



BUILDING TYPES STUDY: RECORD INTERIORS OF 1978

ARCHITECTURAL ENGINEERING: ACOUSTICS OF THE "NEW" CONCERT HALL

WILLIAM MORGAN'S PARK-POLICE STATION FOR JACKSONVILLE, FLORIDA

TWO VERMONT HOUSES, BY TURNER BROOKS

LA CITE: A LARGE-SCALE, MIXED-USE DEVELOPMENT IN DOWNTOWN MONTREAL

FULL CONTENTS ON PAGES 10-11

ARCHITECTURAL RECORD

JANUARY 1978

1

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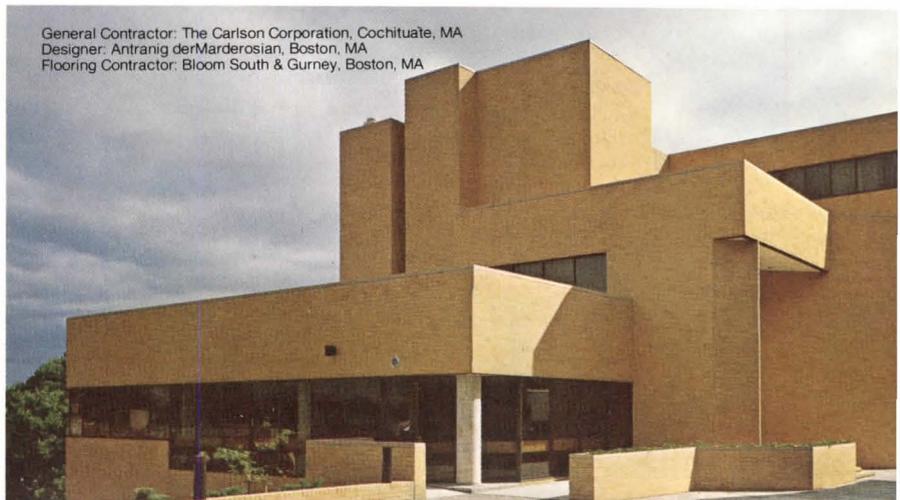


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Letters to the editor

Thanks to William Marlin's enthusiastic report, Stanley Tigerman's two houses-to-be near Chicago become the latest victims of the Prose-Puffed Architecture syndrome.

Presented in plan, section and description (without mythologies and apologies), one suspects the houses would limp along lamely, nodding gratuitously to the requisite deities. Enter the Prose-Puffer, and . . . tadaaa!! The architecture soars, flying high on verbal vitamins. Way over our heads.

While Marlin apparently feels privileged to be among the first to have seen the emperor's new clothes, his rush to the typewriter has obscured his vision. Claiming that Tigerman's architectural wardrobe gives ". . . conceptual substance and theoretical respectability to the sensory make-up of human beings as a primary determinant of structural and spatial relationships," Marlin leaves us starved for evidence, while insisting we ponder the accessories: "procession," "walls as contours," "reversals" and "tableau-like cut-outs." These garments are familiar, whether seen going up (or down?) the so-called "Stairway to Paradise," but the plans and photos reveal the all-too-inevitable monotony of affluence that even 12 bathrooms cannot relieve.

Surreal indeed, the HOUSE that exists only as an intellectual exercise, tenants be damned, "human senses" limited to the cerebral. Surreal indeed, the Marlins who write about the Tigermans who abstract human sensibilities into an architecture without north arrows.

Don Metz, Architect
Lyme, New Hampshire

The houses by Mr. Tigerman are wonderful and so are you for publishing them.

I would not dream of living in one of them nor could I ever design one, but their content is fascinating and very exciting.

Jennifer Clements
Architect
San Francisco, California

Mr. Aksen's article [October 1977, page 59] on "consolidation and joinder" of arbitration proceedings appears to me to be misleading, particularly because of the bold type heading. The most important point, not clearly made in the article, is that the New York court decision supports the contract language found in the AIA

agreement forms which prohibit consolidation and joinder.

Design professionals and insurance carriers have for years harbored mixed emotions about arbitration as a means of settling disputes. Arbitration is the best vehicle we now have for solving disputes in the construction industry. Consolidation and joinder is the quickest way to put an end to the use of arbitration in our industry.

Picture the owner, architect, consulting engineer, general contractor, subcontractor and their respective attorneys trying to select an acceptable date for a hearing, choosing arbitrators and presenting their cases. Picture the years going by, the expense and the potentially ludicrous decision from which there is no appeal. Picture how much simpler it would have been to just go to court.

Steven H. Rosenfeld, AIA*
Icarus Corporation
Rockville, Maryland

*Formerly AIA's Director of Professional Practice Programs, Editor of Architects' Handbook of Professional Practice and staff representative to the A.A.A., 1970-1974.

Regarding the article, the editor apologizes for indeed misleading readers with a subhead which the author, Gerald Aksen, did not write. In fact, the author is quite specific in stating that the drafters of the new AIA contract provision on consolidation had clearly read the court decisions dealing with this subject, and had given heed to the fact that clauses forbidding consolidation "would be given controlling weight."—Ed.

The only thing that got left out of your December coverage of our work, and an important thing at that, were the names of the associates in my office who, these last few years, have knocked themselves out to bring those four city projects to realization. Kent Abraham and David Harris worked on both Petersburg and Schenectady. Anthony S. Whale worked on Baltimore. And David Cox worked on Columbus. Thanks for the coverage, and for helping me remind everyone out there that these men played a major role in making them worthy of coverage.

Arthur Cotton Moore
Arthur Cotton Moore/Associates
Washington, D.C.

ERRATUM

In the Mid-October 1977 issue, page 89, product item 359 was incorrectly identified. The Pratt & Lambert, Inc. primer should have been identified as "Suprime."

Calendar

JANUARY

22-26 The 1978 International Concrete & Aggregates Show, sponsored by the National Sand and Gravel Association, the National Ready Mixed Concrete Association, and the National Crushed Stone Association; Las Vegas Convention Center. Contact: Vincent P. Ahearn, Jr., Exhibit Manager, 1978 International Concrete & Aggregates Show, 900 Spring St., Silver Spring, Md. 20910.

23-25 Seminar, "Solar Energy," sponsored by New York University, School of Continuing Education; Washington, D.C. Contact: Heidi E. Kaplan, Information Services Manager, New York Conference Management Center, 360 Lexington Ave., New York, N.Y. **30-31** Construction Industry National Legislative Conference; Hyatt Regency Hotel, Washington, D.C. Contact: Construction Industry National Legislative Conference, 815 15th St., N.W., Suite 902, Washington, D.C.

30-February 1 ASHRAE's national meeting, Atlanta Hilton Hotel, held concurrently with the Southeastern Air-Conditioning, Heating, Refrigerating Exposition at the World Congress Center, Atlanta, Georgia.

FEBRUARY

4-8 National Solar Heating & Cooling Workshops & Solar Products Exhibition, sponsored by the Solar Energy Industries Association; Phoenix Civic Plaza, Arizona. Contact: SEIA National Workshops, 1001 Connecticut Ave., N.W., Suite 800, Washington, D.C. 20036.

MARCH

16-18 Second National Passive Solar Conference, sponsored by the Department of Energy Conservation and Solar Applications Passive Systems Development Program and the International Solar Energy Society; Annenberg Center, University of Pennsylvania, Philadelphia. Contact: Linda Knapp, Mid-Atlantic Solar Energy Association, Department of Architecture, University of Pennsylvania, Philadelphia.

22-23 Sixth Annual APCA Government Affairs Seminar, sponsored by the Air Pollution Control Association; Hyatt Regency Hotel, Washington, D.C. Contact: Public Relations Department, Air Pollution Control Association, P. O. Box 2361, Pittsburgh, Pa. 15230.

APRIL

11-13 Concrete Canada '78, Toronto Hilton Harbour Castle Hotel. Contact: Jim McGuigan, Concrete Canada '78, 481 University Ave., Toronto, Ontario M4W 1A7.

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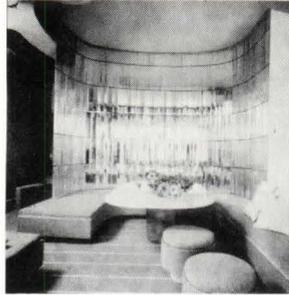
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Cover: Private apartment
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Photographer: Tom Yee

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THE RECORD REPORTS

13 Editorial

1978: Could it be a year of talk about design?

4 Letters/calendar

33 News in brief

Short items of major national interest.

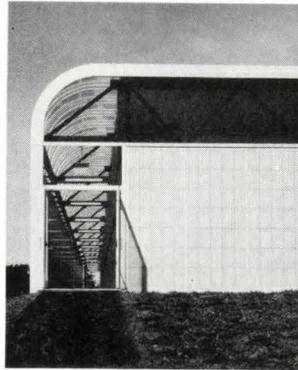
34 News reports

The AIA has named David A. Meeker, Jr., FAIA, its new executive vice president. Owens-Corning Fiberglas announces its sixth annual Energy Conservation Awards. Gulf puts the "new" town of Reston, Virginia, up for sale.

37 Human settlements: world news

40 Buildings in the news

Chicago Chapter, AIA, distinguished buildings program, 1977.



42 Required reading

ARCHITECTURAL BUSINESS

55 Business development

Advertising the architect's services: moving from legal and ethical controversy to marketing strategy

Communications consultant Stephen A. Klimont, AIA, notes the improved legal climate for advertising professional services, and describes the conditions and precautions that professionals should heed.

59 Legal perspectives

Owner-architect contracts: making sure they properly define professional services can avoid potential liability

Attorney and architect Arthur T. Kornblut, Esq. points up some of the danger signs to be looked for in client-prepared contracts.

61 Building financing

Financial support is accumulating for more nonresidential building in 1978

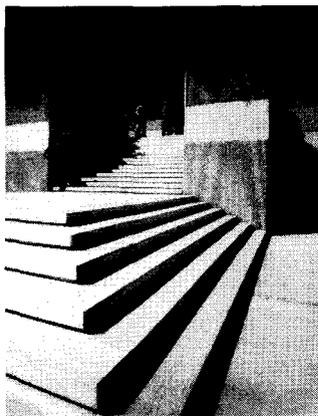
George A. Christie, vice president and chief economist, McGraw-Hill Information Systems Company, reports on the combination of financial events that spell a 15 per cent increase in nonresidential building contracting this year.

63 Building costs

Latest national construction cost figures compiled by the Dodge Building Cost Services.

FEATURES

- 105 Two houses by Turner Brooks**
Designed and built by Turner Brooks and his low-tech design-build outfit in Starksboro, Vermont, these houses are truly remarkable, and they have much to say about the arts of house making.
- 113 La Cité: a large-scale, mixed-use development in downtown Montreal**
Designed for maximum profit on a bare-bones construction budget, without public subsidy in any form, it nonetheless possesses many public amenities such as a well-designed open space network above and below ground.
- 117 Breaking down the battlements: William Morgan's Police Memorial Building in Jacksonville**
The combination of a law enforcement agency and a park on its roof has produced a new image for city governments—an image that may go a long way toward new attitudes for citizens and governments in other cities.



Otto Baitz

BUILDING TYPES STUDY 511

- 77 Record Interiors of 1978**
Ten award-winning designs in a variety of building types by architects who do interior design exceedingly well.
 - 78 Private apartment**
New York, New York
by Paul Rudolph, architect
 - 80 Vidal Sassoon Salon**
Beverly Hills, California
by Gwathmey-Siegel, architects
 - 84 Studio 54**
New York, New York
by Experience Space, architects
-
- Jayne Ardiles-Arce
- 88 Rolling Stone Offices**
New York, New York
by Paul Segal Associates, architects
 - 90 Arby's**
Chicago, Illinois
by Stanley Tigerman and Associates, architects
 - 92 Support Center for IBM**
Southfield, Michigan
by Mayers & Schiff, architects
 - 94 Private apartment**
New York, New York
by Michael Rubin, architect
 - 96 Chicago Cultural Center**
Chicago, Illinois
by Holabird & Root, architects
 - 100 Architect's office**
Chicago, Illinois
by Powell and Kleinschmidt, architects
 - 102 Architect's office**
Miami, Florida
by Charles Sieger, architect

ARCHITECTURAL ENGINEERING

- 125 Acoustic devices enhance the sound of music in a surround hall**
The arrival of a new surround-type concert hall at the University of Mexico signals a mini-trend in concert halls of greater informality and intimacy. Though they resemble European halls of the surround genre, the new ones explore advanced techniques to meet both architectural and acoustic objectives.
- 133 Product reports**
- 136 Office Literature**
- 184 Classified advertising**
- 186 Advertising index**
- 189 Reader service inquiry card**

NEXT MONTH IN RECORD

Building Types Study:
Housing and community planning Architect John Sharratt's advocacy planning of the sixties has led in the seventies to the construction of a high volume of high-quality community housing for low-income groups in Boston. This study, in part, will be a collection of case histories of these award-winning projects, the first three of which were constructed by the communities as their own developers. Sharratt's small office of 12 people has also remodeled landmark buildings, originally constructed for other uses, into successful mixed-income housing. The most important of these, Mercantile Wharf in Boston, will also be featured.



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1978: Could it be a year of talk about design?

The year has been a year of good news and bad news. For most architects and engineers, it has been a year of modest success. While no one seems to be working at the rate of the salad days four years ago, most professionals seem to have fewer empty spaces in the drafting room and to smile more often than they did, say, two years ago.

While the only people who seem to have reason for unbridled glee are the designers and constructors of power plants (a couple of dozen of them, at an average of \$1 billion apiece, will be started this year), it is true that office buildings will be up 15 per cent in dollar value this year over last, stores and other commercial buildings up 17 per cent, manufacturing buildings up 30 per cent, educational buildings (even educational buildings!) up 7 per cent, hospitals and health facilities up 11 per cent, other nonresidential up 12 per cent, apartments up 20 per cent. (For details, see George Christie's 1978 Dodge/Sweet's Construction Outlook, RECORD, November 1977.)

So maybe we face a year in which we can spend some time thinking about nobler notions than how to survive, how to handle a job interview when sixteen other architects (including the biggies from out of state) are waiting in the same waiting room, and whether or not we should allow ourselves to be recertified, take single-responsibility contracts, and advertise in our local newspapers. For example:

- Maybe this is a year in which more local AIA chapters could develop a theme of design quality as their program for the year. Last year, the Connecticut chapter, led by architect Richard Foster, did just that. And Preston Bolton, president of the Texas Society, is planning a year-long, state-wide effort to involve local communities in discussion with architects over how people see the quality life—how people feel about their city or town, and the buildings that they live or work or shop or play in. The game is, of course, that by understanding how people feel about their environment, architects will be able to do a better job of designing it.

- Maybe this is a year in which accomplishment in design might be publicized more broadly by the chapters. I've said before in this space that I think Honor Award winners should be publicized much more widely and wisely—not just at the awards dinner where other architects can either (depending on their agreement with the jury) eat their hearts out or shake their heads in disbelief. I'd like to reinforce the notion that honor awards should be presented (preferably at a pleasant luncheon or dinner

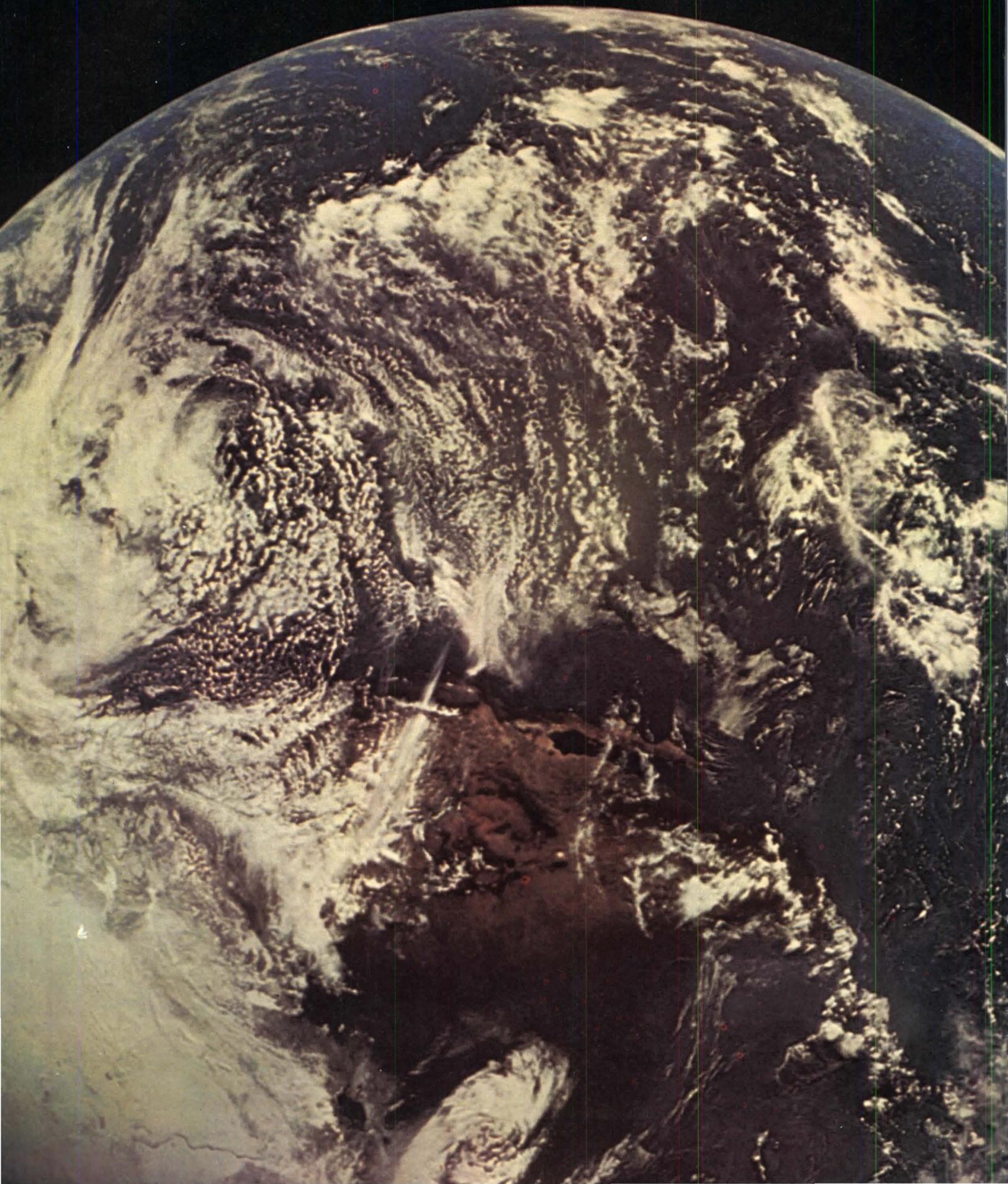
meeting) to the thought leaders and the shakers-and-movers of the area—mayors, councilmen, newspaper editors, television commentators, business leaders, educators and the like—together with a little talk by the pre-miated architect and his (presumably) happy client. And the talk by the client is the most important—because it puts good design into a framework that everyone understands, a framework of function and costs and return on investment. If the architect can help the audience to begin to understand what's good and why—so much the better.

- Maybe this is a year (speaking of function and cost and return on investment) that we can work to dispel the commonly held notion that quality in design and profit-making in the marketplace are incompatible goals. At the risk of sounding immodest, I think RECORD's December issue on "The Case for Design Quality in Today's Marketplace" is one argument in the right direction. We think it does show that "thoughtful collaboration between good architects and developers can result not just in arithmetic that adds up in the marketplace, but the arithmetic of excellence." We sure hope that it demonstrates that there is no real justification for the kind of mediocre design that the architect so often tries to excuse on the grounds "that the developer left me no real choice" or "that's what the marketplace seems to want."

- And maybe this is a year (speaking of understanding what's good and why) that part of the discussion when architects get together might be on design philosophy. For one thing it's clear that we now understand that more things are good architecture that we used to think (in the doctrinaire days of the Modern Movement) were good architecture. For another thing, the design superstars are busily riding off in all directions in search of new design philosophies to hold on to. In a film being distributed by the International Masonry Institute, entitled "Architects/Architecture" (and very much worth seeing if you get a chance), Washington architect Warren Cox argues that "This is probably the most sophisticated time we've had in architecture. [Past] periods of intellectual unrest have proved to be the richest intellectually." And his partner George Hartman: "I hope we are very close to combining romanticism and functionalism. If we should do so, we could produce an architecture that would be absolutely amazing. I think I see the current pluralism leading to an era of unprecedented richness and opportunity."

And wouldn't that be nice. —W. W.

A.D. 1978—Announcing the ultimate in laminate design.



The American Institute of Architects has named Donald O. Meeker, Jr., FAIA, its new executive vice president. Mr. Meeker, who succeeds William Slayton in the post, is presently professor of urban studies and public service at Cleveland State University, and was formerly an Assistant Secretary at HUD. Details on page 34.

Philip C. Johnson, FAIA, will receive the Gold Medal of the American Institute of Architects at the AIA's convention this May. The Institute bestows its highest honor to distinguish singular merit in architectural design.

Building construction maintained its 1977 pace of improvement in October, with a 20 per cent increase in nonresidential building over October 1976, and a 32 per cent increase in residential building, according to McGraw-Hill Information Systems Company's F. W. Dodge Division. In nonresidential buildings, "Stores and shopping centers are 1977's pace-setters," said George C. Christie, Dodge chief economist, adding that "contracting for retailing facilities was up 36 per cent at the end of ten months." The gain in residential contracts "was largely due to a spurt in multi-family units," Mr. Christie said. Nonbuilding construction fell off 42 per cent for the month, however, reflecting a lapse in electric utility projects.

The California Council, AIA, has abandoned, at least temporarily, a program that would mandate continuing education as a condition of recertification. (On the same issue, the Architects Society of Ohio, AIA, in convention resolved that the national AIA and the National Council of Architectural Registration Boards should "not actively promote and/or advocate their currently published concepts of mandatory continuing education" either for AIA membership or for maintenance of a license to practice architecture.) Details of the CCAIA action on page 37.

In his farewell address as AIA president, John M. McGinty said, "The nation needs design solutions." Speaking to the board of directors as Elmer E. Botsai assumed the presidency of the Institute, Mr. McGinty said, "In the '50s, the primary concerns lay in the areas of science and technology. In the '60s, the great issues of civil rights begged for political and legal solutions. Today, the ball is in our court." He stressed the importance of conservation—of materials, neighborhoods, existing buildings, and especially of energy. "I believe," he said, "that the response to this issue alone will be as significant an architectural determinant as was the industrial revolution."

Beverly A. Willis has been elected first vice president and president-designate of the California Council, AIA, and will assume the presidency in 1979. Miss Willis is principal in the San Francisco firm Willis & Associates.

Three buildings and one energy audit received Energy Conservation Awards in the sixth annual program sponsored by Owens-Corning Fiberglas Corporation. Details on page 35.

May 3 has been designated Sun Day by a group seeking to "lead the United States into the solar era." The coordinating council, which numbers among its members conservationists, consumerists, labor, academics and politicians, will promote conferences, demonstrations and tours of solar energy applications. For information: Richard Munson or Peter Harnik, 1028 Connecticut Avenue, N.W., Room 1100, Washington, D.C. 20036.

The American Consulting Engineers Council offers free the "Solar Engineering Directory," which lists alphabetically and by state the names of consulting engineering firms having expertise in the solar energy field. To order, write ACEC, 1155 15th Street, N.W., Washington, D.C. 20005.

ACEC has also published a "Public Relations Guide for Consulting Engineers," a practice aid for design firms that details "the tools and techniques of public relations and the use of promotion to enhance marketing efforts." Copies of the 60-page manual are available for \$6 to ACEC members, \$12 to non-members, from American Consulting Engineers Council, 1155 15th Street, N.W., Washington, D.C. 20005.

The National Institute of Architectural Education has opened three competitions for graduate architects. The Hirons Prize, with a first prize of \$1,750; the Lloyd Warren Fellowship 65th Annual Paris Prize, with a first prize of \$6,000 for travel; and the Traveling Fellowship in Architecture, with a first prize of \$3,500 and two months room and board at the American Academy in Rome. For information: National Institute of Architectural Education, 139 East 52nd Street, New York, New York 10022.

The Rotch Travelling Scholarship program this year offers two scholarships, the first carrying \$11,000 for nine months' foreign travel, the second carrying \$6,000 for five months' travel. Competitors must be graduates of an architectural school in Massachusetts or have one year's experience with a Massachusetts firm. Written requests for entry forms must be received by the committee no later than February 6. For information: Hugh Stubbins, Secretary, Rotch Travelling Scholarship, 1033 Massachusetts Avenue, Cambridge, Massachusetts 02138.



AIA names Donald Meeker executive vice president

David O. Meeker, Jr., FAIA, an architect and planner who for three years headed community development at the Department of Housing and Urban Development, has been selected as the new executive vice president of the American Institute of Architects.

The appointment is effective April 1 to provide Mr. Meeker, 53, with time to complete a tour at Cleveland State University, where he is professor of Urban Studies and Public Service. He succeeds William L. Slayton, the Institute's top staff officer since 1969. Mr. Slayton said last June that he would resign effective January 1.

John M. McGinty, AIA's immediate past president and head of the search committee that recommended Mr. Meeker, told ARCHITECTURAL RECORD that the new chief was not hired to undertake a "radical shift" in Institute programs and practices. "He will have a pretty full plate" just continuing programs now planned.

Mr. Meeker told RECORD that he will stress communications with members around the country and the AIA headquarters in Washington "so there will be less feeling of distance."

Despite several years in local and Federal government posts, and on college campuses, Mr. Meeker says he considers himself mainly an architect. For emphasis, he adds that "my grandfather was an architect and so is my uncle."

Mr. McGinty said the search committee located Mr. Meeker when it sought a candidate for the top post with four specific attributes: sensitivity and deep knowledge of architecture, extensive management experience, knowledge about the operation of

government, and ability to lead a large private organization with its own internal politics.

"He qualified on all points," Mr. McGinty says.

Mr. Meeker says he sees the job having three distinct parts: administrator of a large organization with a large budget, a leader within the profession for new and improved activities, and a spokesman to articulate the needs and problems of the profession to the public.

At HUD, he was Assistant Secretary for Community Planning and Development from August 1973 until September 1976. During his last year in office, his operation had a budget of \$3.8 billion and 1,500 employees. During this time, he chaired two subcommittees of the Domestic Council dealing with disaster recovery and the Bicentennial.

Before joining the Federal government, he was deputy mayor of Indianapolis under then-Mayor Richard G. Lugar (now a U.S. Senator).

For 14 years, from 1956 until 1970, he practiced with and was vice president of James Associates Architects and Engineers of Indianapolis. He was project architect on numerous buildings for Indiana University, including the library, married student and faculty housing, and the experimental teaching school for training elementary and secondary teachers.

Mr. McGinty says William Slayton's appointment eight years ago marked the beginning of a "metamorphosis" of the AIA which Mr. Meeker will continue. "Eight years ago, AIA was a gentlemen's club," says Mr. McGinty. "And it has been transformed into what is now a publicly oriented organization for architects."

Mr. Meeker says he plans to spend as much time as possible until April at Institute headquarters in Washington. But the board, after unanimously approving Mr. Meeker, named James A. Scheeler executive vice president until Mr. Meeker can take over full time. Mr. Scheeler is the group executive for program development and the organization's second ranked officer. —William Hickman, *World News, Washington*.

Commerce agency will watch construction-industry matters

The construction industry's often expressed desire for high-level representation in the Federal government will be answered at least partially by an organizational change announced recently by the Department of Commerce. Its Domestic and International Business Administration (DIBA) has received an additional assignment: the coordination of construction interests within the department.

A similar office was promised last November, after the Presidential election, by outgoing Secretary of Commerce Elliot L. Richardson. Before he could get the office cranked up, however, the Administration changed.

But in late October this year, Commerce Undersecretary Sidney Harman announced that the department was seeking Office of Management and Budget approval to set up a Construction and Building Materials Division. He said the office would become a "focal point" for the department's liaison with the construction and building materials industries.

The new division is expected to involve a slight upgrading of a Commerce office that has been headed for many years by Aaron Sabghir, who also figured in Mr. Richardson's plans.

—William Hickman, *World News, Washington*.

FAA plans expansion of Saarinen's Washington terminal

The 15-year-old terminal at Dulles International Airport, designed by Eero Saarinen, will be expanded, though not in the way Saarinen had planned. The rectangular terminal was designed to permit extension up to 600 ft on each side, but the Federal Aviation Administration, which owns and operates the Washington, D.C., airport, wants to push out the long wall facing the airfield instead.

The reason, says the FAA, is that when Dulles was first designed, wide-body airplanes were not yet even on the drawing board. "The whole terminal was designed around a plane that was 30 feet longer and 20 feet wider than a 707," says James Wilding, deputy director for the Metropolitan Washington airports. "Wide-bodies represent a totally new direction in thinking. Now we have to handle 300-350 people from one plane instead of 150-200."

The terminal space and mobile lounges have been able to handle the excess, but the baggage loading area underneath the concourse has become overcrowded, and for that reason the FAA wants to widen the terminal about 50 ft.

Community groups in Washington worry that the expansion will mar the appearance of the terminal building, which placed third in a poll conducted by the *Journal of the American Institute of Architects* to rank important structures built in the last 200 years. But FAA

planners say the roof level of the addition will be the same height as the platform from which the control tower rises, and will not damage the line created by the curving roof of the terminal. "We're trying to make it work better without impinging on its looks," says Mr. Wilding.

The expansion will cost an estimated \$6-7 million; plans were expected to go out for bid at the end of 1977. Congress has already appropriated the funds for the project, proposed in 1972.

The architects are Hellmuth, Obata & Kassabaum, St. Louis, who are also at work updating Saarinen's master plan for the airport itself. That project has also come under local fire. As a result of Peat, Marwick and Mitchell's new forecast of 18 million annual passengers by 1995 (the Saarinen firm's 1965 plan envisioned only 14 million), the airport authority now wants to build two additional runways instead of the one called for in the earlier plan. This would involve acquiring 995 acres of neighboring land, and residents are afraid noise control has not been considered. The area that would be most affected by the additional runways—Fairfax County, Virginia—last week sent to Secretary of Transportation Brock Adams a request for a thorough environmental impact statement on the proposed expansion. —Anne Swardson, *World News, Washington*.

Illusionistic mural identifies Boston Architectural Center

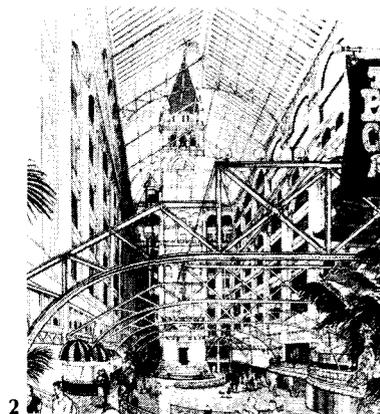
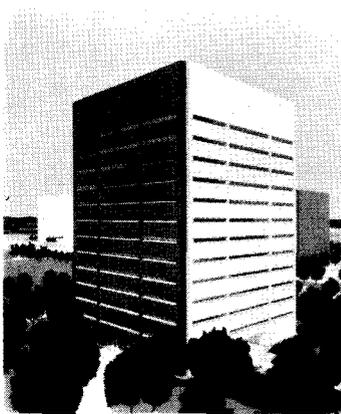
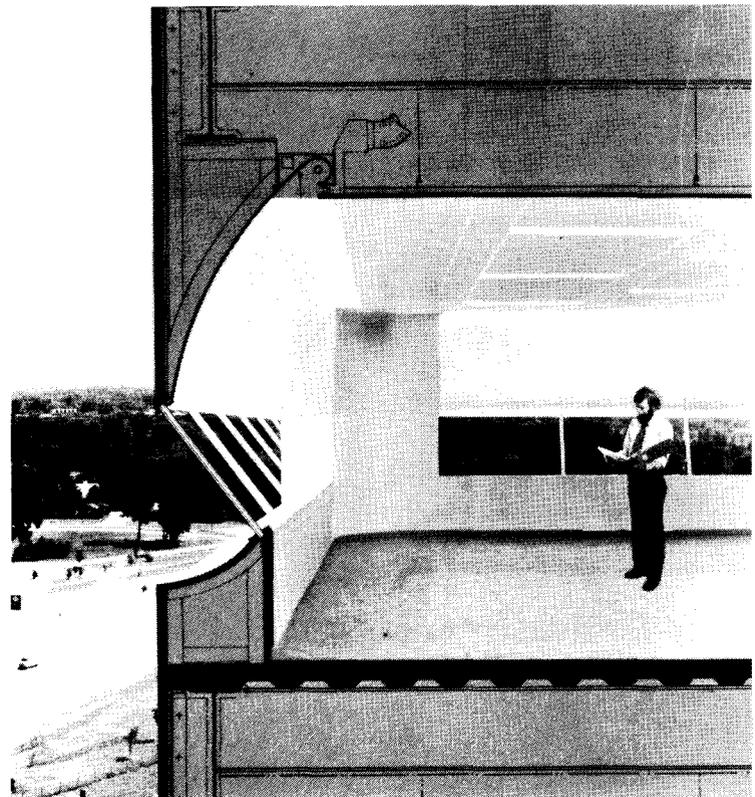
For a colossal (60 by 85 ft) and thoroughly appropriate wall painting, the Boston Architectural Center offered itself as canvas to artist Richard Haas.

Mr. Haas, a painter and printmaker whose work deals primarily with architectural subjects, designed for the school's blank back wall a *trompe-l'oeil* section of a Beaux-Arts building of the same size and shape as the BAC. The illusion is merely allusion, however: the formal arrangement of neoclassical rotunda, coffered dome, monumental stairways, columned ar-

chades and structural members in no way depicts the reality of BAC's strictly contemporary building.

The painting was completed late last year as part of the "City Scenes '76" program, a Bicentennial celebration sponsored by the National Paint and Coating Association, Washington, D.C., and City Wall, Inc., New York City. The work also received financial assistance from the National Endowment for the Arts. The Seaboard Outdoor Advertising Co., Inc., executed Mr. Haas's design.





OCF honors three buildings and one energy audit in its sixth annual Energy Conservation Awards program

Even before the oil embargo of 1973 and the subsequent energy crunch, Owens-Corning Fiberglas Corporation had recognized the importance of energy conservation by establishing a series of annual awards honoring energy-efficient building design. This year, in its sixth Energy Conservation Awards program, OCF named four winners as well as three honorable mentions.

While three of the awards went, expectably, to buildings, the jurors singled out for the fourth award an example of a fairly new engineering activity—the energy audit. A Special award was given to H. F. Lenz Company, Consulting Engineers, of Johnstown, Pennsylvania, for their energy audit of Science Hall at Carnegie-Mellon University, Pittsburgh. For a large computer installation demanding far more than its share of campus steam and electricity, the consultants recommended a retrofit that would reduce the size of the air-handling system and recover heat from the computers, lights and other equipment

for use in Science Hall and four adjacent buildings. Cascade refrigeration produces the heating effect.

In the Commercial category, Gunnar Birkerts and Associates, Architects, of Birmingham, Michigan, were named winners for the IBM building at Southfield, Michigan (1). Expected energy consumption was reduced by careful siting and attention to curtain wall design: insulated aluminum panels are light-colored on the south and west sides of the building, darker gray on the north and east. In addition, a system of "sill reflectors" was designed to reduce the lighting load: below each window a curving stainless steel reflector bounces daylight onto another reflector above the window on the interior—the natural illumination thus gained permits the reduction of the fluorescent light to 1.84W/sq ft; at the same time the system minimizes solar heat gain.

In the Governmental category, a design team made up of architects McGaughey, Marshall & McMillan, of Norfolk, Virginia, Arthur Cotton

Moore/Associates, of Washington, D. C., and Stewart Daniel Hoban Associates, Architects, also of Washington, and the space planning firm Associated Space Design, of Atlanta, took an award for the planned renovation of the Old Post Office Building in Washington (2). The designers have proposed a system of "thermal louvers" at the skylight above the building's central cortile—flat aluminum tubes filled with water to collect heat for summer cooling and winter heating would also provide shading. In addition, a special cooling system using chemically dehumidified air is expected to reduce the cooling load.

Pomeroy, Lebduska Associates, architects of New York City, took a Special award for their design of Bedford Mews, a townhouse development at Bedford, New York (3). There, 28 of the complex's 160 units will be provided with special energy packages, each comprising a solar collector, water-to-water heat pump, energy recovery system, hot-water storage and off-peak electric service; the pack-

age will supply heating, cooling and domestic hot water.

Honorable mention went to:

Ellerbe Associates, Inc., architects and engineers of Bloomington, Minnesota, for Western Life Insurance Company's corporate headquarters in Woodbury, Minnesota;

Rowe, Holmes Associates, architects, of Tampa, for the Business Administration Building at the University of South Florida, Tampa, Florida;

Moore, May and Harrington, Architects, Inc., of Gainesville, Florida, for the Terminal Building at the Gainesville Municipal Airport.

Chairman of the awards jury was engineer Jack E. Tumilty, president of Jack E. Tumilty and Associates, Tulsa. Other jurors included Robert C. Metcalf, FAIA, Dean of the College of Architecture and Urban Planning, University of Michigan; David A. Pugh, FAIA, of Skidmore, Owings & Merrill, Architects; Walter R. Ratai, president of the consulting engineering firm Walter R. Ratai, Inc.; and Jack D. Train, FAIA, of Metz Train Olsen & Youngren, Inc.

District of Columbia court ruling opens the way for high-rise development on Georgetown riverfront

The waterfront in Washington, D.C.'s, Georgetown is now open for high-rise commercial and residential development, under zoning regulations that preservationists think will lead to the "Manhattanization" of the historic riverfront district.

A judge in a District of Columbia Superior Court has ruled that a 1974 rezoning action by the city is legal and enforceable. The city's right to undertake the rezoning had been challenged by a citizen's association that favored a largely residential community of town-

houses and low-rise apartments.

The waterfront area, generally that part of Georgetown south of M Street, fronts on the Potomac just upstream from the John F. Kennedy Center for the Performing Arts. Through it runs the Chesapeake & Ohio Canal and the William O. Douglas Park, which surround the canal and the tow path once used by donkeys to pull barges.

Development in the area is now largely confined to parking lots, warehouses and abandoned mills, with only

a few residences and shops.

With the favorable court ruling, developers are now predicting a new mini-city of hotels, office buildings, condominiums and large commercial establishments.

The District of Columbia government is the largest landowner with nine acres, originally acquired for the relocation of a now decrepit elevated highway that skirts the river along the waterfront area. The next largest landowner is Georgetown-Inland Corp., with six acres and plans for a \$80-

million office, retail, hotel and condominium project.

