



THORNCROWN CHAPEL IN EUREKA SPRINGS, ARKANSAS, BY FAY JONES & ASSOCIATES

MARCEL BREUER AND HAMILTON SMITH'S NEW CENTRAL LIBRARY FOR ATLANTA

THE MUSEUM OF MODERN ART EXTENSION, BY CESAR PELLI AND ASSOCIATES

BUILDING TYPES STUDY: SKIDMORE, OWINGS & MERRILL'S HIGH-RISE OFFICE BUILDINGS

ARCHITECTURAL ENGINEERING: A GRANITE PANEL SYSTEM FOR IBM

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

MARCH 1981

3

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Letters to the editor

With respect to Mildred Schmertz's article in your November 1980 issue on the 1980 Aga Khan Award Program (pages 104-127), I wish to convey to you my feelings at seeing both the process and the product of what I think was quite a wonderful awards program.

American and Western European architects have for some years now used the phrases "Third World" and "emerging nation" with respect to most of the countries included in this year's Aga Khan Awards Program. I personally think enough time has elapsed to dispose of those pejorative terms. This awards program is among the first not only to bring concerns and ideas connected with Islamic architecture into the 20th century but to re-interpret one of the world's oldest religious and ethnic cultures in precisely the same up-to-date way that semiologists and contemporary architectural historians feel that they best serve their own cultures.

I am doubly familiar with the program, first because of my own work in Bangladesh over the last 16 years, and second because of my close ties with one of the Aga Khan program's jurors, Muzharul Islam from Dacca. It has become clear to me, not only in my discussions with Mr. Islam but in reading the article by Ms. Schmertz, that the several intelligent, civilized jury members perceived the breadth of the current translations of culture into physical form as represented by the winning schemes.

The various award winners have, in a stunning way, found significant ways of producing architecture that brings into consciousness contemporary attitudes about the taste culture of the several nations whose work was premiated. In precisely that way, I hope to make clear my position not merely as an international architect but rather as an American architect operating within the taste culture of my own heritage.

Stanley Tigerman, FAIA
Stanley Tigerman & Associates
Chicago

The Intern Development Program, despite enthusiastic marketing, has since its inception met with slow acceptance. Until recently, Michigan's program lay dead in the water, with a crew of architects rowing madly to get something going. The comparison to any number of Federal government programs is all too easy to draw: the kernel of an idea that is sound and fulfills a universally recognized need, an enormous structure of rules covering the hypothetical way the program should be carried out, a hefty price tag, ho-hum performance

when implemented—and someone in Washington wondering why it's not a smashing success.

IDP is an irrefutably sound idea stymied by cost and complexity. I see interns surmounting these obstacles rather handily—those who feel they cannot participate in the sanctioned program become shirt-tail followers of the interns who enroll. They participate when they can, to the point of developing their own accounting of their career experience.

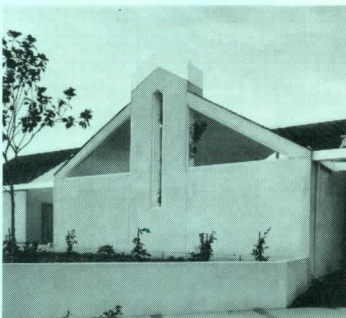
The intern I advise is wrestling with the realities of being a junior man in an architectural firm, and of his need to achieve substantive exposure in areas of the profession to which even some senior architects are not privy. He has blocked out a chart showing where he expects to gain knowledge of the various phases of practice. A substantial block of his exposure, to phases such as client contact and programming, comes from a "simulated project." This is a project that his office has completed, with the firm's project manager acting as simulated owner. The intern can thus develop those phases of the project that are not part of his daily office duties, albeit not as fully as the office did. The existing records of the project serve him as a sort of answer book. He is, of course, evaluating the office's performance on the projects at the same time.

T. Wikle, AIA
IDP Professional Adviser
Detroit

Corrections

Nicole Toutougi should have received credit for the photographs of Hassan Fathy's project in New Mexico (ARCHITECTURAL RECORD, December 1980, page 39).

Barbara Meacham served as the landscape consultant on the El Rancho Rio Building in Carmel, California (RECORD, January 1981, pages 82-83).



Help!

The Wylie House (shown herewith) was submitted to ARCHITECTURAL RECORD for its annual *Record Houses*. The editors would like to have the name and address of the architect, the owner or the photographer.

Calendar

MARCH

3 through April 22 "The Architect as Artist," an exhibition of watercolors by members of the American Institute of Architects. Sponsored by the College of Fellows of the AIA at The Octagon, 1799 New York Ave., N.W., Washington, D.C., 20006. Contact: Alison M. MacTavish, Curator, The Octagon (202/638-3105).

22-25 69th annual meeting of the Association of Collegiate Schools of Architecture entitled "Teaching Architecture"; held at Asilomar, Monterey Peninsula, Calif. Contact: The Association of Collegiate Schools of Architecture, 1735 New York Ave., N.W., Washington, D.C. 20006.

31 Conference, "The Productivity of Retail Space: New Design Solutions," at New York University. Sponsored by the NYU Institute of Retail Management and Mississippi State University School of Architecture; with grant assistance from the National Endowment for the Arts. Contact: Linda Nagel, NYU Institute of Retail Management, 202 Tisch Hall, Washington Square, New York, N.Y. 10003.

APRIL

4-5 Seminar, "Lighting for Cultural Facilities," sponsored by Technology & Conservation Magazine and the MIT Planning Office; held on the MIT campus in Cambridge, Mass. Contact: Technology & Conservation, One Emerson Place, Boston, Mass. 02114.

10 Conference, "Renaissance of the Central City," sponsored by the Louisville Central Area, Inc., and its Third Century committee; held in the Commonwealth Convention Center, Louisville, Ky. Contact: Louisville Central Area, Inc., 2125 Citizens Plaza, Louisville, Ky. 40202.

26 through May 1 The second conference of the International Confederation of Architectural Museums, to be held in London at the Royal Institute of British Architects. Contact: Jan van der Wateren, ICAM Conference Organizer, Royal Institute of British Architects, 66 Portland Place, London, England W1N 4AD.

28-30 "Lighting World International," the First Advanced Illumination Conference & Exposition; at the New York Statler Hotel. Sponsored by the International Association of Lighting Designers and the Northeast Regional Section of the Illuminating Engineering Society. Contact: Robert A. Weissman, National Expositions Company, Inc., 14 West 40th St., New York, N.Y. 10018.

MAY

11-13 42nd annual conference of the Interfaith Forum on Religion, Art and Architecture (an affiliate of AIA), to be held in Chicago. Contact: Mrs. Judith A. Miller, Administrative Assistant, IFRAA, 1777 Church St., N.W., Washington, D.C. 20036.

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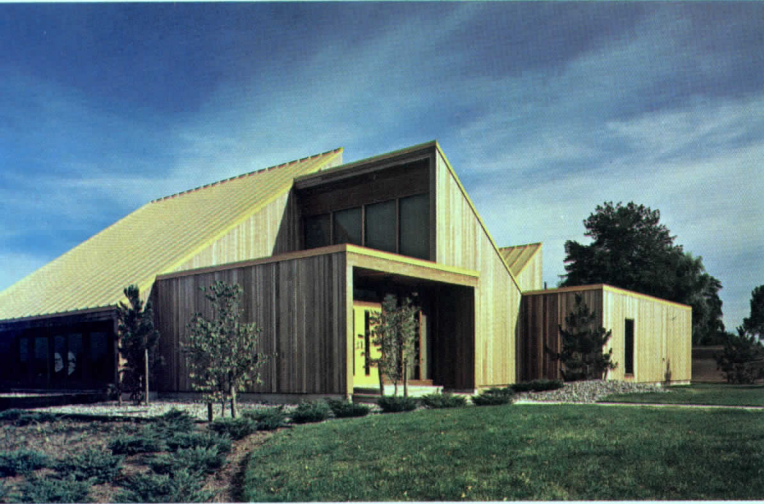
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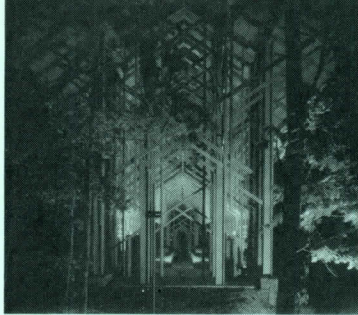
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THE RECORD REPORTS

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Early response to the student survey: some shared concerns, some fresh idealism

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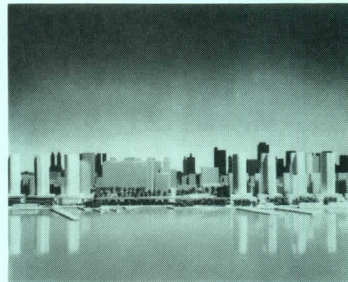
33 News in brief

35 News reports

Mies van der Rohe's Farnsworth House has been selected to receive the AIA's Twenty-Five Year Award. The Public Buildings Act (last year's Moynihan Bill) will continue to stress design competitions, despite AIA protests. The American Consulting Engineers Council has mounted an assault on the six per cent fee limitation for Federal design work.

40 Buildings in the news

A preliminary plan for a privately financed \$1-billion mixed-use development on Manhattan's West Side was unveiled in January: architects and planners are Gruzen & Partners in association with Rafael Vinoly. The most recent addition to the National Centre for the Performing Arts in Bombay, India, is the Tata Theatre: Philip Johnson (Johnson/Burgee) and Cyril M. Harris (professor of architecture and civil engineering at Columbia University) served as consultants.



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42 Books received

46 Design awards/competitions

The competition for a new public library in San Juan Capistrano, California's historic Mission City, has sparked public debate over the merits of stylistic revival and innovation in a landmark district.

68 Office notes

ARCHITECTURAL BUSINESS

55 Building activity

Dodge/Sweet's construction outlook 1981: first phase

Economist George Christie's analysis of last year's turbulent construction market indicates that monetary restraint and fiscal policy conflicts may have produced a new building cycle for the 1980s.

57 Building costs

Materials prices reflect the climbing cost of energy

A 20-city survey by the McGraw-Hill Cost Information Systems Division gauges trends in the current market.

FEATURES

83 Marcel Breuer and Hamilton Smith's new central library for Atlanta
Using the strong sculptural design language that has characterized all of Breuer's designs, the architects have produced a monument to the kind of flexibility that is required for the fast-moving pace of changing requirements in library services.

88 Thorncrown Chapel
by Fay Jones & Associates
An enriched architecture, responsive to physical place, and evocative of historical antecedents is no news to architect Fay Jones: as witnessed in this tiny, non-denominational "wayfarer's chapel," he is an accomplished practitioner.

94 MOMA: The Museum of Modern Art will fund new galleries and operations with money transferred from tower above
Cesar Pelli & Associates have designed an expansion to double the museum's gallery space. The same architect has also designed the exterior of the apartment structure that towers above the expansion—a daring and controversial private project on which the museum relies for its future financial support.

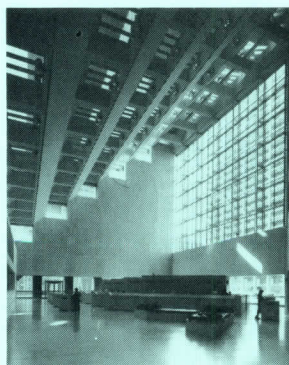
100 An architecture of alternatives: Two houses by Richard C. Tremaglio
Two houses in Massachusetts, one in Marblehead and the other in Weston, focus on process over the end product. Tremaglio's process demands participation by the client, the builders and the users of the buildings as well as by himself. The results can hardly be called post-modernist, yet they are complex, contradictory and filled with allusion and metaphor.

108 The Strada Novissima: or on the street where post-modernism lives
The architecture section of the Venice Biennale brought 76 architects together under the theme "the Presence of the Past." As a member of the consulting committee for this "First International Exhibition of Architecture," Robert A. M. Stern discusses both the exhibition and the larger issues it involves with his customary zeal.

BUILDING TYPES STUDY 557

114 High-rise office buildings of Skidmore, Owings & Merrill
Skidmore, Owings & Merrill, known and respected for its design of high-rise office buildings throughout the country, is continuing to evolve new design strategies for this complex building type. This study focuses on five new SOM projects, and explores trends in high-rise design as expressed by many of SOM's design partners.

114 First International Plaza
Houston, Texas
Skidmore, Owings & Merrill/
San Francisco office.



Richard Payne

120 Town Square
St. Paul, Minnesota
Skidmore, Owings & Merrill/
Denver office.

124 Irving Trust Company
Operations Center
New York City
Skidmore, Owings & Merrill/
New York office.

126 One Magnificent Mile
Chicago, Illinois
Skidmore, Owings & Merrill/
Chicago office.

128 Allied Bank Plaza
Houston, Texas
Skidmore, Owings & Merrill/
Houston office.

ARCHITECTURAL ENGINEERING

130 Panels of polished granite, on a chamfered, triangular-plan structure for IBM, enhances the image of a crystalline prism
Three-inch-thick gray-green granite slabs, 4- by 5-ft, are mounted on steel-truss frames for anchorage to the frame of IBM's new headquarters building in New York City by Edward Larrabee Barnes.

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NEXT MONTH IN RECORD

Building Types Study: Buildings for the arts

Recognizing the growing popularity of reuse, April's Study will contrast examples of new and old buildings recently dedicated to use as performing arts centers and museums. In addition, it will show one new lighthearted complex of buildings designed for summer arts education on a rural campus. The intent of the contrasted buildings is to give a better idea of when each type of choice is appropriate. And the education center will show how spirited buildings for the arts can be.

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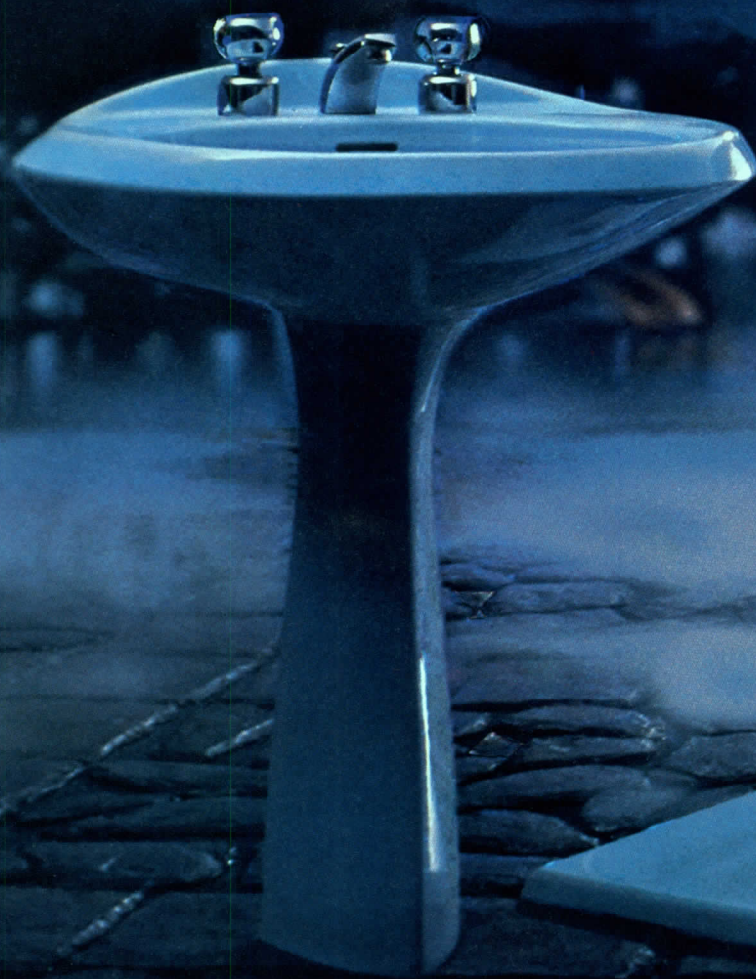
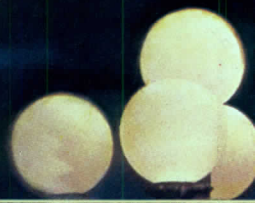
Early response to the student survey: some shared concerns, some fresh idealism

Reader response to "Profile of the 1981 graduate: conservative, on-track, main-line modernists," has been strong and interesting. I share the view of Gene Trotter of Southern Illinois University that the article offers "no great revelations"—but I think that's OK; because any major and fundamental surprises from such a survey would indicate an even greater disjunction between the aspirations of the students and the realities of practice. At any rate, the article has generated some thoughtful comment, some of which is excerpted here: Mr. Brent Harker, who left school five years ago, "has been working towards obtaining a license since high school," and who is Superintendent of Space Planning for Kaiser Center makes two thoughtful points: "Before you talk about making the internship a more sophisticated and regimented system, you must create a position in the profession so that it is to the architect's advantage to hire an apprentice. Internship—in the case of doctors or lawyers—is a required part of the system, and a place is set aside for those interns. In architecture, there is very little done to accommodate the intern. . . ." I would agree, but hope that the strengthening of the Intern Development Program (see editorial, February) would create a better understood and better supported "place for the intern" in more offices. Mr. Harker also voices a common criticism of the examination process: "I have seen superior designers fail the design exam because of the unrealistic demand to design an entire structure and draw it up without use of reference materials all in 12 hours. . . . I think the exam should test objective knowledge of structure, materials, history, mechanical systems, codes, legal matters, and professional skills. But I don't think the NCARB or the profession has the right to put more and more hurdles in front of the students and require them to jump over them for a longer and longer period. For in reality, the licensing and passing of tests means little if the person does not commit to the realization that if his or her designs are not sound and implemented in a rational and deliberate manner, he or she alone will take the consequences of the failure in terms of liability and reputation. Only incidentally will the profession suffer, and the state licensing board will not suffer at all." Which is a comment that puts all of our licensing struggles in good perspective.

Kathleen Bergum, who will graduate in May from the University of Michigan, voiced concern over the apparent slackening of interest in the social issues of architecture; and hooray for her: "A further strengthening of the intern program might emphasize the ethical responsibility of the architect by including community extension service as part of the structured program. This could help establish open communication between the public and the profession, and reinforce the approach of user participation in the design process. Architectural firms involved with the internship program could serve the important function of getting information across to the public on architectural process and concerns. Through providing community services, interns could 1) develop communications skills by making presentations to large and small groups, 2) better understand changes and decisions affected by and affecting the profession, and 3) develop a realistic view of design issues and problems affecting the public—on an individual basis with people who generally have little contact with architects, and a community basis, as in the case with public building projects." Ms. Bergum has a clear and, it seems to me, realistic view of the contribution intern architects might make: "Presentations to community groups and local students. Workshops to assist people in making design decisions about their living/working/learning environment. Assistance in housing maintenance/improvement/design; in small business and public service improvements by suggesting renovation possibilities; community/neighborhood planning assistance; enhancement of public spaces." Is all that too idealistic in today's tough world? I sure hope not. Much of it would have to be volunteer work, but young people have the energy. And maybe, especially in towns and smaller cities, where this work would be highly visible, some firms might be willing to support at least some such work by their intern(s) in the cause of public education. And of course a little such public service work could result—as more and more private citizens and public bodies understood the contribution architects can make—in commissions for the sponsoring firm. It is at any rate an appealing idea—a real contribution that interns could make while they spend time learning to do working drawings.

More in future editorials. —W. W.

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NEWS IN BRIEF
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December's strong rate of contracting for new construction projects points to improved spending for building activity during the opening quarter of 1981. A total of \$12.5 billion of new construction work was started in the final month of 1980, which represents a 21 per cent gain over the comparable 1979 figure. But because of a mid-year slump, the 1980 full-year total of \$147.2 billion registered a decline of 13 per cent from the 1979 amount. December contracts for nonresidential building totaled \$4.7 billion, a 37 per cent increase over the December 1979 total: for the full year, however, nonresidential building (at \$52.3 billion) held only a 4 per cent increase over the 1979 total. Residential building, in its second consecutive year of decline, fell 15 per cent in 1980 to a 12-month total of \$63.2 billion, but the December figure of \$5.6 billion registered a 33 per cent increase over the 1979 amount.

A national design competition for a \$110-million resort community—called EagleRidge—to be located in Steamboat Springs, Colorado, is open to anyone licensed to practice architecture in the United States. The AIA Research Corporation is assisting the sponsor, Caltenco Colorado Inc., in developing the program for the two-stage, open competition. EagleRidge calls for resort hotel facilities, retail/commercial and office facilities, and condominium housing. Bill N. Lacy, FAIA (president, The Cooper Union), will serve as professional advisor. The jury will include Moshe Safdie, Ralph L. Knowles, M. Paul Friedberg, Charles W. Moore, FAIA, and Gordon C. Gunn and Stephen A. Gunn (sponsors). Five finalists will each receive \$20,000 and the chance to compete for the first prize—the commission for Phase I construction. Registration deadline is April 28, with first-stage entries due July 15. For registration information contact: Mike Meinhardt, Foster & Meier Architects Inc., 3603 Lemmon Avenue, Dallas, Texas 75219.

The American Institute of Steel Construction (AISC) is accepting submissions for its 1981 Architectural Awards of Excellence Program until May 8. The biennial program is intended "to recognize and honor outstanding architectural design in steel and to encourage further exploration of the many esthetic possibilities inherent in steel construction." All registered architects practicing in the United States are invited to enter steel-framed buildings of their design, completed during 1979 or 1980. (Buildings must have been designed, fabricated, and erected in the U.S. with domestic steel.) The jury includes: Jacques C. Brownson; Bruce J. Graham, FAIA; Philip J. Meathe, FAIA; Walter P. Moore Jr., and R. Randall Vosbeck, FAIA. Winners will be notified immediately following the June 9th judging, and featured in the October issue of ARCHITECTURAL RECORD. For competition rules and entry forms contact: Awards Committee, American Institute of Steel Construction Inc., The Wrigley Building, 400 North Michigan Avenue, Chicago, Illinois 60611.

Eastman Kodak Company and the Professional Photographers of America invite interior designers, architects, and professional photographers to enter the 1981 "Decorating with Photography Design Competition." Entries must show actual installations of photography in the design of residential and contract interiors; cash awards totaling \$4,000 will be presented to winners in the two categories. The competition is open to individuals, firms, or joint entries by photographers and designers or architects. For further information and an official entry form contact: Linda Sommerfeld, Decorating with Photography Design Competition, Professional Photographers of America Inc., 1090 Executive Way, Des Plaines, Illinois 60018 (312/299-8161).

The National Endowment for the Arts (NEA) has awarded a \$700,000 grant, for production of a television series on architecture and design, to WETA-TV in association with Guggenheim Productions. The NEA grant requires a match of \$1.4 million from non-Federal sources. According to Livingston L. Biddle, Jr., Chairman of the NEA, the five-part series of one-hour programs (to be telecast by the Public Broadcasting Service) will be "a first for American television . . . The series will explore this important area of the arts, one which affects so many aspects of our lives, yet one that we take for granted and fail to fully appreciate or understand." Spiro Kostof, professor of architectural history at the University of California (Berkeley), will host the five programs.

The American Institute of Architects has selected Reynolds Metals Co. to receive an AIA Medal at the Institute's upcoming convention in Minneapolis, May 17-21. The 1981 medal—awarded to an individual or organization responsible for a specific project related to architecture—recognizes Reynolds' two major awards programs: the R.S. Reynolds Memorial Award and the Reynolds Aluminum Prize for Architecture Students. The AIA Jury on Institute Honors noted that the two programs "have accomplished their original purpose of encouraging architectural excellence, and have been an encouragement to others in the establishment of quality awards programs."

To help celebrate its 100 year history, the Graduate School of Architecture and Planning of Columbia University is documenting the work and achievements of its black and Hispanic alumni. Any information concerning this group should be sent to: Alumni Project, Max Bond, Chairman of the Division of Architecture, Room 404, Avery Hall, Columbia University, New York, New York 10027.

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The Reagan Administration freezes regulations

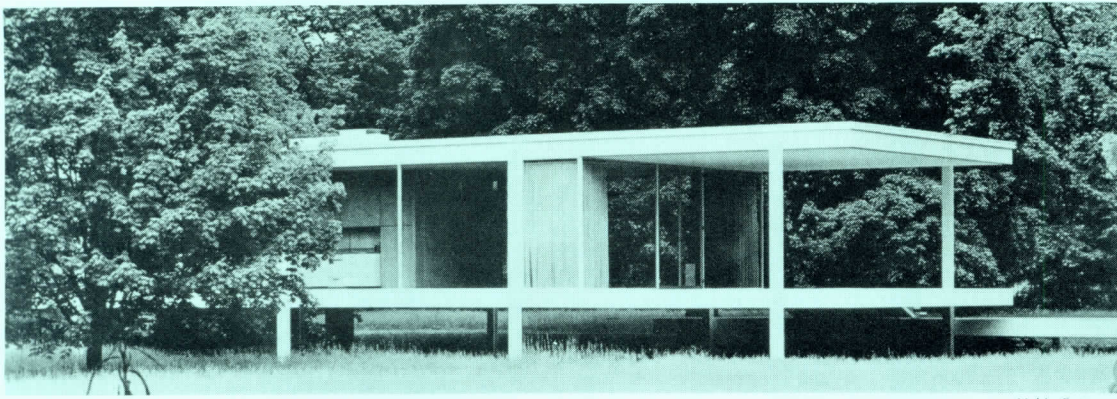
Ronald Reagan is moving vigorously to fulfill his campaign promise for easing the regulatory burden on American business. Though most of his actions have been largely symbolic, that's probably all that could be expected of the young Administration. The regulatory system has been built up over the decades and there is a great deal of inertia built into the system.

The ordering of the 60-day freeze in late January—on the effective date of the regulations proposed in the Carter Administration's waning days—was a sure sign that Mr. Reagan means business. But it stopped short of the all-out one-year regulatory moratorium suggested by some Presidential advisers and by the National Institute of Building Sciences (NIBS). More effective than the freeze was the concurrent order to all executive agency regulators to suspend all plans for new regulations during the same period. Presumably, regulations covering the removal of architectural barriers and Building Energy Performance Standards (BEPS) will be unaffected since there are no milestones planned for either during the period of the freeze.

Construction contractors are delighted, however, that the freeze covers certain occupational safety and health and Davis-Bacon prevailing wage regulations—both have come under heavy criticism from the industry. Court challenges by unions and environmentalists on the legality of the freeze can be expected.

The Reagan strategy for taking the deregulation battle forward will take two paths. The new political climate prevailing in both the White House and Congress, plus the growing outcries about regulatory excesses by practically everyone, suggest that overturning or moderating regulatory statutes by Congress is possible. At the same time, the President has the power to sweep out the Carter Administration's activist regulators and replace them with pro-business Reagan conservatives.

The first of the legislation battles will be over the Clean Air Act, which will expire September 30th: the law has land-use implications, as well as atmospheric discharge provisions. The strategy of the National Institute of Building Sciences (NIBS) is to seek a one-year moratorium so it can assess the impact of all regulations—local as well as Federal—and report back with a plan for ending duplications and unproductive regulations. Leaders of NIBS feel that only during a suspension of regulations can a proper assessment be made and a plan developed for dealing with the pervasive nature of the regulations. (Next month in *RECORD*, Frederick Gutheim will discuss the Reagan Administration in more depth.)
—W.H. more news on page 37



Yukio Futagawa

The AIA's 1981 25-Year Award goes to Farnsworth House

The American Institute of Architects 1981 Honor Awards Jury for Extended Use has selected Mies van der Rohe's Farnsworth House as the recipient of this year's Twenty-Five Year Award. The award recognizes architectural design of enduring significance that has withstood the test of time for at least 25 years. (Last year, the award was presented to SOM architects Gordon Bunshaft, John O. Merrill, and Nathaniel Owings for Lever House.)

According to the nomination, Farnsworth House is a "paradigm of the Miesian idea which has so profoundly influenced American architectural thought and design during the last quarter century . . . [it contains] all the elements integral to the Miesian approach to building."

Located on the banks of the Fox River, 47 miles west of Chicago, the

house was designed as a country retreat for Dr. Edith Farnsworth in 1950. The single-story, glass and concrete structure is elevated 5 to 6 ft above ground to prevent flooding.

In the past 30 years, ownership of the Farnsworth House has changed only once. Due to extensive restoration, its present condition compares to—if not surpasses—its original condition.

The jury described the house as "a classic example of modern architecture. This small building, as precise as a poem, is an architectural moment of significance." The jury's comments seem just right—Mies van der Rohe maintained: "True architecture reflects the needs of an epoch—it is neither a fashion nor something for eternity."

Mies van der Rohe was a Fellow of the AIA, and his 860-880 North

uty John F. Galuardi—is intended to spell out a management plan that would reduce the government's dependence on leased space for Federal office workers to 40 per cent of the total; more important, it spells out, on a project-by-project basis, the agency's priorities for space needs in coming years. Previously, the agency only planned one year in advance; this makes the GSA building program susceptible to political pressures in the placement of new buildings. Winning authority for the GSA to employ "time financing"—the borrowing of construction funds from the U.S. Treasury—is critical to the proposed building program. The Reagan Administration has shown a marked hostility for this form of "off-budget" financing, but has not commented specifically on GSA's plans.

Sen. Robert T. Stafford (R-Vt.) and Sen. Daniel Patrick Moynihan (D-N.Y.) were prime supporters of legislation authorizing time financing during the 1980 congressional session, and Stafford has reintroduced a similar bill in this session: he recently told an AIA meeting that "there is broad agreement that the Federal government should own its buildings, if it is going to pay for them" through lease payments. This suggests that the Vermont senator, who is the new Chairman of the Public Works Committee,

Lake Shore Drive Towers (1948-51) received the AIA's Twenty-Five Year Award in 1976; with Philip Johnson, he designed New York City's Seagram Building, which won the AIA Collaborative Achievement Award in 1964.

Having selected the Farnsworth House for the Twenty-Five Year Award, the Jury for Extended Use will reveal their selection of 1981 Honor Award winners (in the extended use category) in May.

The Honor Awards Jury for Extended Use includes: Arthur Cotton Moore, FAIA (acting as chairman); Peter Chermayeff, AIA; Stuart Cohen, AIA; Nicholas H. Holmes, AIA Associate Member; Piero Patri, AIA; ARCHITECTURAL RECORD executive editor Mildred F. Schmertz, FAIA; and Kimberly N. Stanley, student, Clemson University.

will again support time financing. While this may be welcome news to architects with a Federal practice, another of Sen. Stafford's proposals will not be so popular: he wants design competitions for many projects, in place of the traditional A/E selection process—"The present system] seems to work in favor of those firms that look good on paper, that promise to deliver safe, uncontroversial designs, and that government officials know and like. . . . In short, the current system seems to depend more on the 'old boy network' based on past friendships and reputations, and it does not guarantee that Federal commissioning of design professionals is based on present talent and creativity."

Sen. Stafford's legislation also establishes design criteria for Federal buildings, but he is quick to point out that this does not mean an "official style:" "that," he says "is expressly prohibited." It does mean that Federal building design should take into account the need for energy conservation and "genuine access" by handicapped persons, among other factors.

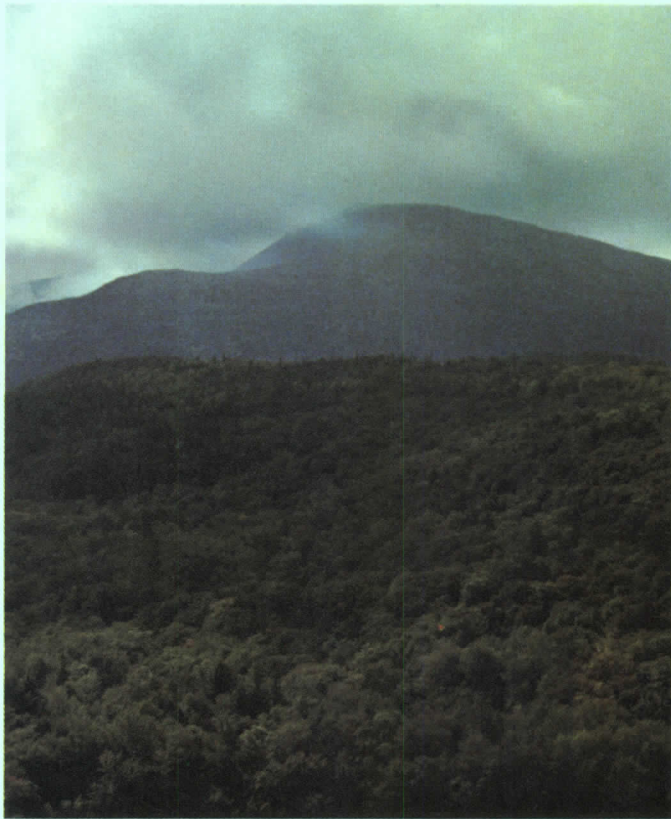
The bill also specifies a supervising architect, as the second-ranked person in the public buildings service. —William Hickman, *World News, Washington*.

The GSA plans for mammoth Federal office construction

Despite White House talk of stringent controls on Federal spending, the General Services Administration (GSA) has developed a \$5.7-billion plan for the construction of Federal office buildings; lawmakers in agreement with the plan are pushing the necessary legislation. Advocates of the huge new construction program argue that the cause of economy in government will eventually be served by the plan, because the only alternative is to continue making lease payments for housing Federal office workers. The counterpoint, offered by foes of the proposal, is that all nonessential spending should be deferred until the economy is stronger.

The GSA construction estimate, contained in a "management plan," is the first comprehensive long-range look at the government's future space needs for its office workers. The plan envisions the construction or acquisition of 31 million square feet of office space by 1987; a preliminary look at space needs—offered last fall—put the construction budget at \$4 billion, \$1.7 billion less than GSA's \$5.7-billion estimate.

The new plan—prepared under the direction of Public Buildings Commissioner A.R. Marschall and his dep-



Peak performance.

At the very top of Mount Washington, the State of New Hampshire is building a new meteorological observatory and visitors center.

The first problem is wind. The highest wind ever recorded, was recorded here (231 m.p.h., in 1934). The wind exceeds hurricane force 104 days *each* year.

The second problem is the cold. The temperature has gone as low as -47°F.

The third problem is snow. In the winter of 1968-69, they had 566 inches of it.

The fourth problem is visibility. 60% of the time, the facility is covered by clouds.

Architects Dudley, Walsh and Moyer of Concord, N.H., general contractor Harvey Construction

Company of Manchester, N.H., and applicator Associated Concrete Coatings, also of Manchester had their jobs cut out for them. About the only problem they didn't have is deciding what product to use to coat and protect the \$3.4 million structure,

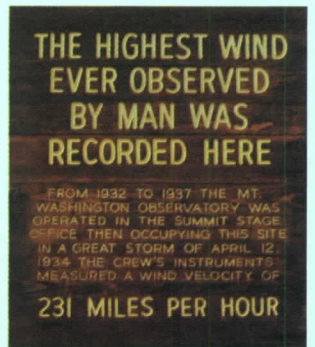
"... from the worst weather in the world."

So just before the furious winds of late Fall began anew, the concrete building was covered, top to bottom, with a trowel coat of Thoroseal Plaster Mix (mixed with Acryl 60 for enhanced bonding and curing).

Thoroseal Plaster Mix is 100% waterproof, harder and more wear resistant than concrete alone, and bonds so tenaciously that it actually becomes a part of the wall. The toughest part.

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Engineers Council fights for higher Federal wages

The American Consulting Engineers Council (ACEC) is arguing that a 41-year-old law limiting the fee an architect or engineer can charge a Federal agency—to six per cent of expected construction costs—is a disincentive to firms that might otherwise seek Federal agency design work. ACEC feels that though plans and specifications for most routine building projects can be prepared by an A/E within the six per cent limitation, it is becoming increasingly difficult for a design firm to undertake certain kinds of projects—small ones, rehabilitations, and particularly complex ones—and still squeeze under the six per cent limit.

Unconfirmed reports suggest that Federal agency contracting officials engage in a form of subterfuge in some "hardship" cases: reportedly, they will ask a firm to accept a loss on one design effort, but make up the loss by over-paying on a subsequent—more routine—design effort. ACEC is understandably silent on this particular method of circumventing the fee-limiting law. The Engineer's Council, however, is making a strong pitch to the Office of Federal Procurement Policy (OFPP) to begin the process for a campaign aimed at Congress to repeal the law.

Larry N. Spiller, executive vice president of ACEC, says that his and

other design organizations are reluctant to go directly to Congress, "on the basis that it may appear to be self-serving." But Mr. Spiller is providing the OFPP—a wing of the Reagan White House—with a long list of justifications for dropping the limitations. Though A/E services represent less than one-half of one per cent of all Federal procurement costs, these services have a significant impact upon the cost of new or improved facilities—not only during construction but throughout the operation and maintenance stages as well.

In Mr. Spiller's view, the Federal government's profit policy should "offer sufficient rewards to attract large numbers of highly qualified A/E firms and individuals to compete for government work." But he feels that limitations, like the one on fees, "fail to offer such incentives."

If there must be a fee limitation, Mr. Spiller suggests 10 per cent as more appropriate. In addition, OFPP—in its role as the government's procurement policy-maker—should make it clear that the limitation covers only the preparation of plans and specifications, and that it does not include—among other items—feasibility and preliminary study surveys, shop drawing approvals, testing, startup, training, and site acquisition work. —William Hickman.

The AIA announces its 1981 AIA Medal winners

The American Institute of Architects will present eight 1981 AIA Medals at this year's convention in Minneapolis, May 17-21. The award recognizes "individuals or organizations who have inspired and influenced the architectural profession."

Last month, RECORD reported on the selection of manufacturer Herman Miller Inc. (RECORD February, page 33), and this month the Reynolds Metals Company award is outlined in News in Brief (page 33).

The remaining six medal winners are listed below with comments from either their nomination statement or the jury's statement.

■ Cornell University professor Colin Rowe: "Mr. Rowe's contribution to the analysis and understanding of architectural form made him a forerunner to the new intellectual base and attitude about architecture. His continuing inspiration and insights into what architecture at its highest level could and should be has led the profession as a whole toward a more rigorous, intellectual contemplation of architectural design."

■ *The New York Times* architecture critic Paul Goldberger: "He knows and enjoys every kind of architecture, past and present, and views them all with the same intelligent, un sentimental, clear-eyed affection. Though his standards and judgments are firm, he delivers them quietly in a

style that is relaxed and always clear."

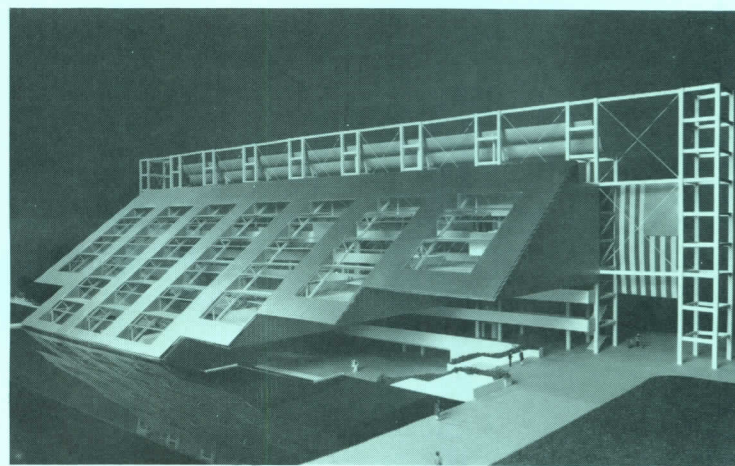
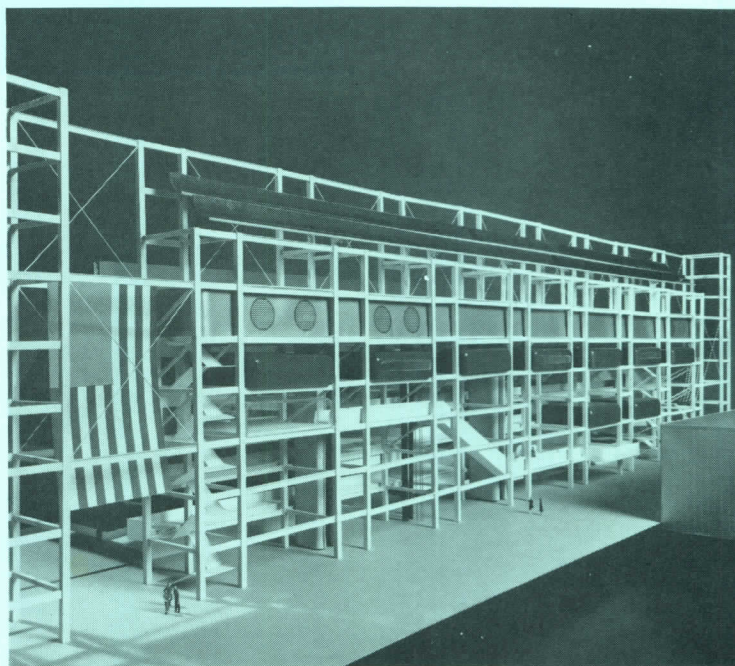
■ New York City artist Kenneth Snelson: "[His work] is not only superb sculpture in itself, but is related to architecture in more than one sense—it is an interpretation of spatial organization, an exploration of the principles of structure, a demonstration of fine detailing, as well as a fine complement to the architectural settings in which it has been placed."

■ New York lighting fixture designer and manufacturer Edison Price: "He holds the unique position often characterized as 'the lighting consultants' lighting consultant.'"

■ Smithsonian Associates: "Architecture, in all of its past, current, and visionary aspects is a continuing theme of the Smithsonian Associates that is manifest through an excellent lecture program and continuing coverage in the *Smithsonian Magazine*."

■ Architectural historian Sir Nikolaus Pevsner: "[His] outline of European architecture has established the very foundation of architectural understanding for more than one generation of Americans."

The seven-member jury for 1981 AIA Medals included: Roger Clark, AIA, (chairman); Paul Kennon, FAIA; Balthazar Korab; George E. Hartman Jr., FAIA; David Macaulay; Bruce Schaefer, AIA associate member; Russel E. Sergeant, student.



Construction has begun on the competition-winning U.S. Pavilion for Knoxville's Energy Expo '82

The U.S. Pavilion for Knoxville, Tennessee's International Energy Exposition—Energy Expo '82—has been designed by the Atlanta firm of Finch, Alexander, Barnes, Rothschild and Pascal Inc. (FABRAP), in association with Carlos Ramirez and Albert H. Woods Inc. (exhibit designers from New York). Turner Associates (Atlanta) and Lindsay & Maples Inc. (Knoxville) are associated architects.

FABRAP was chosen from five finalists, (each finalist submitted conceptual plans) in a competition for the architectural/design commission. The finalists included: Davis, Brody/de Harak and Associates Inc.; Cambridge Seven Associates Inc.; Venturi, Rauch and Scott Brown; Gruzen/Gersin.

The winning proposal calls for a 160-foot-high, 600-foot-long structure containing exhibits and a 1,000-seat Imax theater (Imax is a giant screen projection technique developed in Canada). The proposed Pavilion includes such energy-related features as a large concentrating solar collector, a bio-mass generator, solar sun screening, electrical co-generation and a solar power tower. A series of energy theme exhibits and a

"hands on" area of participatory exhibits will also be included.

In a prepared statement on the design of the U.S. Pavilion, the architects outline the programmatic and thematic considerations: "In searching for the image or 'face' for the U.S. Pavilion, there is the problem of now and future. With the future use unknown, with the energy future in a state of flux and given the inappropriateness of addressing only the traditional Expo concerns for visual/structural gymnastics, we have determined the U.S. Pavilion image should be one of 'becoming,' organized Janus-like about its dominant east-west circulation spine. The design has a serene and finished north face; the south face is dynamic and structuralist, and prepared for future changes. On a more subtle level, the design is a system of portals, arteries, symbolic and literal gateways and transitions underscoring our current situation as a culture, i.e., we are entering a new epoch."

Engineers for the \$9-million Pavilion are Renten Bach of Knoxville. Construction began last October, and the facility is scheduled to open May 1, 1982.

**Exposed steel wall system
provides economy and energy
efficiency in new Chicago schools**



The new 357,000 sq. ft. Olive-Harvey College in south-east Chicago was designed to provide 8,500 full-time students with programs covering the arts, sciences and technical areas of learning.

The building's 30-foot by 30-foot bay steel framed structural system provides good quality spaces for students and faculty functions.

The building's enclosure of insulated painted 1/4 in. thick carbon steel plate with 1" thick insulated glass on a 5-foot module, was designed in 10-foot wide full height 46-foot 6-inch sections for rapid erection and early close-in of the building.

This enclosure is not only an effective barrier to the high noise levels caused by the heavy auto and truck traffic from the adjoining streets and expressway but also complies with energy

conservation design requirements. Of the 59,150 square feet of exterior wall surfaces only 35% is glass.

The new Olive-Harvey College is a successful example of the design flexibility and practical economy of using structural steel on the inside and a painted, easily maintained, exposed light-weight steel skin on the outside. The Richard J. Daley College building in southwest Chicago duplicates this structure and exposed steel wall system.

To find out more about these buildings, and for information regarding the many applications for structural steel, 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 C.5/5a to United States Steel, P.O. Box 86, (C1487), Pittsburgh, PA 15230.



United States Steel

TRADEMARK

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Owner: Public Building Commission of Chicago, Chicago, Illinois

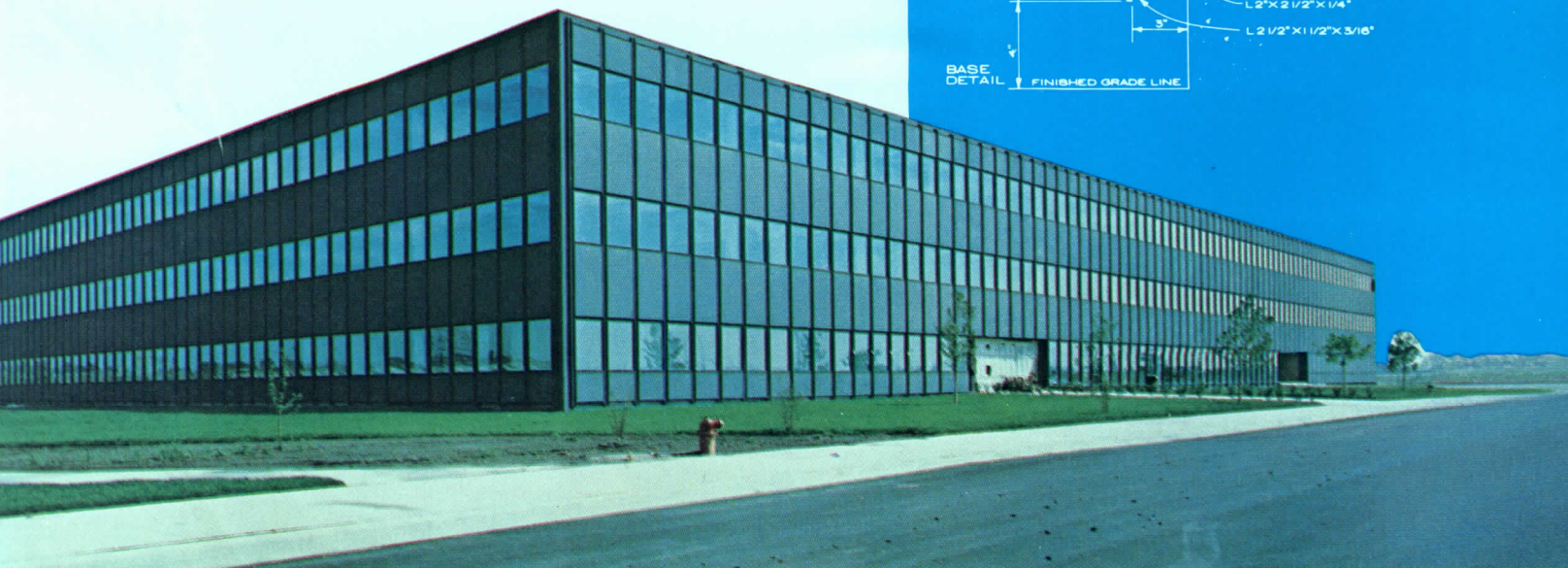
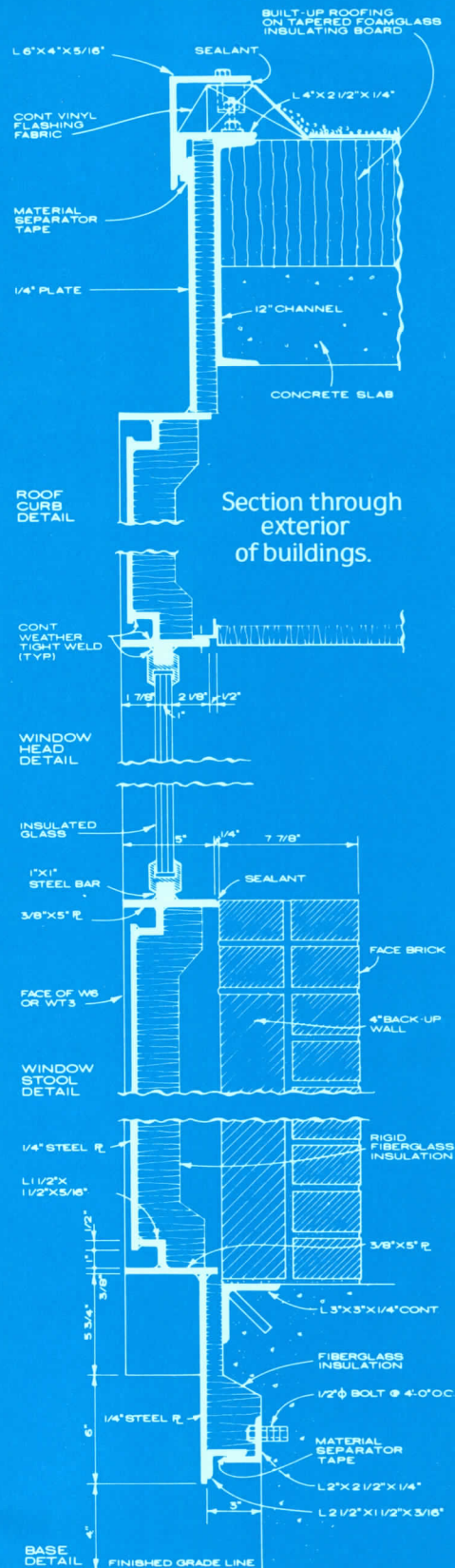
Operator: Board of Community College District No. 508, Chicago, Illinois

Architect/Engineer: Dubin, Dubin, Black & Moutoussamy, C.F. Murphy Associates—A Joint Venture—Chicago, Illinois

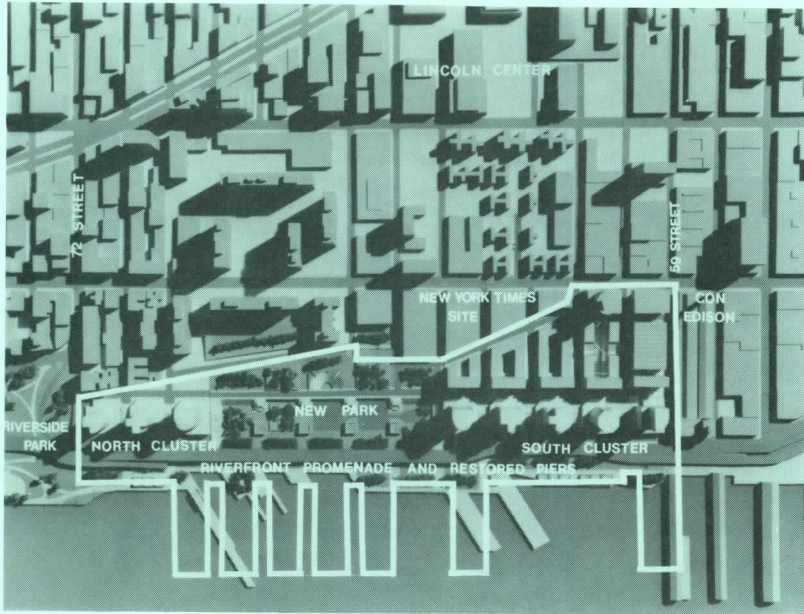
Construction Manager: DDBM Inc., Chicago, Illinois

Curtain Wall Fabricator/Erector: Chicago Ornamental Iron Co., Melrose Park, Illinois

Structural Steel Fabricator/Erector: Wendnagel and Company, Inc., Chicago, Illinois



Gruzen & Partners and Rafael Vinoly join forces for \$1-billion New York City development



© Wolfgang Hoyt/ÉSTO photos

A preliminary plan for a privately financed \$1-billion residential, commercial, and recreational development on the site of the 60th Street Penn Central Railroad yards on Manhattan's West Side was unveiled January 26th at a meeting between the developer, Lincoln West Associates, and Community Board #7. The Board will eventually make a recommendation on the proposal to City Planning officials.

