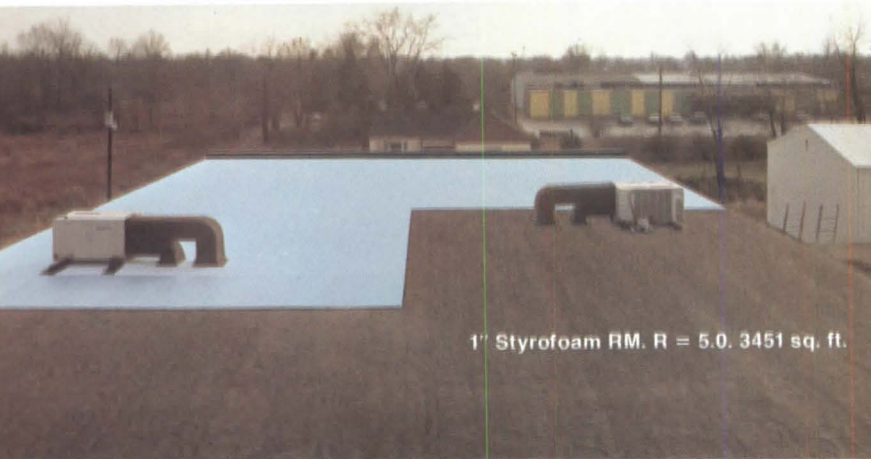
Edited by Martin Helander. (Wiley, \$35.95.)

Human factors engineering, or ergonomics, "aims at modifying work procedures and machinery by taking into account the physical and psychological capabilities and limitations of human beings," explains the editor of this book, who is associated with the Canyon Research Group, Inc., in California. He says that the book is "the first of its kind" for the construction industry, its purpose being to apply information from the social sciences to construction work. Individual contributors are from the fields of medicine and the social and physical sciences.

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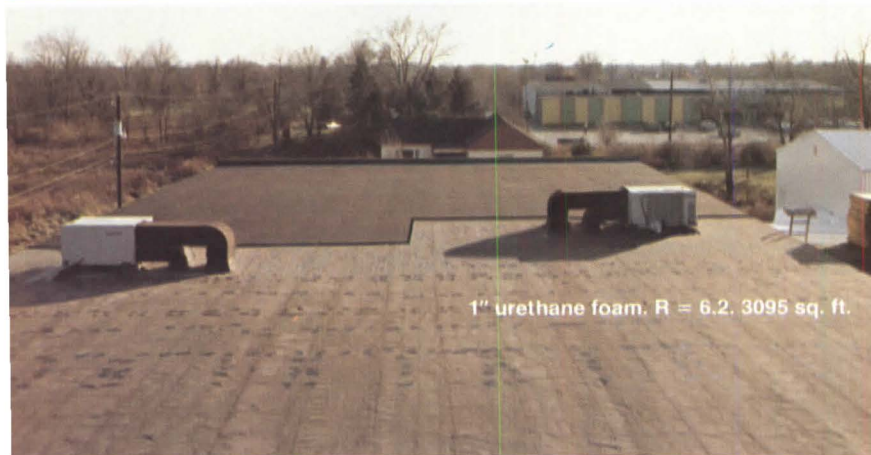
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Books from page 82

What factors influence a worker's ability to perform physical work? What motivates the construction worker? Can negative attitudes be changed? What are the health hazards at the construction site? How can machines and tools be better fitted to human users? What are the problems—and solutions—of women and minorities in construction trades? These are among the many questions the book seeks to answer.

There is a major section on environmental hazards in construction work, with chapters on safety and on physical and chemical health hazards. Another section concerns "operator factors," among them work physiology and the psychology of job satisfaction and worker productivity. (To this reader's surprise, a chapter in this section reports that research has found that increased job satisfaction does not very often lead to increased productivity. Psychology can provide some basic ideas to help management design work situations that maximize both productivity and job satisfaction, the essayists say.) The final section of the book deals with the organization of work, construction productivity and women and minorities in construction. The book will be useful especially to construction managers, civil engineers and safety personnel.

Tunnels: Planning, Design, Construction. Volume one. T. M. Megaw and J. V. Bartlett. (Wiley, \$79.95.)

The architect who needs to know more about the ins and outs of tunnels may want to consult this book in an engineering library since its price of \$79.95 (for a book of 284 pages) is very dear. (The second volume is scheduled to cost \$69.95, with the price of the set slated at \$118.95.) The British authors, who bring to the subject their vast experience that includes participation in the planning and design of underground railways in London, Toronto and other places and subaqueous highway tunnels, say that the work is not a catalog of the most recent tunneling techniques nor an advanced theoretical analysis. Rather, their aim is to explain the principles and practice of tunneling, revealing the role tunnels play in solving problems of increased congestion and the demand for better transportation facilities and better communications.

The book begins with a discussion of the history of tunneling and then deals comprehensively with an array of techniques and the multifaceted problems in the design and construction of tunnels. Among the topics considered are tunneling in soft ground and in rock, the management of water, compressed air working, permanent linings, buried services and structures and site investigation. A final chapter deals with two major under-

sea projects, the Channel Tunnel between England and France and the Seiken Tunnel to connect the main Japanese island of Honshu with the northern island of Hokkaido.

Construction Specifications Writing: Principles and Procedures. Second edition. Harold J. Rosen. (Wiley, \$24.95.)

The first edition of this book appeared nearly a decade ago and has been widely used since that time. The publisher calls it "a best-selling handbook." The book explains the basic principles and uses of specifications and presents practical procedures for specifications writing. This edition has been revised to conform with more recent documents of the American Institute of Architects and the Construction Specifications Institute. (It is regrettable that AIA's address has not been corrected in this revision; see page 173.) The revision also contains two new appendices, one outlining the preliminary specifications for a university hospital and the other presenting a useful project manual checklist.

Rosen, well known in the construction industry and also the author of *Construction Materials Evaluation and Selection: A Systematic Approach*, remarks in the preface to the second edition that changes in the area of specifications writing since 1974 have been "cosmetic," being concerned primarily "with the updating of previous documents that had already established the criteria, format, arrangement and general principles associated with specifications." Technical content, he says, is yet to be dealt with.

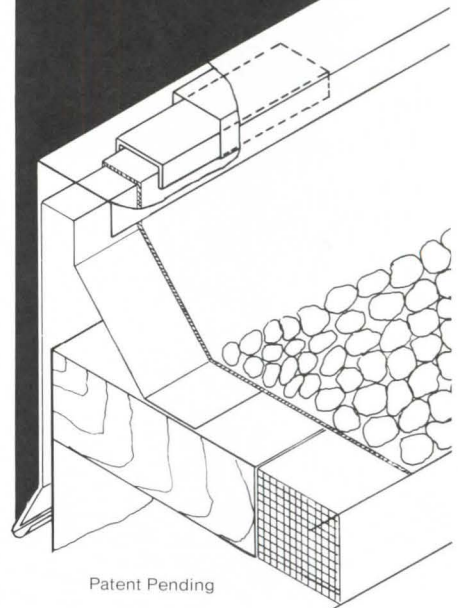
New England Meeting House and Church, 1630-1850. Edited by Peter Benes. (Boston University, \$7.)

Conference proceedings often contain information by experts on specific subjects that is unobtainable elsewhere. This publication, a record of the proceedings of the fourth Dublin Seminar for New England Folklife, will be of great interest to architectural historians. The editorial introduction explains that the primary purpose of the conference was to "recover and recreate the larger social and religious 'world' of the meeting house in its preindustrial setting." The collected papers primarily concern architecture and its embellishments.

Among the papers are Jack Quinan's discussion of Asher Benjamin and Glenn M. Andres' investigation of Lavius Fillmore. Others on framing, decoration and joinery consider the 1751 Meeting House in Abington, Conn.; architectural painting, 1738-1834; the Anglican embellishments of John Gibbs Jr. and William Price in 18th century Boston; "comfort and conformity" in meeting houses, 1750-

continued on page 86

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Books from page 85

1850, and Marblehead pews. A final section gives two papers on civil and religious practices. There is also a bibliography of published and manuscript studies of New England meeting houses and churches built before 1850 that should be of great interest to librarians and scholars.

Structural Brickwork. Arnold W. Hendry. (Wiley, \$49.95). **An Introduction to Load Bearing Brick Work Design.** A. W. Hendry, B. P. Sinha and S. R. Davies. (Wiley, \$48.50.)

A. W. Hendry, who heads the department of civil engineering and building science at the University of Edinburgh, is sole author of *Structural Brickwork* and a coauthor of *An Introduction to Load Bearing Brick Work Design*, with two colleagues at Edinburgh joining him in the latter effort. Both books are directed to the structural engineer.

Hendry points out in *Structural Brickwork* that research in brickwork construction has advanced "remarkably" since the mid-1960s. His purpose is to review existing knowledge of the structural engineering aspects of brick masonry construction. He discusses the strength of brickwork and of brick masonry compression elements; design analysis of reinforced brickwork structures; laterally loaded un-

reinforced walls; reinforced and prestressed brickwork; the resistance of brickwork structures to accidental damage, and brick masonry walls in composite action.

An Introduction to Load Bearing Brickwork Design describes principles, making specific reference to the British Code of Practice. One of the chapters is devoted to design calculations for a seven-story dormitory according to the code. Among the other topics discussed are brick masonry properties, design for compressive loading and for wind loading and the lateral analysis of brickwork panels.

The VNR Real Estate Dictionary. David M. Brownstone and Irene M. Franck. (Van Nostrand Reinhold, \$18.95.)

Real estate has a special language, say the compilers of this dictionary, which defines and explains terms drawn from an array of fields, including architecture, law, financing, taxation and investment. More than 2,000 key terms are defined, among them "act of God," "American Institute of Architects," "energy conservation," "front money," "gouging," "lump sum settlement," "Mother Hubbard clause," "null and void," "planned unit development," "rendering," "roll-over," "sweat equity," "tax haven" and "zero lot line."

The First Emperor of China: The Greatest Archeological Find of Our Time. Arthur Cottrell. (Holt, Rinehart & Winston, \$25.)

One of history's most enigmatic men is Ch'in Shih-Huang-Ti who in the year 221 B.C. conquered the last of China's feudal states, becoming the leader of the Chinese people until his death in 210 B.C. He unified the country, instituted reforms and developed a political system that endured with only minor interruptions for two millenia. Known as the First Emperor, he has also been called the Burner of Books and the Builder of the Great Wall. Although he standardized currency, roads, weights and measures and the written language, he also buried scholars alive and burdened his people with the excessive cost of his schemes. One such enterprise was the building of his own mausoleum at Mount Li, a site unearthed by Chinese archeologists in 1974.

