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**RECORD**

Business Design Engineering  
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March 1985



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I congratulate ARCHITECTURAL RECORD as a publication and Charles Gandee individually on the outstanding writing and analysis in the article about Frank Gehry's Aerospace Museum in Los Angeles [RECORD, January 1985, pages 114-123]. It is rare to see an architect's work dealt with so honestly and with such balance in disclosing the context and historic placement of the work being reviewed. But, above and beyond all else, it is a wonderful piece of writing, a delight to read.

*Douglas Trees*  
D. F. Trees Associates Architects  
Hamilton, Massachusetts

With reference to Sid Frier's article concerning the new NCARB education standards for certification [Education, RECORD, September 1984, page 47 et seq.]:

The new NCARB education standard for certification is a mistaken waste of time and money. It is a typically misguided bureaucratic requirement, complete with all of its own forms, questionnaires, policies, categories, committees, et cetera, that is going to clog the process of the NCARB certification beyond imagination. As such, it directly threatens the future of the architectural profession.

In the short run, the implementation of this new requirement will have an immediate effect upon the profit picture of almost every architectural practice in the nation. Who will pay for the time required by young professionals to respond to this requirement? How many tens of hours will be spent writing letters and filling in forms? Are we going to fool ourselves into thinking that all of this work will be done on evenings and weekends? I believe that we should be more realistic and realize that, to a certain extent, we will bill our clients and raise our fees to account for this time. This practice, however limited, will be another contributing factor in the narrowing of the marketplace for architectural services.

In the long run, this new requirement will have a devastating impact upon the young, creative life-blood of the future architectural community. The NCARB wants us to believe that this requirement is not exclusionary, that it has a window or the "exceptional type-3," that each of us will still have the right to seek licensing on our own, state by state, without NCARB certification. Such an attitude is incredibly small-minded and reflects nothing of the true nature of the regulation. The truth is that this requirement will suck up gumption, creativity and enthusiasm like a black hole. It will hereby strangle the professional

development of hundreds of young architects. It will most seriously impact the most creative and inspired minds, and *the profession will suffer*.

The professional architectural registration exam, *alone*, is the appropriate vehicle for the evaluation of professional architectural competence. This is only logical. Testing is, by definition, the appropriate method of measuring competence. Bureaucratic regulations do not measure anything. This entire new set of requirements will produce *no quantifiable data whatsoever*. To attempt to measure competence on such a basis is, at best, ludicrous.

We must question the right of the NCARB to establish this requirement. Clearly, the responsibility for protection of the life, health, and welfare of the public lies with each individual state, while the role of the NCARB is to encourage standardization between the states. Yet this new, more stringent requirement appears to be an attempt by the NCARB to assume the role of public protector at a national level. This action epitomizes the growth of expensive redundant bureaucracy, and it must be stopped.

Architectural design is a creative process. If we care about design, we must be willing to protect our creative freedom at every opportunity. Clearly, a change in attitude is required. We ought to be clambering over each other for the honor of assisting the development of our most talented youthful designers, whether or not they desire NAAB-accredited degrees.

*Paul S. Brown*  
Framingham, Massachusetts

#### Corrections

In its report on Toronto's Roy Thomson Hall [RECORD, November 1984, pages 114-117], the magazine should have credited Kals Associates Limited, Crossey Langlois Firman Inc., Electrical Consultants for design of the building's electrical engineering.

In Product Reports 19, the item on Ergostar chairs [RECORD, December 1985, page 201] should have been credited to Spieth America, not Charrette Corp. Though Spieth America is officially a division of Charrette, it maintains a single and separate identity.

Paul Warchol should have received credit for the two photographs of the Purdue Frederick Headquarters, designed by Gatje Papachristou Smith/ASE Furno, that appeared on page 99 of RECORD's January 1985 issue.

March 4-29

Exhibition, *Architectural Photographic Collages by Jenny Okun*, sponsored by the Royal Institute of British Architects; at 66 Portland Place, London, U. K.

March 15 through April 19  
Retrospective exhibition of 35 years of the work of architect Abraham W. Geller; at National Institute for Architectural Education, 30 West 22nd St., New York City.

March 18-20  
"Solar Buildings," a conference on active, passive, and hybrid solar technologies, sponsored by the U. S. Department of Energy Office of Heat Technologies and 13 private industry associations; at Sheraton Washington Hotel, Washington, D. C. For information: MCC Associates, Inc., P. O. Box 7472, Silver Spring, Md. 20907 (301/589-8130).

March 19-23  
Four-day "Clinic on Selling Skills" for professionals, sponsored by the Coxe Group, Inc. The program will be repeated April 30-May 4 in Washington, D. C. For information: The Coxe Group, Inc., 2 Mellon Bank Center, Philadelphia, Pa. 19102 (215/561-2020).

March 22  
Seminar, "Teamwork=Increased Profits," sponsored by Professional Services Management Association; in Seattle. Program will be repeated on April 18 in Houston, on May 16 in Chicago, and on May 17 in St. Louis. For information: PSMA, 1213 Prince St., Alexandria, Va. 22314 (703/684-3993).

March 26-June 2  
Retrospective exhibition on the work of Canadian architect Arthur Erickson, organized by the Center for Inter-American Relations (an affiliate of the Americas Society), with special assistance from the Canadian Consulate General, New York; at the Center's gallery, 680 Park Ave., New York City.

March 27-29  
West Week, annual contract market and design conference; at Pacific Design Center, Los Angeles. For information: PDC Public Relations Office, 8687 Melrose Ave., Los Angeles, Calif. 90069 (213/657-0800).

April 10  
Annual conference, "A/E Promotion Strategies '85," sponsored by Lord Communications, Inc., *A/E Marketing Journal*, and the Coxe Group; at Chicago Westin Hotel, Chicago. For information: *A/E Marketing Journal*, Box 11816, Newington, Conn. 06111 (203/666-9487).

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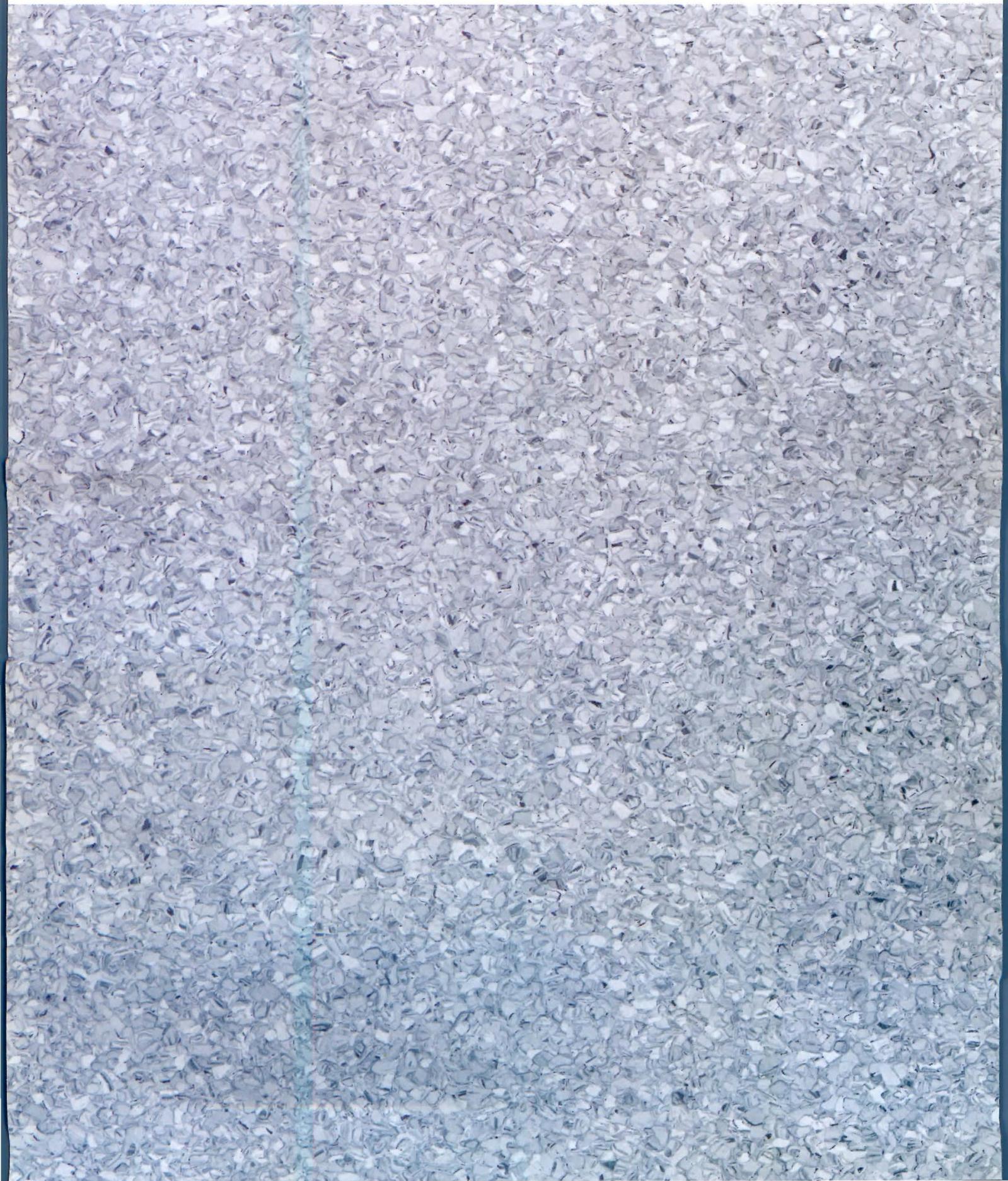
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Early each year is the time when the heads of all organizations (including the American Institute of Architects) outline the goals that they have established for the coming year. It is an ancient and honorable ritual of stating priorities, proposing solutions, and making promises. The thing that is different each year is the quality of performance against those goals.

In his inaugural speech in December, the AIA's new president, Bruce Patty, made a gracious bow to his predecessor, George Notter, for his performance in focusing attention on the critical relationship between architects and the public. Said Mr. Patty: "George, you knew that public perceptions of architecture and architects would affect our ability to practice our profession productively in an increasingly competitive world. . . . I think your lasting legacy will be the new public membership program, the Forum for Architecture [which] will be a continuing force uniting the public and our profession in an ongoing dialogue about the future of design." George does indeed get an A+ for his success in generating a dialogue across the country last year, and for generating (beginning with a first mailing in September) over 1,500 members so far for the Forum (which is well above the predicted growth line).

For his year in the presidency, Bruce Patty has set a broader goal—and performance against that goal will be harder to measure. But how nice it will be if we can give Bruce and his fellow architects an A+ for "focusing the attention of our profession and public on the *value* of architecture."

"Value Architecture," said Mr. Patty, "is a theme with many meanings. At its heart is the idea that architecture has enormous impact on the quality of life, that people value architecture, know the role it plays in their lives, and expect value *from* architecture. People do care what kind of buildings we build. They want quality in their environment, and they expect us to give it to them.

"It also tells us that as architects we must design architecture that is of the highest quality and worthy of being valued by our clients and communities. . . . I'm talking about design excellence [which] brings delight to all who come in contact with it. Design for people [which] recognizes human needs and desires . . . enhances the lives of those it touches . . . respects the past and preserves its historic and cultural heritage . . . brings new life to old structures . . . adds life to neighborhoods and economic value to property . . . pays careful attention to detail, scale, and context. Value Architecture is a project completed on time and within budget, [but also] a creative solution to design problems. Value Architecture is the best that our profession can provide to our clients and our public.

"This is what we want to communicate in 1985: the value of architecture flows from architects, who—in turn—must be honored." And there of course is the rub.

The concepts of Value Architecture are, of course, familiar and important concepts. And it is of course true that the value of architecture flows from architects. But the argument that architects must in turn be honored is the rub. Some architects are honored—because their work is consistently worth honoring. But many architects are not honored, not sought out by clients, not respected by the public because their work does not meet the standards that the new AIA president has set as a goal. I've argued on this page many times before that the "rules" of good design are clearly understood—that Honor Award juries, and magazine editors, and I dare say the general public have little trouble in deciding what is good and what is just ordinary, or boring, or just plain bad. If architects in general (for example, all the members of the AIA) want to be honored, then they must do work that is consistently worth honoring.

And *that* is a goal towards which all architects (most architects? more architects?) can surely reach. Work *worth* honoring. *W. W.*

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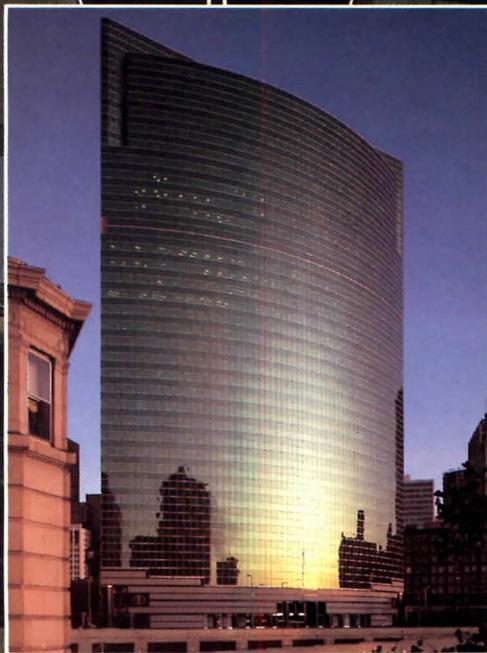
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## Construction under threatened rehab tax credits tops \$2-billion rate

The number of projects certified to use the 25 per cent Federal tax credit for historic-building rehabilitation in fiscal year 1984 was up by more than one quarter over the previous fiscal year, according to the U. S. Department of the Interior. The department's statistics reveal that 3,214 projects qualified for such incentives.

This brings the total investment in historic preservation since the 1976 Tax Reform Act to almost \$7 billion, covering, among other projects, some 54,649 housing units. Since 1976, more than 92 per cent of projects submitted for the tax credits have met the Secretary of the Interior's Standards for Rehabilitation that must be met to qualify. Most applicants indicated that they would not have undertaken rehab work without these incentives.

Of the various tax-reform plans being introduced in the 99th Congress, including the Treasury Department's plan unveiled in November, all would, in the interest of simplifying taxes, eliminate the tax credits along with many new-construction incentives. For more information, contact Christopher Sowick, National Park Service, Preservation Assistance Division (202/343-9592), or Beverly Reece, National Trust, Public Affairs Office (202/673-4130).

## A/E Systems '85 set

The sixth international conference on automation and reprographics in design firms, otherwise known as A/E Systems '85 and sponsored by the *A/E Systems Report*, is scheduled for the Anaheim Convention Center in Anaheim, Calif., on June 3rd through 7th. Continuing a tradition of rapidly growing attendance and displays, the conference is expected to attract some 250 manufacturers, professional organizations, and publications, which will occupy over 950 booths and exhibit the latest in production technology to an estimated 15,000 design professionals. Information sessions will include 80 seminars, 40 three-hour tutorials, and 14 day-long conferences. The sessions will be conducted by some 200 speakers, including conference founders George Borkovich, Michael Hough and Frank Stasiowski. The dates for the conference are timed for the convenience of architects traveling to the AIA convention in San Francisco, which begins on June 9th. For information, contact Conference Director, A/E Systems '85, P. O. Box 11318, Newington, Conn. 06111 (203/666-6097). Future dates include June 2 through 6, 1986 in St. Louis, and June 1 through 5, 1987 in Detroit.

## America's "Main Street" reflects national renewal activity

Washington, D. C.'s Pennsylvania Avenue is usually a site of national attention every four years. As it would have been seen on television screens across the country if cold weather hadn't canceled this year's inauguration parade, the avenue—as an indication of what's going on across the country—was well worth a look.

Started after the inauguration parade of 1961, during which the avenue's seediness was all too apparent, the Committee on Pennsylvania Avenue evolved into the Pennsylvania Avenue Development Corporation in 1972, and has achieved remarkable objectives in both the restoration of existing and the construction of new buildings to form an emerging, cohesive—if, in light of its pattern of growth, appropriately eclectic—whole.

Among the first new buildings to go up under the corporation's plans were two office buildings designed by Skidmore, Owings & Merrill and Frank Schlesinger respectively. These opened in 1981. A new hotel-office complex, which incorporates the restored National Theater, opened last spring. A Canadian chancery designed by Arthur Erickson is scheduled for groundbreaking later this year.