The proposal includes a maximum of 4,850 apartment units, retail and commercial space, an office tower, and a 500-room hotel. A key feature of the development—called Lincoln West—is a \$63.4-million package of "public amenities" and open spaces along the Hudson River. (The open spaces would extend Riverside Park from 72nd Street—where it now ends—to 59th Street.) According to the developer, more than half of the 76.4-acre site (42 acres) would be devoted to open spaces and "public amenities." This would include a \$27.9-million waterfront promenade, more than \$17 million in improvements to deteriorated and unused piers and the Hudson River bulkhead, and \$2 million for an entrance to the 72nd Street subway station.

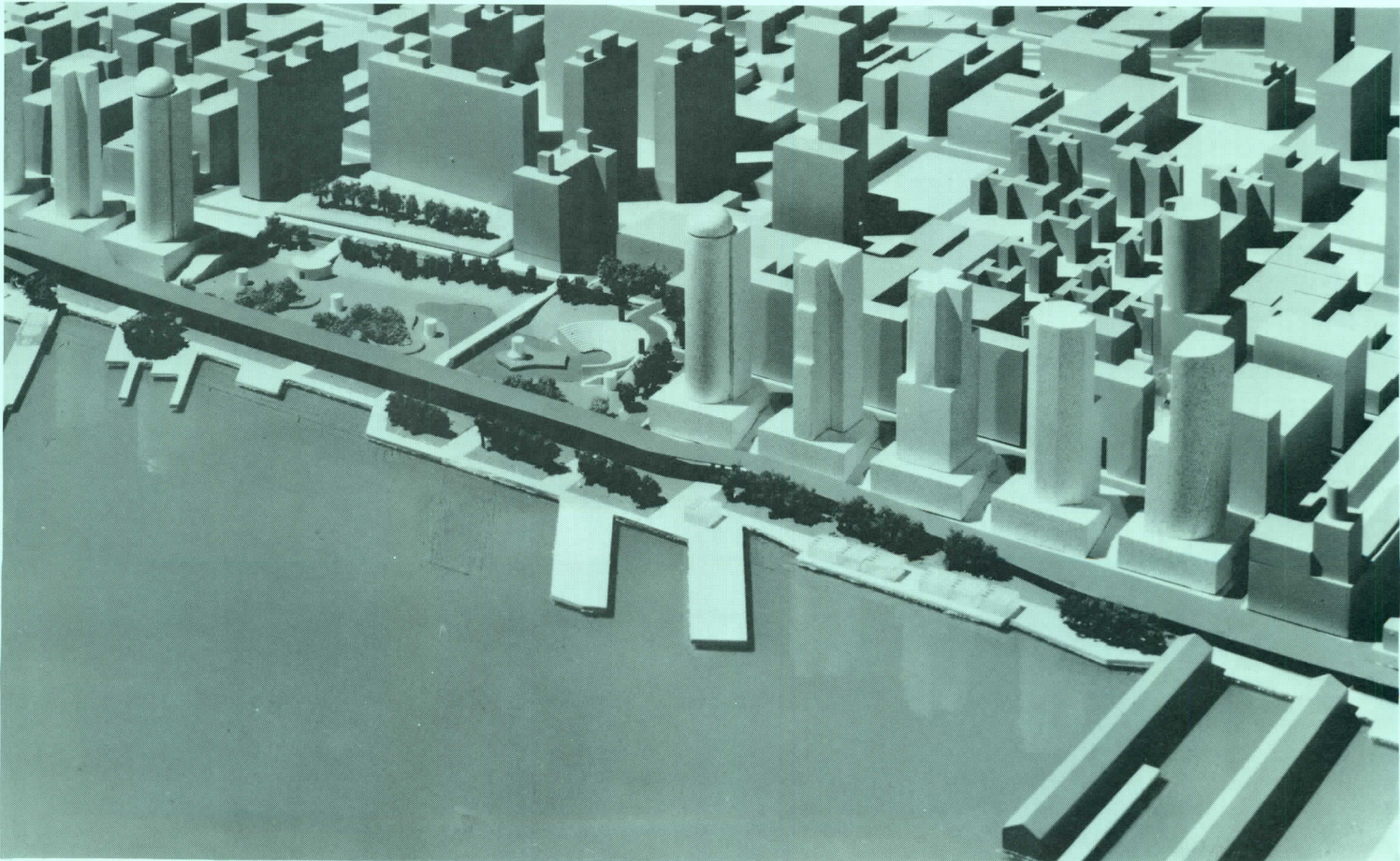
Dr. Carlos Varsavsky,

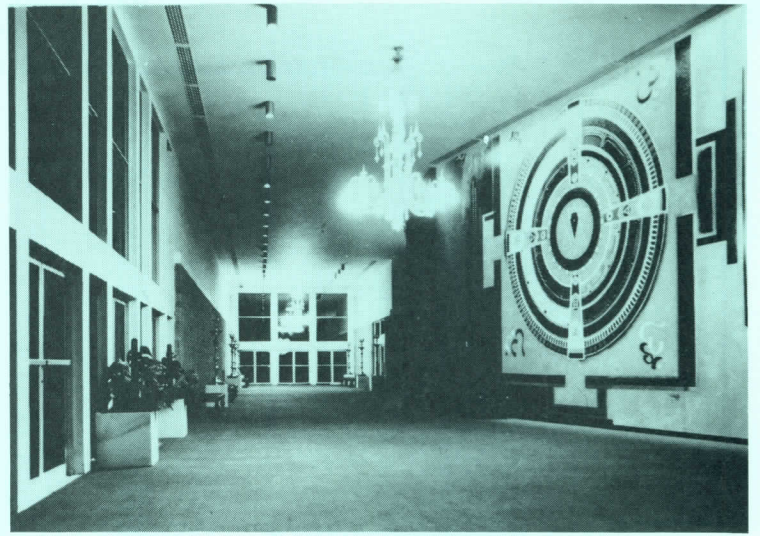
president of Lincoln West Associates, notes: "Lincoln West can at last provide access for the community to a much neglected stretch of the West Side waterfront, while providing sorely needed residential and retail space." Dr. Varsavsky added: "We want to hear the community's ideas, and where possible, incorporate them into the plan."

Under the current proposal, Lincoln West would be built in several phases: groundbreaking could take place in spring 1982, with the first phase of construction completed by mid-1984. This first phase includes construction of approximately 1,050 residential co-op units at the northern end of the site: when these units are completed, the northern portion of the Riverside Park extension would also be finished.

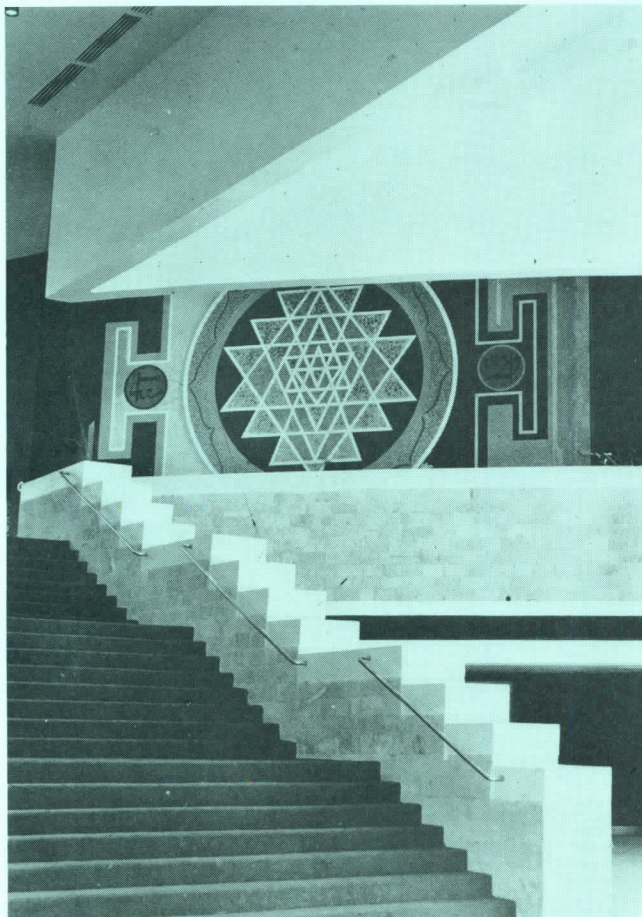
Construction at the southern end of the site, with approximately 3,800 residential units and intensive retail and commercial development, would begin later. The housing would be phased in on an average of 600 units per year, and the entire development would be completed by 1990.

The master plan for Lincoln West is being developed by Gruzen and Partners in joint venture with Rafael Vinoly.





Johnson/Burgee and Harris team up, again, to design a hall for Indian music in Bombay



At the Tata Theater, which opened in India's National Center for the Performing Arts at Nariman Point in Bombay last October, architects Philip Johnson, John Burgee and acoustician Cyril M. Harris teamed up for a very different effort than they exerted for the redesign of New York City's Avery Fisher Hall.

Firstly, the character of Indian music differs greatly from that of large Western symphony orchestras. Musical performances tend to be solo recitals or small groups, using quiet instruments. Vocal performances are similarly delicate. Harris chose nonetheless to forgo electronic amplification in the 1,040-seat auditorium, though Indian musicians have grown accustomed to using microphones.

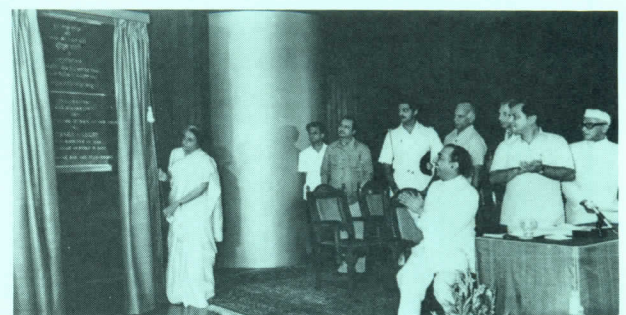
Secondly, the hall will also be used for dance and drama, and the architects recognized the need for the audience's nearness to performers if spectators were to perceive the nuances of subtle expression used by Indian actors and dancers. In order to put the audience as close as possible to the stage, the architects arranged seating in a semicircle, wrapping the semicircular stage in a config-

uration Johnson had observed as traditional to the intimate Indian theatrical style. The stage rotates for set changes.

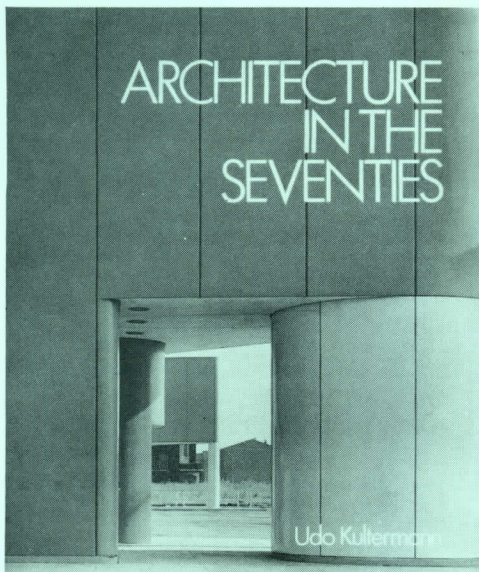
To reflect sound, Harris ringed the hall with panels of high-density plaster, pointed at the top and bent inward for a series of complex reflective surfaces directing sound toward the listeners. On the ceiling, plaster pyramids are designed for the same purpose. He also made extensive provision to isolate the hall from extraneous sounds from the streets and within the building.

Thus members of the audience enjoy superb acoustics. Those sitting in the last rows of seats at the rear are able to hear with enjoyment such instruments as the sitar, the sarod and the sarangi, to perceive with clarity dramatic dialogue, and to note with pleasure and appreciation the subtle movements of the face, legs and hands in classical Indian dance recitals.

The foyer (top and bottom left) forms the central spine of the building and opens at opposite ends to views of the Indian Ocean. It is decorated with tantric murals in bright acrylic paints created by artist Shiavax Chavda.



The photo above shows Indian Prime Minister Indira Gandhi unveiling a plaque to commemorate the inauguration of the theatre. Mr. J. J. Bhaba, Vice-chairman of the National Theatre (seated), was responsible for hiring Johnson/Burgee and Harris.



ARCHITECTURE IN THE SEVENTIES, by Udo Kultermann; Architectural Book Publishing, \$29.95.

Udo Kultermann (professor of architecture at Washington University) has selected 45 buildings, completed during the last 10 years, that he considers to be characteristic of the seventies. If there is a tie that binds the work together, it is that most projects were funded by the state and the "most common use is some form of social welfare." Each project is illustrated with photographs and plans, and accompanied by a brief descriptive text. Twenty-seven countries are represented. The U.S. selections include Richard Meier's Bronx

Developmental Center, Moore Grover Harper's Whitman Village, and Stanley Tigerman's Illinois Regional Library for the Blind and Physically Handicapped.



ARCHITECTURE 1980: THE PRESENCE OF THE PAST: THE VENICE BIENNALE, edited by Gabriella Borsano; Rizzoli, \$35.

The 352-page catalog of the "First International Exhibition of Architecture" of the Venice Biennale (see page 108) documents not only the event, but includes brief profiles of the 76 architects that participated. A general introduction by director Paolo Portoghesi ("The End of Prohibitionism") is followed by essays from Vincent Scully ("How things got

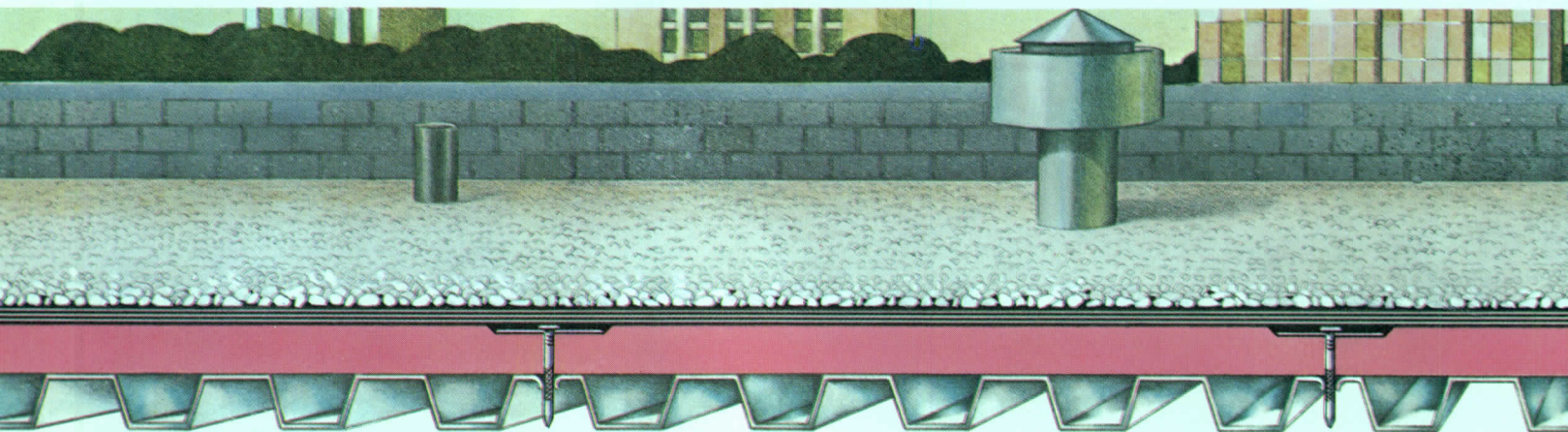
to be the way they are now"), Christian Norberg-Schulz ("Towards an authentic architecture"), and Charles Jencks ("Towards a radical eclecticism").

CHARLES MOORE, by Gerald Allen; Whitney Library of Design, \$18.95.

This monograph, by former RECORD associate editor Gerald Allen, is billed as "the first publication to offer a comprehensive analysis of [Moore's] work as well as an overview of his projects." The introductory essay—"On the Road to the Palace of Wisdom"—likens Moore's work to Shakespeare's pastoral comedies, where surprising and unexpected events alter our perceptions of the world. Twenty projects are illustrated in this compact 127-page volume.

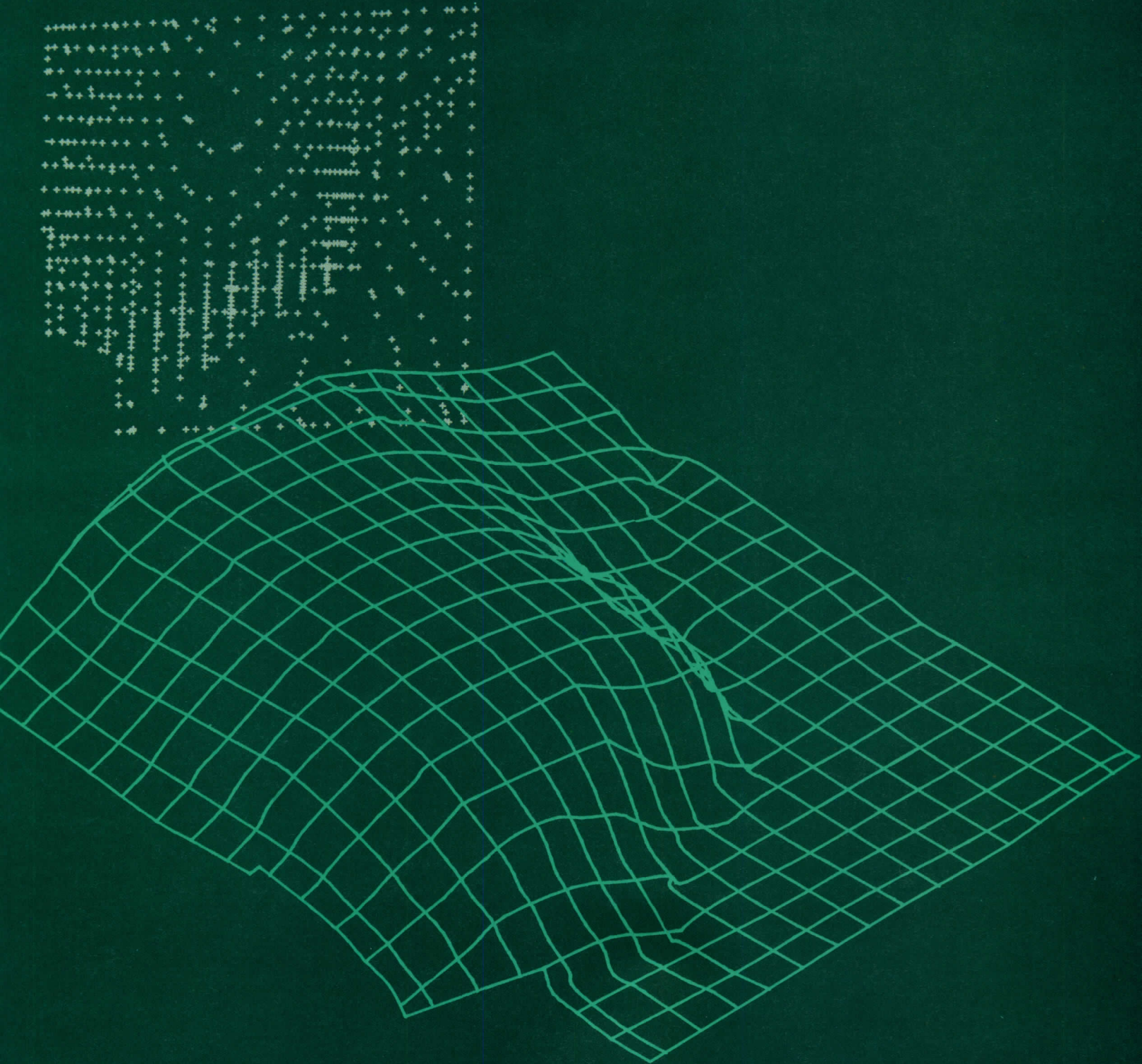
GENIUS LOCI: TOWARDS A PHENOMENOLOGY OF ARCHITECTURE, by Christian Norberg-Schulz; Rizzoli, \$19.95.

"My primary aim is to investigate the psychic implications of architecture rather than its practical side, although I certainly admit that there exists an inter-relationship between the two aspects" writes Christian Norberg-Schulz in the preface to *Genius Loci*. He believes that the modern world suffers from a loss of place; that the local character, which gave early settlements their distinctive mark, is being destroyed. Using Khartoum, Prague, and Rome as examples, *Genius Loci* argues for maintaining the "spirit of place."



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EAGLERIDGE

LOCATION: Steamboat Springs, Colorado—A 30.6 acre parcel of land; mixed use: housing, hotel and commercial space. Estimated construction cost 110 million dollars.

ARCHITECTURAL DESIGN COMPETITION

TYPE OF COMPETITION: An open, two stage design competition, to be actually constructed.

ELIGIBILITY: Open to any Architect, licensed in the United States.

SPONSORED BY: Caltenco Colorado, Inc.

AWARDS: First Stage, Five finalists to receive \$20,000 each. The Final Stage winner to receive commission for Phase I construction.

SCHEDULE: Deadline for registrations, April 28, 1981. Programs mailed, May 1. Deadline for First Stage Entries, July 15. Begin Second Stage, August 7. Deadline for Final Stage entries October 15, 1981.

PROFESSIONAL ADVISER:

• Bill N. Lacy, FAIA.

JURY MEMBERS:

• Moshe Safdie
• M. Paul Friedberg
• Charles W. Moore
• Ralph L. Knowles
• Gordon C. Gunn, sponsor
• Stephen A. Gunn, sponsor

ADDITIONAL INFORMATION:

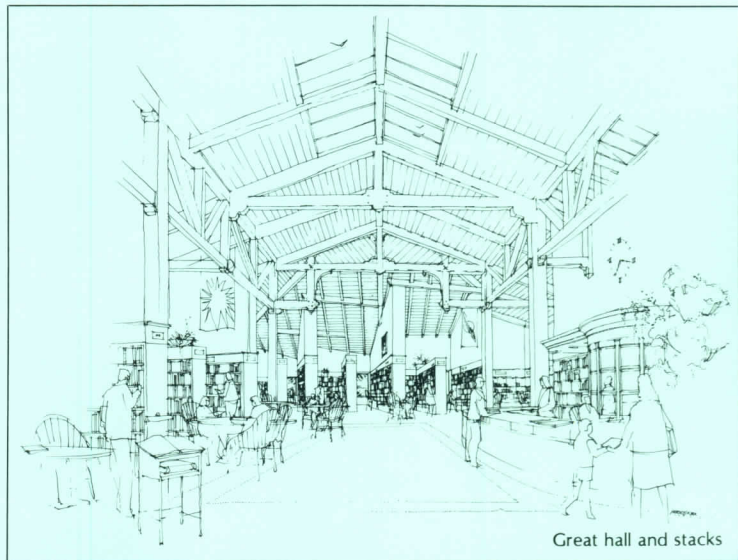
Mike Meinhardt, AIA
Foster & Meier Arch., Inc.
3603 Lemmon Avenue
Dallas, Texas 75219
Phone (214) 528-0070
• See related news item this issue.

DESIGN AWARDS/COMPETITIONS

San Juan Capistrano Public Library Design Competition. The competition for a library to adjoin the 205-year-old Mission of San Juan Capistrano, one of California's prime examples of Spanish Colonial architecture, has been won by Princeton architect Michael Graves (overleaf). Moore Ruble Yudell, in Los Angeles, and Robert A. M. Stern, in New York, are the other finalists chosen by a jury composed of a Capistrano city councilman, a librarian, a representative of the Orange County Architect's and Engineer's Division, an historian, a city planner, and a member of the local architectural review board. Compatibility with Mission Style buildings in the city's historic center was a key requirement for the 10,000-square-foot project.



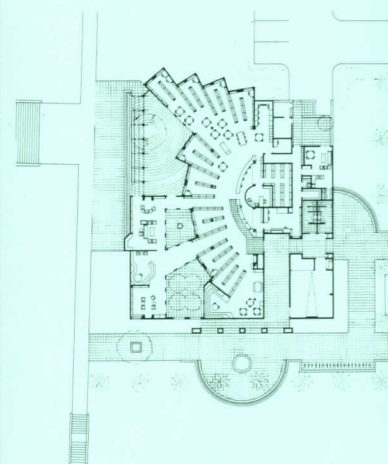
Outdoor reading area



Great hall and stacks



View of entrance facade (model)



RUNNER-UP MOORE RUBLE YUDELL

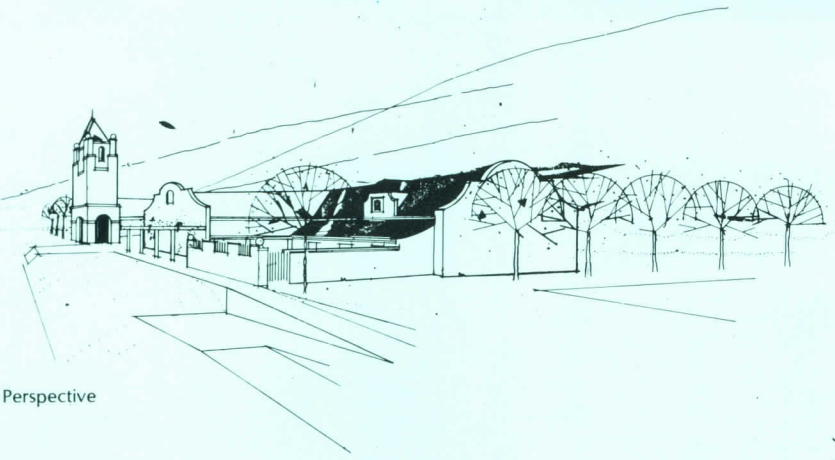
The picturesque, villagelike massing of Moore Ruble Yudell's design belies a plan of tightly calculated efficiency. A fan-shaped arrangement of stacks radiating from a central office gives library staff clear sight-lines into most public areas, while creating a varied sequence of intimate spaces.

Bookcases are organized in a series of alcoves opening off a great hall roofed with massive rafters, following the model of medieval and Renaissance libraries. The axial bays terminate either in individual carrels lighted by exterior windows or in rooms assigned to adult, young adult,

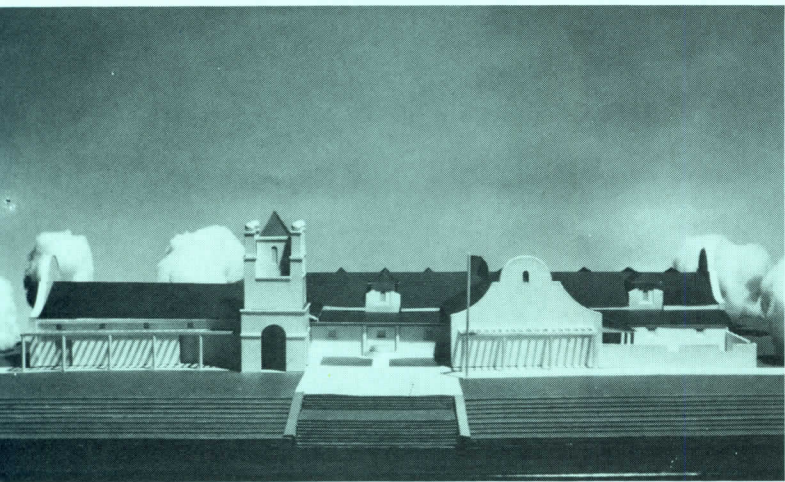
and children's books, and a Spanish language section. Patios shaded by trees and vine-covered arbors serve as outdoor reading rooms. Plantings would include Mission fig and other species introduced to the region by Spanish priests.

Broad stucco walls, painted soft earth tones, are a backdrop for the play of shadows cast by shrubbery and trees. Although the library's low hipped roofs relate to the scale of neighboring houses, the entrance arcade and a tower would reflect similar forms in a planned reconstruction of the ruined Mission church.

This scheme was commended for its "prettiness"—and for strict adherence to the competition program. Yet the ingenious compactness of the plan also struck several jurors as a serious obstacle to future expansion. Ironically, since it was Moore Ruble Yudell who advised San Juan Capistrano on the city's Architectural Design Guidelines, the jury questioned whether the firm's interpretation of historical forms in the library might not be more at home with 1930s "Santa Barbara Style" buildings than with the genuine Mission Style landmark next door.



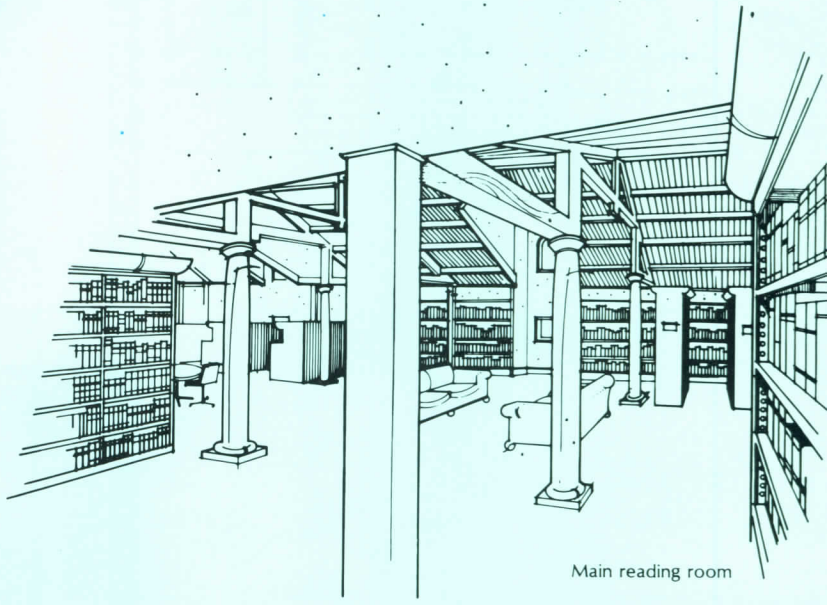
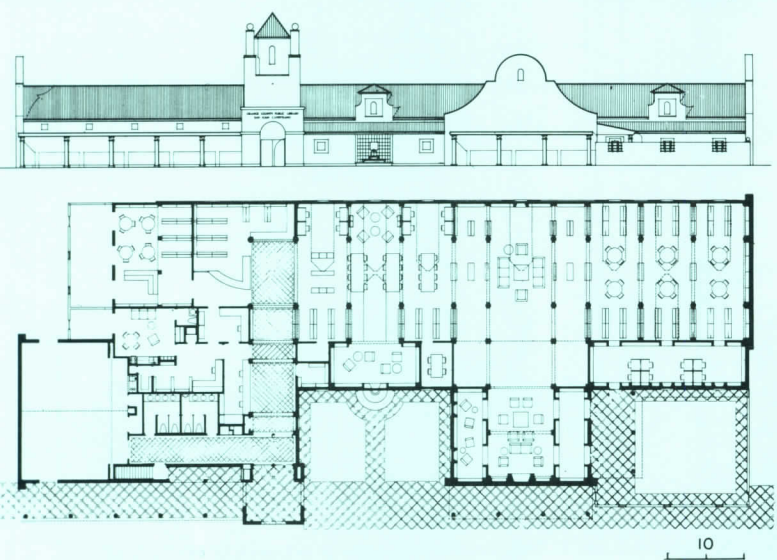
Perspective



View of entrance facade (model)



Browsing lounge



Main reading room

RUNNER-UP ROBERT STERN

Of all three finalists, Robert A. M. Stern came closest to recreating both the details and over-all proportions of authentic Spanish Colonial prototypes, in a restrained design that mediates between archaeological accuracy and up-to-date pragmatism. Characterizing this dual aspect of the project with a familiar post-modernist analogy, Stern explains that his library "speaks" the traditional language of the place without using all the same words."

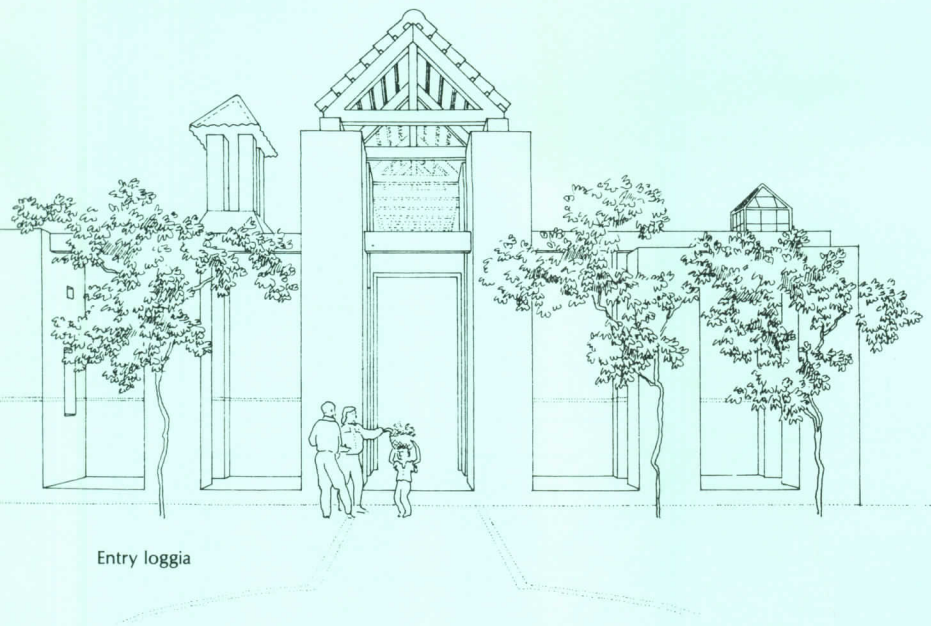
Austere colonnades, curved Baroque gables, tile-silled windows, and an exposed roof structure of wood

trusses and purlins all attest to the respectful study of appropriate historical sources. The rambling horizontal composition of this stuccoed concrete-block structure might almost resemble a grand hacienda, were it not for the entry tower and ceremonial fountain court that signal the library's civic role.

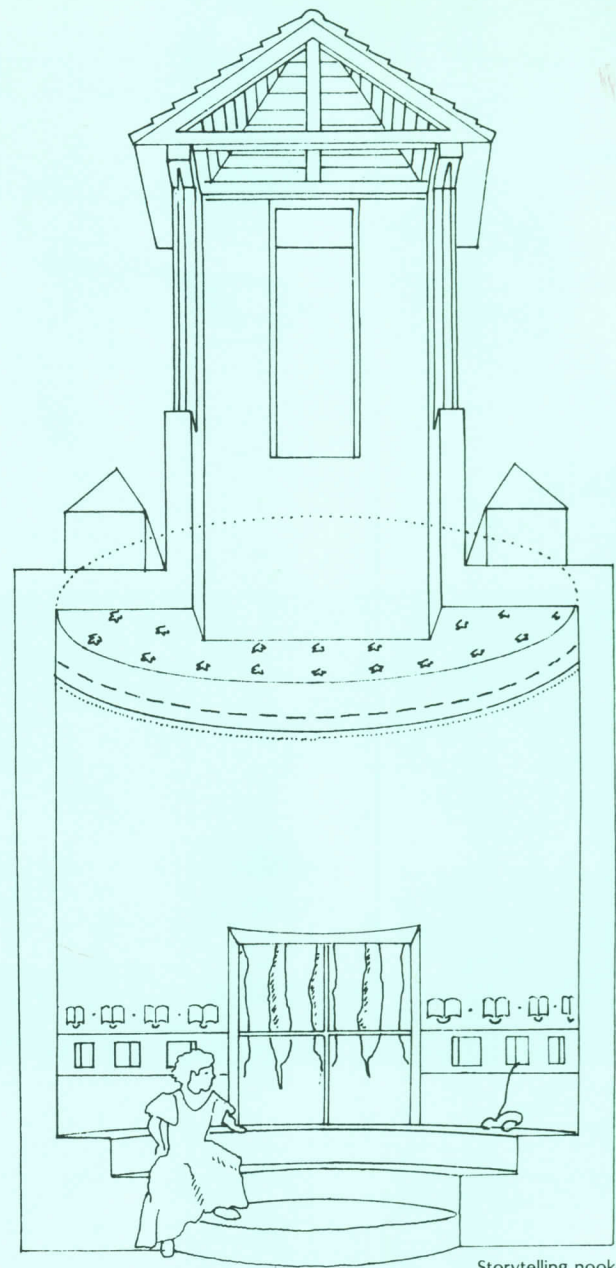
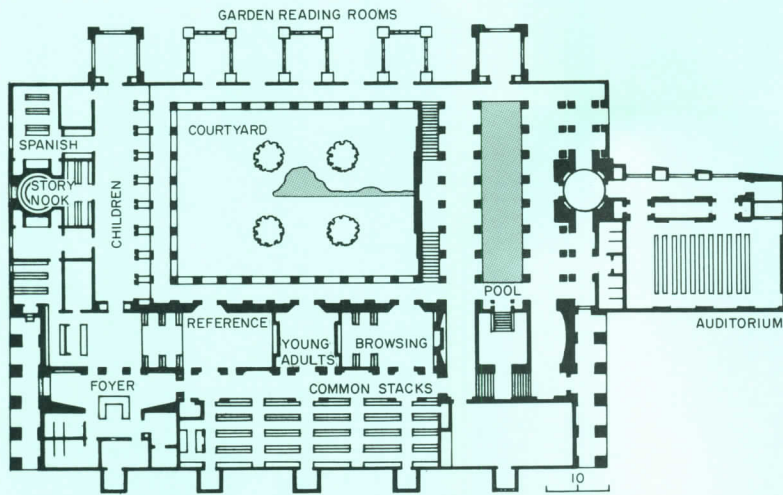
Interior spaces are disposed according to a roughly L-shaped layout: an open-plan reading room occupies the long stem, flanked symmetrically by carrels, study areas, book storage, and lounges. The entrance and staff areas are clustered at the base of the

L (lower left in the plan). An adult fiction area (bottom right in the plan) and children's room (upper left) both face into walled courtyards.

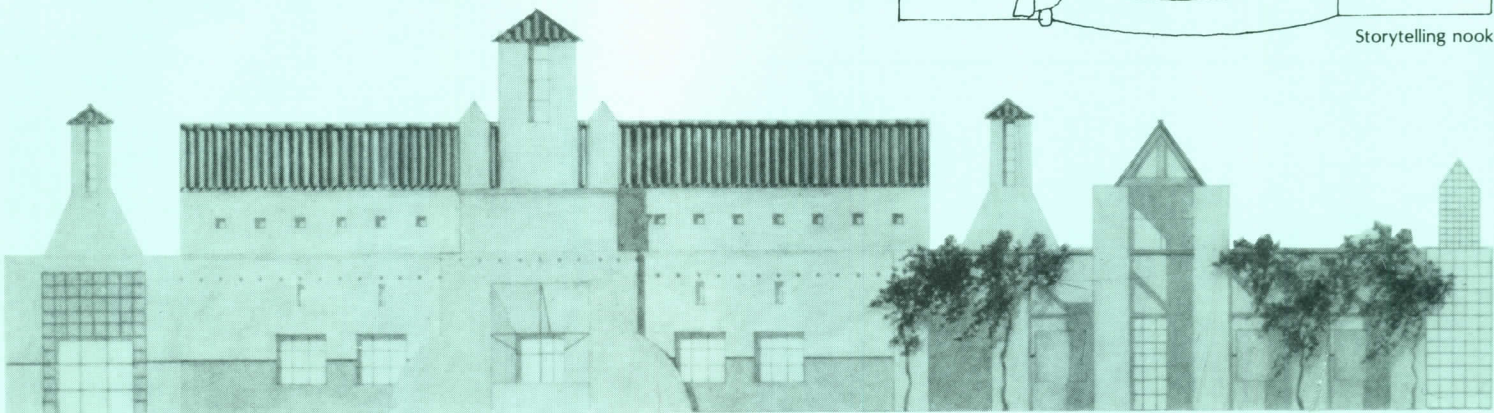
The jury was impressed by Stern's combination of clerestory daylighting and diffused illumination from uplights mounted behind bookcase cornices. The project's chief flaws, the panel concluded, are restricted visibility into stack areas from the main charge desk (just inside the entrance) and a loosely integrated exterior that lacks the emphatic visual focus required by a public building in so prominent a location.



Entry loggia



Storytelling nook



Entrance facade, elevation

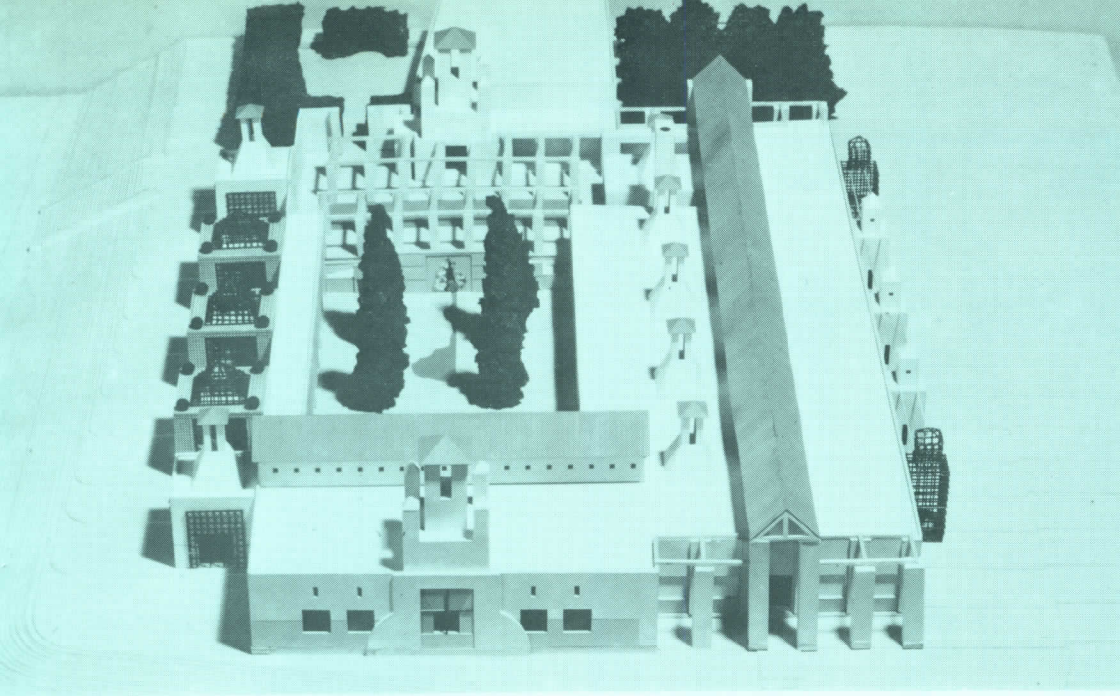
WINNING DESIGN MICHAEL GRAVES

Although Michael Graves employs the stucco walls and red clay roofs stipulated by Capistrano's official architectural guidelines, he largely eschews overt Mission Style detail in favor of the idiosyncratic blend of symbolism and classical monumentality that has become his hallmark. The plan and massing of his library are nonetheless rooted in Mediterranean and Latin American traditions that merged in Spanish Colonial architecture. Graves's research into the genealogy of these traditions is recorded in a series of "referential sketches" (detail, upper right).

Graves orients the entire complex around a central courtyard bounded by a community auditorium to the north, a children's wing to the south, an adult section to the east, and three latticed gazebos for open-air reading to the west. At the north side of the courtyard, a cascade from an elevated pool feeds a serpentine "stream" and a fountain surrounded by four cypresses. Besides circulating cool air into adjacent rooms, this water garden is the focus for a program of nature symbolism that pervades the building. Graves conceives the library as a learning center where

readers can appreciate metaphorical links between art and nature through architecture as well as through books.