The new zoning plan is still fairly restrictive. About half the area will have a height limitation of 40 ft, 30 per cent will be limited to 60 ft and the remaining 20 per cent to 90 ft.

Moreover, commercial development can include no more than 3.5 million sq ft, and residential development is encouraged. Under the plan, the canal and riverfront must be protected. —William Hickman, *World News, Washington*.



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Gulf puts For Sale sign on Reston, Virginia

The assets of the prime developer at Reston, Virginia—one of the nation's most successful new town developments—are up for sale.

Gulf Reston, Inc., a wholly owned subsidiary of the Gulf Oil Corp., will be liquidated because the parent company wants to concentrate on energy-related ventures, company spokesmen explained.

The company will not reveal its asking price, but Fairfax County's tax assessor has them on the books at \$103 million. Included are 3,600 undeveloped acres, 1,000 apartment units, commercial space at three village shopping centers and a meeting center-hotel complex.

Gulf also has two Florida properties on the sales block. A buyer could take the Florida property separately, but the company plans to insist that Reston's buyer take all the assets and promise to keep the management team intact.

GRI president James Todd will not say how well Reston performed as an investment for Gulf. But the company has never been entirely comfortable in real estate development, except that needed by the company internally, and its return has never been up to expectations.

Gulf acquired its Reston holdings 10 years ago from the original developer, Robert E. Simon, who had run out of money. Mr. Simon had carved the new town out of a forest some 25 miles from Washington, D.C., and about five miles from Dulles International Airport. It now has a population of about 29,000—some 6,000 short of its goal for this year, which was set 10 years ago.

The development lagged behind schedule for three basic reasons:

- A sewer moratorium and a new county-wide land-use scheme essentially halted development for an 18-month period of anticipated growth. GRI challenged those moves successfully in the courts, but lost valuable time in the process.

- The politically potent Reston Home Owners Association has taken to challenging many high-density development plans and even some commercial ventures sought by GRI and delayed or blocked some growth.

- Reston citizens, except for those on commuter buses, have never been permitted to use the Federally-built four-lane highway to Dulles that effectively severs the town into two chunks of about equal size, joined only by a single bridge over the airport access road.

Mr. Todd and GRI's present management still have high hopes for completing Reston as a residential and employment center with a population of 68,000 in 23,000 housing units—they hope by the late 1980s. A fourth village center—this one with a Sausalito motif—is on the drawing boards, and GRI anticipates a start on this

project in the next two years.

So far, 10,400 dwelling units have been completed in Reston and 1,400 are now under construction. Of those now completed and occupied, 16 per cent are single-family detached houses, 3 per cent are patio houses (a cluster arrangement with units joined at patios or garages), 35 per cent are townhouses, and 43 per cent low-rise apartments. There are also 35 high-rise apartment buildings.

Reston has attracted an affluent, highly educated citizenry. The median family income is \$27,000, and the average adult citizen attended school for 16.1 years. There is employment for 7,000 people in the town.

A disappointment to Reston developers has been the performance of the village shopping centers. The first, Lake Anne, with 60,000 sq ft of commercial space, has come to symbolize the whole Reston development. But it has empty stores. —William Hickman, *World News, Washington*.

CCAIA drops its campaign for continuing education

A proposed law drafted by the California Council, American Institute of Architects that would establish mandatory continuing education as a condition of architectural recertification has been shelved, at least temporarily. CCAIA had drafted the legislation at the request of California's Board of Architectural Examiners (see RECORD, October 1977, page 57).

Although CCAIA had gone as far as preprinting the proposed bill to offer the legislature, its board members, feeling that the time was not ripe, have decided not to pursue the matter until next year at the earliest.

A poll of CCAIA members failed to produce strong support for the bill—slightly more than half of the respondents opposed mandatory continuing education. Moreover, while CCAIA has been developing programs for continuing education, the board felt that these were not yet adequate to fulfill relicensing requirements.

In addition, comments Piercy K. Reibsam of the Council's six-man professional development committee and chairman of the national AIA Continuing Education Committee, "There have arisen, not only here but elsewhere around the country, some profound legal questions relative to the recertification issue. These revolve around depriving a professional of his ability to make a living after his qualifications have already been established."

The CCAIA has by no means abandoned the cause, however. The board has resolved to "maintain its interest in legislation requiring mandatory continuing education for recertification of architects and support its introduction to the legislature if the board deems it appropriate." In any case, CCAIA will continue to develop educational programs.



Saudi plans public housing mega-complex at Dammam

The Saudi Arabian building boom has spawned a good number of new towns and housing, financed both privately (see RECORD, December 1977, page 37) and publicly. The kingdom's Ministry of Public Works and Housing will invest \$600 million in the first phase of a mega-complex of housing at Dammam, and have let a turnkey contract to the general contracting firm ODEM. The Dutch firm has in turn commissioned The Eggers Group, P.C., of New York City, as architects and planners of the 1,664-unit project.

Plans for Phase I call for eight identical clusters of four apartment towers, each cluster set on a three-

story platform that will provide retail space at ground level, parking garage, tenant storage space, service, and recreation space around the towers. Each floor of the 13-story towers will be identical, containing four seven-room apartments, and each tower will have a heliport on the roof.

Started in October 1977, construction is scheduled to take 24 months. Components of the precast concrete building system will be shipped from the Netherlands.

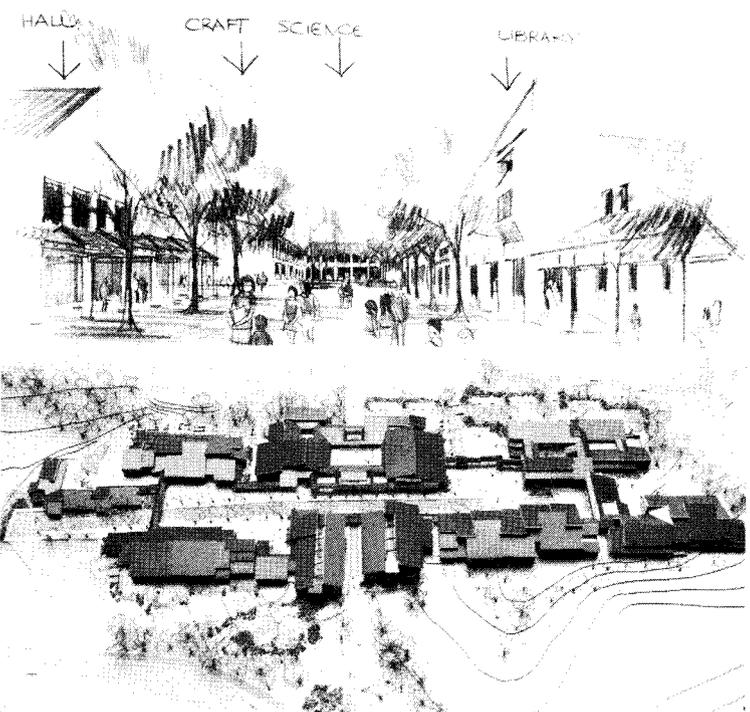
The second phase of the Dammam project will include schools as well as additional commercial and residential space.

Australians build a school along its own Main Street

What appears from above to be a village stretched along both sides of Main Street is in fact a comprehensive school now under construction at Bidwell, New South Wales, a suburb of Sydney.

The school will serve 2,000 or more students ranging in age from three to 17 or 18. Designed by the Ministry of Education, buildings at the school will be of more or less conven-

tional design, with such traditional Australian architectural features as street-level porches with sloped overhangs, and are each different from the other. Floor plans of classroom buildings share some similarities, however, with classrooms having access to an internal common room for discussions and exhibits. Corridors and covered walkways will connect all buildings for circulation in foul weather.





Today's hospitals try hard to hold the line on rising energy and maintenance costs

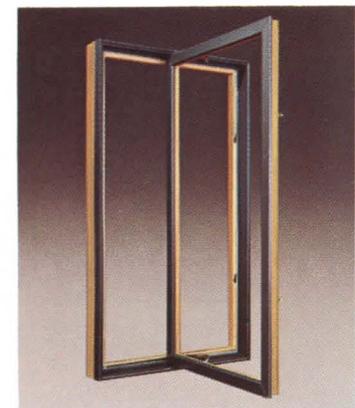
At Doylestown Hospital, a Pella window package helped like no other window could

Because energy savings were such an important consideration, Doylestown Hospital was designed and built to utilize a sophisticated, centralized energy management system. It continuously monitors energy consumption in all parts of the building, allowing hour-by-hour, day and night control over the environment, thereby ensuring the comfort of both patients and staff. Pella windows were used for the same reason. Wood construction, efficient double glass insulation and "energy-tight" weatherstripping provide maximum energy conservation and comfort, both summer and winter, while

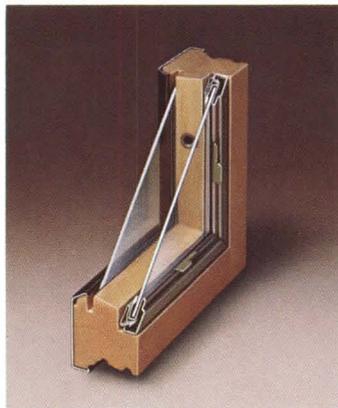
meeting today's ventilation requirements for hospitals.

Maintenance savings were another important consideration. Pella's Clad Frames and Clad Panels virtually eliminate the need for exterior upkeep. And washing of all exterior glass can be accomplished easily from inside the building, further reducing maintenance costs.

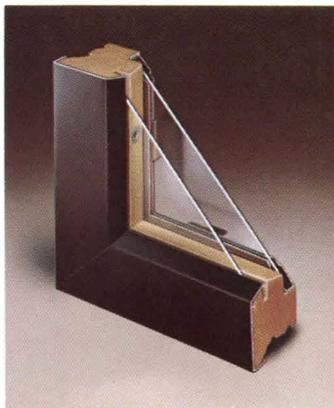
The Pella package detailed below gave Doylestown's new hospital the features and options necessary to help hold the line on rising energy and maintenance costs. A Pella package can do the same for you on your next project.



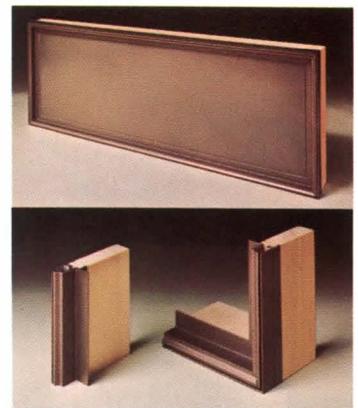
Pella's Clad Casement has a unique hinging system which moves the sash to the center of the frame as the window is cranked outward. This wide open position provides plenty of room to clean outside glass from inside.



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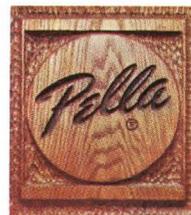
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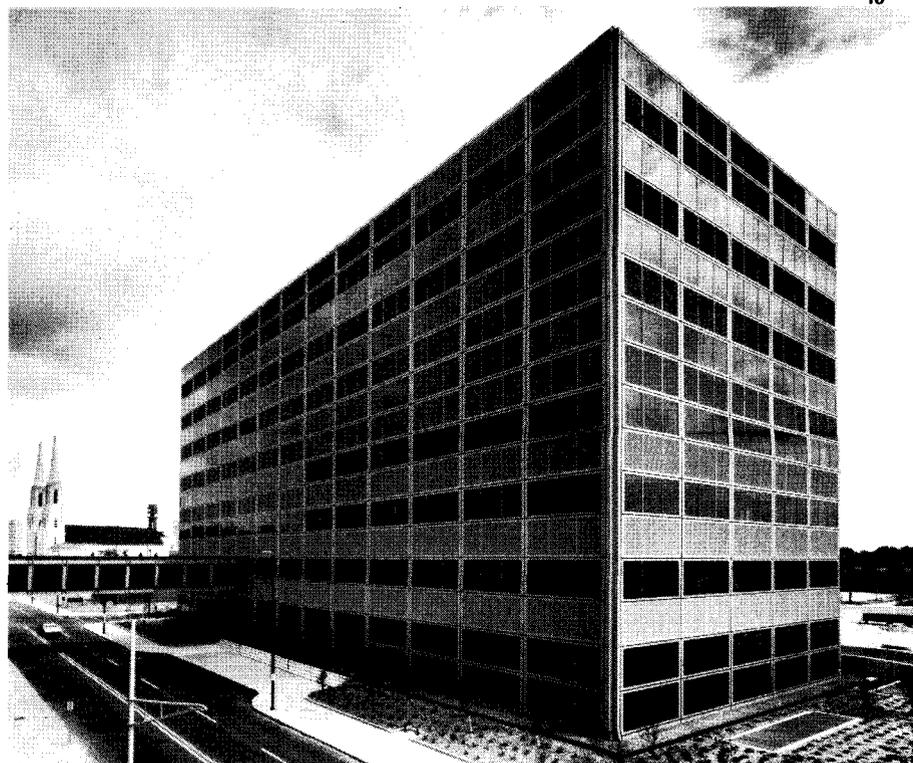
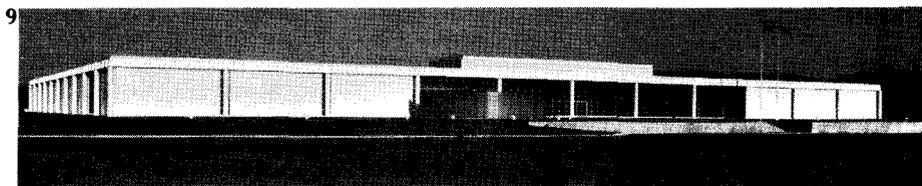
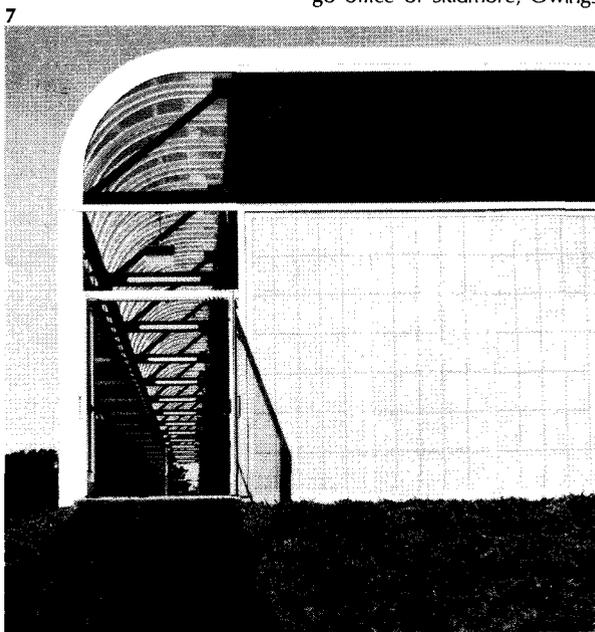
Chicago AIA makes awards to a bridge and 14 buildings

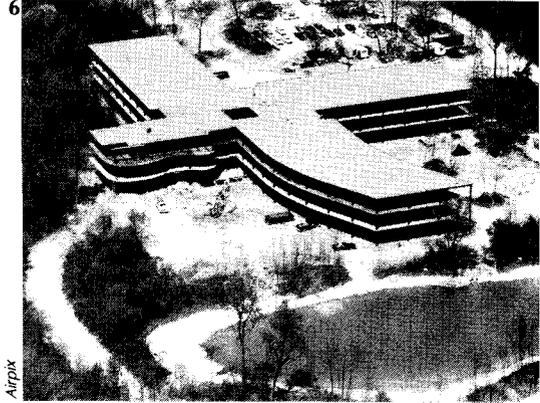
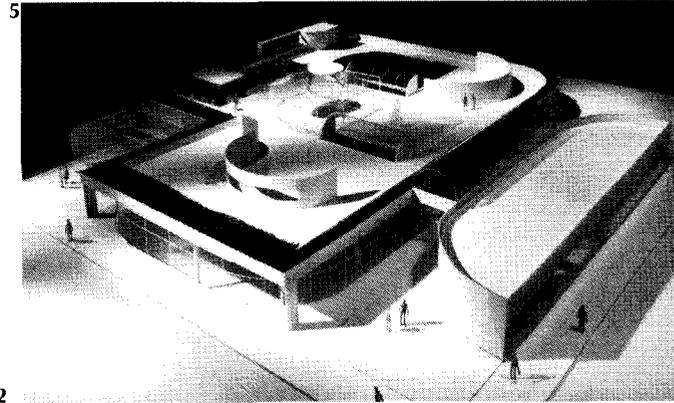
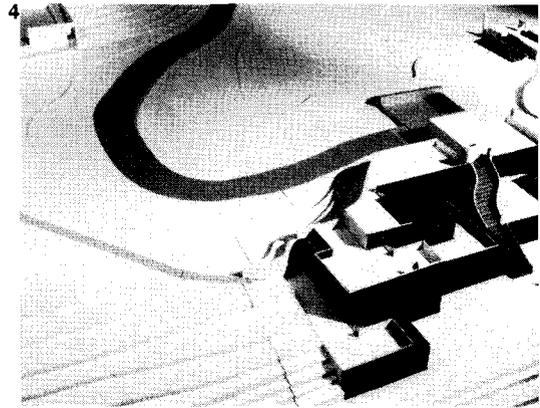
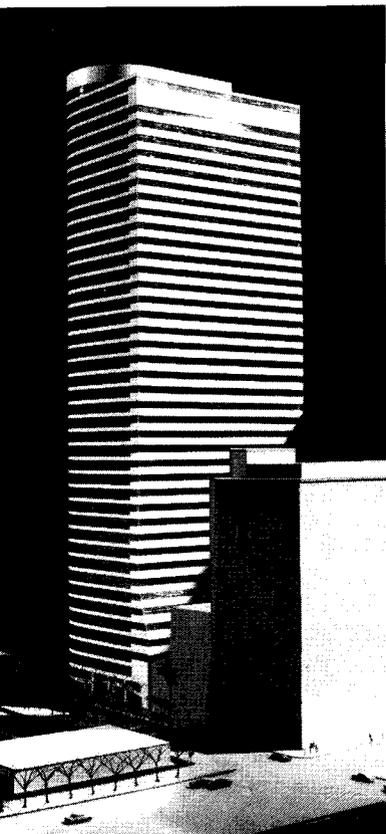
In its 22nd annual Distinguished Building Awards program, the Chicago chapter of the American Institute of Architects singled out only one of the 15 premiated designs for an Honor Award—and that one was not a building: the Ruck-A-Chucky Bridge submitted by the Chicago office of Skidmore, Owings

& Merrill. The 1,300-ft bridge, suspended by cables anchored in canyon walls, was described by the jury as "a poetic and brilliant solution that transcends all technical requirements." The distinguished building projects included (1) Ruck-A-Chucky Bridge, Auburn Dam, California—T. Y. Lin International,

structural engineers; Hanson Engineers, engineering consultants; Skidmore, Owings & Merrill, architectural and environmental consultants; (2) Monroe Centre, Chicago—C. F. Murphy Associates, architects; (3) private residence, Chicago suburbs—Stanley Tigerman and Associates, Ltd., architects; (4)

private residence, Chicago suburbs—Stanley Tigerman and Associates, Ltd., architects (both in RECORD, October 1977, pages 89-94); (5) New ArchiCenter, Chicago—Warren Hendrickson and Peter C. Pran, AIA, architects; (6) Hewitt Associates general offices, Lincolnshire, Illinois—Hammond Beeby and





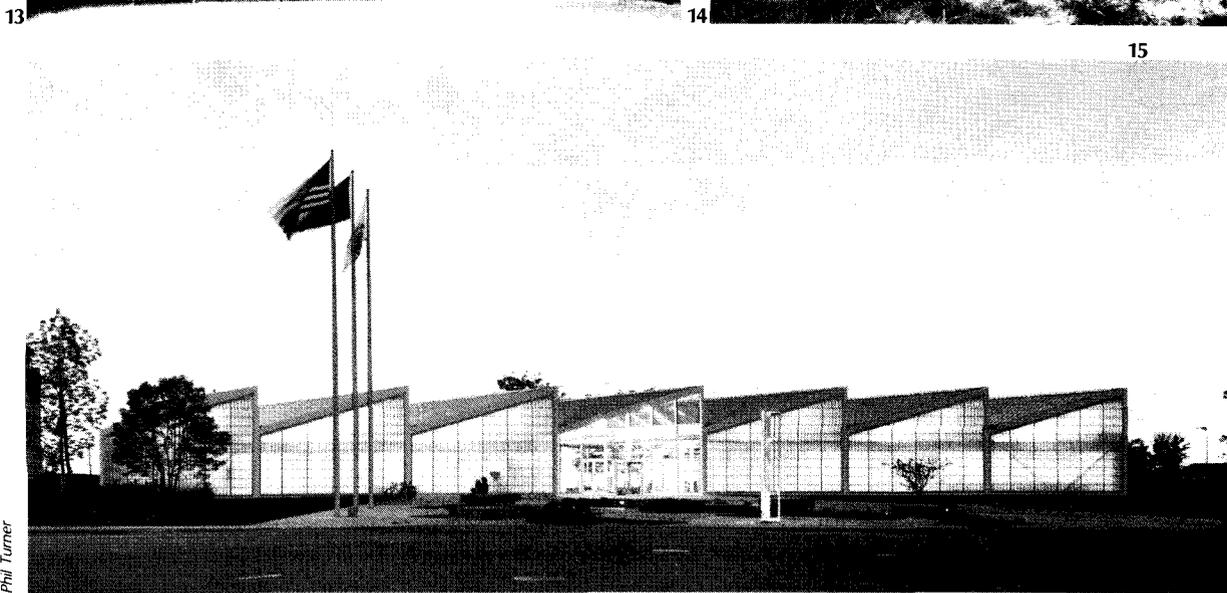
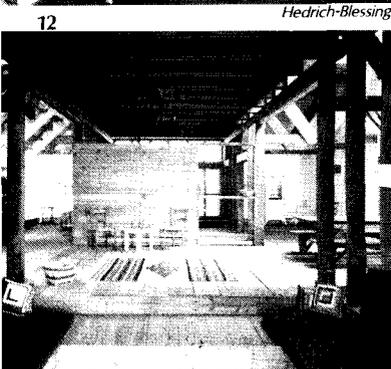
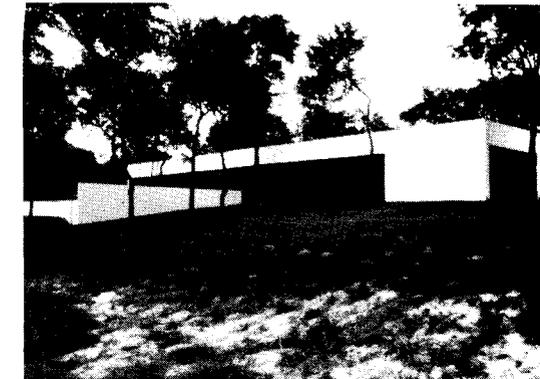
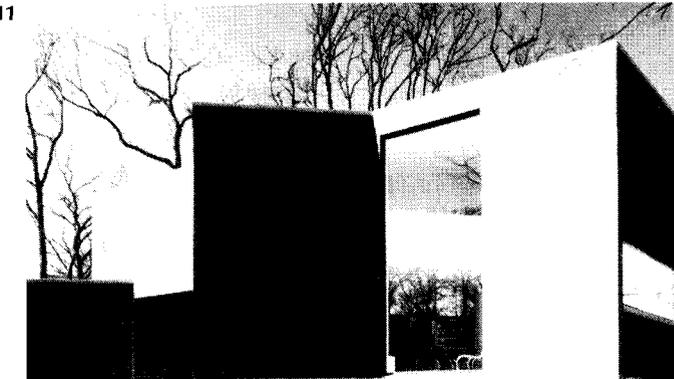
Babka, architects. The completed buildings honored included (7) Saint Mary's Athletic Facility, Notre Dame, Indiana—C. F. Murphy Associates, architects; (8) The Money Stores, Chicago and suburbs—Norman A. Koglin Associates, architects; (9) Hollister, Inc., Stuarts Draft, Virginia—Holabird & Root, ar-

chitects; (10) Lincoln National Corporation office building, Fort Wayne, Indiana—Holabird & Root, architects; (11) William J. Campbell United States Courthouse Annex, Chicago—Harry Weese & Associates, architects; (12) Illinois Corn Crib (weekend residence), central Illinois—Weese Seegers Hickey

Weese, architects; (13) Barr House, Hinsdale, Illinois—Booth, Nagle & Hartray, Ltd., Architects (RECORD, mid-May 1976, pages 86-87); (14) private residence, Dallas—Booth, Nagle & Hartray, Ltd., Architects; (15) Michigan City Public Library, Michigan City, Indiana—C. F. Murphy Associates, architects.

Members of the jury assessing completed projects were Franz Schulze, art and architecture critic for *The Chicago Daily News*; architects Craig Ellwood of Los Angeles, Malcolm Holzman of New York City, and Ricardo Legoretta of Mexico City. The jury assessing projects included James I. Freed, Dean,

College of Architecture, Illinois Institute of Technology; Milo Naeve, curator of American Art, The Art Institute of Chicago; Linda Legner, architectural writer; and Richard Williams, professor, School of Architecture, University of Illinois at Urbana. The juries chose the winners from 155 entries.



12 Hedrich-Blessing

13

14

15

Phil Turner

Update on open housing

HOUSING EQUITY AND ENVIRONMENTAL PROTECTION: THE NEEDLESS CONFLICT, by Mary E. Brooks; American Institute of Planners, \$10.00.

THE DREAM DEFERRED: PEOPLE, POLITICS, AND PLANNING IN SUBURBIA, by Samuel Kaplan; The Seabury Press, \$9.75.

GOOD NEIGHBORHOOD: THE CHALLENGE OF OPEN HOUSING, by Morris Milgram; W. W. Norton, \$10.95.

Reviewed by James R. Hunter

"Open housing" surfaces periodically as an important issue deserving the attention of architects, planners, developers, and others concerned with housing. These occasional public appearances are usually in the context of judicial decisions upholding or invalidating the zoning ordinances of municipalities accused of excluding blacks and other minorities through land-use controls, and in court challenges to Community Development grants to communities allegedly discriminating against minorities.

However, below the surface, there is a significant amount of ongoing activity in the open housing field. There are research and advocacy organizations, such as the Suburban Action Institute, which see exclusionary zoning as a basic denial of constitutional rights. They are active in litigation against the exclusion they find, and they advocate the open housing position before legislative and administrative bodies whenever possible. There are also developers who have a basic commitment to the development of integrated housing projects and communities.

In the fifties and sixties, considerable attention was paid by the architectural and planning professions to the needs of inner-city residents. Housing conditions were often inhuman; unemployment rates were high; and education, health care, and other social services were poorly and callously provided. A panoply of social programs was developed to deal with poverty and the oppression of these circumstances. These problems have since been superceded in the public's eye by problems of energy, the environment, and the continuing poor performance of the national economy.

While the problems of poverty, racism, and the inner cities have receded from constant public scrutiny, they have by no means disappeared. The abandonment of large

areas of our urban centers (like the South Bronx in New York) by landlords and residents has only exacerbated the housing problems of those already denied adequate shelter. Unemployment rates among minorities have by no means decreased in our large cities—indeed, they have risen. The job market has also been made tighter by the move of many manufacturing jobs away from major Northeastern urban centers to suburban areas of the region and to the Sunbelt.

Part of the problem faced by minority citizens and all poor people is, of course, that they are denied access to the suburbs, the home of the American dream. This problem is now even more severe with the move of many firms out into these suburbs. That this exclusion exists is not subject to much debate. What to do about it is. Subsidized multi-family housing which would attract blacks and Hispanic-Americans out of the cities into suburban communities have been consistently fought by these communities. This conflict between the drive to open up housing opportunities and the attempts of municipalities to resist what they perceive as intrusions upon their social and environmental values is the subject of two books on open housing published recently, *Housing Equity and Environmental Protection: The Needless Conflict* by Mary E. Brooks of the Suburban Action Institute and *Good Neighborhood: The Challenge of Open Housing* by Morris Milgram, a housing developer interested in integrated communities. A third book, perhaps the best written of the three, should be read along with the first two, even though it is not strictly on the topic of open housing. This book is *The Dream Deferred: People, Politics, and Planning in Suburbia* by Samuel Kaplan, a well-known writer, teacher, and urbanist.

The Dream Deferred sets the scene for the Brooks and Milgram books by portraying the political system of a suburban community and the response of this system to the social problems we face in the 1970s. Kaplan depicts a "Balkanized" series of overlapping jurisdictions which are most interested in preserving the status quo in their individual enclaves. A wide range of suburban problems are explored in Kaplan's book: political corruption, uncontrolled development of shopping areas and housing developments, the dwindling size of the public purse, and the inadequacy of many public services. He believes that the dream which suburbia represented for many who went there has been "deferred" due to the problems their communities face but are unable to deal with. This condition has led to fear on the part of suburban residents about the conditions they see around them now, and

especially those they anticipate in the future.

While Kaplan's findings have been previously reported in many studies of suburban life and politics, his book fills a void. It is a personal account, based on his experiences as a resident of Port Washington, a suburb of New York City.

Where Kaplan only directly deals with open housing and racism in the suburbs in one chapter, Milgram and Brooks attack the problem from two different perspectives. Milgram's interest is in demonstrating that "... [the] creation and maintenance [of integrated housing] is the most practical way to pursue our national health, both socially and economically." Brooks, on the other hand, focuses on one source of opposition to open housing, the environmental movement, and tries to prove that the conflict that has arisen between the forces trying to open up the suburbs and the environmental groups trying to preserve the environment through the control of all types of development, including housing, is a needless one and that the environmental movement should be assuming the responsibility for its impact on the housing opportunities available to all Americans, especially those with lower incomes.

Milgram's book is very introductory. For the reader who knows little of what has been accomplished in achieving expanded housing opportunities for lower-income and non-white Americans, *Good Neighborhood* summarizes the integrated projects which have been built, the groups who have been active in advocating open housing, and the development techniques available to those interested in the pursuit of open housing projects. For those already familiar with much of what has been done in this area, the value of Milgram's book is diminished. The subsidy programs and the legal battles he discusses are largely from the fifties and sixties. There is no mention of the *Housing and Community Development Act of 1974* which is the current legislative framework for all federal housing policy and the rubric in which the struggle against exclusion in housing is being fought. The book also does not really concentrate on policies which could effectively integrate the many disparate examples of multi-racial developments he discusses into a set of coherent strategies which others could apply in the environment of the 1970s. *Good Neighborhood*, then, has limited appeal.

The emphasis in Brooks' book is on politics and programs, particularly the effect of environmental policies on the provision of housing in suburbia. The point of her book is that environmental policies have had a significant

continued on page 45

James R. Hunter teaches urban planning in the Department of Urban Affairs at Hunter College, City University of New York.

deleterious impact on the ability of minority groups to move into the suburbs. Both the substantive and procedural requirements imposed by environmental policies such as NEPA (*National Environmental Policy Act of 1969*) and local growth control ordinances (such as those in effect in Rampo, New York, and Petaluma, California) have been used to prevent the development of new housing for lower-income citizens. Because of environmental standards, it is increasingly difficult to get Federal approval and subsidy money to build housing in large cities. The suburbs are clearly favored in Federal policy. However, when housing developers attempt to bend to this Federal direction, other Federal, state, and local environmental policies are used to frustrate the development. A developer trying to build in the suburbs will often face onerous environmental reporting requirements, compliance with which will endanger the viability of the project. In other areas, developers trying to provide blue-collar minority employees housing close to the increasing number of suburban jobs encounter local resistance based on the alleged "fragility" of the local ecosystem or on the feeling that low-income people are pollution themselves.

Brooks provides the reader with an excellent analysis of major Federal environmental law as and programs and a set of case studies which documents the effects the application of these laws and programs can have on the approval and cost of housing projects. She recognizes that the environmental programs have legitimate aims and she concentrates her criticism on their application. She does indicate, however, that environmental laws invite abuse because they fail to see environmental goals in relation to other goals valued by society, such as open and free access to housing.

Because Brooks sees the conflict between environmental policies and other social policies as "needless," she does not try to inflame it through polemical conclusions. Her style is largely expository, setting out the environmental programs and their effects on housing opportunities and costs. Unfortunately, this style makes it more difficult for the reader to put all the elements of her argument into place so conclusions can be drawn. A greater degree of open advocacy of the open housing position which Brooks believes in would have made the book considerably easier to follow and would have led to a greater stylistic simplicity. However, the book is a valuable one for a wide range of readers. It is one of the few books available which intelligently assesses some of the unanticipated impacts of one of the major areas of public policy concern of this decade.

The publication of these three books (and of others not available for review here) hopefully signals a resurgence of interest in open housing as a desirable goal for those involved with housing professionally. The three books point out what has been accomplished and how much more needs to be done to achieve the goal of equal access to housing for all Americans. Where the issue once was of considerable concern in the architectural and planning professions, it has taken a back seat in recent years. These books provide a valuable update of what has gone on in those years.

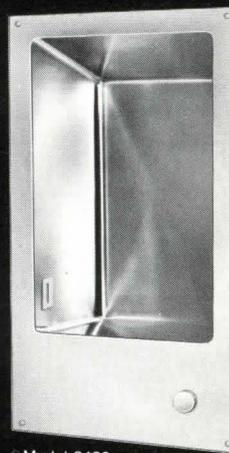


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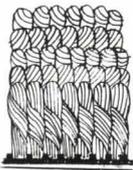


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LOTS OF HAPPY 4 TO 9 YEAR-OLDS. LOTS OF HAPPY TEACHERS AND STAFF. PLUS REDUCTION OF MAINTENANCE COSTS.



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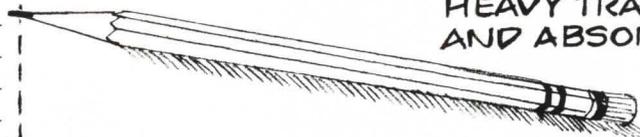
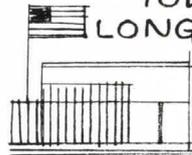
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PROVEN PERFORMERS

TODAY, CARPET IS NO LONGER AN EXPERIMENT IN BROWARD COUNTY SCHOOLS. THE SYSTEM'S 155 SCHOOLS ARE FULLY CARPETED, WITH MORE THAN 300,000 SQUARE YARDS INSTALLED. AND WHEN THEY WANTED TO TALK CARPETS, THEY CAME TO BIGELOW. FOR STRAIGHT TALK. PRACTICAL SUGGESTIONS. AND PROVEN PERFORMERS LIKE THIS ONE. CARPET THAT REALLY STANDS UP TO ABUSE IN HEAVY TRAFFIC AREAS AND ABSORBS SOUNDS.



After 150 years in the business, Bigelow has a wide selection of Proven Performers. And we use our experience and advanced technology to develop a product to meet your needs. Either way, when you come to Bigelow you get the benefit of years of experience.

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Advertising the architect's services: moving from legal and ethical controversy to marketing strategy

Although advertising professional design services remains a clouded ethical issue with the majority of architects and engineers, its legal status is coming into sharp focus, and it seems clear that few—if any—legal barriers can long persist. No one expects that once the restrictions are eased, professionals will leap at the opportunity to advertise. For many firms, advertising is—and will continue to be—an impractical method of promoting design services. For many others, advertising—in spite of legal sanction—will continue to be an unethical practice for professionals. However, for those professionals who may wish to evaluate a hitherto unavailable communication tool, the following article will serve as an introduction to advertising's role in the marketing of professional design services.

by Stephen A. Klimont AIA

The legal climate shaping advertising by professionals is becoming clearer by the day.

In 1975, in *Goldfarb v. Virginia State Bar*, the Supreme Court said professionals were subject to antitrust laws the same as industry, and that fee schedules violated those laws. At the same time the Court showed it was aware that one could not apply to the professions, across the board, antitrust concepts that grew out of general business activities.

But what had fee schedules to do with advertising? The answers came along fast. Two years after *Goldfarb*, the Supreme Court spoke again. This time, in *Bates et al v. State Bar of Arizona*, the Court ruled that flat bans on advertising by professionals violated the First Amendment. Once more, however, the decision did not open the door to all advertising; it dealt merely with price advertising for routine or standardized services. (In the *Bates* case, this meant legal clinics for moderate-income individuals. See also *RECORD*, August 1977, page 63 for a review of this case.)

In another development, the New York State Board of Regents, which regulates the professional practice of all but lawyers and ministers, came out in mid-1977 with a new set of rules which allow professionals to advertise, in the printed media, their range of services, including prices or range of prices for "specified routine professional services."

There is one other warrior in the onslaught on advertising constraints, namely, the Department of Justice. It speaks softly but carries a big stick. By threatening lawsuits—indeed, by the very act of requesting professional societies, such as the AIA, to furnish it with copies of ethical codes, minutes, transcripts and tape recordings of any meetings that deal with advertising—the Department may get results without ever going to court.

What all this means for the architect is becoming clear. Quite soon, restrictions on

advertising (within certain constraints, such as those spelled out in the New York Regents' ruling) will almost surely be illegal. The non-AIA architect, not bound by AIA ethics, may then advertise. The AIA member architect may too, if the AIA drops its restrictions. Until such time, if strongly motivated, he or she can resign from the AIA, advertise, and break no rules.

These and similar issues will surface and be cleared up as time goes on. The legal climate is clearly pro-advertising. Against such a background, more immediate, practical questions arise: If I advertise, will my practice benefit? What will it cost me? Where do I begin?

Advertising in context: it's one of many promotional tools

It is essential to place advertising in its proper perspective. Your firm has, or should have, a marketing plan. The plan sets out such objectives as target building types and clients, desired work volume, firm size and locations. To fulfill your marketing plan, you will invest a certain amount of effort (expressed in salaries and expenses) in marketing promotion. Your promotional tools may—or may not—include a brochure, written proposals, interviews, newsletters, news releases, speeches, slide shows, letters, direct mail, exhibit panels and, yes, advertising.

Now a hypothetical firm with \$1,500,000 in annual billings and a \$100,000 budget for marketing may assign 75 per cent of this to salaries. The remaining \$25,000 may be allocated to marketing expenses as follows:

Graphic consultant, photographer ...	\$1,200
Travel.....	3,500
Publications (brochure update).....	2,000
Exhibit panels (8).....	2,000
Reprints of articles.....	500
Club memberships	1,500
Advertising.....	14,300

This firm must have done some serious thinking before allocating over half its marketing expense budget to advertising. It should be aware that, for this money, it could do all of these: double principals' marketing travel budget; add color to a presently black-and-white brochure system; increase by six the number of exhibit panels; add three projects to those slated to be photographed; extend paid club membership to two promising project managers; finance a market-related research project; lease an in-house composing machine; and still have modest dollars left over for repainting the office.

Alternately, the firm could take the \$14,300 and add a full-time marketing promotion manager.