But the avenue's charm derives mainly from its old buildings that either have been or are going to be renovated. Topping the list is the Romanesque-style Old Post Office Building designed by Willoughby J. Edbrooke and once threatened with demolition. Three blocks down the avenue is the faintly Charles Addamsesque, twin-turreted building, once known as the Apex after a liquor store that went out with the building's renovation. It is today the center of Sears Roebuck's international trading operations.

Seven blocks up the avenue, on the corner of 14th Street, is the site of the most important current restoration project, the venerable Willard Hotel designed by Henry J. Hardenbergh. The home of three presidents at various times, it was shut down in 1968 and left vacant and deteriorating. When completed in 1986, renewal will include an annex of offices and stores.

Other old buildings are in various stages of renewal or restoration planning as well—the National Press Building, the Evening Star buildings, 1001 Pennsylvania Avenue, 717 D Street, Gallery Row, Pennsylvania Avenue Triangle. Most of the restoration projects are for office and retail space, but some will include apartments—essential if the avenue is to avoid being a daytime-only area.

The effect that such renewal projects have had across the nation can be gauged in part by projects currently receiving rehab tax credits (see story this page). McGraw-Hill's Sweet's Division estimates that between 1982 and 1983, renovation overtook new construction in terms of cost. "Renovation's lack of visibility hides its considerable strength," says Sweet's. "While new construction has alternately soared or plummeted, renovation has continued straight up. While some may argue with estimates that the renovation/rehabilitation market will climb well above \$100 billion for 1984, others will argue that even that figure grossly underestimates the volume of the 'hidden' market." But whatever the numbers one chooses to rely on, few will challenge a characterization of renovation and rehabilitation as showing vision and strength. *Peter Hoffmann, World News, Washington, D. C.*

## Preservation easements under fire

Easement-holding organizations report that the IRS continues to challenge the value of donations on unbuilt land and buildings.

The IRS scrutiny of easement donations is part of a larger national effort aimed at tax shelter abuses. At a recent meeting in Philadelphia, IRS appraisers stressed that the only acceptable method for establishing easement values is hard, fair-market data, either through comparable illustrations or through quantifiable reductions in income. The burden of proof lies with the taxpayer to provide hard data using acceptable valuation methods. The IRS contends that many easement donations may have little or no market value.

According to an IRS press release of December 10: "Deductions are limited to the fair-market value of the easement at the time of the contribution. If the donation of the

easement does not decrease the value of the property, the contribution deduction would be zero." The increased IRS attention to easement donations was mandated under new substantiation requirements included in the Tax Reform Act of 1984. Current and proposed regulations require a qualified appraisal to determine the value of donated property.

On an interim basis, the L'Enfant Trust has been acting as a national clearinghouse on easement donation information. They are looking particularly for information describing any "chilling effects" on potential donations caused by IRS audit and disallowance activities. Contact Margaret Dean, Executive Director, L'Enfant Trust, 1731 Twenty-First Street, N. W., Washington, D. C. 20009.

## Engineers target the government's design work and move to get more out of the Corps of Engineers

The American Consulting Engineers Council is attempting to get legislation passed this year that would require the Corps of Engineers to employ outside firms on more of its work—or, in the ACEC's words, "balance staff engineering services with those procured under contract." In addition, a council report on Federal procurement identifies the Navy as having the largest Department of Defense increase for facility-design contracts—or a total of \$140.9 million for 1985. While, over-all, DOD budgets were down some three per cent, the Navy's are up approximately 20 per cent. The report (Number 700/EA 85) covers a broad range of government concerns, and is available for \$3.00. Contact the ACEC at 1015 Fifteenth Street, N. W., Washington, D. C. 20005 (202/347-7474).

# “The key factor was flexibility.”

## Walkercell provides future-ready PLEC distribution for Pioneer Data Systems.

Pioneer Data Systems, Johnston, Iowa, handles all information processing for Pioneer Hy-Bred, the nation's largest producer of hybrid genetic seed. So a planned 60,000 sq. ft. addition to their facility had to be prepared for a future of changing technology and expanding functions.

A major part of that planning was the choice of a distribution system for power, lighting, electronics and communications (PLEC). According to Tom Hanigan, Pioneer Data Systems Facilities and Resources Manager: *“The key factor was flexibility. We have to be free to make modifications as time and technology progress. So that when changes occur — and they will — we can accommodate them with minimum pain.”*

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*labor unit factors are low,”* said Al Bassett, Electrical Contractor, Stroh Corp. *“And the less labor we have to do in the field, the more control I have on my costs.”*

The project's designers were introduced to Walkercell by Walker agent Dave Roemer of Midwest Equipment, Des Moines. According to Roger Otis, Electrical Engineer with the architectural firm, Brooks, Borg & Skiles: *“We were looking hard for a solution to the distribution needs. We looked at various kinds of systems — standard under-floor duct, undercarpet cable, other cellular products.*

*Walkercell met the criteria we felt were important.”*

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# Architect-designed "idea" houses draw crowds at home builders' show

Show houses included two modular units—a 2,300-sq-ft two-story plan designed by Richardson, Nagy, Martin of Newport Beach (1) and a 1,785-sq-ft prototype known as NEST '85 designed by the Berkus Group of Santa Barbara (2)—and a 2,200-sq-ft conventionally built house designed by Fisher-Friedman Associates of San Francisco (3).

This year's National Association of Home Builders convention, held at Houston's Astrodome and Astrodome complex in late January, drew over 50,000 attendees and over 900 product exhibitors, reflecting the upbeat mood of an industry embarking on what everyone expects to be its third successive boom year. Among the exhibits that attracted the largest crowds were six architect-designed houses—three that had been set up on the floor of the Astrodome and three a shuttle bus ride away. Four were idea houses intended to serve as product showcases and sources of design techniques builders could adapt to their own needs. And two were designed for U. S. Home, one of the nation's largest tract builders, to attract smaller builders to its builder-dealer program. This program is intended to allow U. S. Home to operate in cities too small for tract building by providing well-designed and well-priced modular houses through local builders.

Unlike previous years when space-saving and energy efficiency were the dominant themes, most of this year's show houses were downright luxurious in response to research that showed "move-up buyers"—families who already own houses but want something better—returning to the market. The NEST '85 house (photo 2), for example, designed by architect Barry Berkus of Santa Barbara for *Professional Builder* magazine, had three bedrooms, three baths, three greenhouse spaces, and 1,785 sq ft, whereas a similar house designed by Berkus for the 1983 show had only 1,182 sq ft. NEST is an acronym for New Expanding Shelter Technology—a system that Berkus devised to bring both good design and flexibility to the modular production line. The four basic modules that make up the show house can be combined in different ways to create a variety of forms ranging from luxury homes to motels. The heart of the system is a host, or "mother" module (shaded in plan at right) with 11.5-ft ceilings. The ceilings of the satellite modules slope down from this height, creating visual interest and a feeling of openness in spaces that are only 12 ft wide. The modules for the show house were arranged so that all of the living areas would open onto decks, enhancing the feeling of openness and adding to the usable space.

The largest of the three houses shown in the Astrodome was a 2,300-sq-ft, two-story house designed by Richardson, Nagy, Martin of Newport Beach, Calif., for U. S. Home (photo 1). More traditional than NEST '85, it is already part of the U. S. Home product line, and is a good example

of modular construction's potential, with its large, open, two-story living room and entry—the antithesis of the boxy look most people associate with factory-built housing. A second RNM house for U. S. Home shown on the convention floor—a 1,322-sq-ft, four-bedroom model designed to sell for about \$70,000—was a study in space-expanding design devices. It was co-sponsored by *Family Circle* magazine and featured in its February 5th issue.

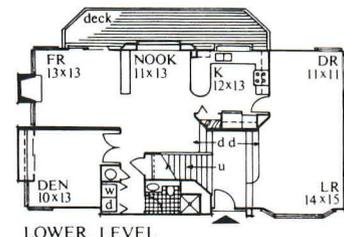
Three of the show houses were located in Houston subdivisions. The *Builder* magazine and *Good Housekeeping* entry, known as The New American Home 1985, was designed by Fisher-Friedman Associates of San Francisco. The architects took into account *Builder's* annual survey of new-home buyers, which showed that the "move-up market," which had been strong during most of the '70s, was reviving. Thus the house has 2,200 sq ft plus a small maid's apartment over the garage. It was designed to look like several small houses grouped together to form a village (photo 3). Said architect Friedman: "We established a concept that a family could be much like a small village or a small-town organization. We used five similar architectural forms, each with its own roof, for the components of the house, and we decided that the threads which would connect these forms worked like streets." Rooms are grouped into four roughly equal pods divided by two major circulation paths. A front-to-back axis splits the house in two, with the master bedroom and the living-room pod on one side, and the children's bedrooms and the family-room/kitchen pod on the other. A second circulation path separates the private areas in front from the public areas in the rear. The dining room, located in the center of the house, acts as a transitional space between the two public areas. It has a view of the street in front, the lake in back, and, through its barrel-vaulted glass roof, the sky above.

A second site-built show house, designed by architect James W. Ritter of Alexandria, Virginia and co-sponsored by *Better Homes and Gardens* and the Wood Products Promotion Council (comprising the American Plywood Association, the American Wood Council, the Southern Forest Products Association, and the Western Wood Products Association), demonstrated both the esthetic and the structural use of wood. It had a permanent wood foundation, a Plenum Wood underfloor plenum system, plywood siding, pine decking, and numerous wood details. And a third house, sponsored by *Metropolitan Home* magazine, showed how a

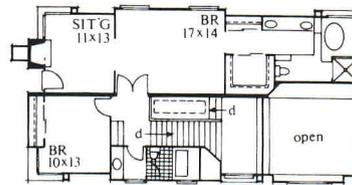
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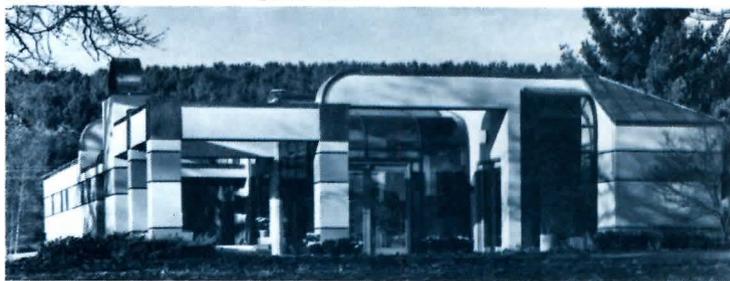
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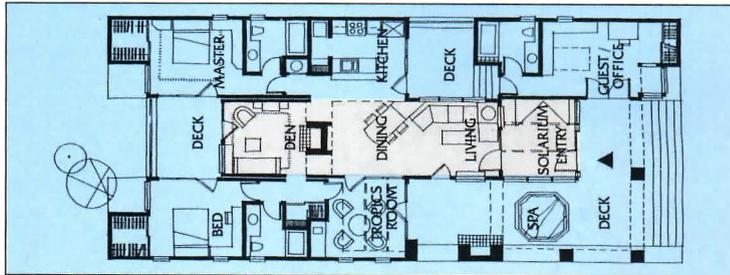
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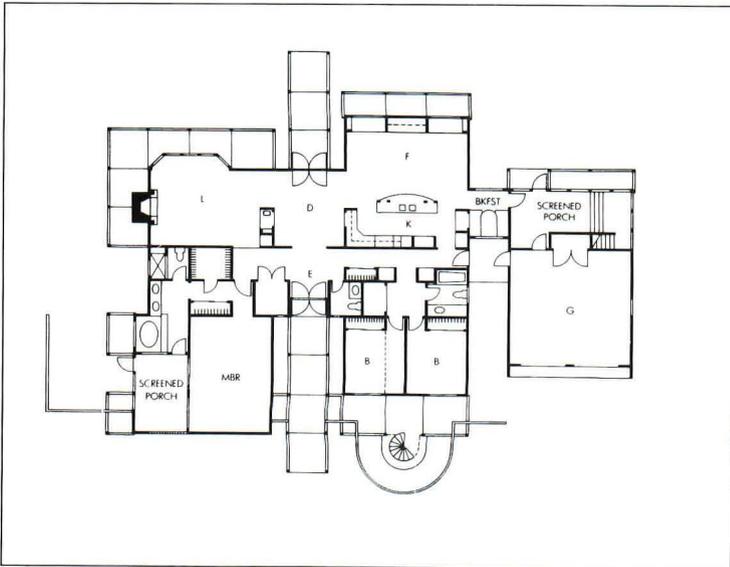
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typical 1950s ranch house could be turned into a lighter, more convenient dwelling suitable for today's families. Val Glitsch of Houston was the architect.

To give an idea of what builders were doing today and what they planned to do in the near future, Owens-Corning Fiberglas Corp. conducted a poll on the convention floor known as Pulse '85. The 1,081 respondents built mainly in the Southeast (26 per cent) and the Southwest (22 per cent). The Northeast and the North Central states were also well represented (19 per cent each), while the Mountain and Pacific states had fewer respondents (7 per cent each). These were mostly larger builders: on average, they had built 114 single-family homes in 1984 and expected to start 122 homes this year. Sixty-one per cent of them had already diversified into commercial construction and 41 per cent into remodeling; another 14 per cent planned to go into commercial construction and 8 per cent into remodeling this year. Only 19 per cent had built rental apartments in 1984; 25 per cent planned to build them in 1985. "For-sale" apartments (mostly condominiums) were more popular: 38 per cent had built them in 1984 and 44 per cent intended to build them in 1985.

Sixty-two per cent of the builders expected the houses they erect in 1985 to be the same size as the ones they built in 1984, and 22 per cent of them expected to build larger houses. Between 80 and 90 per cent expected to include in these houses such energy conservation items as extra insulation, thermally efficient windows, and insulated doors; 25 per cent also planned to include passive solar features. When asked what they were doing to make the single-family homes they built more affordable, 72 per cent of the builders said they were saving on land by offering smaller lots or zero-lot-line planning. Fifty-six per cent had arranged for creative financing. Forty-six per cent offered smaller homes. Others made homes more affordable by increasing labor productivity (49 per cent), reducing amenities (23 per cent), using more pre-built components (25 per cent), and using less expensive materials (21 per cent). And, finally, when asked what techniques they were using to make the most out of smaller spaces in single-family housing, the majority mentioned creative design features (77 per cent), multi-function spaces such as great rooms (68 per cent) and built-in storage space (57 per cent), while others turned basements (32 per cent) and attics (22 per cent) into living space.

Also at the convention, the National Association of Home Builders (NAHB) unveiled its long-range planning report, which contained a number of conclusions with design implications—none of them unexpected. Chief among them was the report's finding that while slower population growth and household formation rates will decrease the demand for housing during the 1980s and 1990s, demographic changes—mainly the aging of the baby-boom generation—will create new

opportunities for residential construction. "The return of large numbers of baby boomers to traditional, family-oriented lifestyles and the dispersal of population from metropolitan to non-metropolitan areas will favor the single-family home market," the report said. Another change: "The growing ranks of the elderly and super elderly will create demand for various types of retirement housing." To this end, the report recommended that "policies should be pursued that encourage construction of life-care and other congregate housing facilities tailored for the elderly." Such housing, it concluded, would not only serve as shelter but also "could help curb the nation's rapidly rising costs of medical care for the elderly."

The report also noted that there are 11.6 million substandard

housing units in the U. S. and replacing or rehabilitating them would be one of the great challenges confronting all levels of government over the next 10 years. It estimated that, "at a minimum, 250,000 substandard units will have to be replaced or substantially rehabilitated annually," and recommended that "NAHB conduct a major study in 1985 on the problems of providing decent housing for the poor in today's market environment."

AIA vice president Donald Hackl, speaking at the AIA Housing Committee's annual design seminar/slide show, called on the AIA and the NAHB to develop an agenda to promote their common goals of providing the best possible value to the home buyer and the community. Hackl's agenda would include:

- Creating a more efficient and

quicker transfer of information between the two groups to take advantage of NAHB's technical information and the AIA's design concepts.

- Developing a uniform system of codes and standards.
- Sharing each other's expertise in the marketplace. "Architects have a lot to learn about business from home builders," said Hackl, "while home builders can learn about reducing the risks inherent in the complex planning, zoning and review process from architects."

- Working together with producers of manufactured housing to encourage a quality, value product.

Other common issues discussed by Hackl included tax legislation, achieving a balanced Federal budget, energy conservation, addressing the nation's crumbling infrastructure, and clean air and clean water. *Natalie Gerardi*

*New*

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## Practice:

### Why are architects on the defensive?

*The AIA promised 120 architects who came to its recent Dallas practice conference that its practices would never be the same again*

By Joan Capelin

Setting the scene: It is 7:00 p.m. Sunday. Twenty-five architects from around the country, mostly men in their 40s, sit in silence in a small Hilton conference room in Dallas. Waiting patiently, they check out the lighting system and the partition details. Soft-spoken conference chairman Jim Franklin greets the tired travelers. Franklin is dressed in a burgundy tee shirt emblazoned with a large AIA logo on the right side and three words on the left, over his heart: Power, Image, Compensation—the title of the conference.