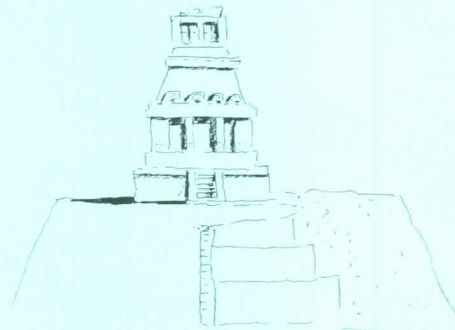
Sunlight is the archetypal element that Graves exploits to most dramatic visual effect, reflecting it into the interior through the shafts of rooftop "light monitors" derived from chimneylike cupolas used in old South American buildings. In the library, these skylights define circulation routes and special areas, such as the small rotunda used as a storytelling nook. A star motif painted on the ceiling of this room is one of a variety



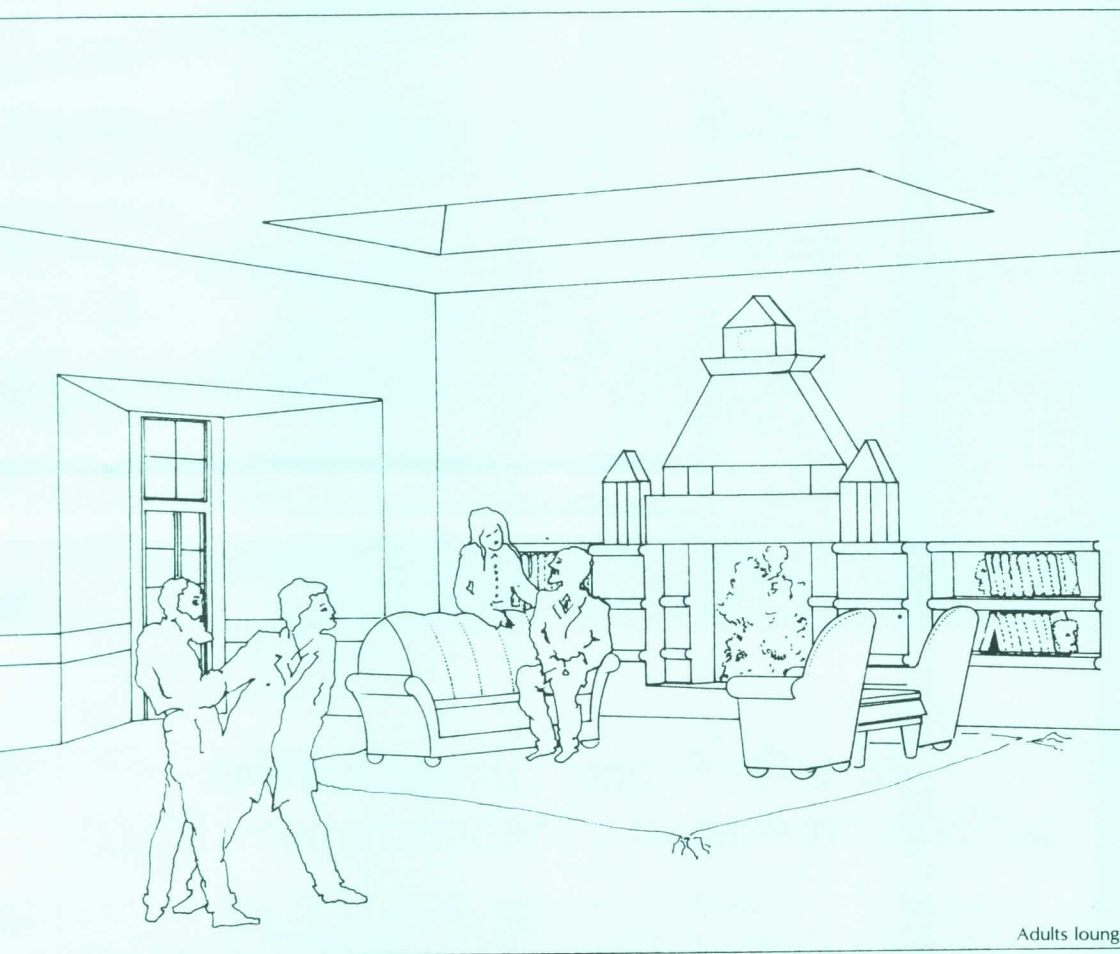
Aerial view (model)



Tikas



Referential sketches



Adults lounge

Calendar

National Interfaith Conference on Religion, Art and Architecture Awards Program for Excellence in Religious Architecture. All buildings must have been completed after January 1, 1976. The deadline for entry forms is March 26; submissions are due April 10. For further information contact Judith A. Miller, IFRAA National Interfaith Conference, 1777 Church Street, N.W., Washington, D.C. 20036 (202/387-8333).

EagleRidge Design Competition. A two-stage, open competition for a Colorado resort community has been organized by Caltenco Colorado, Inc., with the assistance of the AIA Research Corporation. Cash prizes of \$20,000 will be awarded to each of five finalists. Deadlines are April 28, for registration, and July 15, for first-stage entries. Information is available from Mike Meinhardt, Foster & Meier Architects, 3603 Lemmon Avenue, Dallas, Texas 75219. (See News In Brief, page 33.)

American Institute of Steel Construction Architectural Awards of Excellence. The deadline for submissions has been advanced from May 22 to May 8.

Historic Savannah Foundation Design Competition. All licensed architects are invited to participate in a competition to develop residential infill compatible with Savannah's Victorian District. A \$25 registration fee is required by the June 1 entry deadline. Contact Audrey Rhangos, Historic Savannah Foundation, Inc., P.O. Box 1733, Savannah, Georgia 31402 (912/233-7787).

of stencils (a common Spanish Colonial and Early American decorative technique) to be applied throughout the library.

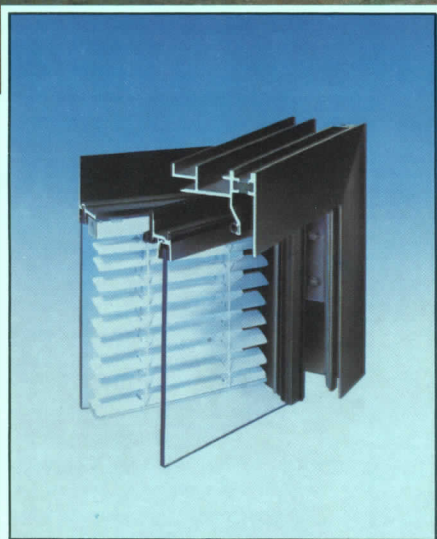
Despite Graves's copious allusions to traditional architecture, his avoidance of obvious historicism provoked lively controversy among the guardians of San Juan Capistrano's heritage. One of the two jurors who opposed acceptance of the Graves project called it "ugly and awkward" and asserted that it "would never have passed the city's new architectural guidelines if anyone else had brought it in." Critics also pointed out

that Graves had exceeded both the budget and the square footage specified in the competition program. Nevertheless, a majority of the jury (and the City Council, who accepted their recommendation this past January) stood convinced that, because of Graves's innovative approach to contextual design, his library would endure as a distinctly modern landmark worthy of its venerable surroundings. The chairman of the jury praised the winning project for expressing "the architectural essence of our community while maintaining its own identity."

hospitals



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Dodge/Sweet's Construction Outlook 1981: first update

Last year brought a new dimension to the cyclical behavior of the building markets. Typically, the housing cycle leads the turn of the cycle of commercial/industrial building by anywhere from six months to a year. That's the way it happened in 1974/75, in 1970, and many times before. Not so in 1980, however, when the traditional divergence of the two major building cycles was compressed into an across-the-board collapse by the force of double-digit inflation, credit volatility, and induced recession. It was no surprise that housing starts plummeted in the wake of 1980's first quarter interest rate run-up. What was unusual, however, was the speed with which economic events caught up with commercial/industrial building.

Ordinarily, this major segment of nonresidential building would not have reacted to 1980's spring recession until late in the year. Instead, commercial/industrial contracting fell by 25 per cent in the second quarter. Then—after only a quarter's hesitation—commercial and industrial work rebounded to a new high in the fourth quarter.

This atypical behavior of the nonresidential building market was not due to sudden changes of industry's needs for productive and distributive capacity. Rather, it was a demonstration of how monetary restraint can extend well beyond the housing market. This kind of stop-and-go behavior may replace the familiar building cycle—at least for as long as the Federal Reserve continues its experiments with monetarism.

1980's year-end surge: too good to be true

There can be little question that as the cost of credit was driven through the top of the chart early last year, many commercial/industrial building projects that had been planned for spring and summer starts were temporarily shelved. Then, once the rate structure broke and finally bottomed out in midsummer, most of these postponed projects became financially viable once again. With financing arranged during the summer and fall, construction starts bunched up in the final months of 1980, ending the year with a 30 per cent surge.

Because building activity in the final quarter of 1980 is the point of departure for 1981 contracting, it is especially important to see this unusual period in perspective. The closing months of last year not only found nonresidential building contracts soaring to an all-time high, but in addition, public works projects were rebounding from an earlier freeze on Federal funding, while housing was in a tenuous state of partial recovery from a disastrous spring and summer. The fourth quarter was easily the best quarter of the year, but its buoyancy was more a reaction to the immediate past than a promise of the future.

By December the prime rate was back to 20 per cent as the Federal Reserve again took off in pursuit of elusive money supply goals. A new Administration was sifting the remains of the fiscal year 1981 budget for the \$13 billion of "waste and fraud" it promised to eliminate. The economy's recovery from the 1980 recession was on the brink of reversal. These ominous parallels to the conditions of

1981 National Estimates of Dodge Construction Potentials

First Update February 1981

Construction Contract Value (millions of dollars)		1980 Actual	1981 Forecast	Percent Change
Nonresidential Buildings	Office Buildings	\$ 13,466	\$ 13,025	- 3
	Stores & Other Commercial	11,336	11,575	+ 2
	Manufacturing Buildings	8,239	7,900	- 4
	Total Commercial & Manufacturing	\$ 33,041	\$ 32,500	- 2
	Educational	\$ 6,766	\$ 7,500	+11
	Hospital & Health	5,396	5,825	+ 8
	Other Nonresidential Buildings	7,142	7,300	+ 2
	Total Institutional & Other	\$ 19,304	\$ 20,625	+ 7
	Total Nonresidential Buildings	\$ 52,345	\$ 53,125	+ 1
	Residential Buildings	One-Family Houses	\$ 41,474	\$ 51,300
Multi-Family Housing		18,519	21,700	+17
Total Housekeeping		\$ 59,993	\$ 73,000	+22
Total Nonhousekeeping		\$ 3,213	\$ 3,000	- 7
Total Residential Buildings		\$ 63,206	\$ 76,000	+20
Nonbuilding Construction	Highways & Bridges	\$ 12,282	\$ 12,000	- 2
	Utilities	4,584	8,000	+75
	Sewer & Water	7,591	8,200	+ 8
	Other Nonbuilding Construction	7,156	7,200	+ 1
	Total Nonbuilding Construction	\$ 31,613	\$ 35,400	+12
Total Construction Dodge Index (1972 = 100)	\$147,164	\$164,525	+12	
	162	181		
Floor Area of New Buildings (millions of square feet)				
Nonresidential Buildings	Office Buildings	244	215	-12
	Stores & Other Commercial	441	400	- 9
	Manufacturing Buildings	213	190	-11
	Total Commercial & Manufacturing	898	805	-10
	Educational	95	97	+ 2
	Hospital & Health	56	55	- 2
	Other Nonresidential Buildings	146	141	- 3
	Total Institutional & Other	297	293	- 1
	Total Nonresidential Buildings	1,195	1,098	- 8
	Residential Buildings	One-Family Houses	1,284	1,440
Multi-Family Housing		545	585	+ 7
Total Housekeeping		1,829	2,025	+11
Total Nonhousekeeping		57	50	-12
Total Residential Buildings		1,886	2,075	+10
Total Buildings	3,081	3,173	+ 3	
Number of Dwelling Units (thousands of units—F. W. Dodge basis)				
	One-Family Houses	809	900	+11
	Multi-Family Housing	519	550	+ 6
	Total Dwelling Units	1,328	1,450	+ 9

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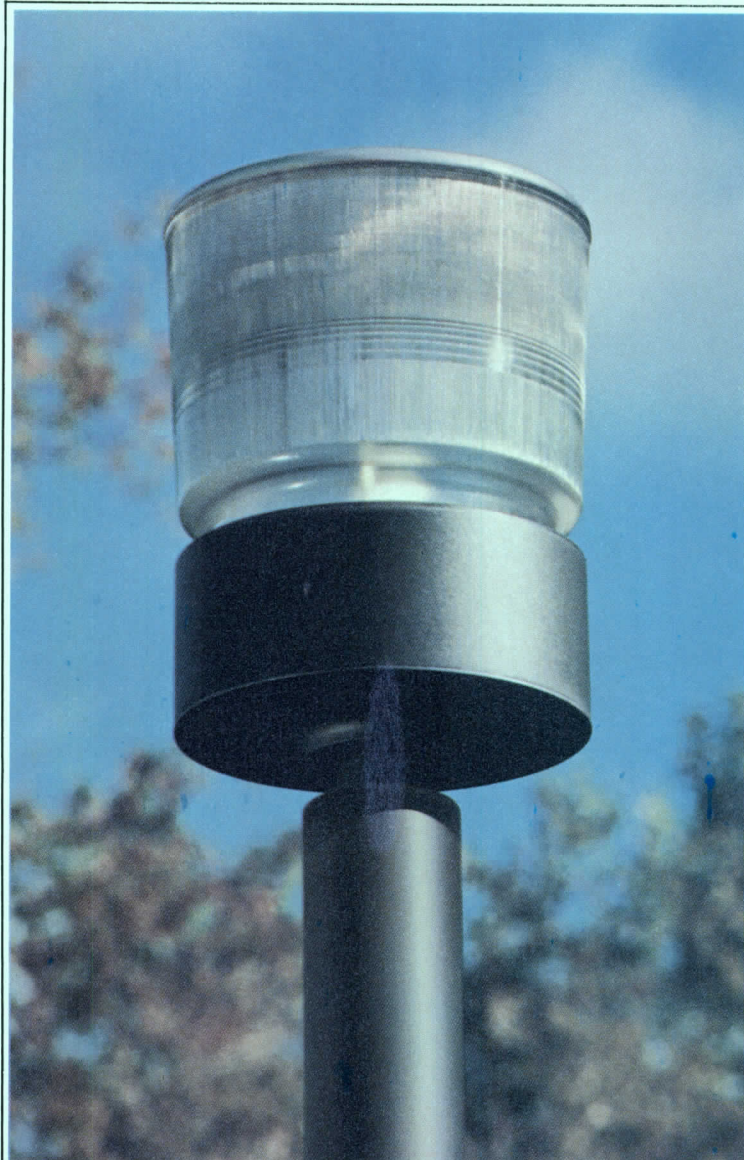
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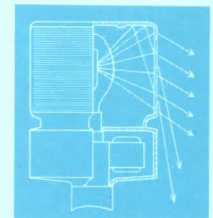
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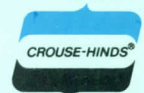
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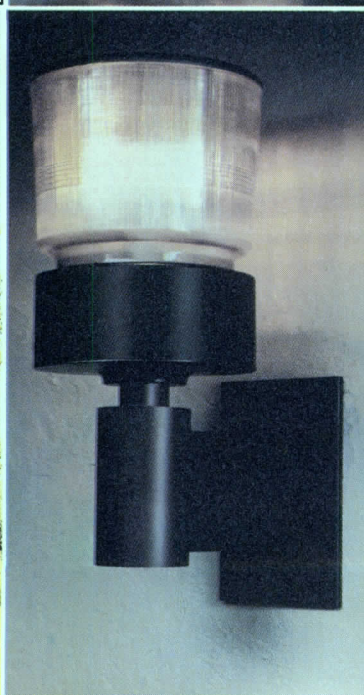
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early 1980 were in sharp contrast to the booming fourth-quarter rate of construction contracting. It was at this point that we put a moratorium on the guardedly optimistic 1981 *Outlook* issued in November.

Lowered expectations for 1981

Some generalities can now be made about the expected short-run behavior of construction markets:

- In contrast to the sustained cyclical recovery that followed the 1975 recession, expansion in the early 1980s will be erratic owing to monetary and fiscal policy conflicts.
- As an outgrowth of the strong rate of contracting for new projects during 1980's final quarter, expenditures for ongoing construction work (building materials and labor) will be relatively well supported through the first half of 1981. But . . .
- Because of the run-up of interest rates in the closing months of 1980, there is a serious downside risk for contracting of new projects at least through the first quarter of 1981. A setback of contracting during 1981's first half

would mean slackening expenditures for work in progress during the second half.

- The outlook for 1981 as a whole is less favorable now than it was six months ago—by as much as \$10 billion (contract value). However, the year's expected \$164.5 billion total of new construction will still exceed 1980's depressed amount by 12 per cent.

More specifically, this first update of the *Dodge/Sweet's Construction Outlook for 1981* anticipates the following outcome:

Nonresidential building: a second-half recovery?

The bunching of 1980 contracting late in the year, and the consensus forecast of high interest rates and near-recession conditions for the economy during 1981's first quarter are compelling reasons for expecting a reversal of the recently strong rate of contracting for commercial and industrial buildings.

A second-half nonresidential building recovery is highly probable, but several things must happen before it can take place. First,

interest rates, which have only begun to retreat, must settle back enough to restore the expansion of homebuilding. After that, residential building must exert its influence on store and warehouse construction.

Contracting for office buildings, coming off its extraordinary 1980 boom (244 million square feet—the all-time high), is expected to proceed at a slower pace in 1981. Manufacturing building, however, should be showing second-half improvement as the new Administration's program for reindustrialization gets under way.

The Outlook

Nonresidential Building Contract Value

Seasonally adjusted annual rates, \$ in billions

Year/Quarter	Total	Commercial and Industrial		Institutional and Other
1980	I	\$54.0	\$35.1	\$18.9
	II	47.0	27.9	19.1
	III	47.8	28.3	19.5
	IV	60.5	40.8	19.7
1981	I	53.6	33.7	19.9
	II	50.8	30.5	20.3
	III	52.7	31.8	20.9
	IV	55.3	34.0	21.3

1981 Regional Estimates of Dodge Construction Potentials

First Update February 1981

Construction Contract Value (millions of dollars)	Northeast Conn., D.C., Del., Mass., Md., Maine, N.H., N.J., N.Y., Eastern Pa., R.I., Va., Vt.			Midwest Northern Ill., Ind., Iowa, Ky., Mich., Minn., N. Dak., Ohio, Western Pa., S. Dak., Wis., W. Va.		
	1980 Actual*	1981 Forecast	Percent Change	1980 Actual*	1981 Forecast	Percent Change
Nonresidential Buildings						
Commercial & Manufacturing	\$ 5,634	\$ 5,725	+ 2	\$ 7,045	\$ 6,825	- 3
Institutional & Other	3,993	4,150	+ 4	4,658	4,775	+ 3
Total	\$ 9,627	\$ 9,875	+ 3	\$11,703	\$11,600	- 1
Residential Buildings						
One-Family Houses	\$ 5,752	\$ 6,875	+20	\$ 6,897	\$ 8,675	+26
Multi-Family Housing	3,124	3,825	+22	3,059	3,500	+14
Nonhousekeeping	517	600	+16	443	350	-21
Total	\$ 9,393	\$11,300	+20	\$10,399	\$12,525	+20
Nonbuilding Construction						
Highways & Bridges	\$ 2,712	\$ 2,350	-13	\$ 2,893	\$ 3,125	+ 8
Utilities	281	950	++	490	2,075	++
Other Nonbuilding Construction	3,726	3,875	+ 4	3,054	3,225	+ 6
Total	\$ 6,719	\$ 7,175	+ 7	\$ 6,437	\$ 8,425	+31
Total Construction	\$25,739	\$28,350	+10	\$28,539	\$32,550	+14

* Totals may not equal sum of components, due to independent rounding.
++ = Over 100% increase.

Construction Contract Value (millions of dollars)	South Ala., Ark., Fla., Ga., Southern Ill., Kans., La., Miss., Mo., N.C., Nebr., Okla., S.C., Tenn., Tex.			West Alaska, Ariz., Calif., Colo., Hawaii, Idaho, Mont., Nev., N. Mex., Ore., Utah, Wash., Wyo.		
	1980 Actual*	1981 Forecast	Percent Change	1980 Actual*	1981 Forecast	Percent Change
Nonresidential Buildings						
Commercial & Manufacturing	\$11,759	\$11,250	- 4	\$ 8,603	\$ 8,700	+ 1
Institutional & Other	6,512	7,025	+ 8	4,141	4,675	+13
Total	\$18,271	\$18,275	-	\$12,744	\$13,375	+ 5
Residential Buildings						
One-Family Houses	\$17,854	\$21,925	+23	\$10,971	\$13,825	+26
Multi-Family Housing	7,010	7,800	+11	5,326	6,575	+23
Nonhousekeeping	1,276	1,100	-14	977	950	- 3
Total	\$26,140	\$30,825	+18	\$17,274	\$21,350	+24
Nonbuilding Construction						
Highways & Bridges	\$ 4,431	\$ 4,350	- 2	\$ 2,246	\$ 2,175	- 3
Utilities	2,237	3,050	+36	1,576	1,925	+22
Other Nonbuilding Construction	4,899	5,075	+ 4	3,068	3,225	+ 5
Total	\$11,567	\$12,475	+ 8	\$ 6,890	\$ 7,325	+ 6
Total Construction	\$55,978	\$61,575	+10	\$36,908	\$42,050	+14

* Totals may not equal sum of components, due to independent rounding.
++ = Over 100% increase.

Residential building: a dim forecast

Although the latest surge of interest rates has finally peaked (December/January), there is little opportunity for a return to mid-1980 rates in the months ahead (or any time in 1981, for that matter). The inflationary potentials of oil/gasoline decontrol and the first stage of Kemp-Roth tax reduction provide more than enough incentives for the Federal Reserve to exert a greater degree of monetary restraint during the generally slack first half of 1981 than it did during the comparable months of 1980.

It is largely because of the generally higher level of interest rates that will prevail throughout 1981 that our housing forecast has been adjusted downward from last November's 1.650 million units to only 1.450 million—barely a 10 per cent improvement from the 1980 cyclical low of 1.328 million (F. W. Dodge basis). By contrast, the first recovery year of the last housing cycle (1976) brought a 30 per cent advance.

On a quarterly basis, 1981's housing starts (seasonally adjusted, at annual rates) are now estimated at 1.275—1.350—1.525—1.650 million dwelling units.

The Outlook

Residential Building Contract Value

Seasonally adjusted annual rates, \$ in billions

Year/Quarter	Total	One-Family		Multi-Family*
1980	I	\$62.3	\$39.6	\$22.7
	II	46.5	30.0	16.5
	III	65.6	46.5	19.1
	IV	78.4	49.9	28.5
1981	I	64.2	38.8	25.4
	II	70.0	47.6	22.4
	III	80.0	55.8	24.2
	IV	89.8	63.0	26.8

* Includes Nonhousekeeping Residential

Prepared February 1980 by the Economics Department, McGraw-Hill Information Systems Company; George A. Christie, vice president and chief economist.

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Materials prices reflect the climbing cost of energy

In the 20 American cities surveyed by McGraw-Hill Cost Information Systems for the period March 1980 to March 1981, the following percentage changes in materials costs have occurred.

Softwoods ranged from a minus 27 per cent low for Boston, St. Louis, and Minneapolis, to a high of plus 19 per cent in San Francisco. Ply-form showed a 31 per cent drop in Baltimore and a high of plus 12 per

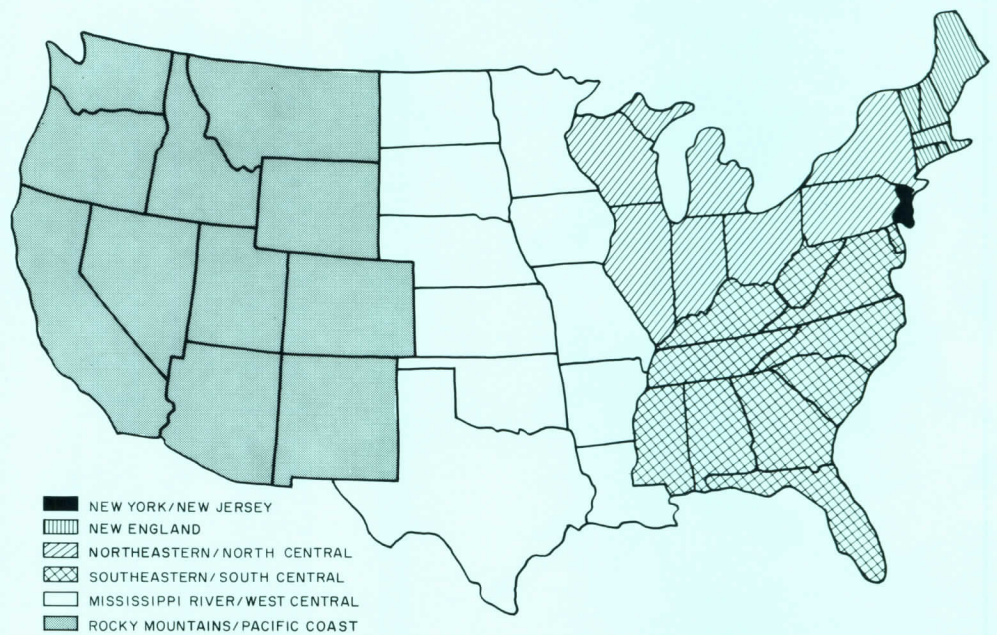
cent in San Francisco. The cost spread for structural steel was somewhat narrower, with a 12 per cent decline in Chicago and an eight per cent gain in Philadelphia and Pittsburgh. Ready mix fell 13 per cent in St. Louis but rose to a high of 21 per cent in Minneapolis.

Generally, materials prices increased 10 to 12 per cent for the entire year. Rising transportation and energy costs are once again the principal high-pressure factors

affecting this over-all cost picture. Labor rates showed the biggest gains in the Southwest and on the West Coast, varying from nine to 10 per cent.

McGraw-Hill Cost Information Systems studies are conducted semi-annually by mail and telephone, and involve contacts with building products distributors, construction labor consultants, and both general and specialty contractors in each city.

Districts	Number of metro areas	9/80 to 3/81 %	3/80 to 3/81 %
Eastern U.S.			
Metro NY-NJ	16	4.9	6.0
New England States	21	3.0	5.5
Northeastern and North Central States	46	4.1	6.0
Southeastern and South Central States	39	5.8	4.5
Average Eastern U.S.	122	4.45	5.50
Western U.S.			
Mississippi River and West Central States	35	5.2	5.0
Pacific Coast and Rocky Mountain States	25	4.0	5.7
Average Western U.S.	60	4.60	5.35
United States: Average	182	4.53	5.43



HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

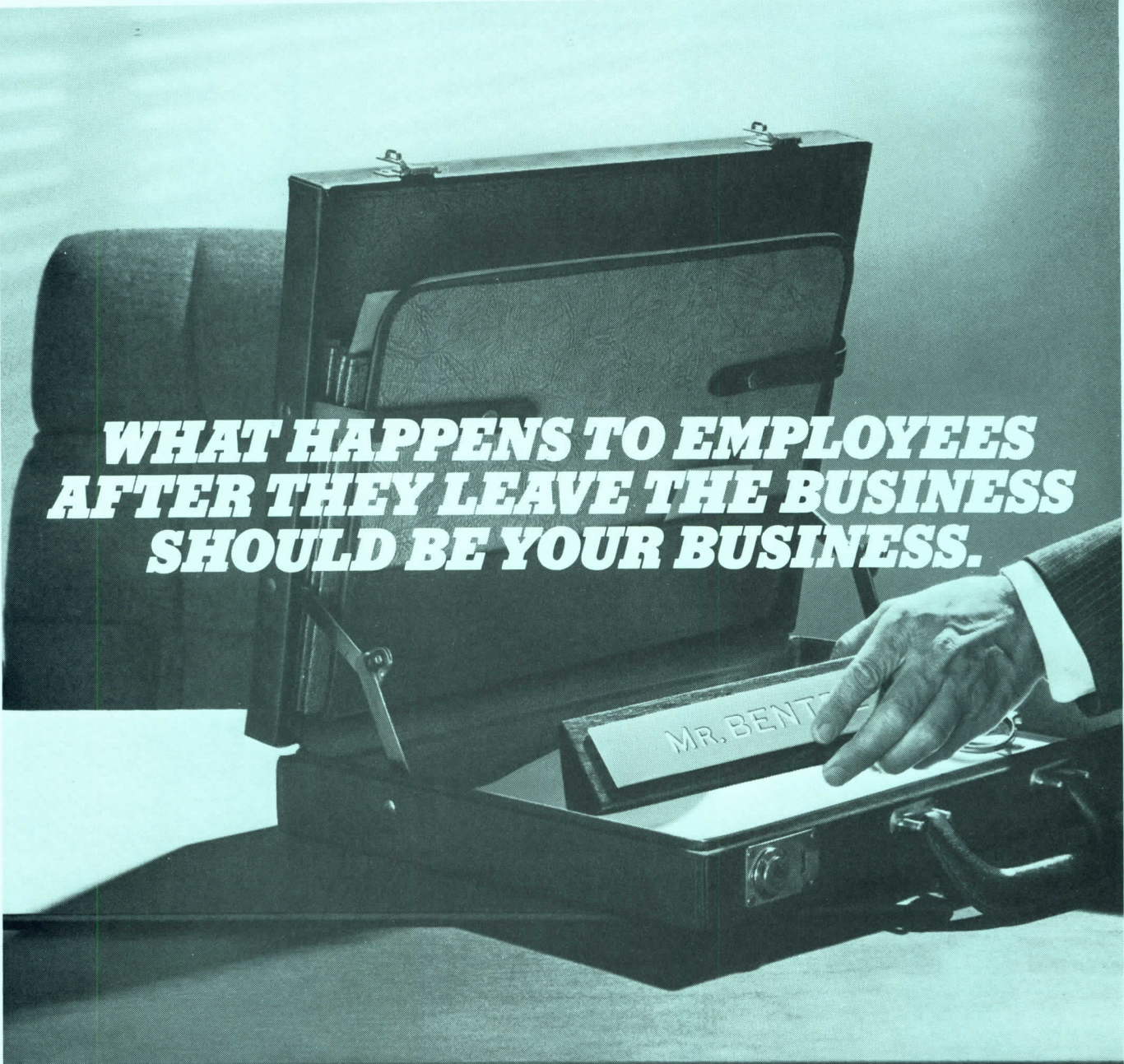
Metropolitan area	1970	1971	1972	1973	1974	1975	1976	1977	1978	1st	2nd	1979 3rd	4th	1st	2nd	1980 3rd	4th
Atlanta	422.4	459.2	497.7	544.8	575.0	598.7	657.1	714.2	755.8	819.6	836.0	872.1	904.3	875.6	901.9	935.1	964.3
Baltimore	348.8	381.7	420.4	475.5	534.3	581.1	585.0	635.6	662.2	729.6	744.2	773.6	802.2	779.0	802.4	817.2	825.3
Birmingham	309.3	331.6	358.3	402.1	421.2	448.9	551.9	585.4	609.2	704.1	718.2	724.5	751.3	736.8	758.9	757.4	764.9
Boston	328.6	362.0	394.4	437.8	462.5	513.2	555.9	587.7	759.5	691.9	705.7	718.9	745.4	736.2	758.3	752.4	759.9
Chicago	386.1	418.8	444.3	508.6	529.6	560.1	635.2	689.9	717.3	805.4	821.5	885.9	918.7	889.4	916.1	944.5	953.9
Cincinnati	348.5	386.1	410.7	462.4	500.1	550.6	609.8	656.6	669.5	750.7	765.7	810.0	840.0	823.0	847.7	868.3	876.9
Cleveland	380.1	415.6	429.3	462.2	509.5	531.0	632.9	625.2	653.5	794.7	810.6	853.6	885.1	881.8	908.3	920.6	929.8
Dallas	327.1	357.9	386.6	436.4	477.9	499.6	538.5	615.2	637.6	739.0	753.8	873.0	905.3	787.7	811.3	827.1	835.3
Denver	368.1	392.9	415.4	461.0	510.0	553.6	616.0	703.8	730.5	803.2	819.3	847.4	878.8	905.9	933.1	927.6	936.8
Detroit	377.4	409.7	433.1	501.0	538.7	597.5	617.2	664.2	756.6	840.6	857.4	865.5	897.6	860.5	886.3	911.3	920.4
Kansas City	315.3	344.7	367.0	405.8	444.9	509.1	547.3	603.0	631.8	657.7	670.8	711.0	737.3	735.2	757.3	771.2	789.9
Los Angeles	361.9	400.9	424.5	504.2	531.8	594.1	673.1	756.8	784.2	886.3	904.0	955.4	990.8	978.3	1007.6	1022.3	1032.5
Miami	353.2	384.7	406.4	447.2	485.5	558.9	592.5	628.4	649.0	686.1	699.8	736.9	764.1	742.8	765.1	777.0	784.7
Minneapolis	361.1	417.1	412.9	456.1	488.6	538.0	564.1	629.4	651.3	793.4	809.3	824.3	854.8	827.6	852.4	848.3	856.7
New Orleans	318.9	341.8	369.7	420.5	442.1	494.7	534.8	614.7	637.0	697.7	711.6	734.7	761.9	753.8	776.4	785.5	793.3
New York	366.0	395.6	423.1	485.3	515.3	533.5	580.8	619.8	646.3	666.6	679.9	778.9	807.8	793.7	817.5	815.1	831.4
Philadelphia	346.5	374.9	419.5	485.1	518.5	567.5	579.2	658.8	680.0	778.0	793.5	814.6	844.8	830.9	855.8	849.2	857.6
Pittsburgh	327.2	362.1	380.3	424.4	465.6	509.5	526.3	589.6	614.0	692.2	706.0	736.5	763.8	746.1	768.5	773.0	788.4
St. Louis	344.4	375.5	402.5	444.2	476.7	528.9	537.1	617.1	637.4	752.0	767.0	782.8	811.8	786.7	810.3	820.5	836.9
San Francisco	465.1	512.3	561.0	632.3	672.5	753.3	820.8	963.2	990.0	1239.0	1263.8	1200.3	1244.8	1202.7	1238.8	1260.4	1285.6
Seattle	341.8	358.4	371.5	424.4	450.2	515.1	570.5	629.6	669.0	700.7	714.7	761.0	789.1	763.3	786.2	807.6	823.7

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 ÷ 200.0 = 75%) or they are 25% lower in the second period.

Figures for the Historical Building Cost Indexes and Summary of Building Costs for the fourth quarter are projections made by McGraw-Hill Cost Information Systems, based on the analysis of key economic factors over the past six to nine months.



Bullock's, San Jose, California—the world's first department store under a permanent Owens-Corning Fiberglas fabric structure. Environmental Planning and Research, Inc., architects and planners. Geiger-Berger Associates, structural engineers.



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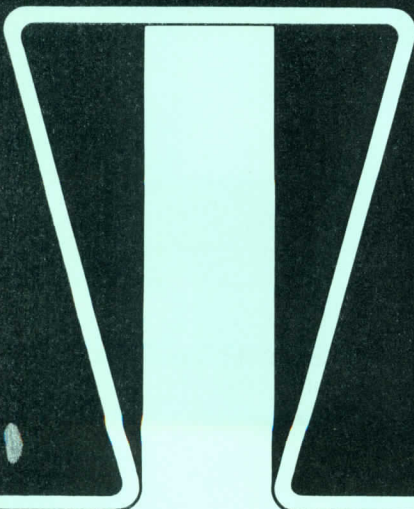
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OFFICE NOTES

Firm changes

Adams and Goodson, Architects Engineers Planners, Inc. announce the promotions of Alisa Moore Hake and David Moffatt to associates in the firm.

Backen Arrigoni & Ross, Inc. announce that Richard Graham, Guy Chambers and Alan Tokugawa have become senior vice presidents and Tom Goodwin and Paul Fisher have become vice presidents in the firm.

Booker Associates, Inc. Engineers, Architects and Planners announce that Mary Jo Rieth, Steven Heilman and Jerry Carter have joined the firm.

J. Thomas Clark has joined the architectural firm of Broome, Oringdulph, O'Toole, Rudolf & Associates as a senior designer and energy conservation specialist.

Dalton, van Dijk, Johnson & Partners announce the appointment of two new associates; Susan Plachy and George Maston.

Daniel, Mann, Johnson & Mendenhall (DMJM) announce Anna Clark as associate vice-president.

Gordon Gong, AIA has been named a partner in the architectural firm of Froehlich & Kow.

James Gilbertson Associates Architecture-Planning announce the promotion of Mary F. Fizzell, CSI to associate.

Allen M. Shapiro has recently joined Hellmuth, Obata & Kassabaum as vice president and director of the transportation facility design and engineering group.

Loeffler/Johnson and Associates announce that the firm name will be changed to Johnson/Schmidt and Associates.

LPA Architecture and Planning announce that Thomas S. De Kleer, Lori Mc Calley, Brian Sandberg and Mary Redwitz have been named associates in the firm.

Joseph R. Loring & Associates, Inc. consulting engineers announce Richard J. Feiner and George A. Florek as associates in the firm.

Jan R. Kirk has been appointed chairman of the board and chief executive officer of McClellan Cruz Gaylor and Associates.

Fred W. Tooley, AIA was named a senior associate and Daniel L. Boggio, AIA was named an associate in the firm of McKittrick Richardson Wallace Architects Incorporated.

Meyer, Strong & Jones announce the appointment of Robert C. Schnarr as senior associate and Richard A. Rao as associate.

Pearce Corporation an architectural firm, announces Thomas A. Tyler as director of architectural interiors.

Perez Associates announce that C. H. Palm has become an associate.

Rose, Beaton & Rose, Architects and Engineers announce the appointment of William H. Switzer, AIA as senior associate and director of marketing.

New addresses

Shannon P. Kennedy, Architect has relocated to Suite 305, Riderwood Building, 1107 Kenilworth Drive, Towson, Maryland.

Lyons & Hudson Architects have moved to 810 Union Street, New Orleans, Louisiana.

Gene D. Smith, AIA has relocated to larger offices located at 11973 San Vicente Boulevard, Los Angeles, California.

continued on page 188

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OUTSULATION

**Cost-effective
answer for a
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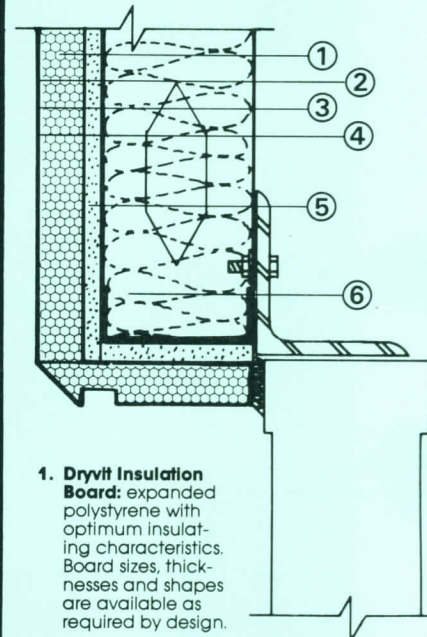
The California Farm Bureau Headquarters (facing page) employed the Dryvit System on exposed exterior walls.

The System was field applied on exterior grade gyp. sheathing attached to steel studs.

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Rick Alexander photos

MARCEL BREUER AND HAMILTON SMITH'S LIBRARY FOR ATLANTA: A STRONG NEW URBAN PRESENCE

These architects' mastery of precast concrete form gives this major new library the same image of importance, strength and monumentality created in older libraries by grand stairs, massive columns, and big porticos. The building has also proven to be efficient and easily adaptable to the ever-changing concepts of what a library is about and how it should work, even though—as with many buildings requiring public financing—the essentials of the design were set ten years ago.

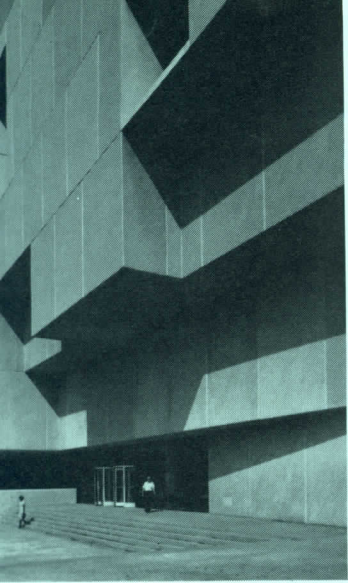
Atlanta's new Central Library by Marcel Breuer and Hamilton Smith—with Stevens and Wilkinson as associated architects—has been a long time in development. The preliminary design and planning was done over ten years ago—as the vehicle for an arduous campaign to gain public support for a bond issue and to encourage voluntary support of the library and its services. The program from the start was a complex one—for this is a central library providing all kinds of support for a network of branch libraries, is intended as an active municipal center inviting local meetings and receptions, and is designed for the kind of “supermarket appeal” to broad segments of the public that now marks all good library design—a far cry from the hushed, scholarly atmosphere that not long ago was the rule in library design. Clearly, the architects exhibited crystal-ball vision when they did the preliminary design ten years ago—for the new library efficiently accommodates library functions that were not envisioned or programmed when the

preliminary design was done, and is in fact an excellent model of the modern urban library.

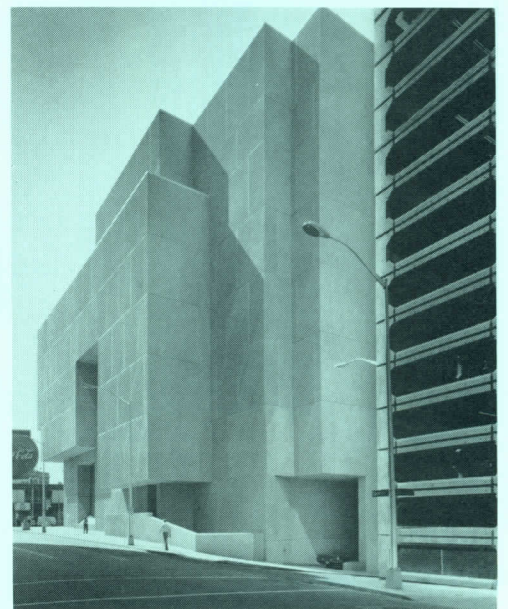
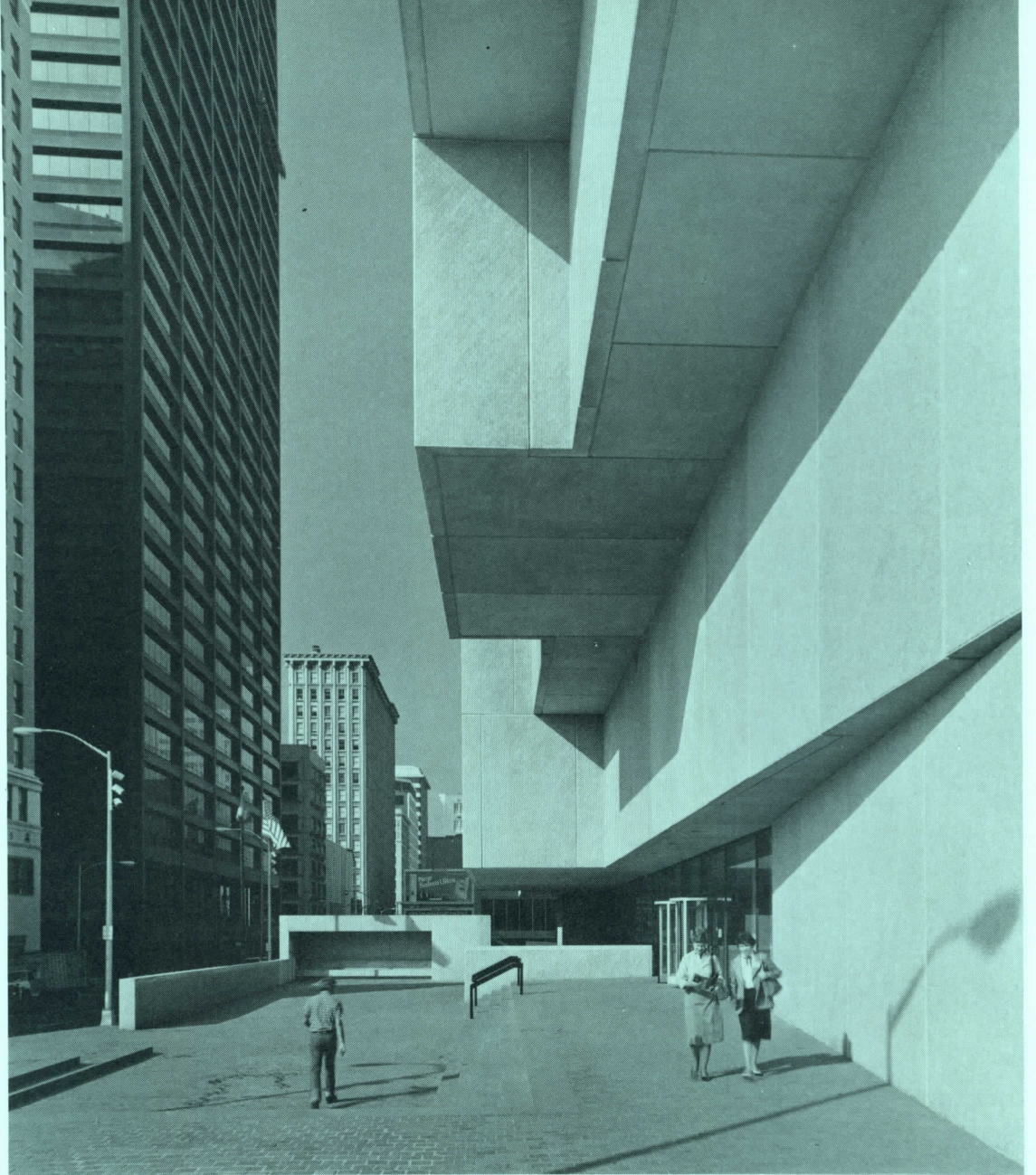
In form and finish, the new library is arguably a most appropriate image for a downtown library. It is, of course, in the Breuer firm's familiar idiom—precast concrete, sculptural, tough but elegantly tough. Hamilton Smith sees the design as having all of the qualities of presence and permanence that marked important libraries of the past—but in contemporary terms. Smith acknowledges, indeed enjoys, comparisons of this building to New York's Whitney Museum, for which he had a major responsibility, but points out that because this building occupies a full city block (whereas the Whitney has a corner location) the sculptural and monumental concepts of the design are here more fully realized. And he argues persuasively that the image is a desirable contrast with the shiny new skyscrapers that have marked much of Atlanta's recent growth.

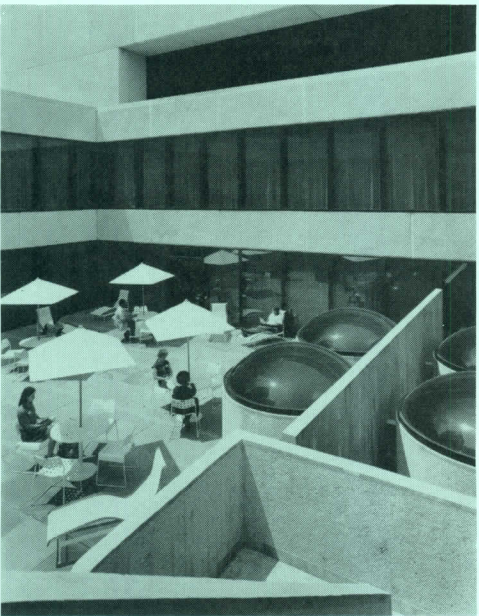
In plan, the building strongly supports the current theory of





The diagonally striated, precast concrete panels span the full 15-foot height of each floor without the need of a heavy masonry backup on which to hang smaller units. They could also be cast in L-shaped sections, that give the appearance of great thickness at the building's corners. The corner sections were cast in two pours, so that the forms could be turned in order to keep the ribbed finished surface on the bottom and the concrete flowing into its recesses. When the forms were removed, the ribs were hammered to produce an irregular, stone-like texture.

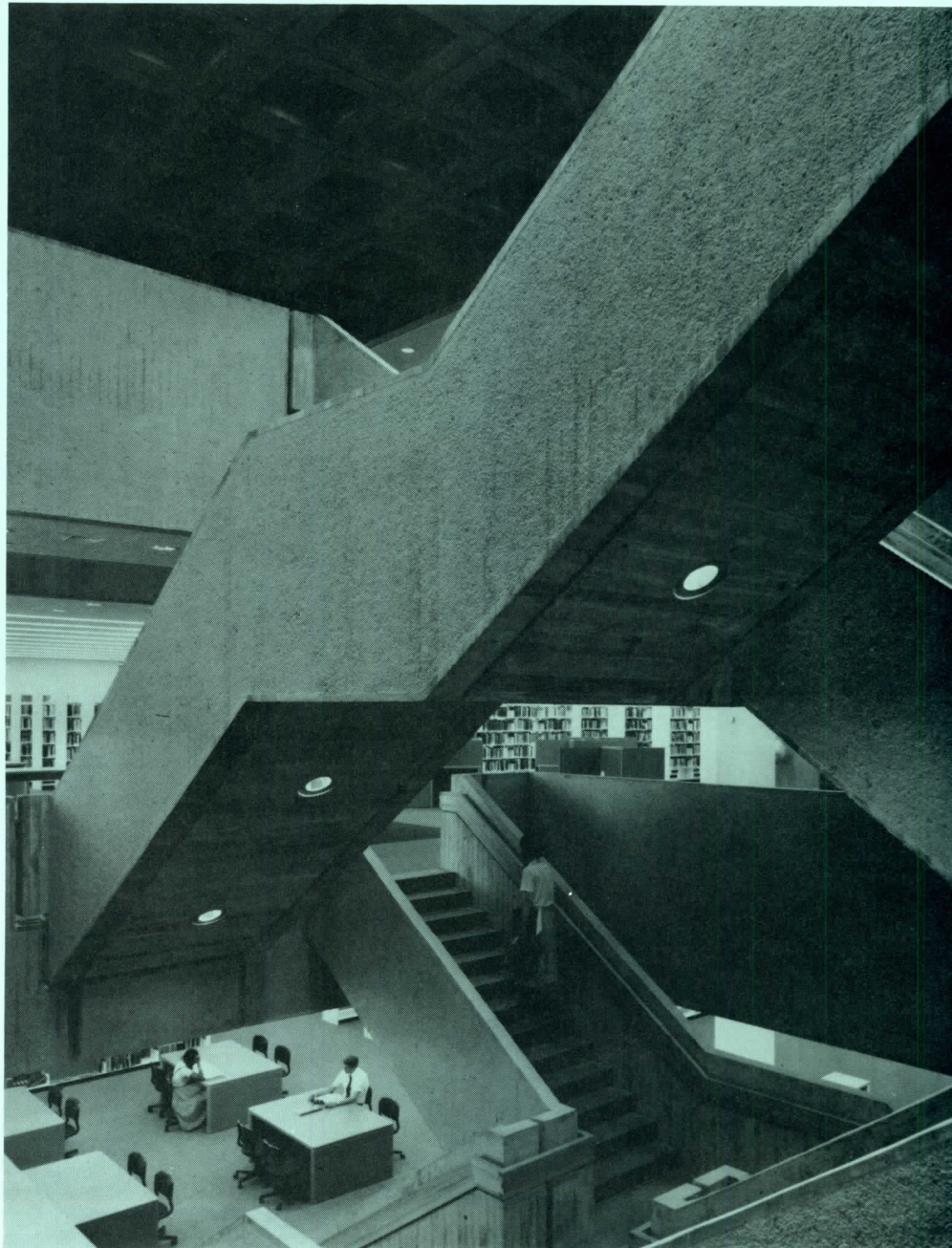




Because of the steep slope of the site, two floors were accessible from the surrounding streets. Accordingly, the architects could accommodate all of the functions requiring such access, and still "give away" part of the main entry level to a plaza. A large number of public activities occur outside of normal library hours in the lower level auditorium, (middle photo above) meeting rooms and cafeteria. A separation of the children's entry and library (top photo above) from the main entry level was also desirable.

library design: that the services should be "sold" to the public with supermarket effectiveness. From the start, the architects welcomed the busy downtown site, and took happy advantage of the slope of the site, which permitted two walk-in levels. The lowest level ("ground floor" in drawings below) has a drive-in circulation desk, a children's theater, an auditorium, various meeting rooms, and cafeteria; the "main floor" has a broad lobby, the main circulation desk, the computerized card catalog and the large reading room stocked with popular books and periodicals. On the main level, there is an entry plaza/amphitheater, which adds drama to the main entrance (but nonetheless offers a level path for the handicapped—a kind of "non-special" accessibility offered throughout the building). Both of these floors are separately accessible for special events outside the library's normal hours.