How to develop the right mix (for you) depends on what you expect advertising to accomplish for you. It is a serious issue, for space advertising can require a substantial investment.

What are your advertising objectives?

What are the alternatives?

Since advertising is merely another form of promotion, what should you expect to gain from it? Consider the following possibilities:

- As a source of leads to be followed up individually.
- As a way of building up your mailing list.
- To define, redefine or improve your image with the target group reading the ad. This could be the businessmen in your community or region; school or hospital administrators nationally; etc.
- As a way to make your firm's name and any specialized services known to other professionals in the field who may wish to retain or associate with you.
- For new firms to become known among prospective client groups.
- To show large groups of clients of moderate means, or those who are not familiar with the way an architect's office works, what it takes to commission a house, a *small store*, etc.
- To announce the cost of special services.

Given these options, when should you consider advertising, and when should you confine yourself to the more traditional channels of promotion? One rule of thumb is to advertise whenever you want to bring out a single feature that makes you distinctive from your competitors. This could be the planning or design of primary health care facilities, special

TITLE	Circulation Cost(\$)*			Cost/ Thou	Circulation Cost(\$)*			Cost/ Thou
	(thousands)	1x	6x		(thousands)	1x	6x	
Wall Street Journal	1,485	7,660 ¹		5.16	453	2,380 ¹		5.26
Business Week	768	16,180	14,560 ³	21.07	186	4,760	4,280 ³	25.59
Forbes Magazine	668	9,450	9,070	14.15				
Fortune ²	618	13,600	12,510	22.01	145	4,620	4,250	31.86
Modern Schools	9	690	620	76.67				
Modern Healthcare	51	1,530	1,440	30.00				
American School Bd. Journal	46	1,600	1,470	34.78				
Hospitals ²	75	1,570	1,470	20.93				
Multi Housing News	43	1,775	1,715	41.28				
House Beautiful	800	9,080	5% disc.	11.35				
Houston Business Journal	17	750	690 ⁴	44.12				
¹ ¼ page		³ 7x rate						
² 1 Jan. 1978 rates		⁴ 4x rate						
*1 page (B&W)								

Figure 1. Cost of advertising in representative journals. Chart is based on data in *Business Publication Rates and Data* (24 Oct. 1977) and *Consumer Magazine and Farm Publication Rates and Data* (27 Oct. 1977), published by Standard Rate and Data Service, Inc., Skokie, Ill., except for costs per thousand, which were computed by the author.

SITUATION REVIEW

The construction client
Construction clients look at a construction project as a "tunnel of horrors." They are highly insecure when buildings they are responsible for are being built. During this time they worry about the end product, and whether they will be embarrassed by the outcome and that their career may be threatened if the project is less than an unqualified success.

The competition

Other construction management firms, including large national and international firms, as well as contractors offering the service and those professing to offer it.

MARKETING OBJECTIVE

Simply, acquire as many suburban school building projects of all sizes as is possible.

POSITIONING STATEMENT

CM is the best construction management firm for schools of any size.

POSITIONING RATIONALE

CM has more experience than anyone in the country in building schools. They understand school clients and their needs better than any firm. CRS association greatly helped this.

TARGET MARKET

Suburban school building projects of all sizes.

RATIONALE

Growth is in the suburbs, therefore more school building projects.

SOURCE OF BUSINESS

The suburban school superintendent has the greatest influence in the decision to use CM.

ADVERTISING OBJECTIVE

Generate leads in the early stages of development for suburban school projects.

Promote the image of CM as the best construction managers of schools in the world.

In order to accomplish these objectives, we must sell and promote CM, the company, and not the construction management process. To do this our advertising strategy must include as many of the following points as is possible:

ADVERTISING STRATEGY

Stress the great results of CM projects to make audience want to learn more about the process of construction management from CM.

CM can honestly promise that they can do a better job on a school building project than any other construction management firm.

CM—specialists in schools. 85 per cent of their business is in schools.

One of the few construction management firms with national and international experience in schools.

CM has young people who have proved they can do the job. They are seasoned professionals. Oldest construction management company incorporated for that purpose.

2/3 of the company is in the field. The rest provide technical support.

Expeditious delivery of materials because CM is national.

CUSTOMER BENEFIT

With CM, the customer will get a highly technical and sophisticated construction management team led by a job supervisor with whom a school superintendent can work comfortably. A supervisor who will help him and the school board bring the suburban school project in on time and in budget.

Figure 3

We'll build the school you want. On time. Within budget.

Chuck Thomsen

President
CM Associates, Inc.

You're building a school. It's a challenging prospect. But you face unsettling questions. Will the building be what you want, when you want it? Is the cost control system reliable? How will you work with the people you'll have to work with? Who is responsible besides you?

In the process of answering questions like these, CM Associates, Inc. (CM) has evolved a construction management approach that has set the industry standard. We've been in the business as long as the business has been, and we know what it takes to build the building you want. On time. Within budget.

You know what you want better than anyone, so you need to be part of the project. With us, you are. We'll give you the input you need and help you make the tough decisions, with assurance you've made the right ones.

We're with you all the way. The problems that occur in traditional building just don't happen, because you're provided a team that manages all the functions of architecture, engineering, construction, and manufacturing. And if there's a problem, you'll know who to go to.

CM pioneered fast track to shorten your building schedule. The shorter the project time, the less chance inflation has to make inroads in your budget. Fast track is the answer. Instead of the linear design-bid-construct process, construction can often begin before every last design detail is nailed down. You get your school faster. And for less money.

The Cherry Creek School District, Denver, Colorado, has an excellent five-year record with CM-managed projects. Since 1972, CM has managed 18 projects for Cherry Creek. Seventeen have been completed on time and within budget. The

eighteenth, a 2,000-student high school, is currently on schedule and within budget.

In Dade County, Florida, the nation's fifth largest school district, CM was able to test itself directly against the traditional construction method. Two high schools, parallel projects. The CM-managed building was completed \$1.5 million under budget and in 10 months' less time.

At CM, the small projects are as important as the big ones. That means every job gets our attention. At the University of Richmond, we've completed four projects and begun eight more, ranging in size from \$250,000 to \$8 million.

Our people will see you through it. Since you can hire a construction manager the same way you do an architect—based on fee and qualifications—why not hire the best? People who bring fresh approaches to problems when fresh approaches are called for, traditional solutions when they're right. That reputation goes on the line every day. We don't intend to lose it.

CM Associates, Inc. can bring your school in on time and within budget. We know because we've done it on more than \$240,000,000 worth of schools and universities all over the U.S.

If you have a school or university project coming up or under way, we can help you. Call or write. Chuck Thomsen, president; Joe Scaranio, vice president; Tandy Lofland, director of development. CM Associates, Inc., (713) 622-5030. 2700 S. Post Oak Road, Houston, Texas 77056.



Figure 2. Advertising position/strategy paper. Developed by Ketchum, MacLeod & Grove Inc. for CM Associates, Inc., Houston, December 1976. Reproduced with permission.

front-end services for developers, value engineering, or special experience in historic preservation or in energy redesign.

Another rule of thumb is to advertise when you want to reach large numbers of readers with news of a low-cost service that requires a high volume of business (e.g. an acoustical consulting firm that offers architects and builders a standardized acoustical analysis of a design, with recommendations).

Another feature to help you decide is cost. Look at Figure 1. Note not only the over-all cost of an ad (there are often premiums for extra color, position—e.g. covers and marginal bleeds; there are discounts for running an ad more than once and sometimes for multiple pages), but also the cost per thousand readers. Note how the figure varies from \$5.16 (quarter page in the *Wall Street Journal*) to, for example, \$76.67 (one-time page in *Modern Schools*). Now compare this with the cost of preparing a direct mail circular. Suppose you wish to mail a four-page fact sheet on your firm's health care facilities planning services to a list of 5,000 hospital administrators. Assuming a high quality piece printed in two colors, and sent by first-class mail, your budget may emerge as follows:

Typesetting & printing	\$580
Mailing list rental.....	200
Cost of mailing (less postage)	150
Postage	650
Total.....	\$1,580

This is 32 cents per piece or \$320 per thousand recipients. For a full page ad in *Modern Healthcare*, you will pay \$1,530 for a one-time use; but with a circulation of 51,000, this comes to a mere \$30 per thousand readers, a difference of \$290.

But do not be fooled by this dramatic cost differential. For one thing, you must add to the cost of the ad the cost of the advertising agency (not using an agency is false economy), typesetting and other production costs. To this, add your firm's own time in conferring with the agency—although this item is cancelled by the amount of time you would spend planning and designing your direct mail piece. Also, you will pay for reprints of the ad—a standard and useful practice.

Finally, you will need to add the cost of reacting to any response you get from the ad. You have the standard options of telephoning the responding readers with a "sales message," writing him or her a sales letter, or sending out a copy of your latest mailing piece—the latter step being something you could have done in the first place.

There are more factors in the advertising cost/benefit equation. For your \$1,530, you have reached 51,000 readers, but with only a single-page message, compared to the four-page direct mailing piece. Furthermore, not all

51,000 readers are prospective clients—perhaps only 20 to 30 per cent. For the \$1,580 cost of your direct mail piece, you can reach 5,000 (or one out of two) hospital administrators with a four-page message, with no waste.

How to place an ad

You can, if you like, place the ad yourself. If yours is a large firm, with graphic design skills and someone in marketing communications who knows advertising, you can probably develop and place a good quality ad—and perhaps save a few dollars.

Otherwise, hire an agency. For its fee, an ad agency undertakes first to advise you on how to cast your ad to fit your marketing objectives. It will prepare a document, usually called an advertising position paper; this is not unlike the space program you use as a basis for design. Figure 2 is an excerpt from such a document, produced for the Houston construction management firm, CM Associates, Inc.

After you approve this paper, the agency will prepare a design concept, and conduct a so-called media search. This consists of identifying likely target publications for your ad, as well as costs, deadlines, the existence of regional editions, breakdown of circulation, mechanical requirements, etc.

At the next milestone, the agency presents you with a proposed concept and media recommendations. After the choice of media is approved, the agency will reserve space in the chosen publication(s). It then will develop copy, art and layouts. Some "accounts," as agencies call their clients, take a very active part in rewriting copy and shaping graphics; others leave it to the agency. Approval normally takes several meetings, and at first you should be prepared to budget at least one personnel hour for every hour of the agency's time. On a longer program, this ratio will recede.

Selecting an agency

There is a special skill in writing advertising copy, developing the art, and getting the two to work together to make a strong impact. Unless you have this kind of talent in-house, you will do best, as noted earlier, to retain an agency.

Architects hire agencies the way clients hire architects. After inviting brochures and checking with professional colleagues, prepare a short list consisting of one or two national agencies (your cost will be lower if the agency has a local office) and one or two independent local agencies. Remember that agencies have been *product-oriented* for generations, and few have a record of experience in advertising professional services. In your interviews, explore this issue carefully. Review the impact of the agency's past ads; be especially wary of gimmicks, for, as the advertising agency Benton & Bowles once stated in an ad of its own in

Business Week magazine, "It's not creative unless it sells."

Be sure to discuss budget. If you have a top figure, find out what it will buy by way of magazine space and agency time. Agencies, as we said, are paid by commission from the magazine, or a surcharge on its production expenses, or a fee based on its labor—sometimes two of these, sometimes all three. Many agencies will agree to pass their commission discount through to you, and charge you on a cost-plus basis, with or without a ceiling.

Finally, find out about the creative staff at the agency, especially their prior contacts with architects or, at the least, with building.

How do you know if your ad worked?

To repeat the Benton & Bowles slogan, "It's not creative unless it sells." "Sells" does not necessarily mean "bring in firm clients by return mail." It does mean the degree to which the ad delivers what was expected of it. This could mean many things—for example, the number of written responses (for future follow-up by direct mail or otherwise), or the quality of responses (opportunities for immediate interviews or requests for proposals).

The chief caution is not to expect too many results too soon. With ads aimed at institutional or commercial clients, it may take months before a response is converted into a ripe prospect, and several more to convert it into an actual job. On the other hand, an ad aimed at a low-budget or high-volume clientele (such as moderate-income store owners or clients for interior redesign services), you should measure success in more tangible, immediate terms.

CM Associates, Inc., a Houston-based construction management firm, is quite pleased with its advertising campaign aimed at suburban school boards, even though at this writing six months have passed since the identical ads each appeared twice in successive issues of two school journals (see Figure 3). The ads were tagged with a number to be circled by the reader on tear out cards, and each journal had yielded some 25 inquiries. A follow-up telephone survey on leads from one of the journals disclosed that 27 per cent of the leads had some kind of building program, and several have now requested proposals for services.

CM Associates feels this is a good return on its \$15,000 investment (cost of ads plus agency fees) and is considering further space advertising.

Is there an ad in your future?

The future of advertising by architects rests less on its legal and ethical credentials than it does on the way it answers the question: "What can it do for me?" In that sense, architects must view advertising in the context of all the other tools at hand to promote professional services.



"GAF® TIMBERLINE® ASPHALT SHINGLES HELPED US SELL OUR ENTIRE 160-UNIT COMPLEX IN JUST 60 DAYS. EVEN BEFORE WE BUILT IT."

Jerry Kramer, Builder/Developer
"The Admiralty," West Bay Shore, New York



"When we're building a luxury townhouse complex like 'The Admiralty,' it's important that we impress our prospects with a look of quality and elegance even before they set foot inside the model," says Jerry Kramer, and he continues:

"Because the unique design of the buildings shows a lot of roof, our choice of roofing was critical. That's why we used GAF® Timberline® asphalt shingles.

"They cost substantially more than standard grade shingles, but believe me, they're worth it. Their double thickness and random-butt design give our townhouses the rugged beauty our prospects were looking for. And Timberline's subtle wood-like tones blend beautifully with the wood-shake shingles on the sidewalls.

"But our buyers—who are spending \$60,000 to \$85,000 for these homes—want performance as well as looks. And Timberline shingles give them just that. Their heavy-duty asphalt construction assures many years of trouble-free service. They won't rot, split, crack or warp. And they'll stand up to almost any kind of weather.

"I don't think of GAF® Timberline® roofing in terms of the extra cost. I think of it as a solid investment that really paid off."



GAF Corporation
Building Products, Dept. RS77
140 West 51 Street
New York, New York 10020

- Please send me more information on Timberline® asphalt shingles.
- Please have a representative call.

Name _____

Firm _____

Address _____

City _____ State _____ Zip _____

GAF® **TIMBERLINE®**
ASPHALT SHINGLES

AR-18

Owner-architect contracts: making sure they properly define professional services can avoid potential liability

The time has long passed when an architect could safely render services on the basis of a handshake with the client. Written contracts are now the order of the day. Unfortunately, not all contracts utilized by architects properly describe the professional services to be rendered or reflect realistic concerns about unacceptable levels of professional liability. Even with readily available standard form owner-architect contracts developed by the AIA, many clients still insist on their own contracts when retaining architects. For the professional confronted with a client-prepared contract, there are a number of common danger signs to be looked for and some techniques that can be used to better assess potential liability implications.

by Arthur T. Kornblut, Esq.

The law does not expect architects to render perfect services, and it does not imply that an architect's services will be free from defects and faults. Thus, an architect's contract should not contain language that alters these fundamental legal principles.

An architect is normally held to a legal standard that requires the rendering of services without negligence. In this context, negligence is the failure to meet the ordinary standard of care expected of an architect under the particular circumstances. In court, that standard is customarily determined by statements from other professionals who are called upon to testify as expert witnesses. During contract negotiations, simply recognizing that the law does not expect architects to be perfect and that an architect renders professional services (as opposed to selling "products") can do much to assure that the proper legal standards are embodied in the contract.

Among the characteristics of all professional services is a lack of exactitude or certainty about what constitutes those services. A client who attempts to describe in writing (i.e. in a contract) *precisely* what a professional is supposed to do is ignoring the fundamental reason for hiring a professional in the first place—namely, to get the benefit of his training, skill and judgment in solving the client's problem. An architect who agrees to an unrealistic and liability-laden contract will have only himself to blame when he is unable to fulfill his obligations as interpreted by the law.

The following are examples of some frequently observed provisions found in owner-prepared architectural service contracts. These items could cause substantial problems in the event a situation develops that leads to a professional liability claim.

1. The contract states that the architect shall "prepare *complete* drawings and specifications for the project." No matter how much effort is expended, it is impossible to prepare

contract documents that are *complete* in the literal sense of the word. A contract provision of this sort clearly alters the normal legal standard that requires an architect to prepare documents with ordinary skill and care.

2. The contract requires the architect to "meet the *highest standards* of the profession in rendering his services." Again, a provision of this sort alters the normal legal standard. While it can be expected that an architect should do *his best* to perform properly, the law does not require him to meet the highest standards of the profession. It can be assumed that no matter what an architect does, someone can be found to testify that it could have been done better.

3. The contract requires the architect to "strictly comply with all municipal, state and Federal laws, rules, codes and regulations." This provision is both ambiguous and unfair. The ambiguity arises because the clause can be interpreted simply to require the architect to obey the law—an obligation imposed on all citizens which does not need to be stated in a contract. The intent of this provision, however, probably is aimed at insuring all legal requirements are incorporated in the project design. Unfortunately, this too may be impossible to achieve because there is no way to know how laws will be interpreted until after the fact, or how the client will use the facility in the future, or even to know all laws that may bear on the project (a determination of which would be difficult even for a lawyer). The most an architect can do in this regard is to agree to use reasonable care in researching applicable legal requirements and designing accordingly.

4. The contract specifically requires the architect to "warrant (or guarantee) that his services will be free from defects and faults." This type of clause obviously goes far beyond the normal legal standard of care noted above, and, in effect, says that the architect's services will be perfect. A major concern with this

contract language is that if a liability claim arises, there probably will be no professional liability insurance coverage.

5. Recognizing that this list of contract concerns could go on indefinitely, one further item that should be noted here is the recent proliferation of hold harmless or indemnity clauses appearing in owner-architect contracts. If an architect is asked by a client to indemnify him (the client), the architect should refer the proposed indemnification clause to his insurance advisor for review. Unless the clause is carefully worded, it may not be insurable and the architect would be personally assuming the risk of having to indemnify the client for claims. If the clause is properly limited in scope, it may be insurable, but that could require a special endorsement to the liability insurance policy.

Checklists for owner-prepared contracts: AIA contract and insurance policy

Two convenient checklists for reviewing the implications of an owner-prepared architectural service contract are the standard AIA owner-architect contract form (Doc. B141) and the list of exclusions contained in an architect's professional liability insurance policy. The AIA contract form is a fair statement of the services customarily rendered by architects, the owner's normal obligations, and the areas of responsibility not normally assumed by professionals on construction projects (i.e. responsibility for construction means and methods).

Using the list of exclusions in a professional liability insurance policy as a checklist can alert an architect to areas of uninsured risk. Most policies exclude coverage for claims arising out of express guarantees or warranties, cost estimates being exceeded, and giving advice on insurance and bonds, among other things. The list of exclusions varies from one insurance company's policy to another's; so each architect should review his own policy to see if proposed contracts create coverage problems. Quite often, knowledge that contract provisions are uninsurable becomes the impetus for negotiating more reasonable, and insurable, substitute provisions.

Mr. Kornblut is a registered architect and practicing attorney in Washington, D.C.

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Financial support is accumulating for more nonresidential building in 1978

Several developments since the release of the Dodge/Sweet's Construction Outlook for 1978 (RECORD, November 1977, page 55) indicate that the necessary financial support for an unexpected increase of 15 per cent in contracting for nonresidential buildings next year is now beginning to pile up. In November's elections, voters approved the highest dollar value of construction-related bonds since 1973. Meanwhile, industry is backing its 1978 plans for an 11 per cent boost in outlays for plant and equipment with a hefty 27 per cent increase in capital appropriations (money they plan to spend). These developments indicate that everything is coming along about as well as can be expected . . . almost.

November's bond approvals (as reported by *Daily Bond Buyer*) suggested that voters are feeling more positive about publicly-financed construction than they have felt for several years. Of a total of \$3.9 billion in proposed state and local issues, nearly 60 per cent—or \$2.3 billion—got the go-ahead. That compares with a \$1.8 billion approval in 1976 when only 53 per cent of a smaller total was approved.

As usual, the biggest part of the 1977 total will finance construction in 1978 of sewer systems, water supply facilities, and transportation, but this year's approvals also provide for a variety of public buildings including schools, courthouses, jails, and hospital/health facilities.

Privately financed nonresidential building is also being well provided for. McGraw-Hill's fall survey of business plans for capital spending cites a total of \$153 billion that is currently programmed for private investment in new plants and equipment during 1978, an 11 per cent increase over the record 1977 total. What's more, preliminary plans for 1979 show a still higher total of \$161 billion.

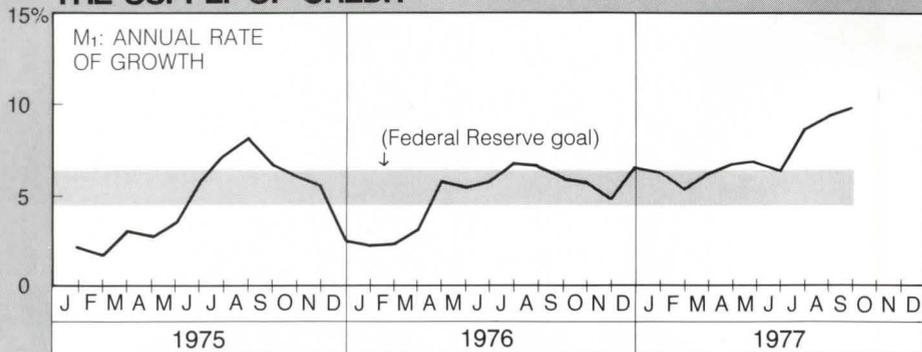
By far the biggest part of this investment is normally provided in the form of internally-generated capital (depreciation and retained earnings), and industry is now demonstrating that it is willing to put its money where its planning is. According to The Conference Board, capital appropriations by manufacturers, at \$63 billion in 1977, are up 27 per cent from the 1976 amount (Chart 3). For 1978, the Board predicts a ten per cent further increase, to \$70 billion, in funds set aside for investment in plant and equipment.

These recent developments in public and private financing of nonresidential construction are a necessary condition for the continued expansion of commercial, industrial, and institutional building next year. At this stage of the game, everything is coming along about as well as can be expected. Almost everything, that is. Chart 1 (the supply of credit) reveals a recent change which could be troublesome. During the past few months the money supply (M_1) broke out of the Fed's targeted growth range of 4 to 6½ per cent, and expanded at better than a 9 per cent clip.

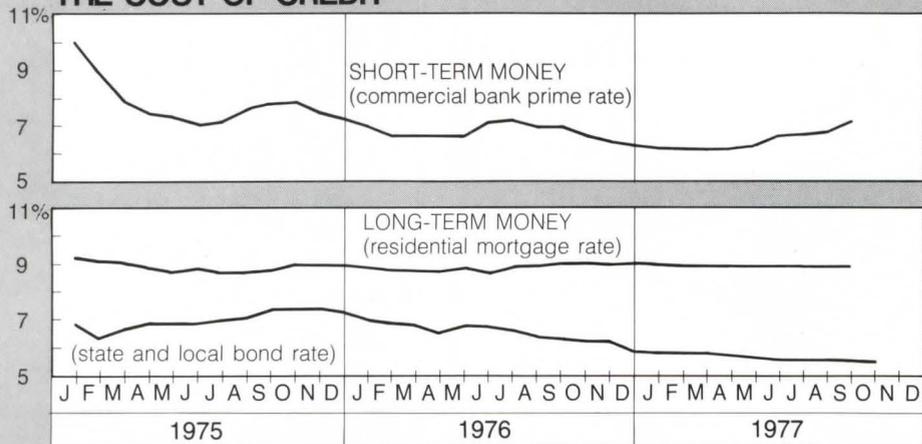
Will the Fed apply the squeeze in a move to contain the inflationary potential of such rapid monetary growth? Will interest rates be pushed up? Keep your eye on Chart 2.

George A. Christie
Vice president and chief economist
McGraw-Hill Information Systems Company

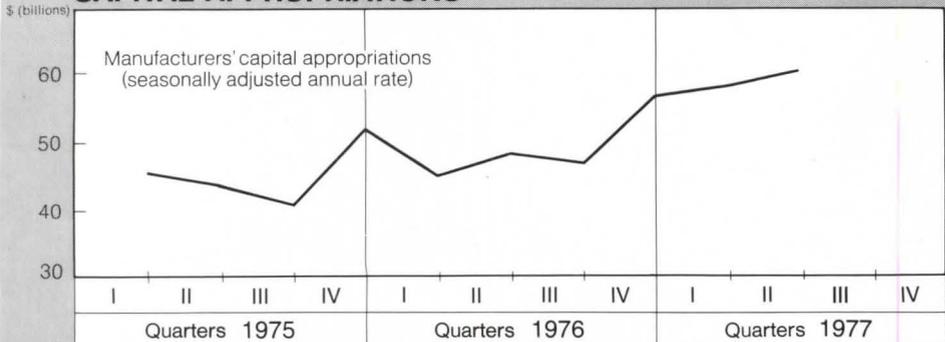
THE SUPPLY OF CREDIT



THE COST OF CREDIT



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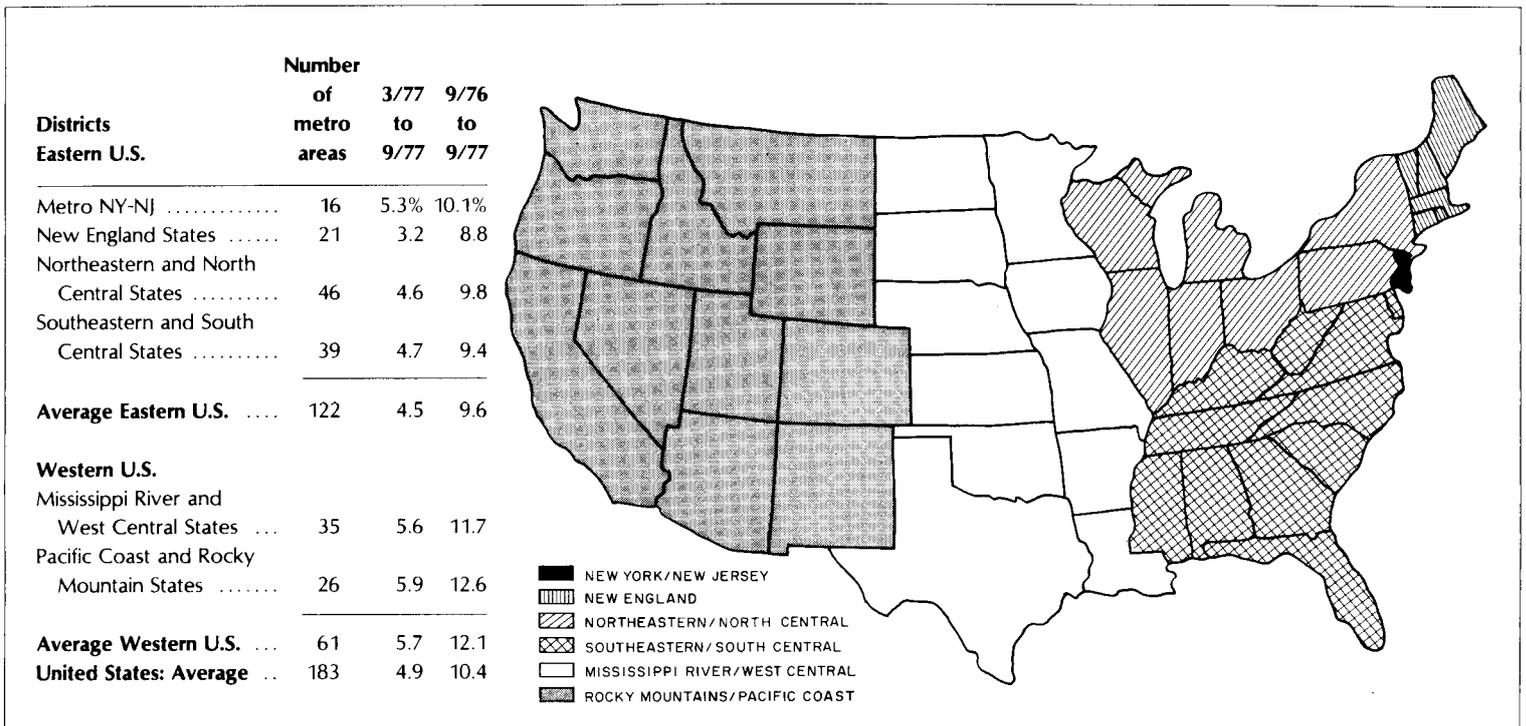
Construction costs rise in last 12 months pegged at 9.6 per cent

The following is a summation of regional per cent changes in building construction costs. Based on a recent survey of prices of five key building materials, and wage rates for ten widely used building trades, average building

construction costs have increased 4.5 per cent in the past six months and now stand 9.6 per cent above a year ago.

On the average, 183 metropolitan areas throughout the United States reported building

material prices increased 12 per cent in the past 12 months, while hourly wage rates of building trade craftsmen increased 8 per cent for the year. These figures were compiled by Dodge Building Cost Services.



HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES 1941 average for each city = 100.00

Metropolitan area	1967	1968	1969	1970	1971	1972	1973	1974	1975	1st	1976 (Quarterly)				1977 (Quarterly)			
											2nd	3rd	4th	1st	2nd	3rd	4th	
Atlanta	335.7	353.1	384.0	422.4	459.2	497.7	544.8	575.0	598.7	602.6	604.1	655.6	657.1	701.5	712.0	704.3	732.5	
Baltimore	295.8	308.7	322.8	348.8	381.7	420.4	475.5	534.3	581.1	609.7	611.2	583.5	585.0	605.7	614.8	628.1	653.2	
Birmingham	274.7	284.3	303.4	309.3	331.6	358.3	402.1	421.2	448.9	469.0	469.5	550.4	551.9	543.8	551.9	575.9	598.9	
Boston	265.7	277.1	295.0	328.6	362.0	394.4	437.8	462.5	513.2	535.7	537.2	554.4	555.9	567.7	576.2	581.3	604.5	
Chicago	328.4	339.5	356.1	386.1	418.8	444.3	508.6	529.6	560.1	560.3	561.8	633.7	635.2	662.2	672.1	683.4	710.7	
Cincinnati	288.2	302.6	325.8	348.5	386.1	410.7	462.4	500.1	550.6	602.9	604.4	608.3	609.8	615.6	624.8	650.7	676.7	
Cleveland	303.7	331.5	358.3	380.1	415.6	429.3	462.2	509.5	531.0	578.7	580.2	631.4	632.9	619.4	628.7	615.1	639.7	
Dallas	270.4	281.7	308.6	327.1	357.9	386.6	436.4	477.9	499.6	506.1	507.6	537.0	538.5	560.1	568.5	611.6	636.1	
Denver	305.1	312.5	339.0	368.1	392.9	415.4	461.0	510.0	553.6	580.3	581.8	614.5	616.0	656.3	666.1	691.7	719.3	
Detroit	301.2	316.4	352.9	377.4	409.7	433.1	501.0	538.7	597.5	615.1	616.6	615.7	617.2	634.2	643.7	649.4	675.3	
Kansas City	264.3	278.0	295.5	315.3	344.7	367.0	405.8	444.9	509.1	523.8	525.3	545.8	547.3	568.2	576.7	592.1	615.7	
Los Angeles	310.1	320.1	344.1	361.9	400.9	424.5	504.2	531.8	594.1	599.1	600.6	671.6	673.1	709.2	719.8	748.2	778.1	
Miami	286.1	305.3	392.3	353.2	384.7	406.4	447.2	485.5	558.9	588.1	589.6	591.0	592.5	604.6	613.7	616.7	641.3	
Minneapolis	300.2	309.4	331.2	361.1	417.1	412.9	456.1	488.6	538.0	548.3	549.8	562.6	564.1	593.0	601.9	617.9	642.6	
New Orleans	267.6	274.2	297.5	318.9	341.8	369.7	420.5	442.1	494.7	522.8	524.3	533.3	534.8	580.2	588.9	609.2	633.5	
New York	313.6	321.4	344.5	366.0	395.6	423.1	485.3	515.3	533.5	539.4	540.9	579.3	580.8	607.7	616.8	607.7	632.0	
Philadelphia	293.7	301.7	321.0	346.5	374.9	419.5	485.1	518.5	567.5	581.8	583.3	577.7	579.2	615.8	625.0	655.8	682.0	
Pittsburgh	275.0	293.8	311.0	327.2	362.1	380.3	424.4	465.6	509.5	508.5	510.0	524.8	526.3	549.5	557.7	579.7	602.9	
St. Louis	293.2	304.4	324.7	344.4	375.5	402.5	444.2	476.7	528.9	542.7	544.2	535.6	537.1	605.8	614.9	611.9	636.3	
San Francisco	390.8	402.9	441.1	465.1	512.3	561.0	632.3	672.5	753.3	790.1	791.6	819.3	820.8	904.5	918.1	954.2	992.3	
Seattle	283.5	292.2	317.8	341.8	358.4	371.5	424.4	450.2	515.1	525.9	527.4	569.0	570.5	603.7	612.8	620.6	645.4	

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.

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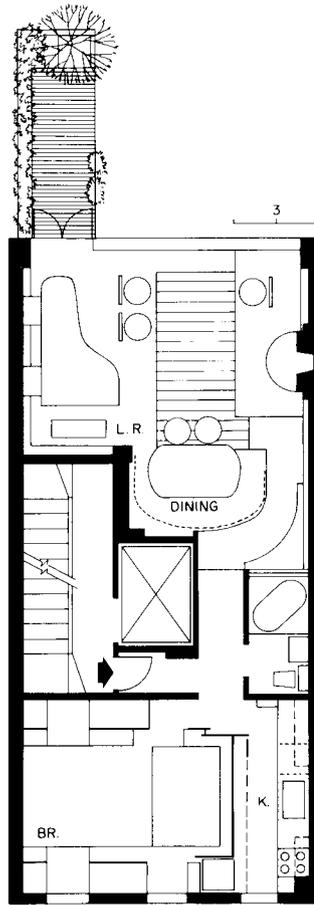
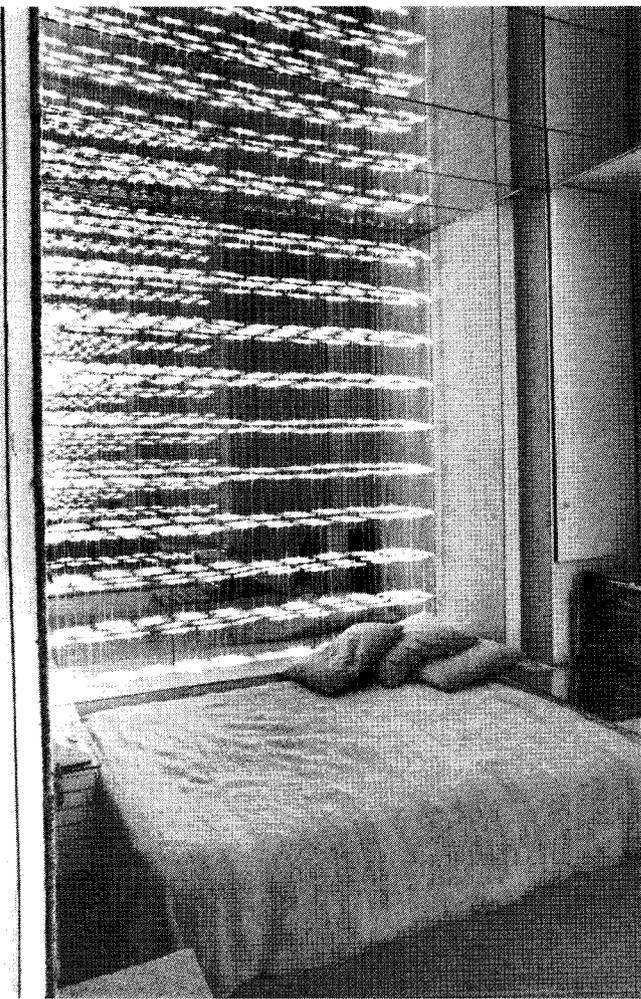
RECORD INTERIORS OF 1978

ARCHITECTURAL RECORD JANUARY 1978 BUILDING TYPES STUDY ® 511

For the ninth consecutive year, RECORD'S editors present a range of award-winning interiors designed by architects who carry out interior projects with exceptional skill. This year the collection of ten includes two apartments, two architect's offices, a discotheque, a hairgrooming salon, a fast-food restaurant, two corporate offices and a cultural center redeemed from an extraordinary landmark building that once faced demolition. All share a common design excellence. Though they reflect differing points of view about design, have various programs and budgets, they all give evidence that their designers worked sympathetically with a broad palette of interior finishes and understood the special problems of interior design —problems of coordination, simultaneous scheduling, and accelerated job flow. But if the rhythms of interior design work are somewhat different, the ultimate goal is still quality design. In Paul Rudolph's apartment (photo below) and in the pages that follow, the reader will see just that. Several projects from this year's competition will appear in forthcoming issues and submissions for Record Interiors of 1979 are welcome throughout the year.