"This could be the beginning of good things for architects everywhere," Franklin begins, "certainly for you." He explains that the evening will be spent setting the stage for tomorrow's hard work. No one can smoke. No one is to talk to anyone else.

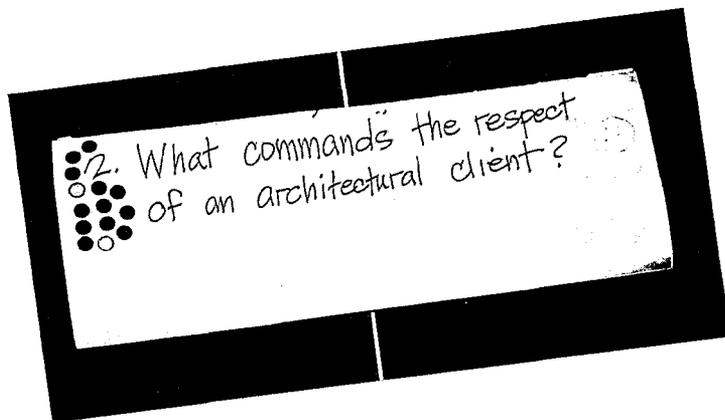
Franklin sits down. The same scene has just occurred in five other rooms. Five minutes pass. All eyes are on the darkened television set on a platform in the front of the room. Then music swells. The face of *Time's* architecture critic Wolf von Eckardt appears on the screen, the first in a half hour of videotaped interviews. "I don't think that, on the whole, architects do a good job," he states dourly.

Many of the architects in the room nod their heads in agreement. Von Eckardt continues: "Architecture is hard, tough, devoid of thanks. And your reward is to do a good building, not to become rich. I have not seen an architect yet that starved to death."

The familiar face of William Marriott appears soon after. A coveted client, he offers some voice of experience: "Some architectural firms are very creative and very impractical. They end up costing the developer far more than the developer should be spending. When that happens, the architect may have created an award-winning building, but he'll never get the developer to do another building with him. He has ruined the financial performance of that particular project forever."

John Vigilanti of Western Development Corporation is not so restrictive: "Part of the reason why, as a profession, architects have a problem is because they don't know how to handle finances, and they don't consider finances as something that dictates design. . . . Architects are just another consultant that we have to hire to get a project built. They are necessary to do the herding and the coordinating."

*Ms. Capelin is president of Capelin Communications in New York City, a public relations firm that consults primarily to design professionals.*



Further in the taped sequences, Paul Goldberger, *The New York Times'* Pulitzer Prize winner, offers his insight into modern practice: "Most architects don't really produce such good architecture. If they got angry, I don't think that would help most of them. To say architects should stand up for something more forces one to ask what should they be standing up for. Remember, architects have never had total power over the building process. I think today they certainly have more than they've had at any time since World War II, and maybe as much as they've had in most of the 20th century."

While none of this is pleasant, by the end of a stressful evening of listening and determining the most important issues facing architectural practice, almost none of the participants had challenged the critical pronouncements. It was clearly no secret to them that architectural practice is a constant struggle. (The next morning, in fact, Ben Thompson would tell the conference: "My greatest disappointment was finding out this is a tougher business—profession, if you will, life—than we were prepared for. Architecture is extraordinarily difficult. Maybe architects should go on strike.")

Nowadays, most would agree, part of the struggle is with change. Consultant Martin McElroy (see RECORD, July 1984, page 29), who spoke later, described this as "an eruption of transformations that have been both volcanic—that is to say, arising from within the profession—and atmospheric, driven by the climate and contexts within which we work."

**The effort here seemed to be to answer the unanswerable**

Among AIA committees, Practice Management has earned a maverick reputation for tackling the Large Issues of Our Time. After years of listening to endless talk—Who is the real client? Is architecture an art or a business? What happened to the Master Builder?—its members simply decided to address

these questions head-on by this conference.

They brought to Dallas a brigade of five-star speakers, some live and some via extraordinary videotapes—a combination of six familiar architectural heroes in Ben Thompson, Sarah Harkness, John Portman, Cesar Pelli, Charles Thomsen and John Burgee, and five less visible but nonetheless influential movers within the profession: Gerald Li of Clark Tribble Harris & Li; Ennis Parker of Scogin & Parker; Paul Segal of Paul Segal Associates; William Hudgins of Gensler Associates; and David Harper of Harper & Buzinec.

The program described these superprofessionals as "people used to getting attention and results." What traits do they evidence? In what ways do they have power? A recognizable image? Appropriate compensation? What insights, or comfort, did they impart? Despite their age and experience, are they the touted "New Professional"?

Part of the answer seemed to lie in having a "winning" personality. Ultimately, the speakers' self-awareness and self-confidence were the unifying characteristics that electrified the audience. Although, for instance, Sarah Harkness and Jerry Li would differ greatly in their personal definition of success, each speaker projected the impression that he or she had control over the circumstances. Certainly you knew that they had thought about where they were going, and how they would get there.

The audience and the moderators were understandably curious if something could, or ever had, tripped up these role models. Each speaker was frank about potential bugaboos.

For John Burgee, the problem would be overextending your role: "Our role is sometimes thought of as being too powerful. Although architects like to think that they should have more power, I think they really should have less; they're  
*Continued*

An impressionist painting of a harbor scene with several sailboats. The style is characterized by visible brushstrokes and a rich, textured color palette of purples, blues, oranges, and yellows. The composition is dynamic, with the masts and rigging of the boats creating strong diagonal lines against the sky and water.

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## "Maybe architects should go on strike"

—Ben Thompson

part of the process. You can't do everything. If you do your part right, you've done a lot."

"Forgetting your calling" would be the problem for Sarah Harkness: "What holds architects back, and has put them in this bind, is their own caring. But if they lose that, they've lost the whole works."

"Inflexibility" would be the problem for Jerry Li, whose straightforward way of speaking suits his firm's description as aggressive: "The one word that has really brought quiet on almost all the speakers has been 'compromise.' But it's a fact of life. Your one goal has to be to purvey that little bit of magic that you can, even with compromise. . . . Let's face it, magic is the one thing clients can't do. Power comes from the perception by clients and the public alike that the magic has value."

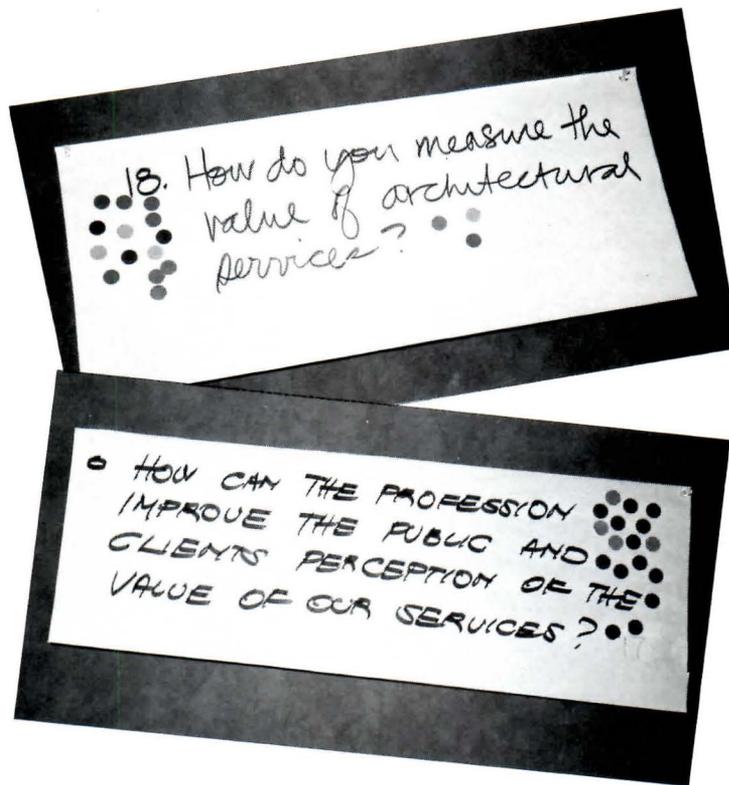
John Portman would agree: "You sense that it can work. People want to be told that. So you're a dreamer. Somebody's got to dream."

Magic? Positive thinking? Dreams? These comments come from two of today's most street-smart architects. In his conference wrap-up address, McElroy set some perspective on what lies behind this apparent contradiction: "It is the wisdom of conference organizers to offer a 'big promise' to boost attendance. Power, Image, and Compensation suggest a magnitude that is nearly daunting. The elements of this theme, however, are consequences rather than issues; they are the results of other things. I would rather focus on the themes of opportunity, responsibility, and leadership, which are the generators of power, image, and compensation. Success in any profession is derived from a capacity to perceive opportunity, assume personal responsibility to capture it, and lead others in the development of its promise."

### The leitmotif for almost all speakers was communication, especially with clients

Success is *not* achieved willy-nilly. The conference, according to Ennis Parker, was actually about "client management, and client management is actually about communications and understanding reality. To me, the issue is communication."

Perhaps because I am a public relations professional working in the midst of design professionals, the theme of communication seemed more pertinent and revealing than how any one firm made more or less money, social contribution, or art. Speakers kept coming back to how they align themselves with the client, prospective client, user, or staff, in order to achieve their own goals and



*The first hours of the conference were spent debating the largest issues facing design practices.*

*Participants were asked to cull through a gallingly long list posted on banners and select their three most vital questions with stick-on colored dots. The top 12 choices were those in the photos, plus:*

- *The architect has the classic problem of great responsibility with little authority. How can this situation be resolved?*
- *Who ultimately is the client? The one who finances it? The user? Society as a whole? Who needs to be represented by architects?*
- *How can the grassroots firms maintain viability in the profession with merely*

influence a situation's outcome.

Communication, and here's the crux, is more than transmitting a message from one person to another. It has to be congruent—the medium must be suitable to the message—and the audience has to understand *and respond*. Communication doesn't just refer to the production of messages; it also consists of *receiving* them. There's a lot of skill involved.

By this definition, one of the most skilled communicators is John Portman. Let me thread together a number of his videotaped comments:

- *On communication in general* "For an architect to be effective, he must be able to convince others that what he is trying to do for them is in their best interests. If we are not able to convince the client that what we are trying to do for him is in his best interest, then maybe we

*commonplace projects and clients?*

- *If we are to improve our compensation, how can we improve the perceived value of our contributions?*
- *How can we best maintain the quality of our work and still run a fairly successful architectural business?*
- *Are the educational systems to blame for architects' perceived weaknesses?*
- *How does our self-image affect the public's perception of our profession?*
- *Why is the architect on the defensive?*
- *How do you measure the value of architectural services?*

shouldn't be allowed to do it. It's interesting that in all the education of architecture, there is not one class given on the psychology of communication. You get out in the real world, and you get knocked down, you get disappointed, and you don't understand what's happening to you."

- *On communication with the client*

"I never discuss esthetics with clients. I never discuss form, art, and design with clients. I talk about the reality and the essence of the situation. I try to deal with the client at the client level. . . . Because you've made an adjustment for communication doesn't mean that you have given up your ideals of what it is you're trying to create or accomplish. This may be on a much higher level than the average client may be thinking about. If you start talking to him on this level up here,

you can't expect him to jump up to that level with you. That only causes great confusion, great suspicion, great doubt, great misunderstandings, and, in the end, both client and architect are unhappy."

Ennis Parker also raised some strong points about how and what to communicate: "Service," he explained, "is not what you do, but how you do it. The client has to feel served. Your professional ability is taken for granted; you are judged on your responsiveness and service."

Delivery then, goes beyond meeting deadlines and budgets; it connects into listening and hearing, and transmitting in any number of ways that the client is getting what is needed. Parker reminded his audience: "Power comes from getting support."

Parker's questions were perceptive: What does the client want? What does he think he wants? And, just as architects differ, not all clients are alike: some are knowledgeable, but not all; some dogmatic, others seek help; some are in authority, others bureaucratic. What does he need? Can you—or do you want to—do what the client is asking of you?

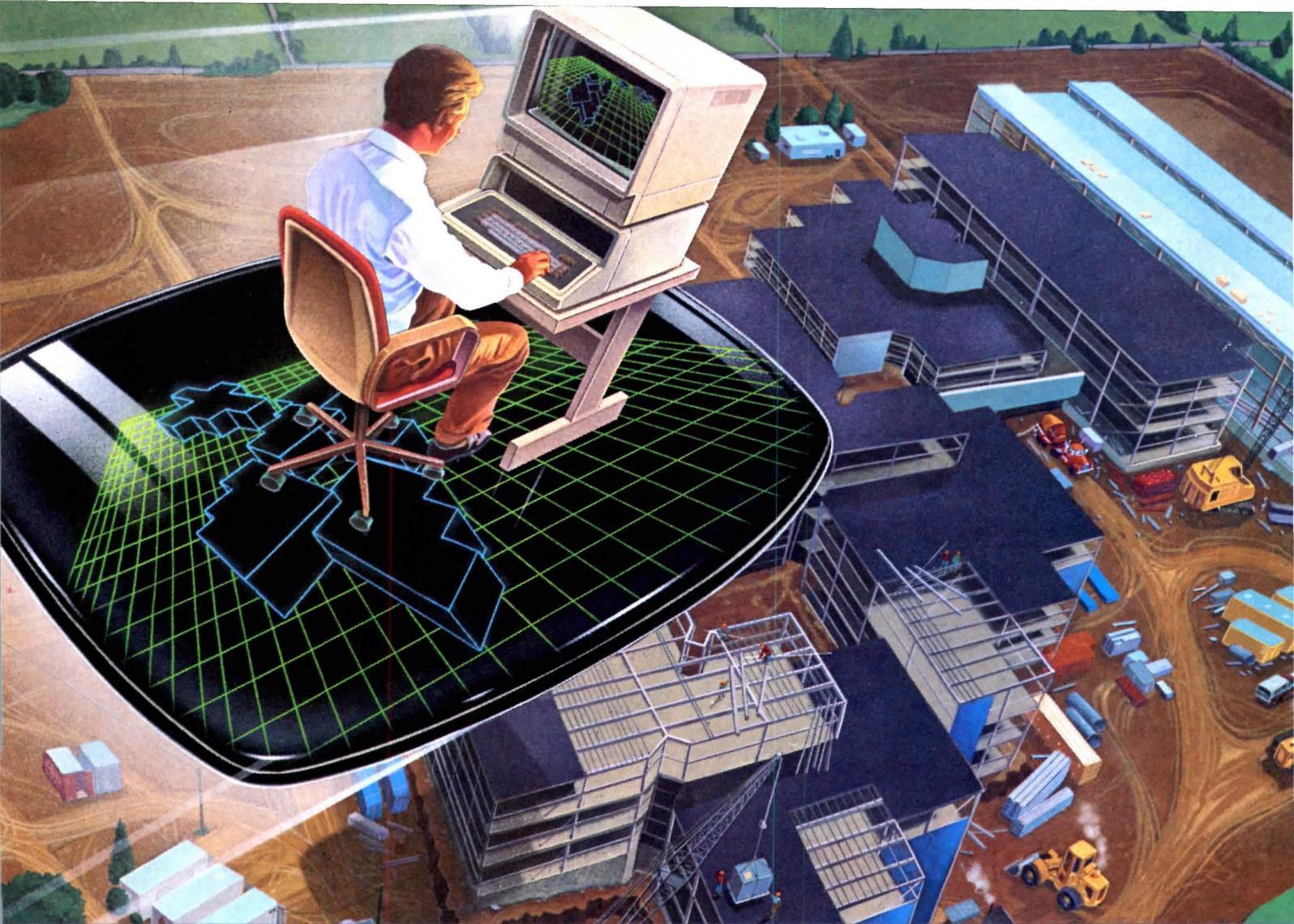
Parker had some basic messages:

- "You have to project an attitude of service."
- "Tell the truth about what you can really do."
- "Don't stop selling when you get the job."

His bon mot: "A lot of architects would rather not have to deal with clients." It's fortunate that he's not one of them.

Selling and compensation are topics that will be covered fully by the speakers cited in the second half of this report. But Chuck Thomsen had ideas that bridged between those topics and those of self-confidence and communication: "Why don't we squarely and honestly see our own individual capabilities? We should recognize what clients want from us, what's distinctive about us, and then be as creative about their needs as we are about the project. When we do, then we'll not only get the commission, we'll get well paid as well."