Above the main level, and accessible by elevator or by the grand stair shown below, are three floors of reading rooms and

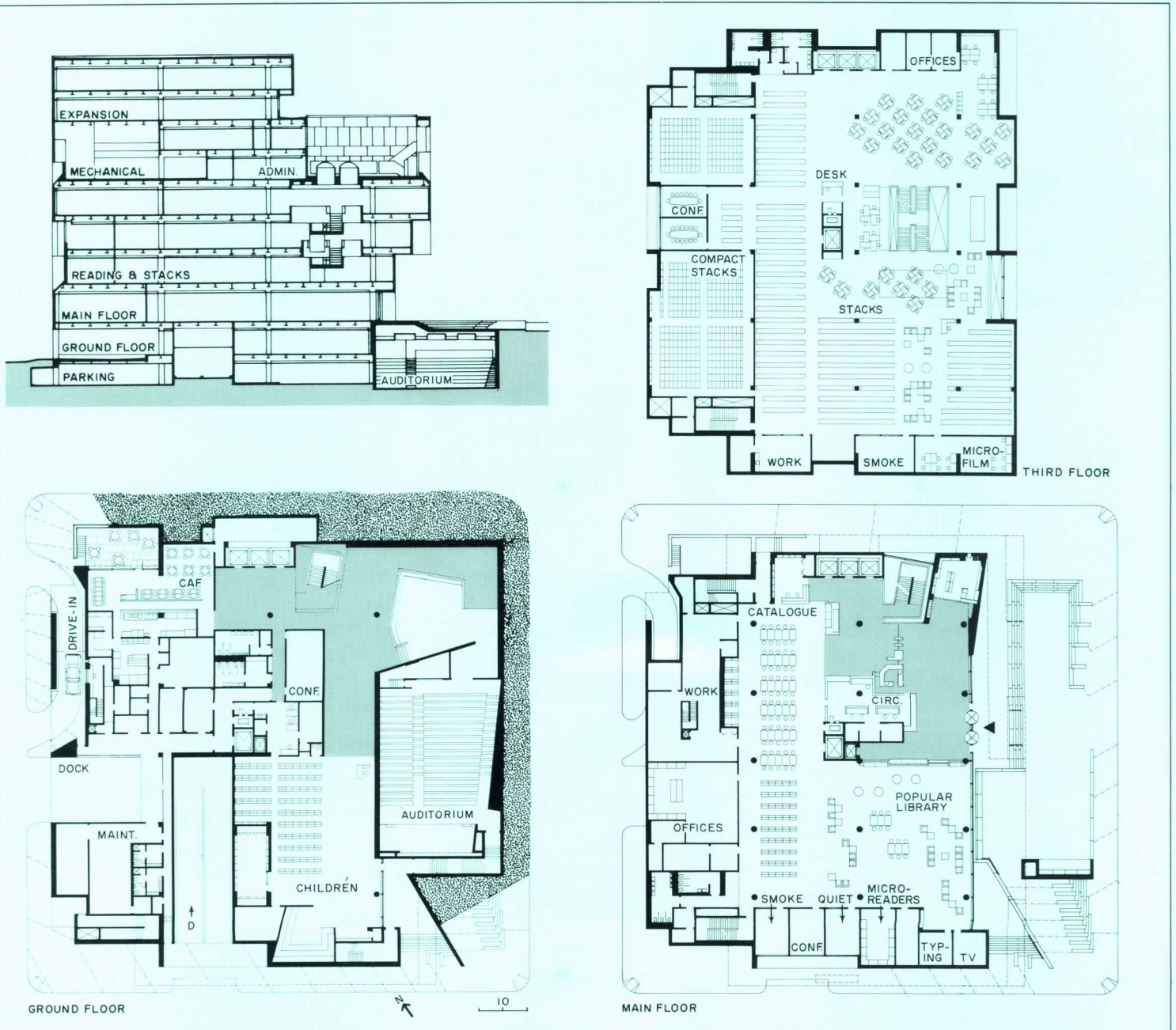


stacks. These floors have both low open shelves, which are visually controllable from one main desk on each floor; and automated closed stacks which compress less-read books into a fraction of the normal space. On these floors are many smaller rooms for audio-visual equipment, private study, and other special needs. The fifth and sixth floors provide spaces for administration, computers, and extensive storage—since this Central Library services 26 branches of the Atlanta library system. Many of the offices are grouped around a terrace (see section) so that the small-scale office windows will not disturb the massing of the building exterior.

Library director Ella Yates is enthusiastic about the functioning of the building. The meeting rooms are in demand by many groups—including the local AIA chapter. Public functions in the main spaces have accommodated up to 5000 guests. Ms. Yates points out that the extensive computerized catalog system and other services to the branches were not envisioned when the library was in preliminary

design—but that today information is fed to the branches by computer cable and special telephone lines; a public television station is being set up along with a closed-circuit service to the branches; and new equipment is installed to “read” books to the blind. Despite the time lapse and the unanticipated new facilities, the initial construction bids were under the budget, and the two top floors could be added for future expansion.

ATLANTA CENTRAL LIBRARY, Atlanta, Georgia. Owner: *City of Atlanta; Bureau of Libraries*. Architects: *Marcel Breuer and Hamilton Smith—associates; Carl Stein and Frank Richlan*. Associated architects and engineers: *Stevens and Wilkinson*. Consultants: *Peter George Associates Inc.* (acoustics); *Donald Bliss* (lighting); *Dean Carlton Rochell* (library programming). Movable furnishings designers: *Hellmuth, Obata & Kassabaum/Jenkins-Fleming, Inc.*, a joint venture. General contractor: *The George Hyman Construction Co./Ozanne Construction Co.*, a joint venture.

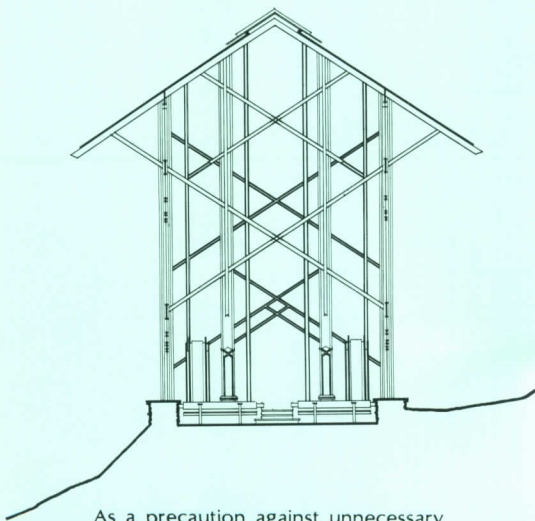


A WAYFARER'S CHAPEL BY FAY JONES

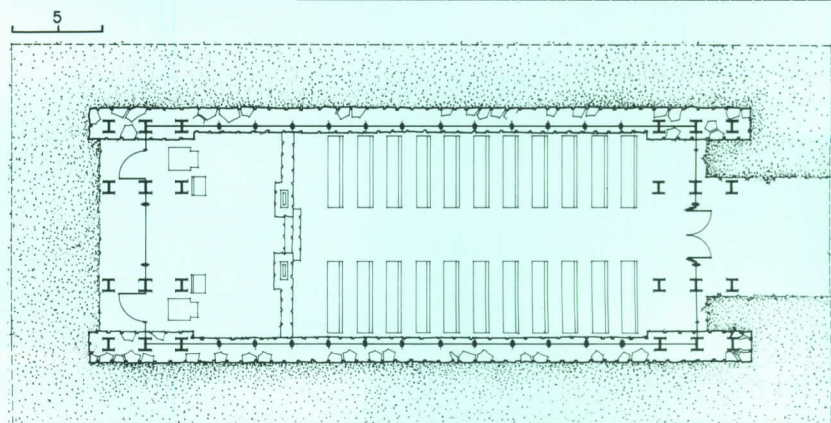
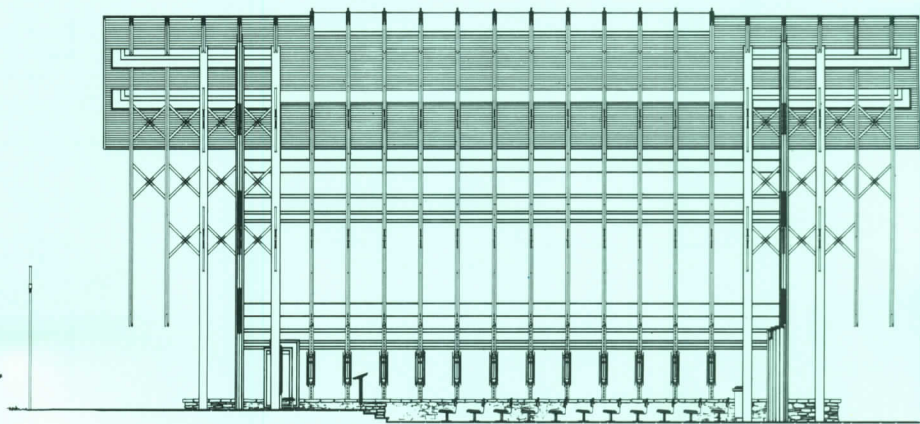


Greg Hursley/Hursley & Lark photos

U.S. Highway 62 cuts a narrow swath through the Ozark Mountains of northwestern Arkansas as it ascends from Fayetteville to Eureka Springs: it's a one-hour drive that takes you from the five-man office of Fay Jones & Associates to a tiny summer community nestled in the side of a hill at an elevation of 2,500 feet. The unspoiled beauty of this deeply rural heartland is a landscape Fay Jones knows well; he has been a lifelong resident since his 1950 graduation with the inaugural class of the University of Arkansas School of Architecture. For the last 30 years, Jones has been gradually perfecting a distinctive vernacular that seems to have as its goal the symbiotic melding of architecture and landscape. The stone and humble wood indigenous to Arkansas, are, for Jones, the supple clay by which to mold an architecture that is literally, a physical outgrowth of its environs. His understanding of materials and their inherent potential is superb, and he has become adept at crafting the simplest piece of oak or fieldstone into forms and compositions of elegant beauty. His houses and larger commissions frequently include Jones-designed furniture, light fixtures, and even stoneware: as a design philosophy, he might offer "the architect is responsible for everything he sees." The result of such comprehensive control is an integral cohesion of building and site, container and contained. Fay Jones has now reached a level of sophistication and maturity in his work that is revealed with perfect clarity in Thorncrowne Chapel. Two miles past the gingerbread summerhouses of Eureka Springs, this tiny wayfarer's chapel bespeaks a lifelong pursuit of mastering materials, forms, and details. — Charles K. Gande



As a precaution against unnecessary damage to the densely wooded site, conventional construction methods were not considered—the design hinged on "not using anything too big for two men to carry along a narrow hillside path." This limitation became the key to the structural concept, and Thorncrowne became a building of many small pieces: pine 2 by 4's and 2 by 6's linked together into modular, angular structural frames were cut, assembled, and tilted into place on-site, and then in-filled with glass.







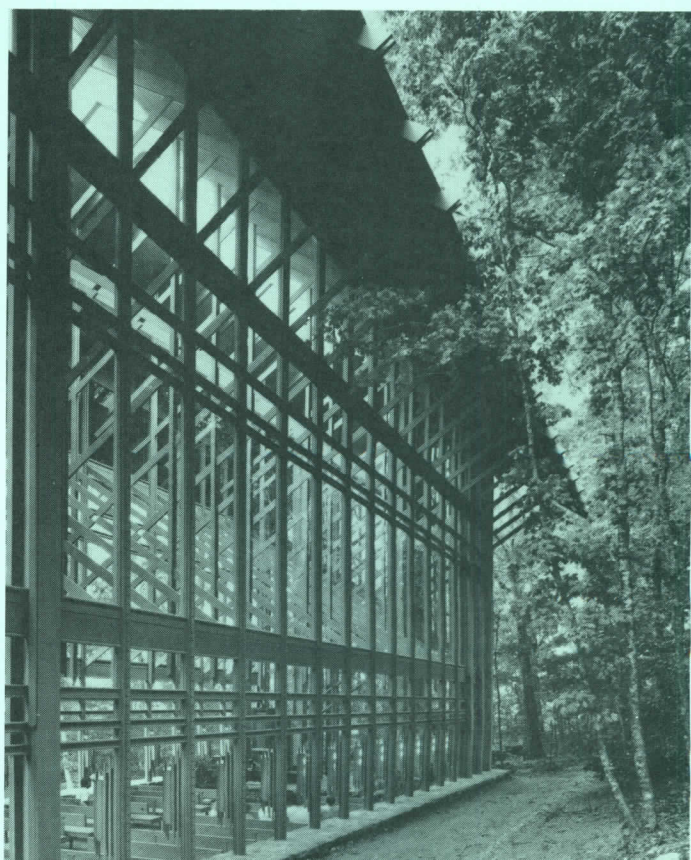
THORNCROWN CHAPEL

The two low fieldstone walls not only support and anchor the wood-frame structure, but serve as ductwork (they are continuous insulated cavity walls) for the hvac. Air is distributed through holes in the mortar joints, and air return is through floor grilles in the dais. This flow of air creates a "comfort zone" at the lower level of the chapel. To avoid premium wood costs, only standard size lumber was used. This budgetary necessity was turned into an esthetic virtue when Jones discovered that by using welded-up x-shaped connectors he could create diamond voids at the intersection of the cross-bracing.

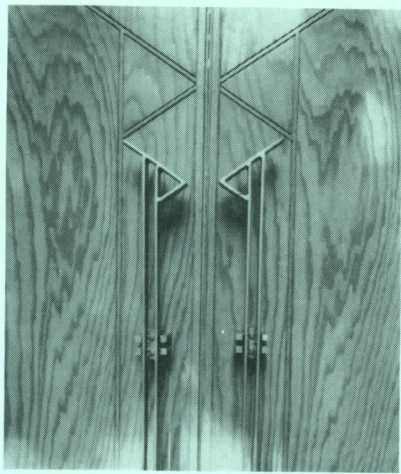
Arkansas native-son James Reed retired to Eureka Springs after a teaching career in California. Each day as he walked down the hillside to the mailbox, he noticed travelers parked at the foot of his property availing themselves of his panoramic view of the Ozarks. Rather than erect a fence to keep people out, Mr. Reed hit upon the idea of building a glass chapel to welcome them in. Providence must have been eavesdropping on Mr. Reed's thoughts, because a stranger in a local restaurant—eavesdropping on his conversation—directed him to architect Fay Jones. A more empathetic collaboration couldn't have been formed: Reed's idea that "we have something here that is very fragile . . . it should be preserved . . . we don't want it destroyed," coincided perfectly with Jones's concept of an "organic" architecture synchronized with the landscape. And Reed's mandate to retain "the spirituality of the place" found its expression in Jones's belief that "good architecture has the potential to nourish." As the result of Mr. Reed's generosity and Mr. Jones's skill, Thorncrown Chapel was dedicated to the public last July.

Despite its modest size, humble materials, and simple plan, this remote wayfarer's chapel embodies a set of canonical ideas about architecture that have only recently found their way back into prominence. Thorncrown is the palpable expression of its time, place, and purpose: as a chapel it is comfortably indebted to the tradition of religious buildings, and its ornament, details, and materials serve to enrich the visual and tactile experience it offers. Though the ideas may ostensibly sound as if they were appropriated from a post-modernist manifesto, Thorncrown bespeaks an understanding and sure-footed confidence in principles that more recent converts to the faith have yet to attain.

The most obvious way to integrate the building with its densely wooded site was to use indigenous materials: wood (hand-rubbed with a gray stain to blend with the bark of surrounding trees) and stone are conspicuous choices for a chapel in the Ozarks. But this kind of contextual sensitivity is elementary; there is also the larger, more general context of historical antecedents—the classic referents endemic to a particular building type. Jones believes that any new building has the opportunity, and the responsibility, to join in on an







architectural continuum: architecture acquires its “timeless” quality through the ongoing re-employment of dominant themes or characteristics. Mr. Jones sees the architect’s task as the re-interpretation and re-enrichment of what he refers to as the “abstract elements” that comprise the forebears of any building. For Thorncrown, the elements being recalled are archetypal, and as simple as the primitive hut—a rectangular plan, a gable roof, repetitive structural elements, and symmetry. What breathes life into these mute and disembodied elements is not some potent semiotic content, but rather it is the way they have been so intelligently employed and artfully integrated into a structure that is decidedly of its time and of its place. Jones refers to the process of giving contemporary meaning to these historically familiar elements as “weaving it through the mesh of my own mind.” He relishes the contrast between the external flying buttresses of Gothic cathedrals—pushing the structure upward and inward—and the wooden tensile members lacing Thorncrown together from within. As a model for understanding Jones’s brand of historical allusionism, the contrapuntal relationship between his chapel and a Gothic cathedral seems telling enough.

Thorncrown Chapel is not only contextually sensitive, but contextually accomplished. Jones subscribes to a school of architecture that argues for a total and harmonious esthetic experience; from the door pulls to the lecterns to the light fixtures, he has designed every square inch. The effect is synergetic, or in Jones’s words: “every part, every piece has a part to play, and they join together to the benefit of all.”

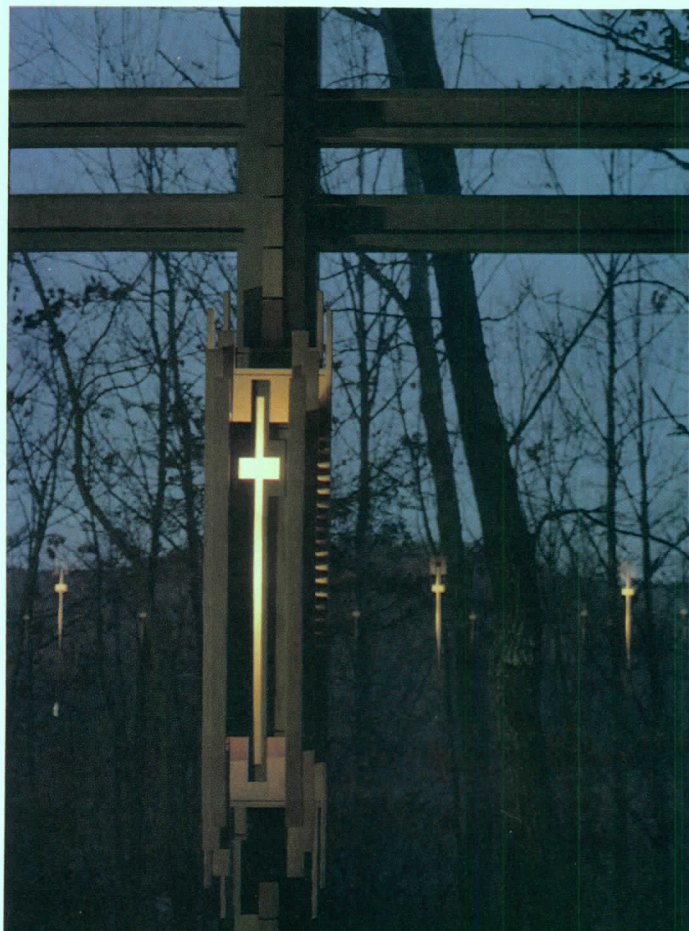
Thorncrown Chapel rises 48 feet from its flagstone nave to the apex of its ridge skylight. It is an intricate web of wood and glass that accepts every nuance of light and registers every subtlety in the landscape. It is a brilliant testimony to the power of architecture to intensify experience and inspire contemplation, and a fitting gauge by which to measure one architect. —C.K.G.

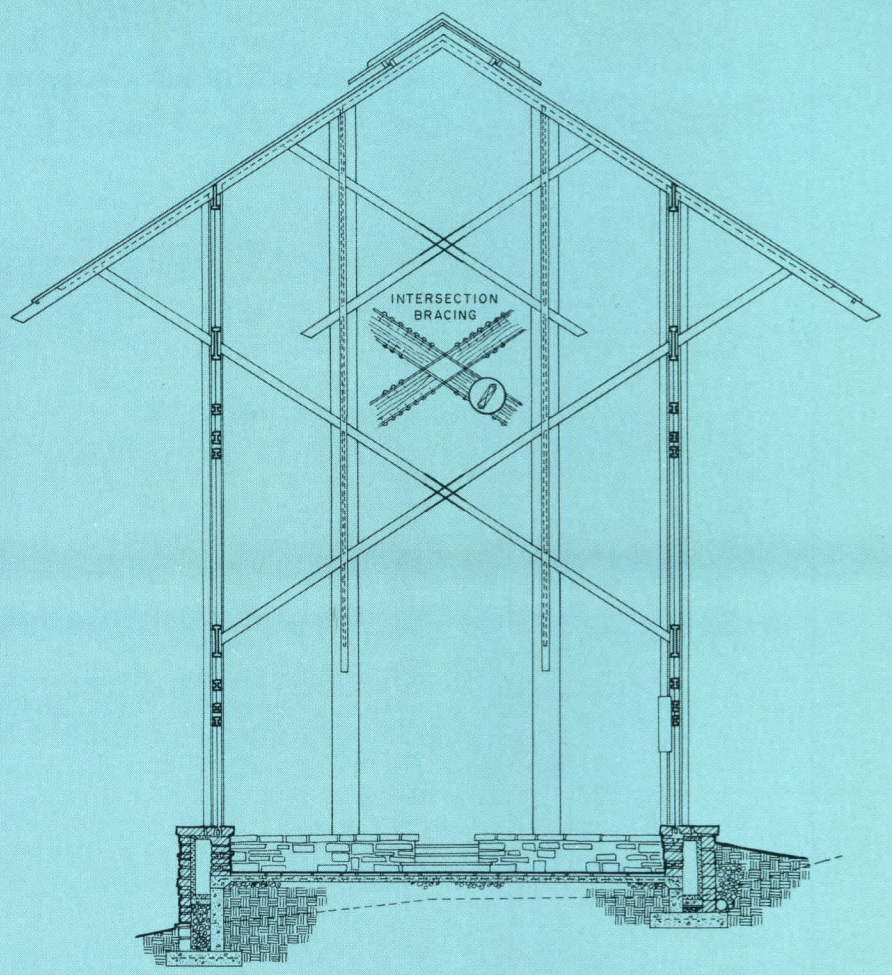
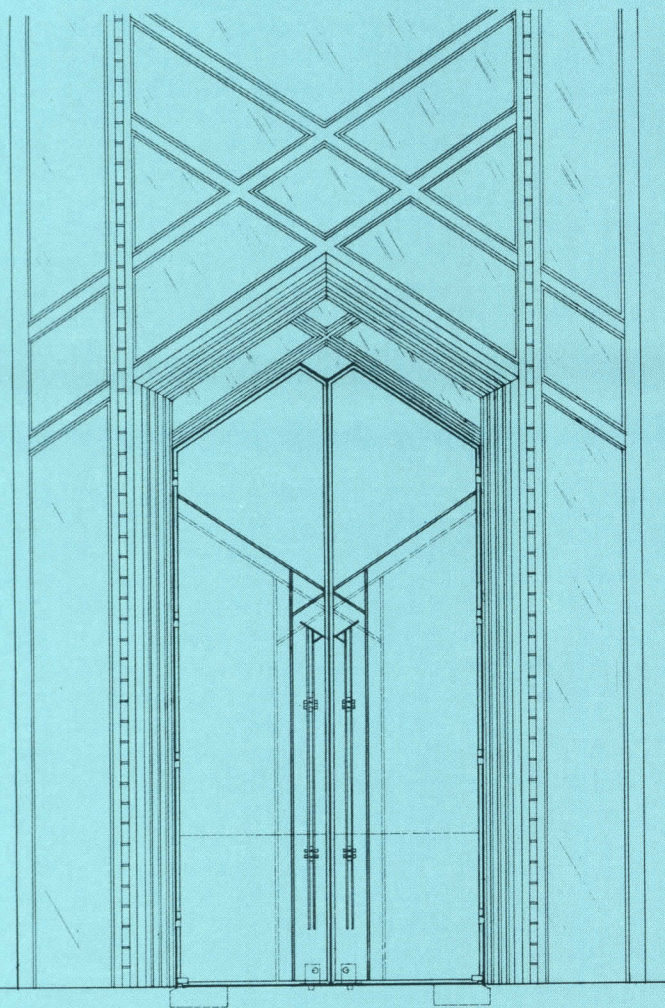
THORNCROWN CHAPEL, Eureka Springs, Arkansas. Architects: Fay Jones & Associates—principal-in-charge: E. Fay Jones. General contractor: Jerry Labounty.



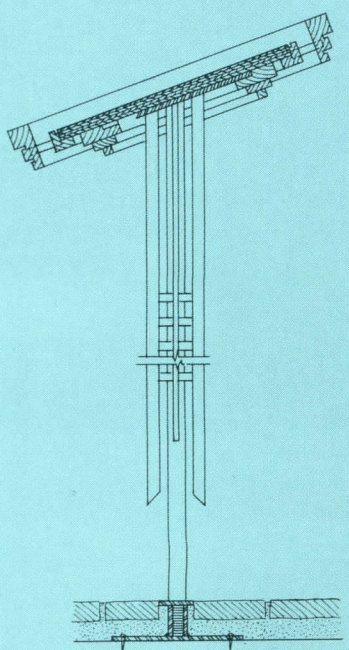
THORNCROWN CHAPEL

From inside this tiny (24- by 60-ft) chapel, every mood and texture of the enveloping Ozark Mountains is amplified. Dusk is an especially memorable experience: subtle shifts of light filter through the ridge skylight, playing off the intricate webbing of the tensile structure and illuminating the diamond voids in the cross beams. The slender backlit crosses are reflected in the glass—like surreal apparitions dotting the countryside. And Thorncrown takes on a powerful and mysterious aura. One is reminded of client James Reed: “We have something here that is very fragile . . . it should be preserved. . . .”

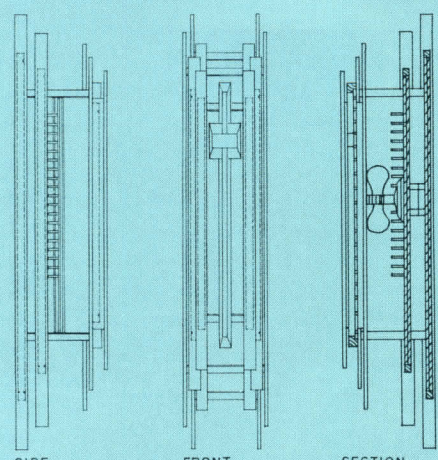




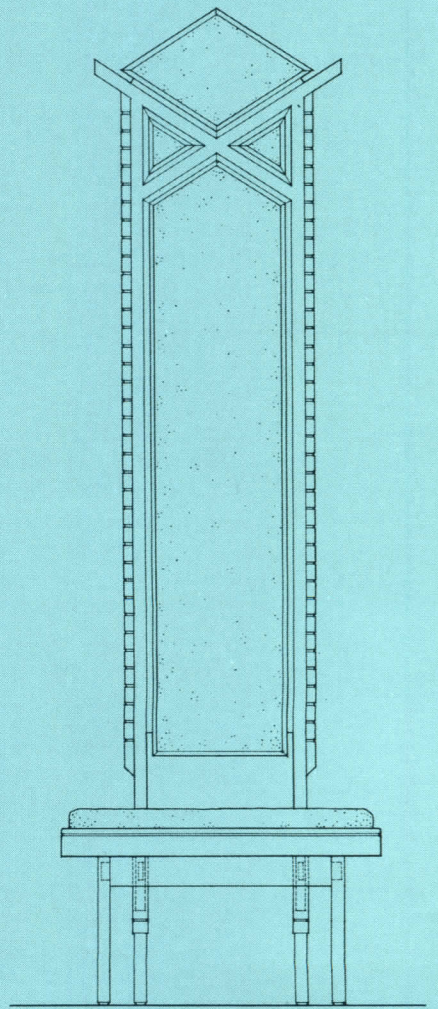
Fay Jones is currently at the American Academy in Rome studying "the rhythmic and ornamental nature of architectural details." As witnessed in these details, it is a subject that interests him greatly. Jones believes that ornament should be integral, not applied; that it stems from basic problem solving: "It's my goal never to do anything for the sake of ornament." But if you need a door pull, or a light, or a lectern, or a structural frame, Mr. Jones might recommend availing yourself of the opportunity being presented. And it is in the details that Jones lovingly recalls a seminal influence on his work—a 1952 apprenticeship to Frank Lloyd Wright.



LECTERN



SIDE FRONT SECTION
LIGHT FIXTURE



CHAIR

MOMA

Museum of Modern Art will fund new galleries and future operations with money transferred from tower above

Amidst all the political and critical squalls besetting the Museum of Modern Art's plans for expansion, the one point on which all quarreling factions agreed was the admirable quality of Cesar Pelli's design for the museum, his painterly treatment of the associated apartment tower surmounting it, and the architecture's worthiness to embody the historic ideals of the institution it serves.

The new museum, which will contain nearly double the gallery space of the old, preserves the facade of Goodwin and Stone's 1939 building, now itself an icon of modern art and architecture. Pelli, calling the old facade a "medallion," flanks its flat whiteness with a dark frame—Philip Johnson's 1964 East Wing on the right, Pelli's own new West Wing on the left.

The West Wing facade echoes, without copying, the black mullions and dark glass on Johnson's building and the flatness and window proportions of the Goodwin-Stone building. At the same time, Pelli varies the colors and proportions of the base to recall the streetscape as it had been when townhouses occupied this stretch of 53rd Street.

In answer to objections that initially clustered around its announcement in 1976 of expansion plans, the museum pleaded need—both for space and money. Since the end of World War II, even in the last ten years, all museums have seen a staggering increase in the number of visitors, as well as striking changes in their viewers—younger crowds regard attendance as a shared social event as much as an esthetic quest.

The original Museum of Modern Art was designed as little more than a townhouse for the reception of a few *cognoscenti*. "If the staff dealt with 200 visitors a day," remembers Arthur Drexler, the museum's Director of Architecture and Design, "it needed the next day off to rest." Nowadays the museum receives 1.3 million visitors a year, 5,000 and more a day on weekends.

Of equal importance to the museum was its lack of gallery space. About 85 per cent of its collection is now relegated to the basement or other storage, and, as Drexler says, "You can hardly call hanging a canvas once every 25 years 'rotation.'" Beyond depriving the public of a chance to see paintings and sculpture—and sharing with the public must be one of the basic reasons art lovers become curators—the museum perceives the lack of gallery space as a threat to pledged gifts: collectors who fear their paintings may be seen only once in 25 years may withdraw their pledges.

Among the design issues raised by the expansion and its related tower:

- Objections to the placement of the 650-ft apartment tower on 53rd Street midway between Fifth and Sixth Avenues, where it destroys what many see as traditional residential scale on Manhattan's side streets. This objection coincides with widespread concern about the proliferation of super-tall office and apartment buildings elsewhere in the city's midtown area and consequent overcrowding and loss of sunlight. In answer, MOMA supporters can refer to Rockefeller Center,

which violates mid-block residential scale two blocks south of the museum.

- The demolition of existing buildings, notably an especially handsome Beaux-Arts townhouse designed early in the century by the architects Hunt & Hunt, and once the home of the museum's bookstore. The new construction also displaced Philip Johnson's office wing for the museum, built in the early '50s; Johnson, taking the destruction in good part, points out that the building was always considered temporary.

- The loss of space and sunshine in the museum's much-loved Sculpture Garden, also designed by Philip Johnson. (The garden is discussed on following pages.)

In search of money to deal with present and future attendance and with its ever-increasing art collection, the museum devised a daring and controversial real estate deal that involves it, in a controlled way, with commercial development. The idea of "capturing" taxes for the museum struck architect Richard Weinstein one afternoon by the coffee machine, he recalls, when several phenomena converged in his mind: an aerial view of the museum property seen from the window, an overheard conversation about the museum's hard times, and his remembered experience of urban planning with the city government. Donald Elliott, counsel to the museum, and Richard Koch, then deputy director of MOMA, joined Weinstein on a committee to thrash out legislative and financial strategy.

MOMA's connection with the apartment tower, undertaken separately by developers Charles Shaw and Frederick and Alfonso DeMatteis as the Museum Tower Corporation, is allowed by recent state legislation permitting nonprofit institutions to use their assets for financial gain, and by the Trust for Cultural Resources, a quasi-public body interposed between the nonprofit museum and the commercial development.

To describe exceedingly complex real estate transactions as simply as possible, the museum made money in three ways: first, it sold the air rights to the developers for \$17 million; second, the developers will pay real estate taxes to the city, which will transfer the money to the Trust as "tax equivalency payments" for the support of the museum; and

finally, the Trust has floated a bond issue to finance the \$40-million expansion, using the air-rights payment and the museum's endowment as collateral. The tax equivalency payments will be applied to operating costs.

The project thus includes two distinct parts—the museum and the apartment tower. The museum, in addition to its own expansion, kept responsibility for the tower's appearance and placement, anxious not to impair its reputation as an art collector or to foul its own nest. Working for the museum architect Weinstein determined the placement of the tower and produced a three-dimensional "diagram" of functions and their relationships that, says Pelli, "served as our program."

But the museum had also to stay out of the developers' entrepreneurial way. It commissioned Pelli, then, for the design of its own expansion and for the design of the apartment tower's skin.

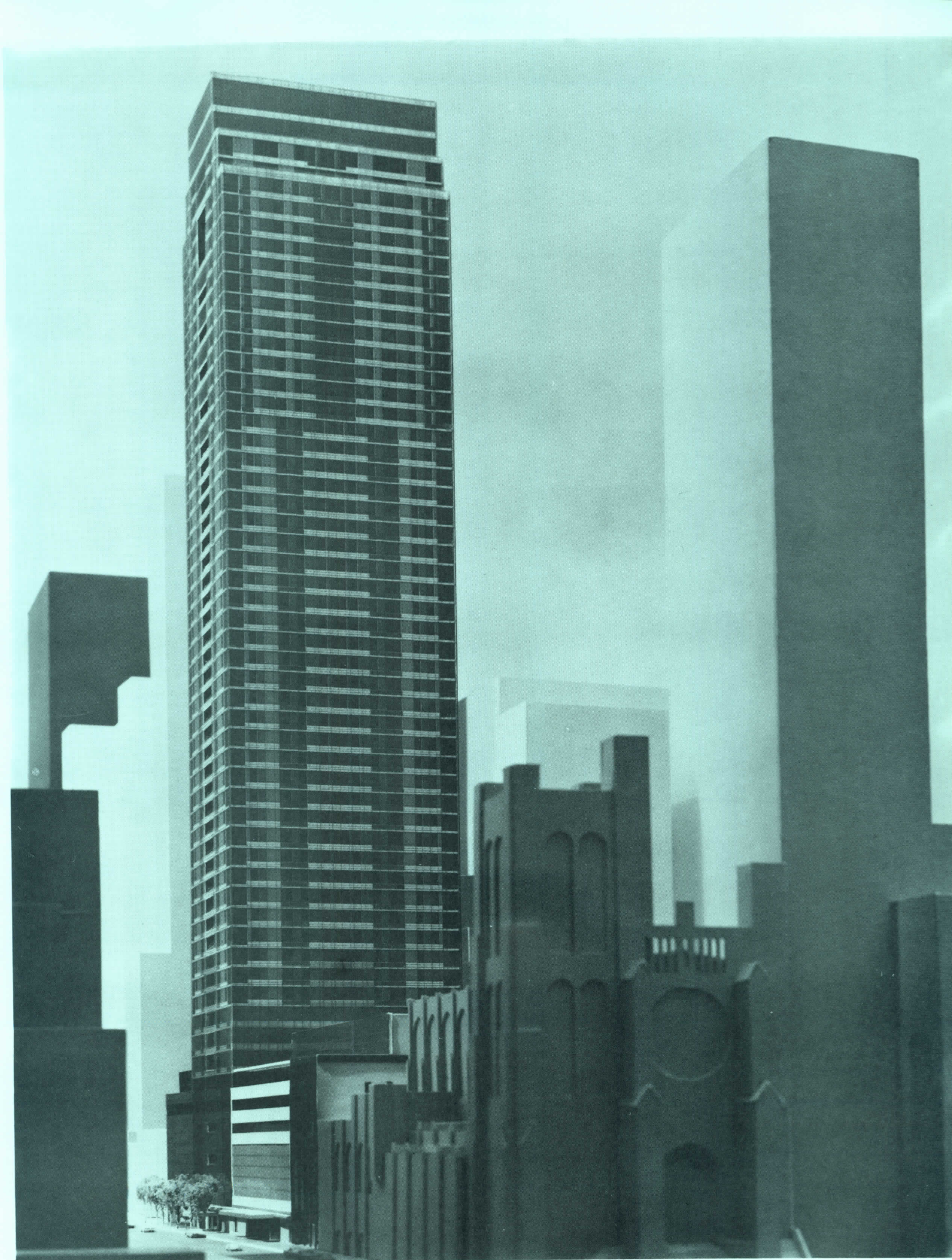
The basic concept of the tower plan was articulated by architect Jaquelin Robertson for an earlier developer. The present developer, however, commissioned the architectural firm Edward Durell Stone Associates; among changes are the distribution of apartments, alterations in the size and location of windows, and the addition of extra floors.

No matter how the museum distanced itself, however, its connection with entrepreneurial development inevitably stirred debate on the enduring question whether the combination of commerce and art creates a fatal conflict of esthetic and financial interests. MOMA officials point to mixed-use cultural real estate like Carnegie Hall, which at the outset incorporated rental apartments and studios as steady income producers for the riskier concert hall. The museum justifies its commercial relationship by its search for financial stability and freedom from annual begging for government money, which also raises the possibility of outside pressures. (The museum has never received money from the city government, and prefers not to compete with firemen and hospitals, not to mention libraries and other museums, when the city is already hard up. It has, however, received funds from both national and state endowments for the arts.)

In any event, construction is well underway now, the concrete frame of the West Wing already in place and the tower frame rising. Completion of the West Wing is scheduled for early 1982, that of the new Garden Hall shortly thereafter. The final phase of the expansion—the public and members' restaurants—should be finished and in use sometime in 1983. —Grace M. Anderson

THE MUSEUM OF MODERN ART, New York City. Owner: The Museum of Modern Art. Architects: Cesar Pelli & Associates (design)—Fred Clarke, Diana Balmori, Tom Morton; Gruen Associates (production).

MUSEUM TOWER APARTMENTS, New York City. Owner: The Museum Tower Corporation. Architects: Cesar Pelli & Associates (design, exterior); Edward Durell Stone Associates (design, interior).



K. Champlin and J. Severson



© Wolfgang Hoyt/ESTO

One of the museum's greatest and most popular artistic and architectural treasures is its Sculpture Garden. The expansion project will necessarily intrude on this space (designed by Philip Johnson in the 1950s), filling a 20-ft strip on the south edge of the garden. But in exchange, visitors will get year-round pleasure and the museum will get vastly improved circulation.

The major visible change (after the towering presence of the apartment on the west) will be the cascading glass Garden Hall on the back of the existing building. Pelli calls this glass bustle the "winter garden," since one of its effects will be to prolong appreciation of the space beyond the summer months. The museum plans some new evergreen landscaping outside and intends to use the interior as a conservatory.

The Garden Hall, enclosing new escalators that connect exhibition floors, forms an east-west circulation spine—a key element in the expansion plan and in the museum's efforts to deal with crowds. It will continue

through the tower to new galleries in the West Wing.

At present, the circulation pattern, such as it is, commingles visitors in a pool at the entrance, their paths criss-crossing as they head for ground-floor galleries, the coatroom and the woefully inadequate vertical circulation—to wit, two small elevators situated at the far west end of the reception space. At that, one of them used to haul freight exclusively; it now hauls visitors, staff and freight. The escalators will relieve these elevators of mass-transportation duties, leaving them to serve staff and handicapped visitors. The expansion will also preserve the head and curvilinear metal railing of Stone's grand staircase on the third floor, a striking artifact of the early Modern Movement. A new freight elevator will be scaled to the large dimensions of much contemporary art.

The glass shed at the west end of the garden will house escalators on the lower floors. On the upper floors, its main function, beyond offering views to visitors in the

upstairs galleries, is to insert some bulk, however transparent, between the sheer face of the tower and people in the garden, and thus to minimize what Pelli calls the "visual shadow" of the tower's presence.

The Whitney Wing at the west end of the garden will contain galleries and the group reception area, a separate entrance on 54th Street where tour groups can leave coats and books and receive briefings.

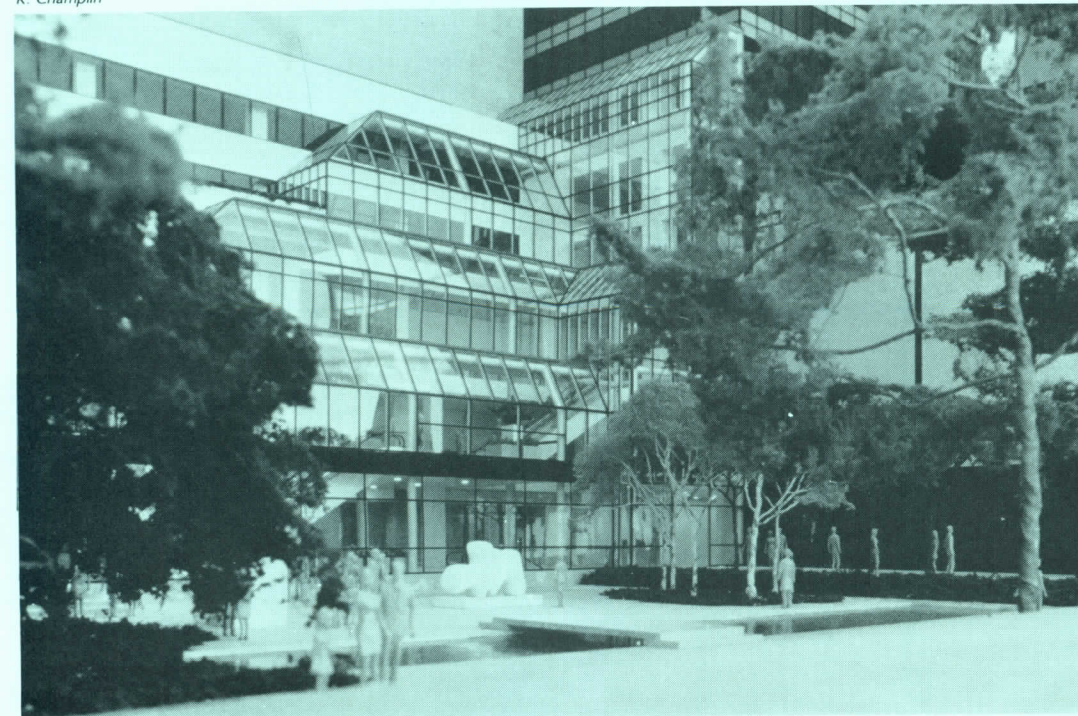
The new building at the east end of the garden will consolidate the museum's food service. The public restaurant, now located at the opposite end of the outdoor space, will open directly onto the garden. Its outer glass wall will be removed in summertime to allow an open-air café. (The glass screen meant for winter enclosure is shown in place on the model opposite at the top of the page.) The members' restaurant, now on the sixth floor of the existing building, will occupy the upper floor of the new East Wing. Members will approach the dining room via a glass bridge extending from the Garden Hall.

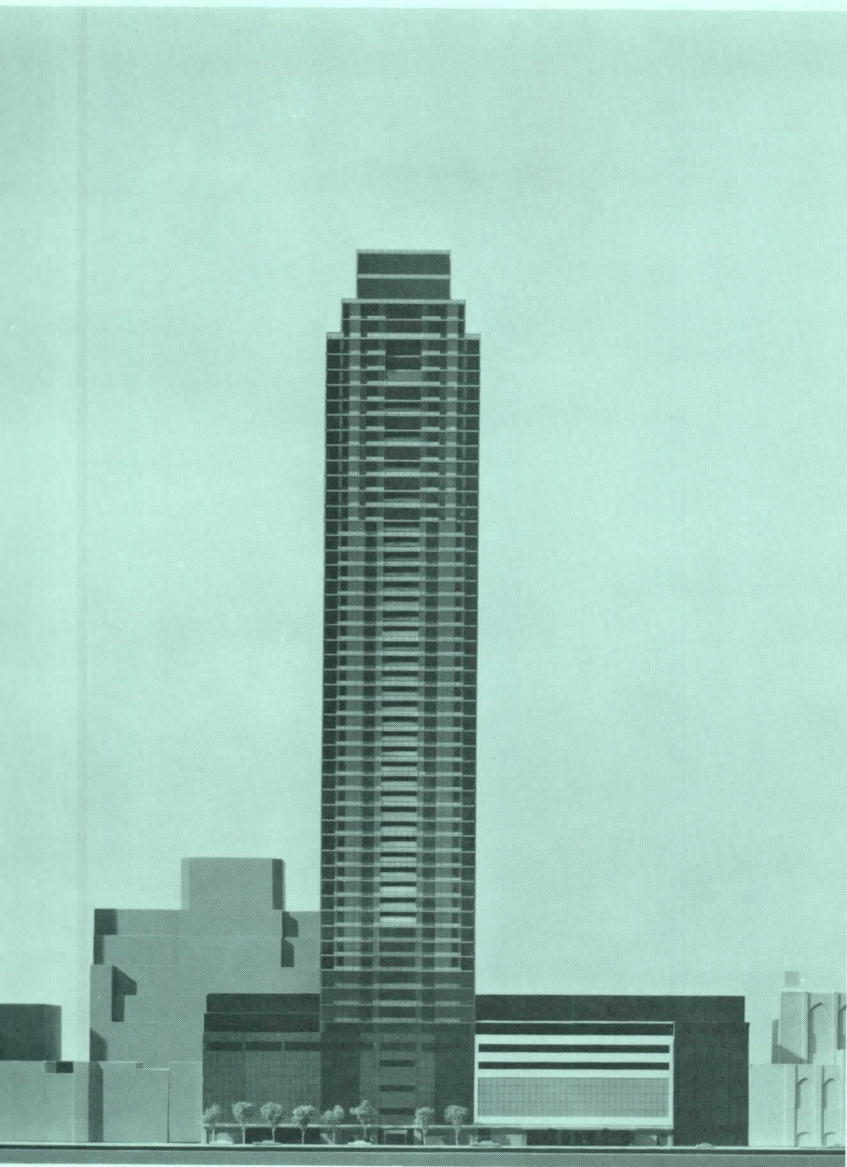


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K. Champlin

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Ken Champlin and Johan Severson

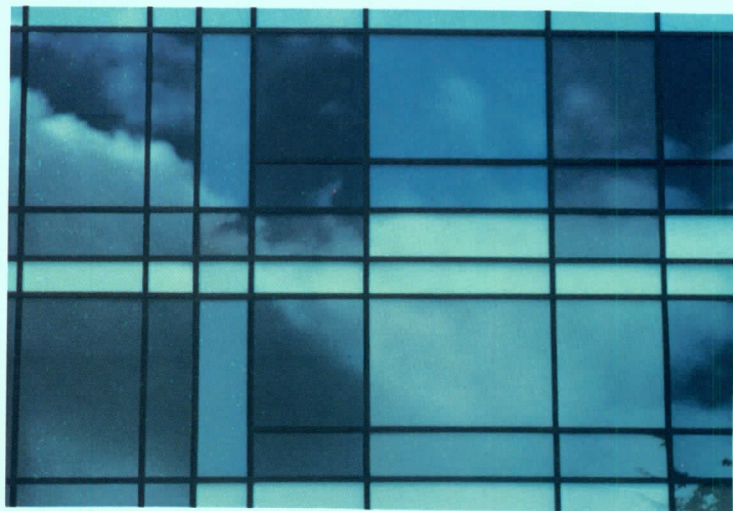
Pelli "paints" tower with eleven colors of glass

Pelli has dealt with the two-dimensional composition of the skin in a conscious, painterly fashion. With small-scale rectangles, he washes the surface with eleven colors of opaque glass—nine warm "colorful" grays, two blue grays—and establishes a secondary pattern with heavy black mullions. The selection—invention, almost—of these colors and their subtle juxtapositions occupied Pelli and his staff for some months. The architect perceives a warm brownish gray as the city's dominant color—"I looked at New York color a lot."