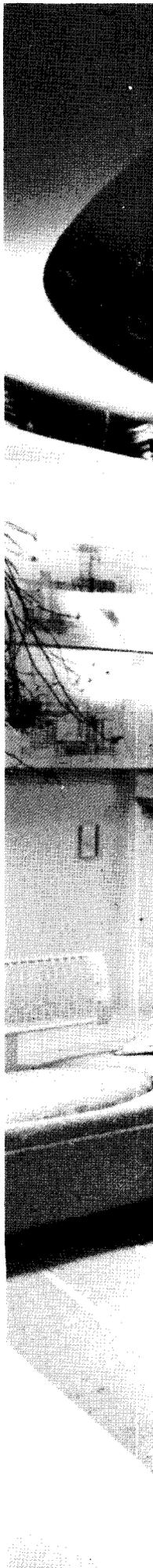
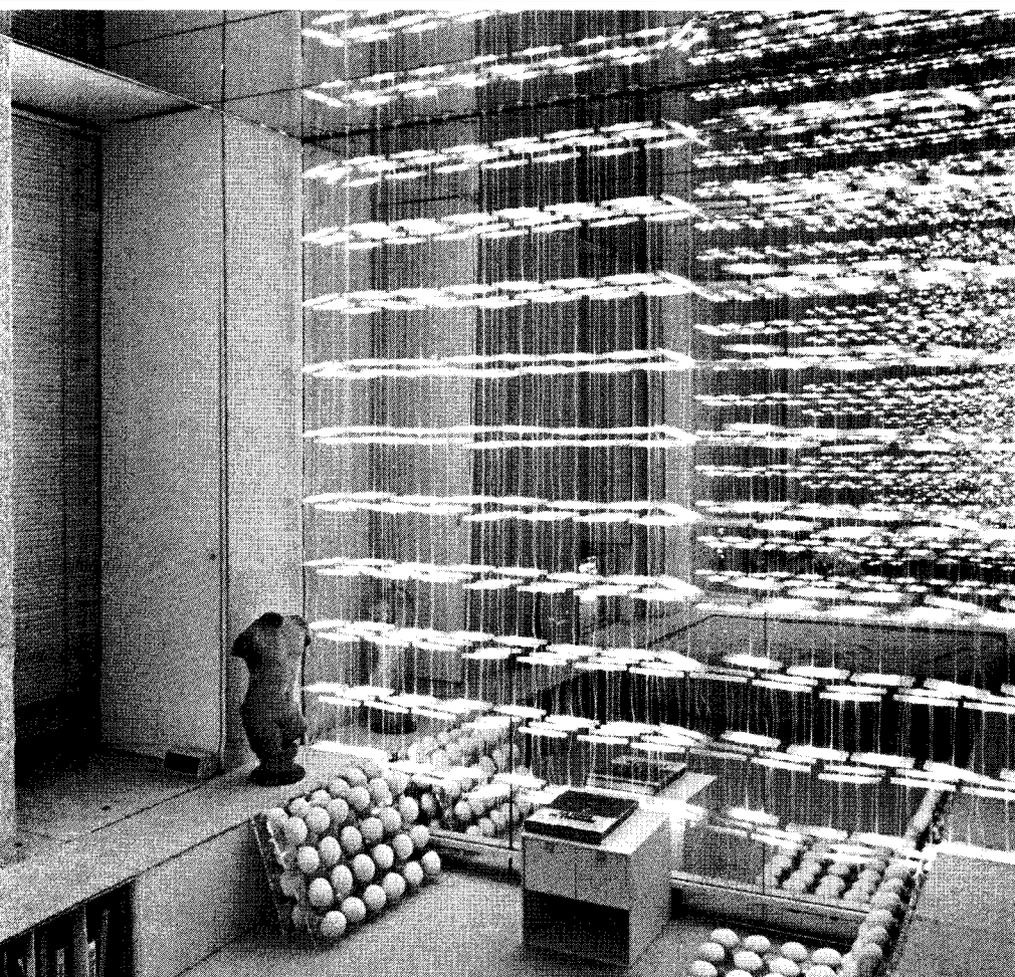
**Life's rudimentary elements:
fire, water, light
are all here and mixed with
elements of fantasy in
Paul Rudolph's Manhattan apartment**



Overlooking the East River in New York City is a most remarkable apartment which owner Paul Rudolph uses as much as a design laboratory as a place of abode. Its measured spaces are confounded by mirrored surfaces in the bedroom that throw reflected images back and forth in an endless cadence and catch the images, real and reflected, of light screens that Rudolph uses to animate the space. Separated from the bedroom by a narrow entry hall lined in green plastic is the living area that opens through a glass window wall to the river. This space is lined on two walls by low, upholstered platforms adapted at intervals with backrests for seating. A grand piano, its legs let into the platform, occupies one wall. Across from it is a fireplace, only the upper portion of the opening visible over the platform. Curling overhead in a long, unifying arc are bookshelves that form a visual soffit.

The floor heights are modulated by gentle steps. At night the floors glow with bands of light and walls are washed by recessed fixtures. To those bred to a stark minimalism, the Rudolph apartment, with its obvious concern for form and texture, its abundance of richness and elaboration, may seem fussy and self-indulgent. Most readers, however, will see incipient design ideas—ideas about lighting, about storage about the manipulation of surface, some of which will find their way into larger building applications. Those that do not work will be replaced in this apartment by other experiments that are just as inventive.

RUDOLPH APARTMENT, New York City. Architect and owner: *Paul Rudolph*. Contractor: *Owner*.

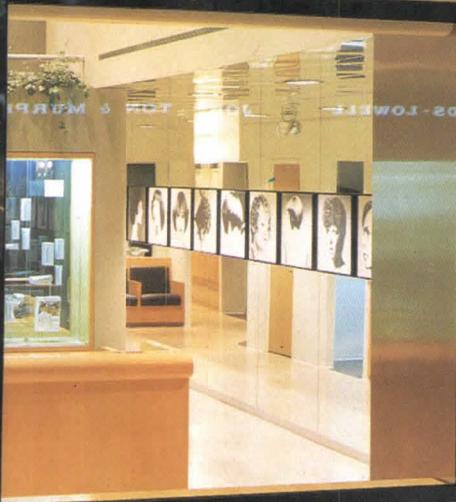




Norman McGrath photos



VIDAL SASSOON

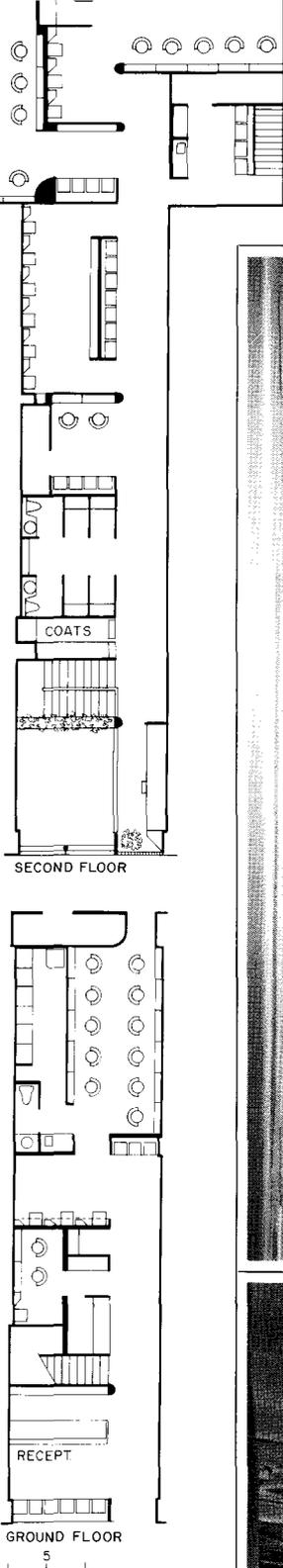


For an affluent, style-conscious West Coast community Gwathmey-Siegel has designed a glittering hairgrooming salon that excites all the senses

For their new franchise in Beverly Hills, Vidal Sassoon commissioned Gwathmey-Siegel to create this polished, super-elegant setting for hairgrooming. Behind the spectacular entry (photo left) is a double-height volume: men on the ground floor, the womens' salon above. On both levels, the circulation spaces are clearly defined by long mirror walls that carry photographs of the newest styles—photographs that can be changed at appropriate intervals. The mirrors (photos right) extend the narrow space visually rather than simply reflecting the image of the viewer and thus only the mounted photographs betray the presence of a solid plane.

The aura of illusion is quite deliberate and is achieved to a large extent through the use of highly reflective materials: glass, mirror, glass block, and polished aluminum for the ceilings. Other principal finishes include oak veneer for cabinets, travertine for floors, vinyl wall covering in certain areas. Glass and stainless steel are carefully detailed to make the storefront which forms a powerful magnet to passers-by.

VIDAL SASSOON, Beverly Hills, California. Architects: Gwathmey-Siegel—Tsun-Kin Tam, project architect. Mechanical engineer: Thomas Polise. Contractor: H. Kaplan Company.







The Gwathmey-Siegel design modulates the long narrow spaces carefully according to function. The upstairs salon for women is shown in the photo at left. Reception and conference spaces are shown above, right, below.



**Where many a Rigoletto
once poured forth his anguish,
Studio 54, a new mecca for disco
designed by Experience Space,
now takes wondrous, varicolored shape**

It was designed half a century ago as an opulent setting for Verdi and Puccini. After World War II, it became a radio and then a television studio and now, in a third incarnation, this venerable theater has been transformed into one of New York's busiest discotheques, bathing patrons nightly in an enchanting, throbbing, mind-bending array of light and sound.

Studio 54 fits with surprising ease into the forms of the past. The sloping floor of the orchestra has been covered over and brought right up to the edge of the dance floor which is located on what had been the stage. Around the dance floor are rearrangeable seating units covered in silver vinyl and 1200 square yards of black *Astroturf* cover the floor. Black paint in a high gloss finish also covers the elaborate detail on the ceiling of the entry lobby.

But much of the original remains. Most mechanical services were already there, plaster work and ornament in some areas was cleaned and left as is, and the original chandeliers still grace the lobby.

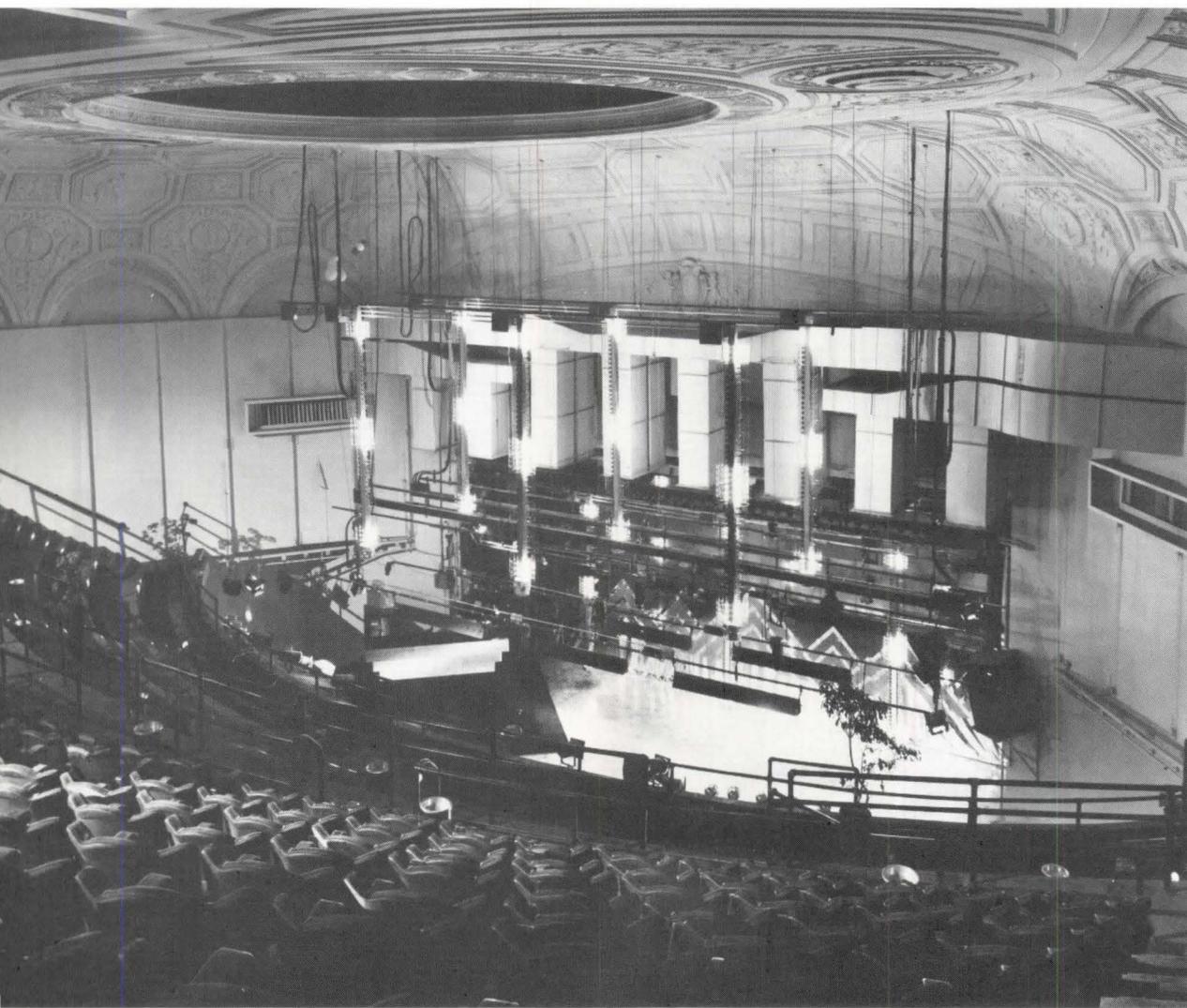
The most elaborate changes, of course, are in the stage lighting designed by Jules Fisher and Paul Marantz. The range of possible lighting effects—effects that heighten the sensation of the dancer as performer—seems almost inexhaustible.

STUDIO 54, New York City, Architects: *Experience Space—Ron Doud, designer; Scott Bromley, architect; Brian Thompson: lighting; Renny Reynolds; landscape.* Dance floor lighting and visuals: *Jules Fisher & Paul Marantz, Inc.* Graphics: *Gil Lesser.*

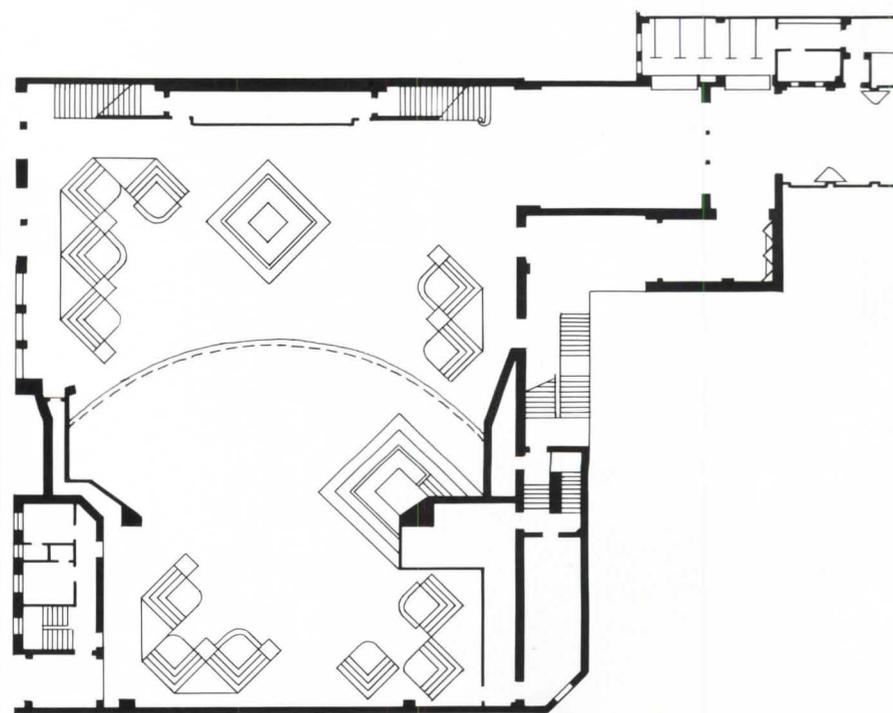


Jaime Arcilles Arce photos





Jules Fisher & Paul Marantz Inc, responsible for all lighting from the line of the balcony to the back of the dance floor, determined from the outset to keep the theater imagery intact and, where possible, to amplify it. Lighting devices normally masked are revealed here to help scale the space, modulate the size of the dance floor and heighten the kinetic sense of the space. Standard theatrical lighting devices to simulate fire, fog, snow are present and a 40-foot-long horizontal prism reflects fingers of light in any of several moving patterns. The various moods the lighting can achieve (some programmed, others manually controlled) are spectacular.







For a client that has reached beyond its countercultural beginnings, architect Paul Segal has designed a hardworking but distinctly personal headquarters

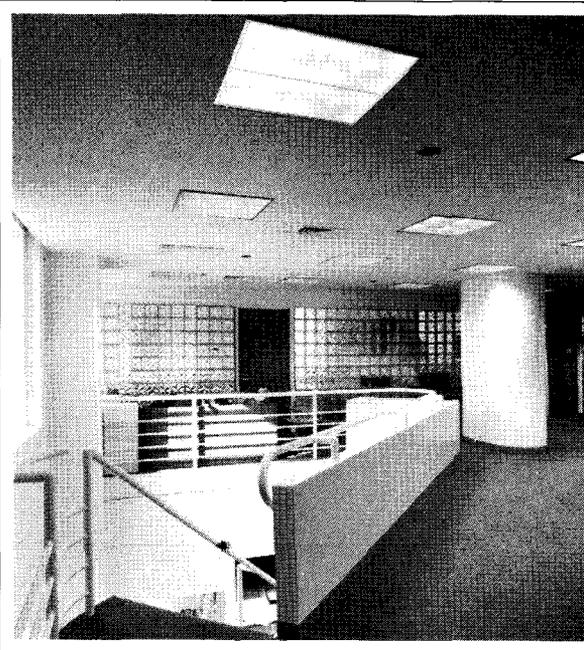
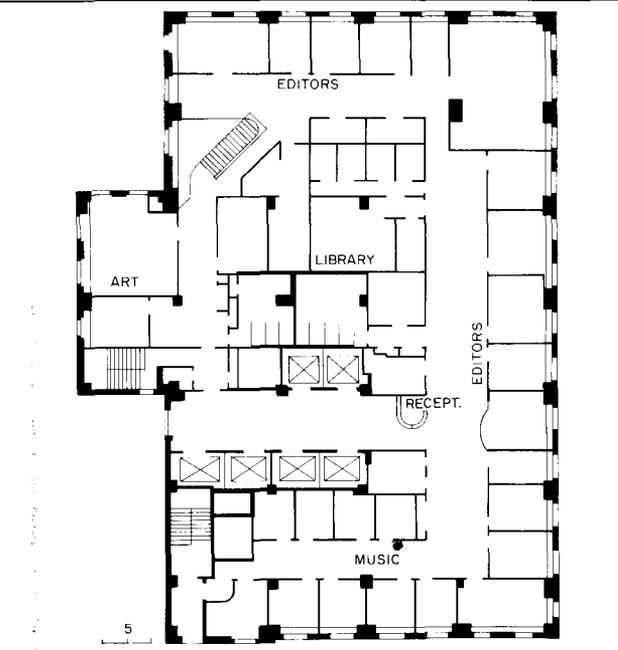
Darwin K. Davidson photos

When *Rolling Stone* came East last summer to open new publication offices in New York City, architect Paul Segal was commissioned to redesign four floors of a midtown tower. The floors were paired but spaced apart vertically, a situation that necessitated careful zoning. In addition, publishing, more than many other businesses, requires a precise work flow, always against an ominous backdrop of deadlines.

Segal's success came in establishing thoughtful functional relationships and in giving the entire design, including all its varied functions, a unified visual presence. This presence is achieved by the consistent use of a narrow palette of finishes; though reiterated on all floors, these finishes do not weary the senses. Nor do they add up to the kind of visual strait jacket we come to associate too often with New York office design.

Many of the spaces are furnished with old oak tables carried east from San Francisco and used as desks or conference tables.

Lighting has had special attention not only in the entrance lobby (photo left) but in many of the work spaces where efficient fluorescent "hairpins" have replaced the building standard. The single, most forceful design element is an elaborate interior stair that links the lower two floors (photo right). The new axis it creates and the sculptural treatment of its pipe rail details provide the only moment of design exuberance in an otherwise low key, orderly office plan.



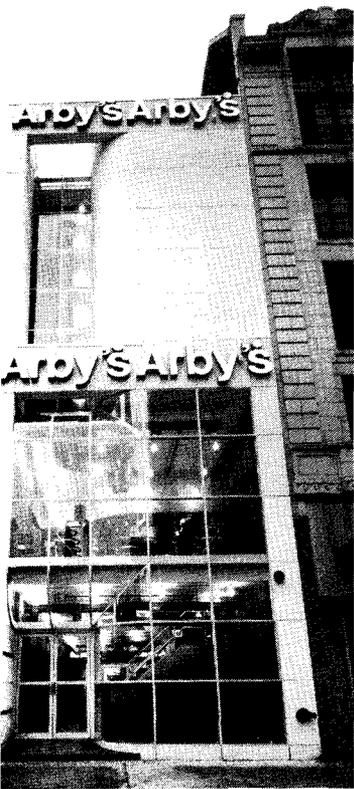
ROLLING STONE OFFICES, New York, New York. Architects: Paul Segal—Michael Pribyl, associate. Engineers: Robert Silman (structural); Flack & Kurtz (mechanical). Contractor: Nico Construction.



Arby's^R Arby's^R



Fast-food need not be served from junk buildings: a lesson that Stanley Tigerman's design for Arby's in Chicago reinforces emphatically

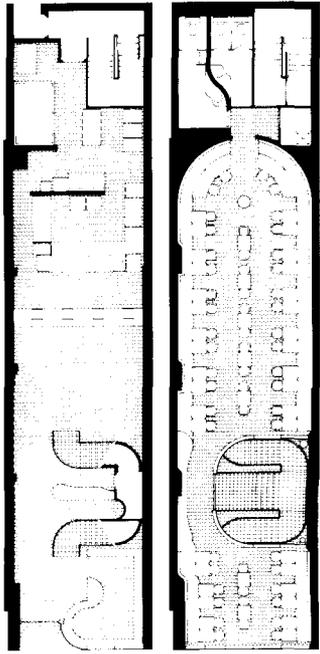


Some conservative Chicagoans must have held their breath when they learned that Stanley Tigerman—an architect whose work nearly always excites admiration and occasionally raises the back hairs of the profession—had been commissioned by Arby's, a fast-food chain, to renovate a four-story commercial building on a highly conspicuous downtown site.

They need not have worried. The design that emerged when the scaffolding came down is inviting, not funky; tasteful, not junky—and decidedly not a bad neighbor (as some had feared) to the historic Water Tower which it faces across Chicago Avenue.

The exterior is infill, stucco and glass, employing both straight-line and curved elements. Behind the glass is a carefully organized fast-food operation on two levels, service below and seating for 90 on the second floor. The two levels are linked by a double stair that breaks up the long narrow volume downstairs. The interior walls are finished in rough-sawn cedar and liberal doses of primary colors are by added color coding air ducts red, lighting tracks yellow, and water piping blue. It is a powerful overhead composition that, coupled with menu boards and other graphics, produces a lively interior, full of invention and fun.

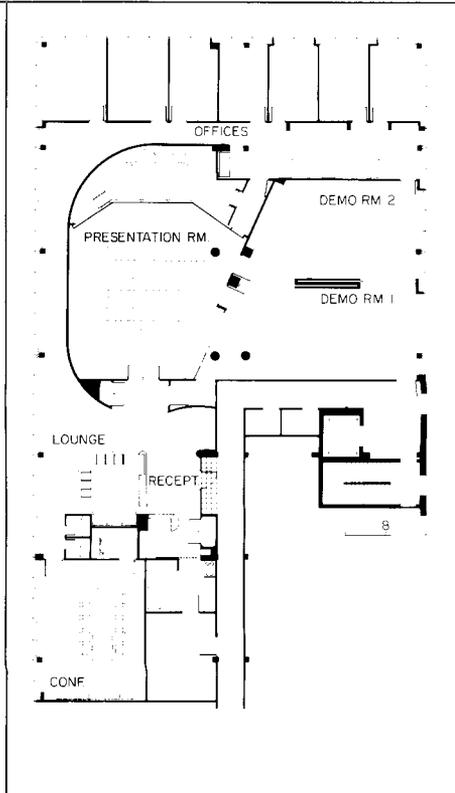
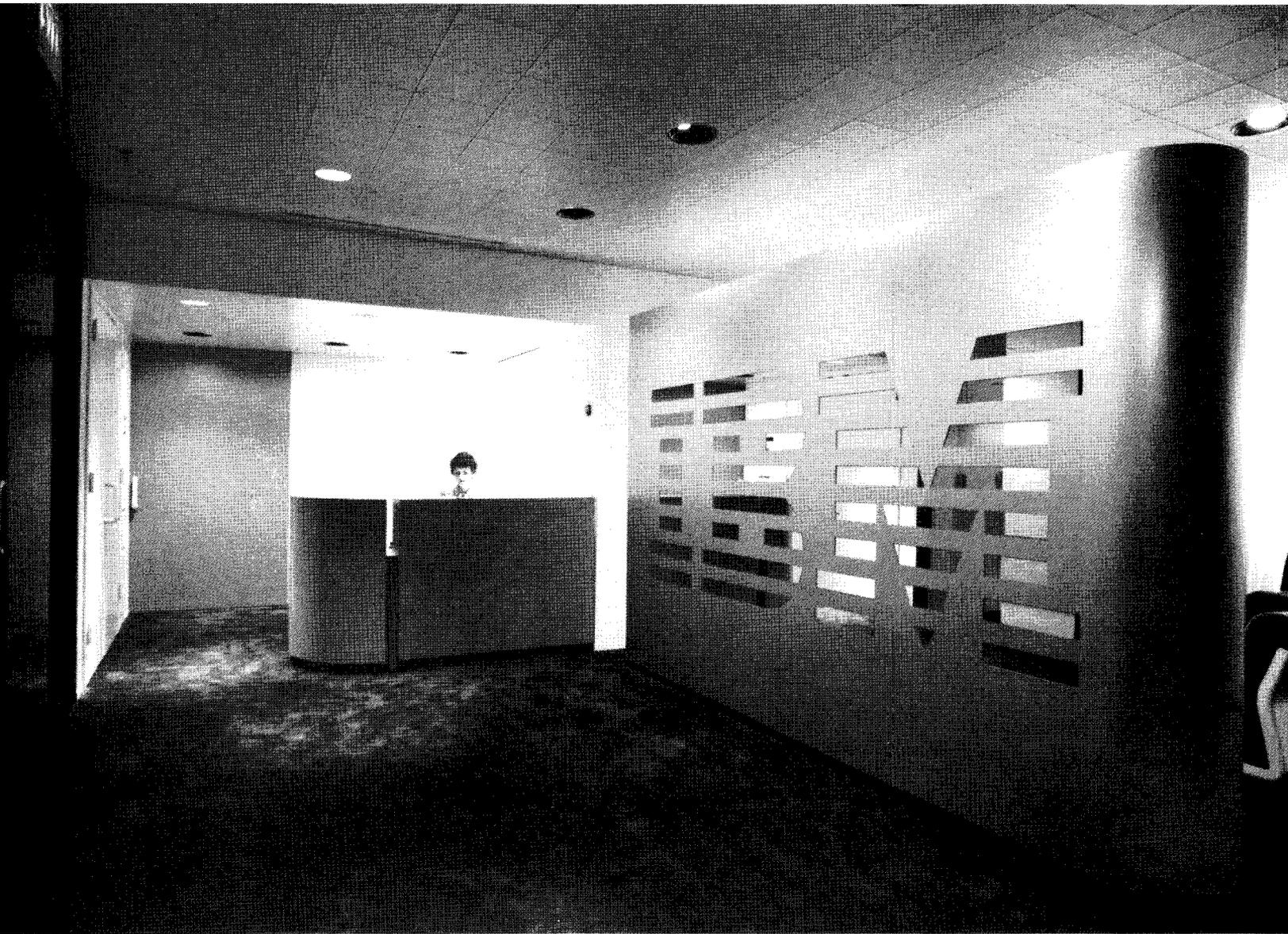
ARBY'S, Chicago, Illinois. Architects: *Stanley Tigerman and Associates*. Engineers: *Raymond Beebe (structural); Wallace & Migdal (mechanical)*. Contractor: *Pepper Construction*.



LOWER FLOOR

UPPER FLOOR

Robert Mayers photos



**Gently accented lighting,
visual warmth and comfort
in this IBM demonstration center
for a Detroit suburb
by Mayers & Schiff**

Here is one of several Systems Support Centers that architects Mayers & Schiff have developed for IBM. Located in Southfield, Michigan, this center, like the others, is used to display and demonstrate IBM equipment to potential corporate or government customers. The center is entered through glass doors facing a freestanding "logo wall" of brushed, anodized aluminum. Behind the wall is a reception area with comfortable seating. From here, visitors proceed to the Presentation Room, a highly automated media center (photos lower right) that includes three-screen, pre-programmed, rear-projection equipment for slides, films or television. This media wall also contains a white, flush-mounted "write-on" panel and concealed flip charts for live presentations.

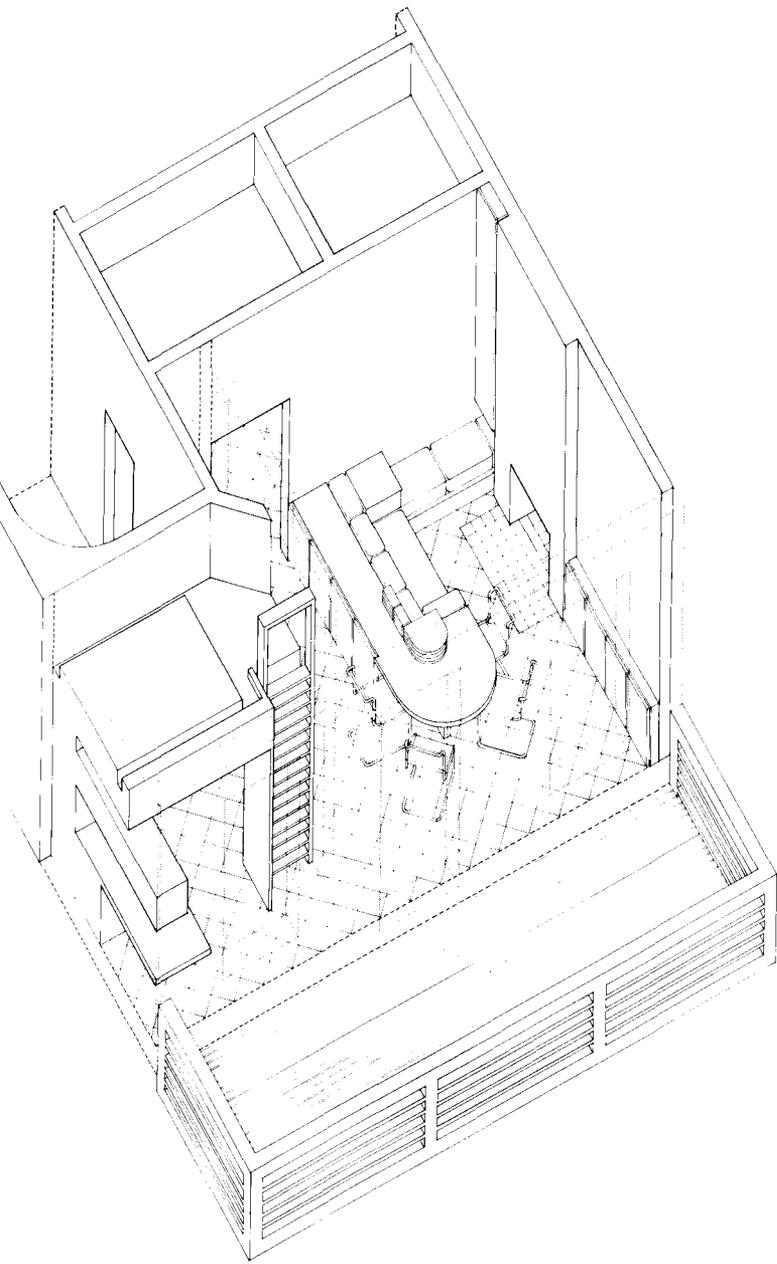
When the presentation is over and the lighting level raised, visitors will see through operable vertical louvers into the demonstration space where the actual equipment is displayed for testing and first-hand examination.

Lighting and careful detailing have been especially important here. The entry, lounge and presentation rooms are treated with recessed incandescent lighting; the more utilitarian spaces (halls, offices, secretarial spaces) are fitted with low-brightness fluorescent fixtures with warm white lamps. Colors throughout are rather subdued: grey-beige for wall carpeting, dark brown for floor carpeting. The over-all impression is one of warmth and welcome.

OFFICE SYSTEMS EDUCATION CENTER, Southfield, Michigan. Owner: IBM Corporation—Office Products Division. Architects: Mayers & Schiff—Peter Wheelwright, job captain. Engineers: Flack & Kurtz (mechanical). Audio-visual consultant: Robert Singleton. Fabricator of presentation and freestanding wall: Exhibit Group New York. Contractor: Smith & Andrews.



Severely limited living space in this Greenwich Village apartment was the challenge Michael Rubin confronted and skillfully solved by stacking, squeezing, doubling up

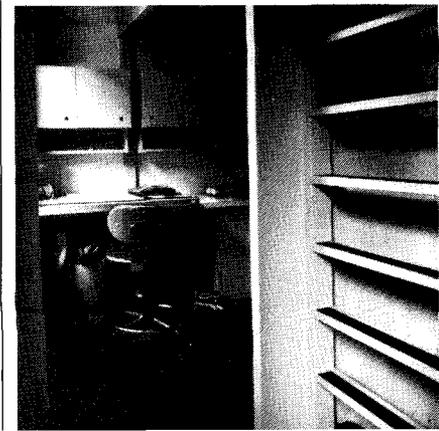


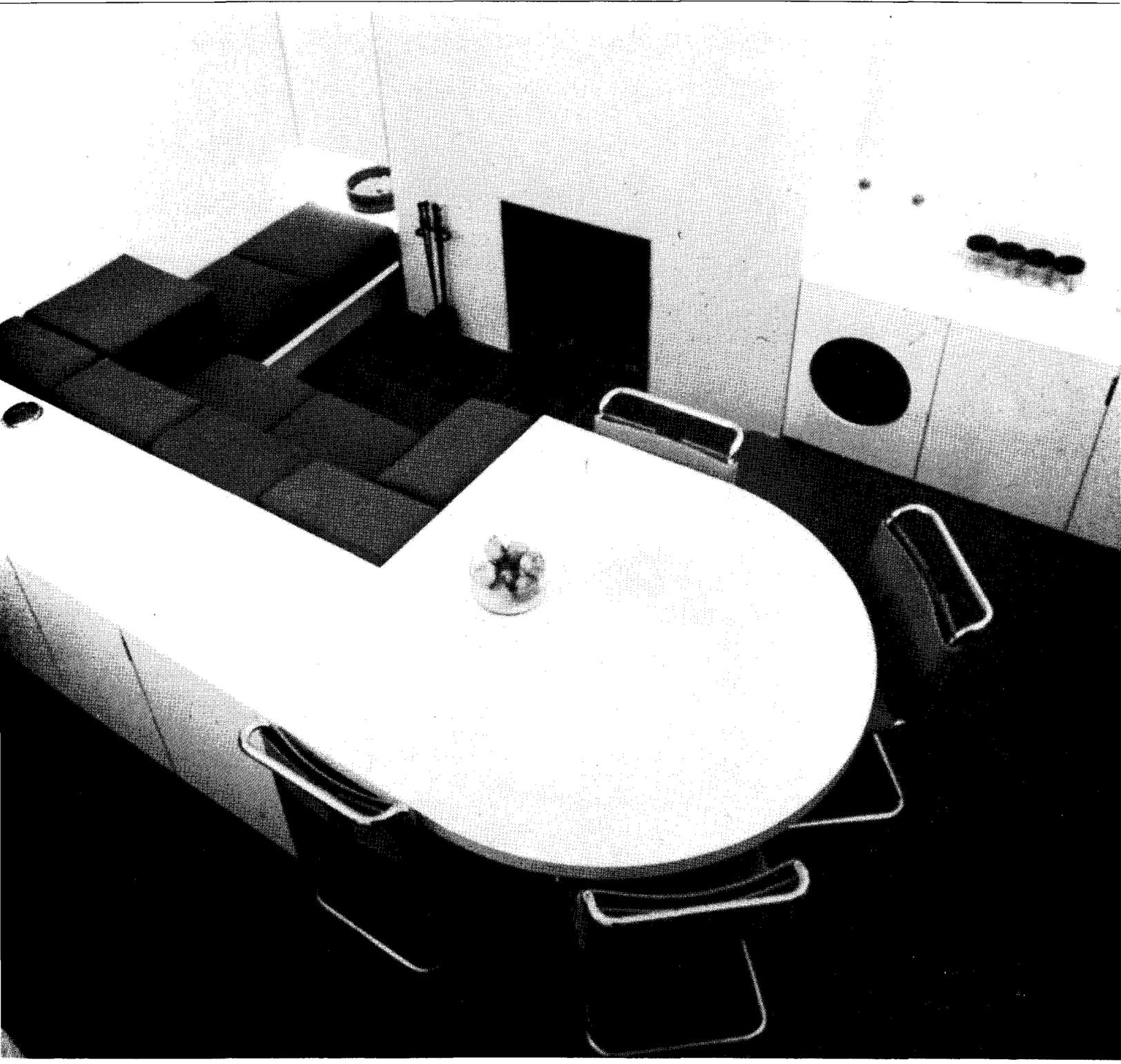
The original renovation of this 1850s brownstone established a one-bedroom apartment, but as the bedroom was only seven by eight feet—with an 11-foot ceiling, Rubin subdivided the space horizontally creating a sleeping loft above and a work space under. In the main space, he removed the massive marble mantle, rebuilt the fireplace wall and removed that portion of the bedroom wall that intersected the window wall.

In the space created by this series of adjustments, Rubin designed and installed a handsome seating area and table unit. The latter, which includes low cabinets, was covered in white plastic laminate. Other cabinets along the fireplace wall house hi-fi equipment and concealed lighting. To add space to his apartment, Rubin also decked the roof of the projecting sun porch below and thereby developed a narrow but welcome terrace.

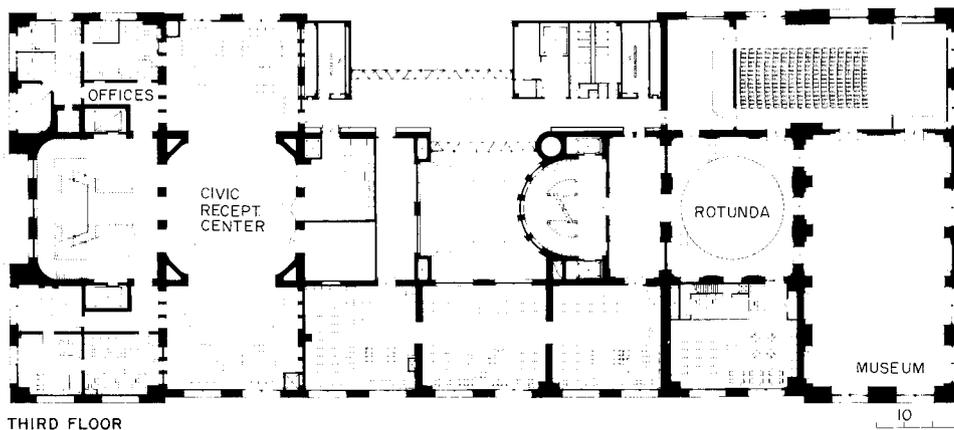
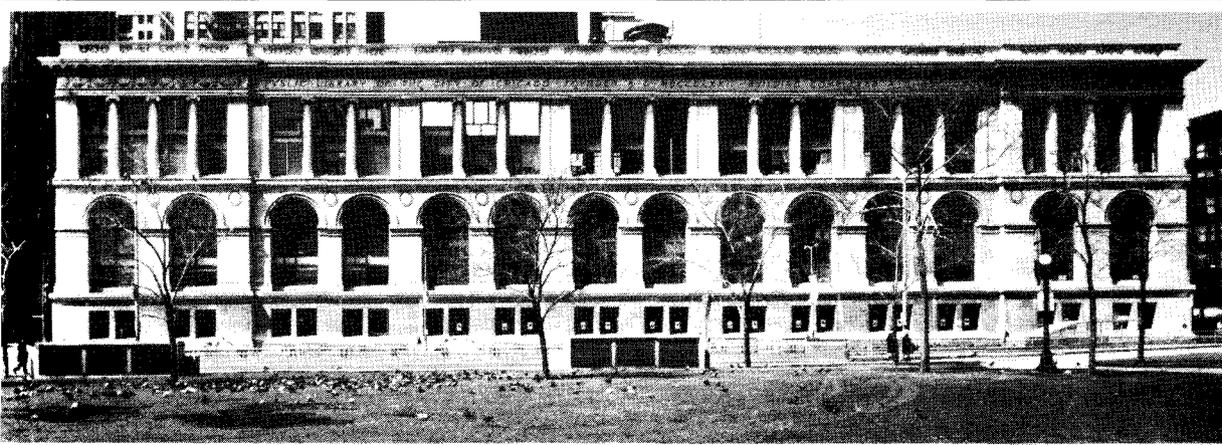
The result is a tidy, contemporary and surprisingly comfortable living space fashioned with wit out of what was little more than remnants from the past.