*In the second half of this report, more conference speakers' views will be explored on such topics as selling services, adequate compensation, and the importance of paying attention to business.*



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ON THE INFORMATION FRONTIER

# Computers: Having to switch CAD systems is no laughing matter

By Donald R. Fullenwider

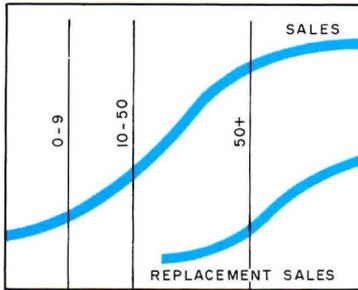


Figure 1 illustrates a textbook industry penetration curve showing the percentage of firms by numbers of employees that have acquired CAD systems. It also illustrates, as discussed in the text, the beginning of a new curve of replacement.

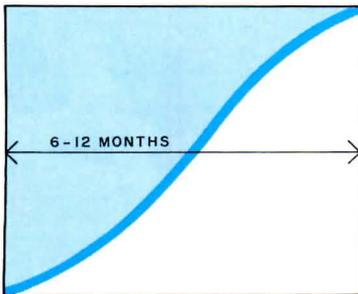


Figure 2 illustrates the learning curve for first acquisitions. "State of the art" systems generally require two weeks of intensive training for learning individual commands and "ins and outs." Once these basics are learned, it takes approximately six to twelve months to reach peak productivity.

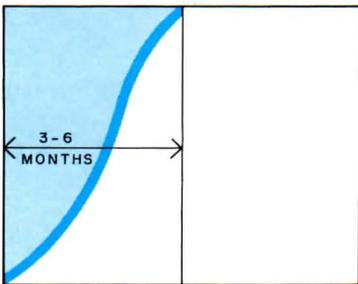


Figure 3 illustrates the CAD conversion retraining curve. This curve gives a visual picture of a very significant hidden cost of conversion. The shaded area represents approximately half time for three to six months for two typical architectural production employees, or 1,000 to 2,000 hours.

The last six to twelve months have brought some very important changes to the industry that provides CAD hardware and software to our design profession. As the market for minicomputer-based systems shows signs of saturation, the industry has begun a classic process of consolidation, with weaker firms dropping out of the market and others being acquired by stronger competitors.

Although the average cost of a CAD workstation has dropped dramatically over the last five years, from some \$75,000 to perhaps \$40,000, it is still only the largest firms that normally consider this kind of investment. If it were possible to prove conclusively that CAD working drawings were cost-effective, many more architects would invest, and those with two or more workstations would be rapidly adding more.

The truth is that we have come face to face with cost-effectiveness difficulties. Non-scaled drawings such as mechanical-system layouts, wiring diagrams, door schedules and room-fixture schedules can clearly be cost-effective. But few architects can count on a steady flow of these kinds of drawings eight hours a day for the three- to five-year payback period. Instead, many architecture firms seem to be investing in CAD systems for public-image reasons—and also as an investment in the future.

Despite or because of problems with older CAD systems, it may well make sense to switch Figure 1—in addition to showing the current market penetration—also shows the beginning of a replacement penetration curve which predictably follows first purchases to replace outmoded CAD systems purchased or produced in-house by the profession's pioneers five to ten years ago. Such replacement illustrates the classic economic concept of the optimum time to switch to a new product: when the marginal cost of the new purchase is equal to the marginal cost of maintaining the original product. In other words, when the monthly payments on the capital investment plus maintenance of a new system are less than or equal to the cost of continuing to maintain the original system.

The second reason firms are switching CAD systems is that their original supplier is no longer able to provide ongoing support or

software enhancements because of mergers or simply going out of business.

Lastly, some firms are switching systems because they themselves become involved in a merger or acquisition. If a design firm suddenly finds itself part of a new corporate organization with a different computer environment or a policy that all divisions of the new firm shall have identical CAD systems, then it makes sense to switch to a new system.

## If switching makes sense, what, then, does switching cost?

The idea of switching systems sometimes results from some fairly casual observations: "Well, our original supplier gave us their software at an enormous discount to get our business or to gain market share. If it doesn't work, we'll just dump it and go with someone else." Or: "Our computer is compatible with different suppliers' software. If the current supplier's becomes obsolete, we'll just dump it and switch to a different but compatible system."

It is true that the most obvious cost of moving from one CAD system to another is the monthly expense of the new hardware and software minus the salvage value of the existing system. Anyone who has bought a new car and traded in the old one understands this simple concept.

However, there are other things to look at: there is the additional cost of retraining employees on the new system, which can be substantial. Experience shows us that the cost of retraining CAD users on a new system is approximately half to two thirds of the original cost of training a user.

It is important to look at the cost of switching CAD suppliers in some detail, because it turns out that there are massive hidden costs that are not obvious at first glance. The procedure firms follow to cost justify a system in the first place is not thorough enough when dealing with actual disengagement, re-engagement, retraining and relearning the learning curve from one system to another.

An additional cost is that of transferring symbol menus and previously created drawings stored in the computer. Since no two systems use the same data-file formats—because no industry standard has yet emerged—it is impossible to transfer these images electronically. They must all be re-entered in the format of the new system.

If the system being replaced has been installed for a relatively long time, the cost of converting graphic images can be extremely expensive.

Some firms have literally hundreds of typical details and other symbols, all of which cannot and must not be transferred internally to the new system. This transfer process can be extremely costly and will remain so until a graphic-image format emerges as the industry-wide standard.

It is unlikely that any of the current file formats will emerge as a standard because of trends in new computer languages such as "C" and computer operating systems such as UNIX V. It is likely that an image-file standard will emerge for architectural drawings when 32-bit computers are universally available at personal-computer prices, which any architect can afford. This is probable within the next three to five years.

In addition to transferring graphic-image files to a new system, there is the cost of re-writing macros or "system-specific modifications" to custom-fit the software to a firm's idiosyncratic needs. This again can be very costly. To see just how costly, see Figures 2 and 3 at left.

## Be careful when the first system is selected and when you switch

The first obvious conclusion is that great care should be taken in selecting an initial CAD system. The cost of a system's hardware and software is only a small part of the total investment. Taking the "low bid" could be the most expensive mistake a firm ever makes. The CAD industry is going through a period of rapid consolidation. This is no time for impulsive decisions. It is a time for careful evaluation and caution.

The second conclusion is that great care should be taken in calculating all dimensions of the switching process. Implementing a CAD system into the work flow of an architecture firm is difficult enough without the added surprise of hidden or unanticipated costs. CAD systems are still expensive enough so that the average firm would take years to recover from a serious miscalculation.

Mr. Fullenwider is an architect with a computer-aided-design consultancy firm in Santa Monica. As a staff member, he has furthered CAD use by Welton Becket Associates and Albert C. Martin and Associates and taught its use at the University of Maryland.

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# Marketing: "The future is yours"

*Smaller design firms walk away with many of the latest awards from the Society of Marketing Professional Services*

By Rolf A. Fuessler

*More than 600 people attended the eleventh SMPS annual convention held in Washington late last year. The program lasted three days, included workshops and panels to improve marketing skills, and was keynoted by Kohn Pedersen Fox Associates' Eugene Kohn. The theme of the convention, "Leadership; the future is yours," was seized on in his address by Kohn, himself no slouch at positive thinking—his firm having grown by a combination of excellent marketing and design skills to its current large size in some eight years of existence. He ascribed its success to the five P's: Professional, Purposeful, Pursuing, Persistent and Patient—although he thought one well-known architect might have recently added a sixth, Pusky.*

*SMPS is the only organization devoted to the marketing activities of employees in architectural, engineering, planning, interior-design and construction-management firms. It has a current membership of over 5,000 people. Its awards—the highlight of the convention—are a benchmark of what is happening in this relatively new field for design firms across the country.*

*Earlier in the year, 12 jurists from the marketing and communications field, including myself, met to pick this year's 25 winners in 10 categories. The juries were chaired by marketing communications consultants Rolf A. Fuessler, the author of the following article on the results, and Ernest Burden, who had responsibility for the audio-visual awards. Fuessler reiterates Burden's summary in RECORD of last year's awards (see February, pages 33-35) that "awards are given for over-all concepts and creativity, rather than for copy, concept or graphics alone." Charles K. Hoyt*

The 1984 awards program has put to rest the myth that only the larger professional service firms, with their in-house communications departments, contracts with top public relations firms, and ready funds can do effective marketing. Many of this year's winners were smaller firms.

There were some significant structural changes in this year's competition. First, judging for all 10 categories took place over a 2 1/2-day period in Washington, D. C., instead of having separate juries for each category in different locations, as in the past. Second, the judging

*Mr. Fuessler is a principal in Fuessler Communications, public-relations and marketing consultants for design professionals in Boston.*

criteria were changed to place increased emphasis on well-rounded entries that exhibited good creativity, implementation, and results. In the past, creative approach, design, photography, and art direction—how a piece looked—counted for more than 50 per cent of the total score. In this year's program, research, development, approach, and measurable results counted for 55 per cent. These changes resulted in consistent standards applied to all entries in all categories and a recognition that groundwork and results are important barometers of effective marketing material.

Winners communicated ideas about the firm from the potential client or "buyer" point of view. An example was the first-place winner in the Direct Mail category, a series of seven postcards, each dealing with a separate issue and titled with a single eye-catching word—Sales, Quick, Accurate, Experience, Budgets, Fees and Team. The graphics were amusing and unusual but appropriate; the words brief and to the point. The "Experience" postcard showed rows of medals on an officer's uniform. The card states: "We've seen a lot of action. Twenty-two years as tenant planners. Over twenty million square feet." Each card ends with the punch line: "Good space is good business."

In addition to such direct targeting, many winning entries had simple concepts and design. All three winning newsletters were less complicated than previous winners. And all three were newsletters started within the past year. The winning special-market brochure was an understated and undersized four-page brochure of few words describing artwork placed in office buildings designed by the firm. The winning corporate advertising entry was a series of quarter-page, black-and-white ads that informed readers of various trade publications about the firm's capabilities.

Firms seemed willing to take risks in the approach to and the design of many of the entries. One firm, a winner in the Special Events category, sent out 500 specially designed ceramic pigs as an invitation to the firm's fourth anniversary party. The pigs were symbolic of the firm's first contract—a prison pig barn. Eighty per cent of the recipients came.

In many of the categories, the jury had a difficult time choosing the winners among the many entries. Judges spent nearly 20 hours in their efforts, with judging lasting into the wee hours of the morning on the first night. Those who served as judges and gave up 2 1/2 days of their time were: Maureen Arvai, Dewberry & Davis,

Fairfax, Va.; Nadene Barna, FKP, Houston; Lois Boemer, Boemer Associates, Boston; Joan Capelin, Capelin Communications, New York City; Gail Gabriel, Robinson Mills & Williams, San Francisco; Charles Hoyt, RECORD; Joseph Huttie, CUH2A, Princeton, N. J.; Raylene Kershaw, Great, Inc., Alexandria, Va.; William Morton, the McElhanney Group Ltd., Vancouver, British Columbia; Connie Neuman, American Consulting Engineers Council, Washington, D. C.; Ray Rhinehart, American Institute of Architects, Washington, D. C.; and Brenda Terris, ICS, Atlanta.

What follows are brief comments about each category and the winning entries. A list of all winners, with names and addresses and/or entry forms for the 1985 awards program, can be obtained by writing SMPS, 801 North Fairfax, Alexandria, Va. 22314.

## Company brochures

It was clear from the large number of submissions that design-related companies feel the need for a company brochure. But why? According to juror Joan Capelin: "Given the considerable disparity between the submitted marketing statements and the brochures themselves, the jury concluded that brochures are popular and useful because they cause a firm to define and position itself, to clarify marketing goals, sometimes to course-correct, and thus ultimately to present itself with far more confidence.

"In other words, the process obliges the researcher, then the strategy, and finally the concept and selection of the words needed to effect a successful marketing program."

Other observations from the 1984 crop of brochures: 8 1/2 by 11 is the preferred size. Most carried color photographs, but quality was often questionable. This was the year of matte finish and the lacquered photograph. Capelin adds, "The black-page/color-photo format first used by Morris Aubrey a half-dozen years ago is now 'highly preferred,' even though white type on black pages is always difficult to read."

First place was awarded to Partners Construction Inc., Houston; second to Rehler Vaughn Beaty & Koone, Inc., San Antonio; and third place to Van Dell & Associates, Inc., Irvine, Calif.

## Special market brochure

Many of the 33 entries in this category showed that firms were targeting their markets and pursuing them with outstanding



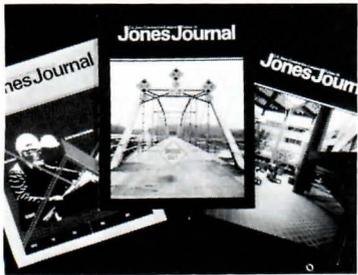
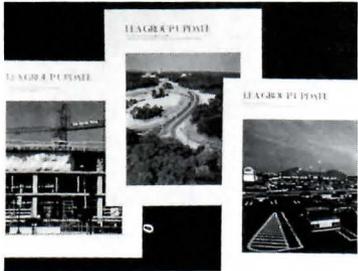
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marketing tools. ADD, Inc. in Cambridge, Mass., took first place with a stylish "art" brochure containing color photographs and a brief text describing art placed in the firm's office buildings. It was viewed as an innovative way of portraying a design image to corporate clients. The second-place winner, HDR in Omaha, had a "Health Facility Design" brochure, which included a sleeping baby on the cover and a two-page color centerfold of an operation. It was described by jurors as "humanistic and people-oriented," while the copy described issues that are important in the design of health-care facilities. In its third-place "Water Power" brochure, Seattle's Schuchart & Associates, Inc. took what is generally regarded to be a highly technical market and injected excitement into it through striking photography of water as a natural resource.

#### Newsletters

Judges found this a difficult category because there are no firm rules on what makes a newsletter. Should it only contain news? Are feature articles permissible? How sophisticated can it get before it qualifies as a magazine? The judges decided that format didn't matter. What mattered was: Did the design of the newsletter get people to read it? Was it easy to read? Those newsletters that had a good balance between graphics and copy tended to draw the most votes.

Many of the entries contained a lot of information, and the winners presented this with crisp, lively copy. The winning newsletter, from Boston's LEA Group, featured a single four-color photograph on the cover floating on a graph grid. Inside, LEA's "Update" contained a series of news stories in three-column format, with small, crisp black-and-white photographs. Side four had another four-color photograph, a short article, and space for the mailing label.

The format of the second-place winner, C. W. Fentress and Associates' "Design," is 8 1/2 by 12 inches, which folds up into an 8 1/2 by 6 mailing piece. The newsletter concentrates on excerpts from published articles on buildings designed by Fentress. Third-party endorsement gives credibility to the young firm's work. The newsletter has four pages, and uses the corporate "green" as a second color in bands to highlight various headlines. The jurors felt that it was simple, yet unusual and to the point.

The third-place winner, Shooshanian Engineering Associates' "Quarterly Report," uses a four-color, full-bleed photograph of a major project on

the cover. Inside, the newsletter contains black-and-white photos with one accent color. The inside spread highlights the project shown on the cover. Page four briefly lists news about a variety of projects and people. The newsletter is mailed out in an envelope.

#### Magazines

The magazine category exhibited several good contenders. Approaches ranged from the very polished to the "rough and ready."

According to juror Raylene Kershaw: "The best entrants had a clear objective with a defined but sometimes broad-based audience. Strong, consistent internal layouts, at times employing good usage of award-winning photography, gave them a recognizable look." Some stayed closer to a format than others, but the best had at least a loose tie to a format with enough divergence to be interesting.

In each case, writing styles, though varied even throughout one publication, were appropriate for the defined audience. Subheads, highlighted quotes and informative captions were most beneficial to the flow of the articles.

Reader-response cards, surveys, and tallied requests for reprints of articles were good methods of measuring results. Other magazines cited positive image-building benefits that could have been more valid if attempts to measure them were used. Kershaw adds: "All-in-all, it was an exciting, well-received and well-viewed category."

First place was won by CH2M-Hill, Denver; second place by both J. A. Jones Construction Co., Charlotte, N. C., and A. G. C. Publications (for the Enterprise Building Corporation), Tampa.

#### Corporate-identity programs

According to juror Nadene Barna, "the entries in this category represented the need to establish a more competitive image and to target market communications materials to specific audiences." The judges looked for concepts that most creatively expressed the company's operational philosophy, projected its unique character and capabilities, and created a workable format for collateral material design.