This archeological find, we are told, provides new insights into the emperor. To date, the Chinese have excavated row upon row of more than 7,000 life-size terra cotta infantrymen, crossbowmen, chariots and cavalry in four subterranean chambers. Invited by the People's Republic of China to visit the excavations, Arthur Cottrell went to Mount Li in

continued on page 89

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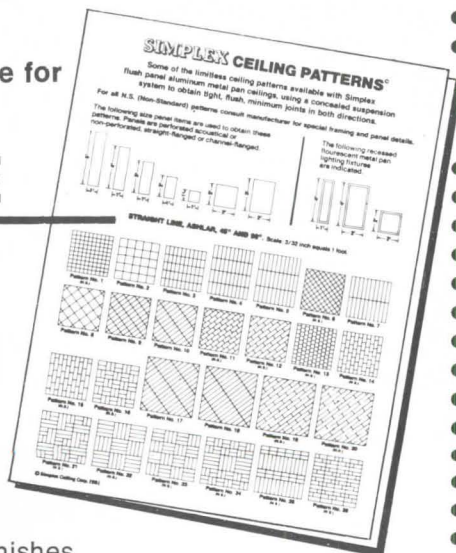
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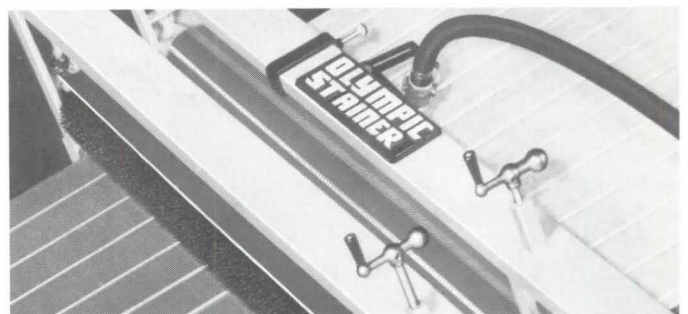
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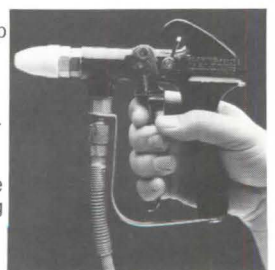
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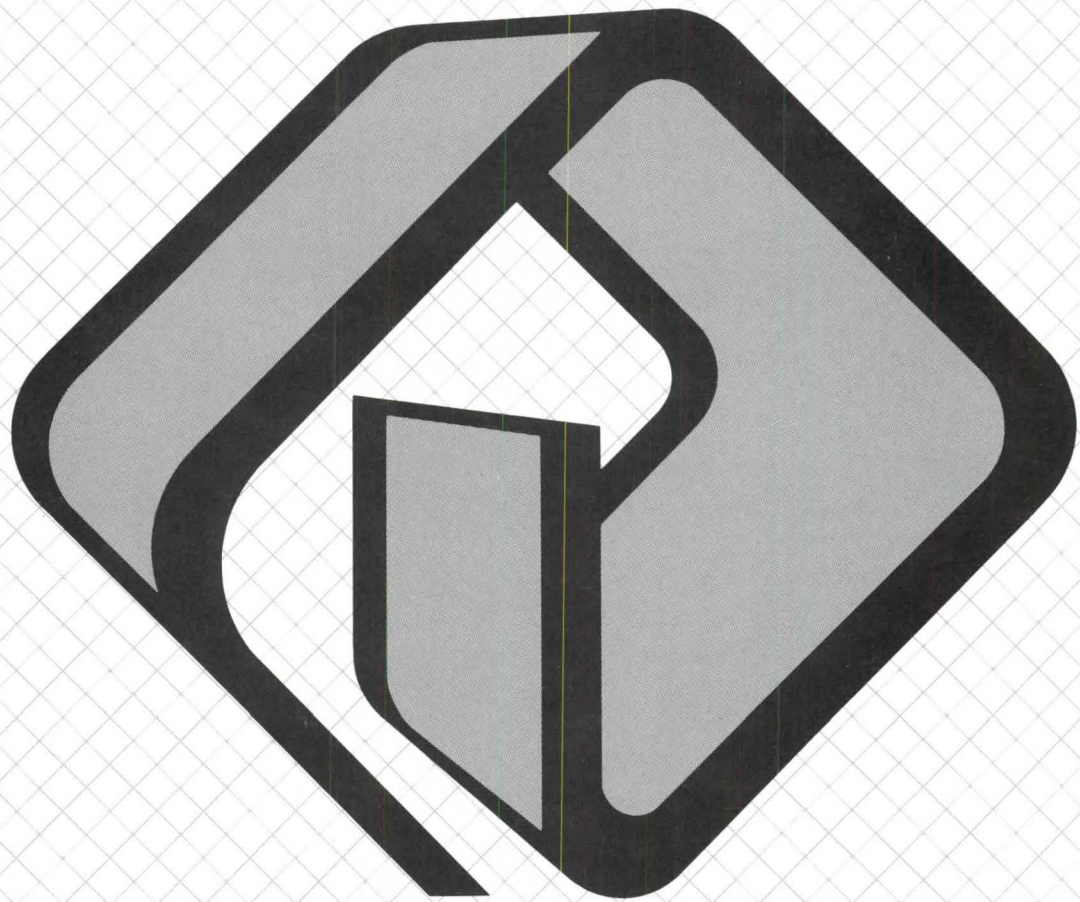
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Books from page 86

1980. This book describes the amazing archeological discoveries and also places Ch'in in a historical context and discusses the influence of his empire. Cottrell, who is author of *The Early Civilization of China* and other scholarly books, provides an absorbing account for anyone remotely interested in archeology. His book is replete with handsome photographs and drawings so intriguing that any reader will want to take the next plane to Mount Li.

Engineering Evidence. Max Schwartz and Neil Forrest Schwartz. (Shepard's/McGraw-Hill, no price given.)

A civil and mechanical engineer and a lawyer have collaborated on this comprehensive book that is intended for use by attorneys in the accumulation, preparation and presentation of engineering evidence in civil litigations. The selection of an engineering expert is discussed, and there are separate sections devoted to discovering evidence in products liability cases, in construction litigation, in natural and catastrophic disasters and in transportation accidents. Sections follow on the preparation of experts and evidence for trial; the presentation of demonstrative engineering evidence for trial; the examination of experts in trial, and statutory and case law on expert evidence. The

appendices give sources for finding experts; list authors of regulations and standards; outline typical regulations and standards; present references given in the regulations of the Occupational Safety and Health Administration, and list commonly used terms and symbols in engineering. There are also tables of cases and of statutes.

Skylines: Understanding and Molding Urban Silhouettes. Wayne Attoe. (Wiley, \$36.95.)

Nearly everyone, surely, has come into a city at night and has been awed by the image of its skyline outlined against the dark sky. Wayne Attoe, who teaches at the San Francisco Center for Architecture and Urban Studies and at the department of architecture, University of Wisconsin-Milwaukee, calls a skyline "a vital symbol of urbanized culture," reminding the reader that the skyline is "more than an accidental or incidental shape." The skyline, he says, is the product of "many factors and forces," and it has "various meanings and significances."

The book is divided into six chapters, each of which explores an interpretation of skylines. The chapters deal with skylines as collective symbols, social indexes, utilitarian objects, esthetic contributors, indicators of social behavior and as cul-

tural icons. Despite the fact that skylines are seldom taken into consideration in urban and social planning, Attoe emphasizes their importance in their effect on civic pride.

The book is replete with illustrations of skylines all over the world. Attoe believes that "more and more cities will establish controls on the development and character of whole skylines." In the future, he says, there will be greater public participation in decisions about skyline forms. He warns, however, that "efforts to mold the visual image of the city will meet constant criticism from those who feel other issues are far more important." For those who view the city esthetically as well as politically and economically, this book provides a thoughtful analysis of urban values.

Historic Wisconsin Buildings: A Survey in Pioneer Architecture, 1835-1870. Richard W. E. Perrin, FAIA. (Milwaukee Public Museum, Milwaukee, Wis. 53233, \$7.95, plus 90 cents postage and handling.)

Originally published in 1962, this second edition has been completely revised and enlarged because of the changes that have taken place over the past two decades. About 150 structures were described in the book's first edition, about one-third

continued on page 90

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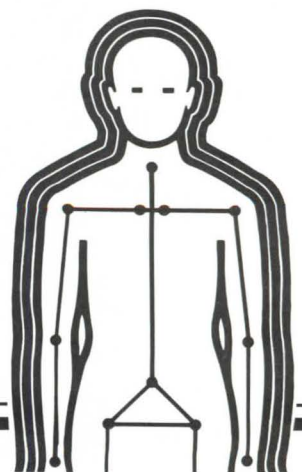
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Books from page 89

of which are now destroyed or altered significantly. Perrin, a Milwaukee native and former commissioner of city development for the city, treats his subject respectfully. The book, he explains, is not an inventory of historic buildings; rather, it is a most commendable introduction to the buildings of wood, brick and stone that have graced the state for many years, providing spirit and charm.

Dream Palaces: Hollywood at Home.

Charles Lockwood. (Viking Press, \$19.95.)

Go read some other book if you want architectural insights into homes designed and built for Hollywood stars in the 1920s and '30s. But if you want an entertaining social history of a bygone era when movie stars were America's royalty, this book will engage you for an evening. There is some architectural history nonetheless, such as the brief description of the architectural eclecticism of the 1920s in Los Angeles, of Frank Lloyd Wright's association with Aline Barnsdall in the design of the Hollyhock House, of the 40-room palace (26 bathrooms) designed by architect John de Lario for Harold Lloyd. Against a background of how the stars moved upward as demonstrated by the kinds of houses they acquired, there are

intriguing and gossipy tales of parties thrown by Fatty Arbuckle, of Douglas Fairbanks' and Mary Pickford's entertainment of European dukes and duchesses, of the cars and Arabian horses owned by Rudolph Valentino, of the adoration of Marion Davies by William Randolph Hearst. (Marion rescued Hearst more than once by writing checks to him for a million dollars. "Why do I need diamond brooches," she once asked Anita Loos, "when I have plenty of safety pins?")