PRIVATE APARTMENT, New York City.
Architect: *Michael Rubin*. Cabinetry: *Gene Black (Materials Design Workshop)*.





A once-loved civic monument on a prominent downtown site restored to its former grandeur by Chicago architects Holabird & Root



THIRD FLOOR



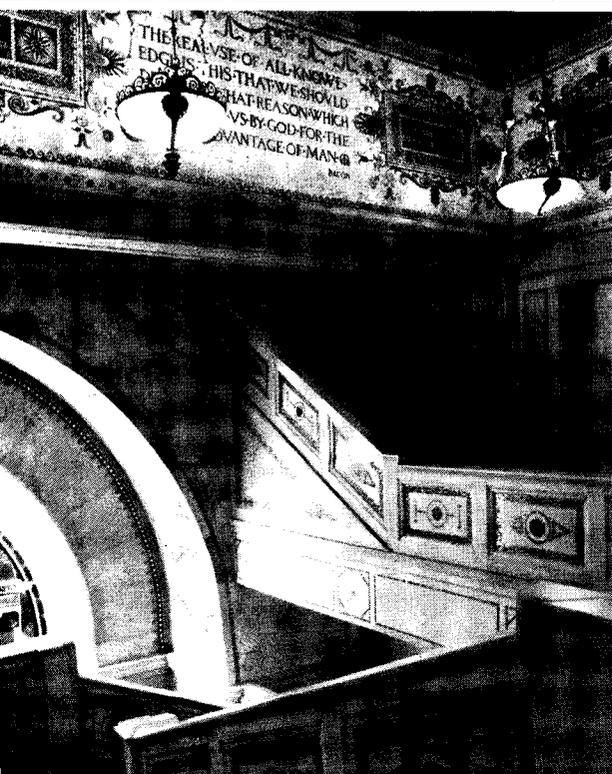
The Nineteenth Century's love of pomp, of ornament, of pageantry, of noble sentiment were all on display when the Chicago Public Library first opened its doors in 1897. The filigreed domes of Tiffany glass, the cartouches, the marble inscriptions, the huge spaces all combined to summarize an attitude toward civic building and civic pride. As the decades passed, however, the building began to suffer from serious neglect: ornaments began to crumble, surfaces collected veneers of soot and grime. Finally, in 1970, after proposals to modernize the structure were abandoned, demolition was suggested.

Eleanor Daley, the late mayor's wife, led a campaign to save the structure and before long an \$11 million restoration program was officially inaugurated. Chicago architects Holabird & Root were commissioned to direct the restoration that included conversion of many former library spaces into areas for exhibit and display. By removing many towering bookstacks, long sweeps of space became possible and functional problems, which had plagued several generations of librarians, could also be attacked and solved. The largest task, however, was the restoration of neglected surfaces. Selected craftsmen from all over the country painstakingly cleaned and repaired the fine mosaics and restored the stained glass domes over the two rotundas, domes that had been covered over in the 1930s to forestall leaks.

What has emerged, after years of work, is splendid cultural space of a kind seldom affordable today and only achievable at all when people are willing to invest time, energy, and sympathy in their cultural past.

CHICAGO CULTURAL CENTER, Chicago, Illinois. Architects: Holabird & Root—Gerrard Pook, partner-in-charge. Contractor: Paschen Construction Company.



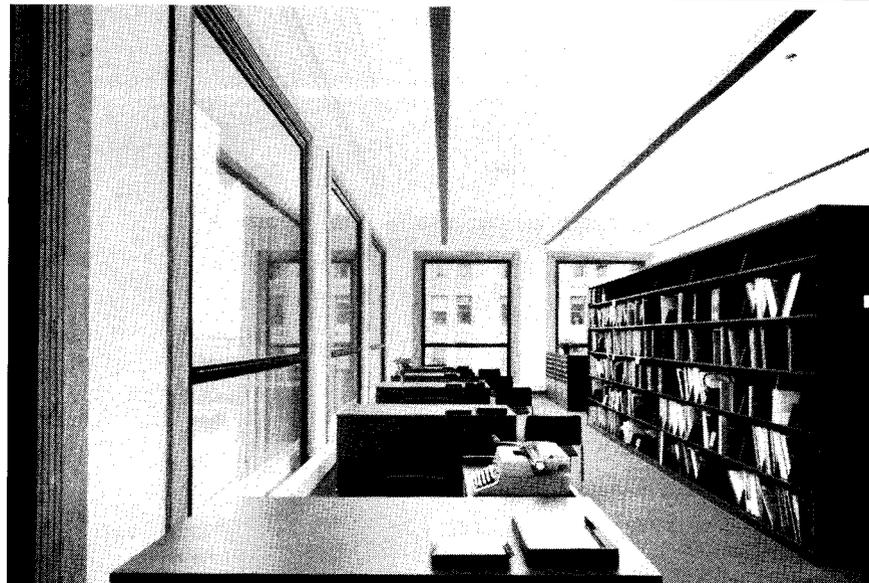


The architects were determined to retain whatever they could of the Library's original detail and surface enrichment. New furnishings have been selected with care.





Reading rooms and work spaces both for the public and staff are now air conditioned in summer and heated in winter by a steam plant within the building.





A new design office in Chicago for Powell/Kleinschmidt that combines flexibility and subtle coloration with unusually neat detailing

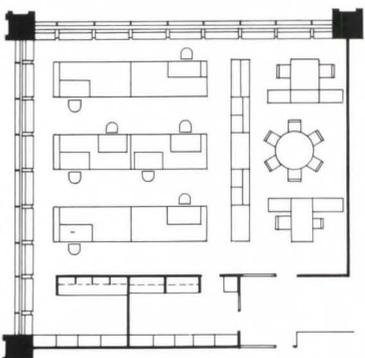
Hedrich-Blessing

In about 2000 square feet of space, the partners of this young design firm established their own offices. The space opens generously to the north and east giving good natural light for drafting as well as a compelling view to Lake Michigan. In laying out and furnishing the space, the cardinal objective was to stay within the esthetic vocabulary of the building itself, a steel and glass, high-rise office structure on Chicago's lakefront. The second premise was that the office should be a neutral, flexible background for design work of various kinds. Finally, the partners wanted the color in their office to come from the work itself.

The design accomplishes these goals, as the photos show, with unusual success. The carpet is a neutral heather; the walls and ceilings are off-white. The beautifully-detailed drafting units are covered in white plastic laminate and are lowered in height to 29 inches.

The more or less general illumination is soft in tone, and circulation routes through the work spaces are natural and comfortable. A glass light was substituted for wall panel at the front entrance (photo left) to make the front of the office inviting, and the generous use of plant materials underscores the feeling of welcome.

ARCHITECTS' OFFICE, Chicago, Illinois.
Architects: Powell/Kleinschmidt. Contractor: H.B. Barnard Construction.





**Steel and glass furnishings
alongside industrial components
give this Miami architect
a working environment
that is comfortable and personal**



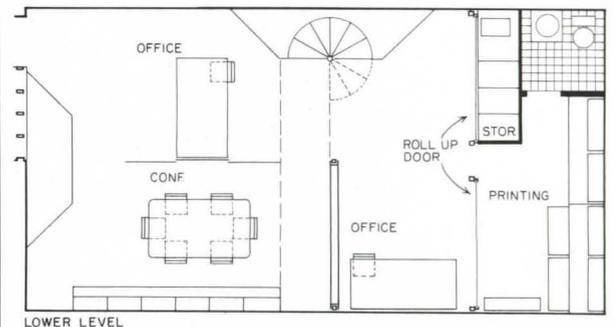
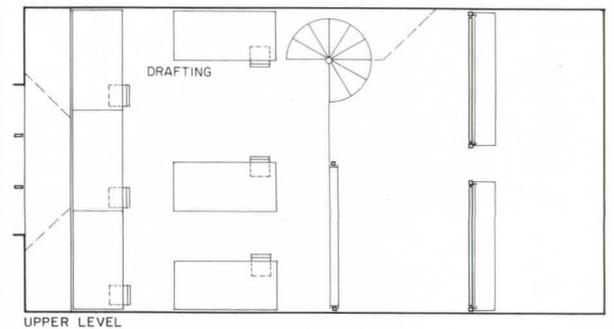
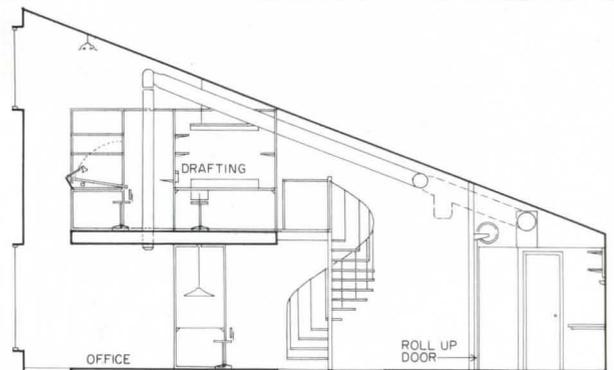
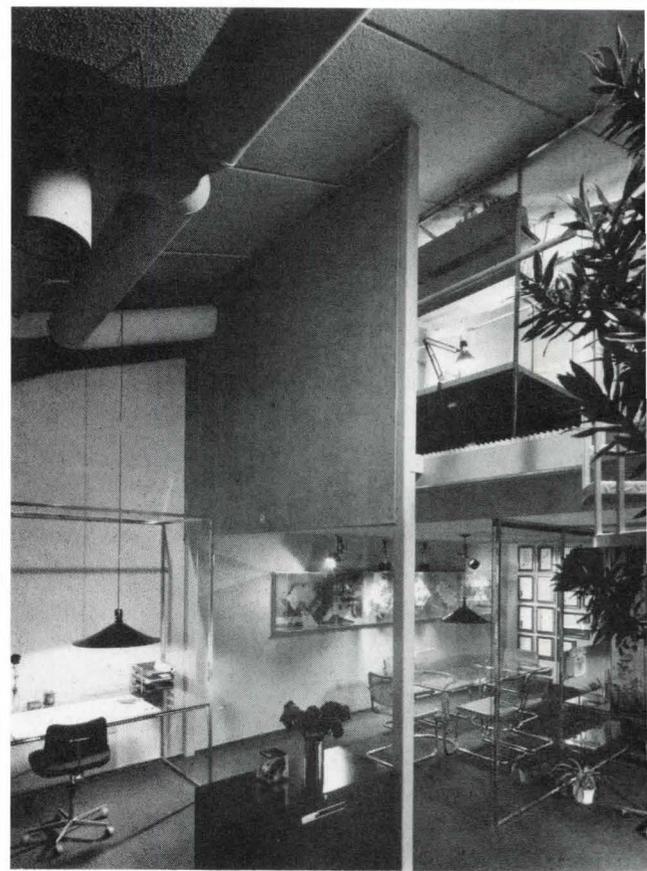
In designing his own office, Charles Sieger had the ordinary objective: to slip a rather fluid program into limited space and, at the same time, to express a consistent, personal design philosophy throughout the space.

Because the existing interior volume was 21 feet high, Sieger zoned the space horizontally, keeping the more private work areas on a partial balcony reached by a circular stair, and giving over the lower floor to reception, conference space, printing, wash-room and associated client areas.

To get the design character he wanted, Sieger made extensive use of industrial components and finishes. In addition to the exposed ductwork and steel columns, Sieger has used metal grating for the balcony floor, roll up metal doors, a counter-balanced lift wall, and a factory stair. Furnishings, though dressier, belong to the same family of steel components.

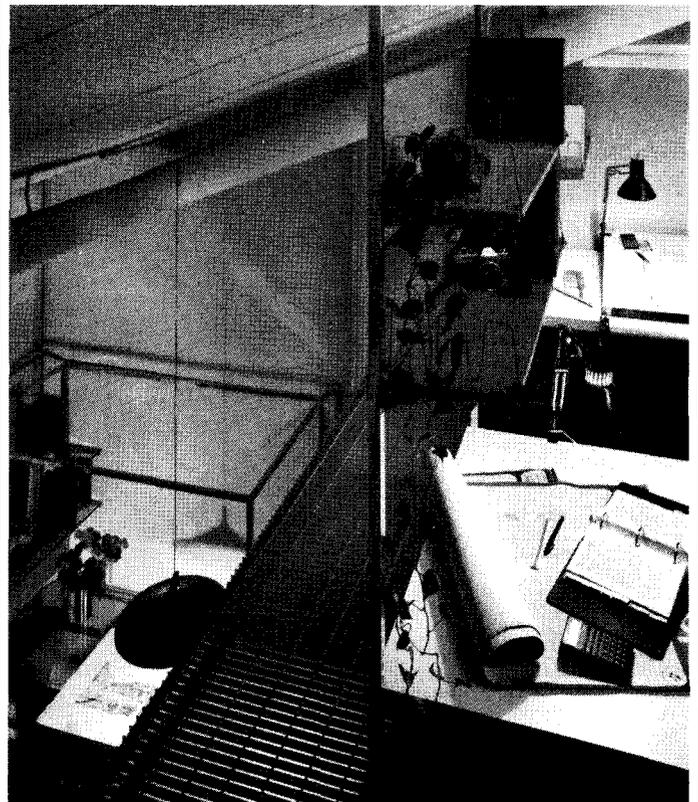
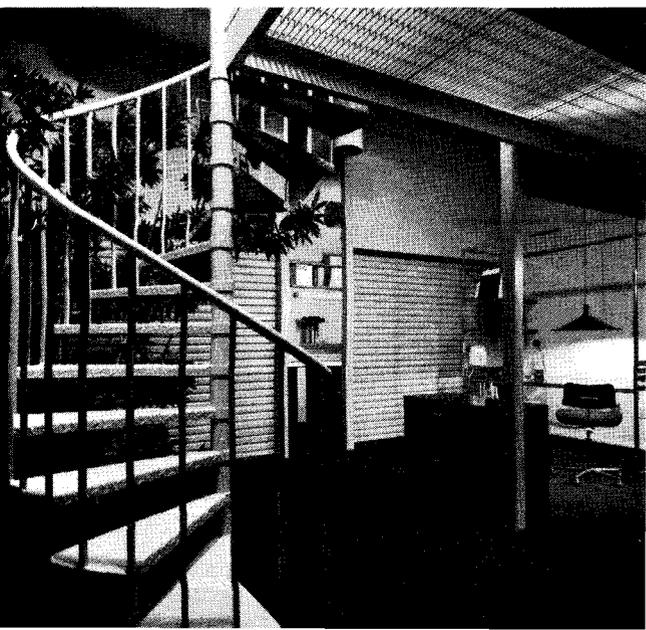
The architect has also made sensible use of glass to act as a foil against the steel vocabulary and to create the sense of transparency that makes the design work spatially. And to offset any sense of mechanistic harshness, Sieger has kept the palette of colors in the warm gray zone, brightened the interior with color accents and plants, and employed lighting as a creative design device.

ARCHITECT'S OFFICE, Miami, Florida.
Architect: *Charles Sieger*. Contractor:
John McKie & Son.





The roll up metal door, visible in its closed position in the photo at lower left, isolates the conference room from the rest of the office for visual and acoustic privacy.





Tobin Townsend

WHAT MORE COULD A GOOD HOUSE BE?

Over the past five or so years, a special group of beguiling houses, two of which are shown on the following pages, has been making its appearance across the landscapes of rural Vermont. Designed and built by Turner Brooks and his low-tech design-build outfit in Starksboro, these houses are truly remarkable, and they have much to say about the arts of house making. Even though they have very little in common with the usual architect-designed single-family house (and, for that matter, not very much in common with the well-known legion of their slicker cousins built during the past decades near the Vermont ski slopes as a kind of fashionable adjunct to architectural education) they offer anyone willing to give them a second glance the very rare thrill of seeing really original architectural talent at

work. And, because of that, they will also no doubt give still other people pause—partly, one can guess, because the delights they proffer require marginally more effort than usual to harvest.

Turner Brooks's houses begin by very clearly electing not to be what most other architects' houses are. The main proposition they violate is that an architect's house—particularly a young architect's—should try to look new and, with any luck, important. Brooks's houses look old and rather unimportant. They look cheap rather than expensive, rough rather than polished, humble rather than worldly-wise, and just plain poor rather than rich. Also they seem like a collection of parts added together over time rather than a deliberately composed whole. The building tech-

niques are simple, and so are the materials: perfunctory asphalt shingles, not wood shakes. Most of the parts look like leftovers (some are), and old doors, new doors, and sliding glass doors, casement windows, two-over-two sashes, and six-over-six ones are slapped on with abandon (was it necessity too?) and in a way that is almost, but significantly not quite, capricious.

These houses begin, too, by alluding to what is around them, to the timeless, wood-frame, frugal New England farmhouses of memory. They are almost—but, again significantly, not quite—identical to them. This practically nonchalant striving to make the houses like something else—particularly like something so very modest, and so closely like it at that—may strike many as an errant endeavor at best.



Erik Borg photos

Nevertheless, it is true that in pursuing it Brooks's houses are doing (in what is, granted, their own special way) one of the basic things that all architecture always does in order to make itself comprehensible, which is to seem, at least at the outset, like something else.

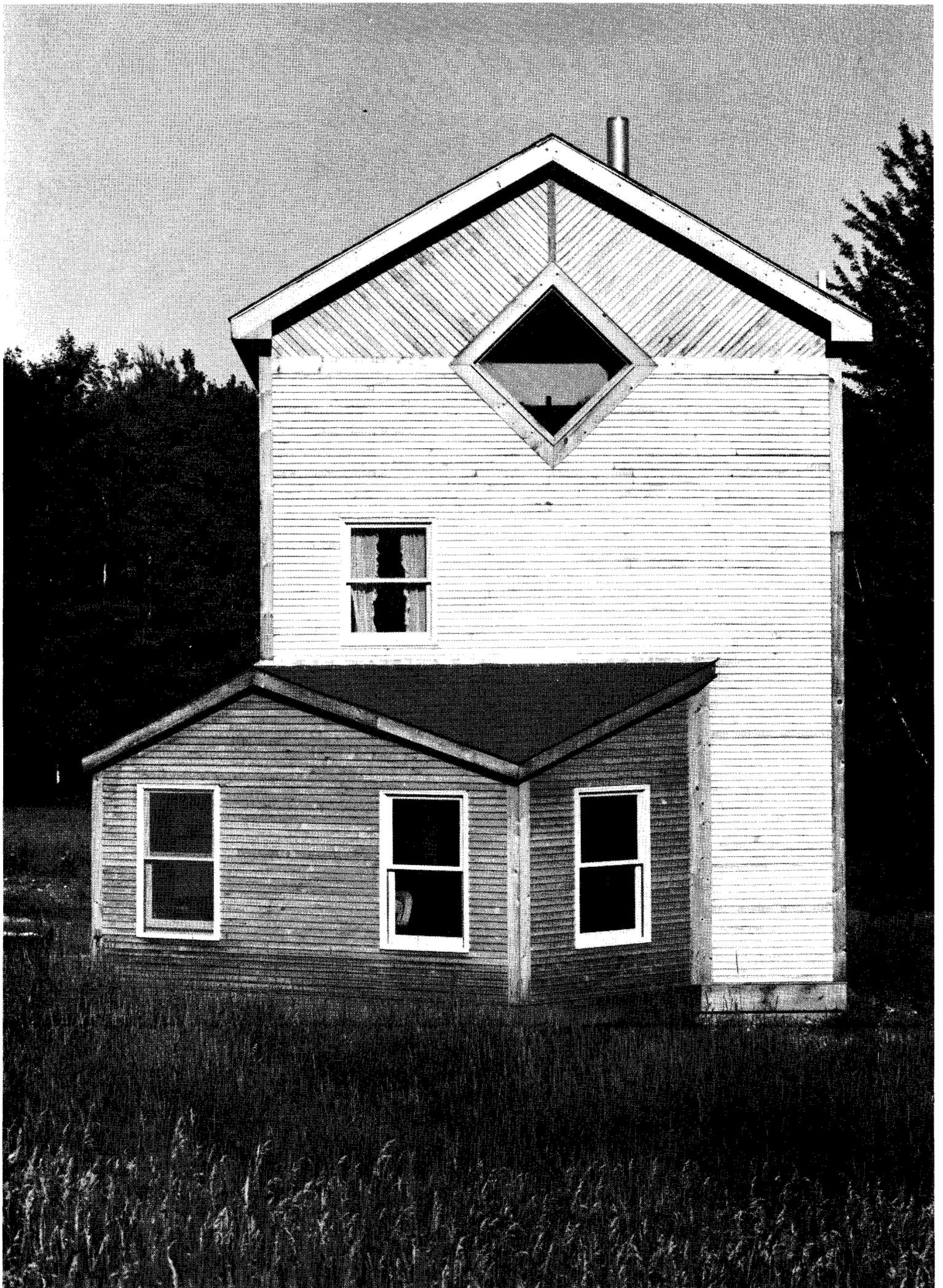
Here, though, we are talking not of the "meanings" that architecture can convey, but of the processes by which it conveys them. Architecture, after all, can have many very different meanings and always has had. But it always seems to convey them in the same way, which is by analogy, by being "like"—not just like other buildings and physical objects, but also like abstractions, ideals, feelings, actions, and anything else that is of any conceivable interest to people, of whom it is architecture's point to be expressive.

Architecture's necessary penchant for being like something depends upon a simple and obviously demonstrable fact: it is very hard for us to know anything, whether verbal or non-verbal, without reference to some other things that we already know about. Architecture must in some way be like something else to have any meaning for us.

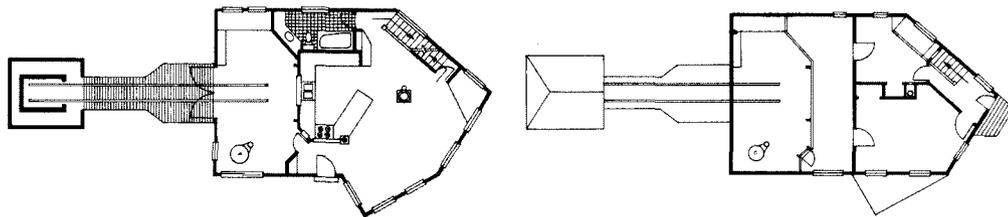
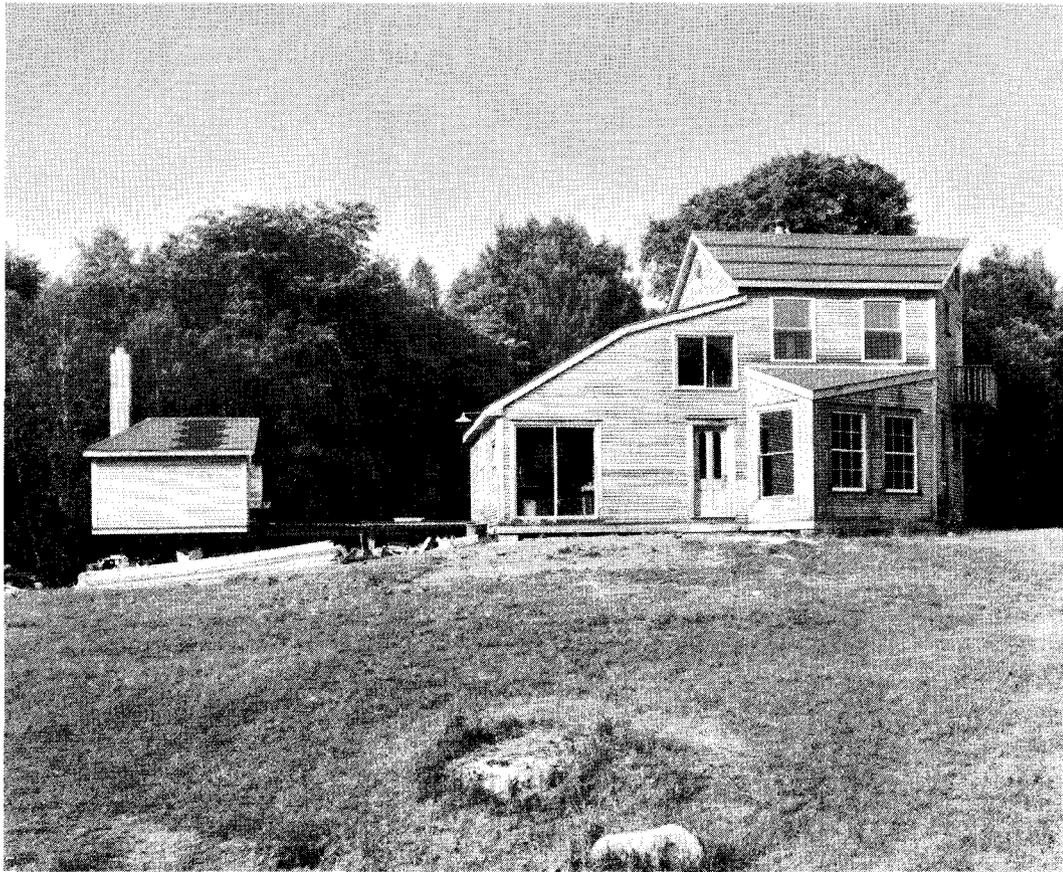
But the opposite is also necessarily true: it must at the same time be unlike anything else. Otherwise it isn't itself anything and holds no special meaning, being simply the dumb reflection of the things it is like. Thus architecture presents itself to us in a way that is at once mimetic and original, offering an always curious fabric of the familiar and the unfamiliar, vividly like things we already know about and, with equal vividness, unlike them. And there is no

high mystery to the process: it is as though we first need a comfortable and familiar framework (the "like") to win our confident attention, and then something different (the "unlike") to sustain and gratify it.

Brooks's houses seem as good at the one as the other, making considerable esthetic hay, as in the house shown above and on the right, out of proportions that feel just a little too tall, of parts that go together with a faint uneasiness, and of windows that are shaped and placed not quite normally—including the square one in the gable that, turned on the diagonal, provides the excuse for a quietly spectacular rearrangement of the clapboards. The whole is strange and beautiful, and not at all as easy as it looks. Don't try it, unless you are prepared to risk all, with energy, concentration, and passion.



Robert Perron photos



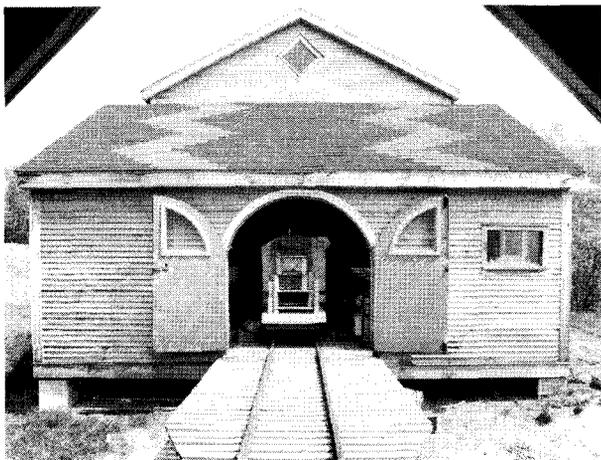
Now in all of this business of being "like" and "unlike," it has to be said that there isn't necessarily all that much that is new, since there is at the moment, of course, a small but growing band of architects who are doing it, and who perhaps immodestly regard themselves as being at the cutting edge of stylistic development. But it is one thing to squirt on a Doric column or a pointed arch for no evident purpose but fashion, and it is still another thing (though still not what Brooks manages) to make the kind of grand historical allusions that, in their different ways, men like Robert Venturi, and Robert Stern, and Charles Moore are very well known for making. In this kind of gesturing, it is usually pretty clear what is what, and the dividing line between the thing that is doing the alluding and the thing being alluded to is

quite plain. In Brooks's houses, though, the line is made very fine indeed, and a small but hair-raising drama ensues. Are they, or aren't they? Are they just farm houses, or are they partly something still unseen, and if so what?

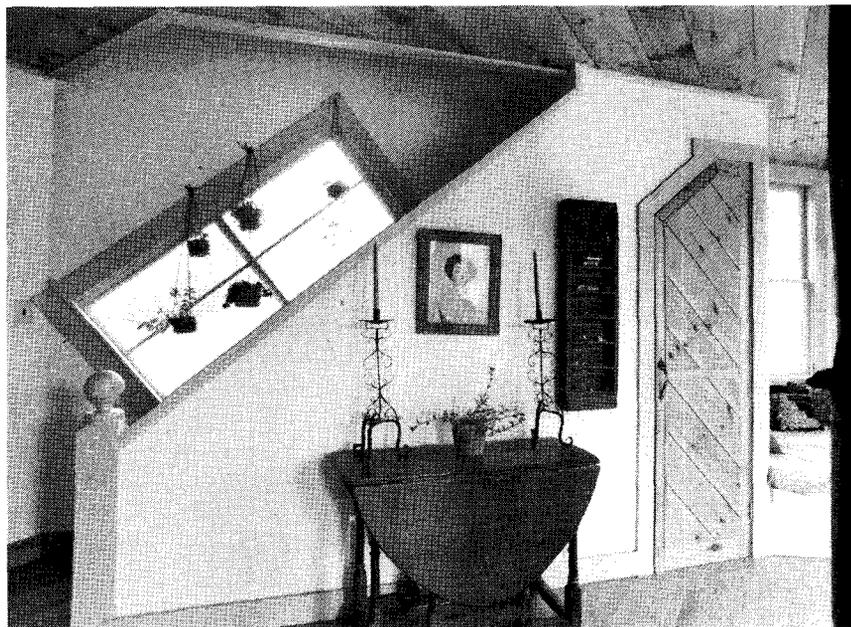
The question of what they really are—since this is by all evidence not just a game of styles—opens up perhaps the most touching and poignant dimensions these houses possess. The answer almost certainly lies in the realms of their social and cultural meaning, and at first this seems to involve nostalgic and even sentimental recollections of the fetishes of the 1960s, with their emphasis on retreat and on individual self-discovery. At this point, though, it seems that the modesty, carefulness, and frugality that comes forth in these houses have much more to do with the harsh realities of the

future, still unseen by most of us. The house that is shown above and on the right was built for a potter, with a small kiln connected to her studio by a homemade railroad track. It is clearly a house made for someone who elected without shame not to consume very much, either in terms of materials or of space, just as Brooks elected to abjure the usual refinements of architecture and let the house look "poor." What we have, then, in this house and in others like it by Brooks is a very special view of life—in this case one that seems particularly timely, a view that perhaps sees luxury, including the luxury of being adrift from place and from the past, as being beneath one, and demeaning—rendered into a set of physical forms of great poignancy. What more could a good house be? —Gerald Allen



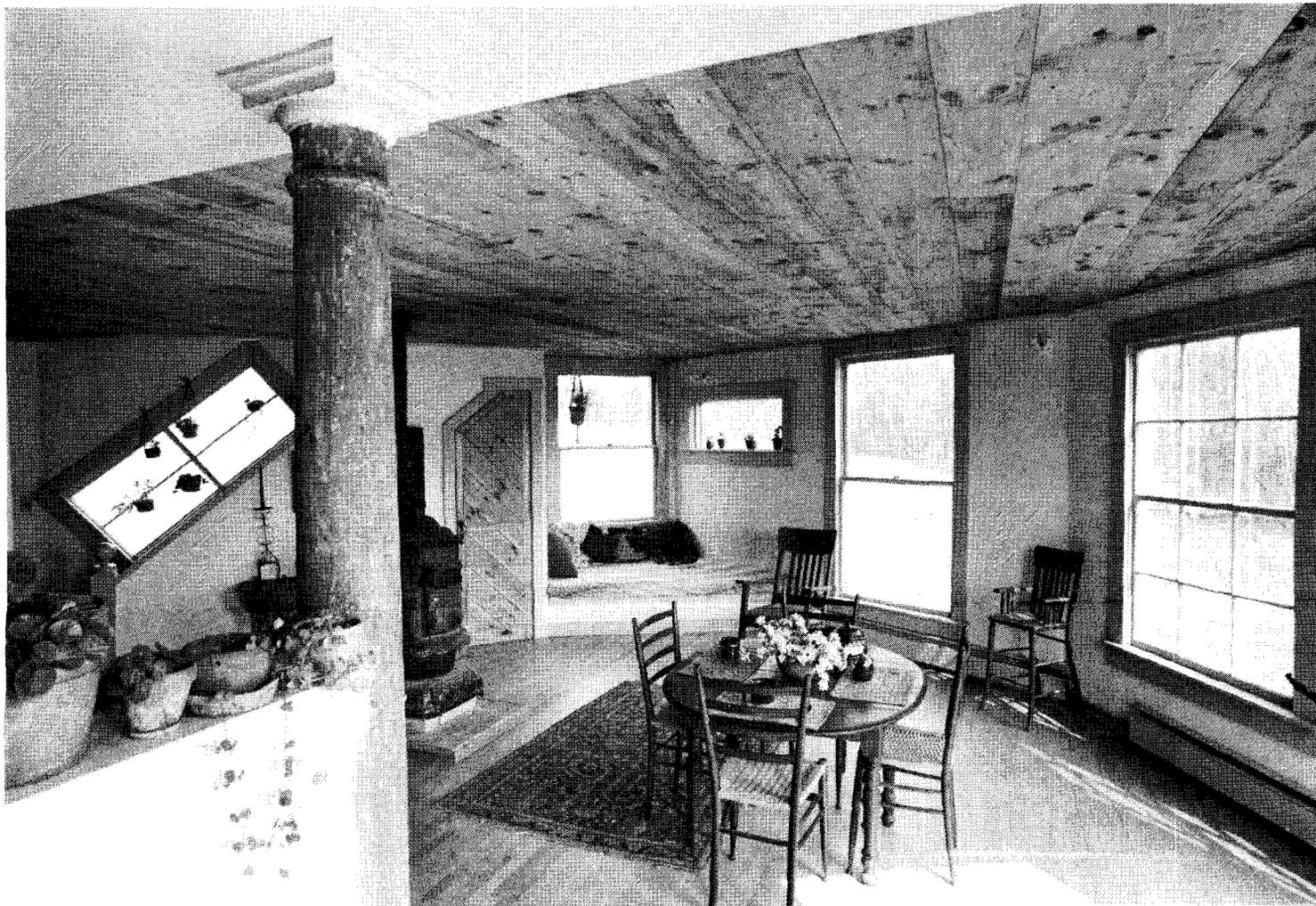


The Glazebrook House, shown here and on the preceding two pages, consists of a main house with bedrooms and a living and dining room (shown below) adjoining a kitchen, which overlooks a potter's studio. This is connected to a separate kiln by a track on which the pots can be wheeled back and forth. Note the details: the polychrome pattern roof of the studio (above) made of asphalt shingles, and the sideways staircase window (both traditional New England tricks), or the cellar door whose upper left corner is truncated to miss the stairway above—and also carefully to echo the shape of the handrail.



BUTTERWORTH HOUSE and GLAZE-BROOK HOUSE, Starksboro, Vermont. Architect and builder: *Turner Brooks*. Carpenters: *Mike Burgess and Peter Laffin*.

Robert Perron photos



LaCité:

a mixed-use development in downtown Montreal designed by Eva Vecsei, includes a 26-story office building, a 500-room hotel, three residential clusters with 1,352 units, a two-level shopping area with 100 boutiques and an indoor-outdoor health club. Designed for maximum profit on a bare-bones construction budget, without public subsidy in any form, it nonetheless possesses many amenities such as an attractive and well planned public open space network above and below ground, and generous roof terraces for apartment dwellers.

W. Juster



“The fundamental issues are not high-rise versus low-rise or high-density versus low-density”

LaCité is Montreal’s first large-scale mixed-use, comprehensive downtown development. This \$120 million project is also the first job completed by architect Eva H. Vecsei as head of her own office. Vecsei and her husband, both architects, had come as refugees from Budapest to Montreal in 1956, fleeing the aftermath of the Hungarian uprising. By 1964 she had been made an associate of Affleck Desbarats Dimakopoulos Lebensold and Sise (ARCOP). She became head project designer with partner-in-charge R.T. Affleck on Place Bonaventure for Concordia Estates Development Company, now called Concordia City Properties Limited and the developer of LaCité. One of the largest buildings in the world, Bonaventure is a \$80 million monolith on a six-acre site with one million square feet of retail mart space, 100 thousand square feet of office space, and a 400-room roof-top hotel—built just in time for the opening of Expo’67 (RECORD, July 1967).