C. W. Fentress and Associates, the first-place winner this time, clearly exhibited all of the above in the submission for its subsidiary, Precision Scale Models, which was formed to build architectural models for Fentress as well as other design firms. The design concept communicates both "precision" and "scale" through the use of a series of graduated tick marks

reminiscent of a scale. The lines are fine and precise, as is the type. A graphic tension is set up between the lines and white space which further enhances the over-all design effect.

The program was one that could not help but evoke a positive response from its target audience of architects, engineers, and interior designers. More than any other entry, it was the best expression of the services offered and a very well thought-out and creative approach.

The second-place winner, Hansen Lind Meyer, PC, Iowa City, Iowa, chose the more traditional Bauhaus approach used by many in the design industry to fulfill their objective that their marketing material not just be "fancy dress" but reflect an image that was "dignified and lasting." The program is easily applied to all elements in its system, and it gives a contemporary look to a traditional approach.

One of the most impressive aspects of the third-place winner, Wittenberg, Delony & Davidson, Inc., Little Rock, Arkansas, is the modular design of the corporate identity program, which allows individual pieces to stand alone or work as part of a system. It also allows for expansion of the system without confusing the design concept, and yet is flexible enough to provide graphic variety with control. The variation allowed within the over-all design is quite strong and appealing. The extent of the material is impressive.

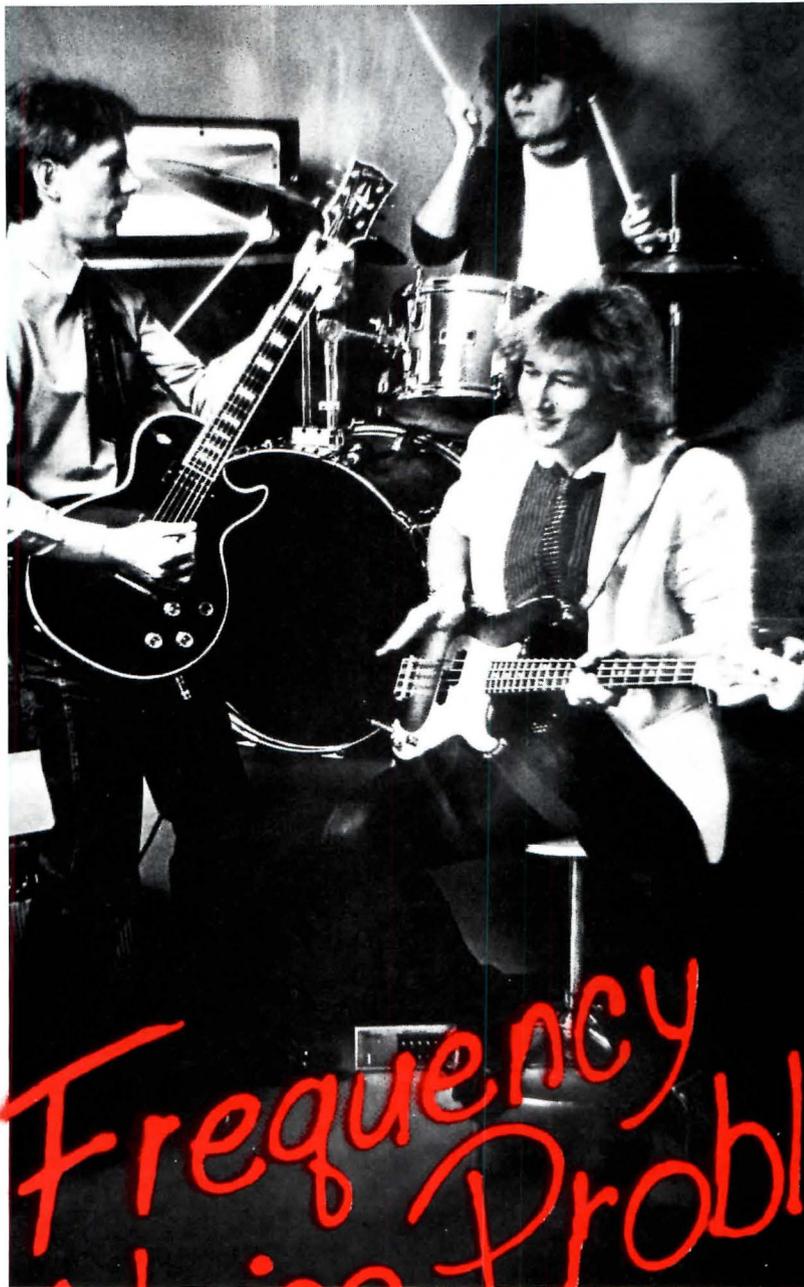
#### Direct-mail campaigns

The direct-mail category has come a long way since the SMPS Awards Program began. Juror Gail Gabriel felt that "the winning pieces this year were sophisticated and the quality of graphics, written material and printing excellent. They focused less on the design firm and more on the client or the client's concerns."

The Business Space Design entry, which won first place, really stood out among all the entries for this category. Not only is it clever, colorful and humorous, but it pinpoints the main topics, such as maximization of available space, that concern a client whose goal is to lease a building. The quality is excellent, from the paper and photography to the printing. The combination of the message and the graphics makes this series of postcards the best entry. Also important to note is the follow-up with telephone calls, which was done after the mailing of the entire series. Business Space Design is a unit of NBBJ, Seattle.

The Index, Incorporated piece, which won second place, has graphics and photography that

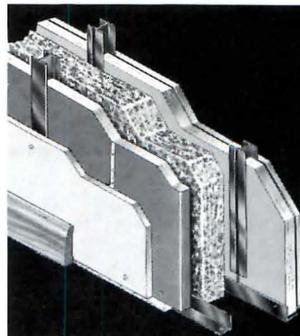
Among award winners for special-market brochures, HDR produced "Health Facility Design" shown top. LEA's "Update" (center) won the firm first prize in the newsletter category. Among magazine award winners was "Jones Journal" (bottom).



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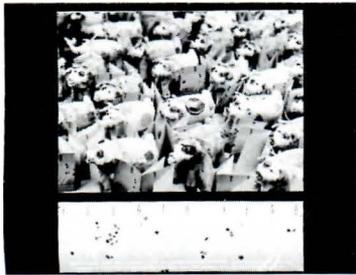
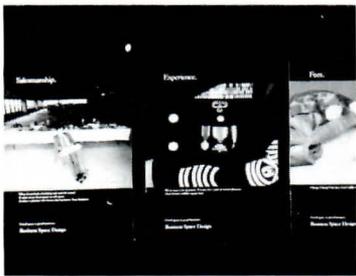
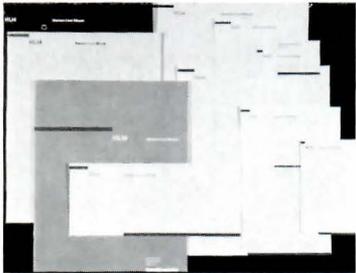
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*The corporate identity program category was won by C. W. Fentress and Associates for a subsidiary, Precision Scale Model's entry (top). Business Space Design won the direct mail category with the entry (center), and Reynolds, Stewart, Stewart & Associates the special events category with their invitation (bottom).*

encourage the recipient to read it. The information about the firm, along with the concerns and issues of the target market, the hospitality industry, are effective.

The direct mail pieces developed by OPUS, Minneapolis, which won third place, were four good, solid minibrochures that stand on their own, as well as in a series. And they achieved documented results—28 active leads, five proposals, and one signed contract. The enclosed self-addressed, stamped envelope proved to be convenient for recipients and successful for OPUS. Graphics were pleasing and consistent. Third-party endorsements were well positioned.

#### Special-events pieces

According to juror Ray Rhinehart, "perhaps no other category is more difficult to judge or more rewarding to review than special events. The only two criteria for entering seem to be boundless imagination and the difficulty of squeezing the results into the other nine strictly defined awards categories. Where else can one encounter ceramic pigs cheek by jowl with a transit tabloid and downtown shop windows?"

So why did Denver's Smallwood, Reynolds, Stewart, Stewart & Associates' pigs walk off with first place? Because of the sheer delight of their enterprise—and more besides. By SRSS's own account, of the 500 unique invitations sent out, 415 guests showed up at their "Pig Party." Not a bad rate of return for any mass mailing. Add to that the fact that over one year later most of their clients keep their pigs within sight atop a desk or credenza. You have to give SRSS's campaign an A+ for hitting dead center two top marketing targets: high visibility and the creation of good will. Any design firm that can bring off a routine mailing with that much panache has to be attractive to potential clients.

The Giffels/Harte transit tabloid, which won second place, could not look more different from SRSS's beguiling entry. However, both are lit by a similar flash of inspiration. The problem? An interview for a design commission. The challenge? To stand out from the crowd. Since no audio-visual material was allowed, the obvious course was a lengthy presentation complete with pointers and flip charts. Atlanta's Giffels/Harte left the obvious to the competition and struck a novel approach. They recognized that the question posed to the competing firms was not their ability to get the job done, but to do the job with a difference—a design difference. In other words, the medium had to be the message. The message headlined by Giffels/Harte's innovative presentation in the form

of a newspaper was "here is a firm that turns out exceptional, not expected, solutions."

Likewise, standing out from the crowd and having a clear picture of their objectives distinguish HTB, Inc.'s entry, which won third place. To attract prospective tenants to an office-building renovation they had designed in Washington, D. C., where there is already a glut of office space, HTB installed show windows during construction that are also an ad for their firm. Thus, they turned the usual liability of boarded-up windows into an attractive asset.

An important lesson that emerges from HTB's achievement is the value of research into the client's needs and the market. It enabled HTB to devise an informed solution.

#### Corporate advertising

Although architectural and engineering firms continue to "go slowly" in their evaluation of advertising as an effective marketing aid, according to juror Joseph Huttie, "the current submissions in the corporate advertising category demonstrate that professional-service firms that have chosen to explore the potential of the medium are doing so in a sophisticated and thoughtful manner."

The first-place winner, Myklebust Brockman Associates Inc., La Crosse, Wis., used a simple, but crisply designed three-ad campaign to create identity and name recognition for the firm with commercial and retail clients. Placed in trade publications over a nine-month period, each advertisement focused on a headline and illustrative photograph that punched out a succinct, yet somewhat whimsical message. What starts out as very soft sell becomes positive hard sell that emphasizes the firm's experience, special capabilities, and understanding of the needs of the retail merchandiser.

Building suppliers, The Everman Corporation of Everman, Texas, received a second place award for its campaign stressing its creative and innovative line of prestressed concrete products. Each of the three individual advertisements in the campaign centers attention on a humorous headline that isolates a specific advantage of prestressed concrete. The copy works to support the headline, and photographs are used to reinforce the selling points.

CH2M-Hill, Denver, the third-place winner, uses a parody of the traditional newspaper headline to tell of specific mining industry problems the firm has helped solve.

CH2M-Hill uses copy to detail the nature of its solutions while emphasizing the firm's years of experience with mining.

#### Corporate-services presentation

The most notable aspect of this year's audio-visual entries was the use of video as more than a recording medium, states audio-visual awards chairman Ernest Burden. "A straight transfer of a slide presentation into video only makes it more portable. It does not necessarily make it better. Many of this year's entries made a conscious effort to use video as a very expressive medium even when shooting still objects such as photomontages."

Some programs used a variety of special video effects such as computer-generated grid backgrounds and rotating pictures. Unfortunately, the price tag for these state-of-the-art techniques is very high. But the benefit is apparent in programs that are designed to be shown to corporate-level clients who may be accustomed to such presentations on a daily basis.

First place in the Corporate Services Presentation category went to the Sverdrup Corp., St. Louis. This well-thought-out presentation focused on the similarities between a baseball manager and the company's construction manager. Design Collaborative Inc., White Plains, N. Y., won second place. This was a well-scripted show that won a major project for the firm. Their clarification statement indicated that without a presentation of this caliber, they would not have been considered for a project that consisted of space planning and interior design for 350,000 square feet of a corporate headquarters.

Third place was won by Clarke Tribble Harris & Li Architects, Washington, D. C. The presentation was a sophisticated video utilizing footage mostly of renderings and photomontages of models on their natural sites.

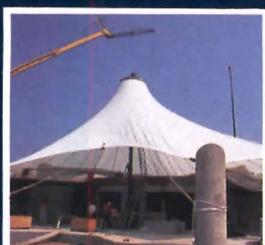
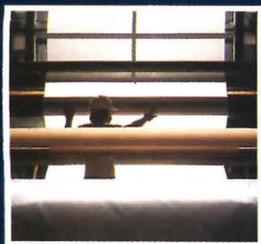
#### Project presentation

There was only one winner in this category. Repeat winner Sverdrup's first-place presentation was targeted to the selection committee for a major mass-transit project. The firm used key project team members on-camera to discuss eight issues important to the committee. Use of graphic symbols helped round out the project.

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# Architectural education: On flies, bees, and the architectural studio

By Michael and Julie Seelig



Six flies and six bees are put into a glass jar which is then placed horizontally with its base to the window and its open end away from the window. In this experiment, the bees persist in trying to exit in the direction of the window, until they finally die. The flies, however, manage to exit from the open end of the jar. The bees "evidentially imagine that the issue from every prison must be where the light shines clearest; and they act in accordance, and persist in too logical action. To them glass is a supernatural mystery that they never have met in nature; they have had no experience of this suddenly impenetrable atmosphere; and, the greater their intelligence, the more inadmissible, the more incomprehensible, will the strange obstacle appear. Whereas the feather-brained flies, careless of logic as of the enigma of crystal, disregarding the call of the light, flutter wildly hither and thither, and meeting there the good fortune that often waits on the simple, who find salvation there where the wiser will perish, necessarily end by discovering the friendly opening that restores their liberty to them."<sup>1</sup>

Are architects behaving as flies or bees? For architectural educators, this elegantly stated example can serve as a metaphor for the importance of experimentation, trial, and error, and a bit of healthy confusion in problem solving . . . not that they are the only ingredients, but that they are a healthy antidote to analytical rigidity. In fact, architects have been teaching and behaving like the flies in the experiment for generations. They have relied heavily on personal knowledge and insight, unencumbered by much in the way of self-doubt. Even in the 1950s, when the purview of architecture broadened from the building scale to the urban renewal of entire neighborhoods, architects often responded with personal, physical design solutions to complex social and economic problems.

Perhaps sensing the inadequacy of their intuitive solutions to problems, and perhaps influenced by a countervailing trend in private industry, architects were drawn to the rational, "scientific" methods of the early 1960s. Think tanks such as the RAND Corporation proliferated, espousing a rational systematic approach to problem-solving and rejecting unitary, simplistic solutions. Architecture schools began to shift their focus from design to architectural programming, construction and building management, and computer modeling of urban development. The design studio

*From a background of doing, teaching, and researching architecture and city planning, Michael and Julie Seelig offer some personal guideposts for a more balanced approach to architectural education*

waned in importance. Perhaps something could be learned from the bees' approach after all. But the comfortable focus on rationality did not survive the late 1960s' shock waves of "counter-culture" opposition to the dominant "technocracy."<sup>2</sup> The youthful rebellion of the late 1960s marked the end of the glorification of the completely objective, technical solution and the rule of the disinterested expert . . . a blow to the bees and a return to the flies' approach.

The architectural pendulum swings between rational and intuitive. There have been a couple of swings of the pendulum since—both in architectural practice and education. As the heady, full-employment days of the late 1960s and early 1970s gave way to harder times, young people wanted demonstrable skills out of their education investment. They wanted to be sure that they themselves were marketable commodities. Architecture students sought courses in business schools in order to insure that they would have skills wanted in the marketplace. More recently, insight, personal knowledge, and the accidental have again returned to the fore. Many architects have thrown off the rigid dogma of Modernism and are finding new inspiration through the use of classical references and color in surprising, sportive ways.

Where do these pendulum swings between the rational and the intuitive leave us today? The debate in the pages of RECORD about the importance of studio as a teaching method reflects the difficulty of training people in the profession which is partly science and partly art, and where the challenge is to produce not only firmness and commodity but also delight. If only those bees and flies could put their heads together!

Both approaches must be pursued simultaneously. Rapoport's claim that design should be based on theory, not simply likes and dislikes, is valid. Yet his dismissal of the studio as the most important teaching forum for architects is not (RECORD, October 1984). The need for experimentation, for subjective and value-laden knowledge, and for deductive, analytic knowledge must be met in architectural education.

This article claims that this task can be accomplished in the architectural studio by setting guideposts that draw on both commonly held universal ideas and individual intuition and creativity. The four guideposts that are

normally viewed as constraints in the design process provide the framework within which the architect can develop his ideas. Imposing constraints on the creative process helps resolve the conflict between the need to identify a common set of rational interests to be served by physical design while allowing the designer to rely on his individualism and permitting him freedom of expression.