All these dream palaces require considerable outlays for upkeep, but some are being saved. They conjure up a prosperous time when a star had to "live like a star." Today, Lockwood says, the remaining houses "are not much more than empty stage sets with their original players and expensive props long departed."

Introductory Technical Mathematics.

John Christopher. (Prentice-Hall, \$19.95.)

Mathematics, says John Christopher, is the foundation of engineering and the language of physics. His purpose is to give the student a review of "elementary topics" and to provide the older student who may have forgotten or never clearly understood the subject a means of acquiring the desired comprehension. He begins with an arithmetic review, covers the

metric system and discusses basic algebra and trigonometry. Exercises and illustrative problems are provided that are supplemented by drawings.

Christopher explains that "unlike many texts, which assume too much and expect too much from the students, this book assumes little, starts with elementary topics, explains in detail and repeats the explanation from a second point of view for important subjects." The author teaches at the Durham Technical Institute in North Carolina.

Winning Designs: The Competitions Renaissance.

Edited by George R. Wynne. (Transaction, Inc., New Brunswick, N.J. 08903, no price given.)

This booklet, which favors competitions as a means for the selection of design professionals, briefly describes the role of competitions in Germany, France, Sweden, England, Australia and Japan. The editor, who is director of communications for the Council for International Urban Liaison, sees a resurgence of interest in design competitions abroad, especially in Germany, France, the Scandinavian countries and the United Kingdom. The booklet describes competition procedures in the various countries and gives examples of some of the projects developed. □

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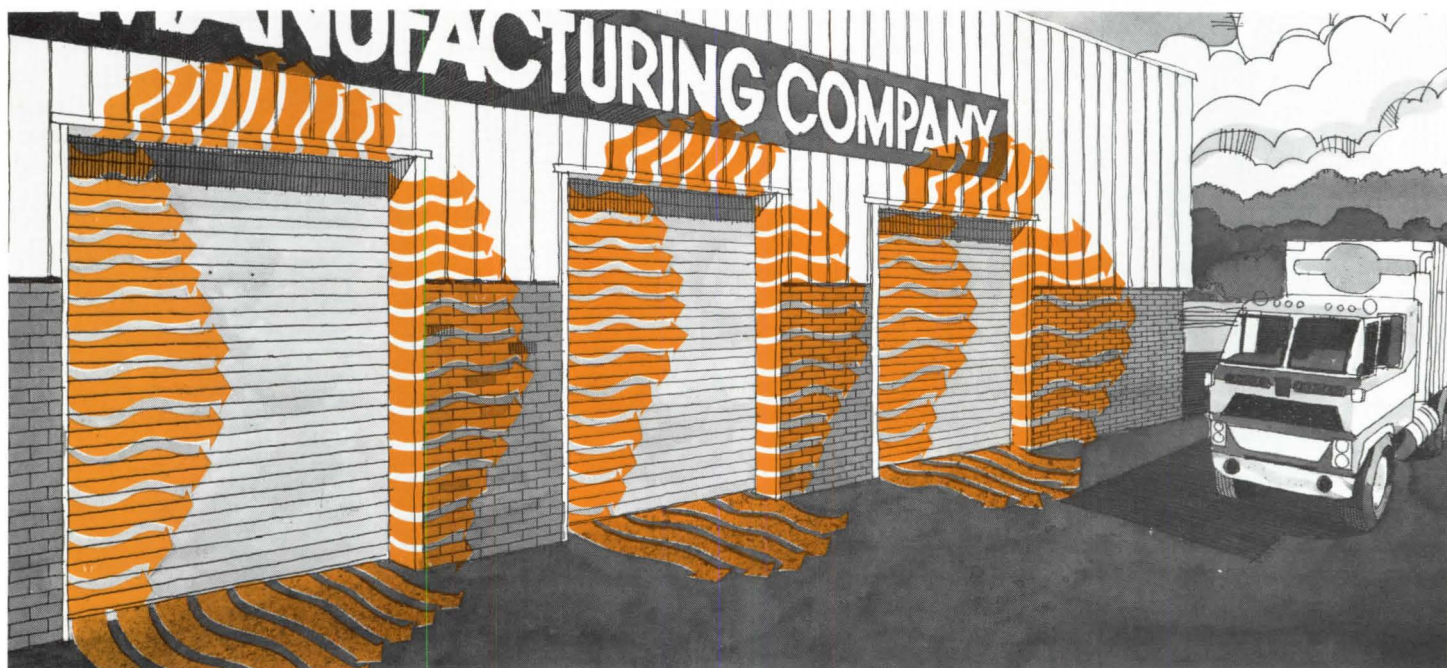
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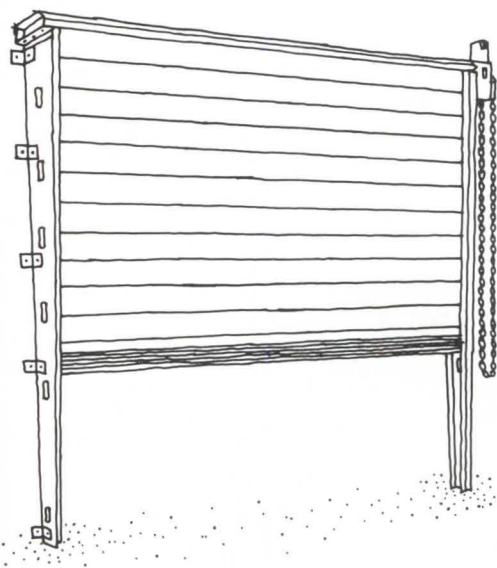
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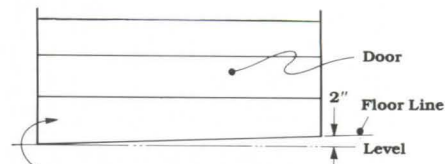
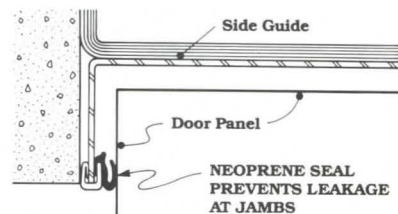
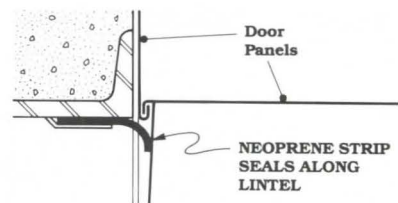
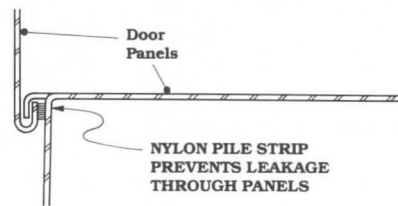
Air infiltration through vehicle door perimeters wastes energy—can add hundreds of dollars per door per year to a building's operating costs.

The Inryco Telescoping Door reduces such waste dramatically. Tested at 1.56psf air pressure (25mph wind) it achieved an infiltration rate of only 0.93cfm per foot of perimeter. Calculated rates for most other doors are at least three to six times higher. That translates into substantial life cycle savings.



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For full details, see our Catalog 36-1 in Sweet's, section 8.8/In. or write for a copy: Special Products Group — Milcor Division: INRYCO, Inc.; Dept. A-4127; P.O. Box 393; Milwaukee, WI 53201.



"FLOATING" BOTTOM PANEL ADJUSTS AUTOMATICALLY FOR OUT-OF-LEVEL FLOORS—UP TO 2" JAMB TO JAMB. BOTTOM EDGE IS FLEXIBLE VINYL.



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The American Institute of Architects

Energy Planning for Buildings

Michael M. Sizemore AIA
Henry Ogden Clark AIA
William Ostrander PE

Building owners expect their architects and engineers to have the practical knowledge it takes to translate energy theory into a reliable form of practice.

This book, written by two architects and an engineer who have hands-on experience in energy-conscious building design and redesign, does just that. It presents a proven process that design professionals can use (or adapt) to study the present energy performance of a building, uncover opportunities for energy-conscious improvements, evaluate those opportunities, and see to it that they are carried out to the owner's best benefit.

The book describes in detail a manual technique for calculating energy usage and shows in a sample problem how that technique can be applied. This allows the reader to evaluate any energy design solution, including solar assisted alternatives. It also provides a basis for understanding computer-aided energy estimating techniques.

In developing their work, the authors have recognized that non-energy related concerns such as user comfort, environmental impact and visual appearance are as important in an energy-related design as energy performance itself, and they urge designers to iden-

tify these at the outset of a project and to keep them in mind to the end.

An opening chapter offers a look at the basic concerns of energy planning, including such concepts as comfort; illumination and daylighting; the building envelope; heating, ventilating and air-conditioning; and the very concept of energy itself.

Chapter 2 takes up the roles and responsibilities of the team needed to carry a project through to a successful end. Team members discussed include the owner, the architect/engineer, the building users and operators, energy suppliers, product manufacturers and building officials.

Chapter 3, a key part of the book, shows how to study a building's present performance (or, in the case of a new building, analyze a set of building plans) so the energy planner can examine the impact of any proposed changes suggested as a way to greater energy efficiency.

Chapter 4 pinpoints those opportunities, describing the best way of identifying them. The following Chapter 5 then shows how best to narrow the list of possibilities to those that make the most sense in terms of cost, time, payback and technical feasibility. Two

levels of evaluation are given—"quick" and "detailed."

Chapter 6 shows what is needed to carry out the recommendations stemming from the evaluation, and offers much sound advice to the energy planner and owner for monitoring the results and maintaining the renewed building at a peak of performance.

This chapter is followed by a sample problem which illustrates the procedural steps presented in the various chapters.

Finally, an appendix includes discussions on system response and cost benefit analysis.

There is also a glossary and a practical reference list.

ENERGY PLANNING FOR BUILDINGS fills a serious need for a practical, process-oriented book which energy planners can use, and owners can refer to, as they embark on a new building project or go about redesigning an existing one for greater energy efficiency.

156 pages, 120 charts and illustrations.