Tinted vision lights add still another color—black, during the day—providing strong verticals in the center and at the outside border. At the top of the tower, the scale is enlarged to offset foreshortening when the height is seen from below.

Apart from the white "medallion" of the Goodwin-Stone front, the base colors are dark, more saturated than those of the tower, to distinguish museum from apartments and to add visual weight. Residents enter from 53rd Street.

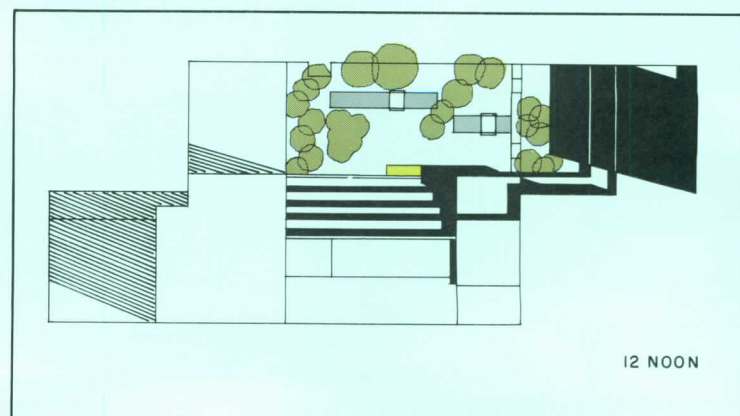
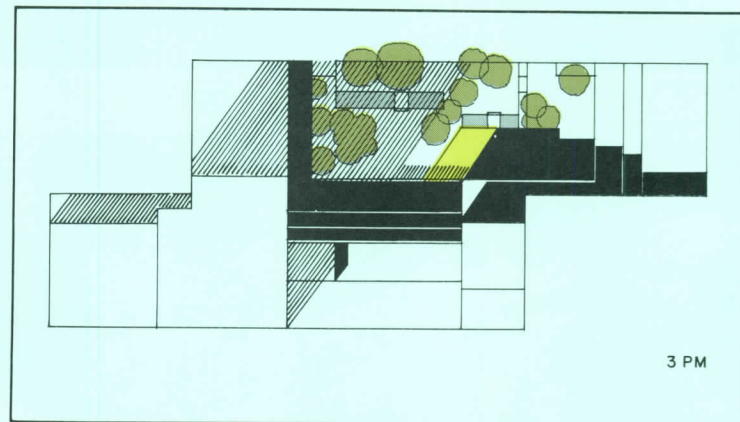
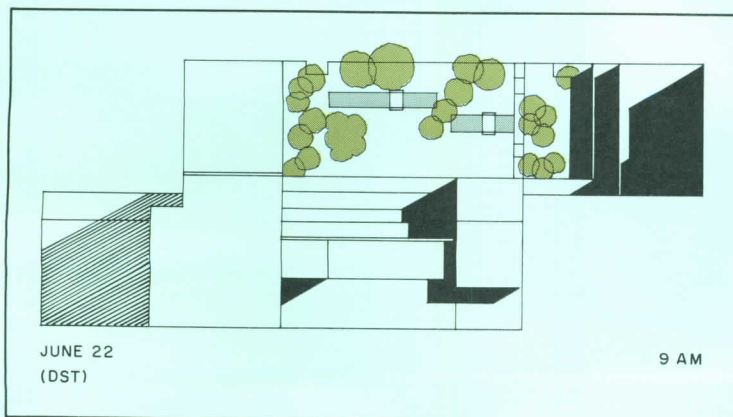
The condition accepted by the developers and their architect, the office of Edward Durell Stone Associates, was to fit apartments into a fixed envelope. Cooperation has, by all accounts, been gentlemanly, even pleasant. When Pelli wanted floor-to-ceiling windows at the corners to achieve a black vertical, Stone's office was glad to add this amenity to luxury apartments. Pelli has on occasion made minor adjustments to satisfy functional needs. Nonetheless, the museum has final say, thus giving Pelli power of veto.

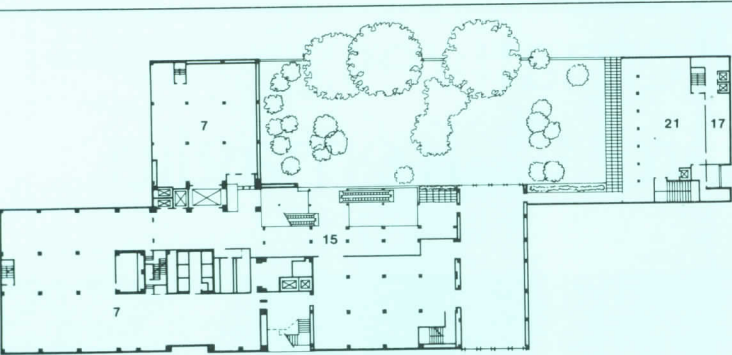


K. Champlin

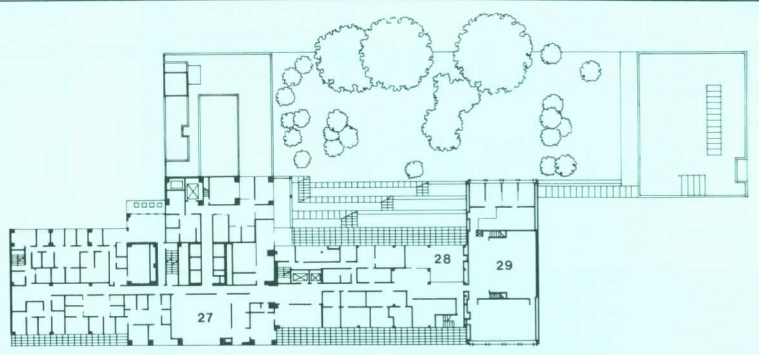
Sun study identifies garden shadows

The museum, anxious to determine the effects of the new building's shadow on its treasured Sculpture Garden, undertook a series of sun studies. As expected, the tower does indeed cast a long shadow in the afternoon (hatched lines). Museum officials point out, however, that the new shadow partially overlaps existing skyscraper shadows. The museum itself shadows the space (black), but the renovation will add some sunshine (yellow) by removing mechanical equipment on the roof.

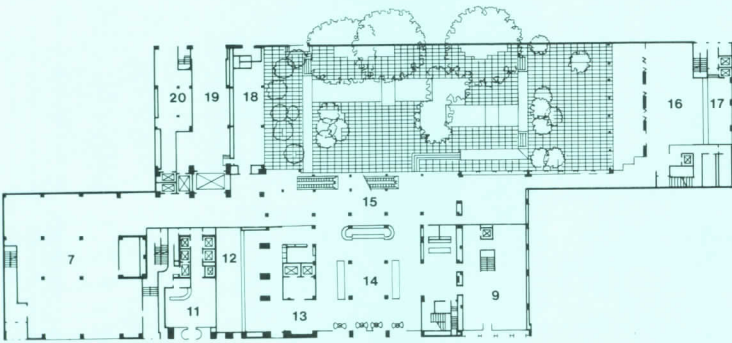




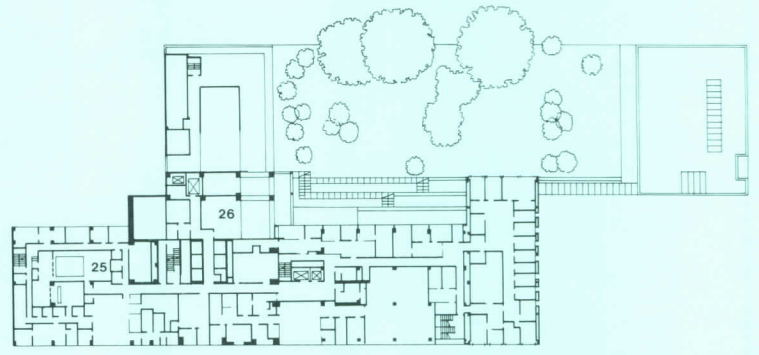
SECOND FLOOR



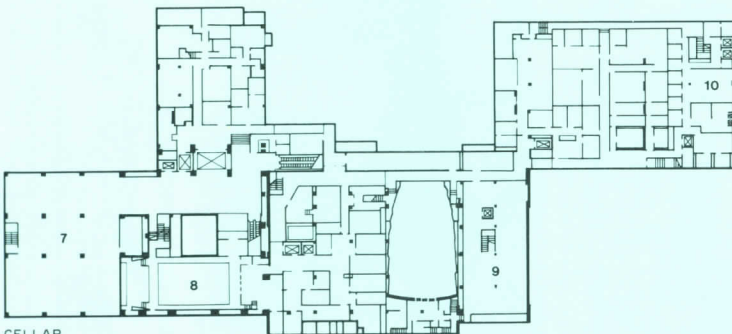
SIXTH FLOOR



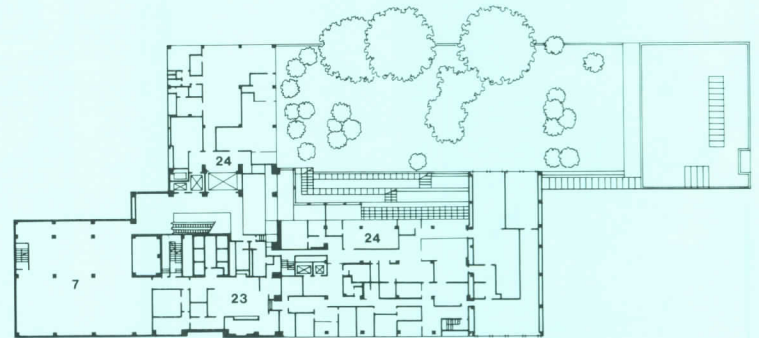
GROUND FLOOR



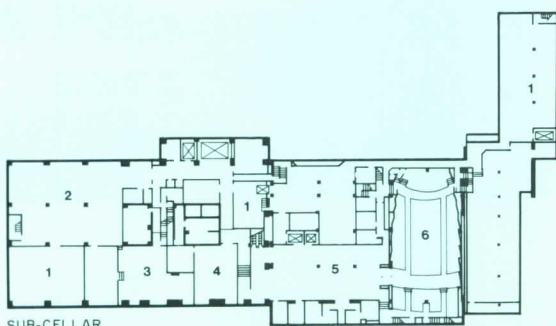
FIFTH FLOOR



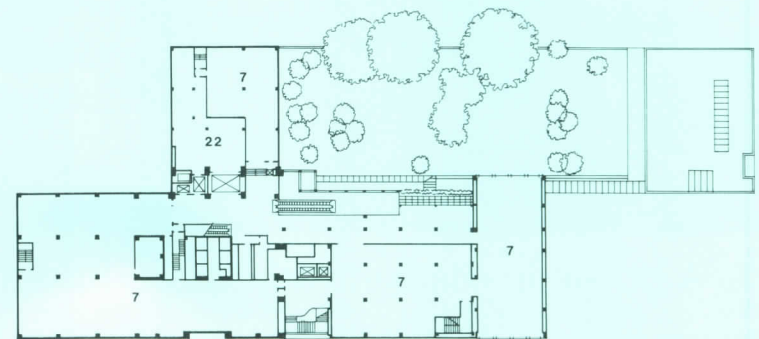
CELLAR



FOURTH FLOOR



SUB-CELLAR



THIRD FLOOR

- | | |
|-----------------------|-----------------------------------|
| 1 Storage | 16 Public restaurant |
| 2 Receiving | 17 Kitchen |
| 3 Framing | 18 Group reception |
| 4 Photography studios | 19 Museum service |
| 5 Film lobby | 20 Tower service |
| 6 Titus Auditorium | 21 Members' restaurant |
| 7 Gallery | 22 Painting and sculpture storage |
| 8 Auditorium | 23 Architecture and Design |
| 9 Bookstore | Study Center |
| 10 Main kitchen | 24 Labs |
| 11 Tower lobby | 25 Film |
| 12 Coatroom | 26 Staff lounge |
| 13 Staff reception | 27 Board room |
| 14 Museum lobby | 28 Library |
| 15 Garden Hall | 29 Library stacks |

An architecture of alternatives: Two houses by Richard C. Tremaglio

by Eleni M. Constantine



1. A house in Marblehead, Massachusetts

The early Modernists believed that ambiguity and unfinishedness, qualities with meaning for human beings, were signs of weakness; "good" architecture was to be free of extraneous imagery. Well, we all know what the Post-Modernists think about that. Architectural forces now challenge Modernist form and thought with historical allusion and metaphor under the banners of "complexity," "contradiction," "levels of meaning" and "language." To which the counter-attack is: "But architecture should be more than added ornament." The arguments may be getting tiresome, but the battle continues.

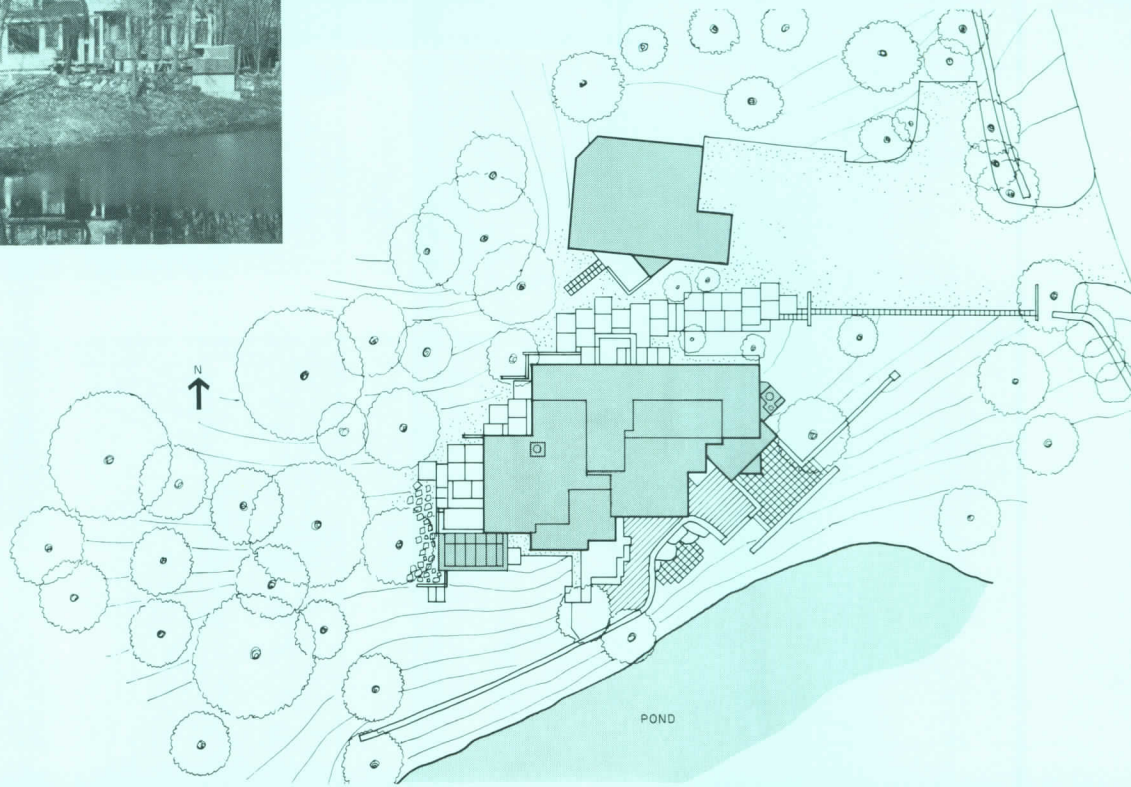
Perhaps there is another way. Maybe architecture can achieve an enriching ambiguity without appliqué of either form or meaning. Setting this as his goal, architect Richard C. Tremaglio is creating a new and exciting architecture. Tremaglio has a practice in Cambridge, Massachusetts, was trained at MIT and is now teaching there. In the last five years he has completed several projects which

Eleni M. Constantine, a former associate editor of ARCHITECTURAL RECORD, is now a graduate student in the fields of law and urban planning at Harvard University.

embody his particular interpretation of MIT's "party line" on architecture. Summed up by the slogan "built form," the philosophy aims at replacing the idea of a single creative architect, fashioning complete, untouchable works of art, with the concept of architecture as a growth process. What architects should do, according to the "built formers," is set up referential frameworks that support various interpretations.

Two houses recently designed by Tremaglio, the Arena house in Marblehead, Massachusetts (these pages and overleaf) and a renovated barn in Weston, Massachusetts (pages 104-107) exemplify his method and beautifully represent its results. Spreading out a wealth of possible uses, perspectives and meanings, these houses compel attention and demand thought and feeling. These two residences are intended to make those who inhabit them conscious of the shape of their own activity; the buildings urge people to use their own perceptions for interpreting the place in which they live.

Indeed, both projects called for continuous client participation in a designing process that was largely contemporaneous with



Herbert Engelsberg photos



construction. Tremaglio began with a sketch which set up parameters within which decisions about details could be and were made by the clients and builders. These houses, as a result, reflect complicated and often contradictory views of reality.

Rising in tiered wooden cells off a small hill overlooking a pond, the Marblehead house, like a coral reef made of wood, seems to have grown over time, shaped by natural forces. The front of the house (opposite page) recognizes its urban setting, but once past the entry a gradual shift begins: the house turns to face the sun and a small pond (top photo).

The plan has two interlocking grids—the orthogonal one, parallel to the edge of the entrance drive and the diagonal one facing south. The 45-degree shift from one to the other (see plans overleaf) starts in the family areas on the ground floor and gets more pronounced on the upper levels as the structure frees itself from the urban defining elements and responds more fully to the natural environment. The turn that the house makes follows an old path through the lot that once led past two large trees (on the site of the

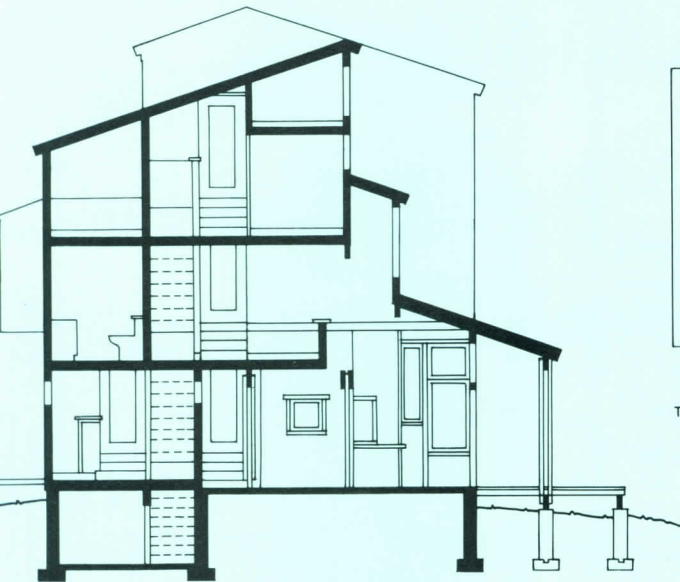


The house is divided into two regions, each anchored by a fireplace: the living-dining area, in the southwest corner, and the family area in the southeast corner. The kitchen acts as a pivot where the two grids meet and the stairs maintain the separation between the eastern and western zones. The stairs are not just a passage, they incorporate a study area, a bench, a table and storage areas. Interior windows and openings allow the public areas to be seen from the private areas and allow what the owners call "pencils of light" to penetrate the house. Windows on the exterior walls describe the view from the inside out. Their placement is primarily related to the interior space. Since each room in the house has at least three window walls, this emphasis upon the view from within effectively destroys the traditional ideal of an ordered facade.

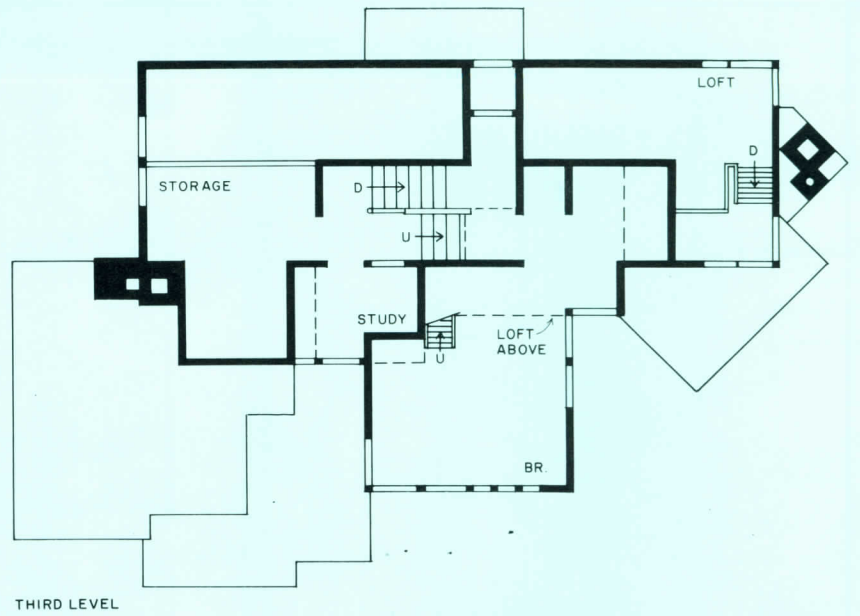
chimneys) and along the edge of a rock ledge. The design of this house literally grows out of this old path along the contours of the land. Its curve sets up two axes of motion which serve as references for all the geometrical shifts, where the two grids meet or pass each other. This gesture embodies a guiding principle of Tremaglio's work: that the direction of motion, in the natural or built environment is with the contours of the land, not against them.

Vertically, the spatial divisions follow an anthropomorphic model: ground, body, top. The ground references are stressed; the cement foundation wall topped with blue brick, for example. Above this boundary materials change to wood and glass. The gabled roof is another strong element. These forceful demarcations are in contrast to the overlapping and interweaving continuity of the interior space itself. All the elements of the house have been brought together in a non-hierarchical manner to form a whole within which they still maintain their separate identities. "You can think of the open-ended system I work in," says Tremaglio, "as a metaphor for a way of life that we haven't seen yet. But each time the system gets applied, we are carrying history with us."

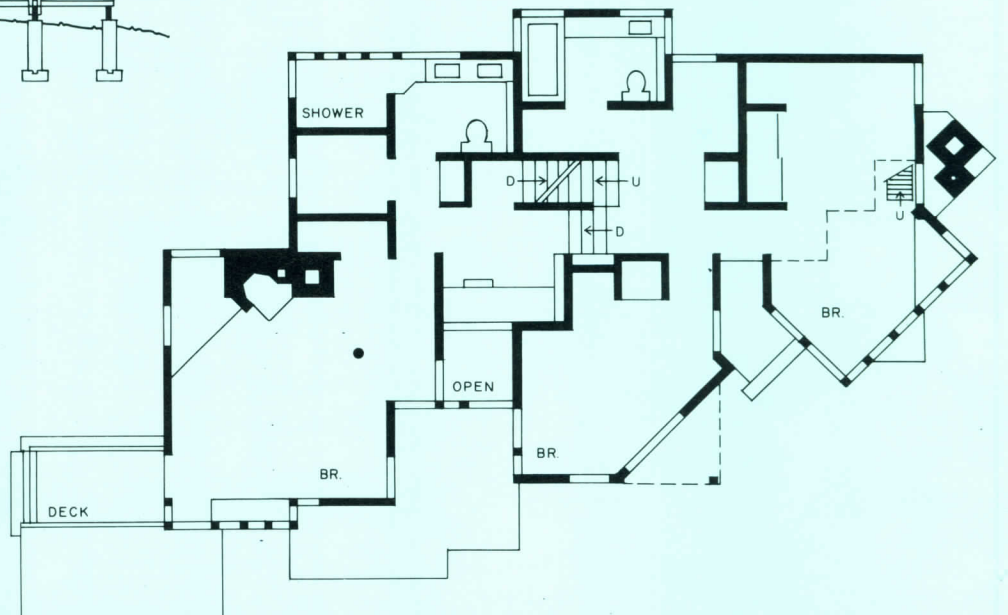




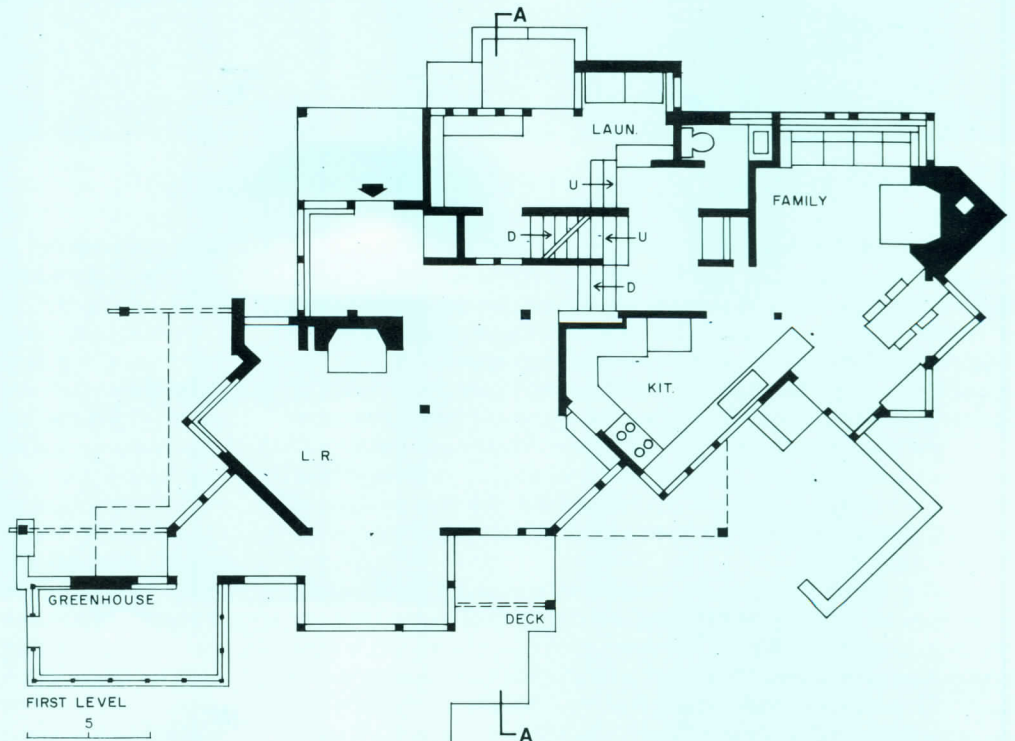
SECTION A-A



THIRD LEVEL



SECOND LEVEL



FIRST LEVEL

5



2. A barn renovation in Weston, Massachusetts

At first glance, the patchwork walls of this barn suggest a quilt, a stained glass window, or a multiple-frame photograph of a moving sailboat. This last image is perhaps the closest, for the barn's design is neither random nor strictly patterned. Rather it is a flexible but coherent response to conditions changing over space and time. The Arena house in Marblehead (preceding pages) posed the problem of selecting possibilities, of choosing, out of all the alternative directional frameworks suggested by the site, those which were the strongest. The Marblehead design develops these, and brings them to bear on each other. This barn renovation posed the converse problem of eliciting alternative directions from a context dominated by a single framework.

Built in the 19th century, this huge barn was saved by its owners when they took down the rambling, difficult-to-heat Victorian house on their small farm. Before the barn could be made into a new house, however, a great deal of structural rehab was necessary. The barn was jacked up while a new foundation went in, and about a quarter of the original structure, which had rotted, was rebuilt, using

parts from another barn of the same vintage.

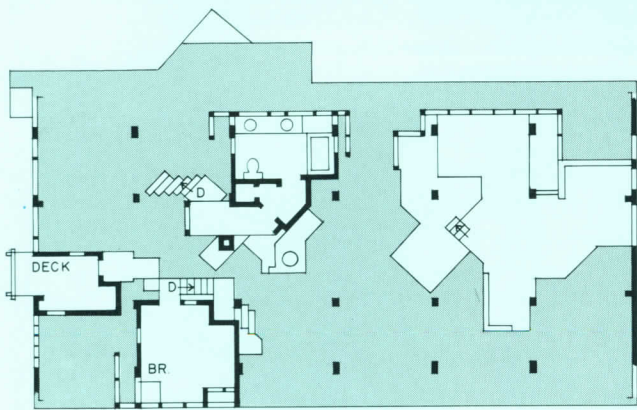
The restored barn was an incredibly powerful structure. Too powerful, in fact. Its center aisle had the directional pull of a cathedral nave, only in this secular basilica there was no altar to stop you from going out the other end. Something had to be done to "dam the movement" as Tremaglio put it, to make the flow eddy about within the barn, rather than sweeping through it at a pace visually accelerated by the symmetrically foreshortened perspective. Tremaglio's dam is a three-story mountain of a fireplace that incorporates stairs, seating areas and hearths. Its cozy nooks suggest cave dwellings within the mountain. Gathering major areas to focus activity, this brick crag in the barn's landscape stops the center aisle movement and diverts it in other directions. The fireplace anchors the barn's center, pulling you into its glowing heart and releasing you away from it. Suddenly the varying distances between this center and the edge, the barn's skin, acquire meaning. The too regular pattern of the barn's bays is unified at the same time that its homogenous symmetry is disrupted. The fireplace's ripple effect on



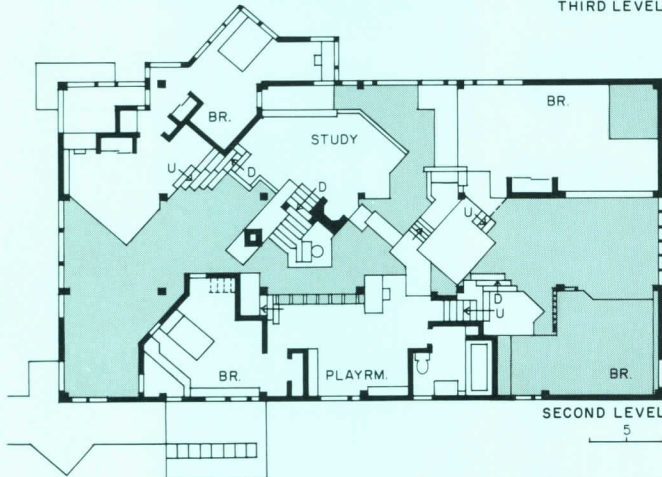
The fenestration of this barn provides both order and imagery. Next to each exterior structural column, Tremaglio has placed an acrylic plastic panel, polygonal in shape, and next to that a rectangular, operable, double-hung window. These plastic panels meeting the familiar sash windows, add to each other's significance. The acrylic panels transform the columns into posts in a plastic screen, so that the barn's structure appears lighter and more visible. The columns with their branching beams look a little like trees; the barn becomes almost an extension of the forest behind it. The double-hung window reasserts the wall and recalls the barn to being a house.



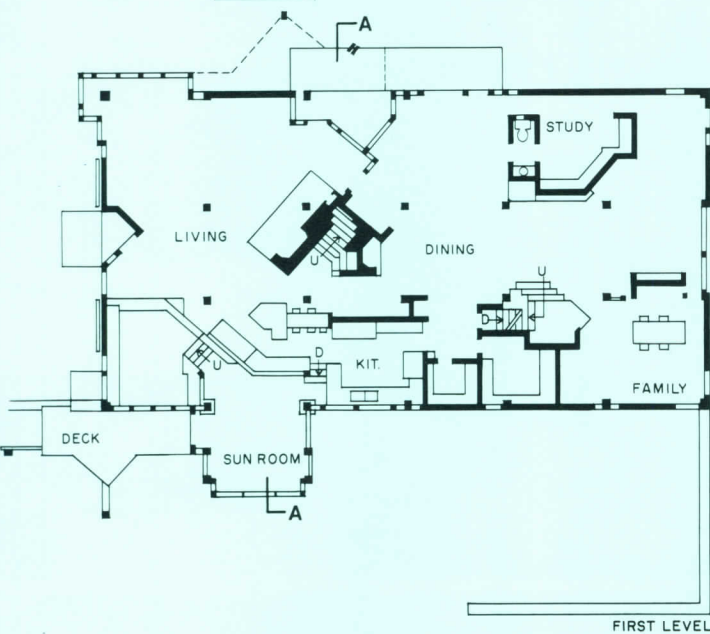
Herbert Engelsberg photos



THIRD LEVEL



SECOND LEVEL

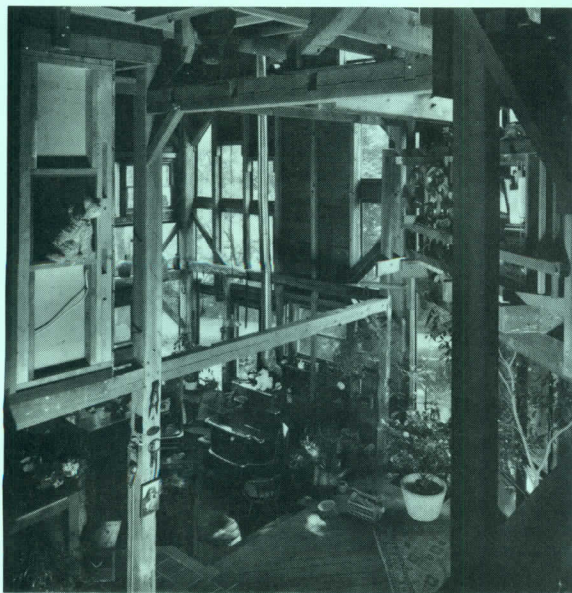


FIRST LEVEL

the barn is echoed throughout Tremaglio's design. He sets up symmetry, then smashes it, thus emphasizing the alternatives.

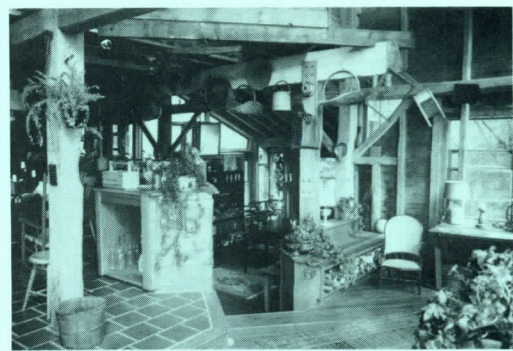
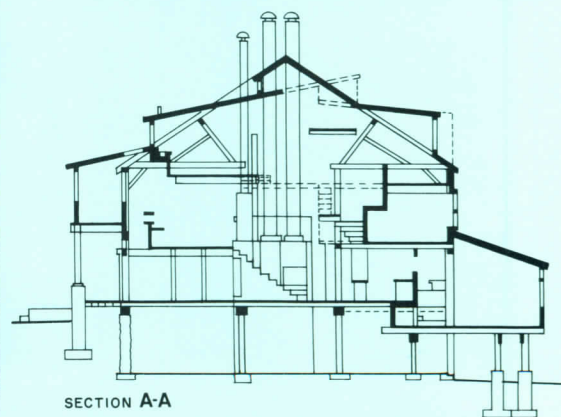
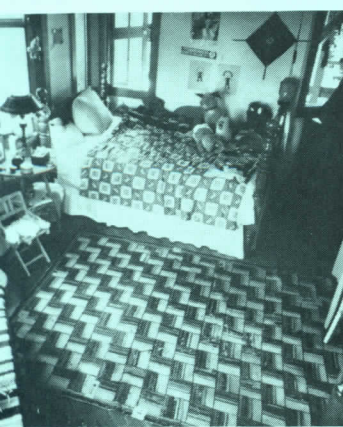
The barn is also a cornucopia of exuberant on-the-spot design decisions, like the tractor seat on one landing, which evince the sheer delight both Tremaglio and his client found in the process of designing and building this home. But the more lasting pleasures that the owners have discovered have to do with less obvious design features. The image of tree houses in a forest points up the great achievement of the design: the barn offers its users a constant non-exclusive choice between public and private places, sharing their lives and being alone.

HOUSE, Marblehead, Massachusetts. Owner: *Dr. and Mrs. Joseph Arena*. Architect/builder: *Richard C. Tremaglio with carpenters Charles Styron, Michael Paul, Christopher Murphy*. Structural engineer: *A. Michael Tremaglio*. Contractor: *Walter Rous*. BARN RENOVATION, Weston, Massachusetts. Architects: *Richard C. Tremaglio—project architect: Reynolds Thompson*.





The barn, among other things, is a study of what a habitation can be. Inside, Tremaglio's spaces are like little houses, each with a particular use or owner, within the communal framework. On the ground level, the enclosed kitchen and laundry area, and the sunken formal dining room (right bottom) are clearly distinguished. Individual private areas are enclosed to varying degrees. The little girl's bedroom (below left), with only a small interior window looking down on the rest of the house, is almost a self-contained doll-house. The mother, a poet, has a tiny study, an eyrie isolated from the space below, but commanding a view over the entire barn. A larger study for her husband spreads in a more gregarious fashion over an open platform at one end of the barn. The two children's rooms are linked by a play area and the kitchen and formal dining room share an informal eating area. At night, all these dwellings lighted, become bright at home spots in the barn's dark landscape.



BEHIND THE FACADES: a conversation with Robert A.M. Stern

Last fall, in the 1579 rope factory (The Corderia) of the Venice shipyards (The Arsenale) the First International Exhibition of Architecture of the Venice Biennale brought together 76 architects, all considered to be pursuing "post-modern ideas" in their work, under the theme "The Presence of the Past." In the words of director Paolo Portoghesi the exhibition was intended to recognize the importance of "the creative reintegration of historical heredity" and the "repudiation of the binding orthodoxy of the International Style." Twenty architects were invited to design facades for La Strada Novissima—a street running through the Da Ponte-designed Corderia—and 55 "young" architects were invited to display their work on a mezzanine overlooking La Strada. Robert A. M. Stern was a member of Portoghesi's advisory commission, and one of the 20 architects chosen to design a street facade. In a written preface to his project, Mr. Stern quotes Gloria Swanson, as Norma Desmond in *Sunset Boulevard*, extolling the methods of the silent film: "We didn't need sounds. We had faces." Miss Swanson's words may echo the hope of the architecture exhibited at the Biennale, and the ambition of post-modern architecture to communicate, but, to date, words have been as conspicuous a part of post-modernism as building. RECORD talked with Mr. Stern about the architecture section of the Biennale and the implications of the work exhibited there. A portion of that conversation follows. —Charles K. Gandee

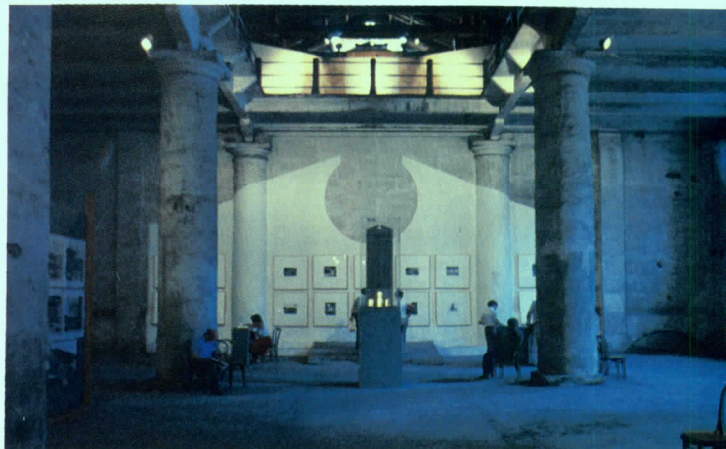
CKG: You were instrumental in organizing the architecture section of the Biennale, and selecting the American architects who participated. Tell me something about the process.

RAMS: The long and the short of it is that Paolo Portoghesi assembled a commission, mostly of Italians, with two Americans, myself and Udo Kultermann. The commission then invited four critics to participate: Kenneth Frampton [who later withdrew], Charles Jencks, Christian Norberg-Schulz, and Vincent Scully. I, as the American member of the commission closest to the situation in architecture—and with Portoghesi's idea that this would be a post-modernist Biennale—proposed the theme "The Presence of the Past." I suggested a list of Americans whom I thought represented a broad spectrum within that theme, so that the list I proposed could include Frank Gehry, who in a way represents continuity with a kind of California or American vernacular tradition, but is not an historicist *per se*, though some of his work does explore literal historicizing themes. At the other extreme, I proposed Allan Greenberg, representing an academic, correct and McKim-esque attitude to classicism, and Thomas

Peter Pennoyer



"The Biennale intends to be a Trojan horse in a desirable restitution to Venice of one of its most vital organs [the reopening of the Arsenale]," writes director Paolo Portoghesi in his article "The End of Prohibitionism"—included in the exhibition catalog published by Rizzoli. The contents of that Trojan horse can be glimpsed in the photo at left—a view from the mezzanine, overlooking the Strada Novissima. A model of the Johnson/Burgee AT&T Building, and an enormous detail of its top, were included in the exhibit (photo below) as an homage to Philip Johnson—one of three architects to whom the exhibition pays tribute. West German Joseph Paul Kleihues' project is in the foreground of the photo at right.



Gordon Smith, representing a kind of very vivacious classical revival in the Maybeck tradition. In the middle range, I proposed the obvious, logical group though I may have made an error here and there. Senior members were Charles Moore and Robert Venturi, who in their work and writing crystallized the thought of a whole group of people and made it all possible. On the other hand, I would say people like Michael Graves and Stanley Tigerman have carried the ideas forward.

CKG: Did you recommend the Europeans as well?

RAMS: I made proposals for the European selections but the situation was naturally more complicated. Europe has so many different countries and one tries to represent all those countries in the Biennale. Clearly, not each country in Europe is concerned with the same issues, and in certain countries, because of economic and political conditions, architecture has been rather stagnant intellectually and in terms of the amount of work done recently. Spain's emerging democracy has

brought a wonderful resurgence of architectural forms and what we call post-modernism is very much present there. Germany, on the other hand, with the exception of Ungers and Kleihues, has been really trapped in a kind of academic modernism for a very long time. So the European architects were much more complex to assemble as a group. . . . I think finally the compilation is coherent.

But, beyond that, what makes the Biennale a brilliant, important event is first, the idea of having it in a historical building of great character, so that the efforts of those architects invited to design facades could be measured against traditionally admired forms, and, second, Portoghesi's idea of making a street—the whole idea of the facades.

CKG: Wasn't Portoghesi inspired by a carnival he had seen in Berlin, with new construction on one side of a street and carnival facades on the other, which seemed like an enticing format?

RAMS: Yes, that was his idea. But the one disadvantage of the Strada Novissima is that because it is so narrow you can't see the

facades individually. But it's perfect in that it's like a real street—you can back up only to a point and the individual facades become fragments of the totality. But if you want to look at each one individually, it's difficult.

CKG: How did the street hold together? How did it look when you stood at the end or walked down?

RAMS: I'd say it was one of the most exciting possible places to walk. I think it was stimulating, it brought a smile to your face, your eye was never bored, you went in and out of the individual facades as though they were wonderful shops on a lovely street. It worked very very well. It also created an enormous sense of energy. Frankly, of course, I think the Americans come off better, although Hans Hollein had a wonderful facade. And among the 55 younger architects represented upstairs, the Americans clearly were the ones who carried forward the theme with great energy.

CKG: Did you choose the young Americans who displayed on the mezzanine?



Photo left:
Charles Moore (USA)

Photo right:
Allan Greenberg (USA)

Photo below right:
Thomas Gordon Smith (USA)

Photo below:
Studio G.R.A.U. (Italy)



RAMS: I proposed many more who were not selected. I think many more might have been selected but it would have looked like a complete rout of the Europeans and the Japanese. Second of all, there was very serious discussion of the younger architects and the effort was made to pick less well known architects who not only had intriguing projects but who seemed already to suggest a certain solidifying of the direction of their work. One project that was astonishing was by John Blatteau, whose classical projects were illustrated with extraordinary and equally classical drawings. Together these revealed that after 30 years of people saying that such projects were inconceivable, that it's perfectly possible to conceive of them with a very fresh eye. In terms of wowing people, Blatteau came off very well.

CKG: *Taking the street and its facades as the medium, what is the message?*

RAMS: To make people realize the possibilities open to architecture. Architecture should not be self-limiting. It should not be anti-intellectual. It shouldn't close its eyes to what

is possible. Anything is possible in our society. What is appropriate or not should not be decided by architects alone, operating in a vacuum. It should be decided by society in general, the interaction of architects, the people who have the power to commission architecture, the people who have the fortune or misfortune to use architecture. You don't take a vote, it just happens. If everything is there, natural selection will occur.

CKG: *And if you self-limit the ideas, you've pre-determined the outcome?*

RAMS: Not only pre-determined the outcome, but you're very likely to lose your audience completely. The great thing about the Biennale was the range of ideas that you could see, even though the selection was loaded toward a historically rich architecture. The statement that the individual architects were sent—which I had a hand in writing—asked the participating architects to express in their facades what they felt about the theme of "The Presence of the Past," and how they had involved themselves in the theme in their own work. The architects were

asked to use Sir John Soane's own house in London as a model. Soane's house *cum* museum is a kind of public declaration of what he believed in. I think people put their energies into trying not to rival Soane literally, but to emulate his commitment to architecture as communication about beliefs.

CKG: *Doesn't the Strada Novissima present easy prey for the critics of post-modernism, by saying that the work represented in the Biennale—i.e. post-modern—is precisely where it belongs, in the realm of the facade; that it's not building, that it's decoration, that it's ornament, that it lacks substance, that the materials that are used in the constructions are not honest to the forms?*

RAMS: My first answer to your question would be by way of historical analogy. World Fairs and other expositions have frequently been very influential in the history of architecture: the most notable being the Chicago Exposition of 1893 which, though all lathe and plaster that couldn't withstand the weather for very long, transformed architecture for a generation or more. Second of all, the Strada

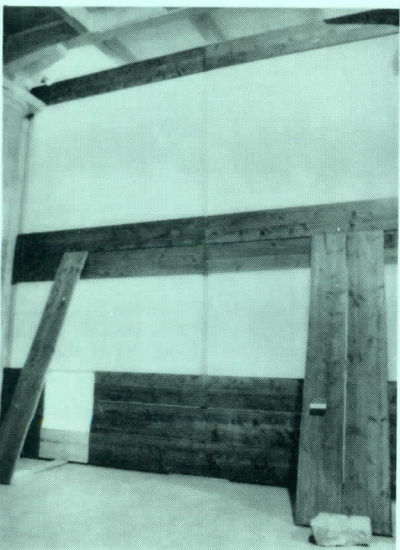
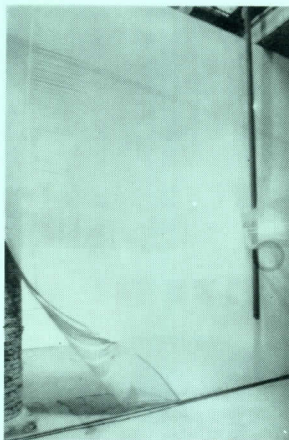


*Photo left:
Frank Gehry (USA)*

*Photo right:
Michael Graves (USA)*

*Photo below:
OMA Elia Zenghelis,
Rem Koolhaas (England)*

*Photo below left:
Arata Isozaki (Japan)*



Novissima is built inside, built very cheaply, very quickly; it wouldn't be appropriate to spend the vast sums necessary to build out of expensive materials.

But the broader issue, if I take your remarks either as a question or an accusation that someone might pose, is twofold: one, what does it mean to be true to materials? And doesn't post-modernism question that sort of presumed moralism? Post-modernism questions some of the ideological presumptions of the last 40 or 50 years: one of which is this notion of morality, as though an art form was somehow a branch of theology—a notion that of course was not nearly so much honored in practice as it was in polemical writing.

But the other thing that you did suggest was that ornament wasn't architecture, or that decoration wasn't architecture. I don't think that's true at all. As Arthur Drexler once suggested, I think, decoration is in fact the only act of free will that the architect has for himself—or at least one of the few. And it is the way that a building's specific character is made explicit, whether it's in the Modern Movement or in the history of architecture in

general. Mies's buildings look like Mies's buildings because I-beams and other members of a quasi-structural nature are used in a quasi-decorative way as well. The temple form is an archaic form, gables on boxes, but by various decorative motifs—whether the traditional orders or their deliberate absence (the Parthenon on one end and the abstract stripping of Frank Lloyd Wright at the other end of the spectrum)—it's made to look different. Yet the temple form, that primitive hut if you will, is archaic. . . . It goes on and on.

There is very little new in architecture in a basic way, and that's what typology is about—a study of the types and their variations. Many of the variations come about from the assemblage of types and compositions, and many of the variations come about from the various decorative treatments of the type. So I am for decoration. It is the thing that makes buildings most specific and our experience of them most intense; given the comparative muteness of architecture (as opposed to painting or sculpture) the most direct way to represent what the architect has in mind is to decorate the facade.

CKG: What happens if you strip off the decoration? It seems that there is an open invitation to look at the decoration, the ornament, as surface embellishment having been applied rather than as an integral part of the building.

RAMS: There is this notion that you either decorate with structure or you decorate structure. To decorate structure is to bring to the inert and inarticulate volume of a building some other values—pure plastic values and often values that have to do with presumed meanings through allusive processes or metaphorical processes. Ornament makes buildings look richer. If you strip the ornament off, you rob the building of a lot of its richness—and of its ability to convey meaning. Ornament makes a building interesting, lively; it occupies our attention. The eye is the recorder of meaning in architecture. If there's nothing to look at, the eye will pass it by.

CKG: But if you put garlands on an office building—like Graves's Portland Public Service Building—and then you say that those garlands represent welcome . . . ?