Constraints of the design process: Opportunities and signposts in disguise? At the start of any design problem, one is keenly aware of the range of physical and practical constraints: topography, climate, budget, and others. These constraining features of the design process are generally viewed as negative, when in fact such constraints can provide invaluable clues to creative design decisions. But beyond the more mundane limits of site configuration and budget, there are limits of a more abstract nature that can serve as positive stimuli to good design. We define these limits as Precedent, Context, Order, and Values. These four concepts direct and channel the intuitive process of physical design.

Precedent: Carefully consider only the appropriate best. Consideration of precedent is second nature to a lawyer whose first step in preparing a case is to review related decisions already made by the courts in order to identify which legal arguments have worked in the past. Just how far afield and how far back in history he wishes to consider in his search of the case law is what he must decide.

It should be equally automatic for architects to consider precedent and past successes in their work. Step number one in so many large-scale design exercises is to define the problem. As Rapoport complains, this stage may be whisked over using little information and research. Antecedents to the situation must be considered. This does not mean the standard thumbnail historical sketch so often provided in design documents, but rather a considered drawing out of history relevant to the specific

<sup>1</sup>Gordon Siu's experiment is cited in Thomas J. Peters and Robert H. Waterman, Jr., *In Search of Excellence: Lessons from America's Best-Run Companies*, (New York: Harper and Row, 1982), p. 105.

<sup>2</sup>Theodore Roszak, *The Making of a Counter Culture*, (Garden City, New York: Anchor Books, Doubleday and Co., Inc., 1968).

Michael Seelig is an architect and city planner who teaches at the University of British Columbia. Julie Seelig is a freelance city planner in Vancouver. The Seeligs are currently spending a year in Jerusalem researching the incorporation of archaeology with modern architecture.

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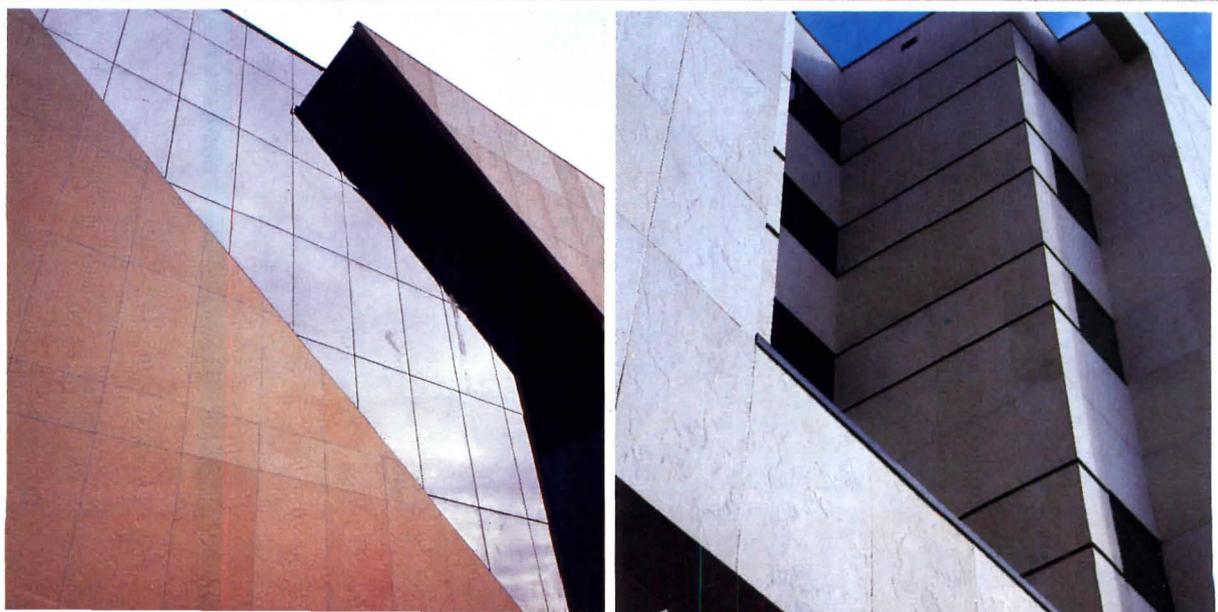
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design project. A lawyer's citing of the case law in a particular field will not be identical from case to case. It must vary with the point he is trying to make.

Venturi has said, "As an architect I try to be guided not by habit but by conscious sense of the past—by precedent thoughtfully considered."<sup>3</sup> This distinction between precedent and habit is crucial. The consideration of precedent does not mean slavish copying of what has been done before. Instead, a careful consideration of the best design and functional elements is called for here.

An example of a major redevelopment project (about 40 acres) which reflects the careful consideration of precedent is Granville Island in Vancouver, Canada (RECORD, September 1980). The island has been redeveloped into a lively commercial area containing a public market, theaters, artists' studios, restaurants, an art college, factories, and waterfront walks and parks. The area was an old and decaying industrial district until its redevelopment. The approach has been to keep the industrial toughness of the place, and several existing industries including a cement plant have remained amid the bustle of shoppers and theatergoers. Instead of prettifying the area, the tangle of streets was left, and pedestrians mix with vehicular traffic in what has always been a planning "no-no." The result is a revival of the lost urbanity which the urban designers were seeking. The industrial precedent provided the inspiration for the building styles—and brightly colored corrugated metal and stucco dominate the island just as they did when the buildings were warehouses rather than theaters and galleries.

In the case of Granville Island, precedent provides charm and something unusual—the final result is a far cry from the sanitized style of renovation done in warehouse districts of many cities. This example cites the use of immediate historical precedents, but there is no limit to the time period of location of helpful precedents.

Arthur Erickson's Museum of Anthropology at the University of British Columbia is a good example of the use of precedent in the design of a single building. In searching for precedent for the design of such a museum, Erickson chose to look not at other museums but rather at the building style evolved by Northwest Coast Indians. The concrete posts and beams echo the huge wooden posts and cross-beams so typical of the traditional Northwest Coast house, especially

of the Kwakiutl Indians. The shape of the museum, its relationship to its site and the sea beyond, and its landscaping evoke an entire traditional Northwest Coast village.<sup>4</sup> The precedent for the museum is therefore not other museums but the character of the people whose work is shown inside.

**Context:  
Apply all the pertinent factors to design**

Another limit that must be considered is the context of a particular development or decision. This context might be physical, political, or institutional. A change in context brings about a change in meaning. Despite Mies's statement that he was interested in the building first and only secondarily in its relationship to its site, one of his most famous buildings—the Seagram Building in New York—is at least as celebrated for its siting as it is for its detailing.

Consideration of context can help to insure an evolutionary approach to urban design, an approach that builds on and enhances the environment instead of negating and destroying it. Consider two single-family homes done by the same architect in two completely different settings (RECORD, November 1983). Moshe Safdie designed one home in Jerusalem just outside the ancient walls of the Old City. His design was constrained by preservation legislation and the types of buildings already in the area. His solution appears quite conventional from the outside—the house fits into its surroundings unobtrusively. The inside spaces are dramatic and most unconventional. The second house is set on a lakefront in Alabama. There is not another manmade construction in sight. The solution is daring and even bizarre—the only constraint is the relationship to the lakefront. Safdie comments: "The Jerusalem house was built with a high level of community responsibility—it is urban, it is a collective domain. The Alabama house was built as a man's private world. Looking back on these two houses I am reminded of a conception of 'place' brought to each design. It is important to remain attentive to what is special about a place." (RECORD, November 1983.)

In addition to changes in physical context, there are changes in political and economic context. One of the most startling shifts in context occurred with the 1973 energy crisis when limits to energy began to stimulate more responsible ways of designing buildings and developing land. Only after 1973 was there consideration of the cost

of tearing down a building in terms of the energy needed to produce the actual bricks and mortar.

**Order:  
Find the dominant unifying forces as themes**

Once limits to a given design problem are set by looking backward for precedent and around at context, are there additional constraints and guideposts to propel one forward? Venturi's work celebrates complexity and contradiction in architecture.<sup>5</sup> He opposes oversimplification and uniformity and praises an architecture of opposites, where the circumstantial and the surprising are included. This architecture of inclusion rather than exclusion has its order. Venturi does refer to what he calls the "dominant binder"—a good term for a boundary on physical planning and design activity. In cities it is generally the circulation pattern that provides the dominant binder. It gives order. This function is most evident in Mediterranean cities where there seems to be a solid volume of building in which the streets have been hollowed out. The street edges are the only limits to development.

The point of referring to a dominant unifying force is to stress the importance of stepping back from a particular design problem to assess what are the significant themes for that situation. In a seaside city like Vancouver or San Francisco, certain views of water and mountains might be a dominant principle. In more ancient Mediterranean cities, a major organizing principle is the historic street pattern of tight, winding alleyways. In many suburban areas, the topography provides a guideline as streets wind and conform to the lay of the land.

Order is more than a physical concept. It can be social and economic as well. The strong social order in the Little Italies and Chinatowns of North America is readily apparent. If physical design ignores the social order, it is doomed to failure. Thus, when public housing programs provided small apartment units for Chinese families in Vancouver's Chinatown, they failed completely to meet the needs of the large extended families so much a part of the Chinese way of life.

The context of a design exercise, as described in the previous section, sets parameters or limits to the solution. The concept of order described here provides a structure for the next steps to be taken. While context is external to the problem at hand, order stems from within and gives positive guidance to the design process.

**Values:  
Compare the different points of view**

Values provide a way to translate Precedent, Context, and Order into action. Both the values of the designers and entrepreneurs who carry out development and the values of the community in which they work come into play. Kevin Lynch wrote that "the values and the values who transformed Boston can be traced, overlaid as they are by the complexity of a great city and the vast inertia of its form. The city did not just 'grow naturally,' nor was it the inescapable outcome of impersonal historic forces. Neither was its growth a unique or incomprehensible tale."<sup>6</sup> Lynch honed his ability to read societal values from built form and from a knowledge of how that form evolved over time. Architects need to develop these skills. They should learn to set as one of their objectives a value sketch of the society in which their projects are located.

Different societies have fundamentally different points of view on such values as privacy, open space and other issues important to the work of architects. Compare the role of the Common, which exists in every New England city and town, to the lack of common open space in Middle Eastern cities. In those cities privacy is one of the most important values. In Jerusalem, for example, what is visible from the winding streets of the Old City is only the surface of the walls and gates. A quick glimpse into one of the courtyards behind these gates shows that all open space is interior and private. New England towns are far more open and obvious in their layout. These physical differences clearly express the difference in values of the two societies.

Recently, writers like Trilling<sup>7</sup> have taken up on Lynch's style of observation. Trilling's "Architecture as Politics" provides

<sup>3</sup>Robert Venturi, *Complexity and Contradiction in Architecture*, (New York: Museum of Modern Art, 1966), p. 18.

<sup>4</sup>Joan M. Vastokas, "Architecture as Cultural Expression: Arthur Erickson and the New Museum of Anthropology, University of British Columbia," *Arts Canada* 208/209: 1-15.

<sup>5</sup>Venturi, *op. cit.*

<sup>6</sup>Kevin Lynch, *A Theory of Good City Form* (Cambridge, Mass.: The MIT Press, 1981), p. 35.

<sup>7</sup>Julia Trilling, "Architecture as Politics," *The Atlantic*, 252, 4: 26-35.

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# Planning Prevents

a wonderful sketch of recent developments in Paris as manifestations of the prevailing political climate. The redevelopment of Les Halles, the picturesque but cramped market, became an ideological football as proposals for its ultimate use varying from park to world trade center to housing project were bandied about. The so-called *L'Affaire des Halles* involved clashes in such values as populism versus elitism, classicism versus romanticism, and national control versus Parisian control of decisions. Certainly, political analysis can be carried to an extreme, so that the architect feels incapable of action. But some minimum of this type of analysis of the political constraints surrounding a planning decision is a necessity if the decision is to be viable.

#### Learning from flies and bees: Find a more structural intuitive approach

The four guidelines above should provide some theoretical underpinnings for studio work. However, focusing too heavily on any one of the four will give a lopsided approach. Overemphasis on "values," for example, can lead to the overly political types of analysis so prevalent among young radicals in the 1960s. An overemphasis on precedent can result in the slavish devotion to the past that one sometimes finds in the historic preservation movement. It is important to touch on all four aspects.

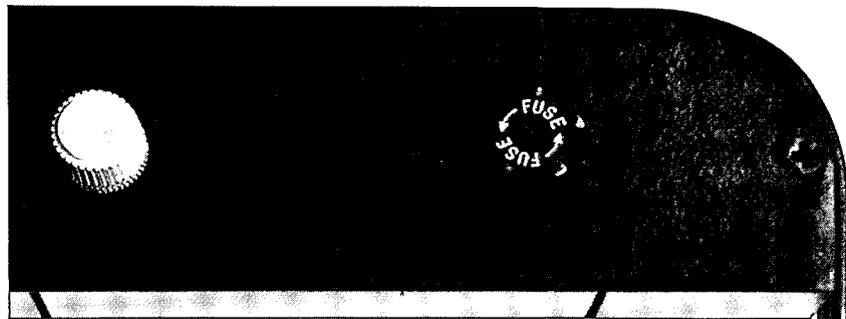
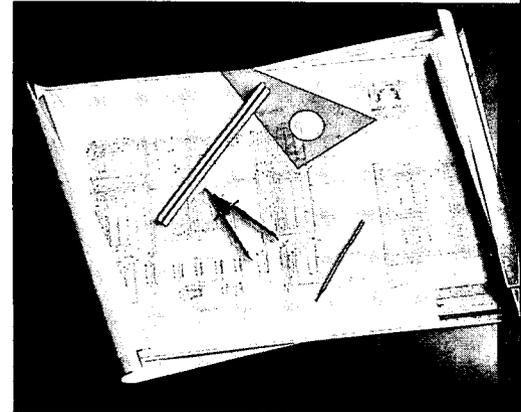
To return again to the flies and bees of the experiment described earlier, it is obvious that neither the example of the bees nor that of the flies provides the model for architectural education. In the past, much of architectural education was purely intuitive. Recently there have been strong pressures to make architectural education more "scientific." This article advocates a compromise—a more structured intuitive approach. By advocating this course, the authors have not left practitioners to beat their wings aimlessly at the confines of the glass jar until they find solutions by chance. The four positive stimuli to good design—Precedent, Context, Order, and Values—are offered as guides to the thinking of architects and those who train them.