\$40 AIA Members
\$44 Others

The American Institute of Architects

Yes, I would like _____ copy (copies) of ENERGY PLANNING FOR BUILDINGS (#4M-720)

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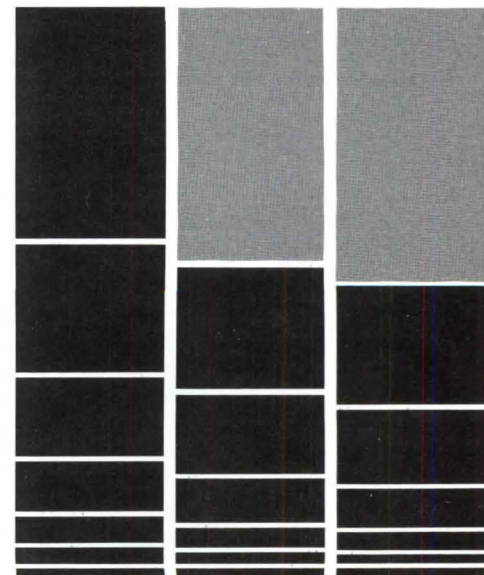
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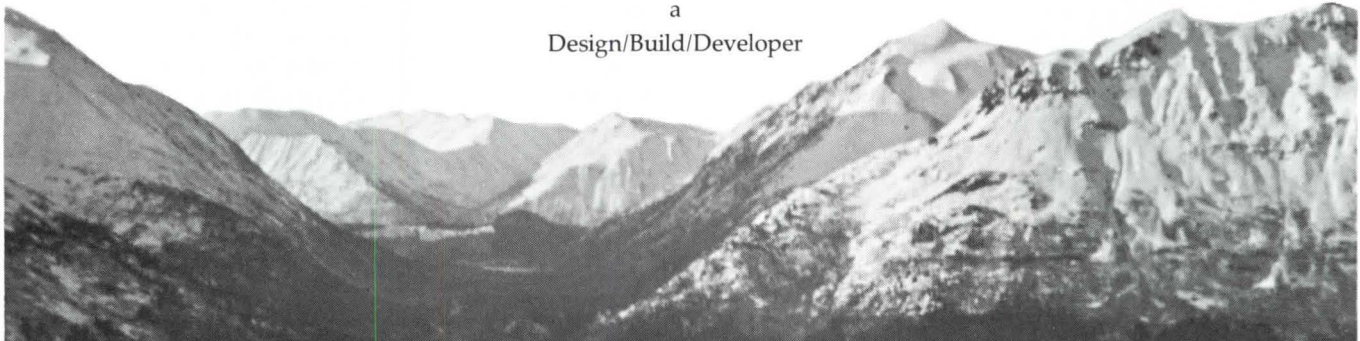




THE STATE OF
ALASKA
announces

a

Design/Build/Developer



C O M P E T I T I O N

for

Anchorage Office Complex
Anchorage, Alaska

Vincent J. Scully, *Advisor to the Jury*

It is the intent of the State to consider proposals from Developers for buildings that are designed in a manner that may reasonably be expected to earn national recognition of the aesthetic qualities of the complex.

The State is assembling a site in the Anchorage Central Business District and intends to acquire, under a long term lease-purchase agreement, an office complex for 1,800 Executive Branch employees, by January, 1985, and to expand the complex to accommodate 2,800 employees by 1995. Development cost is estimated to be \$90,000,000.00 and it will in-

clude all design, construction, interior design, furniture and equipment, and related fees and costs for a 432,000 GSF office building and a two level, below grade, 1,000 car parking structure of 340,000 GSF. The State is forecasted to need an additional 213,000 GSF for 1,000 more office workers in 1995.

Pre-Qualification Criteria available January 28, 1982
Deadline for Pre-Qualification Submittals February 26, 1982

Architects, Contractors, and Developers who are interested in obtaining pre-qualification criteria for this two stage, compensated competition, should write to the State of Alaska:

Contracting and Facilities Manager
Division of General Services & Supply
Department of Administration
330 E. 4th Ave., Suite A
Anchorage, Alaska 99501

All telephone queries and personal contacts should be directed to:

William J. King and Associates
Project Management Consultant
750 West 2nd Avenue, Suite 211
Anchorage, Alaska 99501
907-272-0325

Circle 94 on information card

1

Photographs by Mark Meachem



2



Rohde's 1938 design for the Herman Miller showroom in Chicago (1) used the 'biomorphic' shapes then appearing in painting and sculpture by Leger, Arp and others. The ceiling form covered indirect lighting; curved walls were covered in Flexwood; the Rohde-designed table was of Lucite. A similar form topped the 1940 end table for Herman Miller (2), which had legs wrapped in Duraleather.

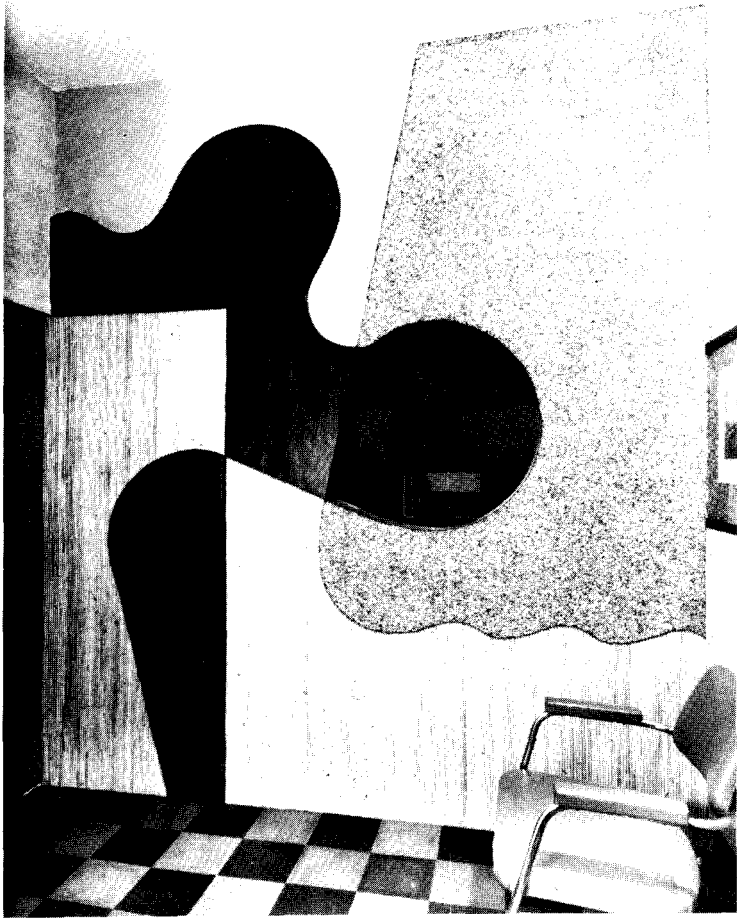
Furnishings

Gilbert Rohde, pioneer and symbol of a period.
By Stanley Abercrombie, AIA

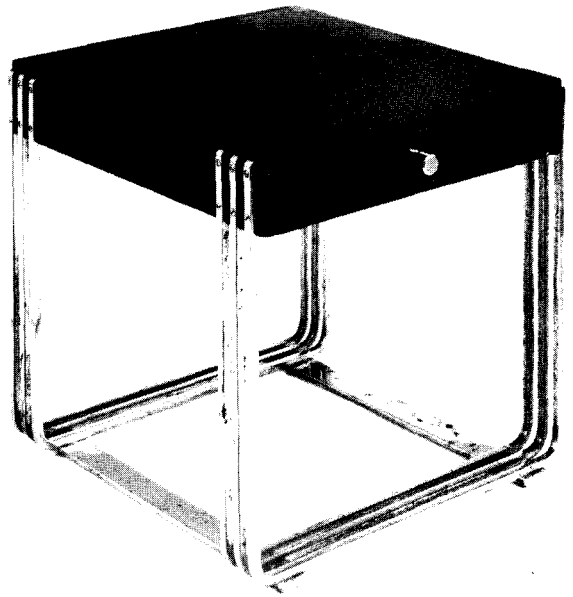
Gilbert Rohde (1894-1944), subject of a recent exhibition organized for New York City's Washburn gallery by David Hanks and Derek Ostergard, was an American pioneer in furniture design and interior design between the wars. Much of his work was custom design for private commissions, beginning conspicuously in 1928-29 with the lavish Norman Lee apartment in New York; other work was for such well-known firms as Thonet, Heywood-Wakefield, John Widdicomb and Kroehler. As both designer and furniture illustrator, he worked for stores such as Sloane's, Halle's, Wanamaker, Macy's and Abraham & Strauss, acquiring merchandising skills then rare for a designer. But Rohde's most prominent association was a long one with the Herman Miller company (see Feb. '81, page 54), during which he introduced modular storage systems, transformed the appearance of the Miller showrooms and brought the company—previously a manufacturer only of residential furniture—into the burgeoning office furniture market. He brought it as well into the world of contemporary design, a transition that his successor, George Nelson, was to complete brilliantly.

A few years before his early death, Rohde took an active part in establishing the look of the 1939 World's Fair, being specifi-

3



4



The reception room of Rohde's New York City office (3), with a collage of cork and wood veneers, was designed in 1938 or '39. The tubular steel chair was a Rohde design for the Troy Sunshade Co. The end table of Bakelite and metal (4) was designed a decade earlier. Two other views of Rohde's office (5 and 6) show his custom-designed desk with a swiveling glass top. Rohde was among the first to use variegated calf's skin in upholstery. Curtains were of celluloid. The office also contained a pioneering version of a 16mm screening room.