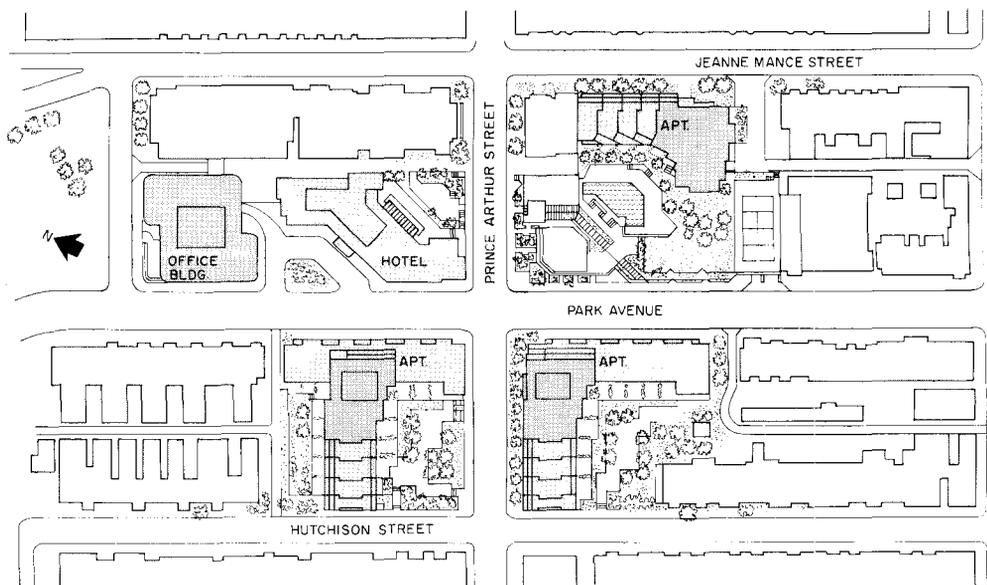
Vecsei began work on LaCité while she was still at ARCOP, and continued to develop it as an associate of Dimitri Dimakopoulos after he founded his own firm in 1970. By this time, however, the future of the project was uncertain. It had come under strong attack from local opponents of high-rise housing and even from Jane Jacobs herself, who came from Toronto to take sides in the controversy. Worse, the developers couldn’t get financing.

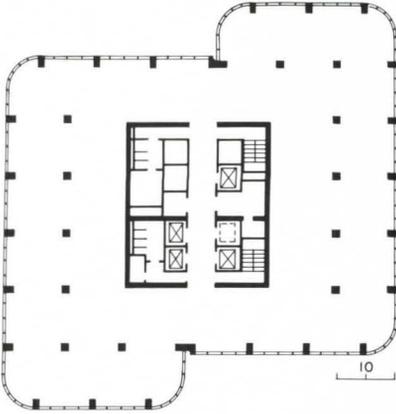
By 1973 Vecsei wanted to start her own office and Dimakopoulos (who had other projects which then seemed more achievable) gladly handed over to her the politically hot, financially cold potato. Because they had been working directly with Vecsei for almost ten years, first on Place Bonaventure and then on LaCité, the directors of Concordia found this arrangement to their liking.

Vecsei opened her office and on December 1, 1973 officially began work in her own name on LaCité. With her as associated architects were Dobush Stewart Longpré Marchand Goudreau. The team faced a crucial deadline. The buildings on the seven-acre site, located at the intersection of four city blocks, had by then been demolished and the developer wished to start construction immediately. The 500-room hotel in the project was to be completed first, in time for the 1976 Olympics.



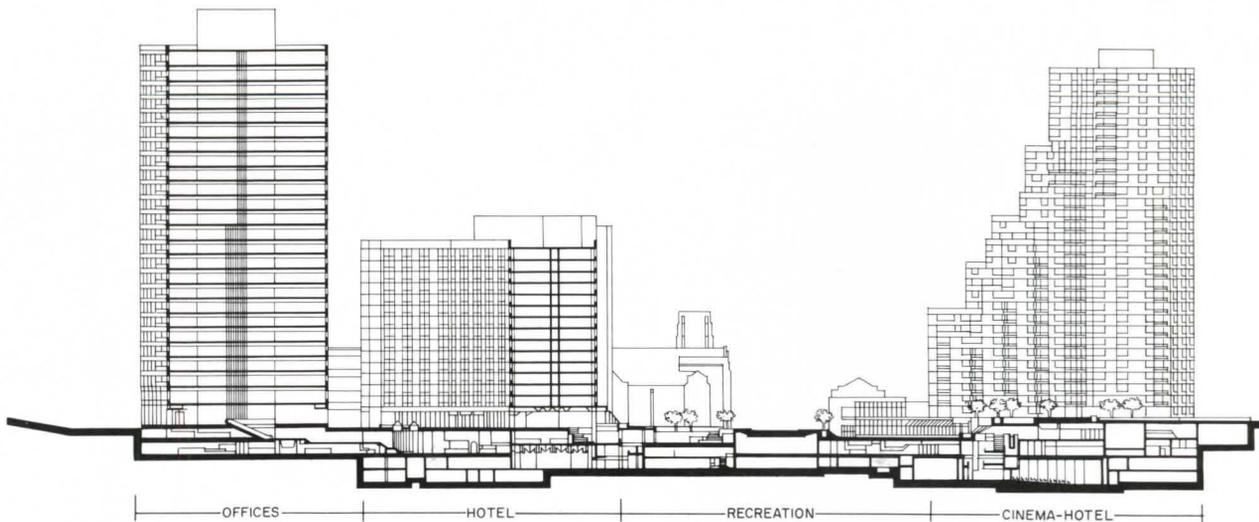
Mike Drummond





C. Savides

The hotel (opposite page top) overlooks street level retail plaza in the photo (above right). The site plan (left) shows how the open space network relates to the sidewalks and streets. The surrounding buildings are mainly row housing and churches. Originally the apartment towers (above right) were to have walls of continuous brick with precast balcony parapets which would have formed a quieter backdrop to the office tower (top). Budgetary considerations forced Vecsei to expose the structural slabs and to use metal railings on the balconies. To avoid what she calls the "zebra look" she selected a very light brick to reduce the contrast with the slab edges. Vecsei massed the apartment towers to conform to the street scale (above).



"I put underground everything which doesn't need daylight. This is a civic responsibility"

No one wanted to start the hotel until the entire complex was designed as an ensemble and interrelated and interconnected above and below ground. This had to be done by April—the last chance to get city council approval. (By fall, a new election would mean further delay while the architects persuaded the new council members to approve the scheme). Making this short deadline even more difficult to reach was the fact that none of the earlier schemes was applicable.

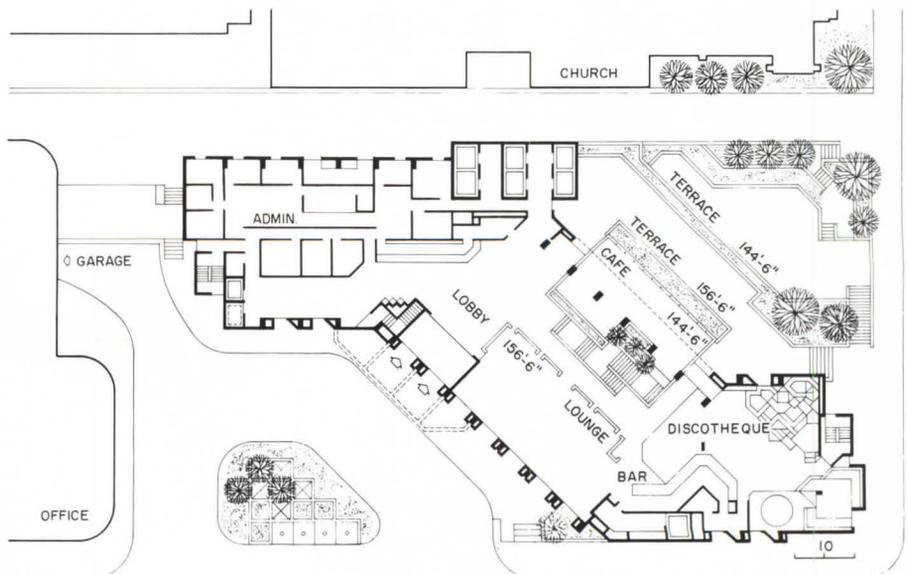
The project had originally been researched and programmed for a floor area ratio of 12 which the city, in response to the public outcry against high densities, had reduced to 6. This meant that in the final design only 1.5 million square feet of the project could be built above ground. The remaining 1 million square feet called for by the economic model went below the street level.

"We got a scheme ready for the April deadline," said Vecsei, "and it was approved. Then came a crisis for Concordia. Their financing didn't work out. Fortunately the First National Bank of Chicago joined the Bank of Montreal in providing construction financing and the project got going again. I had to redesign the entire project several times, making it smaller and less complicated for financial reasons—but the redesign improved it. I put underground everything which doesn't need daylight. This is a civic responsibility."

The fundamental issues in the design of urban housing, Vecsei believes, are not high-rise versus low-rise or high-density versus low-density. Both can work. Whichever approach is called for, the architectural problem is first to find a way to organize the enclosed space required by the program in a manner which allows the remaining open space on the site to be a real amenity for the users of the project and for the general public. The second problem is to find the right architectural vocabulary to define these spaces.

As she designed LaCité, she tried to orient the buildings to maximize sunlit open space. Since the streets on the perimeter of the site are lined with townhouses, she also tried to establish a residential scale at the edge of LaCité.

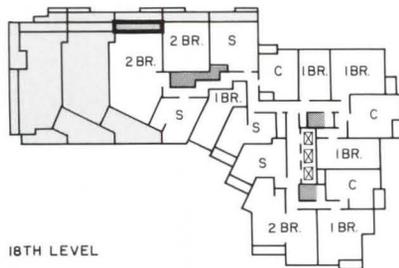
The three residential towers have similar open space-to-building relationships. Each has



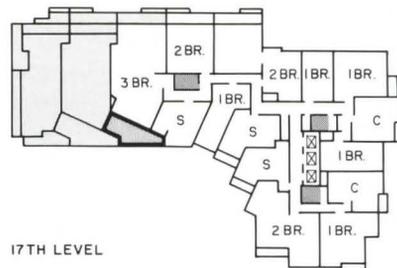


Mike Drummond

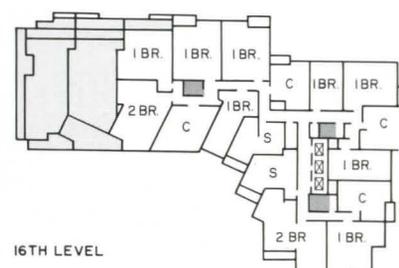
The hotel cafe (opposite page left) is skylit from a terrace 12 feet above. As the plan below indicates, it extends under this terrace to open into a sunken terrace of its own. The hotel lobby (above) is at ground level. The cocktail lounge is to the right of the photo and the discotheque is beyond. The diagrams (right) show three typical terrace setbacks in the apartment towers and the manner in which the apartment plans conform to the L-shape. Below (from left to right) are terraces, the health club and an office tower escalator.



18TH LEVEL



17TH LEVEL

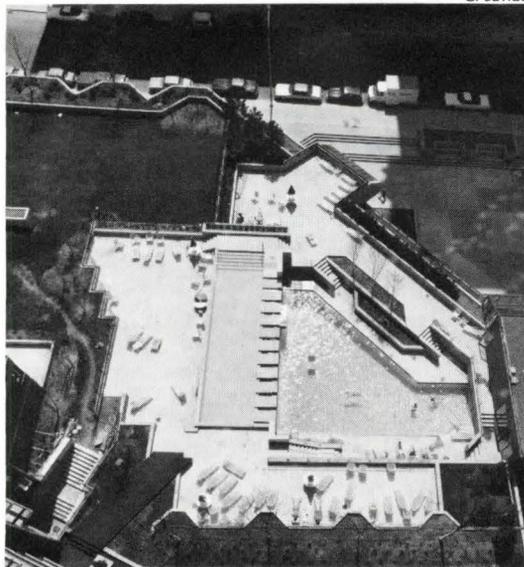


16TH LEVEL

C. Savides



E. Choueke



**"I think we have proved
that this kind of development
can be good and beautiful in the city"**

public space at the ground level and a series of stepped-up private terraces. The landscaped areas of the three residential towers comprise two acres of open space. These 30-story towers are located near the center of each city block, and step down gradually to meet the scale of the houses across the street.

The four city blocks are interconnected by an underground infrastructure which includes a two-level, 220 thousand-square-foot retail area which provides an all-weather connection between all parts of the project. The upper level of the retail space frames the street level plaza, and serves as a prominent entrance to the lower-level shopping concourse. Here special displays and careful lighting announce the presence of the underground shopping facility.

Vecsei carefully designed the public gardens to relate to the main entrance plaza and to the street level retail areas. The diagonal circulation routes through the gardens and the street-level retail area interconnect strategically located entrances. Each block contains a vertical circulation core leading down to a pivotal circulation system in the lower retail area. This circulation system also receives, via escalators, traffic from the office tower, the hotel, and one of the two intersecting streets. Each residential tower has elevator stops on the retail level and there is a vertical circulation core connecting the garage to the retail level.

These four pivotal circulation cores also provide residents, hotel guests and office tenants access to the health club. The indoor recreation facilities of the club include a gym, swimming pool, squash courts and saunas. Outdoors is another swimming pool (connected to the indoor one in such a way that it is possible to swim through a glass door from one to the other), a wading pool, games courts, sundecks and a tennis court. The indoor and outdoor facilities are connected by elevator.

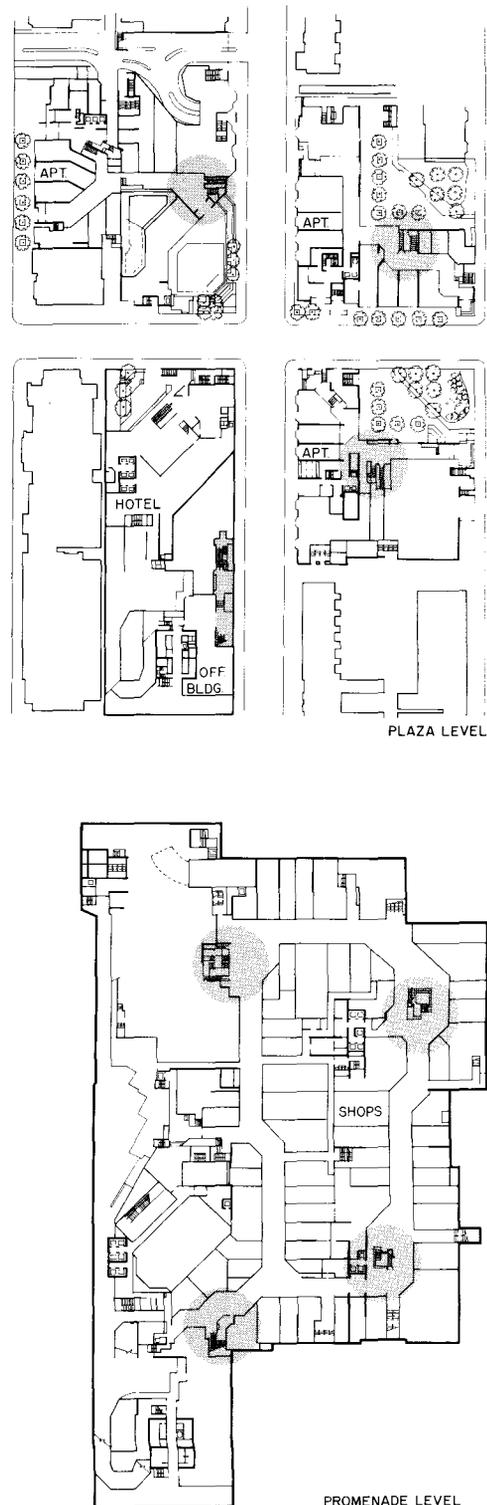
In deciding what to put above ground, at street level, and below ground in order to contain the construction above ground to the 1.5 million square feet called for by FAR 6, Vecsei determined that, for the hotel, only the lobby and the rooms would be located above ground. She created a [skylit] sunken garden terrace for the lower-level eating facilities. Natural light and morning sun reaches even the

assembly hall, which is 30 feet under the street level. The most dramatic and exciting sequences of spaces within the entire complex are to be found within this grand multi-level space of the hotel.

The hotel is the entertainment center for the approximately 3,000 residents and 10,000 office workers and commercial employees who live or work in LaCité. It shares the parking and trucking facilities of the complex and ties into and manages the health club.

The 26-story, rounded-corner office tower is entirely different in appearance from the hotel and the residential towers. Its precast panels match the color of the stone row houses in the neighborhood, while the other structures are of light, pink brick. Vecsei wanted the office building to be "slick and dark, highly polished and technical looking, in contrast to the hotel and apartment buildings. Commercial buildings should be repetitive, but buildings in which people live should be more romantic. There should be complications, interesting corners, odd passages, unexpected discoveries. I paid a lot of attention to the roofs and terraces of the residential buildings and I concealed the ugly stacks. These are buildings which you can look down on from your apartment. Some of the four-bedroom apartments designed for big families have terraces as large as a good-sized yard. When they are covered with plants they will be wonderful to look at. I think we have proved that this kind of development can be good and beautiful in the city. I think in LaCité we have created strong architecture which can only get better as there is more life around it." —Mildred F. Schmertz

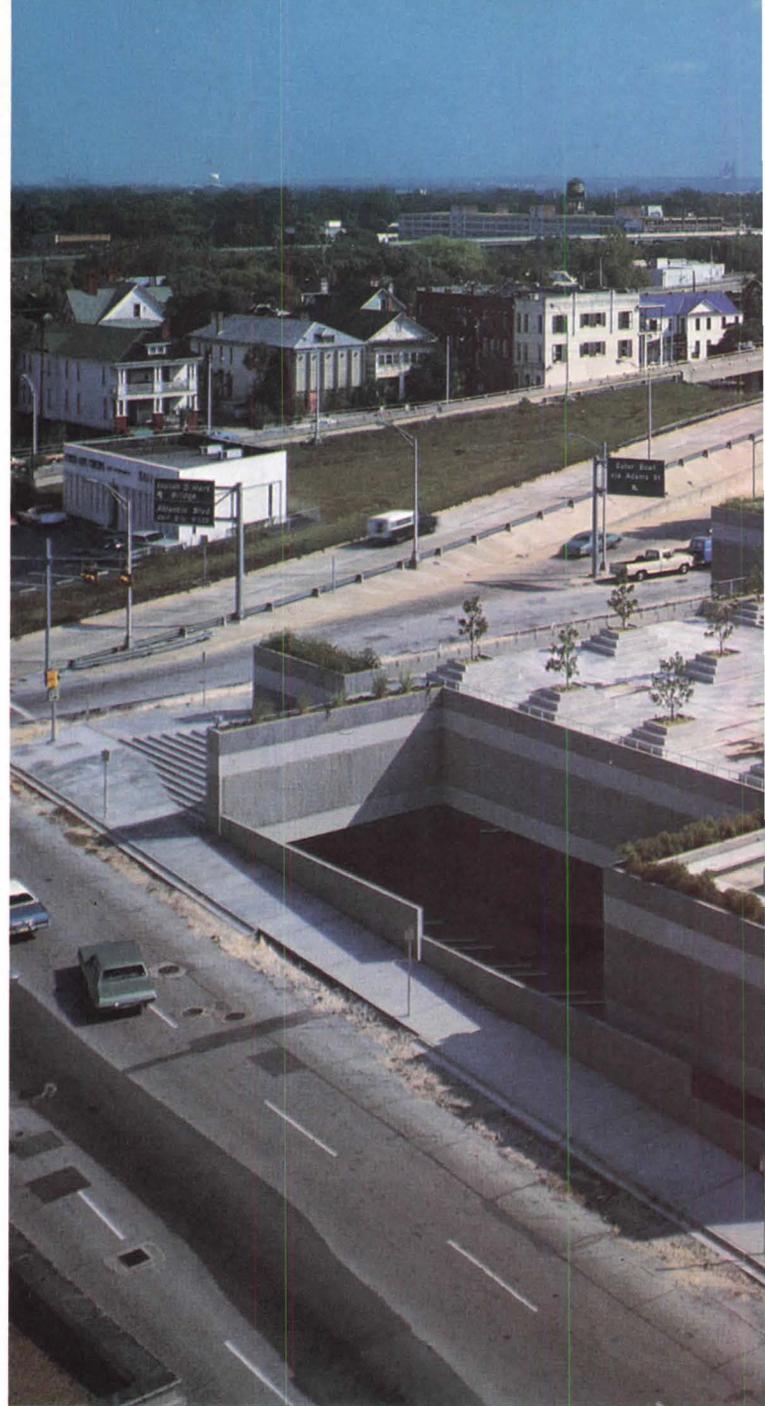
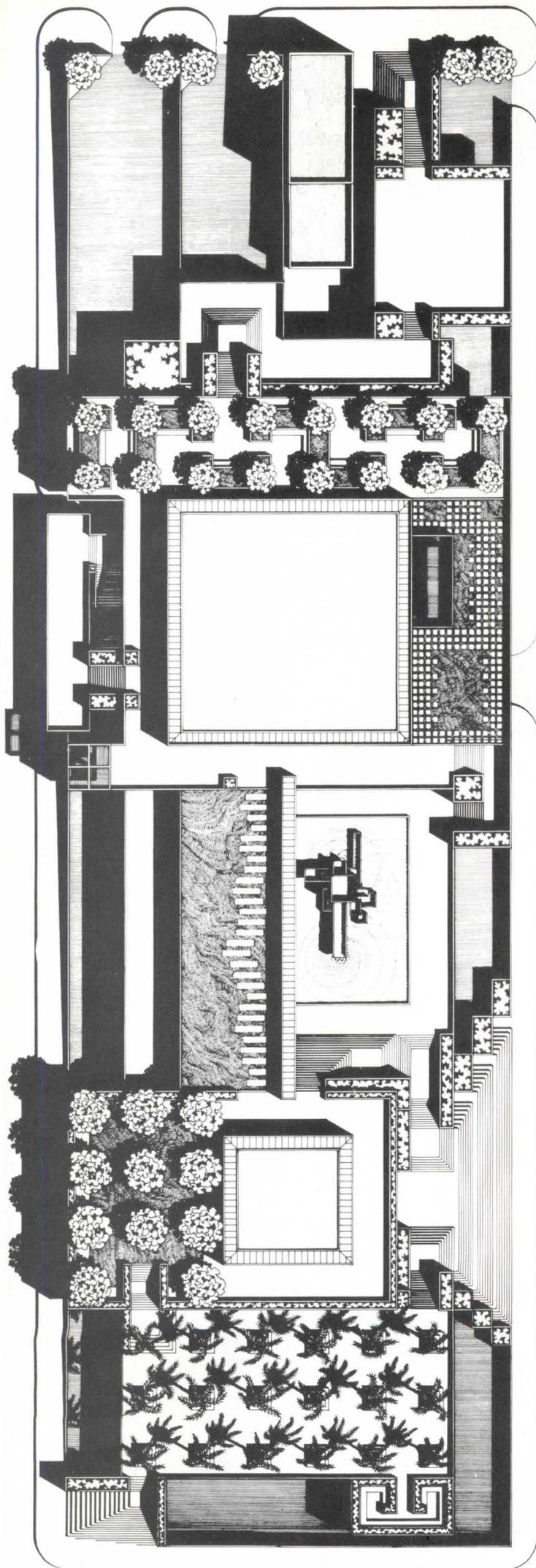
LA CITE, Montreal, Quebec, Canada. Owner: Concordia City Properties Limited. Architects: Eva H. Vecsei in association with Dobush Stewart Longpré Marchand Goudreau—Dan Hanganu (design coordinator); Ralph Hein (project architect). Consultants: Lalonde, Valois, Lamarre/Adjeleian & Associates (structural); I.A. Semenic/Caron, Racine, Saint-Denis (mechanical/electrical); Roger Montgomery, Vincente Ponte, David Farley (consulting planners); William B. Tabler (hotel); Jacques Guillon (restaurant interiors in the hotel); John Schreiber/Ron Williams (landscape); Tillyard Canada Limited (costs); William Bradley (acoustics); Beauchemin & Associates (hotel kitchen). General contractor: Concordia Construction Properties Limited.





BREAKING DOWN THE BATTLEMENTS: JACKSONVILLE'S NEW POLICE HEADQUARTERS

In designing what is officially known as the Police Memorial Building in Jacksonville, Florida, architect William Morgan has produced two unified civic facilities that would seem by traditional standards to be incompatible: a functioning law enforcement agency and a public park. But it is exactly this skillful marriage of the two normally distinct faces of government's responsibility that makes this building significant. The park is located on the stepped levels of the agency's roof, and it lends a totally new and humane image to normally stern and forbidding functions. But such innovation is nothing new to Morgan. The two-part use of the site is consistent with his innovative design approaches for all sorts of buildings (see "Buildings as Landscape," *RECORD*, September, 1972, pages 129-136 and the pages that follow.) Morgan's buildings are in harmony with their surroundings—or sometimes with what their surroundings might be in the most considerate of worlds. Truly, he is telling us something about the nature of what architecture can be all about—and in this case what government might be all about. —*Charles King Hoyt*



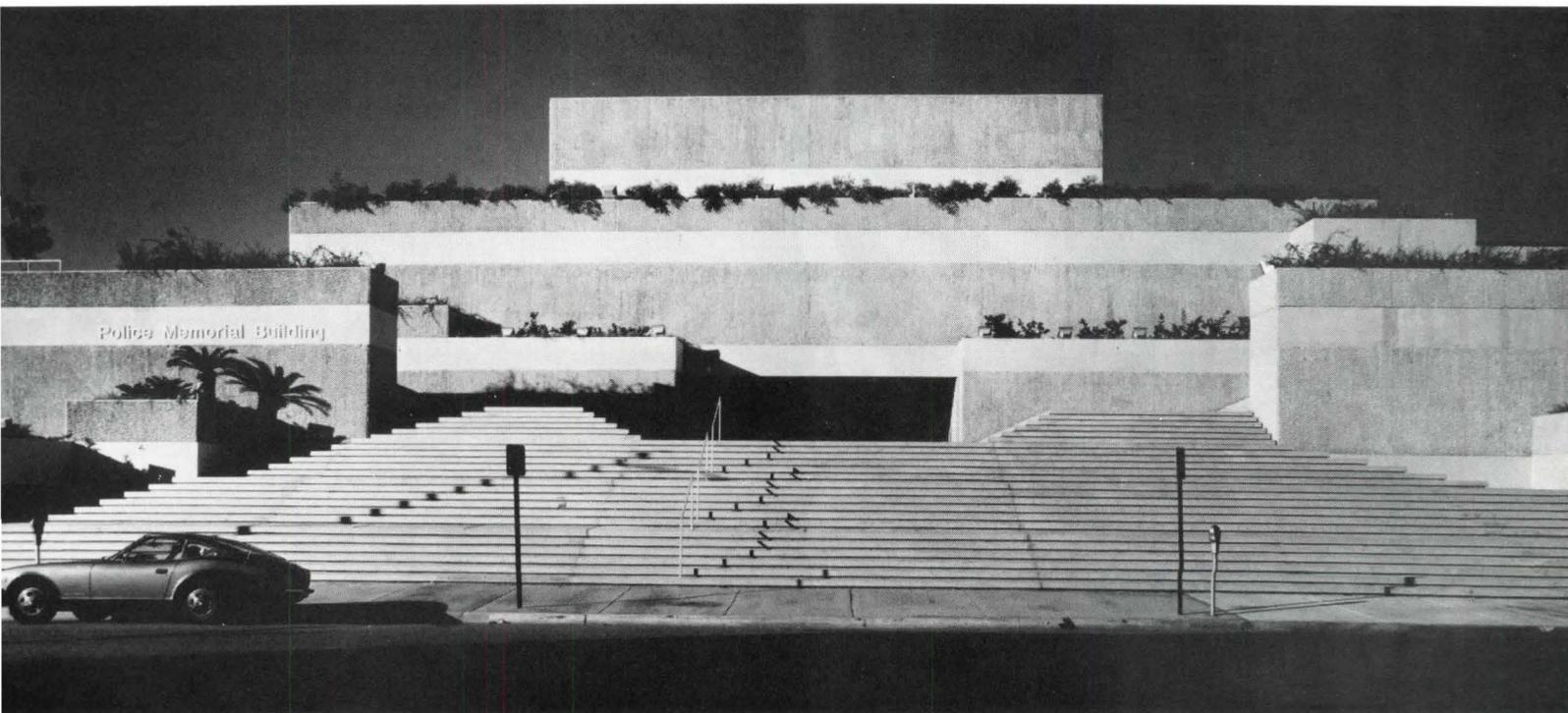
In the past, some police stations have been designed as civic monuments (in the spirit of the great nineteenth century railroad stations), others as examples of hardheaded efficiency. It requires an appreciation of both design approaches, and it requires the spirit of the most recent times, to produce the adventurous design shown here by architect William Morgan for Jacksonville, Florida's Police Memorial Building.

First of all, the building is monumental—but in two very different senses from the overbearing connotation of that description. It is a monument to a new concept of civic responsibility, wherein the barriers between government's function and the aim of that function, human amenity, are broken down. The building is monumental because its symbolic values go far beyond its day-to-day purposes, and boost humane sensibilities. (Another monumental quality is the visual recall of the ancient Indian architecture of northern Florida—a subject that has fascinated Morgan for many years.)

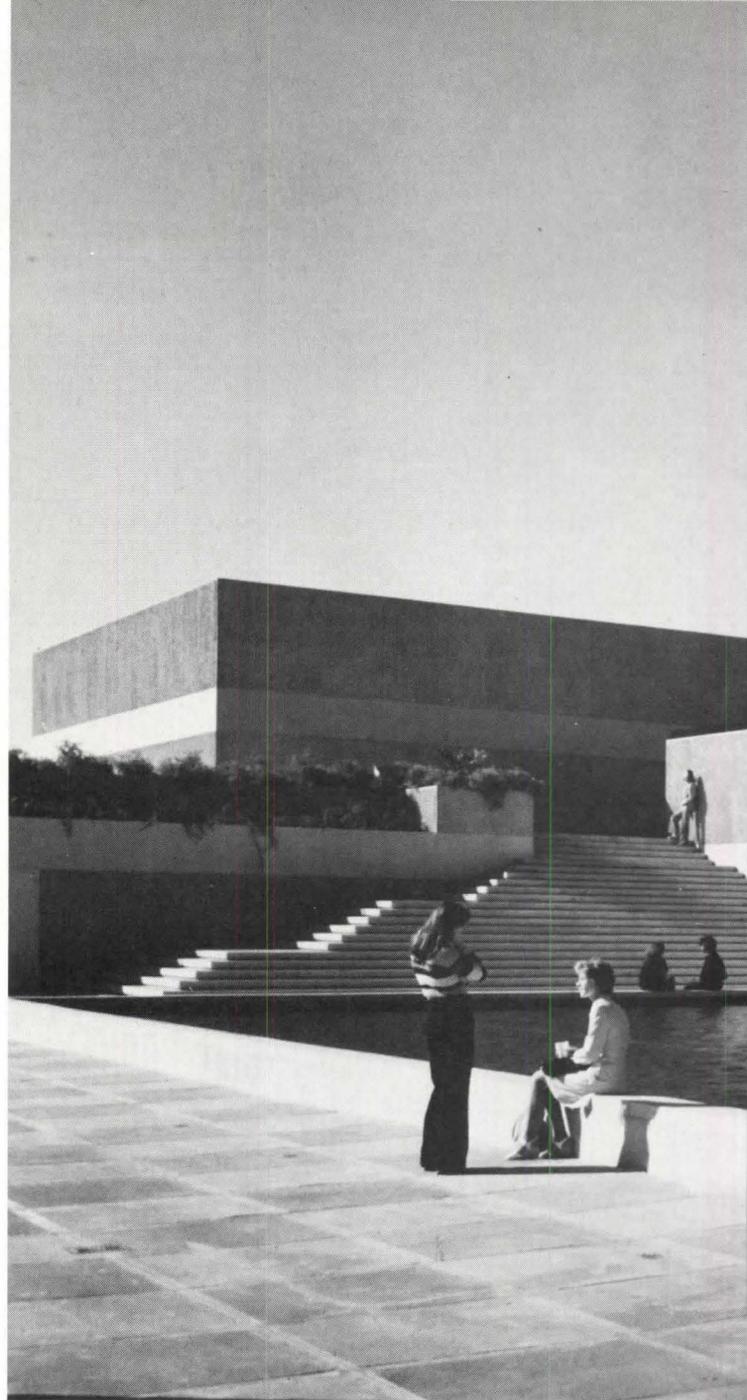
The design was the winner of a competition sponsored by the AIA, and the jury report stated that the selection was based on the need for breaking down the barriers of isolation, unpleasantness and resentment that have recently become attached to the image of law enforcement. In an understatement, the jury said "we tried to choose a design with an airy rather than eerie atmosphere." The jury also said that the design was selected for visible "ease of approach *and* efficiency in handling day-to-day business."



Otto Baitz photos

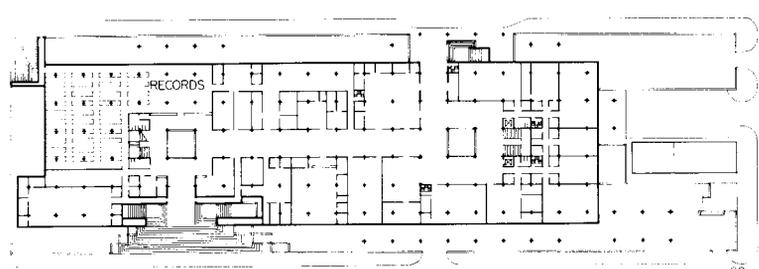


Police Memorial Building



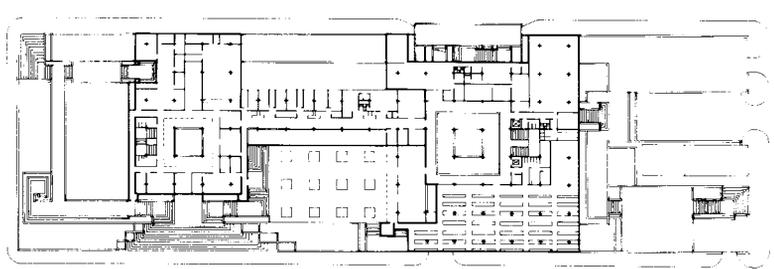
And the building does handle business. Police functions are distributed over two floors, which are elevated above a subgrade parking area. The parking level also accommodates service functions such as mechanical equipment rooms, and provides space for future expansion of the building. (The utilization of the current 208,000-square-foot building is approximately 70 per cent). The main floor is surprisingly straightforward in plan for a building with the apparently complicated volumes that are seen from the exterior. All spaces are organized around two interior courts, which are respectively centers of public-related and internal functions. Accordingly, the main entrance (see photos last page) leads to the smaller court (see section), around which are public services and records, and facilities for public transactions—such as paying parking tickets. The sheriff's office and the offices of other police officers are located around the larger court, with such functions as detention.

Architect Morgan was determined to create a building in which people's sense of location would be quick and easy, as they traveled from place to place. Accordingly, the two courts are connected by a two-story-high gallery (photo top). Here hang banners created by artist Anne Emanuel, whose designs are derived from paintings by local school children transferred onto canvas. The building's exterior walls (as seen in the photo above) are poured-in-place concrete with a fluted, bush-hammered finish that is interrupted by smooth concrete bands at the floor levels.