Photo above:
Hans Hollein (Austria)



Photo right:
Venturi, Rauch
and Scott Brown (USA)

Photo below left:
Stanley Tigerman (USA)



RAMS: Such an act of design introduces nature to buildings—an act which in the city is something most people welcome. . . . Buildings usually represent to the public the absence of nature.

CKG: Who understands that? Isn't there a serious risk of mis-communication?

RAMS: I think people understand the representation of nature and other things (which is part of ornament) pretty directly. Anybody who looks at a building that is embellished understands that a certain care has been taken. There's something to look at. They say, "Oh! Plants, flowers, that's nice." Now, the use of such motifs may have other meanings that are deeper—historically, conceptually, compositionally. However, that's not to say that their most obvious function—to please the eye and refresh the spirit—is their most trival. The decorative motifs employed may each have deep philosophical meanings that pass the vast number of people by, but it doesn't mean that because those meanings pass them by that the most basic meanings are passing them by.

CKG: Or that meanings independent of those intended might still have validity to whoever perceives them?

RAMS: People bring different associations of their own to buildings; that's as it should be. My only concern is that in buildings that aspire to muteness that there's not much of an attempt to trigger the viewer's own associations; also the absence of specificity in so-called mute buildings often makes the viewer feel that his own associations are at odds with the building, threatening the building, or threatened by the building. So that's why I would urge people not to have a mute architecture. And one way to make architecture articulate is to use ornament.

CKG: What about the movement some time ago, which was saying that a neutral and minimalist background was the appropriate one; that movement found enormous popularity—the same kind of popularity that post-modernism is now receiving?

RAMS: I think that the issue of minimalism, has been at the heart of modernist architecture

for the last 30 to 50 years. But minimalism just does not seem to me to deal with the public realm very effectively. Interiors are another thing. Whether you build a building in the country or on a city street, your work has a public dimension. Minimalism cannot deal with the public function of buildings, which is that most buildings are perceived by people who do not ever enter them. You never go inside the vast majority of buildings you see in your life. The facades of a minimalist building are merely the record of the organization of the interior, or more alarmingly, a screening of that organization by a vertical grid of reflective glass. For example, those glass boxes don't even show you the structural system and don't tell you anything about the uses inside. The ultimate minimalist building is the *mirror* building which shows you yourself or reflects the other buildings. But it shows you *nothing* of itself. I think that's alienating, it's boring, it's incommunicative, it's 1984-ish.

I think that architecture has a job to do. Yes, a building has to perform a function. But architecture has the job of communication as well. It has to interest people, it has to tell them something. At the very least it should

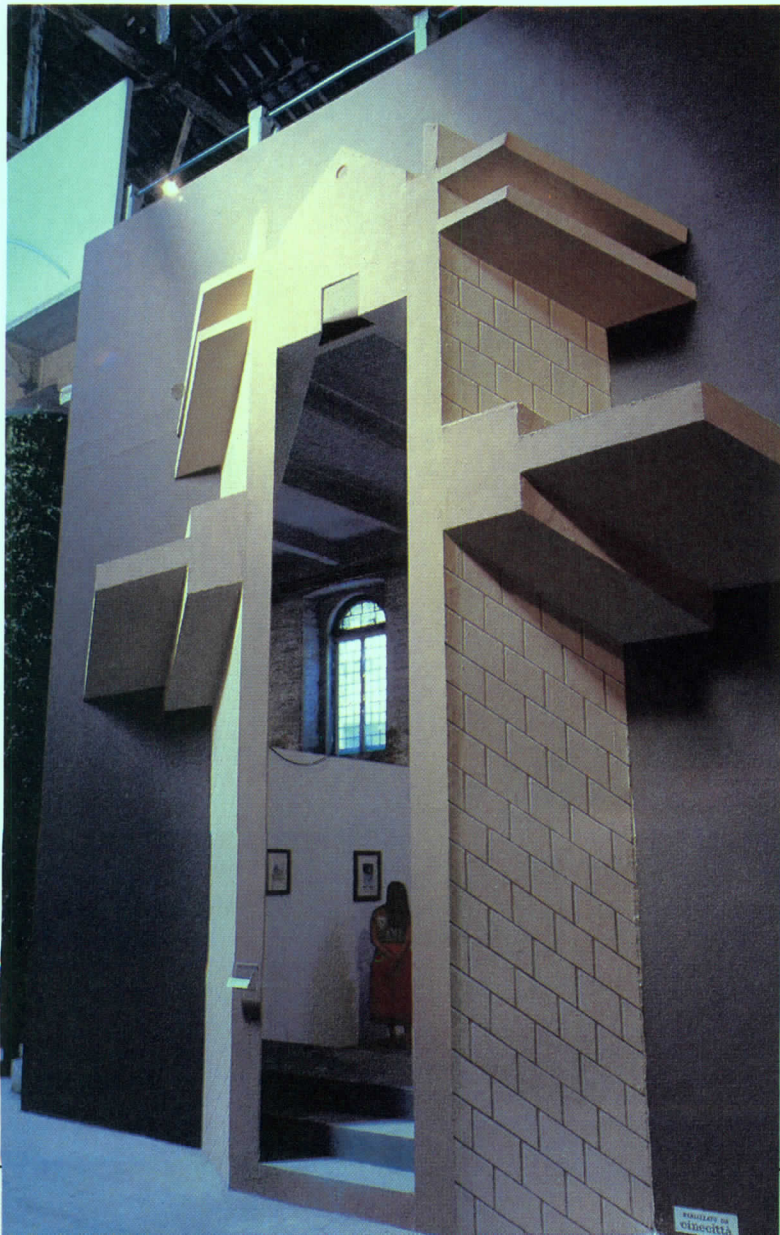
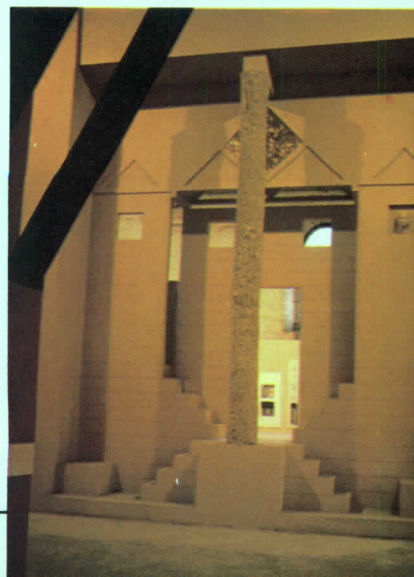


Photo left:
Massimo Scolari (Italy)

Photo right:
Paolo Portoghesi (Italy)

Photo below right:
Laura Thermes,
Franco Purini (Italy)



tell them about doors, it should tell them about windows and other devices that help them to relate the size of the actual building to their own size. That makes them comfortable at what Charles Moore calls a haptic level. It also should tell them about how this building occurred in the history of buildings. I think architecture has history as a possible subject. And buildings have the possibility of making us understand them and ourselves by establishing relationships to nature. This relationship is very little explored in minimalist architecture. In traditional architecture, whether Gothic or classic in its form, the natural analogy was made explicit through the use of leaves, tree and plant forms: the analogy to nature is one of the great pleasures of looking at Gothic buildings.

CKG: It seems that the point of the post-modern movement in architecture is to relate a building to something else—to its environment, to nature, to history, to man; to give it scale, to define the street; to do all these things that everyone would see as good things. But the only prominent example we have now is Michael Graves's Portland Public

Service Building, which seems to do all those things, or to try to do all those things, without very many compromises. Yet that building caused a furor.

RAMS: Only exceeded by the furor that Philip Johnson's [Johnson/Burgee's] AT&T Building caused. It didn't cause a furor among the general public. Though not yet completed, AT&T is one of the most popular buildings among the general public. Only architects seem upset. I can't say anything printable in answer to your remarks. . . . It's the architects out there who are seeing their stock and trade being sold out from under them.

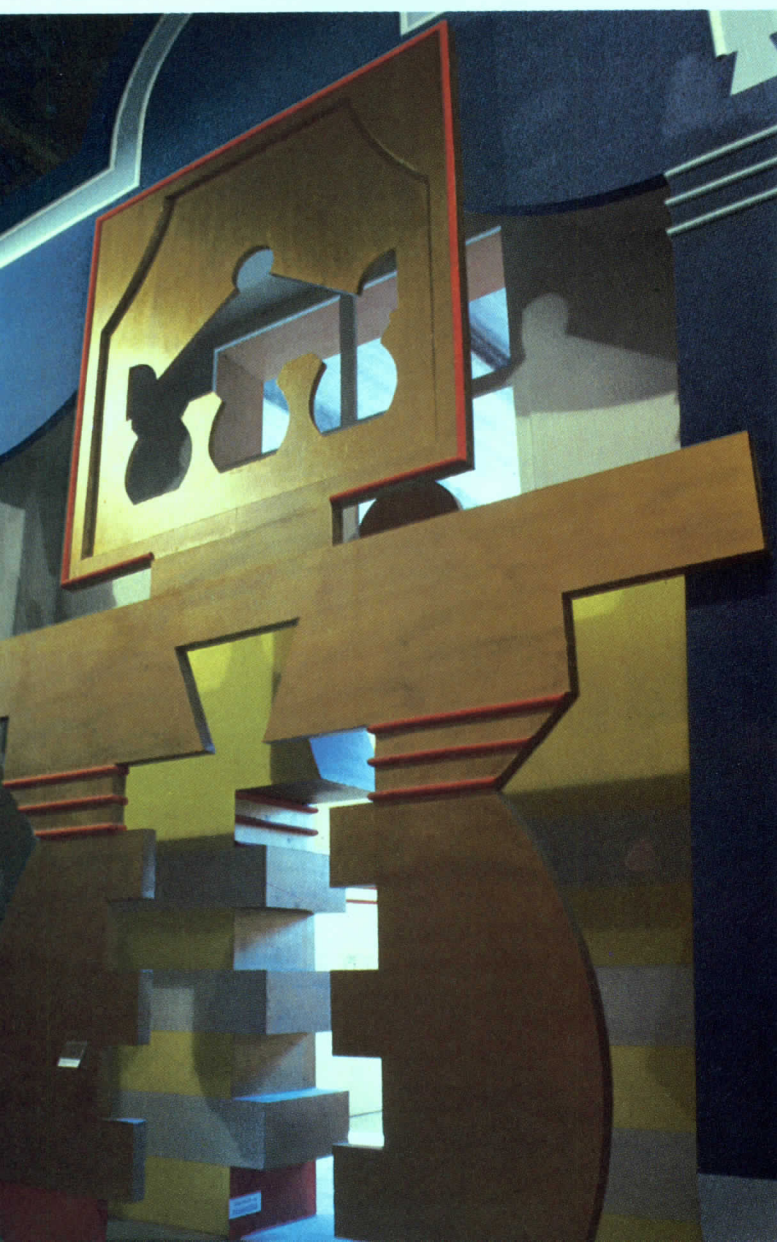
CKG: RECORD received more than a few angry letters about publishing Graves's Portland project (RECORD, August 1980).

RAMS: That just shows you that the building is lively and interesting; that it has something to say and it is speaking very clearly. The plain and simple answer is that architects are threatened by the building, and that shows you the power of an idea. Everyone is entitled to his opinion and it's fine to disagree

with a building on intellectual grounds; but it's not fine to condemn it; it isn't even built. If Gore Vidal doesn't like Mary McCarthy's book, he doesn't say, Mary McCarthy shouldn't have written the book, he says it's a bad book and gives his reasons. But he doesn't prevent the book from being written or have the audacity to say that it shouldn't have been written.

I really do think that we are returning to a more normative tendency in architecture, which is to be eclectic in the correct sense of the term. Architects do more selection than invention at any given time. It's the normal condition of architecture—it is what modern architecture is and has been for five hundred years, and I do not see that it's going to change.

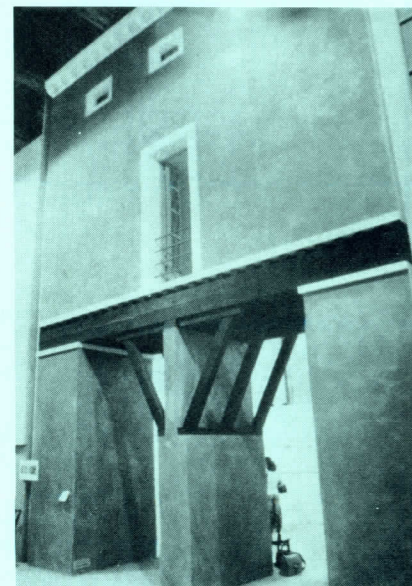
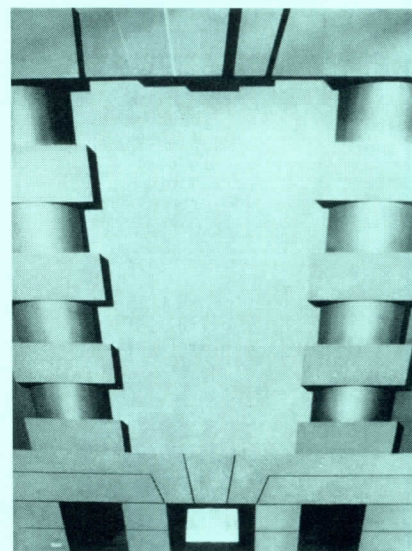
Our office did a little townhouse on Park Avenue in New York [AIA Honor Award winner 1980]: it has a suggestion of early classical detail, and it's a completely new building. Many people have seen it and liked it—people I meet say "Oh, I pass that all the time, that's really interesting." They are responding. They do notice it. So far nobody's punched me in the face. . . .



*Photo left:
Robert A.M. Stern (USA)*

*Photo right:
Ricardo Bofill (Spain)*

*Photo below right:
Maurice Culot (Belgium)
Léon Krier (England)*



SKIDMORE, OWINGS & MERRILL'S NEW DIRECTIONS IN HIGH-RISE DESIGN

Skidmore, Owings & Merrill, known and respected for its quality of work since its inception in Chicago in 1936, has steadily built a reputation as a master "corporate architect." Although the firm has sought and maintained a diversified practice, it is the office building—particularly the high-rise office building—with which the firm is associated in most minds. Perhaps unfairly, perhaps because of the volume of such work it has done, SOM has been criticized for designing "those SOM boxes." To which the partners rebut—in unison—"all boxes are not the same!" Nonetheless, the SOM partners, including the new ones pressing up through the firm, have undertaken strong new design initiatives that will most visibly affect form and dramatically alter skylines.

As exposure for their ideas, SOM and the editors of *The Harvard Architecture Review* put together a "post-modernists versus SOM" forum for SOM's New York staff, based on the *Review's* Spring 1980 issue, "Beyond the Modern Movement." The conference, held last December at the Harvard Club in New York City, was titled "Between Practice and Polemic," with Raul de Armas, Donald Smith, Tom Killian, Michael McCarthy and Jan Pietrzak representing SOM, and Michael Graves, Robert Stern, Jorge Silvetti and Steven Peterson as the invited "post-modernists."

The event began with each person presenting slides of his current work, including SOM's Irving Trust Company's Operations Center, St. Paul Town Square, the Haj Terminal and the First Canadian Center in Calgary, and Grave's Portland Public Service Building, Stern's second Chicago Tribune and Dom competition submissions, Silvetti's Roosevelt Island work, and Peterson's University Avenue Development in Ithaca, New York.

Even though strong opposing views were expected by the very nature of the well known personalities and points of view of the participants, unexpected pyrotechnics flared when Stern carried the banner for the "post-modernists" by attacking SOM on all the cliché, predictable grounds, and charging that "all SOM buildings are boring!" But the most interesting discussion was generated with SOM's announcement that it is post modern but by a different definition. They see themselves moving beyond the strict principles of Modernism, conceding that Modernism had failed in certain ways by paying too little attention to history, context, human scale and symbolism. SOM proposed that its current work, particularly that in urban settings, dem-

onstrates considerable variety in configuration, massing and exterior treatment, while paying attention to energy conservation, regional and local contexts and providing special amenities for the user. And yet there were issues raised that will never be resolved between the two groups, such as "Buildings ought to be about us, and not about themselves," espoused by Michael Graves. SOM's response was that structure must be honest and represent only itself, not the architect flexing his muscles. Regardless of the outcome of this specific encounter, it was a bold move on the part of SOM to create the opportunity to discuss such weighty issues, and to confront its most vocal critics.

The proof of the pudding is to be found in the new SOM buildings that make up this Building Types Study. The five projects selected, two completed and three unfinished, run the gamut in design richness. The *First International Plaza* in Houston (pages 115-119), designed by Richard Doane and Chuck Bassett, is a disciplined, controlled expression of form, in which each elevation is different in response to its neighbors and also provides a major urban plaza. *Town Square* is a large mixed-use complex in the heart of St. Paul, Minnesota (pages 120-123). Designed by Donald Smith, it is sensitive to the community needs, focusing on both high-rise office towers and low-rise blocks of marvelous indoor spaces, including an enclosed urban park the size of a football field. The first of the unfinished projects shown is *Irving Trust Company's Operations Center* (pages 124-125) in lower Manhattan, again a contextual design which creates a grand interior space—a central atrium—despite its dense location in the financial district. It was designed by Raul de Armas. *One Magnificent Mile* in Chicago (pages 126-127), designed by Bruce Graham, is a high-rise mixed-use building, two-thirds of which is condominiums. Its unusual hexagonal shape specially responds in 360 degrees to its classic Michigan Avenue locale. And the last project, *Allied Bank Plaza* (pages 128-129), designed by Richard Keating and Chuck Bassett, is another very different sculptural solution on Houston's skyline, which provides pedestrian amenities that few other buildings achieve in the business district.

During interviews with each of the six design partners responsible for projects shown in this study—Chuck Bassett, Raul de Armas, Larry Doane, Bruce Graham, Richard Keating and Donald Smith—the individuality of each was most noticeable. There are two statements, however, which capture the sen-

timents of the others and framed their views on trends in high rise design. Bruce Graham was most adamant that "Our objective should be to build a city, not just a single building, and that the prime question for the architect should be how to express our civilization. I think we should find the 'local music' and continue to search for the proper vocabulary which responds to the demands of the people." Backing him up, Donald Smith added, "The city is the architectural problem of our time. If we are to save our lifestyle, there must be a rebirth in urban centers. I've been particularly an advocate of the mixed-use complex as a way to accomplish this."

At issue now is the design of forceful forms. "Many of the buildings that appeared in the sixties were as messageless as possible, and uptight and slick as we could make them. I'm presently exploring, as many of the other partners are too, the tube system, like the one in Allied Bank Plaza which gives us the opportunity to relax the form," states Keating. "Form will have to change," continues Graham, "with demands for higher density." And Doane further explains, "with all the different reasons for more expressive forms, our computer system has provided more intricate and elaborate studies freeing us for the critical design decisions."

"We must draw upon a logical reason for the way things happen," continues Smith, "otherwise, design will simply be fashionable and there is always the chance of its going out of style." As developer work has increased and there are more Canadian developers working in the US, "there is more competition between developers for good design work," said Graham. DeArmas adds, "these clients often establish long-term relationships with an architect and as their work expands to many cities, it is only natural for the architect to do the design. We will see more variety in forms and manipulation of scale because the box is now thought of in such a perjorative sense. But all attempts will be rather ineffectual without more energy conservative solutions." Chuck Bassett concludes "there is no recipe for the future; architecture will reflect changes in the culture—as it always has—but new criteria will force innovative schemes."

The projects on the following pages explore some clever, innovative strategies in high rise design. They are worth studying as they are more expressive, contextual solutions, progressing beyond the "box," that address the larger and more critical issues affecting our cities. —Janet Nairn



First International Plaza Houston, Texas SOM/San Francisco Office

Charged to design a speculative high-rise office building, with a major banking hall for one of the tenants, the San Francisco office of SOM manipulated the form of this Houston tower in such a disciplined manner that not only is each elevation visually different—as a response to different stimuli—but the base and top also react diversely. It is a building whose functions “read” amidst the competing towers of booming Houston. A perfectly symmetrical solution could not have solved the complex criteria in this fast-developing city.

The site is typical in the downtown grid—each lot is quite small, 250 feet square. The immediate parameters which affected the design include medium- and high-rise buildings toward the east, and development falling away from the site toward the west with extensive freeway system. Houston and its high-rise character have always intrigued several of SOM’s design partners, and they have sought work there as well as being sought out by developers. As a result, part of downtown has been developed by SOM; found within only a few blocks radius are four completed SOM buildings and one under construction (the Allied Bank Plaza, also shown in this study).

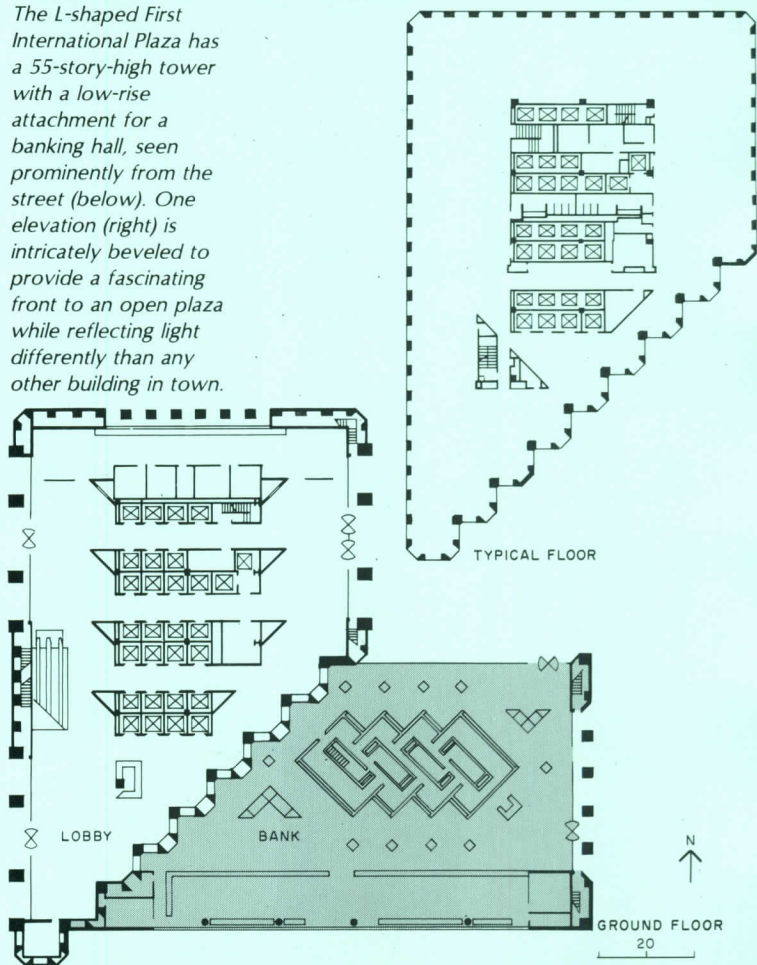
Because Houston has no zoning restrictions, there are no required set-backs and therefore few of the pedestrian plazas so typically found in other major cities. The opportunity to create such a unique oasis for the pedestrian was achieved here by positioning the building to the southwest corner of the site, and locating the banking hall in an L-shaped arm. This creates an urban plaza that will anchor a broad open swath planned in front of Allied Bank Plaza (again, see pages 128-129) just across the street (to be completed in 1983). The plaza also links to another SOM-designed building, One Shell, fronting busy Louisiana Street. There are plans for a major sculpture in the plaza.

With the opening-up of the plaza corner, an abundance of light strikes this key elevation. This wall was designed to take advantage of the light as it moves around the building, by using intricate bevels and beveled window frames. These faceted angles reflect light in a different manner than any other building in the area, creating what design partner Larry Doane calls a “beacon” effect.

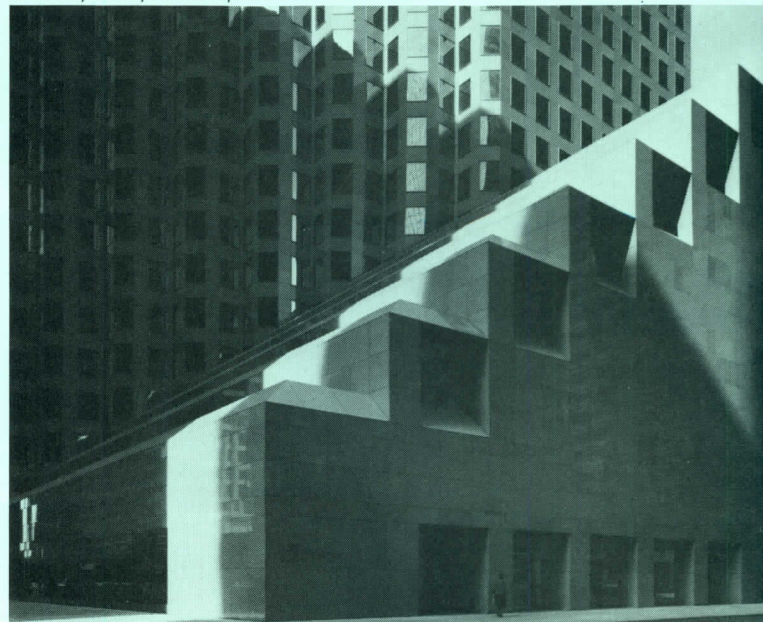
The northwest elevation on the opposite side of the structure (shown on previous page) is perceived as a whole only from passing cars on a nearby freeway. Capitalizing on this, the top of the structure became the focal point. Reminiscent of the other beveled elevation, the top has pronounced bay windows which step down against a



The L-shaped First International Plaza has a 55-story-high tower with a low-rise attachment for a banking hall, seen prominently from the street (below). One elevation (right) is intricately beveled front to an open plaza while reflecting light differently than any other building in town.



Richard Payne AIA photos except as noted





background of a straightforward, flat facade. Two important dimensions, six-foot-wide windows and four-foot-wide solid panels, set-up an orderly, regimented pattern around the building on both beveled and flat walls.

The nature of the structure is monolithic and the exterior materials were selected to reflect this image—polished granite and reflective glass, both in rose color. At certain times of the day, there appears to be no differentiation between the glass and granite creating a single warm tone.

By separating the banking hall into its own individual space rather than placing it in the lobby of the tower, the architects had a marvelous opportunity to create an enormous volume of interior space. The beveled pattern on one elevation of the tower extends down through the banking hall. This common connecting wall, however, is clad in travertine, to match the remainder of the banking surfaces. Light floods into the space through a huge southern window wall, and through linear skylights and clerestory windows, which follow the building roof height as it steps down from its 106-foot-high peak to the street. In 1977, Gensler & Associates/Architects were hired by the bank client to design the banking hall and seven office floors in the tower. Within the bank, the loan officers' office area is underneath a horizontal mechanical section for privacy, and tellers are located in the grand open space.

While Larry Doane, one of the design partners for this project, believes that not every new building should make its own pronounced statement, this new solution demanded its own identity as a response to the cityscape. Doane continues, "In the design of First International Plaza it was important for us to respond to the city yet contribute to its development in a special way, and I think we achieved this, as the two strengths of the building are its varied exterior form and large pedestrian plaza. As this building was the new kid on the block, we gave the clients what they wanted—a building with its own identity, a different image from others downtown."

FIRST INTERNATIONAL PLAZA, Houston, Texas. Owner: A Project of Gerald D. Hines Interests and PIC Realty Corporation. Design architects: Skidmore, Owings & Merrill—Larry Doane and Chuck Bassett, design partners; Walter Costa, partner-in-charge of administration. Associated architects: 3D/International. Engineers: Colaco Engineers, Inc. (structural); I.A. Naman + Associates, Inc. (mechanical/electrical/plumbing). Consultants: Claude R. Engle (lighting); Susan Rush Associates (art). Interior architects for First International Bank in Houston: Gensler and Associates/Architects—Antony Harbour, principal-in-charge; Clyde W. Jackson, project director; Bud Luther, project designer of banking hall and typical banking floors; Margo Grant, project designer for executive banking floor; Michael McKinney, Tom Giannini, Riddell Chancellor, project team. General contractor: W.S. Bellows Construction Corporation.



The stepped roof banking hall which is attached to the office tower (above) provides a marvelous volume of space for normal bank operations. One glass window wall with a southern exposure, and linear strips of skylights permit more than ample natural light to flow into the space (below). The common interior wall of the bank and tower has identical forms that appear on the exterior. This element of design continuity also allows a few offices in the lower part of the tower to actually have views into the banking space (right).





Town Square

St. Paul, Minnesota

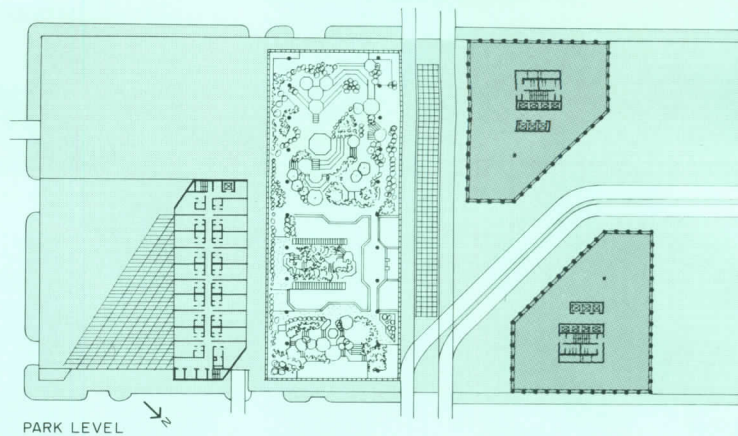
SOM/Denver Office

At the crossroads of downtown St. Paul, equidistant from the Mississippi River and the Minnesota State Capitol, is a new kind of town square—like its rural Midwestern counterparts, a focal point and gathering spot, but unlike them, grand in scale and complexity, representative of today's urban living. As a central locus, it was important that the project generate use at night as well as during the day, and because of extreme winter weather conditions, it was necessary to fully enclose all public space.

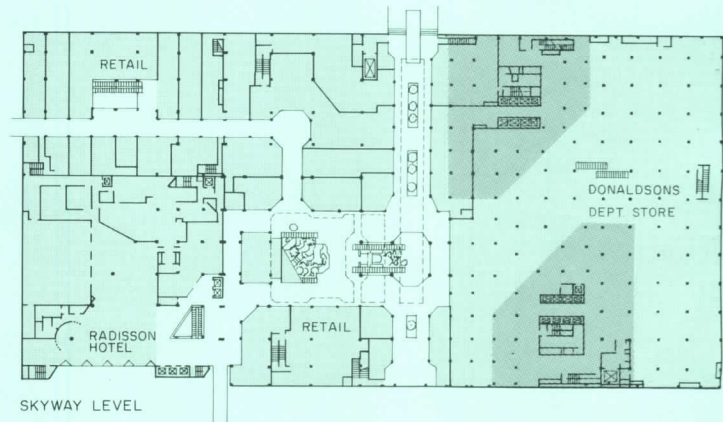
To meet these requirements, Donald Smith from the New York office in conjunction with the Denver office designed this mixed-use development—appropriately named "Town Square"—covering two major city blocks that had stood empty for a dozen years (and bounded by Cedar, Minnesota, Sixth and Eighth Streets). A two-block-long podium spans the dividing street (Seventh Street), and is topped by two office towers on one block and a large indoor city park on a portion of the second block. Within this podium is 350,000 square feet of retail and commercial space. Also atop the podium but at the southeast corner, nestled against the park, will be a Radisson Hotel and garage, being designed by St. Paul architects Bergstedt, Wahlberg, Berquist and Rohkol.

The two-tower concept developed because two tenants, who both needed large amounts of floor space, wanted their own separate building for identity. This solution also allowed the tower heights, at 25 and 27 stories, to be compatible with surrounding structures. By not dominating the skyline, as one skyscraper would have, the visual focus in the area remains on the historic Capitol building. The forms of the two towers and their position (see plans) were a direct response to earlier city plans for a people mover transit system that would have linked this whole project to other buildings and open spaces in the area (RECORD, July 1979). While this plan has not received necessary support, if it goes ahead a spur would run diagonally through the site between the angled walls of the towers, and towards the State Capitol beyond.

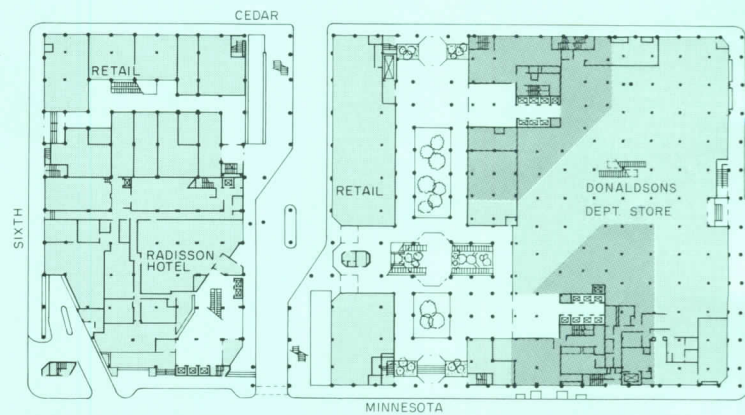
The towers use reinforced cast-in-place concrete in lower portions, post-tensioned concrete in the higher segments, and are sheathed with precast concrete and semi-reflective glass. The subsequent fenestration pattern that is achieved appears quite powerful along the skyline. Employed is the "pressure-equalized rainscreen" principle—a method by which the pressure in a cavity between the exterior cladding and insulation material is equal to the pressure outside so as to prevent moisture being sucked into the cavity.



PARK LEVEL

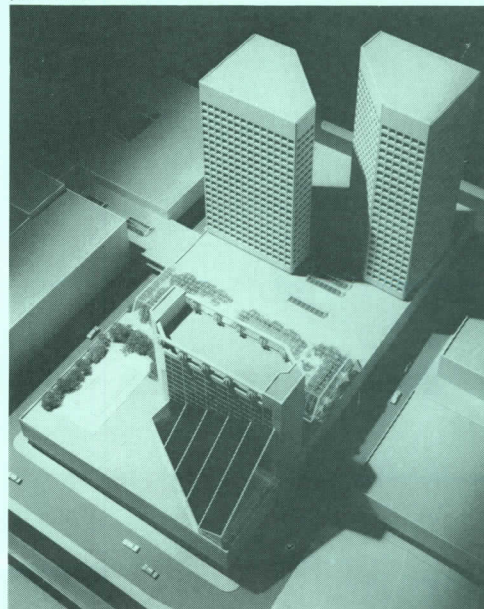


SKYWAY LEVEL

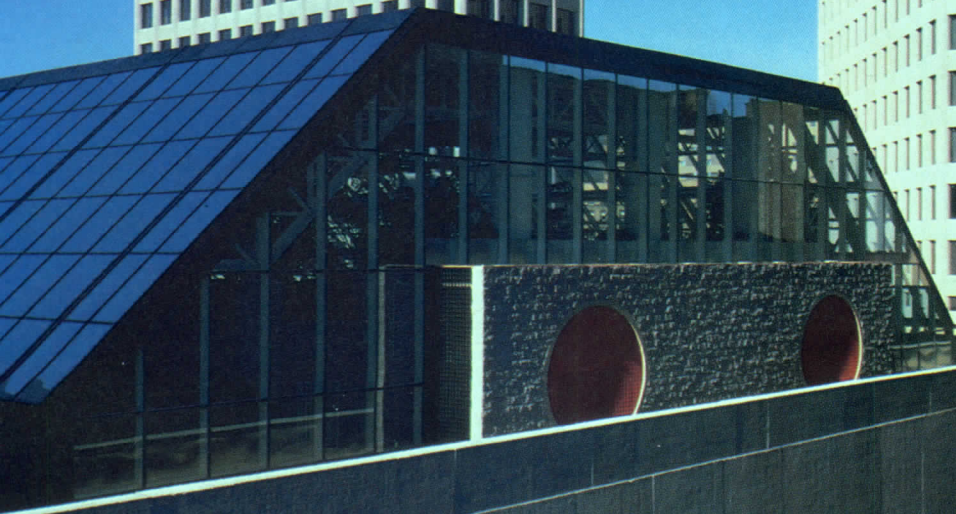


STREET LEVEL

Jack Horner



Town Square is a mixed-use development in downtown St. Paul. A two-block-long podium is filled with retail and commercial spaces, and is topped by high-rise towers on one block and enclosed park on another. Completing the scheme (left) is a hotel. The truss-supported glass enclosed park (right) provides a spectacular indoor greenhouse for recreation and exhibitions.



MOTEL



Well water from St. Paul's aquifer is utilized in heat pumps to heat and cool the buildings. The aquifer has a constant temperature of 55 degrees, and it is estimated that the energy consumption of Town Square is only half of that used by conventional high-rise buildings.

In a multi-level space, it is the architect's job to create an entry system that entices the users into the retail and commercial spaces. This was accomplished by creating one central spine along Seventh Street, from which escalators draw people upwards until the upper level is reached. Entries to the tower lobbies are only from the street level and skywalk level in the mall; there is no direct access from the street itself. On the upper level, an urban park the size of a football field is enclosed under a great truss-supported glass roof. The park, a cultural event in itself, is adaptable for concerts, parties, exhibitions, meetings and lectures (but not for sports events), operating concurrently or singly. Like a year-round greenhouse, the park has proven a wonderful reprieve—an oasis—from the harshness of winter weather.

Enclosed, elevated pedestrian bridges connect this whole complex with other buildings in the downtown area. The skywalk system is more developed here than in most other cities, and this has often influenced design amenities in new buildings. Architects have designed larger, important lobby spaces and increased retail and commercial additions to office towers that would not otherwise include such space.

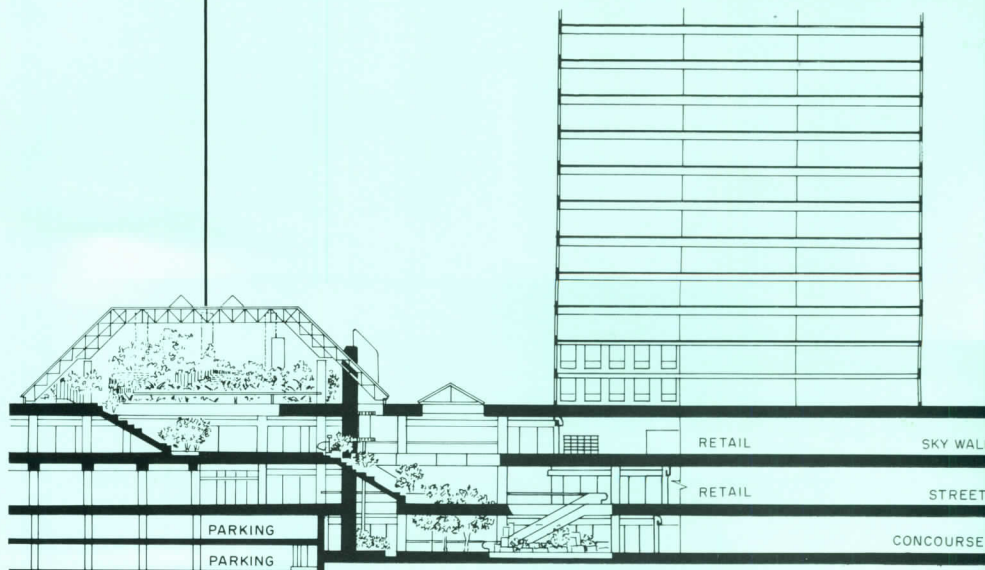
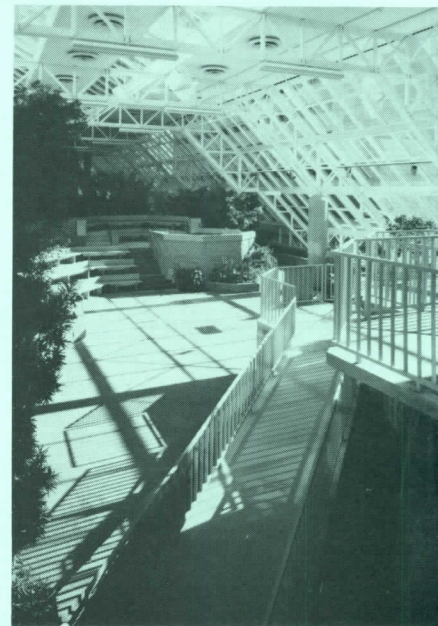
Design partner Donald Smith sums up Town Square by reiterating that "We must reorient our attention to the center cities to save them, and we must then consider what is important in the development in terms of people, not the automobile. Town Square is a prime example of an economically viable project that achieves this by combining office, retail and commercial spaces with recreation- and civic-oriented uses. Mixed-use is tough to do, but when it works, as in St. Paul, it stimulates activities that draw people downtown and prevent the sidewalks from rolling up at night."

TOWN SQUARE, St. Paul, Minnesota. Owners: Oxford Development Group, and the City of St. Paul. Architects (except for hotel and garage): Skidmore, Owings & Merrill—Donald C. Smith, partner-in-charge of design, New York office; Kenneth A. Soldan, partner-in-charge, Denver office; Patricia W. Swan, project designer; Leroy D. Schickedanz, technical coordinator; William P. Scott, senior designer; John L. Petro, project manager; Thomas J. Walsh, John R. Condrey, Robert C. Grubbs, job captains. Architects for hotel and garage: Bergstedt, Wahlberg, Berquist and Rohkol. Engineers: Skidmore, Owings & Merrill—Edwin K. Shlemon, senior engineer (structural); Flack + Kurtz (mechanical/electrical). Consultants: Lerch, Bates & Associates (elevators); Cerami & Associates (acoustics); GN Associates (graphics/banners). General contractor: PCL Construction Ltd.



Nick Merrick/Hedrich-Blessing photos except as noted

As the podium for Town Square spans a street, a small skylighted atrium is created, through which people have access to the shops (section below and photo right). One major department store anchors the retail space (located underneath the high rise towers) with smaller stores and shops located between the atrium and hotel (see plans previous pages). Entrance to the high-rise towers is only from the upper levels of the mall necessitating people passing through the podium. The urban park is wonderful as it is flooded with natural light, filled with multi-colored banners, and meandering landscaped walks and bridges (above).



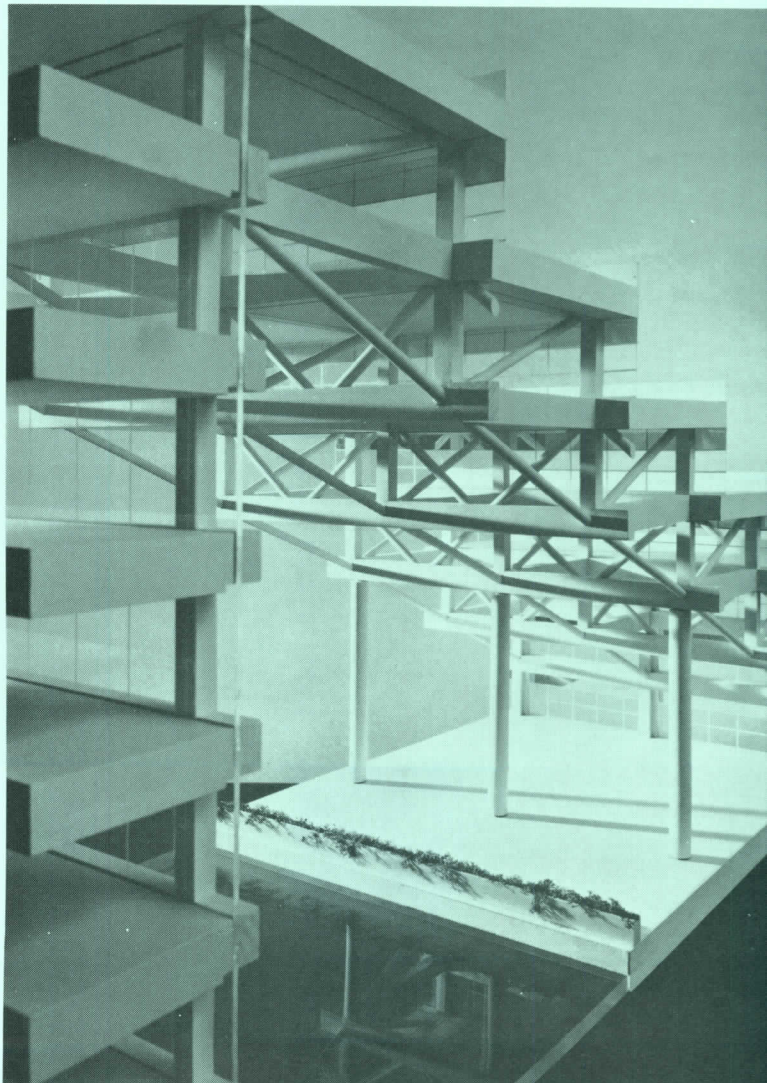


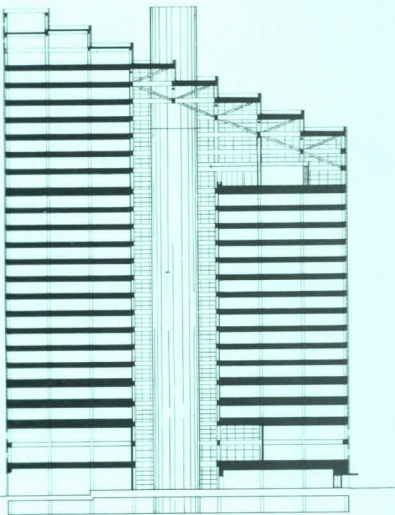
Operations Center For Irving Trust Company SOM/New York Office

The winning design for Irving Trust Company's computer-based Operations Center competition is one that evolved from its New York City context—an elegant image suitable for the client and its dense financial district location (only two blocks north of the World Trade Center), and in form a direct response to varied interior functions and special Washington Street Urban Renewal Area requirements. In order to create a larger site than existed, the developers received variances to close a portion of Washington Street and combine two blocks, which created a trapezoid-shaped site. An inherited building on the southwest corner diminished usable land on which to build, necessitating a cube-shaped building. A 60-foot-wide central atrium, which is the same width and continues along the axis of Washington Street, separates the office floors into two towers, with rental floors in the 23-story-high section and ITC spaces in the 16-story-high tower. The roof simply straddles the two towers by stepping down toward the east—"breaking the cube" in section at the same angle as in plan (see drawings). With windows bordering the walls of the atrium, no employee is more than 45 feet from a window, and therefore a view.

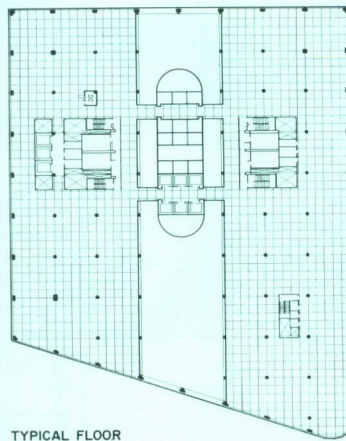
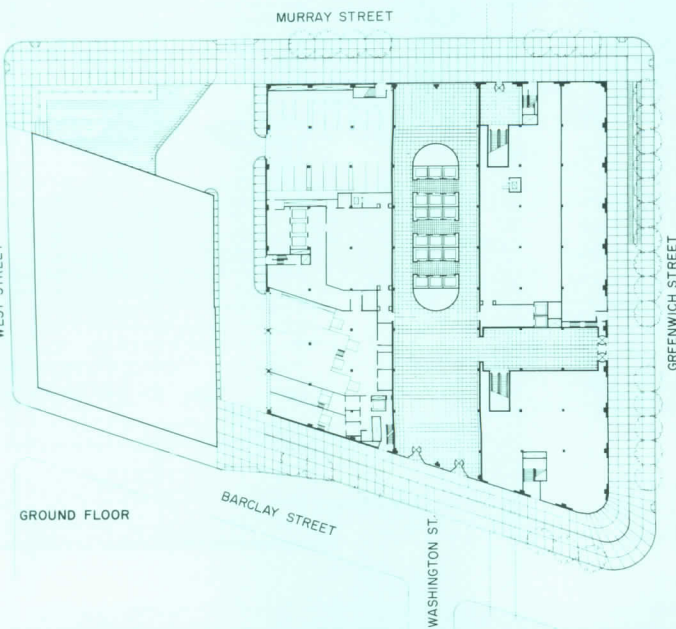
A formal facade is established by a regimented composition of glass bands around the building. While the building is sheathed entirely in 10- by 4-foot glass panels, the banding effect is created by three different transparencies of glass. As seen in the detail of the wall section and model photo (right) oyster-white, non-transparent glass covers the spandrels, and sandwiched between the spandrels are two bands of glass, one partially reflective, the other clear vision glass. The partially reflective glass permits light to enter but without glare, and therefore is positioned above the transparent glass, set at eye level. In accordance with the urban renewal plan, the architects provided tie-ins to an elevated pedestrian bridge system that will eventually link buildings throughout the area.