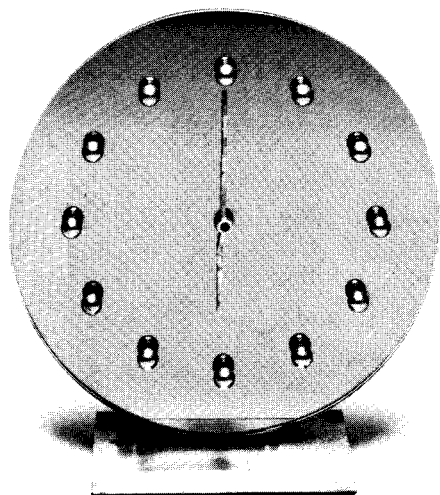
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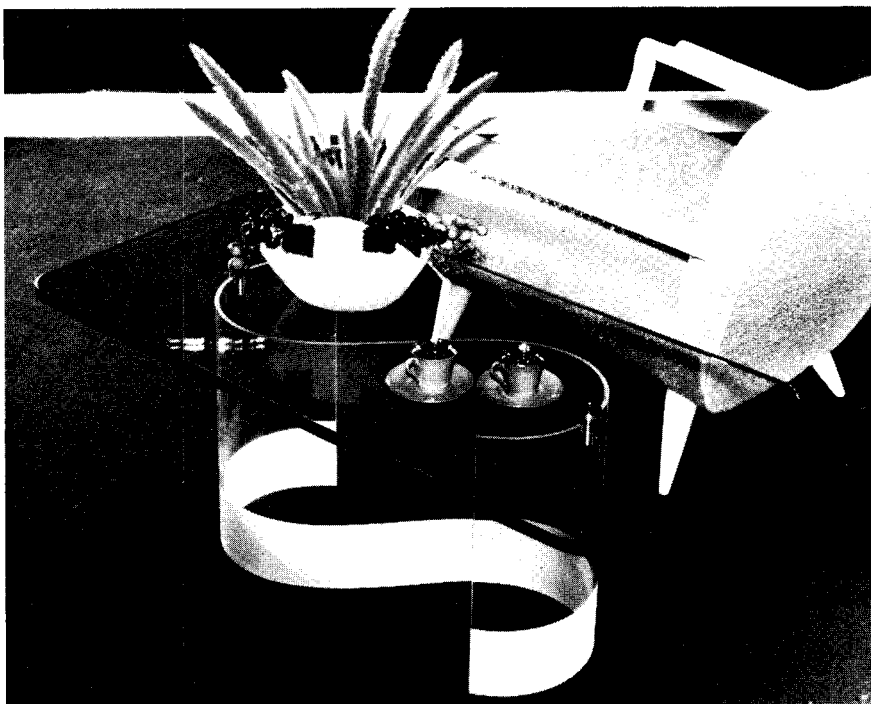
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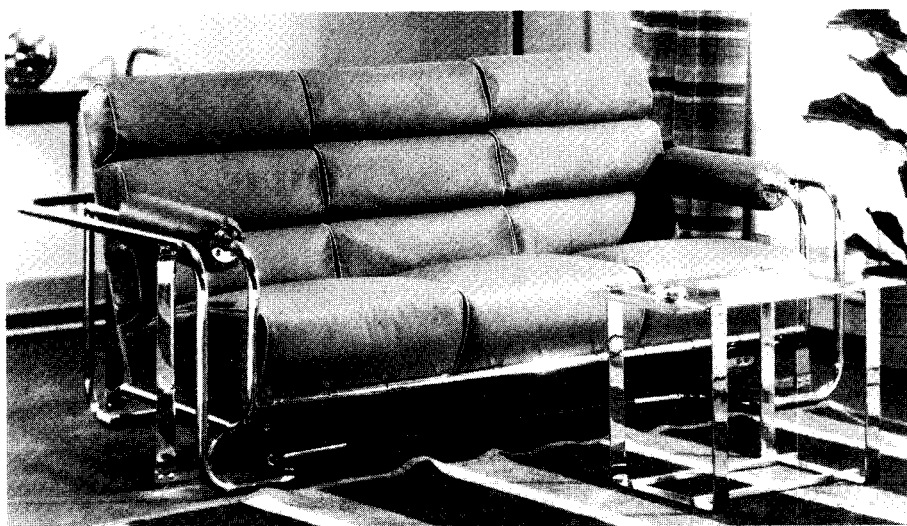
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2



3



Rohde designed the clock of blue-tinted glass (1) in 1933 for the Herman Miller Clock Co. It was also available in black-tinted 'Carrara Glass.' The coffee table (2) had a glass top held to an S-shaped Plexiglas base (with a sandblasted border) by two metal bolts; it was produced about 1939 by the Valley Upholstery Co. A sofa (3) that rocked on a 'glider' base of chrome-plated steel was a Troy Sunshade product of 1933-34. Rohde's cabinetwork of bleached mahogany, made by Herman Miller in 1936 or '37 (4) had a simplicity that would make it welcome even today. A large-scale interior (5) was for the Texas Centennial Exhibition Administrative Center in Dallas, 1936. The end table (6) was produced by Herman Miller about 1934.

4



Photographs by Mark Meachem

5



cally responsible for designs for the New York Housing Authority, the Anthracite Industries Exhibition and the Focal Exhibition on Community Affairs.

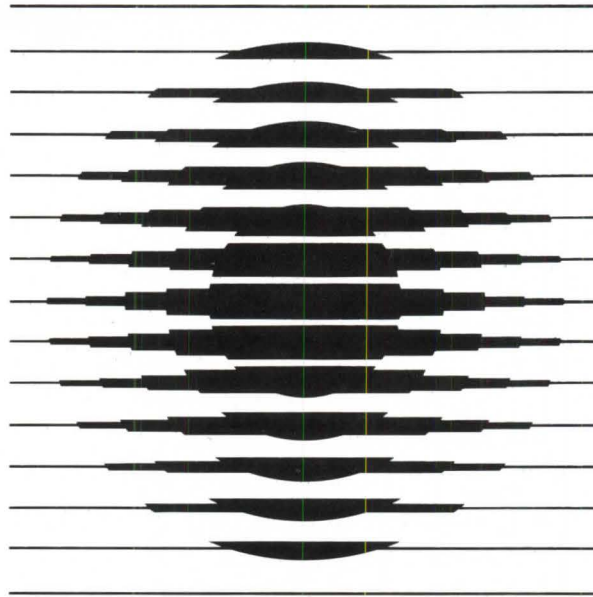
Rohde was consistently adventurous in his use of new materials, including plastics such as Bakelite, Plexiglas and Crystolite, curtains of celluloid, wood veneers such as Flexwood and low-care leather substitutes such as Durableather. Similarly, he was always informed about the latest in design developments abroad, particularly in France.

The shapes, the materials, the practical conveniences, the imaginative double uses of some of his pieces, the relative simplicity of his designs—all these, while now identifiable as work of their time, were definitely in the forefront of that work and were more influential than has generally been acknowledged on the more familiar modern design that was to follow. □

6



Energy



Make It Work Make It Pay In 1982

Find Out How at AIA's 1982 Spring Energy in Architecture Workshops

Energy conscious design has always made sense. Now it might also make *profits* for you in 1982.

With fuel costs on the rise, clients and communities want buildings that offer high energy performance. And architects who possess the expertise to deliver on this need are already profiting from this emerging market.

How can you get the knowledge and know-how you need so you can tap this business potential yourself? Keep *your* firm's profits growing despite the worsening economy?

Attend one of AIA's Spring 1982 Energy in Architecture Workshops. This series of workshops—including Techniques, Process and Practice—will give you the language, tools and the *confidence* you need to compete in this new marketplace.

Choose the Workshop Right for You

Techniques

Start here for an overview of natural energy use. Explore the principles involved in the energy problem. Analyze external, internal factors. Learn how to do energy analyses and economic life-cycle cost analyses for choosing the best design solutions. \$150.00

Process Workshop

Learn how to apply the principles. Work with an actual design problem taking it from programming through schematic design. Focus on region-specific examples provides you with practical information you can apply to design problems in your office today. \$275.00

Practice Workshop

You understand the fundamentals and the techniques. Now tackle a real design problem. Working on your own you'll examine various environmental conditions affecting the design of the building explored in the Process workshop, and design a building for high energy performance. Your presentation will be critiqued at the end of the workshop. \$275.00

Workbooks Enrich the Workshop Experience

You will receive a workbook as part of your fee for every workshop you attend. When sold as a 3-volume set these workbooks are valued at \$150.00 and will offer you a permanent record of the ideas, information and techniques you explored during the 2-day sessions.

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Ms. Brenda Henderson
Workshop Coordinator
American Institute of
Architects
1735 New York Avenue,
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Washington, D.C. 20006



Yes! Send me more information about AIA's workshops planned for my region, as well as details about the workshops themselves.

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DEATHS

Wallace K. Harrison, FAIA: Born in 1895 in Worcester, Mass., Mr. Harrison was the son of a foundry superintendent. His mother died when he was 14, and he quit school to take a \$5-a-week job as office boy for a contractor while attending Worcester Polytechnic Institute. He became a drafter in the New York City office of McKim, Mead & White in 1915. After World War I, he studied at the Ecole des Beaux-Arts and then returned to New York to work for the Bertram Goodhue firm, which later became Corbett, Harrison & MacMurray, one of the three firms whose seven architects collaborated to design Rockefeller Center. This was the beginning of a long association with Nelson Rockefeller.

He designed the trylon and perisphere, symbol of the 1939 World's Fair, which he considered a "disaster" as built because building officials reduced the height of the perisphere by 20 feet.

In 1935 he formed a partnership with J. Andre Foulhoux, and six years later Max Abramovitz was made a partner. The firm continued as Harrison & Abramovitz after Foulhoux died in 1945, and became one of the most successful of the postwar period. Mr. Harrison chaired the team of consultants working on the United Nations building and designed the Metropolitan Opera House at Lincoln Center, and Harrison & Abramovitz was responsible for the design of Empire State Plaza, the mammoth \$2 billion New York State complex in Albany.

The firm also designed a quartet of second generation Rockefeller Center buildings—Time & Life, McGraw-Hill, Exxon and Celanese—as well as other Manhattan skyscrapers for Mobil Oil and Corning Glass. Outside of New York, the firm's work included the Alcoa and U.S. Steel buildings in Pittsburgh, the curving Phoenix Mutual Life Insurance tower in Hartford, Conn., and the gambrel-roofed First Presbyterian Church in Stamford, Conn.

Mr. Harrison was AIA's 1967 gold medalist. At the awards dinner in New York City, Governor Rockefeller called his friend "a man of great modesty, of deep humility; and yet, a man of vast imagination and a clear vision of the kind of world we want to create." He retired from Harrison & Abramovitz two years ago and set up a small office of his own in Rockefeller Center. He died Dec. 2 in his Manhattan apartment.

A. W. Alegre, Visalia, Calif.
H. J. Anderson, South Dennis, Mass.
A. Appleton, San Francisco
Ralph M. Ball, Oklahoma City
W. J. Barnes, Towson, Md.
Clyde W. Bohn, Pittsburgh
H. Bradley, Alliquippa, Pa.