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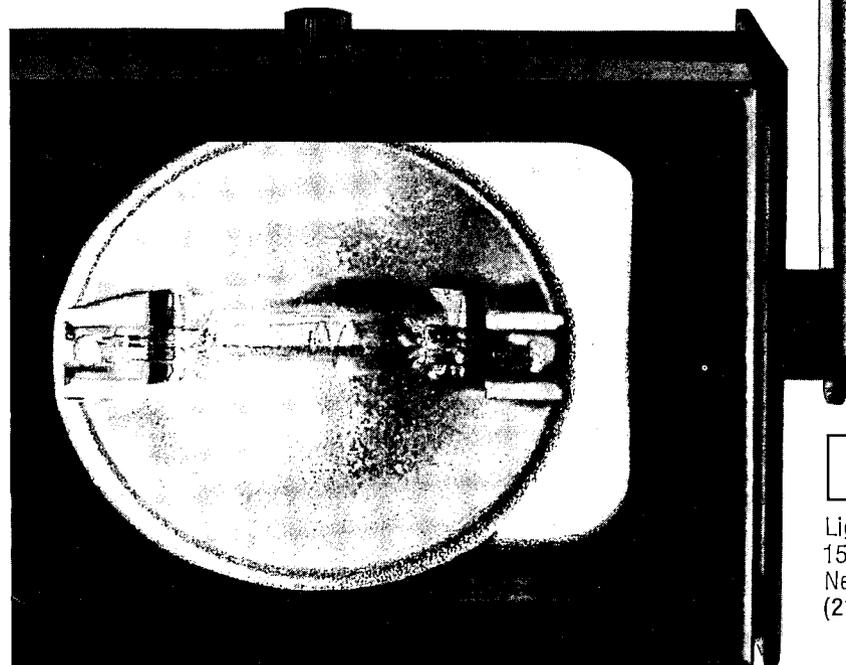
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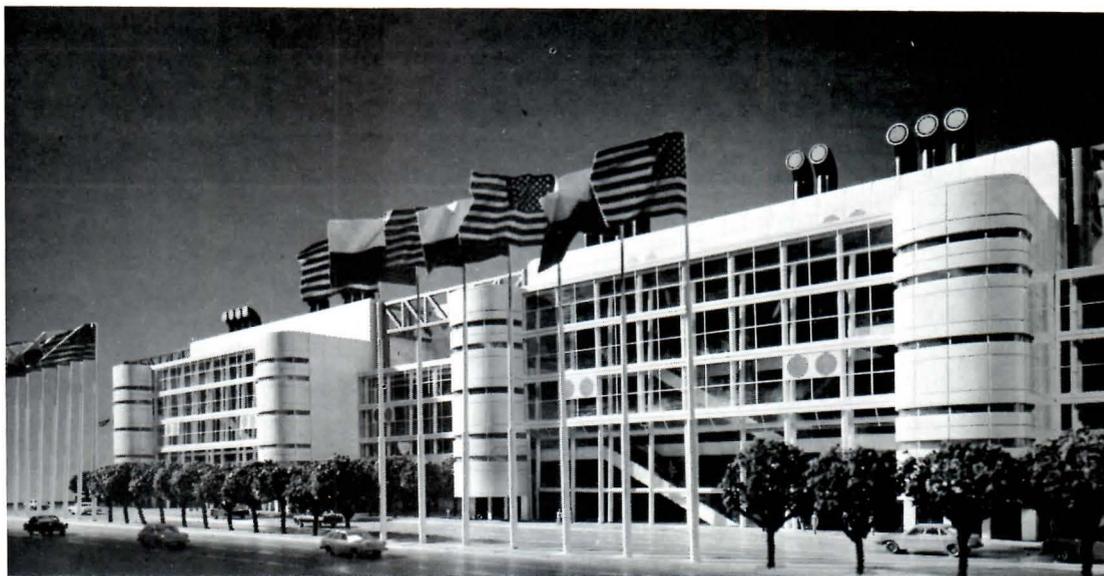
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## Construction begins on Houston's downtown convention center



Although Houston has long been one of the most popular convention sites in the country, the city's main meeting place, the Astrohall, is situated a good five miles from major downtown hotels. In an effort to provide the Texas metropolis with a more conveniently located convention center, the city fathers proposed—and the voters passed—a referendum for a facility that will occupy a 25-acre, 17-block parcel on

the eastern edge of the central business district. The first phase of the 1.6-million-square-foot project, scheduled for completion in 1987, comprises 500,000 square feet of exhibition space, a ballroom with banquet facilities for 3,000, 43 meeting rooms, three general assembly auditoriums seating a total of 3,600 people, and an adjacent 3,000-car garage. Designed as a mild-mannered, all-American

variation on the Pompidou Center in Paris, the structure will have white metal cladding, exposed blue trusses and columns, prominent red roof ventilators, and large expanses of glass revealing the interior. Chief designer is Mario Bolullo of Golemon & Rolfe Associates, in association with John S. Chase; Molina & Associates; Haywood Jordan McCowan of Houston; and Moseley Associates.

## From olive drab to dusty rose: A new design center in Boston



One of the happiest offshoots of the historic preservation movement has been the growing reuse of former industrial buildings, once viewed by many as white elephants, into a variety of commercial, residential, and mixed-use facilities. Recently, developers have begun to convert these sturdy, amply proportioned buildings into design centers for the display of contract and residential furnishings. Warehouses in Denver

and Washington, D. C., have been renovated into manufacturers' show rooms, and a major project in New York is transforming a collection of vacant industrial buildings into the new International Design Center. And in Boston, work is proceeding on the conversion of a 1917 Army base warehouse, located on the South End waterfront, into a 550,000-square-foot center that will serve the New England design

community. Architects Earl R. Flansburgh & Associates have given the pre-Modern concrete building a decidedly post-Modern look by adding a triangular pediment atop the structure and a two-story-high granite and marble main entrance vestibule. Interiors, which will incorporate eight floors of contract and residential show rooms, were designed by The Stubbins Associates.

# Reshaping the San Francisco skyline: Seven current projects respond to the city's new downtown plan

San Franciscans like to say that every American has two home towns: his own and the City by the Bay. But while only the most cold-hearted observer would fail to be captivated by the legendary charms of the city, residents and visitors alike agree that the unprecedented 20-year building boom in San Francisco's central business district has resulted in a decidedly charmless skyline that, save for the distinctive Transamerica pyramid, could be Anywhere, U. S. A. Although critics have been bemoaning the proliferation of giant commercial slabs in San Francisco's CBD since the early-1970s, it was only in November of last year that the City Planning Commission approved a sweeping new master plan for downtown which, if ratified by the Board of Supervisors this spring, will have a profound effect on future development in the city.

"Downtown San Francisco should encompass a compact mix of activities, historical values, and distinctive architecture and urban forms that engender a special excitement reflective of a world city." Thus begins the CPC's comprehensive 131-page report, which includes, among other things, the following recommendations:

- Move commercial development away from the so-called "Golden Triangle" bounded by Market, Montgomery, and California streets to an area south of Market Street, the city's main spine, centering on the Transbay Transit Terminal.
- Reduce over-all building density by lowering the floor-area ratio throughout the CBD.
- Consciously structure height limitations from a maximum of 40 feet at the edge of the CBD to 550 feet near the Transbay Terminal. These controls are meant to create a sculpted skyline that would taper down toward the Bay and "simulate the natural hills that characterize San Francisco."

- Set into motion a series of bulk controls mandating that "as buildings increase in height, they should be shaped to appear increasingly slender and delicate." These setback controls would encourage a return to the tripartite architectural configuration of base/shaft/tower prevalent earlier in the century and discourage the "austere, flat-top box—a facade cut off in space." Developers could receive up to a ten per cent exception to the height limitation by further reducing tower bulk and by terminating buildings with "expressive tops."

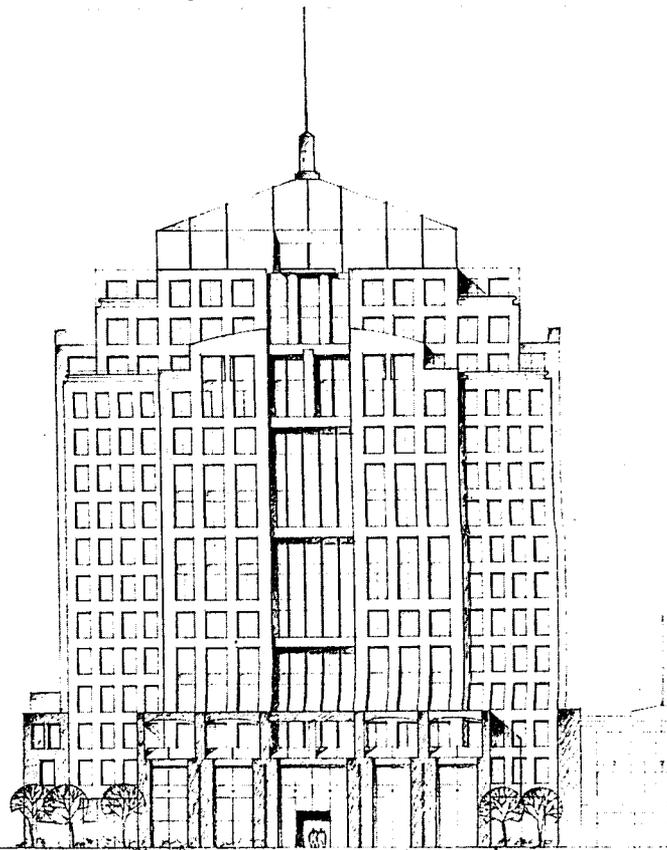
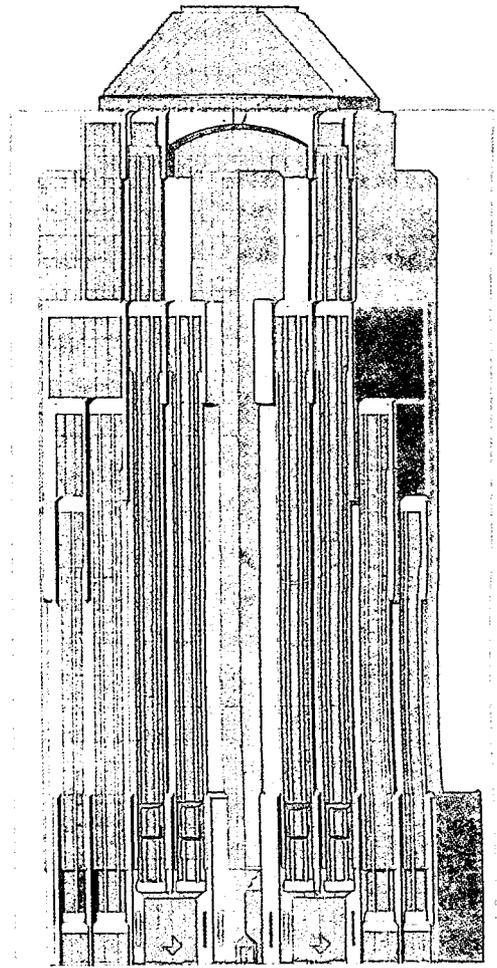
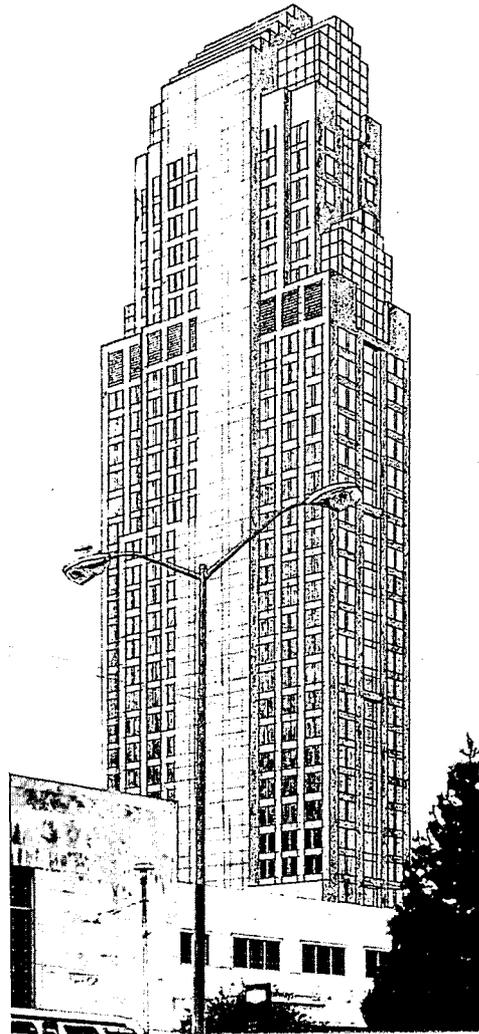
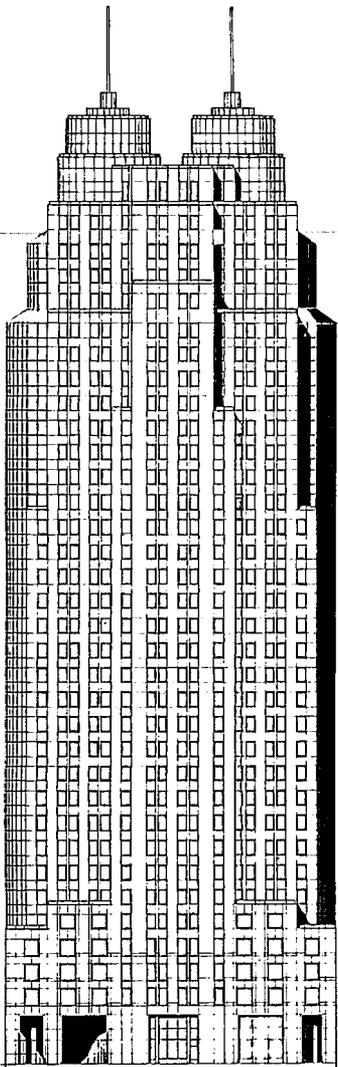
Not surprisingly in a city as philosophically diverse as San Francisco, the provisions set forth in the downtown plan have provoked considerable debate.

Many development-oriented observers feel the guidelines are too restrictive, while others, lamenting the overbuilding of the past, contend that the report does not go far enough in reducing bulk and putting limits on the amount of commercial square footage which annually can be added in the CBD. One local architect who feels that the downtown plan effectively addresses past planning oversights is Jeffrey Heller, the former partner-in-charge of commercial and urban design at Kaplan/McLaughlin/Diaz and now a partner at his own firm of Heller & Leake. Heller helped draft the city's new urban form guidelines, and he contends that buildings erected from this point forward should create a dramatic skyline evocative of the setback towers built in New York during the 1920s and '30s.

To lend weight to his view Heller's firm is presently collaborating with Kaplan/McLaughlin/Diaz on several new office projects—six of which are illustrated here—that conform to the new height and bulk rules, especially as they apply to the area around the Transbay Terminal. (A seventh project, also shown, is a joint venture between Skidmore, Owings & Merrill and Heller & Leake.) The buildings range in height from 15 to 35 stories, and all seven projects exhibit a predominance of masonry—usually granite and precast—over glass. Each proposal has several setbacks, an articulated top, and provisions for ground-floor retail space either along the street or in pedestrian arcades. Although the architects' renderings clearly reveal the visual potential of structures designed under the new guidelines, it remains to be seen whether San Francisco has come up with the correct formula for humane downtown development. *P. M. S.*

1. 250 Montgomery Street. Heller & Leake.
2. 49 Stevenson Street. Kaplan/McLaughlin/Diaz.
3. 535 Mission Street. Kaplan/McLaughlin/Diaz and Heller & Leake, associated architects.
4. 524 Howard Street. Kaplan/McLaughlin/Diaz and Heller & Leake, in joint venture.
5. 100 First Street. Skidmore, Owings & Merrill, architects; Heller & Leake, design consultants.
6. Central Plaza. Kaplan/McLaughlin/Diaz, architects; Heller & Leake, design consultants.
7. 299 Second Street. Kaplan/McLaughlin/Diaz and Heller & Leake, associated architects.





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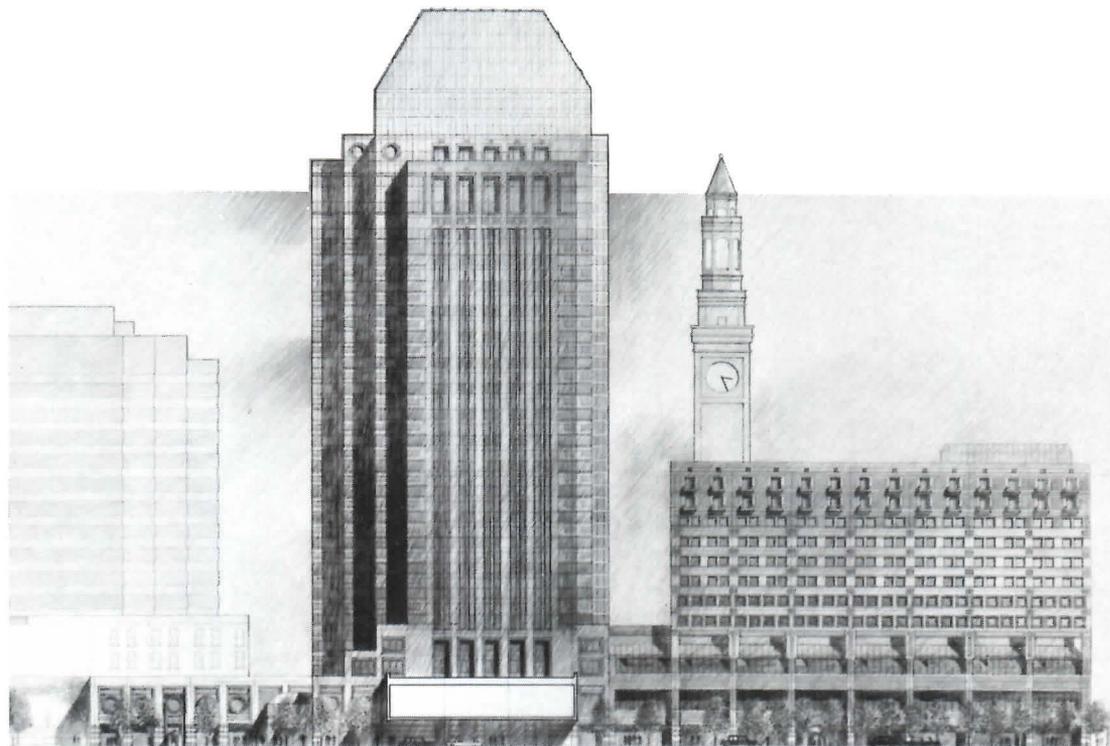
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## Harbinger of downtown rebirth: A mixed-use proposal for Springfield



• Oberlin College is sponsoring a competition for the design of a bandstand, proposed for Tappan Square on the college campus. A cash award of \$5,000 will be given to the winning entrant. Registration deadline is March 31. Contact the Project Director, Bandstand Design Competition, Allen Memorial Art Museum, Oberlin College, Oberlin, Ohio 44074.