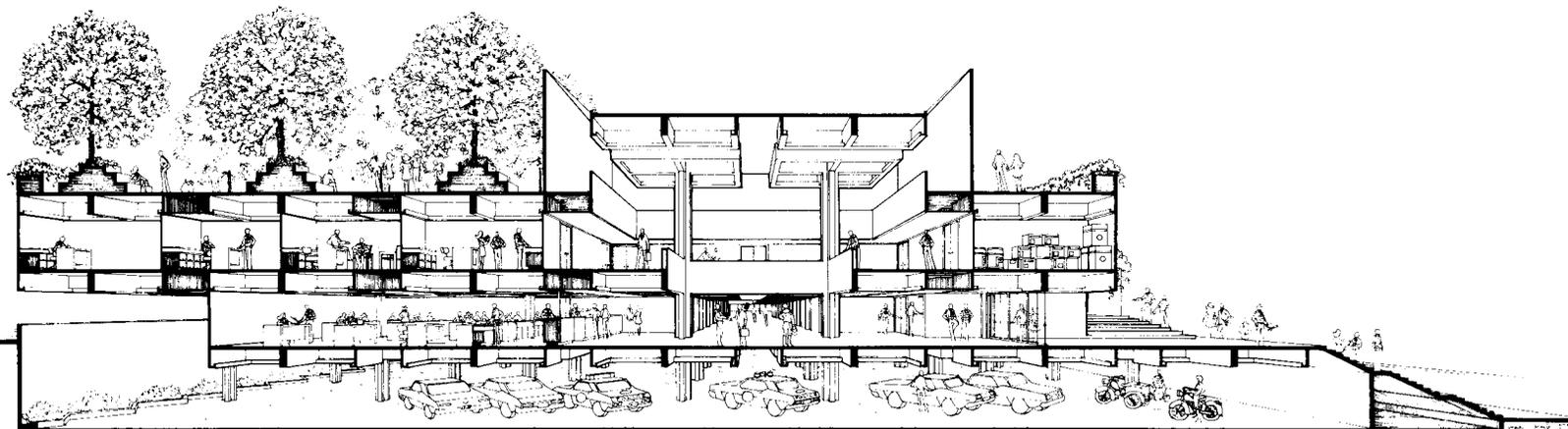


MAIN LEVEL

20

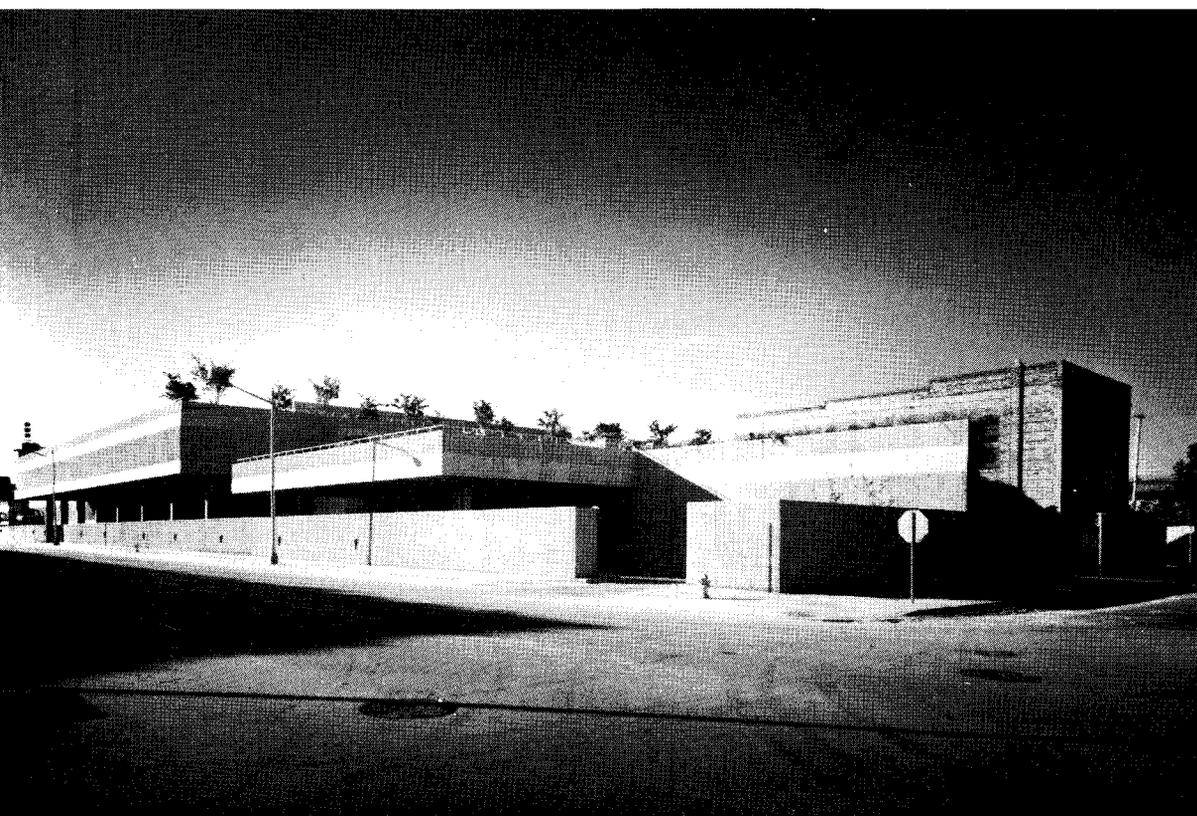


UPPER LEVEL

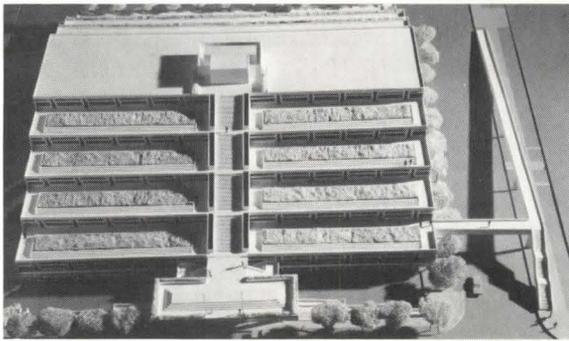
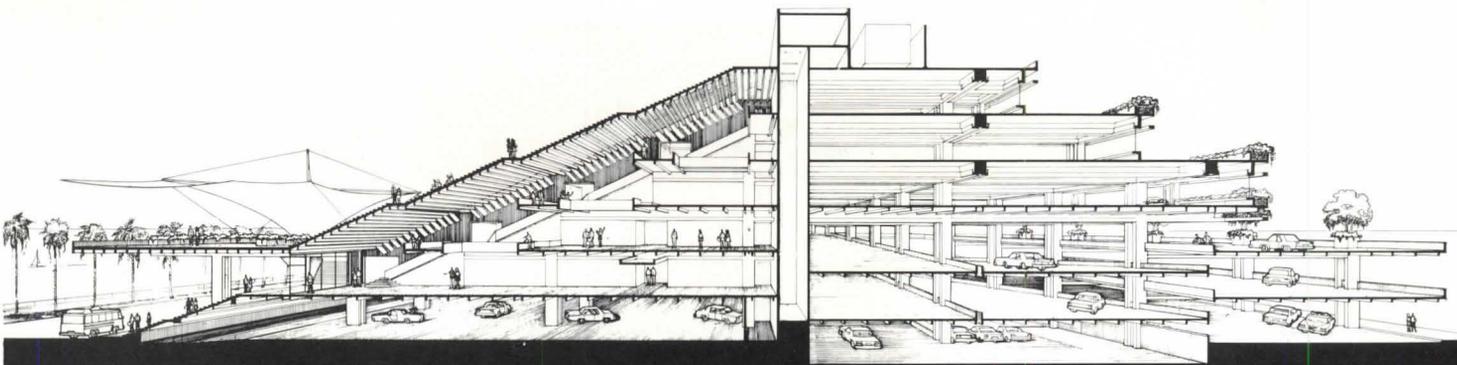




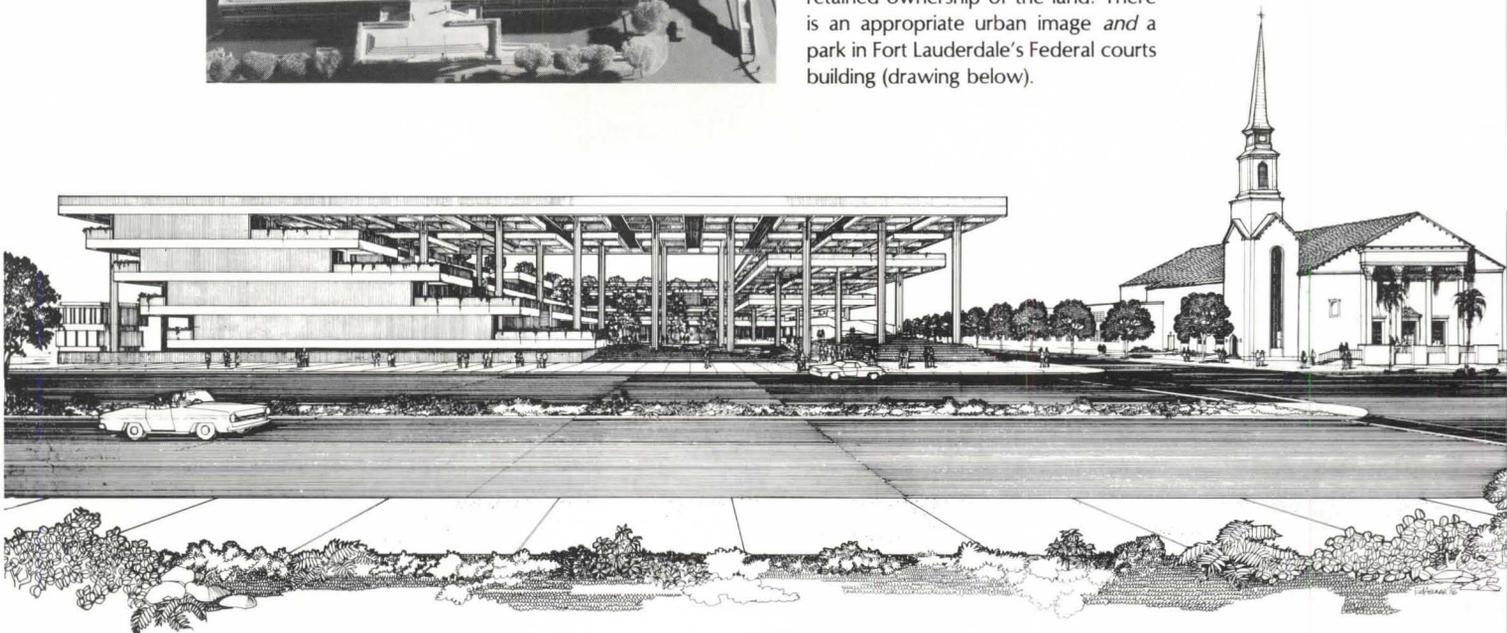
Despite the building's open appearance, security was a strong consideration in the design. Accordingly, there are few windows, and skylights take on great importance. The skylights are located over the two courts and the connecting gallery. The larger court (photo opposite) rises four stories from the parking level to the underside of a helicopter landing pad, which is elevated above the roof. Architect Morgan calls these courts "inverted pyramids of space" in reference to his interests in the ancient architecture of the local Indians. As the development of downtown Jacksonville moves in its direction, the roof-top park (photo left) will gain increasing importance as both open space and as a place for people to relax. Consistent with his interests in urban context, the preservation of a nineteenth century firehouse on the site was successfully urged by Morgan, and the building has been converted to a museum for historic fire-fighting equipment (photo bottom).







Jacksonville's new state office building (section above and model photo left) might have been built on a suburban site without an innovation in land use that reduced its cost and replaced a civic eyesore—a municipal parking lot right on the river. The municipal parking spaces were combined with those for the new building, and the city retained ownership of the land. There is an appropriate urban image and a park in Fort Lauderdale's Federal courts building (drawing below).



Similar thoughtful approaches in Morgan's designs are seen in a comparison of the police headquarters to two other civic buildings currently under construction. They are a Florida State office building in Jacksonville (model photo and section top), and a Federal courts building in Fort Lauderdale (drawing above). The office building is conceived as a ceremonial viewing platform with roof-top terraces that step down to the adjacent river. Here, Morgan was instrumental in having the building on a downtown site, by promoting an arrangement whereby the State could rent land over a municipal parking lot, and incorporate the former use in the new structure. The courts building makes an appropriately strong urban statement, while providing a public-related park within the building's over-all framework.

These two buildings share with the Police Memorial Building several other of Morgan's concepts besides the innovative use of their sites. Most obvious are forms generated by Morgan's interest in what he is currently researching—local indigenous Indian architecture, which Morgan expects to demonstrate as rivaling that of the Aztecs and Mayans. Ceremonial forms, such as great earth pyramids and processional routes, sunken below the ground, were important elements of that architecture.

Partially because of such interests in historical monumentality and partially as an innovative way to reduce floor-to-floor heights, Morgan—along with engineers William Le Messurier and William Lam—developed

a system of structural precast-concrete "trees" for the police building. (The concept was later carried over to the courts building.) In the system, each column supports two cantilevered beams at right angles. The beams in turn support edge beams that define a section of the structure, which is only tied to the next "tree" by a flat concrete slab over the intervening space. Under the flat slabs, the intersecting beam-free areas can accommodate the horizontal mechanical and electrical services, as can be seen in the photos on the last pages and in the drawing of the courts building above.

Considering the innovation and amenity in these buildings, it is interesting to discover that there has been a tight control of costs. The police station was completed last year for just over \$40 per square foot, on a fast-track schedule that required eight separate construction contracts. The State office building's basic contract was twenty-five per cent under budget.

POLICE MEMORIAL BUILDING, Jacksonville, Florida. Architects: *William Morgan Architects—associate-in-charge: Thomas McCrary*. Engineers: *William Le Messurier* (structural theory); *H.W. Keister & Associates* (applied structural); *Haley Keister & Associates* (foundation and soils); *Roy Turknett Engineers* (mechanical/electrical). Consultants: *William Lam Associates* (lighting); *Ed Heist, Jr.* (interiors); *Hilton Meadows* (landscape); *Meyer/Lompfrey & Associates* (graphics). General contractor: *Orr Construction Company*.

Acoustic devices enhance the sound of music in a surround hall

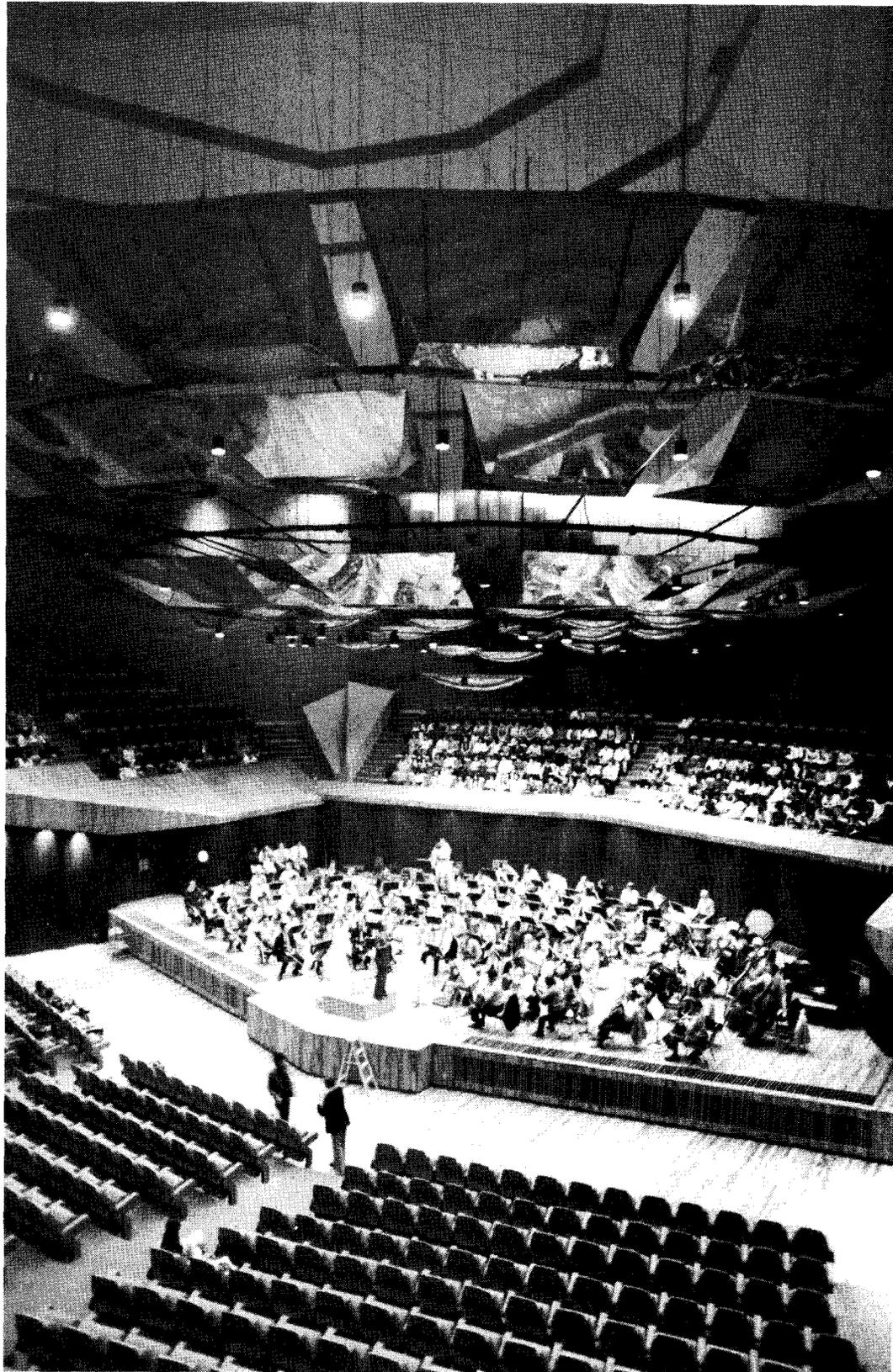
Surround-type concert halls—ones in which the audience encircles the orchestra in various degrees—are not unusual in Europe, but Nezahualcoyotl Hall at the National Autonomous University in Mexico City is the first in North America. Though the 2,500-seat hall had been dedicated earlier, the architects, who are associated with the University, and its acoustician, Christopher Jaffe of the U.S., eagerly awaited the hall's most severe test yet of its sound: a performance of Beethoven's Ninth Symphony on September 9 by the Cleveland Orchestra, four vocal soloists, and a national chorus drawn from three Mexican universities.

After the morning rehearsal that day, attended by several U.S. music critics and other members of the press, Cleveland conductor Lorin Maazel volunteered that Nezahualcoyotl (named after a legendary Aztec poet-musician) is a "great hall that permits individuality of instrumental timbre . . . and that has an embracing warmth. The hall has a marvelous dynamic range," he said, "You can get perfect pianissimo, and it can take full fortissimo." And later, in their newspaper columns, the critics praised the hall for its acoustical clarity, brightness of tone, and presence—as well as for its warm, inviting concert atmosphere.

The completion of the Mexico City hall, the imminent opening of a new home for the Denver Symphony, and the planning for new concert halls for San Francisco and Toronto—all surround halls—suggests that perhaps a mini-trend may be underway. Abetting this, no doubt, are the social contribution and financial success of summer concerts indoors and out, where informality has been encouraged, and where the audience has been brought into more intimate contact with the orchestra.

In Nezahualcoyotl Hall and at Denver, for which he also is the acoustics consultant, Jaffe has taken a more adventurous approach to the acoustics design than his counterparts in Europe. Jaffe's techniques, however, are not untried—he has developed and refined them in both outdoor music pavilions and indoor auditoriums—and a number of them are based on recent findings in the technical literature.

Surround halls, as noted, are not new to Europe, and perhaps the most acclaimed is the Concertgebouw in Amsterdam, which opened in 1888. In form, the University of Mexico hall most nearly resembles the Concertgebouw, or Rotterdam's De Doelen of more recent vintage, both more formal versions of the "surround" hall. There are major differences

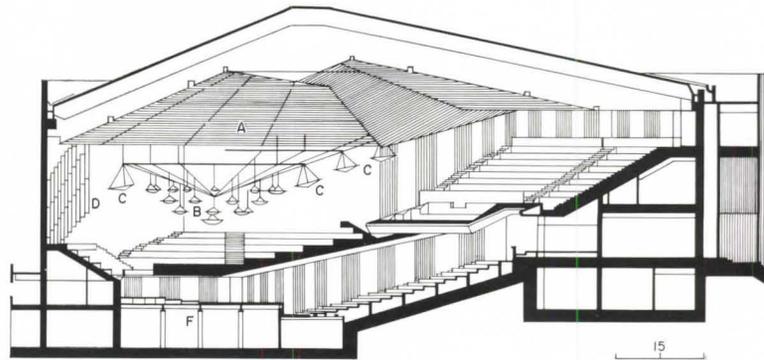
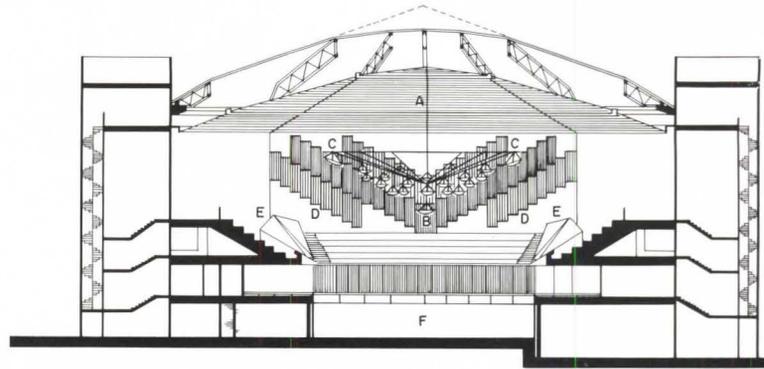


The \$3.3-million concert hall at the National Autonomous University of Mexico is the first building in a huge cultural center planned for the 122,000-student University that will include four additional facilities as well as two libraries and a museum.

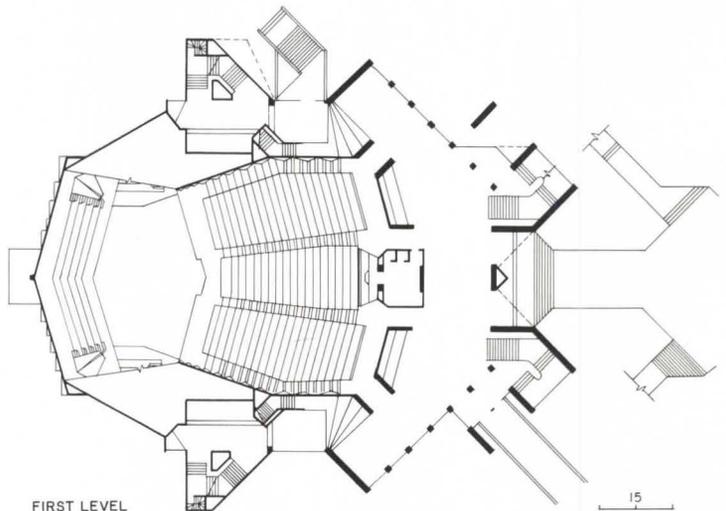
Principal acoustic devices of the hall include a canopy of "watch-glass" and prismatic diffusers, an acoustic "moat" to assist low-frequency reverberation, reflecting terrace fronts, dif-fusing boundary surfaces such as the

staggered volumes (looking like huge, square organ pipes) on the front wall, and the sarcophogus-like volumes on either side of the chorus seats to prevent echoes from corners.

The architects—all associated with the University—included: Orso Nuñez and Arcadio Artis, project architects; Manuel Medina and Arturo Treviño, collaborating architects. The project was supervised by engineer Francisco de Pablo, UNAM director general of projects.



- A: "hard cap" for diffusing low-frequency sound
- B: "watch-glass" diffusers for high- and mid-frequency reflections
- C: prismatic reflectors for early delayed reflections
- D: articulated, diffusing surface
- E: corner diffusing elements
- F: acoustic moat



between them, however. Concertgebouw is a wide rectangle, De Doelen is also a rectangle, while the Mexican hall has mezzanine terraces that come in close to the orchestra, and wide terraces at the rear. More significant, though, are the acoustical devices Jaffe has provided to improve listening conditions for the audience and orchestra members.

One of the acoustical devices is a canopy of reflectors that hovers over the orchestra platform and the main floor. The other is a reverberant chamber, an invention of Jaffe's, which he calls an "acoustical moat," over

which the orchestra sits, and which extends under several rows of seats on the main floor.

The brown-tinted acrylic plastic reflectors are of two types: saucer-shaped units over the orchestra, called "watch-glass" diffusers by Jaffe; and prism-shaped units in three concentric rings around the saucers, dropping off to one ring over the "chorus" seats.

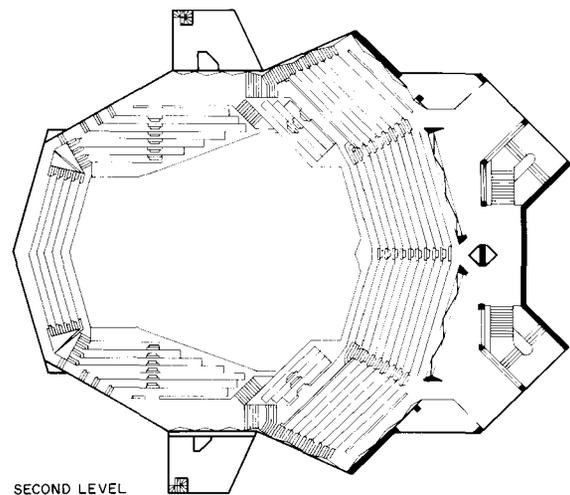
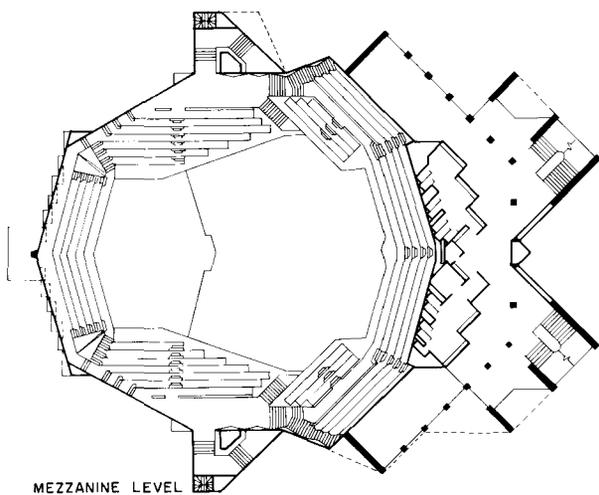
The watch-glass reflectors have three basic functions: 1) to provide a 360-degree onstage canopy that distributes the harmonics of each instrument throughout the auditorium so that the A-note of an oboe can be distin-

guished from the A-note of a violin; 2) to provide onstage hearing capabilities (for performers to hear themselves) and cross-stage hearing (for sections to hear each other); and 3) to provide balance between sections of the orchestra (the openings between saucers can be adjusted to release some of the energy of the brasses, so that the front rows of the audience will not be "wiped out" by the intensity of sound).

The purpose of the prismatic reflectors is to provide first reflections to the audience not more than 20 milliseconds after direct sound



Robert E. Fischer photos



reaches them in order to achieve clarity, intimacy and presence. In the Mexico City hall these early reflections arrive between 14 and 16 milliseconds.

Acousticians have identified a number of major characteristics that enhance or detract from the enjoyment of music in facilities for orchestras. Basically, a pleasurable listening experience is related to the balance and blend of the orchestra, and to the relationship between this initial energy and a series of reflected sound fields that reach the listener over a period of from a few milliseconds to

three seconds. Leo Beranek determined the importances of early reflected energy in achieving articulation, intimacy and presence; while Ted Schultz of Bolt, Beranek and Newman provided insight into the need for sufficient low-frequency energy in the late-arriving reflections to attain warmth and fullness of sound.

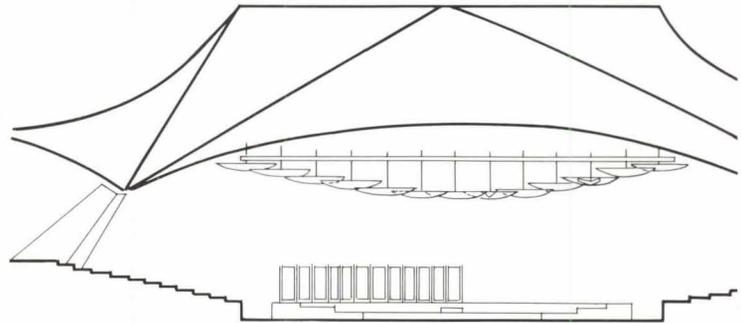
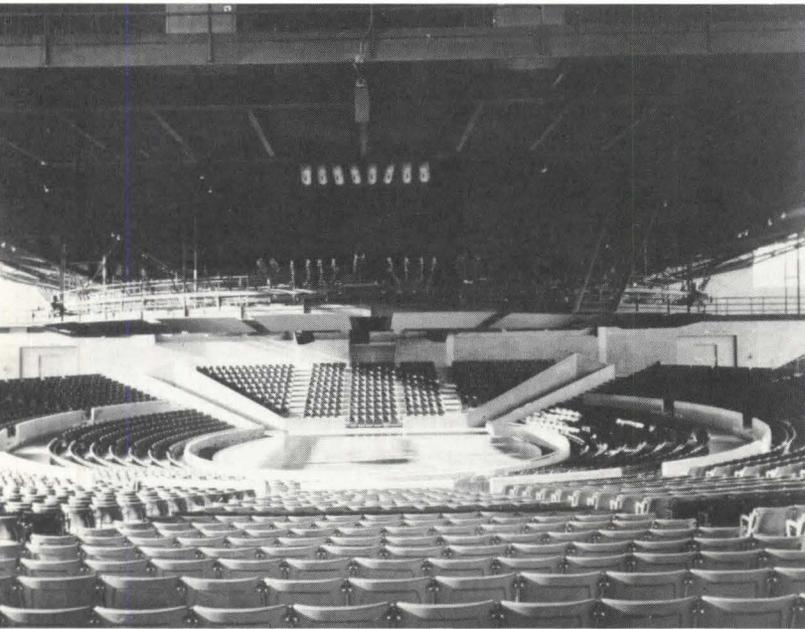
Getting early reflections to the audience was accomplished in the traditional shoebox hall by the closeness of the side walls and balcony faces that extend to the apron of the stage. And the reflected sound was diffused by

the ornamentation of the surfaces.

In the traditional halls, late-arriving low-frequency sound was achieved by the large volumes of these spaces, which had very high ceilings. Jaffe says that even more volume is desired in surround halls so that mid- and low-frequency energy has a longer time to decay. The reason is that, with the audience closer to the orchestra in surround halls than in rectangular halls, there is more total absorption, so a larger volume is needed to achieve the requisite reverberant sound. Both the Mexico City and Denver halls have about 450 cu ft per

At **Concord Pavilion**, designed by architect Frank Gehry for a site near San Francisco, acoustician Christopher Jaffe first used an acoustical "moat," whose purpose is to increase the low-frequency reverberant energy near the stage. The moat is an enclosed raised

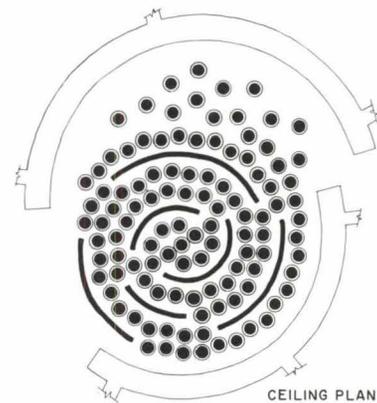
platform that serves as the stage as well as a reverberant chamber. Vibration of the stage platform induces air motion in the acoustic-moat chamber, and hence reverberant sound, which emerges from openings in the stage perimeter.



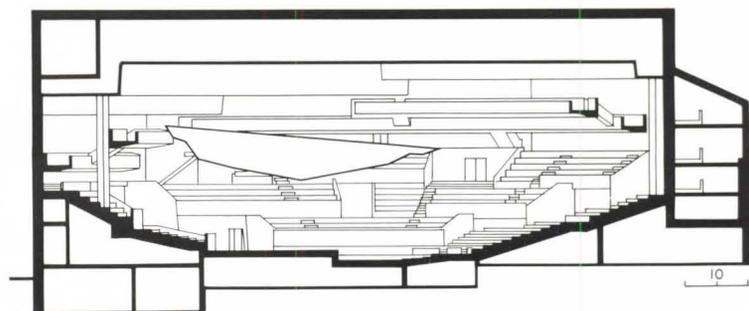
In the **Forum at Ontario Place in Toronto**, a 360-degree overhead canopy helps orchestra members hear themselves and orchestra sections better, reflects mid- and high-frequency energy into the audience, and helps

achieve balanced sound from the orchestra. The "watch-glass" diffusers shown here also were used in the university concert hall at Mexico City. Architects of the Forum were Craig, Zeidler and Strong.

The new home of the **Denver Symphony**, designed by architects Hardy, Holzman, Pfeiffer Associates, is a vertical surround hall. It will open in March. Nezahualcoyotl hall in Mexico is a shallow surround hall because the terraces are in a shallow sweep around the hall. In contrast, at Denver, the terraces occur at higher and higher elevations. The reflecting canopy is in the form of a spiral nebula, as shown in the drawing.



CEILING PLAN



person, whereas 300 cu ft per person has been sufficient in traditional halls.

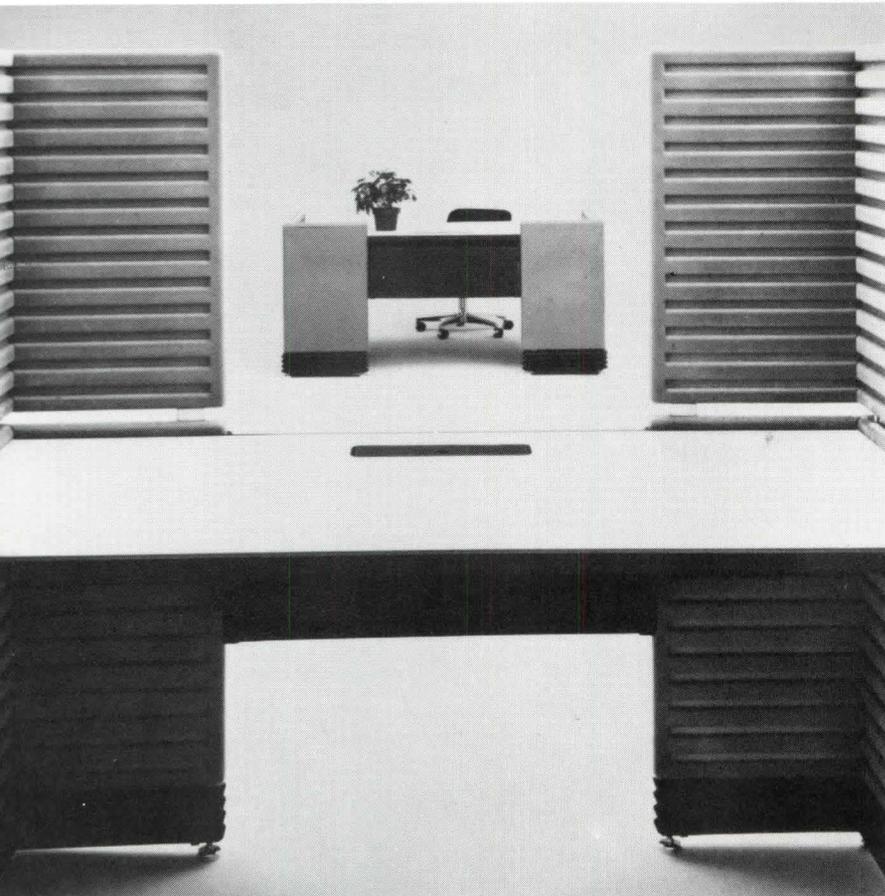
The acoustical moat, which in a way resembles the sound box of a musical instrument, was first employed by Jaffe for an outdoor pavilion at Concord, California, near San Francisco. Its purpose was to provide additional input of late-arriving low-frequency energy in a performing facility that had no stage house or side walls that would let it develop. There were two reasons for putting an acoustical moat in the hall at the University of Mexico. Most importantly, it was needed to

provide delayed low-frequency energy for the first dozen rows of the audience. (Many traditional rectangular halls are notably lacking in this respect. The problem is that the brass and tympani tend to mask the strings for listeners in the front of the hall.) An additional reason for the moat is that it can assist in developing the total reverberant field for the hall, adding as much as 2 db. For release of reverberant energy, the Mexico City "moat" has grille-type openings in the floor plane at the front and rear of the stage, in the front face of the stage, and under the first three rows of seats. Structure-

borne sound from the cellos, string basses, and sound from brass basses activate the acoustic-moat chamber.

Another acoustical design element that has an impact on the architectural design is the distribution of the audience in the terrace blocks to increase the reflective areas in the vicinity of the audience on the main floor and the orchestra, increasing the ratio of reflected to direct sound. This aids presence, keeping the hall from sounding "dry." It also minimizes the influence of discrete echos, which are difficult to avoid totally.

For more information, circle item numbers on Reader Service Inquiry Card, pages 189-190

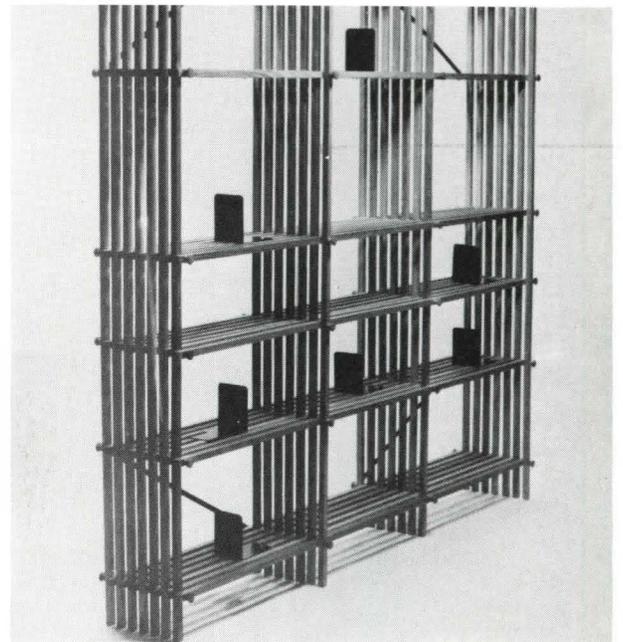


Knocked-down shelving offered in natural oak

Each wood unit of this system (five basic parts) folds flat for moving and storage, and units can be assembled quickly by attachment of steel rods capped on both ends with solid wood knobs. In oiled natural oak with beveled edges and

ends, units come in three-bay, six- or four-shelf heights, and two-bay six- or four-shelf heights, in two depths. An integrated, adjustable bookstop is optional. ■ R. Wilkes & Co., Grand Haven, Mich.

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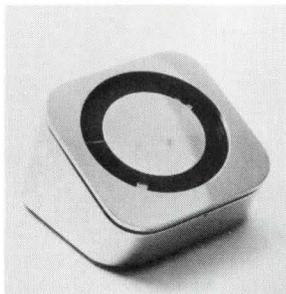


Workstations designed by George Nelson

Designed by George Nelson & Company for the Aid Association for Lutherans Headquarters (architects: John Carl Warnecke Associates), this open office system consists of L-shaped desk units that can be stacked more than two high, while supporting various work and storage components. The basic

L-shape bases measure 30 in. high and come in 30- or 18-in. depths. They stand on base "pontoons" of high-impact plastic. The exterior of the units is steel finished in a high gloss, while the interior is molded plastic. ■ Storwal International Inc., Toronto, Ont., Canada.

circle 300 on inquiry card



Covered face clock is battery-operated

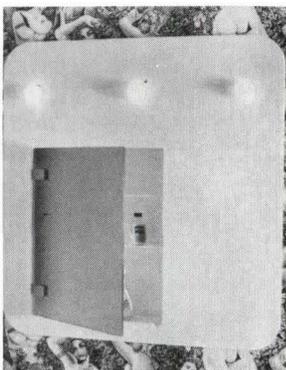
Part of the "Radius One" collection by William Sklaroff, this desk clock measures 4½ by 6 by 4 in. high, with 1-in. radius corners. Mirror-finished, the clock shown (model 3946) has a covered face with the numeral 12; hands are visible through a concentric ring. The base is covered with a neoprene pad. ■ Smith Metal Arts Co., Inc., Buffalo, N.Y.

circle 302 on inquiry card

Plexiglas recessed medicine cabinet with lighting

This contemporary unit measures 32 in. square with a depth of 4½ in. It is also available in custom sizes. Using three 60-watt bulbs, the unit may also be ordered without light in 13 colors with either a plate glass or Plexiglas mirror door. An electrical outlet can be added. ■ Yolanda Quitman, Hewlett, N.Y.

circle 301 on inquiry card



Energy-conserving window shade in several fabrics

The MECHO SHADE for contract-commercial, institutional and residential application is designed for use with solar shading materials, fabrics or audio-visual blackout materials. The shade is said to be easily installed, is manually operated

and features a removable roller for interchanging fabrics. It is shown installed at the Federal Reserve Bank of Philadelphia. ■ Joel Berman Associates, Inc., New York City.

circle 304 on inquiry card
more products on page 137

Our supporting role saved \$14,400



M&M Supermarket, Garden City, Georgia

Architect: Thomas E. Stanley and Associates
Engineer: William H. Saussy, Jr., P.E.
Savannah, Georgia

It pays to shop around

By shopping around, M&M Supermarket not only saved \$14,400 on the roof system for their new 48,000 square foot store, they ended up with more features than they had originally bargained for.

After considering all of the alternatives—structural steel, precast concrete and heavy timber—Trus Joist's, TJI 35 plywood web I-Beams and TJ 60 steel web trusses were specified by the structural engineer, William H. Saussy, Jr.

This decision saved \$14,400 at the cash register, and enabled the architect, Thomas E. Stanley and Associates to deliver even greater building performance through the addition of a full sprinkler system.

Construction efficiency is another

Trus Joist benefit. Because of the relative lightweight of the TJI 35 and TJ 60, no heavy cranes or specialized equipment were required. And even with the multi-plane roof, the Trus Joist system went up fast and efficiently,

without the need for additional trades.

Trus Joist permits freedom of design. Available in eight series, each covering a wide range of loads and spans. The open web can be specified in parallel, curved, angled, tapered, pitched and scissored profiles. With 150 field technical personnel to assist you in your area, call or write Trus Joist for a money-saving answer for your next project.