John Wesley Cherry, Atlanta
James Howard Compton, Topeka, Kan.
Artemio J. DeSimone, Buffalo, N.Y.
L. Adrian Doe, Narberth, Pa.
Alan E. Domin, Sarasota, Fla.
J. A. Drielsma, Capistrano Beach, Calif.
W. A. Grey, Redding, Conn.
G. A. Hagen, Cambridge, Mass.
Austin K. Hall, Memphis
Elmer G. Harrington, Portland, Ore.
Russell T. Heter, Glen Ridge, N.J.
A. C. Hopkins, Sparks, Md.
Robert G. Jahelka, Deerfield Beach, Fla.
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Jules H. Marling, Libertyville, Ill.
A. S. Marvin, Detroit
Benjamin F. McAdoo Jr., Seattle
Robert Adams McKelvey, Greenwich, Conn.
E. L. Morgan, Wilbraham, Mass.
G. F. Oman, Columbus, Ohio
Ernst Payer, Chagrin Falls, Ohio
E. H. Pedersen, Haverford, Pa.
Ernest L. Pogue, Albuquerque, N.M.
Edward N. Porter, Tiffin, Ohio
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James A. Reed, Dayton, Ohio
Albert Ruthrauff, Lansdale, Pa.
J. F. Schindler, Pompey, N.Y.
E. J. Sessinghaus, Omaha
C. H. Sherwood, Pompano Beach, Fla.
E. O. Smith, Columbus, Ga.
W. F. Staunton Jr., Yucca Valley, Calif.
E. Steese, Scarsdale, N.Y.
Debra L. Steward, Denver
R. F. Stockdale, Cincinnati
Chester N. Treichel, Walnut Creek, Calif.
James L. Walker, New Albany, Ind.
W. H. Walton, Stillwater, Okla.
George Cannon Young, FAIA, Salt Lake City

BRIEFS

Volunteers are sought for summer rehabilitation projects at historic sites in England and France by the U.S. Committee of the International Council on Monuments and Sites. Programs are open to people between the ages 17 to 23. All expenses are the responsibility of the applicant. Deadline for receipt of applications is March 1. Contact US/ICOMOS, 1785 Massachusetts Ave N.W., Washington, D.C. 20036.

I. M. Pei & Partners and Caudil Rowlett Scott Architects were top winners in the Reliance Development Company's first nationwide awards program for excellence in office building design. Texas Commerce Tower in Houston by I. M. Pei & Partners won in the investor building category. CRS received top honors in the institutional building category for the IBM branch office building, also in Houston. The Eggers Group also received recognition

continued on page 100

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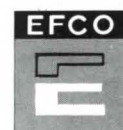
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Briefs from page 99

tion for an office tower at 560 Lexington Ave. in New York City. Judges for the competition were Charles Bassett, FAIA, A. Eugene Kohn, Walter McQuade, FAIA, Mildred Schmertz, FAIA, Tim Vreeland, AIA, Harry Weese, FAIA, and Henry Lambert of Reliance Development Co.

"The Home Builder's Guide for Earthquake Design," published by the Applied Technology Council, discusses regulations to improve the earthquake resistance of housing units, site selection and architectural design constraints. Contact: ATC, 2150 Shattuck Ave., Suite 806, Berkeley, Calif. 94704.

Five properties have recently been designated national historic landmarks: the John Jay house in Katonah, N.Y.; the old waterworks in Bethlehem, Pa.; Folsom Powerhouse in Folsom, Calif.; Sloss Blast Furnaces in Birmingham, Ala., and the old stone gate of the Chicago Union stockyards.

The American Hospital Association Guide to the Health Care Field, 1981 edition, is now available for \$44 to AHA institutional and personal members, \$55 prepaid for nonmembers. Contact AHA, 840 N. Lake Shore Drive, Chicago, Ill. 60611.

Alvin Holm, AIA, has been appointed to the Pennsylvania State Art Commission, a five-member committee responsible for the review of the design and location of monuments, memorials, public buildings and structures funded partially or completely by the state.

Information on pedestrian/vehicle space is being sought. Of interest are 20th century examples of such spaces that do not segregate pedestrian use from vehicular use. Contact David Reed, School of Architecture, Victoria University of Wellington, 91 Kelburn Parade, Wellington, New Zealand.

Peter Rumpel, FAIA, is the recipient of the Florida Association/AIA's design honor award for the "high quality and originality of his work over an extended period of time."

An exhibition of the architectural history of Louisiana, sponsored by Tulane University's Southeastern Architectural Archive, will open at Tulane in April.

A design competition for a civic center complex is being sponsored by the Municipality of Monroeville, Pa., and the Gateway School District. The complex will include a town hall, community sports

center and community arts center. The limited single-stage competition is open to architects registered in Connecticut, the District of Columbia, Maryland, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia and West Virginia. Registration deadline is Feb. 12; submission deadline is May 31. For information, contact Civic Center Competition, Intergovernmental Advisory Board, Municipality of Monroeville, 2700 Monroeville Boulevard, Monroeville, Pa. 15146, Attention: Gary R. Naktin, AIA, Professional Adviser.

The Association of Student Chapters/AIA's officers for 1982-83 are Robert J. Klancher, University of Cincinnati, president, and Christine Vina, Texas Technical University, vice president. They will take office July 1.

George Nelson, FAIA, has been appointed as chairman of the 1982 International Design Conference in Aspen, Colo. His associate (and wife), Jacqueline Nelson, has been named conference program director. The conference, whose theme is "The Prepared Professional," will be held June 13-18.

PRODUCTS

Exterior Blinds.

Slats in the solar control shutter system are constructed of thick roll formed aluminum with a high gloss enamel finish in eight standard colors. (Architectural Products, West Chicago, Ill. Circle 197 on information card.)

Foundation Insulation.

Polystyrene panels are factory-coated with an insulative covering for protection against ultraviolet degradation and impact damage. Panels are designed for installation under brick ledges, siding and stem walls. (Omni Energy Products, Inc., Albuquerque. Circle 198 on information card.)

Floor Lamp.

Uplight torchier lamp constructed of solid brass features a 17-inch diameter pearl glass reflector bowl and a dual switch rated for 200 watts maximum. (Nessen Lamps, Inc., Bronx, N.Y. Circle 191 on information card.)

Replacement Window.

Side latches, master frame and insert corner keys are molded of thermoplastic polyester resin. (General Electric Co., Pittsfield, Mass. Circle 190 on information card.)

Expansion Scales.

Double bevel expansion scales are designed to enlarge electronic, electrical and other small drawings to 3X and 5X or

2X and 4X ratios with decimal graduation intervals. (Sterling Manufacturing Co., Mansfield, Mass. Circle 189 on information card.)

Radiant Heating System.

Ceiling mounted Energy-Kote panels are constructed of a graphite element laminated between two layers of dielectric polyester film. The system can be controlled manually or with thermostats. It is offered in a range of sizes and achieves full operating temperature in about three minutes. (TVI Energy Corporation, New Canaan, Conn. Circle 186 on information card.)

Task/Ambient Lighting.

Fixtures are designed to be adaptable to most desks to accommodate open office layouts. Overhead lighting may be adjusted for glare control and energy savings. (Keene Corporation, Wilmington, Mass. Circle 187 on information card.)

Low Level Floodlights.

Lamps offer both symmetrical and asymmetrical light distribution with a mounting below eye level for interior and exterior applications. (Kim Lighting, City of Industry, Calif. Circle 185 on information card.)

Insulated Shades.

Window shade system features a four-layer insulating fabric, decorative interior fabric and magnetic edge sealing system attached to the frame. Shades may be mounted inside or above the window frame and are adjusted by a drapery cord through a pulley and a series of rings. (Warm Window, Seattle. Circle 188 on information card.)

Insulated Glazing Panels.

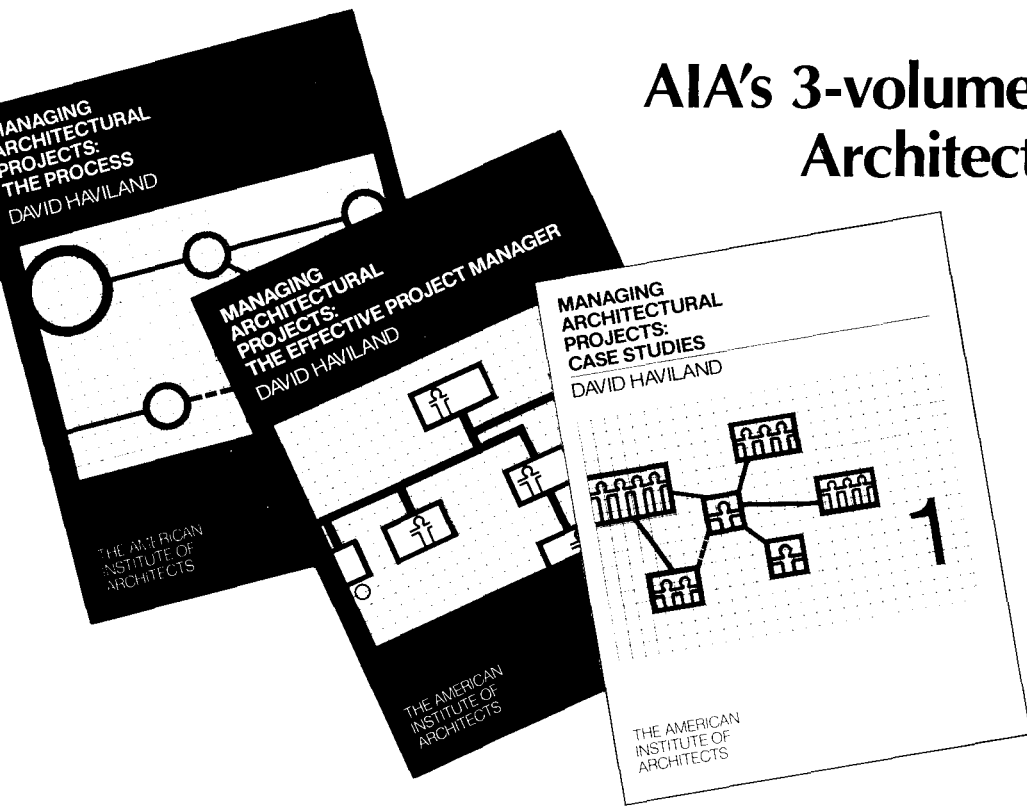
Prefabricated panels are designed to transmit solar radiation and insulate. The panels are constructed from glass fiber reinforced shatterproof sheets in six standard stock sizes. (Solar Components Corporation, Manchester, N.H. Circle 170 on information card.)

Storage System.

Vinyl coated frames with sliding baskets can be stacked or placed side by side to form storage systems. Beige or white baskets are available in a variety of sizes with front and side entry. (Closet Maid Corporation, Ocala, Fla. Circle 169 on information card.)

Skylight.

Double and triple domed skylights feature an aluminum curbing system. The curb, painted bronze for protection against corrosion, includes one-inch polystyrene insulation core, fiberboard interior trim and dual sealing gaskets. (ODL Inc., Zeeland, Mich. Circle 181 on information card.) □



AIA's 3-volume series on Managing Architectural Projects (MAP) shows you the way to hire, train or become an effective project manager.