IRVING TRUST OPERATIONS CENTER, New York, New York. Development manager: *Rockefeller Center Development Corporation—John G. Burnett, president.* Architects: *Skidmore, Owings & Merrill—Gordon Wildermuth, in charge of project; Raul de Armas, in charge of design; Carolina Woo, project manager; Roger Radford, project senior designer; William Hellmuth, senior designer; Gerald Genderau, designer; William Waffle, job captain; Matthew Szczeniowski, interior project manager; Pamela Babey, senior interior designer.* Engineers: *Skidmore, Owings & Merrill—Srinivasa Iyengar, partner-in-charge; Kurt Gustafson, project engineer (structural); Jaros, Baum & Bolles (mechanical/electrical).* Construction manager/general contractor: *Turner Construction Company.*

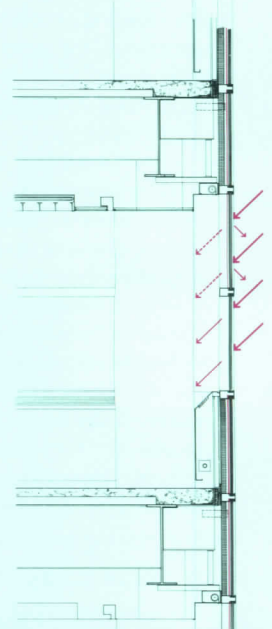




©Wolfgang Hoyt/ESTO photos



The key element of the structure is the central atrium, separating office space into two sections, rental and client spaces. A grand, open space with exposed structural frame provides a special employee garden/cafe/teria high in the tower (top left). Energy-conserving window bands (detail right) also establish a formal exterior pattern.



One Magnificent Mile SOM/Chicago Office

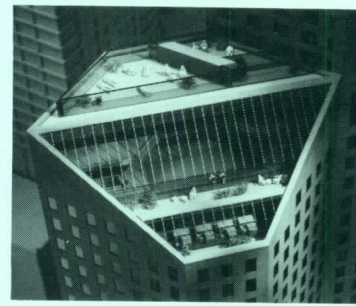
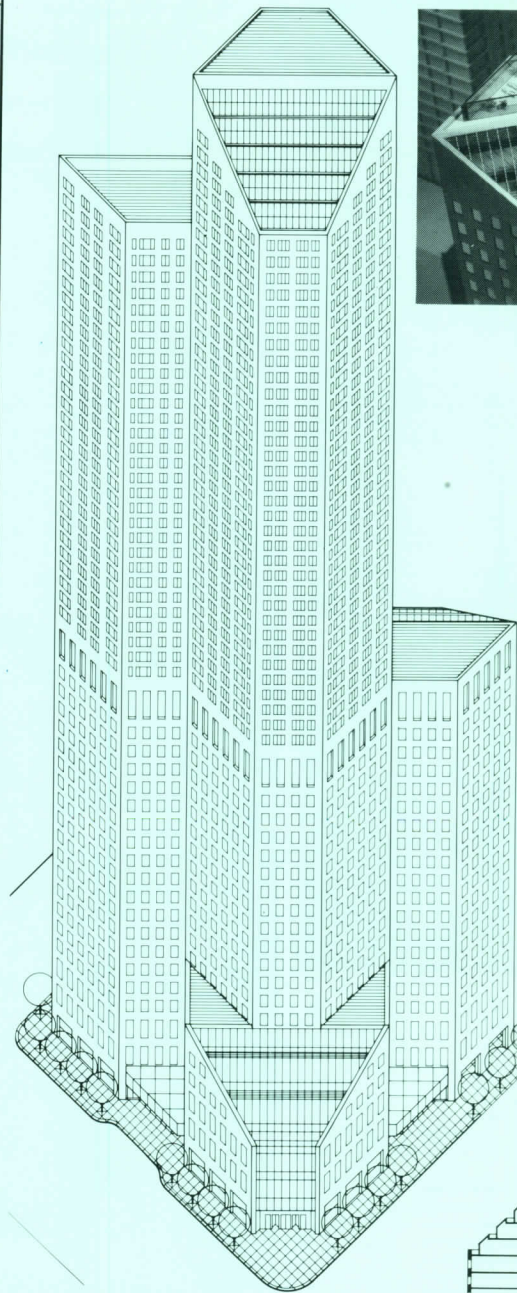
Chicago's "One Magnificent Mile" is a particularly inventive solution to the problem of providing a mix of housing with office and commercial spaces in a highly developed urban center. While Chicago has always achieved more after-working-hours vitality than most large cities, the provision for nearly two-thirds of this project's space as luxury condominiums should add to the vigor and be an incentive for other mixed-use developments. This one-million-square-foot building is composed of three concrete tubes bundled together, the tallest tower being 57 stories. Its hexagonal shape evolved from its splendid but tight location at the portal of "Magnificent Mile," the northern end of Michigan Avenue with its prestigious stores. The faceted shape avoids any sense that the new building turns its back on any of its significant neighbors—it relates well to Michigan Avenue, to the John Hancock Tower (an earlier SOM-designed, mixed-use project) only one block away, to Lake Shore Drive and nearby North Avenue Beach in another direction, and to Oak Street on yet another elevation—all without violating the city's grid pattern.

As an honest exterior expression of changes in interior functions, the fenestration is handled differently on commercial, office and residential levels, with the latter two sharply divided by a broad horizontal line behind which are mechanical floors. To heighten this diversity, there are clear windows at the commercial levels at the base, gray reflective glass on the office floors in the middle section, and gray tinted glass for upper residences.

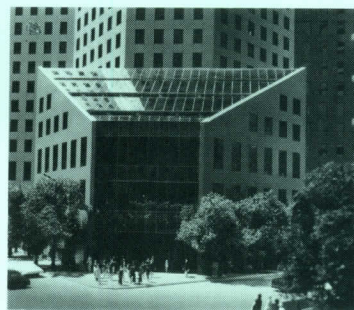
A typical residential floor has six large units off a rambling central corridor, with hexagonal walls a deliberate reminder of the structure's geometry. The clipped tops of the two tallest towers will house penthouses and the shortest tower will have a southwest-facing swimming pool.

As Bruce Graham concludes, "We have discovered more freedom in high-rise forms, particularly useful in solving new demands, like housing, in higher urban densities. Developers like the one on this job have proven that good architecture pays and are very supportive of design innovation."

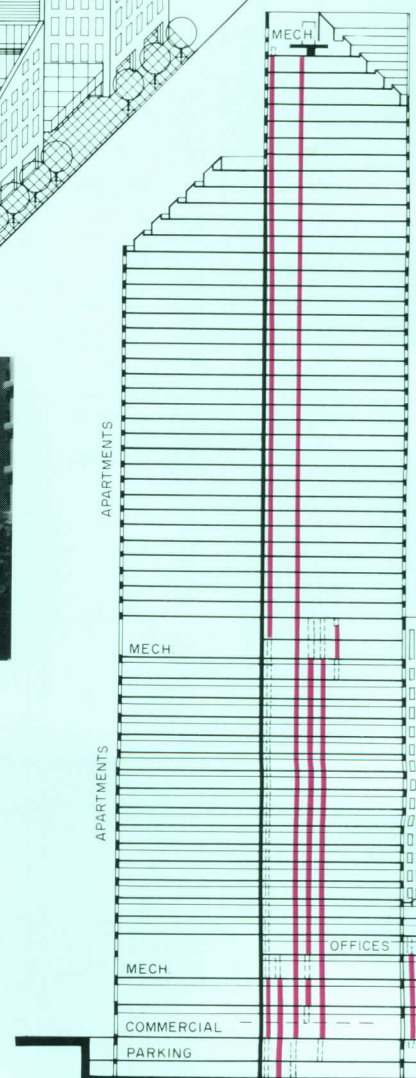
ONE MAGNIFICENT MILE, Chicago, Illinois. Owner/developer: *The Levy Organization*. Architects/engineers: *Skidmore, Owings & Merrill—Bruce J. Graham, design partner; Richard E. Lenke, project partner; Fazlur R. Khan, partner-in-charge of structural engineering; Robert W. Siegle, project manager; Christopher J. Cedergreen, studio head*. Architects for residential spaces: *Barancik, Conte and Associates—Richard M. Barancik, partner-in-charge*. Consultants: *Cerami & Associates, Inc.* (acoustical); *Jules Fisher and Paul Marantz, Inc.* (lighting); *Vignelli Associates* (graphics). Construction manager: *Schal Associates, Inc.*



Offices are reached through the large, main entrance on the Lake Michigan elevation (right). The entry (below) reflects the hexagonal building shape as well as the sloping glass roof of the towers. A separate entrance for the tenants is located on another elevation, at the corner of Michigan Avenue. The top of the lowest tower is a recreation area with swimming pool (top).

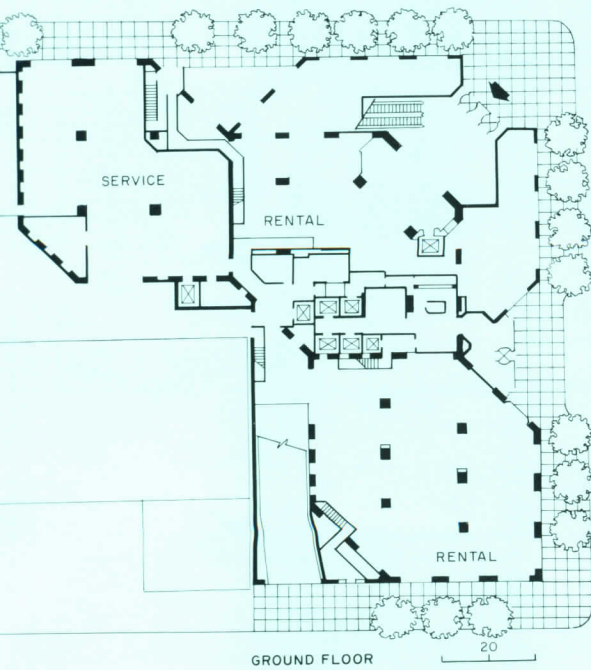


When completed in 1983, the One Magnificent Mile multi-use tower will have cleverly differentiated its uses—commercial space at the base, offices in the middle portion of the towers, and topped by luxury condominiums. Its hexagonal shapes are not arbitrary "fashion" but a sensitive response to the building's context.

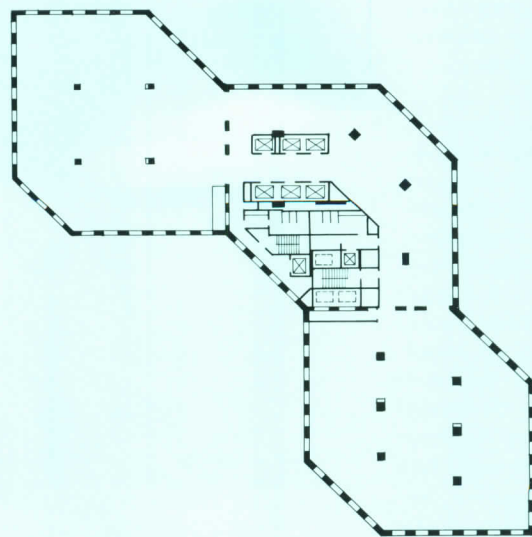




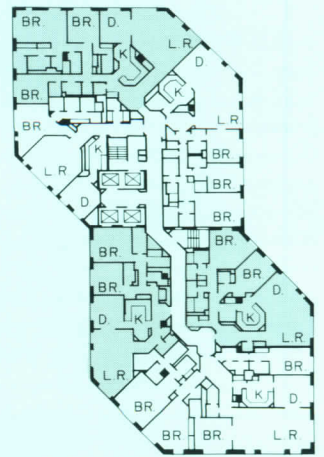
Jim Hedrich, Hedrich-Blessing photos



GROUND FLOOR



TYPICAL OFFICE FLOOR



TYPICAL APARTMENT FLOOR

Allied Bank Plaza

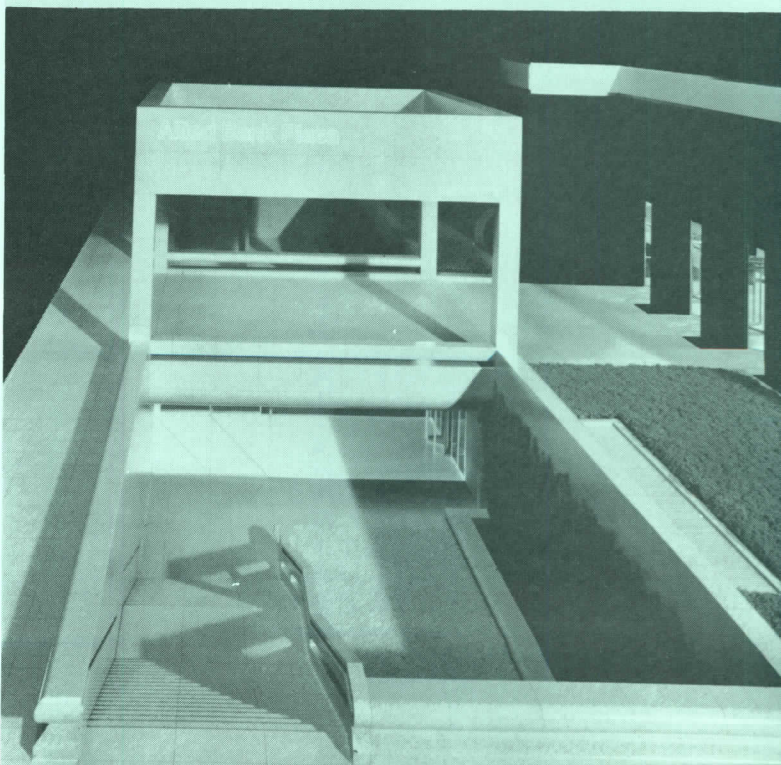
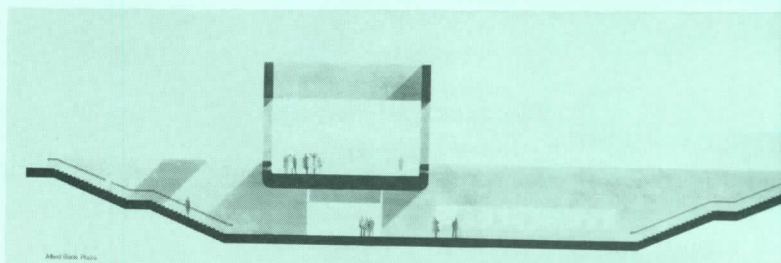
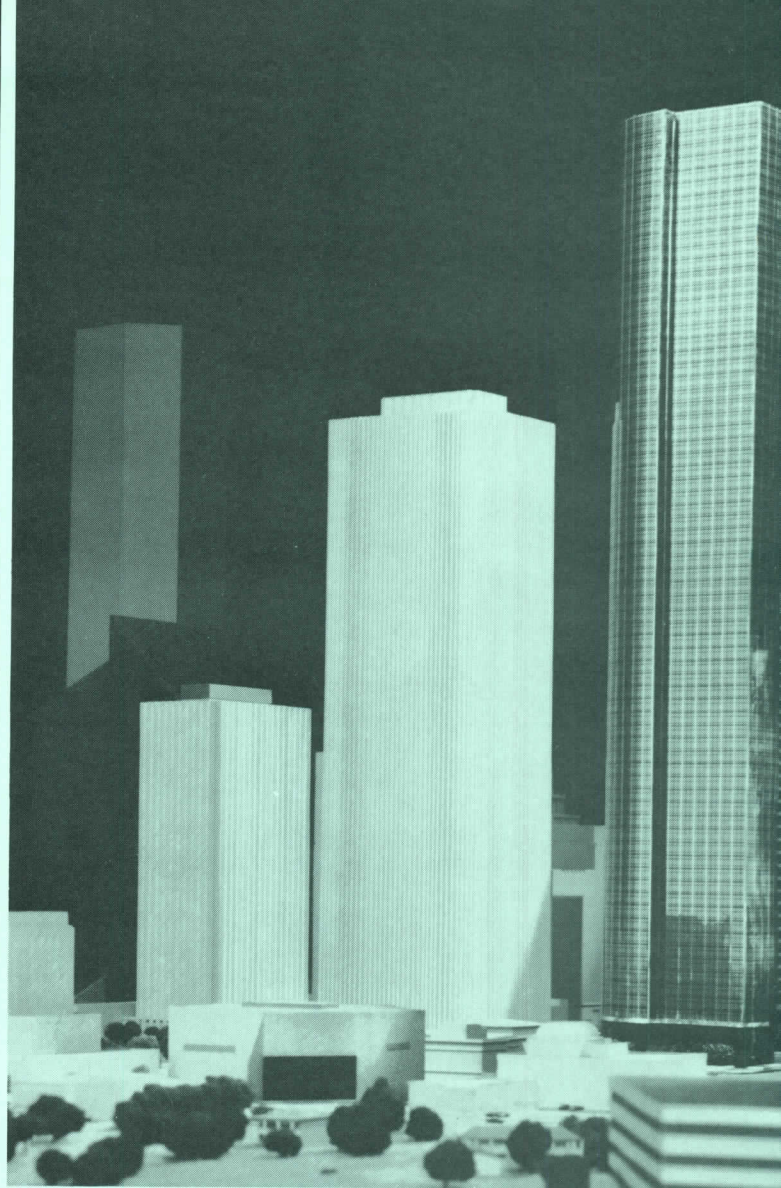
SOM/Houston Office

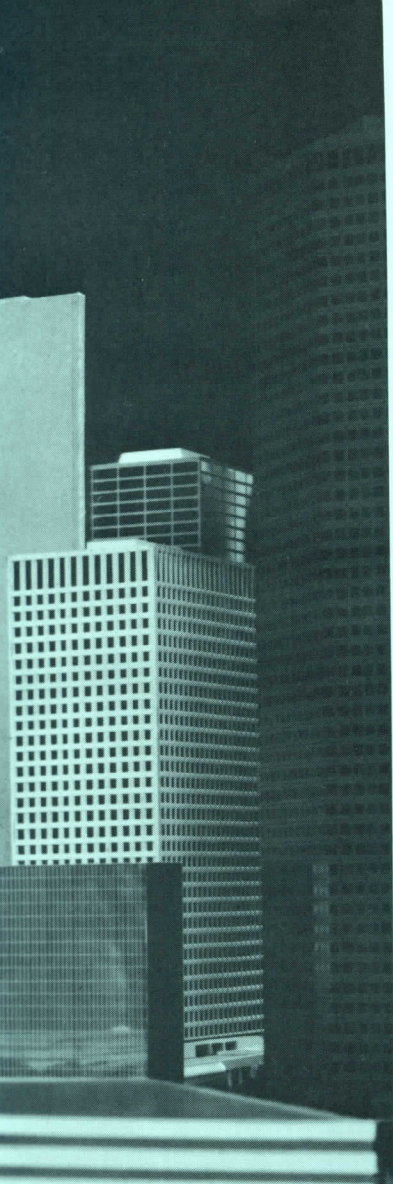
A new high-rise design for Allied Bank Plaza in the heart of Houston's business district has combined straight and curved planes in such a sophisticated manner that the building commands its own identity along a skyline full of very strong competing images. At 70 stories it will rise over its neighbors, most especially an enclave of other SOM-designed buildings including One and Two Shell Plaza, Tenneco and First International Plaza (also shown in this study on pages 115-119, and in model photos right). The building's visual force, however, is generated primarily by a most unusual tube design—two quarter-cylinder shafts connected but a bit askew, sheathed in a blue-green reflective glass curtain wall. Adding a dimension of scale and punctuating the huge area of reflective glass, a stainless steel vertical and dark green horizontal mullion grid subtly expresses the exterior building system.

Structurally, columns are set at 15-foot on-center distances at the curved building edges and on a lateral line through the center. This permits nearly column-free interior spaces. Vertically, the building is divided into three sections, with double-deck express elevators (used to minimize the core area) running to two separate "sky lobbies."

Houston's unusual downtown grid pattern comprises only 250-foot-square blocks and the lack of zoning regulations have tended to foster a territorial prerogative on the part of some owners and designers, in which public amenities (such as urban plazas) have been neglected. Because of the SOM "family" of buildings, collaboration between design partners on neighboring projects has knitted a linear open space along the main Louisiana Street elevation. Allied Bank was "backed-up" to Smith Street to align its plaza with First International Plaza across one street, and hook-up to the plaza of One Shell building across another street. The main entrance to Allied is across a foot bridge over an open stairwell, which leads to a subterranean pedestrian mall connecting 25 blocks.

ALLIED BANK PLAZA, Houston, Texas. Owner: A Joint Venture of Century Development Corporation, Allied Bank of Texas, Centennial Equities Corporation, and American General Realty Company. Developer: Century Development Corporation. Architects for design: Skidmore, Owings & Merrill—Richard Keating and Chuck Bassett, design partners; Michael Mann, project architect. Architects for production: Skidmore, Owings & Merrill and Lloyd, Jones Brewer & Associates, Inc.—Bob Fillpot, partner-in-charge. Engineers: Skidmore, Owings & Merrill—Robert Halvorson, Srinivasa Iyengar (structural); I.A. Naman + Associates, Inc. (mechanical/electrical). Consultants: Claude R. Engle (lighting); Cerami & Associates (acoustical); Richard Chaix (fountain). General contractor: Miner-Turner, A Joint Venture.

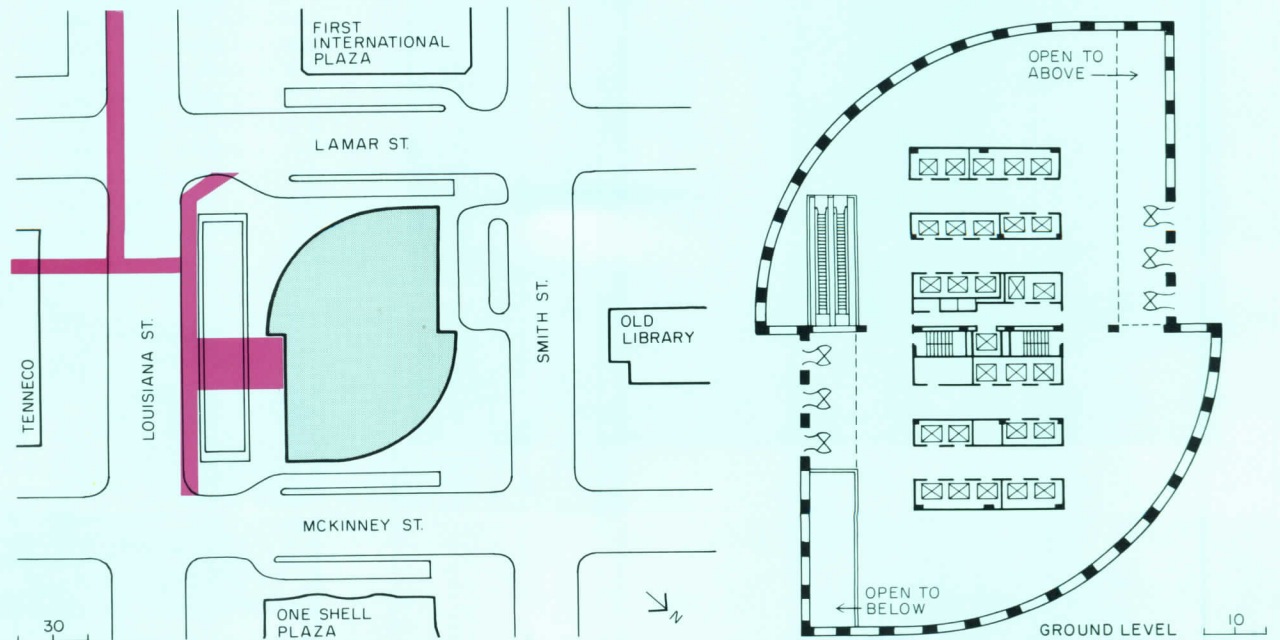
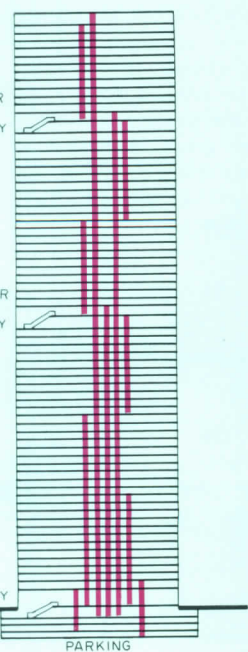




The dynamic, sculptural form of Allied Bank Plaza is most dramatically seen along the western skyline (above), rising above a cluster of highrises, many of which were also designed by SOM. A prominent framework at street level announces the entrance to the building and also to an underground pedestrian mall (section left and photo below left).



©Joe C. Aker photos





The southwest elevation of the new headquarters building for IBM has a view toward the Hudson River and overlooks a large glass-covered plaza and sidewalk cafe. The plan is a right-angle triangle with two chamfered corners.

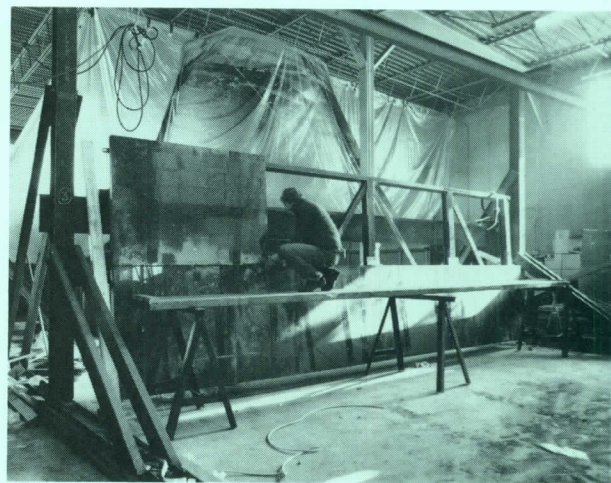
Granite panels perform as unitized assemblies, and give form and color to IBM's prism tower

Stone is in. Not that architects ever lost their fondness for the material, but design trends and competitive costs (for custom-type walls) have rekindled their interest. Example: New York City architects in the vicinity of IBM's new 43-story headquarters in midtown have become sidewalk superintendents, watching the huge 7- by 20-ft granite panels being erected. A typical panel comprises eight 3½- by 5-ft by 3-in. thick granite slabs tied to a steel truss that hangs by brackets from the building columns. Though the truss-frame technique has been used before, the panel design is unusual in its weepage and thermal protection techniques.

The spandrel is, in fact, a complete unitized assembly—a weep system, condensation gutter, insulation and vapor barrier within the same system: the top and bottom chords of the truss serve as condensation and weep gutters; the back plate serves as both vapor barrier and protection for the insulation during erection.



Robert E. Fischer photos



The granite is quarried at a Quebec provincial park, cut and polished at A. Lacroix et Fils plant 35 miles from Maine, and trucked to the Hohmann & Barnard plant in Hauppauge, Long Island, where it is fabricated into panels. Ten truckloads (40 panels) are shipped to the jobsite each week. The architects favored the Canadian granite for its color, but cost, availability, and production capacity of the stone suppliers also affected the decision. A comprehensive quality-

control program was established to ensure color consistency and integrity of the granite. Dr. Charles Fairhurst, head of mineral engineering at the University of Minnesota, took core samples and suggested the best locations for quarrying. The architect hired a young sculptor, James Rappa, who has worked in stone, to grade the stone, classifying it in three grades and rejecting unacceptable pieces. The top grade will be used in the bottom five stories.



Architect for the IBM Building, Edward Larrabee Barnes, envisioned the building color as being "green as a garden . . . a counterpoint to technology." This symbolism takes tangible form in the facades' Atlantic Green (dark gray-green) granite from Quebec and blue-green glass. The granite is polished because Barnes wanted the building to read as a prism and because the green cast is stronger in the polished form.

The building would read as a series of stripes, says Barnes, if unpolished stone spandrels had alternated with ribbons of glass. (Fenestration is 35 per cent of the facade. The double-glazed unit comprises a 1/4-in. blue-green float glass outer light, a 1/2-in. air space, and a 1/4-in. clear glass inner light, and has a light transmission factor of 65 per cent.)

Barnes also felt that the stone should be solid rather than veneer because a viewer will sense solid stone at building corners and at sill cutbacks. Use of solid stone has a practical side, too: the engineers say that the stone

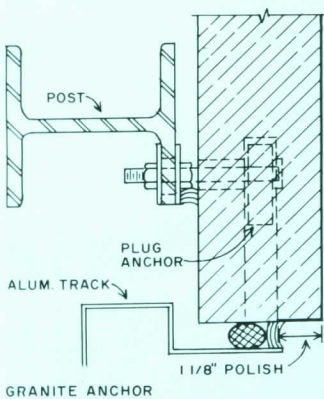
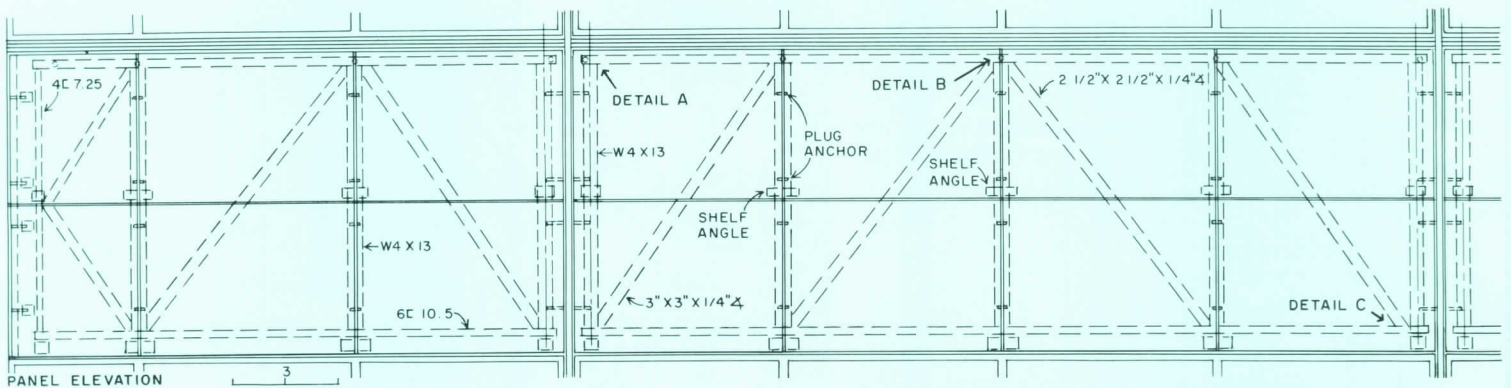
panels (granite on steel trusses) weigh half as much as stone veneer on precast concrete. The designers, in consultation with Turner Construction Co., the general contractor, and Peter Bratti Associates, Inc., the stone subcontractor, decided on off-site production of the panels at the factory of Hohmann & Barnard, Inc. on Long Island to reduce site labor and time and costs. The only sitework is hoisting and attachment of panels followed by field application of black silicone sealant between all joints of the granite slabs.

The panels are 9 1/2-in. deep with the 3-in. granite slabs in front and 2 in. of mineral-fiber insulation at back protected by a 16-ga. steel plate. The 9 1/2-in. depth was a critical dimension because ducts for the perimeter induction units nest on the outside face of the spandrel girder. The mineral insulation has zero smoke developed and zero fuel contribution according to ASTM E-84. The steel truss has 6-in. channels for top and bottom chords, 4-in. wide-flange posts and 2 1/2- and

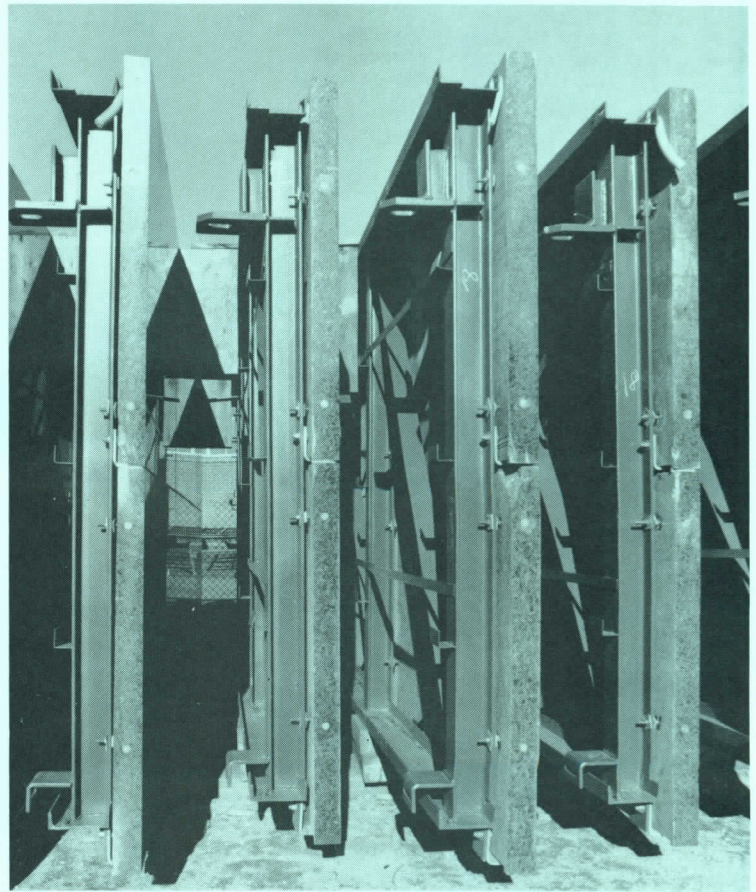
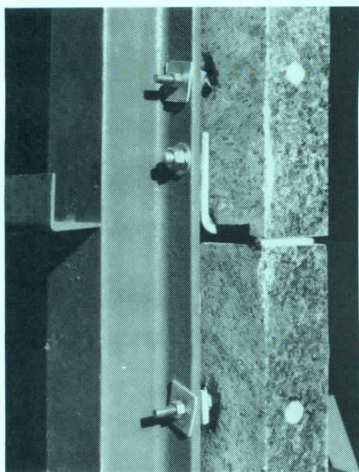
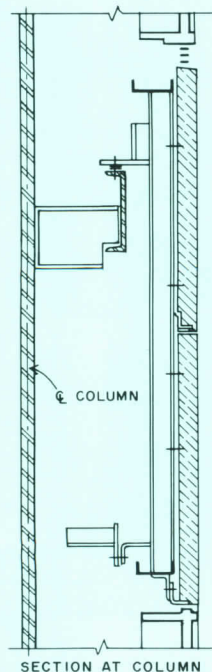
3-in. diagonals. Special care was taken to prevent rusting of the truss steel, according to Richard Keller, field architect for the Barnes office. Both truss members and the back plate were sand blasted and coated at the factory with a zinc-rich primer followed by an epoxy-type coating.

Each granite slab is independently supported from the truss by "relieving angles," which are stainless steel to avoid rust staining of the granite, and the slabs are tied back to the truss by stainless steel plug anchors, two on each side.

For fastening the panels to the building, each panel has six attachments. Brackets at each end of the top of the panel bear on channels that transfer the 7,500-lb panel load to the columns. Lateral ties to the building are provided by three connections at the bottom of the panel and one in the center at the top. The engineers required that all connections except the latter allow relative displacement between columns and panels when wind



Panels generally are 7- by 20-ft, except at corners and chamfers where they are half the length. Stainless steel angles attached to the trusses carry the granite slabs, which are secured to the trusses by stainless steel plug anchors.





Ducts from the core for the perimeter induction system penetrate spandrel beams every fifth floor, feeding up three floors and down two. The mechanical engineer, Joseph R. Loring & Associates, detailed the ductwork for tight space (see detail below).

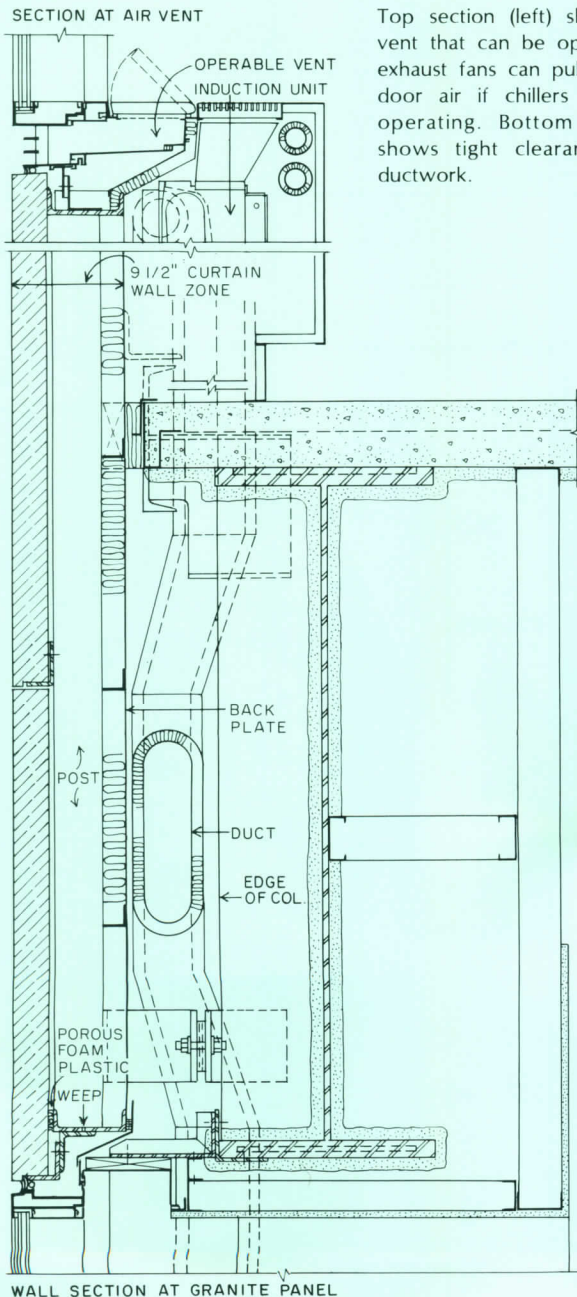
loads the structure. But the center top connection is welded to a plate in the floor slab, explains Leo Plofker of the Office of James Ruderman, the structural engineer, so that panels and floors move together as the building deflects.

Moisture-protection functions of the window frames were integrated with those of the granite spandrel panels, and some of the design details evolved after weather testing at Construction Research Laboratory in Miami, according to architect John Lee of Barnes's office. Originally, the panel was sealed tight, but during weather testing of a simulated joint failure, wind pressure bulged the back panel. For this reason the panel was vented for pressure equalization by means of a weep hole in the bottom channel and a space between the back face of the granite and the bottom channel. But curtain-wall consultant Jack Heitmann found that these openings allowed cold air behind the granite to migrate through the space, past a flashing

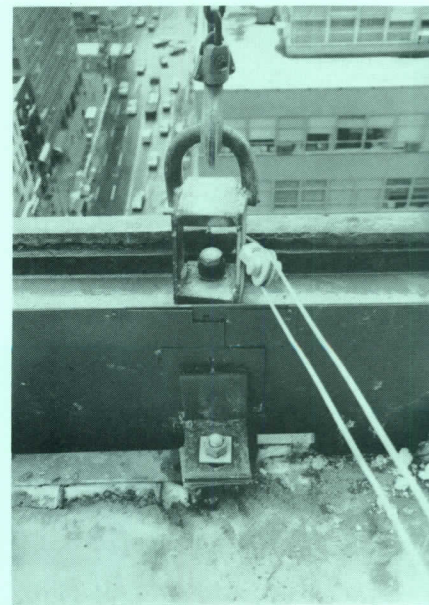
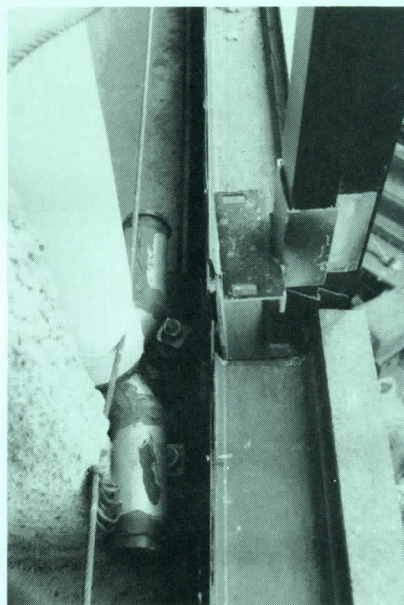
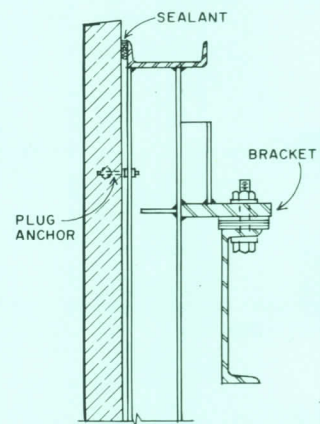
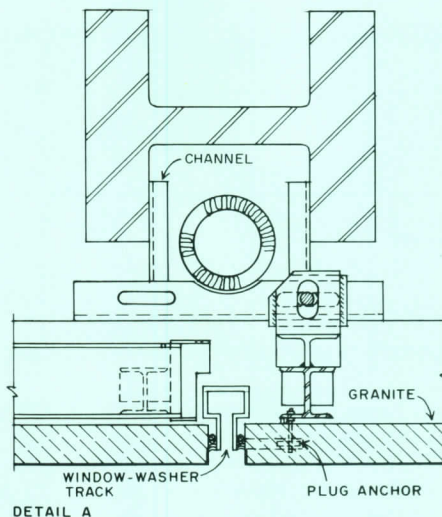
runner, and to the warm side of the insulation, short-circuiting the system. His solution to this was to block the flow with a porous type of foam plastic in the openings, which still allowed pressure equalization of the panel and weeping of water.

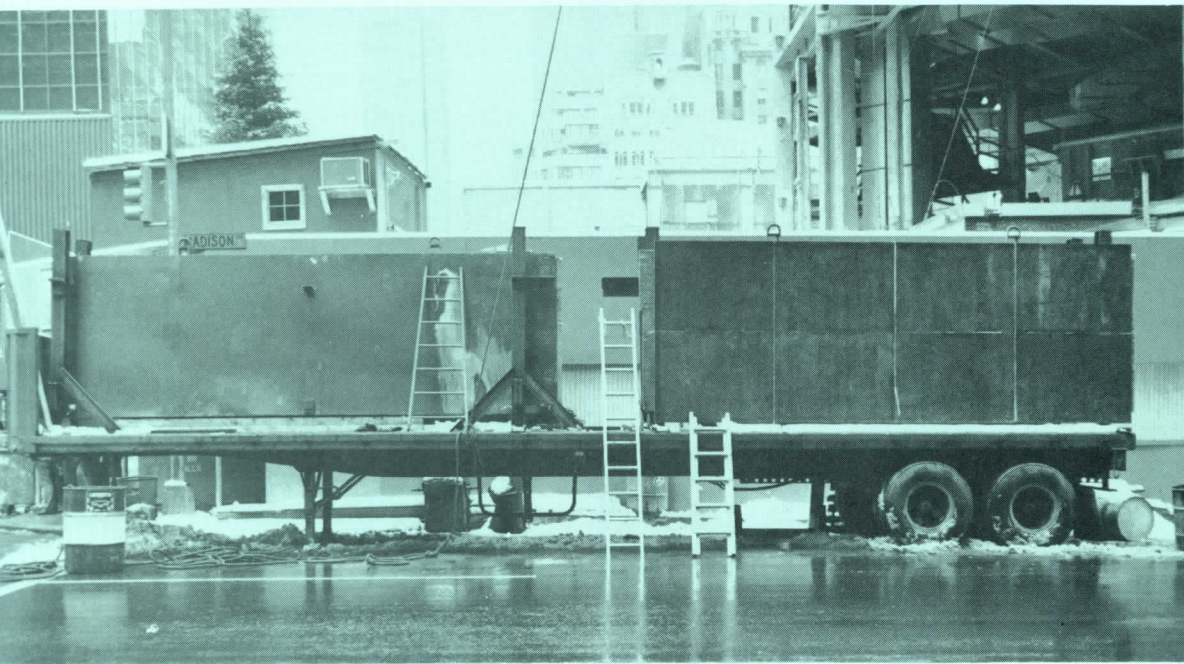
If any sealant in a granite joint should fail, rain water first collects in the bottom channel of the panel which weeps to the head section of the window. From the window head, water flows down mullions to the top channel of the panel below. Water collecting in this channel is drained through a weep hole in the window-washer track to the outside. This prevents staining of the granite and avoids icicles under panels.

It is not surprising that this prefabricated granite panel is being considered for other buildings in view of its advantages of lead time and savings in field labor, plus the functional advantages of an integral thermal and moisture-control system. No one-off design this—*Robert E. Fischer*

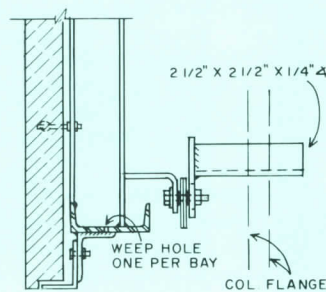
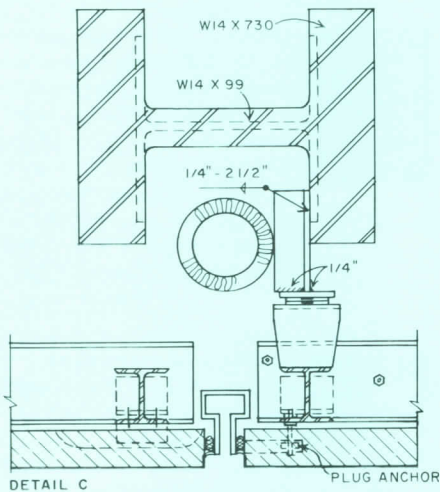


Top section (left) shows air vent that can be opened so exhaust fans can pull in outdoor air if chillers are not operating. Bottom section shows tight clearances for ductwork.

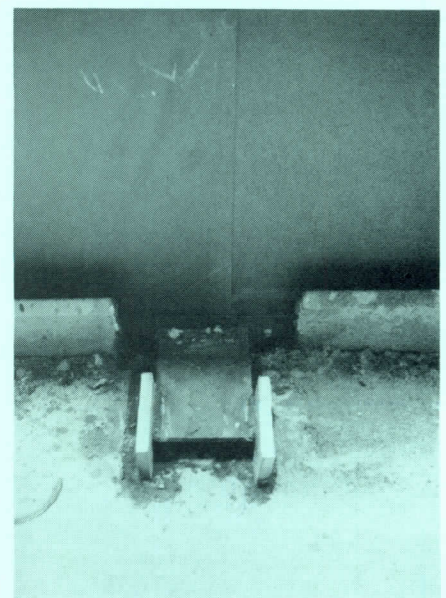
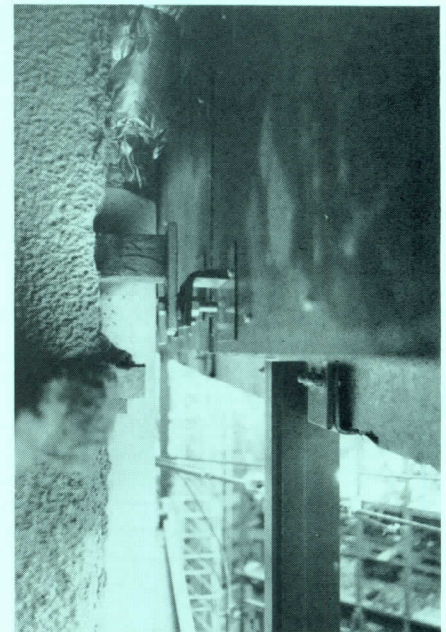
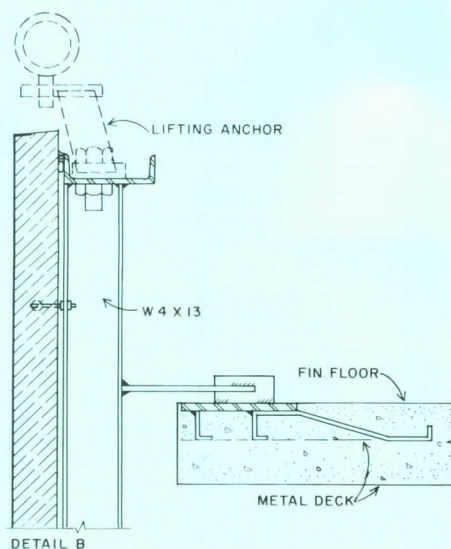




Both the front granite side and the back steel-plate side of the panels can be seen in this photo of the panel transport system. The granite slabs have polyethylene foam rope factory-installed in the joints as backup for the black silicone sealant that is field applied. About 1750 panels, in all, will be installed.



Panels hang by brackets from columns except at building corners where the channel supporting the bracket is attached to the spandrel beam. The first condition is shown in the details and the far left photo across page; the second condition is shown in the photo near left. Lateral ties to the building occur at three locations at the bottom of each panel and in the center of the panel at the top. A bottom tie to a column is shown above in details and the adjacent photo. Connections are slotted in two directions for erection tolerance and to allow relative movement between columns and panels when wind loads the building. The top center connection (right) is, however, welded fast to maintain panel position relative to floors. The support bracket for corner panels also is a fixed connection for the same reason.