TRUS JOIST CORPORATION
P.O. Box 60 • Boise, Idaho 83707 • 208-375-4450

For more information, circle item numbers on Reader Service Inquiry Card, pages 189-190

MODIFIED H-PILE / The company intends to modify its wide flange structural steel shape and H-pile product lines to recognize the new dimensional and weight standards recently adopted by the American Society for Testing and Materials (ASTM). The new dimension and weight standards are set forth in ASTM's 46 standard Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use, which replaces the present ANSI/ASTM A6-76a Specification, Tables A1.1 and A1.4. To assist with transition to the new standards, the company is publishing a booklet which gives complete details on the wide flange and H-pile shapes it will be producing and a comparison between its old and new series of wide flange shapes. ■ U.S. Steel, Pittsburgh, Pa.

circle 400 on inquiry card

FLOORING ACCESSORIES / An eight-page, full color catalog features vinyl and rubber cove base, vinyl and rubber stair treads, vinyl and rubber stair and carpet nosing, edge guards and reducer strips, as well as rubber corner bumper guards, plus adhesives. Sizes and colors are given for each product group. ■ Johnson Rubber Co., Flooring Accessories Div., Middlefield, Ohio.

circle 401 on inquiry card

HOSPITAL EQUIPMENT / A 1978 hospital and laboratory equipment brochure illustrates the company's complete line of refrigerators and freezers for installation in medical and lab facilities. Units for blood storage, as well as biological and pharmaceutical use, are featured in freestanding, under-counter, and wall-mounted models. Morgue and autopsy equipment are shown. All dimensions are both metric and English. ■ The Jewett Refrigerator Co., Inc., Buffalo, N.Y.

circle 402 on inquiry card

LETTER CATALOG / An eight-page condensed catalog describing gold and silver face letters is now available. The letters are precision cut from mirror finish metal, gold or silver, permanently bonded to 1/4-in. hardboard with painted edges. Designed for interior use only, the letters are available in 20 standard letter styles in sizes from 4 through 24 in. Complete alphabets and numerals are available. Custom letter styles, logos and designs are available on special order. ■ West-On-Letters, Inc., Los Angeles, Calif.

circle 403 on inquiry card

RESTROOM COMPARTMENTS / A four-page color brochure describes the company's line of laminated plastic restroom compartments, giving details on color, construction and hardware. High-pressure laminated plastic conforming to NEMA standards covers a core of three-ply, 42/45 lb density particle board. All exposed hardware is polished chrome-plated heavy cast non-ferrous metal. Ceiling and floor-mounted units are available. ■ Ampco Products, Inc., Hialeah, Fla.

circle 404 on inquiry card

POST-TENSIONING / A manufacturer of prestressing materials has issued a technical manual detailing information on its four systems for post-tensioning. These systems cover bars, multistrand, monostrand, and "StressBond" bars, a patented rock anchor that offers the choice of grout or resin as the anchoring medium. A chart is included showing the choice of post-tensioning systems for a range of construction applications. Engineering data on each system follows in detail. Post-tensioning applications for nuclear containments and concrete tanks are also illustrated. ■ Stressteel Corp., Wilkes-Barre, Pa.

circle 405 on inquiry card

SOLAR-ASSISTED HEAT PUMP / A 26-page application guide provides technical information and detail drawings for the design and installation of solar-assisted heat pump equipment for residential heating and air conditioning. The *Suntrol* control package and the *Flexhermetic II* heat pump are among the system components described. The importance of obtaining solar collector output data that accurately reflects actual weather conditions is stressed. ■ Fedders Corp., Edison, N.J.

circle 406 on inquiry card

LAMINATED BUILDING PANELS / The attributes, applications, installation procedures and other pertinent details for three types of mineral fiber/cement panels are included in a 12-page product brochure. Panels are laminated to both sides of rigid, insulating core materials composed of wood fiber/asphaltic compound; expanded polystyrene bead; and expanded perlite. Each core material can be utilized with smooth or textured facing sheets, or combinations of them. ■ Johns-Manville, Building Systems Div., Denver, Colo.

circle 407 on inquiry card

ENTRANCE HARDWARE / Architectural hardware for this manufacturer's line of aluminum entrances is shown in a 24-page brochure. Included are push-pull handles, hinging hardware, panic exit devices, locking hardware, door closers and other items. ■ Kawneer Architectural Products, Niles, Mich.

circle 408 on inquiry card

TEMPORARY BUILDINGS / Using 4- by 12-, 4- by 8-, and 4- by 4-ft panels of fiberglass, galvanized steel, or aluminum, this pre-engineered building system can be used for a wide variety of construction site weather enclosures, painting and welding screens, noise and security barriers, etc. A color brochure explains how these temporary buildings, in widths up to 44-ft, can be quickly erected, then disassembled and re-used. ■ Kelly Klosure Systems, Inc., Fremont, Neb.

circle 409 on inquiry card

MATERIALS HANDLING EQUIPMENT / A 200-page conveyor technical manual describes a complete line of wheel-, roller-, belt-, live roller and overhead conveyors. Detailed drawings and photos illustrate each section; the application, selection and design of conveyor systems is described. ■ Litton Unit Handling Systems, Florence, Ky.

circle 410 on inquiry card

FAUCETS / Over 20 product photos are included in a six-page brochure on residential faucets for kitchen, bath, and pantry. Accessories are also shown, as well as several water conservation products. ■ The Chicago Faucet Co., Des Plaines, Ill.

circle 411 on inquiry card

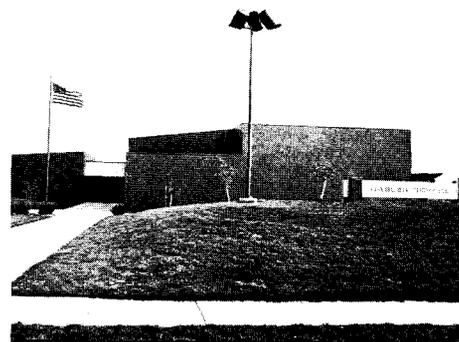
METAL BUILDING SYSTEMS / The economic, maintenance and durability advantages of the *Stran* metal building systems are detailed in a 12-page illustrated brochure. Photographs show the various architectural options available and in use internationally. Structures include manufacturing plants, offices and showrooms, theaters and recreational facilities. ■ National Steel Products Co., Houston Texas.

circle 412 on inquiry card

TEMPERATURE SETBACK THERMOSTATS / Eight models of *Fuel Saver* setback thermostats are described in a four-page folder. Typical applications and possible fuel economies are outlined for residential, multifamily and commercial situations. ■ Ammark Corp., Fair Lawn, N.J.

circle 413 on inquiry card

AZTEC



There are 72 2'x4' 750 watt 277V Aztec low temperature electric radiant heating panels providing perimeter heat in the Gables Elementary School in Columbus, Ohio, just one of 40 schools in Ohio in which Aztec radiant panels now have been installed. The ceiling heaters in Gables Elementary were silk-screened to provide an architectural blend with the Conwed Fissura acoustical ceiling tiles.

Sounik-Eller-Martin
Architects, Columbus, Ohio

Van Straten & Edwards,
Consulting Engineers, Columbus, Ohio

Kevin McGovern & Associates, Inc.
250 E. Town Street
Columbus, Ohio 43215 614-224-0969
Aztec Engineering Representative

Aztec panels have a patented crystalline surface. A superior graphite element assures uniform heat across the panel. No moving parts. No maintenance. 10 year limited warranty.

For more information on Aztec electric heating panels or for the Aztec engineering representative nearest you, call or write to:

Aztech International Ltd.
3434 Girard N.E., Albuquerque, N.M. 87107
505-345-5631
TOLL FREE 800-545-8306

For more data, circle 55 on inquiry card

VICRTIQUE[®]... the breakthrough
soft look,
soft touch,
soft sound,
vinyl wallcovering

Vicrtique by Vicrtex[®] is a unique contribution to residential and contract interiors. Backed with non-woven fabric, it is the epitome of "softness" in exquisite deep texture, superb patterns and magnificent colors. Vicrtique is superior in serviceability...durability... thermal—acoustical and tear-resistant properties; yet it is a remarkably light 15 oz. per square yard. Write for a Presentation Folder.

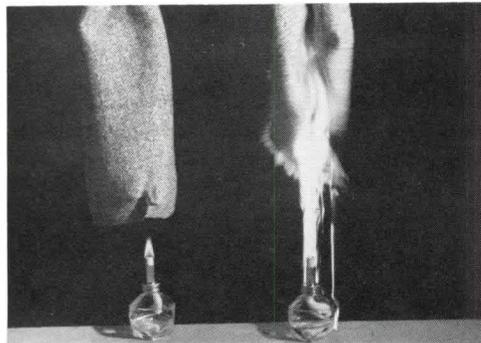
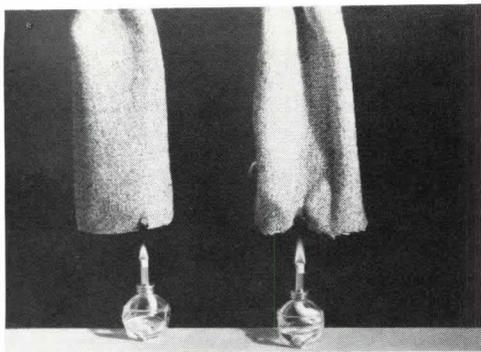
Wall Sculptors to the Industry

L. E. CARPENTER and Company  A Dayco Company
170 North Main Street
Wharton, New Jersey 07885
(201) 366-2020/NYC (212) 355-3080



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HOWELLS, INC., Salt Lake City/PAUL RASMUSSEN, INC., Honolulu

For more data, circle 56 on inquiry card



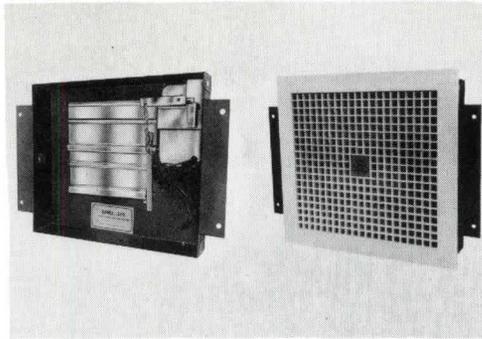
FIRE-RETARDANT FABRICS / Upholstered furniture, free standing panels and wall coverings are some uses of "Profolon," an olefin polypropylene fabric, which has been tested against the requirements of the Boston Fire Prevention Code; the new fabric showed 0.0 seconds of afterflame, 0.0 seconds of burning of drippings, and 0.0 seconds of afterglow in both width and length. (Photo: "Profolon" treated fabric at left.) In addition to its fire-retardant characteristics the new fabrics are non-absorbent, stain-and chemical-resistant, mildew-proof, light-fast and highly resistant to abrasion. The "Profolon" process imparts a matte finish to the fabric, and provides a soft, almost wool-like hand. Various weaves and qualities will be offered in a range of colors. ■ Specialty Jute Products & Development, Inc., New York City.

circle 305 on inquiry card



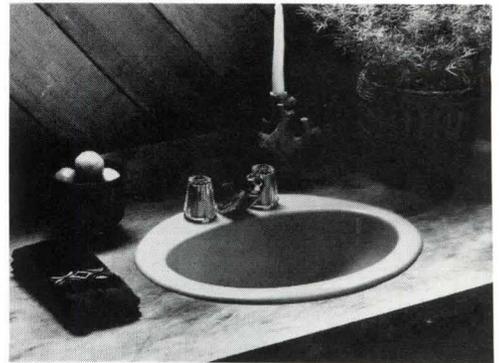
LATERAL FILES, TABLES / Lateral files, round tables and taller panels for executive privacy have been added to the company's "Series 9000" systems furniture. The laterals (shown) are offered in two-, three- and four-drawer heights; and in 30-, 36- and 42-in. widths. Both letter and legal-size drawers have integrated pulls, and are 12 in. high, with a choice of interior options. New 75-in. high end panels and *Spanner Panels* have been added to the 65- and 53-in. heights. The round tables are 45 or 54 in. in diameter, with self-edge plastic laminate tops in wood grains or solid colors. Pedestal bases, in polished or "Ember" chrome, match the base design of "Series 9000" panels and have the same type of adjustable glide to compensate for uneven floors. ■ Steelcase Inc., Grand Rapids, Mich.

circle 306 on inquiry card



AIRFLOW CONTROLLER / "Savex" individual room motorize damper to control airflow is designed to open and exhaust air only when a given room is occupied, thus saving valuable conditioned air. The "Savex" comes complete with grille and damper. ■ Penn Ventilator Co. Inc., Philadelphia, Pa.

circle 307 on inquiry card



LAMINATE / A high-pressure plastic laminate, "Stonehenge" is recommended for kitchen and bath applications. ■ Exxon Chemical Co. U.S.A., Odenton, Md.

*circle 308 on inquiry card
more products on page 139*



THIS IS AN EXIT DEVICE? THIS IS AN EXIT DEVICE!

Why have exit devices always been ugly, expensive, bulky, pipe-rack monstrosities? Darned if we know. We (Adams Rite Manufacturing Co.) believe that simplicity, not complexity, is the ultimate sophistication. We designed our exit device to complement the clean lines of narrow stile glass doors (and fit easily and securely into the same standard mortise cut-out as our M.S.® deadlock). We also designed it to release at a mere 8 lb. touch anywhere on the bar, which moves only one inch. This one inch is in the exit direction too, not the conventional but unnatural downward arc. Load the door up to the code-required 250 lbs, and release pressure still stays well under

50 bs. anywhere on the bar. Yes, it's an exit device. It's also an exciting device. Some architects have indicated they're specifying it even where exit devices are not required by law. It's simply the neatest way to open a door they've seen. Who are we to argue? For details of the 8400 mortise device (shown) and its twin, the 8500 concealed vertical rod for paired doors, write:

ADAMS RITE 
MANUFACTURING CO. CITY OF INDUSTRY
CALIFORNIA 91749
TEL: (213) 699-0511

For more data, circle 57 on inquiry card



Barnplank™

PANELING

Weathered Brown Pine Veneered Plywood 5/16"



Georgia-Pacific introduces wall paneling with the rustic, mellow look of weatherworn barn board. New Barnplank paneling is a 5/16"–4' x 8' panel with a face veneer of real Ponderosa pine. All natural markings in the veneer, such as knots, splits and worm holes, have been retained.

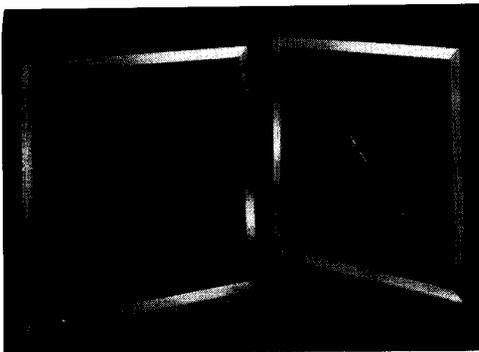
Irregular-width grooves, approximately 12" apart, also contribute to the look of authentic barn boards. What's more, Barnplank paneling comes in three subtle but distinct shades of weathered brown, grey and white to give you design flexibility.

And it's readily available across the country. Write today for a free brochure and samples of all three shades of Barnplank paneling.

Georgia-Pacific

900 S.W. Fifth Avenue
Portland, Oregon 97204





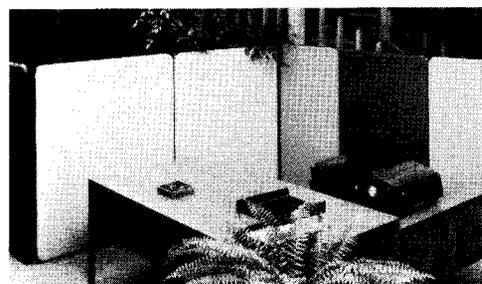
MODIFIED ACRYLIC / A modified acrylic resin said to offer many times the impact strength of conventional acrylics, "Lucite" T 1000 retains the advantages of standard grade "Lucite" acrylic resin of optical clarity, formability, chemical resistance to many solvents, and good weatherability, including resistance to degradation from the ultra-violet rays of the sun. The acrylic resin is suitable for applications such as signs and displays; lighting fixtures; and safety glazing for buildings. ■ Du Pont Co., Wilmington, Del.

circle 309 on inquiry card



VINYL WALLCOVERING / Pictured is "Barn Door," a textured fabric-supported vinyl wallcovering for commercial applications. The design is on a bias, resulting in a chevron pattern; "Barn Door" is available in 10 color choices. The wallcovering meets Federal Specifications for heavy-duty vinyls, and is recommended for such heavy-traffic areas as hallways and lobbies. ■ Stauffer Chemical Co., South Plainfield, N.J.

circle 310 on inquiry card



ACOUSTICAL SCREENS / The acoustical control properties of fiberglass are used two ways in the "Prima I" and "Prima II" screens for office landscape enclosures. *Fiberglas* forms the core and septum of the panels, and the outer surfaces are *Glastrate*, layers of *Fiberglas* compressed to 1/8-in. thickness, and covered with either modacrylic fabric in 19 colors or COM. A hardwood frame surrounds the free standing panel, which is supported by a round disk, low-profile foot that distributes the screen's weight over a broad area for improved stability. Panels have an NRC of 0.85, and are available in a number of widths, in heights of 58- and 70-in. ■ Prima Products Inc., San Leandro, Calif.

circle 311 on inquiry card

STEREOMETRIC CAMERA / The K-460 universal stereometric camera makes possible, through close-range photogrammetry, a convenient means of accurately measuring the area, shapes, complicated curves and masses of building exteriors, rooms, columns, mouldings, friezes, banisters, and other architectural details. The basic K-460 is a dual camera system equipped with high resolution, wide-angle six-element lenses. Focusing distance is variable from 14 in. (360mm) to infinity, with shutter speeds to accommodate high-speed photography. System utilizes single sheet or roll film cassettes. ■ Kelsh Instrument Div., Danko Arlington, Inc., Baltimore, Md.

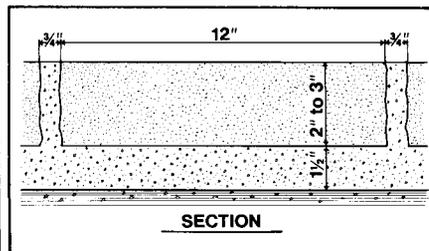
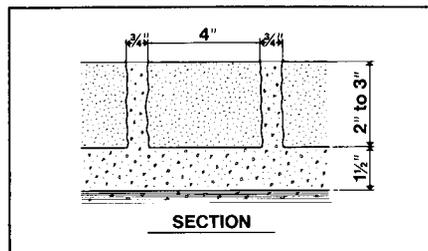
circle 312 on inquiry card

ANTI-PILFERAGE SYSTEM / An electronic anti-pilferage system requires no arches, pedestals or any other visible detection monitors at the exit to the controlled area. In the "Satellite" system, detection monitors are built into ceilings and floors and cannot be seen. The opening to be protected is divided into invisible detection zones, each of which has its own alarm light, pinpointing the exact location of the violation. The alarm light is activated when someone passes through the zone carrying merchandise from which a special inventory or "wafer" has not been removed. ■ KNOGO Corp., Hicksville, N.Y.

*circle 313 on inquiry card
more products on page 141*

Granite.

Beautiful for heavy traffic areas.



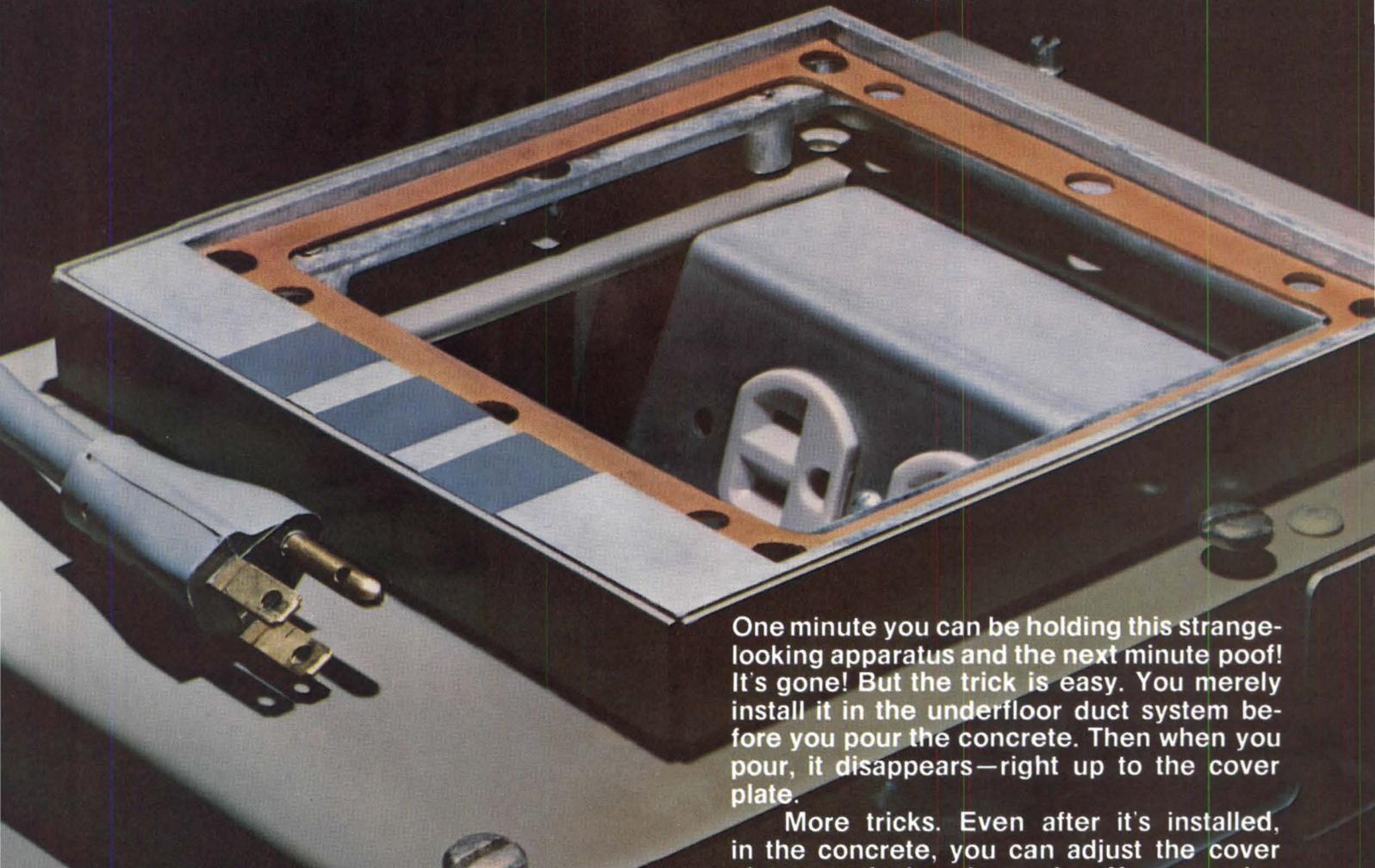
Cold Spring granite is a natural for landscape applications. Its warm colors and natural textures blend beautifully with the environment. And at the same time, granite provides the designer with the flexibility he needs to create areas of unusual and lasting beauty.

At Cold Spring we now have a wide variety of Module Pavers and Durax Blocks available. For more information, plus a packet of full color literature illustrating our products in use, call toll free **800-328-7038**. In Minnesota, call (612) 685-3621. Or write to the address below.



Cold Spring Granite Company, Dept. AR-1 202 South 3rd Avenue, Cold Spring, MN 56320
For more data, circle 59 on inquiry card

Introducing. The service fitting that disappears like magic.



One minute you can be holding this strange-looking apparatus and the next minute poof! It's gone! But the trick is easy. You merely install it in the underfloor duct system before you pour the concrete. Then when you pour, it disappears—right up to the cover plate.

More tricks. Even after it's installed, in the concrete, you can adjust the cover plate—vertical and angular. You can also adjust the carpet trim plate (it's double-flanged, die-cast aluminum) for any carpet thickness. And during installation, you can even adjust the legs to level it.

The new 124 Dual Flush service fitting is UL listed, can accommodate a 15 or 20 amp duplex receptacle, and has three access openings for combination telephone and electrical service. Find out more about "the vanishing service fitting." Ask your Walkerman to tell you all about the 124.



**WALKER PARKERSBURG
TEXTRON**

Walker Parkersburg Division of Textron Inc.
An Equal Opportunity Employer, M/F

There Are 3 ways to deal with advertising mail:

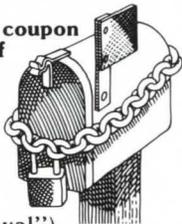


1. You can just throw it out, the good with the bad, without reading it.

But when you do, you could be missing out on some pleasant surprises... like discount coupons, money-saving subscription offers, sweepstakes offers, or valuable free gifts. And chances are that most of your advertising comes directly from manufacturers, publishers, or retailers you've long trusted, who offer you top-brand products, many times with free-trial offers and money-back guarantees that you don't often get in stores.

2. Or you can mail the coupon below and get taken off many mailing lists.

You can stop most advertising mail from ever reaching your mailbox simply by mailing the coupon below (check the box marked "Name-Removal").



The Direct Mail Marketing Association, which represents 1700 companies who advertise and sell by mail, has set up a Mail Preference Service for your convenience. Send in the coupon, and we'll promptly mail you a simple form. When it's completed and returned, the companies participating in this program will remove your name from their mailing lists. Within 90 days, you'll notice what will become a substantial reduction in the amount of advertising mail in your mailbox. There's no way we can stop all advertising mail from reaching you—but we will do our best. Participating companies are glad to extend this courtesy.



3. Or you may decide for yourself which mail to read, which offers to accept.

Shopping by mail is like being in a big department store with many items on display. Some you pass by quickly, some look more interesting, so you stop to look and perhaps to buy—but the choice is always yours. You may even want to receive more mail about certain hobbies or interests of yours. The Mail Preference Service can help you get more mail in areas from cooking and gardening to books, travel, sports, and many others. Simply check the box marked "Add-On" below, and soon, you can begin taking even greater advantage of the extra opportunities you find only in mail advertising.

Direct Mail/Marketing Association
6 East 43rd St. N.Y., N.Y. 10017



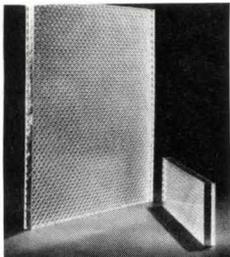
- I want to receive *more* mail on my favorite interests or hobbies. Please send me a *Add-On Form*. AR
- I want to receive *less* advertising mail. Please send me a *Name-Removal Form*.

Name _____

Address _____

City _____ State _____ Zip _____

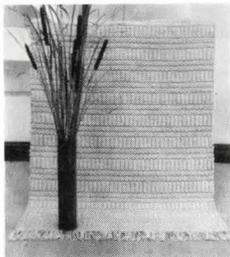
INDESTRUCTIBLE LENS / "Vandalens" has an impact strength in excess of 250 ft lbs. It protects a lighting fixture with a laminate of 1/4-in. clear polycarbonate (facing outward) and 1/8-in. clear prismatic acrylic lens (facing inward) for light refraction and UV absorption. ■ J. W. Carroll & Sons, Div. of U.S. Industries, Carson, Calif.



U.S. Industries, Carson, Calif.

circle 314 on inquiry card

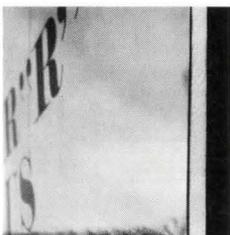
WOOL RUGS / Woven wool rugs from mills in Ireland are made of natural wools in combination with bleached or dyed-to-match yarns, woven on a flax warp in flat weaves, popcorn stitch, and other stripe effects based on early Gaelic patterns. All have the effect of a hand-woven piece. Sizes up to 10 ft in width and 13 ft long, can be joined to create larger sizes. Delivery on custom orders is approximately eight weeks from time of confirmed order. ■ Prouty Designs Inc., Chicago, Ill.



Prouty Designs Inc., Chicago, Ill.

circle 315 on inquiry card

INSULATION/SHEATHING / "SuperR Plus," an insulation and sheathing material, made of light-gauge aluminum and expanded styrene bead foam, is available in 4-by-8-ft sheets, with foam 1- or 1/4-in. thick. "SuperR Plus" is also available with foil on both sides. The aluminum is extended 1/2 in. along the 8-ft edge to provide seam sealing. The board can be nailed or stapled to studs, and can be cut with a utility knife or carpenter's tools. It has an R value of 6.67 and a K factor of 0.15 at 75F. ■ Korwall Corp., Elkart, Ind.



Korwall Corp., Elkart, Ind.

circle 316 on inquiry card

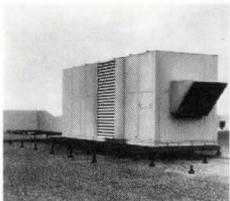
LOW-HEIGHT THRESHOLD / To satisfy new laws in many states, the company has introduced a line of 1/4-in. high thresholds for handicapped persons. These are said to be the first thresholds under 1/2 in. in height that can be used with door hinges, either offset or centerhung. They may also be used separately. These low thresholds are available in extruded aluminum or in architectural bronze. They are designed to couple into 6-, 7- or 8-in. widths or to be used by themselves in 3- or 4-in. widths. ■ Pemko Mfg. Co., Emeryville, Calif.



Pemko Mfg. Co., Emeryville, Calif.

circle 317 on inquiry card

HEAT RECOVERY UNITS / The "Packaged Recovery Unit" (PRU) is a self-contained exhaust/make-up air system that incorporates a static, counterflow heat recovery cell. The standard cell recycles up to 70 per cent of exhausted heat back to the building. Capacities range from 1400-4000 cfm. ■ Allied Air Products Co., Subsidiary of United Air Specialties, Inc., Cincinnati, Ohio.



Allied Air Products Co., Subsidiary of United Air Specialties, Inc., Cincinnati, Ohio.

circle 318 on inquiry card

DASH (DELTA AIRLINES SPECIAL HANDLING) GETS YOUR SMALL PACKAGE THERE IN A BIG HURRY.

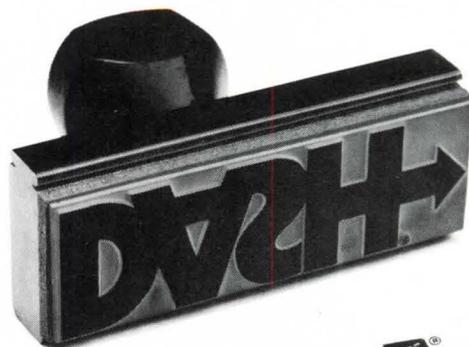
Delta handles more over-the-counter shipments of 50 lbs. or less than any other certificated airline. What's more, DASH serves 85 U.S. cities plus San Juan. Any package up to 90 inches, width + length + height, and up to 50 pounds is acceptable. DASH packages accepted at airport ticket counters up to 30 minutes before flight time, up to 60 minutes at cargo terminals. The charge for DASH shipments between any two of Delta's domestic cities is \$30. There is an extra charge for pick-up and delivery. For pick-up and delivery, call 800-638-7333, toll free. (In Baltimore, call 269-6393). Special DASH airbill provides speedy documentation. Special DASH bag makes identification easy. DASH shipments are prepaid.

You may pay for your shipment with cash or approved credit or an acceptable major credit card. For full details on rates and shipping information call your nearest Delta air cargo representative. **DELTA**

The airline run by professionals

For more data, circle 61 on inquiry card

DELTA IS READY WHEN YOU ARE.®



In the ENR 500 League, Shand, Morahan keeps raising its average.

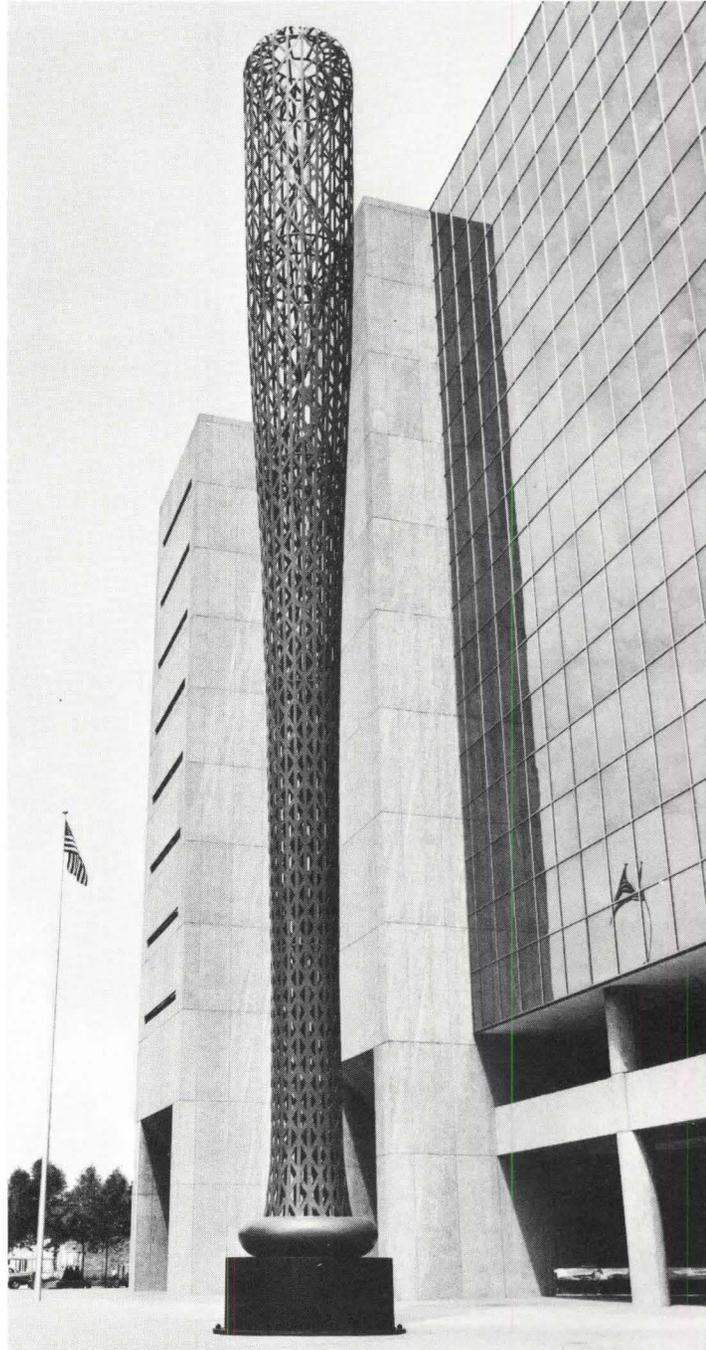
One year ago, we supplied design and engineering E&O coverage to 24% of the world's 57 largest design-constructors. This year, 35% of this group are our clients.

Of the remaining ENR top 500*, we've increased our share from 20% to 25% in the past year.

In short, the switch to Shand, Morahan & Company for E&O by big league design-constructors and design firms continues. And for good reasons: Flexible, custom designed coverage. Competitive rates. And the most prompt, courteous service available anywhere.

If your firm can benefit from a better E&O program, let us go to bat for you. Have your broker give us a call.

*Engineering News-Record; May 19, 1977



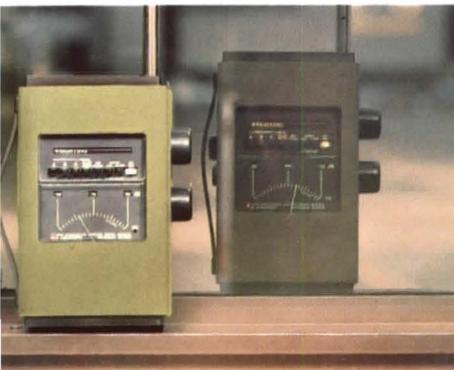
SM Shand, Morahan & Company, Inc.

For more data, circle 62 on inquiry card

Laminated architectural glass.



It keeps interiors measurably quieter.



Sound-level meter readings:
Interior 66 db, exterior 102 db.

We measured the noise levels at Philadelphia International Airport to prove a point.

Laminated acoustical glass with Saflex® polyvinyl butyral interlayer by Monsanto provides an excellent noise barrier over the entire sound spectrum. It damps the vibration of

sound from one glass face and thus reduces its transmission to the other. Better than either monolithic or air-spaced glass, which allow the sound to pass through the pane.

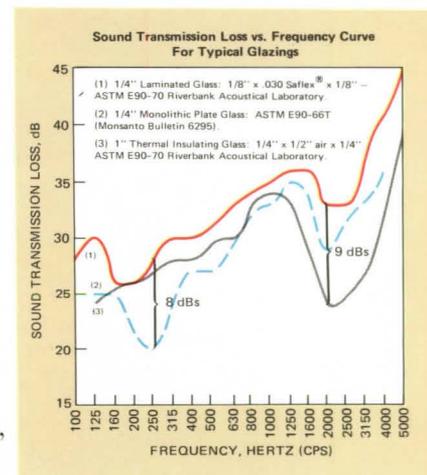
This is especially important since effective sound control must reduce sound levels across a wide range of frequencies: the high and low frequencies of jet aircraft, the middle frequen-

cies of speech and typewriters, and the low frequency of traffic.

When you need effective sound attenuation—for airports, hotels, offices, recording studios, industrial control rooms—laminated acoustical glass could be the answer.

Laminated glass is also ideal for security applications, light and heat control, energy conservation or a combination of these features.

For a list of leading laminated glass manufacturers, write: Monsanto Plastics & Resins Company, an operating unit of Monsanto Company, Dept. 804, 800 N. Lindbergh Blvd., St. Louis, Missouri 63166.



SAFLEX®

PLASTIC INTERLAYER BY

Monsanto

You can't afford to waste water. Not at these prices:

MONTHLY METERED COMMERCIAL RATES (Per 100,000 cubic feet or 748,000 gallons)*

Boston	\$482
Chicago	283
Dallas	315
Denver	241
Hartford	446
Kansas City	250
Los Angeles	247
Minneapolis	350
New York	525
Pittsburgh	546
Portland, Ore.	270
San Francisco	285
Seattle	213
Tampa	360
Winston	300
Washington, D.C.	300

*From January 1976 survey conducted by Business Statistics.

So you can't afford to install anything less than Sloan Flush Valves.

That's because a Sloan Flush Valve uses 12½% less water than a flush tank. And this difference increases with use because leaks in tanks go undetected to waste even more water. With today's water rates, it all adds up to a healthy saving on your water bill.

You also save on the energy needed to pump water within a building to upper floors and distant branches. The more water you save, the less energy you have to pay for.

Sloan Flush Valves save water another way, too. Because you can't hold a Sloan Flush Valve open, it meters out the same minimal amount of water needed to flush one fixture, then shuts off automatically.

Put an end to water waste that's costing you money. Find out how Sloan Flush Valves use 12½% less water. The facts are in a recent test report prepared by an independent laboratory. For your free copy, write us. We will send you the facts.

Sloan
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Anything else
is a waste
of money.



SLOAN VALVE COMPANY

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