There are proven ways to approach managing an architectural project, and there are skills and attitudes that the successful project manager must have. The new AIA series, *Managing Architectural Projects (MAP)*, tells you how to implement an effective project management system; how to plan, organize and staff it; and how to gear the system to meet your firm's needs. The MAP series also describes the qualities a good PM should have — and it shows you exactly how these skills can be taught and learned.

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Each case study in this volume examines a different architectural firm as the firm takes a project from initial lead to completion. The case studies allow you to view the many dimensions of project management, and to understand how the project management process differs from firm to firm.

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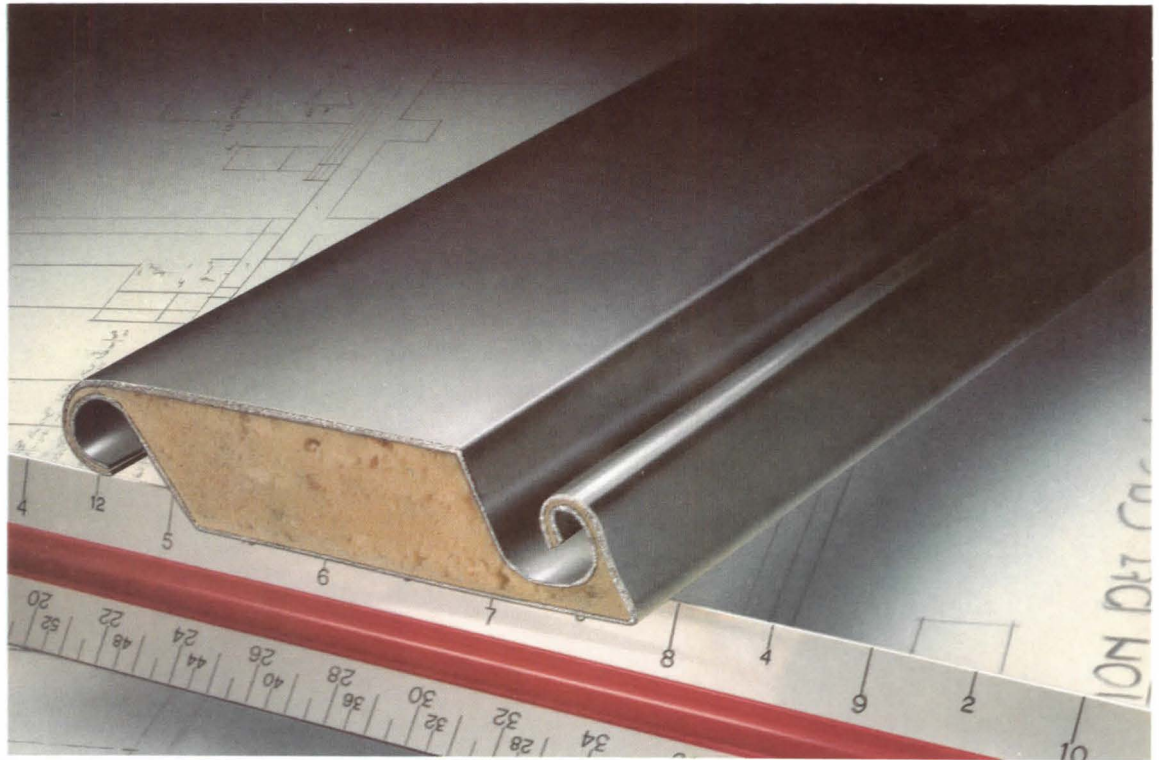
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Circle No.	Page No.	Circle No.	Page No.
58	Andersen Corp. 14-15 <i>Campbell-Mithum, Inc.</i>	79	Lighting Associates, Inc. 82
81	Arco Chemical Co. 83 <i>Kight, Haunty, Inc.</i>		Libbey-Owens-Ford Co. 80-81 <i>Campbell-Ewald Co.</i>
50	Armstrong Cov. 2 & p. 1 <i>Marsteller, Inc.</i>		McGraw-Hill Book Co./ Book Clubs Div. 17-19 <i>Media Buying Services</i>
98	Atlas Door Corp. Cov. 3 <i>American Ad Group</i>	86	McGraw-Hill Book Co./ P & RB Div. 87 <i>Media Buying Services</i>
83	Cheney Flashing Co. 85 <i>MR Associates</i>	65	McGuire Co., W.B., Inc. 28 <i>R. T. Blass, Inc.</i>
57	CNA Insurance 12 <i>Frank C. Nasher, Inc.</i>	66	McPhilben Lighting 29 <i>Graddon Communications, Inc.</i>
68	Cold Spring Granite Co. 31 <i>Kerker & Associates</i>	89	MIT Press 89 <i>Franklin Spier Inc.</i>
56	Columbia Lighting, Inc. 11	91	New Jersey Institute of Technology 90 <i>Lewis Adv. Agency</i>
78	Concrete Reinforcing Steel Inst. 79 <i>Marsteller</i>	52	Nucor Corp./Vulcraft Div. 4-5 <i>Faller, Klenk & Quinlan, Inc.</i>
87	Dallas Market Center 88 <i>The Media Mix</i>	85	Olympic Stain 86 <i>Kraft Smith</i>
	Dover Corp. 21 <i>Caldwell/Bartell/Wood</i>	54	PPG Industries (Glass) 8-9 <i>Ketchum MacLeod & Grove, Inc.</i>
60	Eastman Chemical Products, Inc. 22 <i>Geers Gross Advertising, Inc.</i>	59	Shand, Morahan & Co. 20 <i>Hakanson & Assoc.</i>
96	EFCO 99 <i>Frank/James Productions</i>	84	Simplex Ceiling Corp. 86 <i>Leschin Assoc.</i>
51	Elkay Manufacturing Co. 2 <i>Cunningham & Walsh Chicago, Inc.</i>	62	Sloan Valve Co. 24 <i>Marsteller, Inc.</i>
75	Environmental Glass Products. 75 <i>Film Associates of Michigan, Inc.</i>	77	Society of the Plastics Industry 78 <i>Kight, Haunty, Inc.</i>
90	Federal Energy Systems, Inc. 90	94	State of Alaska 93 <i>Bronson Leigh Weeks</i>
73	Ford Glass Division 38 <i>Wells, Rich, Greene, Inc.</i>	55	Thiokol Specialty Chemicals Div. 10
82	General Electric/Air Conditioning 84 <i>Batten, Barton, Durstine & Osborn, Inc.</i>	63	Unistrut GTE 25 <i>Doyle, Dane, Bernbach, Inc.</i>
53	Georgia Marble 37 <i>Corporate Communications & Marketing, Inc.</i>	72	U.S. Ceramic Tile 7 <i>Sweet & Company Adv. Inc.</i>
71	Haws Drinking Faucet Co. 35 <i>Mandabach & Simms/Pacific</i>	67	U.S. Gypsum Co. 30 <i>Marstrat, Inc.</i>
72	Honeywell, Inc. 72-73 <i>BBD & O, Inc.</i>	69	U.S. Steel Corp. 32-33 <i>Compton Adv.</i>
92	Inryco, Inc. 91 <i>Melrose Adv. Assoc.</i>	61	Wayne Door Co. 23 <i>Whitemyer Adv.</i>
76	International Masonry Inst. 77 <i>Henry J. Kaufman & Assoc., Inc.</i>	88	Webb, Zerafa, Memkes, Housden Partnership 89
64	Kawneer Architectural Products 26-27 <i>Garrison, Jasper, Ross & Co.</i>	70	Wilsonart 34 <i>McKone & Co., Inc.</i>
99	Levolor Lorentzen, Inc. Cov. 4 <i>Muller, Jordan, Weiss, Inc.</i>		

ATLAS THERMAL SERIES— NO OTHER INSULATED ROLLING DOOR MEASURES UP



1. "Foamed in Place" Polyurethane

Today the amount of insulation in a door is more important than ever before—but even more important is the way it's put in. That's where nobody measures up to Atlas. And that's why Atlas uses "foamed in place" polyurethane, because solid insulations can't fill effectively. Foamed in insulation reaches in and penetrates filling all the small and hard to get to places. That's the difference, it's effective and fills completely.

2. Superior Slat Design

Inside the curves, where the slat faces interlock, are the hard-

est spots to insulate—in any rolling door. It's here that Atlas makes some unique design modifications that allow them to be filled completely. This effective insulation over the entire length of the slat is a major design achievement, yielding 100% insulation coverage and performance, a real value that no other rolling door measures up to.

3. Bonding, Strength, Highest R

For strength and durability, urethane foam hardens to a solid lightweight plastic that bonds to the metal slats permanently—no falling off, warping, or wearing. It's protected from external damage and weathering by 22 gauge galvanized steel, a tough combination of metal/foam/metal. Urethane foam also has the lowest thermal conductivity (K)

and highest resistance (R) of all common insulators. These unique properties coupled with Atlas technology produce a durable, lightweight, energy barrier that will last for the life of the door.