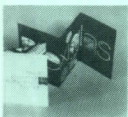
LOW-PRESSURE SODIUM / A color booklet outlines the features and advantages of low-pressure sodium—SOX—lighting, said to be the most efficient light source commercially available today. Charts, comparison photos and application ideas demonstrate photos and application ideas demonstrate how SOX can reduce energy costs in indoor and outdoor security, area lighting, flood-lighting, warehousing, roadway, bridge and tunnel applications. ■ North American Philips Lighting Corp. Highstown, N.J.

circle 400 on inquiry card



TOILET HINGE / Tap-Loc III, a toilet seat hinge post that requires only a screwdriver for tightening, is described in a product folder. The Tap-Loc incorporates a corrosion-resistant aluminum stud that remains rigid to prevent the seat from wobbling. ■ Forbes-Wright Industries, Inc., Monson, Mass.

circle 401 on inquiry card



ACRYLIC SKYLIGHTS / Color folder provides specific information on the lighter weight, lower cost, and better energy conservation characteristics of Plexiglas used in place of glass in skylights. Photos show various unusual skylight applications, and illustrate the available range of Plexiglas solar control tints. ■ Rohm and Haas Co., Philadelphia.

circle 402 on inquiry card



WOOD-BURNING FURNACES / Industrial wood-burning hot air furnaces and hot water systems for companies with wastewood by-products are described in an illustrated catalog. Full details are given on five furnaces, rated from 1/2- to 1 1/4-million BTU/hr; automatic stoker feeders and boilers are also included. ■ The G & S Mill Co., Northborough, Mass.

circle 403 on inquiry card



DESIGN GUIDE / A 30-page booklet, "Facility Solutions" is divided into sections that offer simple line drawings illustrating design ideas to help solve complex interior design problems. A section on "Space Dynamics" demonstrates how space can be "economically reduced while providing occupants with a feeling of more personally defined space." ■ Office Facility Solutions, Newington, Conn.

circle 404 on inquiry card



CONCRETE SURFACING / Three different epoxy-type systems, each designed to withstand many kinds of chemical and physical abuse in the severe and critical environments found in manufacturing and industrial plants, are explained in a six-page brochure. Technical information includes coverage, thickness, application methods, set time, cure time, and other data. ■ Con/Chem, Inc., Los Angeles.

circle 405 on inquiry card



RESILIENT FLOORING / A 20-page catalog contains color illustrations of all colors and patterns in Azrock vinyl composition floor tile, asphalt floor tile, feature strip, and vinyl cove base. Information on sizes, gauges, uses, installation, and light reflection values is given. New products featured are "The International Collection" of custom flooring designs, and "Shine-Ease" no-wax floor tile. ■ Azrock Floor Products, San Antonio.

circle 406 on inquiry card



SLIDING HARDWARE / A condensed catalog features this maker's most popular hardware items, divided into four sections. These cover sliding and folding door hardware; drawer slides, such as the Duo-Rail and Velvet Touch lines; hospital hardware, including cubicle tracks; and shelf standards and supports. Sizes, load capacities, features and options, and suggested applications are given for each product. ■ Grant Hardware Co., West Nyack, N.Y.

circle 407 on inquiry card



ILLUMINATED CEILINGS / Trilogy ceilings, made up of 3- by 3-ft interlocking aluminum panels, provide an unbroken surface designed for efficient and even illumination. A color catalog illustrates the shadow line, wall or sculptured profiles furnished with the ceiling system. ■ Neo-Ray Products Inc., Brooklyn, N.Y.

circle 408 on inquiry card



WOOD DRAWING TABLES / Hardwood pedestal, professional and utility drawing tables are included in a Stacor brochure. Academy and folding tables are also shown, all with a full range of movements for use while standing or sitting. ■ Stacor Corp., Newark, N.J.

circle 409 on inquiry card



INSULATING SHEATHING / ThermaTite Plus, a polyisocyanurate insulating sheathing for use in residential and light commercial construction, is described in a 14-page brochure written for design and construction professionals. The lightweight, closed-cell board, reinforced with fiberglass for increased dimensional stability, has aluminum foil facers on both sides. Charts show product thickness, R-values, and typical physical properties of ThermaTite Plus. ■ Johns-Manville, Denver.

circle 410 on inquiry card



CERAMIC TILE / Each quarterly issue of Tile Talk features case studies of recent ceramic tile installations in commercial, residential and institutional buildings. Color photographs illustrate a full line of Romany-Spartan products, including "Decorator" series ceramic tile; pavers; and unglazed mosaics. ■ United States Ceramic Tile Co., Canton, Ohio.

circle 411 on inquiry card



FABRICS/WALLPAPERS / French designer Manuel Canovas's line of correlated wallpapers and fabrics, the "Pergola Collection," consists of four groups—floral and geometric—in classic harmonies of beiges, pinks, corals, blues and greens. All fabrics and papers are assembled in book form, available to professionals for \$30. ■ Manuel Canovas, New York City.

circle 412 on inquiry card



EXTERIOR LIGHTING / Decorative cast aluminum and solid brass mercury vapor lighting fixtures for residential and light commercial use are presented in a color catalog. Hadco fixtures offer substantial energy savings, a three-year limited warranty, and a durable polyurethane powder coat finish that will not chip, fade or peel. ■ Hadco Div., Craftlite, Inc., Littlestown, Pa.

circle 413 on inquiry card



TRADITIONAL CLOCKS / Organized by clock style, a 68-page Howard Miller catalog contains floor and wall chime clocks, ship's bell clocks, mantel clocks and quartz alarms, among other traditional timepieces. ■ Howard Miller Clock Co., Zeeland, Mich.

circle 414 on inquiry card

continued on page 149

For more information, circle item numbers on the Reader Service Inquiry Card, pages 207-208

Special marble veneer process creates two unique products for interior applications

Two important new developments in the stone industry have made it possible to combine the qualities of marble with lightweight panels, thereby reducing costs and increasing product availability. While Marble Technics Ltd. has been working to develop in Italy and distributing in the United States 6- by 6-in. marble tiles (ARCHITECTURAL RECORD, mid-October 1980), it is now introducing two new marble products for interior applications: *GL-Marble* and *ISO-Marble*.

GL-Marble (below middle) is an extremely thin (1/4-in.) and lightweight (3.7 psf) stone veneer with a reinforced fiberglass backing. As cladding for interior surfaces only, it can be applied to floors and walls (as shown in bath, right). Installation methods are similar to those used in applying wood paneling or ceramic tile, eliminating methods necessary for conventional heavier, thicker pieces of stone. *GL-Marble* is stocked in this country in sizes 12-in. square and 24- by 48-in.,

in a wide range of colors including both filled and unfilled travertines.

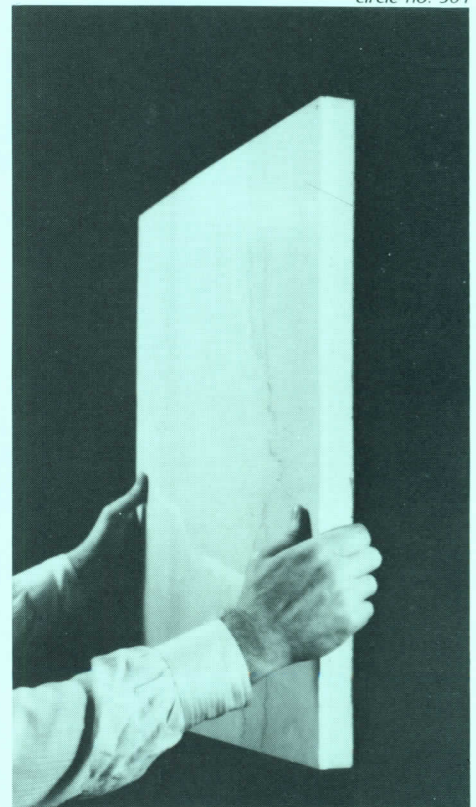
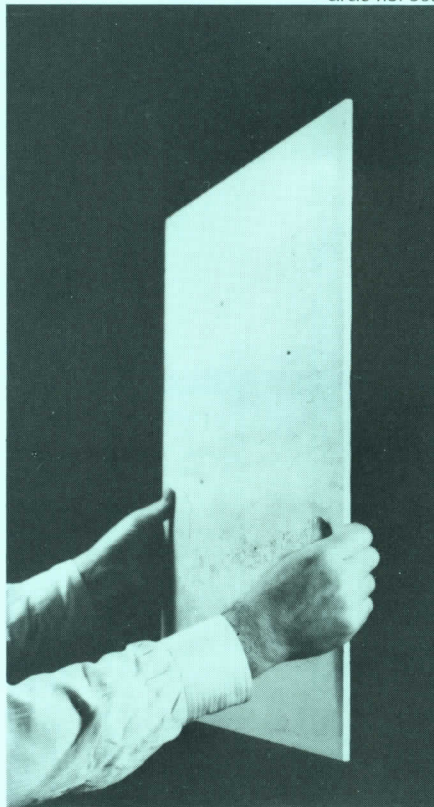
An extension of the *GL-Marble* patented process has created a second new product, *ISO-Marble*. Intended as a structural panel for interior use—for example, partitions, furniture, column facings—extremely large (4- by 8-ft.), lightweight (4.5 psf) sheets of thin (1/4-in.) stone veneer are bonded to a backing of polyurethane foam and plastic laminate. Stone in this form can be machined and used almost like wood, using slightly modified conventional carpentry tools. Advantages of using these special processed stone veneers include lower material costs due to the new fabrication process, lower delivery and installation costs due to lightweight panels, and availability of craftsmen, and a wider range of decorative materials in-stock. ■ Marble Technics, Ltd., New York City.

more products on page 141



circle no. 300

circle no. 301



SEARS ROEBUCK DISTRIBUTION CENTER, CHICAGO, ILLINOIS

*Architect: A. Epstein & Sons, Chicago, Illinois
Construction Manager: Schal & Associates, Chicago, Illinois*

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Why? Because the construction team responsible for the building reviewed and tested all the alternatives...and decided on Raynor. The next time you're looking for a top quality door, large or small, look to Raynor.

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RAYNOR
GARAGE DOORS

Circle 57 on inquiry card

A RAYNOR RECORD: 544 DOORS ON ONE BUILDING.



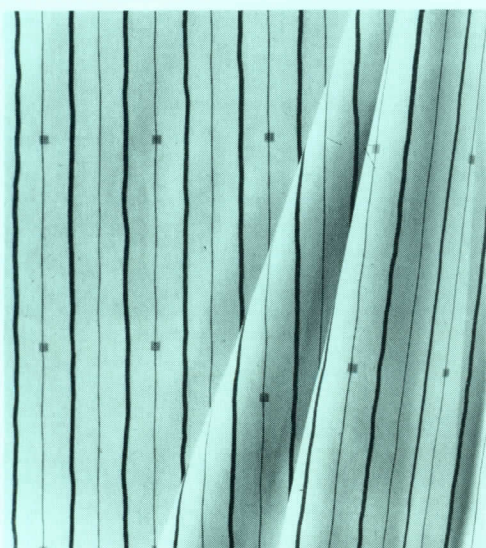


LOW-VOLTAGE LIGHTING / Pictured are "Orbit" (left) and "Sprite" lampholders, part of a series of five new lines of low-voltage track fixtures. Including 12- and 5.5-Volt lampholders that use high-efficiency PAR lamps, the track lighting installations are said to significantly reduce air-conditioning loads in large commercial, retail and exhibit applications. Each unit has its own built-in transformer, so they can be used side-by-side with standard 120-Volt *Trak-I* lamps, on the same *Trak-I* track. ■ Progress Lighting, Philadelphia.

circle 302 on inquiry card

DRAFTING MACHINE / The *ProTrac* unit features a "floating" double-hinged head, which travels a half-in. above the drawing during repositioning, eliminating ink smears and torn drawings. A double reference index lets users establish a secondary baseline up to 45 deg. in either direction, while permitting easy return to the original baseline. Its "Scalock" device improves accuracy by anchoring scales firmly; a double-action brake system provides positive locking of vertical and head movement. The *ProTrac* drafting machine is available in six sizes, from 32- by 42 in. to 43½- by 84-in., at prices from \$369 to \$424. ■ AM Bruning, Los Angeles.

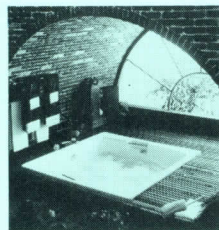
circle 303 on inquiry card



DECORATIVE FABRIC / A three-color silk-screened design, the "American" pattern is composed of two stripes of varying thickness, and a box which repeats itself every three inches. This and other *HGH* silk-screened fabrics are suitable for casements, wallcovering, etc. ■ HGH Design Group, New York City.

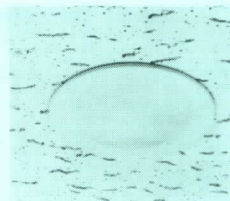
circle 304 on inquiry card

ACRYLIC WHIRLPOOL BATH / The newest and largest addition to the *Aqua-Whirl* line of one-piece acrylic tubs, "The Encore" measures 60- by 60-in., and holds 92 gal. of water. It comes as a single unit, ready to drop into position. Standard equipment includes a remote timer, two air volume controls and eight adjustable water outlets, two hand rails, a pump and an in-line heater. The "Encore" is also available without the whirlpool features, for use as a regular, soaking tub. ■ Aqua-Glass Corp., Adamsville, Tenn.



circle 305 on inquiry card

CONCEALED SPRINKLER / Smaller and easier to install than the previous model, the *Cleanline II* recessed sprinkler is FM approved in chrome and white finishes, and UL-listed for the chrome finish. The cover plate allows for a plus or minus ⅛-in. adjustment; simple installation involves pushing the plate up to proper height and making one quarter turn. The *Cleanline II* is available in two temperature ratings: 165 and 212 F. ■ Grinnell Fire Protection Systems Co., Inc., Providence.



circle 306 on inquiry card

more products on page 143

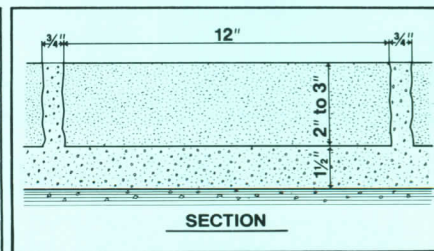
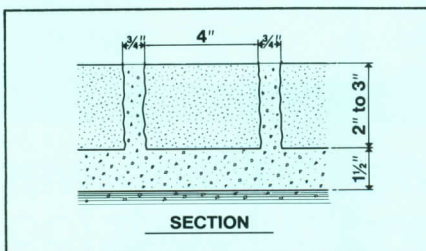
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Architects: Lawrence Halprin & Associates



Architect: Joe Karr & Associates, Chicago, IL



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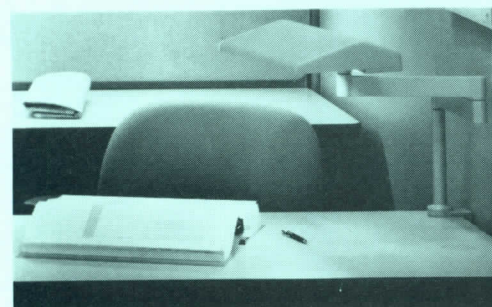
UNITED STATES GYPSUM 
BUILDING AMERICA

Circle 59 on inquiry card



DINING FURNITURE / "The Sherwood Collection" is made of Appalachian Red Oak, in a natural or vintage oil finish. The table top is 1 1/4-in.-thick, with bullnosed edges and corners, available in a range of sizes and square, round and rectangular shapes. Matching chairs have cushioned seats and backs upholstered in tweed fabric or Saddle Brown vinyl; backs may also be ordered in cane. ■ John Boos & Co., Effingham, Ill.

circle 307 on inquiry card



TASK LIGHT / Using soon to be published IES recommendations and illumination standards for office spaces, *Herman Miller* now offers fixtures designed for three specific lighting functions: critical task, general task, and display. The task light shown here is for workers who require high levels of illumination and glare-free lighting that totally eliminates veiling reflections. A fixture head, mounted on a highly directional articulating arm, directs light from a fluorescent lamp out in front of the source. ■ Herman Miller Inc., Zeeland, Mich.

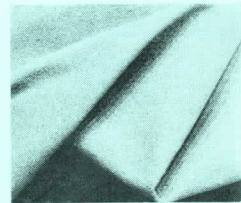
circle 308 on inquiry card



COMMERCIAL SOLAR / Designed for a variety of applications, including space heating, air conditioning, or heating water for commercial buildings, the "TC-120" solar collector produces operating temperatures up to 300F using vacuum tube liquid-type technology. During installation, individual collector headers are brazed together. Options include a solar controller, mounting kits, and an option *Lexan* protective window. ■ General Electric Co., Philadelphia.

circle 309 on inquiry card

RATED WALL FABRIC / Inherently flame-retardant, all-silk "Par Excellence" plain weave has a flame-resistant *Tyvek* backing. The upholstery fabric has been approved for use on walls and ceilings in accordance with the San Francisco Building Code, after successfully passing tunnel and delamination test procedures. Part of the *Cross-Clime* collection. Italian-made "Par Excellence" will stand up to the abrasion requirements of heavy-traffic commercial installations. ■ Gretchen Bellinger, Inc., New York City.



circle 310 on inquiry card

GLASS FIBER ROOFING MAT / *Celo-Glass IV* ply sheet, manufactured for the fiber glass asphalt built-up roofing market, has an even distribution of glass fibers for uniform porosity. This characteristic is said to allow gases and vapors to vent during application, while controlling bleed-through of the mopping asphalt long enough to permit effective brooming. Lightweight *Celo-Glass IV* roofing meets ASTM, FS and other applicable standards, and is tear-, shock-, and rot-resistant. ■ The Celotex Corp., Tampa, Fla.



circle 311 on inquiry card

more products on page 145

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Glazier: Hendrix Glass & Mirror
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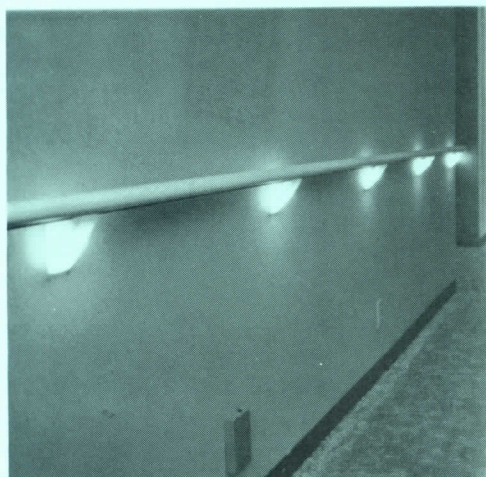
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TELECOMMUNICATION SYSTEM / Engineered for the private telephone market in businesses or institutions which require as many as 5,000 lines, the "Summit" digital PBX System uses distributed processing technology. This replaces a single processor with satellite units that manage many operations, freeing computer capacity for other functions. The "Summit's" software system may be tailored to the user's exact line, trunk and feature requirements. ■ Executone, Long Island City, N.Y.

circle 312 on inquiry card



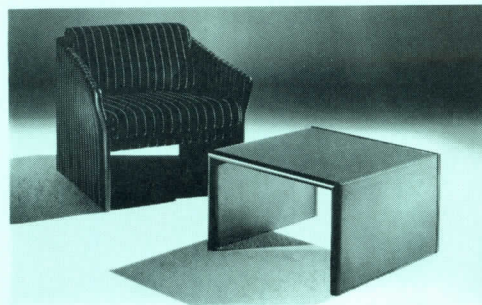
LIGHTED RAIL SYSTEM / The *Safelite Rail* is a self-contained system that consists of vinyl-clad aluminum railing, prewired coordinated brackets, an independent power source, and a photo-cell for automatic on/off. Translucent bracket faces transmit light from standard 57A bulbs mounted inside. All wiring and fastening hardware are enclosed to reduce damage from vandals. The *Safelite Rail* meets OSHA code requirements for illumination, load weight and extension, and is suitable for commercial, institutional and industrial hall and stairway applications. ■ Balco, Inc., Wichita, Kan.

circle 313 on inquiry card



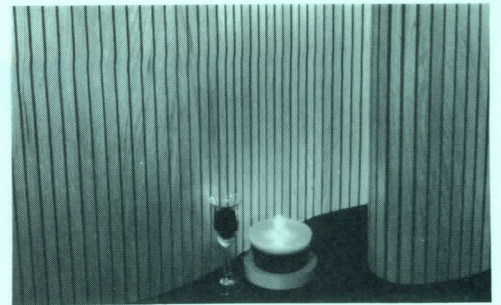
CONTRACT SEATING / Designed by Dennis Christiansen for *Dunbar*, the "Adagio" long sofa and armchair feature widely flared back- and armrests. Each piece is fully upholstered in a choice of natural leathers. A Resources Council, Inc., Design Award winner. ■ Dunbar, New York City.

circle 314 on inquiry card



LOUNGE GROUP / Finished in precisely matched fabrics or non-fading leathers, the "Viva" series consists of an easy chair, sofa and table, all designed by Enrico Tonucci. Pieces are framed in solid walnut, with armrests slightly flared and vertical edges softly rounded. ■ Brayton, High Point, N.C.

circle 315 on inquiry card



TAMBOUR WALLCOVERING / Said to be the first tambour product totally engineered to be Class A under ASTM-E-84, "Phoenix Series" wall-covering does not require an excessive surface coating thickness to lower flame spread. ■ National Products, Inc., Louisville, Ky.

*circle 316 on inquiry card
more products on page 147*



Skyroof Retrofit Johnson Hotvedt Di Nisco & Associates, Architects

KALWALL®

The most highly insulated light transmitting material.
Saving energy for 25 years.

KALWALL CORPORATION

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See Sweet's 8.14/Ka, 7.8/KaL, 13.11a/Ka, 13.2c/Stu.

Circle 62 on inquiry card

NEW!
NATURAL OAK TONE

**Now,
in a third
new tone**


Legacy

**gives you three
distinctive ways
to trim door
installation costs**



OAK TONE



WALNUT TONE

Save on original cost of sliding closet doors, bi-fold doors and standard passageway doors with Legacy[®] Brand embossed, prefinished hardboard-faced doors. Wherever ash, birch or oak is commonly used, you'll find Legacy to be a durable, economical alternative to more costly materials. Domestically produced, it's not subject to the vagaries of price, quality and delivery common to imported materials, either. So you'll realize significant savings, while providing a custom look of quality.

Save on finishing costs. Beautifully prefinished in a choice of three decorator tones, the hard, stain-resistant Royalcote[®] finish reduces on-site labor...saves on finishing materials...assures a consistently even tone from door to door. You leave your customer with a Legacy that will stand up to everyday use, wear and abuse for many years.

Save on callbacks. The Masonite[®] brand hardboard used in Legacy door facings is 50% denser than natural wood, offering high dimensional stability and great structural strength. It's resistant to scuffing, splitting, cracking and checking...minimizes the chances of damage on the job...virtually eliminates callbacks.

For more valuable information on Legacy doors and matching wall paneling, write Masonite Corporation, Central Hardboard Division, P.O. Box 1048, Laurel, Mississippi 39440.

Circle 64 on inquiry card

**For value
you can calculate,
install prefinished
Legacy faced doors.**

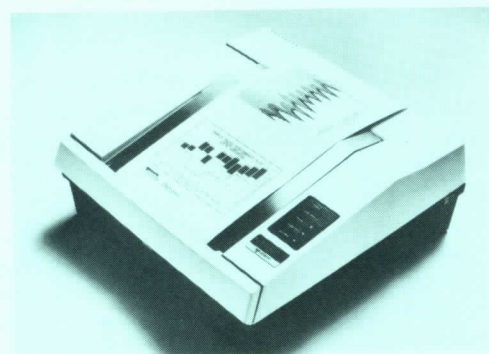
Masonite, Legacy and Royalcote are registered trademarks of Masonite Corporation.


**MASONITE
CORPORATION**



CANTILEVERED CHAIR / The simple and carefully made frame of this chair is constructed of maple and white oak veneer, laminated into two curves which form the seat and back supports and the arms of the chair. The two curves are separated by a thin strip of walnut. Finish options include natural oil and custom stains. ■ Agate/Wildnauer Assoc., Springfield, Ill.

circle 317 on inquiry card



PRINTER PLOTTER / Substantial reductions in size, weight and cost are incorporated into the third-generation "V-80" series of desktop hard copy output devices, designed for integration into OEM computer, office equipment and instrumentation systems. The "V-80" prints 1000 132-column lines per minute. It is also a high speed, high resolution plotter, plotting an 11- by 8½-in. plot with 200 dot per-inch resolution in seven seconds. *Fortren-callable* subroutines allow most user and commercial programs originally written for pen plotters to be used with any *Versatec* plotter. OEM evaluation units of the "Model V-80-711" are priced at \$5400 in single unit quantities. ■ Versatec, Santa Clara, Calif.

circle 318 on inquiry card

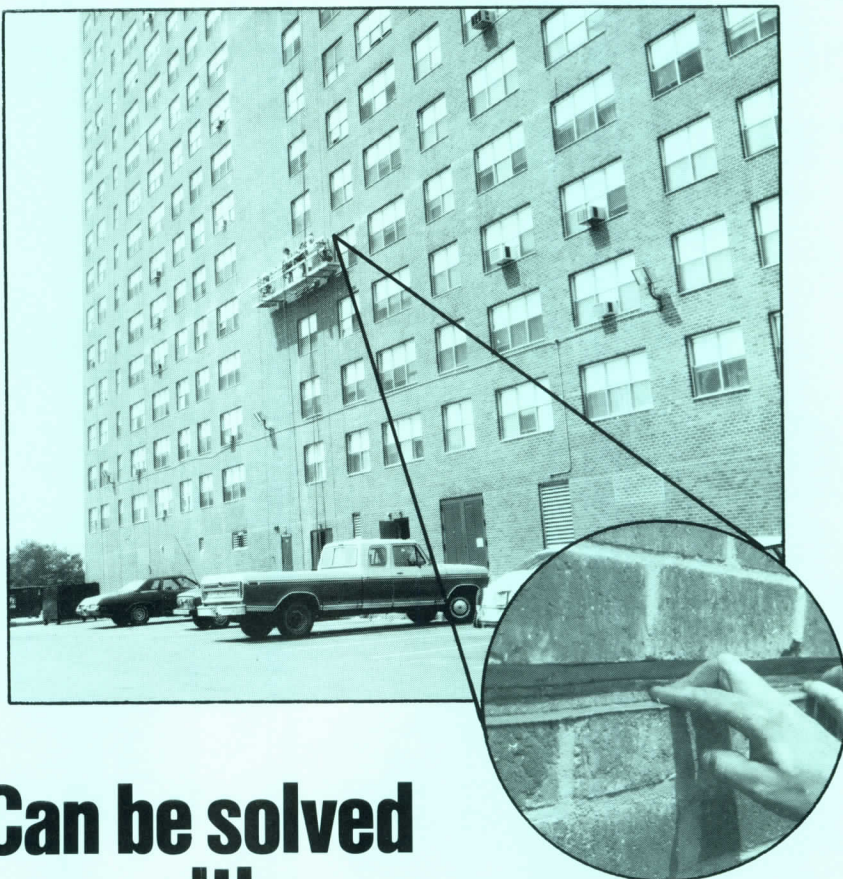
GRAPHICS DISPLAY / A system of versatile molding, hooks, holders and clips, this picture hanging device can be used to exhibit graphics of all kinds, from large framed paintings through matted photos and prints to blue prints and paper sketches. Hanger rods are available in tan fiber-

glass as well as plated steel, with in-stock lengths from 24- to 72-in. Rods lock on to both *Walker* moldings, hang from older conventional wooden moldings, or fit over exhibit back-drops. ■ Walker Systems, Inc., Duluth, Minn.

circle 319 on inquiry card

EXPANSION JOINTS—

The weak link in your building...



Can be solved with... POLYTITE JOINT SEALANT

You will get permanent, watertight protection.

Today's high rise buildings, whether of brick or building panels, involve vertical and horizontal joints which are the weak link — because unless the joints are watertight, it will mean long and costly modifications and repair as shown in the photo above.

You can prevent this damage with Polytime B as the secondary sealant behind backer rod and caulk. Polytime B sets up an impenetrable barrier that gives unmatched protection for the life of the building . . . even in the severest weather extremes.

Put your confidence in Polytime B.

Write for full technical details (including information on the building shown).



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Telephone (617) 491-0540

Circle 65 on inquiry card

Many architects agree that single-ply is the roofing material of the future because of its cost efficiency and energy savings. But many have also learned through unhappy clients that a single-ply roof is only as good as the company that installs it.

Single-ply requires specialized application and seaming techniques.

a single-ply roof is only as good as the company that installs it



If that fact has made you hesitant to specify single-ply, consider this:

We have enough confidence to warrant our roof for 10 full years. That warranty covers both workmanship and materials. Try to find another contractor who'll warrant both.

Why we use Sarnafil® single-ply material exclusively . . .

Years of evaluating numerous single-ply materials have convinced us that Sarnafil® is superior to all others.

A product of Swiss technology, its greater durability and elasticity permit extreme building expansion and contraction without tearing or wearing.

Proven for more than 18 years, it's the only roofing membrane which is dimensionally stable (ASTM: D 1204 — 0.00% shrinkage). Because of the manufacturing process it will not shrink with age and is easily repaired and maintained.

Over the years, we've perfected our installation methods re-roofing more than 1,000 buildings. Our experience results in greater protection for your client's building and fewer headaches for you.

Specify D. C. Taylor roofs with confidence. Send in the coupon below or call toll free for our comprehensive information packet containing the complete D. C. Taylor story and Sarnafil® specs.

Call toll free: **1-800-553-8857**

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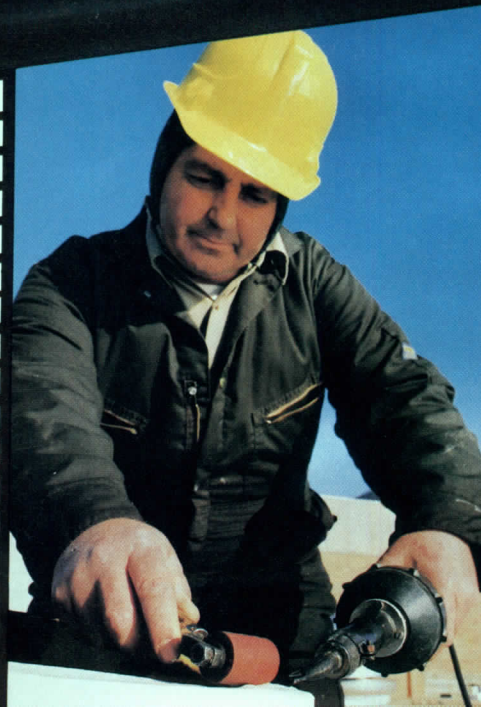
(ask for Alan Benson)

Mail to:
D.C. Taylor Co.
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P.O. Box 97 Dept. A2B
Cedar Rapids, IA 52406



Yes, I'd like to know more. Send me your free information packet with specs.

Name	
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Firm	
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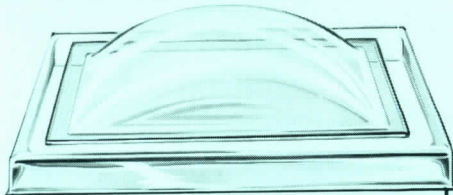


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America's largest single-ply roofer

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Regional offices throughout the U.S.



How to let light in without letting heat out.

Skylights formed from **UVEX[®] Plastic Sheet** can reduce costs by reducing the need for artificial lighting during daylight hours.

While the optical transparency of UVEX Sheet lets light in, its low thermal conductivity keeps heating and cooling losses low.

UVEX Sheet has excellent impact strength and outstanding resistance to weathering. And in many instances, skylights formed from UVEX Sheet can be flashed directly into the roof—eliminating the need for aluminum curbing or support.

For information and the name of the skylight manufacturer nearest you, contact Bill Seaman at Eastman Chemical Products, Inc., Plastics Products Division, Kingsport, Tennessee 37662.



Eastman Chemical Products, Inc., a subsidiary of Eastman Kodak Company, Kingsport, Tennessee. UVEX is Eastman's trademark for its plastic sheet. Eastman makes only the plastic sheet used in finished products and therefore makes no warranties with respect to such products.

UVEX[®]

Plastic Sheet

Circle 67 on inquiry card

MINERAL FIBER PANELS / Complete design and application data on *Johns-Manville* Architectural Panels are supplied in a reference guide for specifiers and installers. Physical characteristics and design considerations with respect to fastening, venting, allowance for expansion and other factors are described. The booklet contains recommendations on cleaning and maintenance, patching screw holes, sealants and anti-graffiti coatings for the panels. ■ *Johns-Manville, Denver.*

circle 415 on inquiry card

POLYURETHANE SEALANT / *Sikaflex-1a* one-component sealant is now offered in 20-oz, shrink-wrapped "sausage" package for bulk gun loading. A product folder provides technical data on the permanently-flexible construction sealant, and explains how the new packaging saves time and money. ■ *Sika Corp., Lyndhurst, N.J.*

circle 416 on inquiry card

WASTE TREATMENT / Special chain products for water and waste treatment applications are shown in a color brochure. *Rex* cast and welded steel chain, and polymeric chain for highly corrosive areas, are included; all data on chain and attachments are presented in chart form for easy reference. ■ *Rexnord Inc., Milwaukee.*

circle 417 on inquiry card

METALLIC LAMINATE / Made of real aluminum, copper and mirror chrome, *Homopal* high-pressure laminates are said to be ideal for a number of interior applications. A color brochure provides product information, color illustrations of each style, and resistance-test data. ■ *The Diller Corp., Morton Grove, Ill.*

circle 418 on inquiry card

RATED CEILING PANELS / Acoustical and technical properties of *Spintone* and *Firedike* felted mineral fiber lay-in panels for interior lighting system are listed in a data sheet. Details on the fire hazard performance of both panels are included; UL test results for both floor/ceiling and roof/ceiling systems are given. ■ *Johns-Manville, Holophane Div., Denver.*

circle 419 on inquiry card

NOISE CONTROL / Written for the design professional, "Guidelines for problem-solving in the industrial/commercial acoustical environment" includes information pertinent for general applications in all types of occupied space where noise presents a problem. The 42-page manual discusses noise and how to reduce it at the source, along the path and at the receiver. Acoustical data is given for all types of sound-absorbing materials. ■ *Owens-Corning Fiberglas Corp., Toledo.*

circle 420 on inquiry card

VIBRATION DAMPING / A semi-fluid material that can be applied by spray, brush, trowel or caulking gun, *Sound-Off* reduces reverberant sound radiated by metal, ceramic, glass, etc., surfaces. A six-page brochure describes three types of *Sound-Off*, with the recommended applications for each product, and lists physical properties and characteristics of the noise damping mass. ■ *Noise Knocker Industries, Dayton, Ohio.*

circle 421 on inquiry card

more literature on page 149



This man can bring you what you need to know about metal framing.

He's sitting in your drawer, just waiting to bring you important information on Unistrut[®] Systems.

You'll learn how to solve complex problems such as dividing and multiplying space. We'll send you catalogues on support systems of all kinds.

But we can't do anything until you fill out this form, put it in an envelope and put that man to work.

To: Unistrut Systems, 35005 Mich. Avenue West, Wayne, MI 48184. Please send me what I need to know about:

11

- Industrial Support Systems
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- Medical Support Systems
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Company _____ Phone # _____

Address _____

City _____ State _____ Zip _____

UNISTRUT | **GTE**



End of the washroom waste land.

Year after year, washrooms turn out looking pretty much the same. No more. Bradley Washfountains offer the variety of circular, semi-circular or corner styles in precast terrazzo, colored Bradglas or stainless steel. They serve large groups efficiently and let you achieve a new look, too.

One 54-inch Washfountain can serve up to eight people at the same time. It takes about 15% less space than lavs, and can cut installation costs as much as 80%. It also reduces the amount of

water used and the energy used to heat it.

On the maintenance side, one Washfountain cleans up more quickly than eight lavatories. And a choice of bowl materials eliminates unsanitary chips and cracks, even resists chemical attack and corrosive atmospheres.

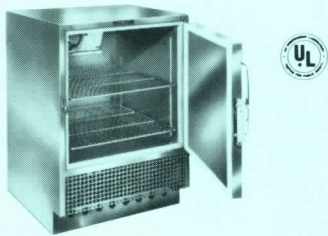
WRITE FOR OUR WASHROOM/SHOWER ROOM PLANNING GUIDE. Bradley Corporation, 9107 Fountain Blvd., Menomonee Falls, WI 53051.

Another
right idea
from  **Bradley**

Circle 69 on inquiry card

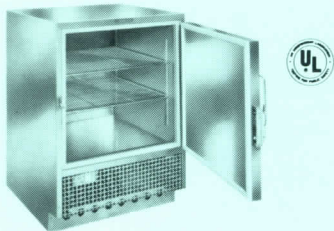
WE FIT IN

STAINLESS STEEL UNDER COUNTER LAB REFRIGERATORS AND FREEZERS



UC-5-BC refrigerator has a blower coil cooling system with automatic off-cycle defrosting and condensate evaporator in condensing unit compartment. Two adjustable stainless steel shelves are provided.

UC-5-F-BC freezer is equipped with automatic timer electric defrost. Capacity—5.4 cu. ft. (155 ltr.)

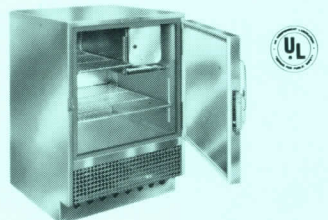


UC-5-CW* refrigerator with cold wall cooling system is equipped with push-button defrost, automatic reset and condensate evaporator. Capacity—5.4 cu. ft. (155 ltr.)

UC-5-F-CW* freezer is equipped with manual hot gas defrost. Capacity—4.6 cu. ft. (130 ltr.)

UC-5-CW-E refrigerator has the same interior features as the UC-5-CW but modified to make it *totally explosion-proof*. Capacity—4.9 cu. ft. (140 ltr.)

With explosion proof interior only.



UC-5 features a two-tray ice cube cooling system with manual defrost and stainless steel defrost water tray. The cooler section has two adjustable stainless steel shelves. The entire UC-5 series features polyurethane insulated thin wall construction and air-tight neoprene thermo-break door seals. Capacity—5.4 cu. ft. (155 ltr.)

Jewett also manufactures a complete line of blood bank, biological, and pharmaceutical refrigerators and freezers as well as morgue refrigerators and autopsy equipment for world wide distribution through its sales and service organizations in over 100 countries.



Refer to Sweet's Catalog 11.20/Je for quick reference.

Circle 70 on inquiry card

WALLCOVERINGS/FABRICS / A fully-illustrated color brochure on the "Donghia" collection of wallcoverings and companion fabrics shows 21 designs in 92 colorways. All are gravure-printed on fabric-backed, scrubbable or washable vinyl, Mylar, Tessitura and Kraft paper grounds. ■ James Seeman Studios, Div. Masonite Corp., Garden City Park, N.Y.

Circle 422 on inquiry card

GLASS BRICK / A color brochure covers all of this manufacturer's current and upcoming glass brick product line, including standard, thin-line and solid glass units. Special brick such as solar reflective blocks, virtually indestructible *Vistabrik*, and lighter-weight *Delphi* and *Decora* patterns are featured. Physical property data is charted. ■ Pittsburgh Corning Corp., Pittsburgh.

Circle 423 on inquiry card

ERGONOMIC SEATING / The relationship between worker comfort and productivity is discussed in two brochures from the manufacturers of *Vertebra* office seating. "The Principles of Office Chair Selection" deals with seating problems and attitudes, exercise, the working environment, and chair selection for a healthy back. "Seating Systems, Fatigue and Productivity" reviews the causes of a decline in white-collar worker productivity, and suggests remedies. ■ Krueger, Green Bay, Wisc.

Circle 424 on inquiry card

CONTRACT FURNITURE / A 50-page, full-line catalog features contemporary designs in furnishings for businesses, schools, resorts, restaurants, and hotels and motels. Included in the *Virco* line are hand-made rattan and cane chairs, folding chairs and tables, pedestal and office tables. All color and finish options are shown. ■ Virco Mfg Corp., Torrance, Calif.

Circle 425 on inquiry card

OPEN OFFICE PARTITIONS / *Interact* acoustical screens form the basis of a complete open plan furniture system. A color catalog illustrates most finish options, such as fire-resistant fabrics, *Plexiglas* and woods; power options for the interconnecting raceways include a two/20 AMP capacity circuit. ■ Acoustical Screen Corp., East Longmeadow, Mass.

Circle 426 on inquiry card

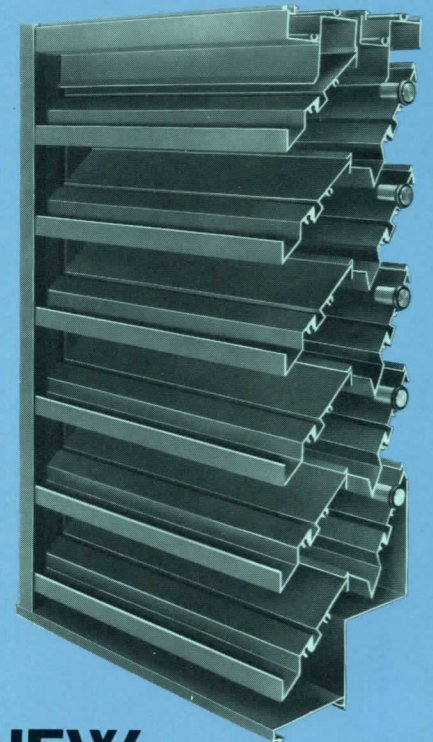
TERRAZZO FLOORING / A color brochure explains the "thin-set" system, showing how different types of flooring, terrazzo and carpeting, for example, can be used side by side to differentiate various functional areas with no change in slab thickness required. The 1/4-in.-thick thin-set terrazzo matrix is highly resistant to many acids, alkalis and other harmful materials. ■ The National Terrazzo and Mosaic Assn., Inc., Des Plaines, Ill.

Circle 427 on inquiry card

AREA LIGHTING / A catalog sheet describes the *RMA* fixture package, designed to illuminate residential areas and roadways with medium to light vehicular traffic, and for off-street lighting, such as in rural areas. Technical and photometric data, dimensional drawings and ordering information is included. ■ Westinghouse Electric Corp., Pittsburgh.

Circle 428 on inquiry card

HIGHER FREE AREA, LOWER WATER ENTRAINMENT, GREATER ECONOMY



NEW C/S 3" LOUVER SYSTEM

Construction Specialties Inc., the world's premier louver manufacturer, has developed a complete line of 3" deep, drainable blade louvers, in both fixed, operating and dual combination styles.

This new system offers architects and engineers a remarkable combination of features not previously available.

After studying the impressive test data below, you'll want the complete story. It's all in our *new* 40 page brochure which is available free to architects/engineers and all specifiers.



	AIR FLOW	WATER CARRYOVER
MODEL	CFM PER SQ. FT. FREE AREA	OUNCES PER SQ. FT. FREE AREA
3867 OPERATING	950.6	0.168
3157 FIXED	1018.6	0.105
3157/3867 COMBO	1241.7	0.048

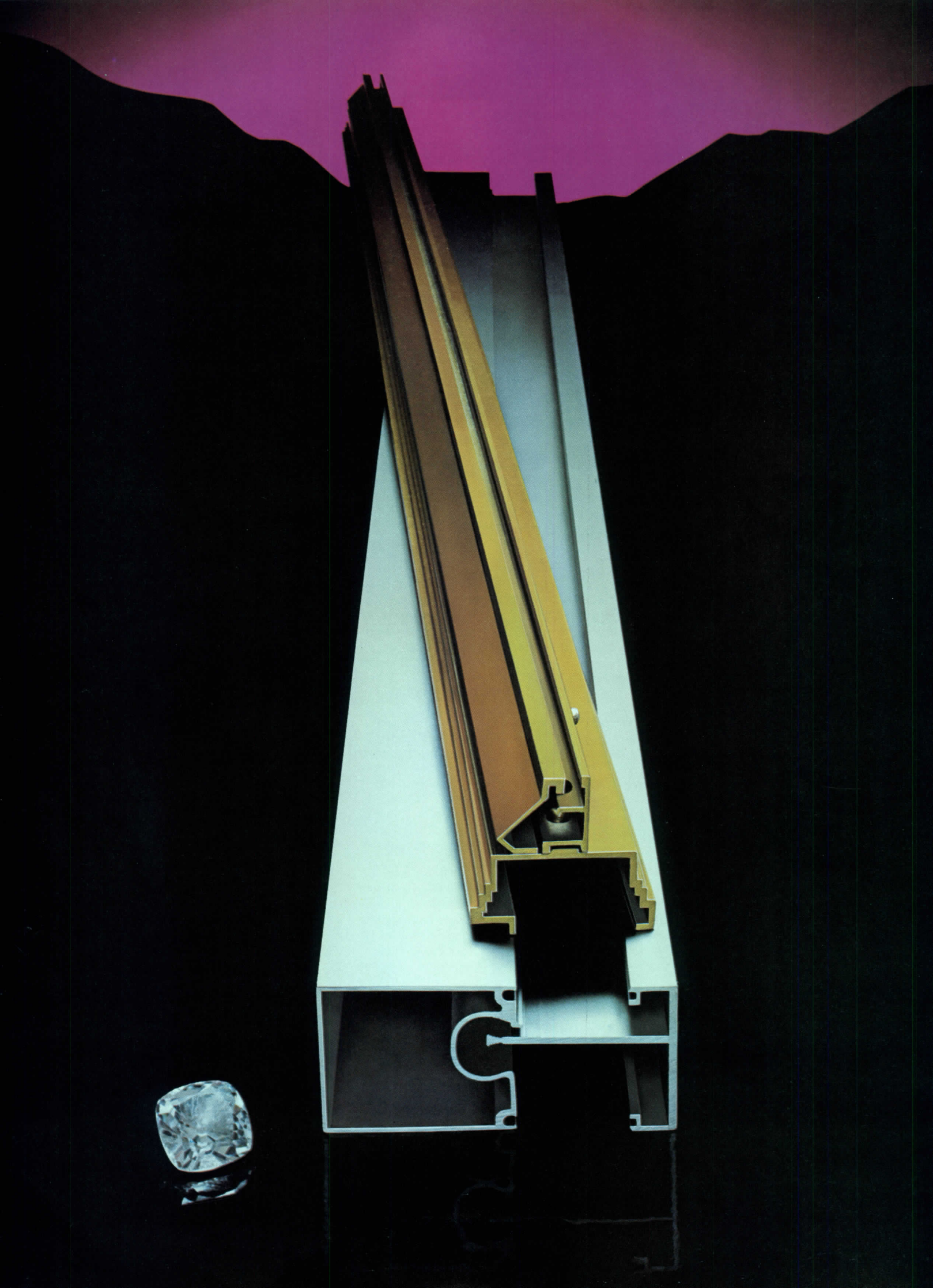
The above test results were obtained using 4' x 4' louvers.



CONSTRUCTION SPECIALTIES, INC.

Cranford, N.J. • San Marcos, CA.
Mississauga, Ontario

Circle 71 on inquiry card



In the 16 years it's been on American roofs, Owens-Corning's Perma Ply-RTM roofing felt has failed on the following occasions:

Not once.

Sixteen years—over three and a half billion square feet—and no known product failures. A record no one else can match. A free booklet, "The Case for Perma Ply-R Roofing Felts," has the facts. Write A.Q.B. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.



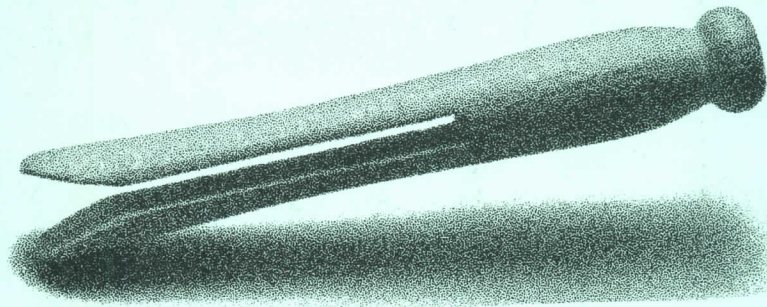
OWENS-CORNING
FIBERGLAS

TRADEMARK ®

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Circle 114 on inquiry card

Sloan's Optima solves a problem not normally mentioned in polite company.



When the men's room is a little strong.

Sanitation is somewhat less than perfect if urinals go unflushed. Which can happen with manual or timed flushing. And disinfectants replace one odor with another.

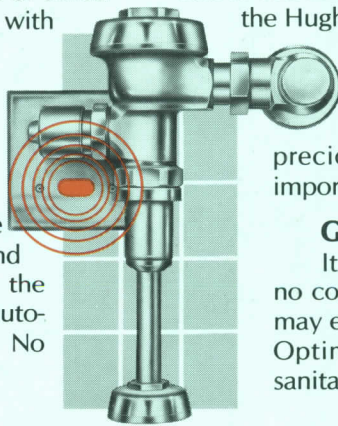
Sanitation is why Optima was invented.

The Sloan Optima™ Automatic Flushing System is *sensor-operated*. The sensor sends out an invisible, continuous beam of light. The user reflects the beam back into the scanner and arms the system. When the user steps away, the flush valve trips automatically. Sanitation's automatic, too, since flushing is on *demand only*. No more forgotten flushes.

Optima works for big buildings (and little ones).

Optima is on the job all around the country. For example, it helps solve sanitation problems at the huge

Kemper Group headquarters in Long Grove, Illinois, where more than 2,000 employees work. Other Optima installations include the Oak Park (Illinois) Country Club and the Hugh Carter Engineering Co., San Diego.



Beyond sanitation, water savings.

Since Optima flushes only on demand, precious water is conserved. That's pretty important these days.

Get our new brochure.

It tells all about the Optima System. There's no cost or obligation, of course. Just write. You may end up joining the ranks of those who find Optima is the clean-cut solution to tough sanitation problems.



SLOAN VALVE COMPANY

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