4. "New" Atlas Options

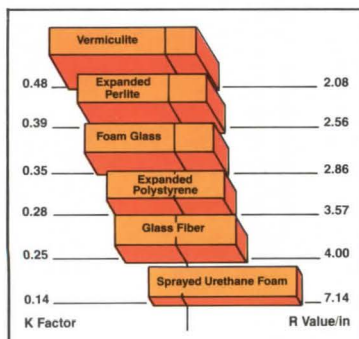
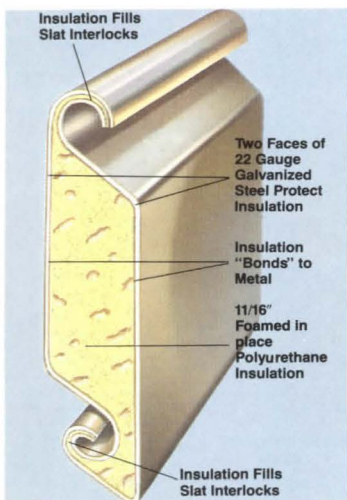
Two new rolling door options, the Atlas Safety-Stop™, which prevents the door from free falling, and the Atlas VHC™, which extends the useful life of the door, complement a complete line of rolling doors and grilles. Atlas doors are backed by a national network of distributors and in-

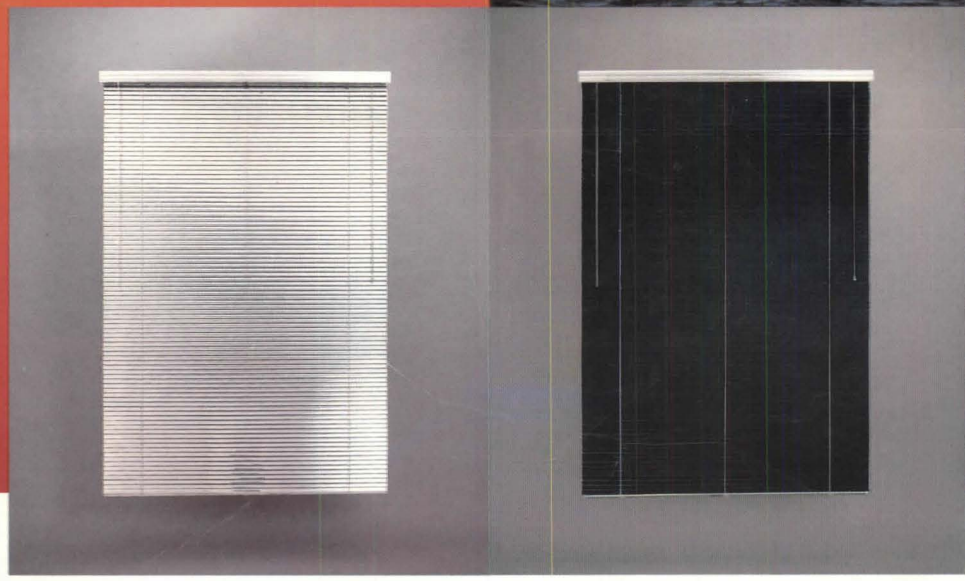
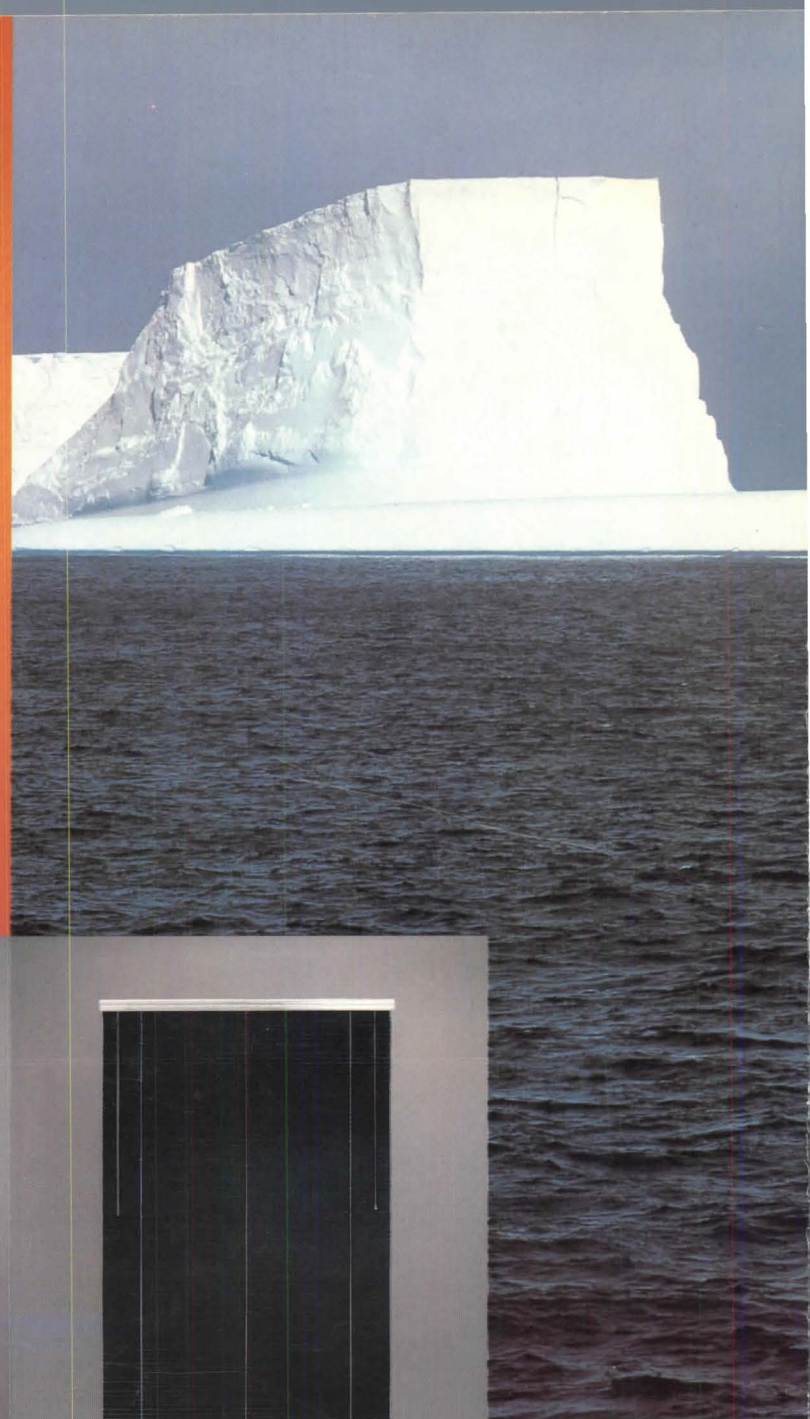
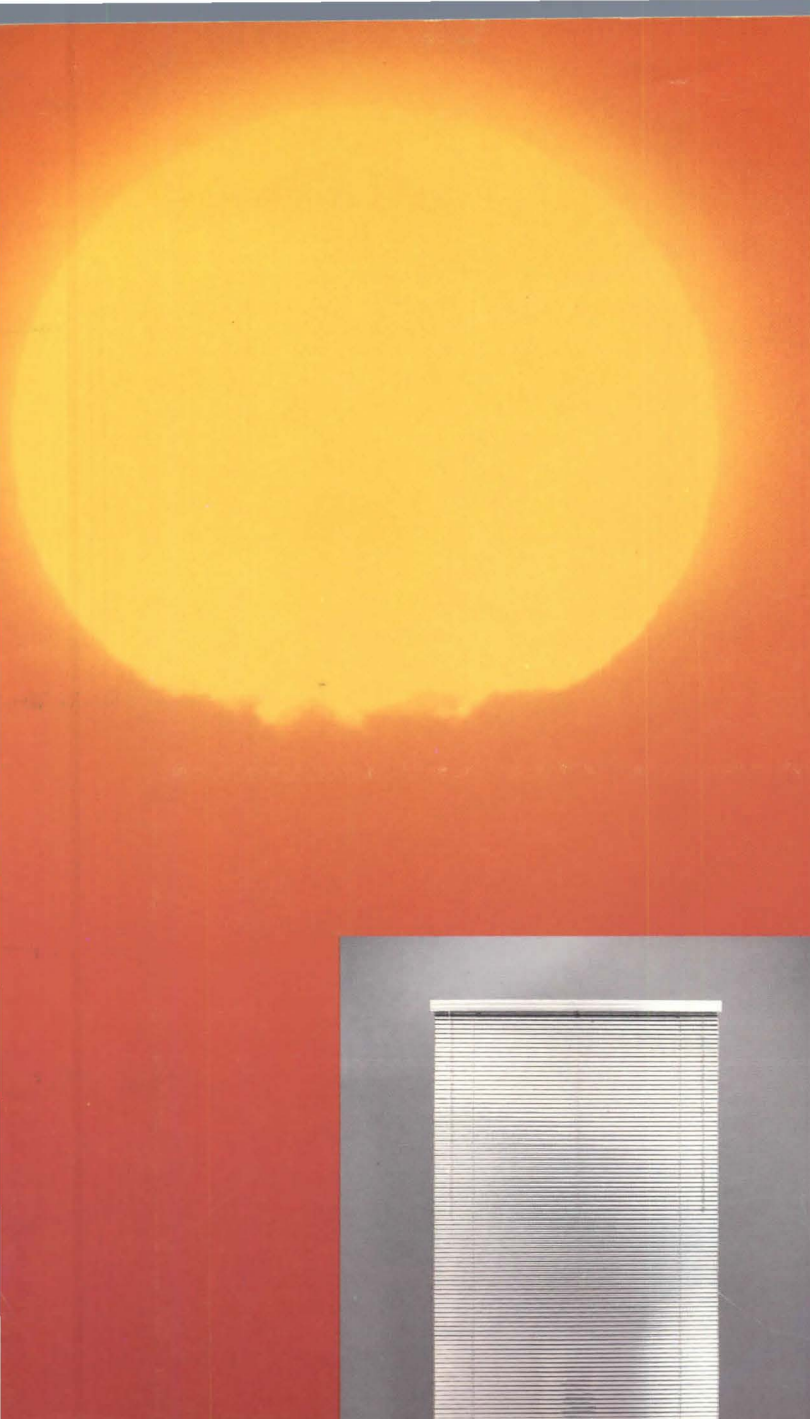
stallers. That's because Atlas measures up—all the way.

For more information about Thermal Series rolling doors and these new options, contact Atlas Door Corporation at 116 Truman Drive, Edison, N.J. 08817, or call (201) 572-5700.



We're meeting the challenge!





Cryotherm Treated blinds by Levolor reduce solar heat gain by 55% (12% more effective than conventional blinds).

These blinds are more than just beautiful. Their sleek surface promotes direct reflection of the entire solar energy spectrum — including infrared heat. Exactly how effective is this new treatment in reducing heat gain? We asked the Stevens Institute of Technology to find out. Their findings are in the accompanying chart.

But reducing heat gain is only one side of the story. These blinds reverse to a dark, heat absorbing color on the other side, reducing energy costs in winter, too. Detailed information about the use of these blinds in both summer and winter

environments is available. Please write: Levolor Lorentzen, Inc., 1280 Wall Street West, Lyndhurst, New Jersey, 07071.

Heat loads and energy savings		
Finish of blind	Total heat loads (Btu/hr.)	% Savings
No blind (clear glass)	16,086	Base
White finish blind in closed position (clear glass)	8,176*	49%
Cryotherm Treated [†] blind in closed position (clear glass)	7,282*	55%

Chart represents data for a typical summer day (August 21) for south-facing windows on a building located at 40° N latitude. Temperatures are 95° F outside and 75° F inside at 12 noon.

*The 894 Btu difference represents a 12% savings.
†No. 89 Brite.

CRYOTHERM™ TREATED LEVOLOR® BLINDS.

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