• The Harvard Architecture Review seeks entries to an exhibition at Gund Hall entitled "Making Shelter." Entrants should submit designs for a shelter where someone may spend the night in the public space of a city. Entry deadline is April 5. For information write "Making Shelter," The Harvard Architecture Review, Gund Hall Room 323e, 48 Quincy St., Cambridge, Mass. 02138.

• The New York Chapter/AIA is sponsoring the Third Annual Douglas Haskell Awards for student architectural journalism, a national program open to any student enrolled in a professional architecture program or related discipline. Entries should be articles on design-related topics that have been published or are suitable for publication. Prizes totaling \$1,000 will be awarded. Entry deadline is April 15. For information contact the Haskell Program, New York Chapter/AIA, 457 Madison Ave., New York, N. Y. 10022.

• Arizona State University has issued a call for entries to a competition that seeks designs for a new fine arts complex on the Tempe campus. Five finalists will each receive an honorarium of \$15,000 plus \$5,000 for travel expenses. Entry deadline is May 1. For information contact the Competition Advisor, University Planning and Construction Office, Arizona State University, Tempe, Ariz. 85287.

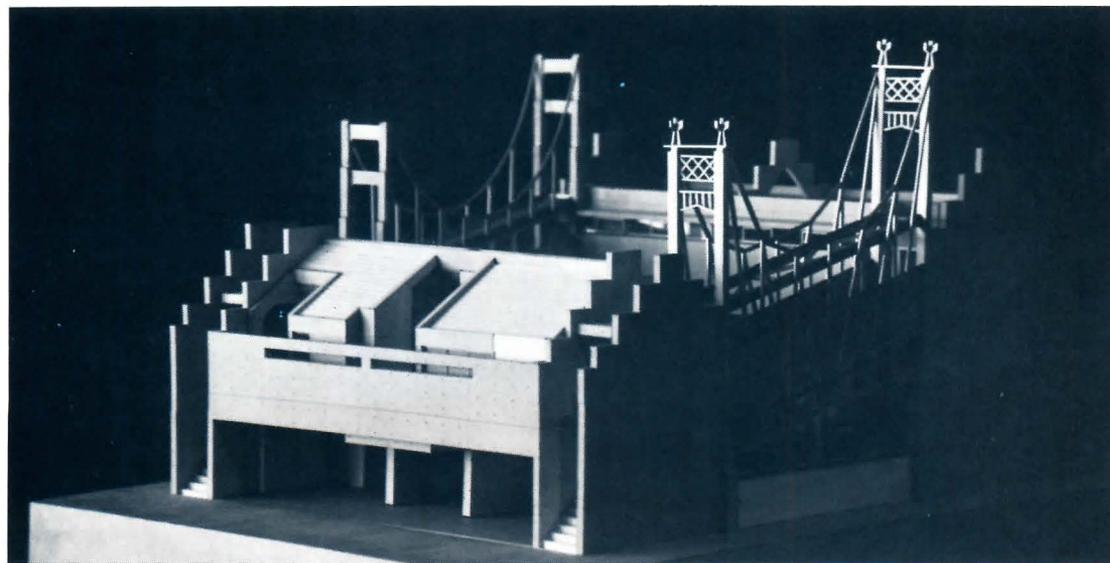
Like other medium-size cities in New England, Springfield, Massachusetts has not had much to brag about in recent years. Although the industrial center on the Connecticut River has retained a good deal of residential vitality, its once-robust downtown has been beset by the same urban woes—fleeing businesses, building abandonment, and competition from regional shopping malls—that

afflict inner-city cores across the country. Still, there is hope for downtown Springfield—witness the recent unveiling of plans for Monarch Place, a 946,000-square-foot, mixed-use project proposed for a pivotal site formerly occupied by the Forbes and Wallace department store. The center is designed by Jung/Brannen Associates and will consist of a 26-story office tower, a 280-room hotel, street-level retail

space, a health club, and a 540-space garage. Situated on a base of pink granite, the tower and hotel will be sheathed in reflective glass and precast concrete on two sides; the remaining elevations, by contrast, will be clad in all-reflective glass that will mirror the city's historic municipal buildings and campanile located across the street. A lighted polygonal glass top will cast a nighttime beacon across the valley.

## Hassan Fathy wins UIA Gold Medal for Architecture

The International Union of Architects has awarded its first Gold Medal to Hassan Fathy, the Egyptian architect whose writings and practice have reflected a lifelong belief in the marriage of vernacular tradition and modern technology, especially in the design of housing for the poor. Fathy received the award, the UIA's highest honor, at the organization's recent congress in Cairo.



## Bicoastal living

How does a Japanese architect designing a Tokyo apartment house for American businessmen and diplomats make its Western residents feel right at home? Kazuhiro Ishii's whimsical solution is a three-unit multiple dwelling consisting of two terraced residential blocks linked by small-scale replicas of New York's Queensboro and San Francisco's Golden Gate bridges. Designed to

enclose stairwells and define an interior courtyard, the two spans were inspired by telephoto vistas of great American bridges framed by buildings that Ishii had seen while studying architecture at Yale. One doesn't have to be from New York or California, however, to appreciate Ishii's unusual imagery: the dwelling, notes the architect, is for all Americans who "like to live *in between* the two coasts."

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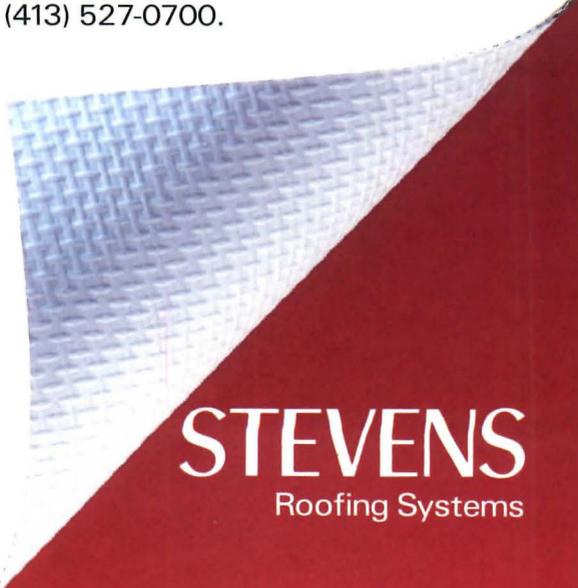
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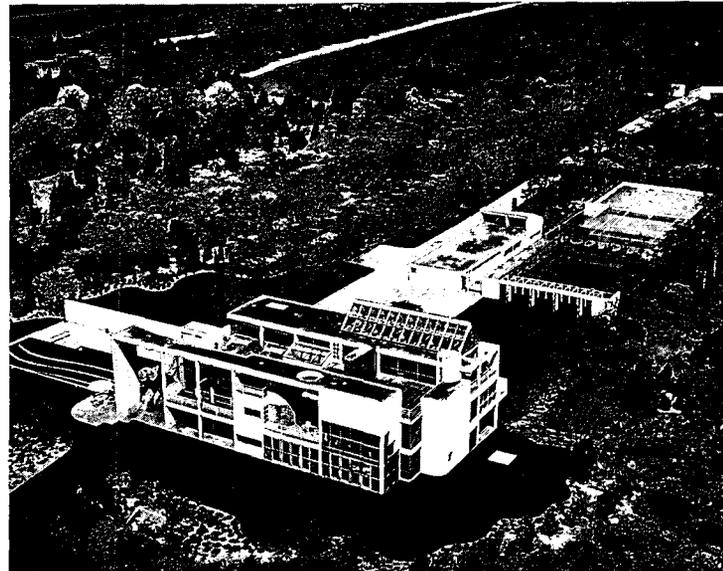
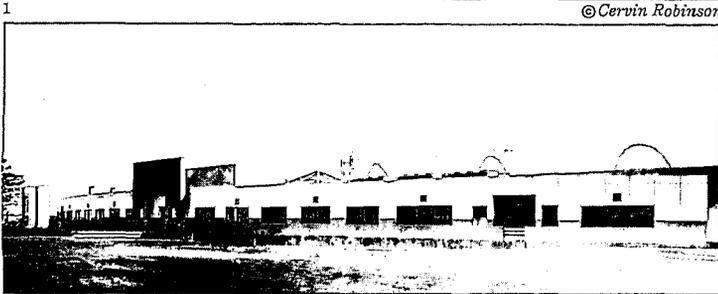
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**Design awards/competitions:  
New York State Association of Architects  
1984 Design Awards**



1. IBM 590 Madison Avenue, New York, New York; Edward Larrabee Barnes Associates, Architects (Award of Excellence). For a 43-story office building in midtown Manhattan, the architects specified a sheer, five-sided prism clad in a sleek curtain wall of gray-green glass and polished granite (RECORD, May 1984, pages 146-155). Designed to reinforce the street walls of Madison Avenue and East 57th Street, the tower occupies just 40 per cent of its building site and opens onto an all-weather, bamboo-filled garden plaza—a major public amenity that the jurors called “elegantly executed and landscaped.” They added that “this building may be eventually labeled as one of the very great skyscrapers of the 20th century.”

2. HBO James R. Shepley Satellite Communications Center, Hauppauge, New York; Lee Harris Pomeroy Associates, Architects (Award of Excellence). A two-level, 60,000-square-foot communications facility on Long Island originates and transmits television programming to 5,000 cable systems throughout North America. Clad in blue-and-white aluminum panels that contrast with red-framed windows, the building gently curves around seven dish antennae. A concrete “banner” at the entrance is meant to symbolize the building’s position between earth and outer space. The jury admired the building’s architectural imagery and noted that the structure “has a high-tech esthetic appropriate to its function.”

3. de Menil Residence, East Hampton, New York; Gwathmey Siegel & Associates, Architects (Award of Excellence). “A complex theoretical statement on a grand scale” is how the jury characterized the design of a large residence located on a seven-acre oceanfront site in eastern Long Island. The program was to develop the property—a combination of woods, open fields, and dunes—to accommodate a main house, guest house and garage, pool, tennis court, caretaker’s house, and garden. The solution, according to the architects, is meant to “extend the ideal intentions of Modernism” while referring “to historical precedents not through literal translation, but through an understanding of organizational ideas and perceptual implications.”

4. Erie Community College, City Campus, Buffalo, New York; The Cannon Corporation, Architects (Award of Excellence). The problem was to create a downtown campus for a community college through the renovation of an unused Victorian Gothic Federal building and post office. The focal point of the five-story, 225,000-square-foot facility is a large, rectangular atrium that was converted into dining commons and the school library. Other work on the structure included restoration of the granite facade, reconstruction of a stone tower, and replacement of the atrium’s glazed skylight. The jury called the project “a strong example of the advantages of adaptive reuse that demonstrates a faithful respect for the original building.”

A museum in Dallas, a community college campus in Buffalo, and a summer residence on the eastern end of Long Island were among the top winners in the 1984 awards program sponsored by the New York State Association of Architects. The annual program attracted 150 entries, and awards were made in the five categories of commercial/industrial, institutional, historic preservation/adaptive reuse, residential, and mixed-use. In presenting the six citations for excellence in design and eight honorable mention awards illustrated below and on the following

page, the jury tended to reject what it called "the gimmicks and decorations" of post-Modernism, showing, in the words of one juror, that "Modernism is not dead!" The jury consisted of Leonard Weinberg, AIA (chairman); Allan Anderson, AIA; Ann R. Chaintreuil, AIA; John S. Garment, AIA; and Der Scutt, AIA.

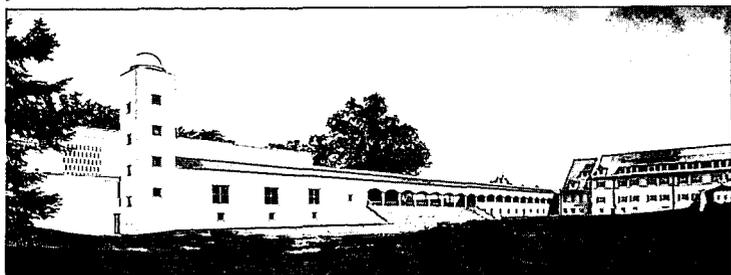
Also included in this issue are the results of awards programs sponsored by AIA regional chapters in the Central States, Houston, and Michigan.



©Paul Warchol



Roberto Schezen

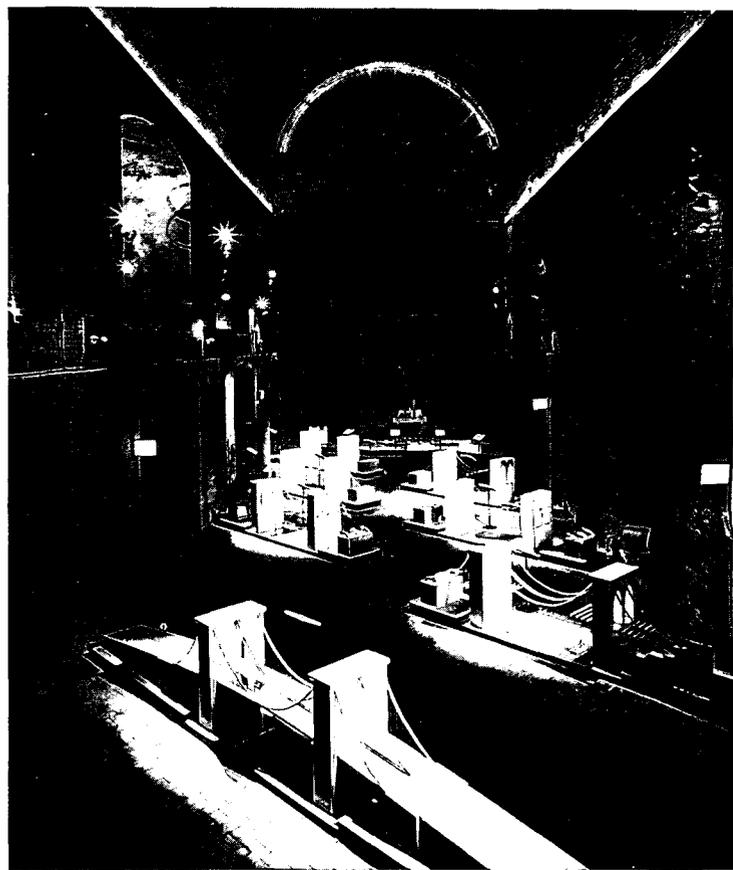


5. Purdue Frederick Company Corporate Headquarters, Norwalk, Connecticut; Gatje Papachristou Smith/ASE Furno, Architects in joint venture (Award of Excellence). A 50-year-old, 124,000-square-foot fire alarm factory was converted into a 90,000-square-foot headquarters for a pharmaceutical company (RECORD, January 1985, pages 98-99). In order to reduce the interior volume, the architects carved out two generous landscaped courtyards—and in the process created several exterior colonnades composed of previously internal columns. "Excellent plastic surgery," observed the jury. "This building displays sensitive attention to form, material, and detail."

6. Dallas Museum of Art, Dallas, Texas; Edward Larrabee Barnes Associates, Architects (Award of Excellence). A series of granite-clad

pavilions connected by a vaulted spine forms a major new museum, the first completed project of the downtown Dallas Arts District. The jury praised the building for its "beautiful sequence of interior spaces [which] are strengthened by diffused natural light and exquisite detailing. The architects have created a quiet, supportive space for the display of art."

7. Additions to The Westover School, Middlebury, Connecticut; Gwathmey Siegel & Associates, Architects (Honorable Mention). A major addition to a private boarding school, located on 150 rural New England acres, houses a 40,000-volume library and instructional spaces for three scientific disciplines (RECORD, February 1985, pages 124-133). The architects



Stephen Brown

designed an arcaded building whose stucco-covered walls and slate roof harmonize with details of the existing early 20th-century campus structures. "The building is full of richness and delight," observed the jury.

8. Restoration of the Brooklyn Bridge Anchorage Vaults, Brooklyn, New York; Smotrich & Platt, Architects (Honorable Mention). The architects' challenge was to convert two stone and six brick vaults of the Brooklyn Bridge anchorage into space suitable for exhibitions and gatherings of up to 1,500 people—all without intruding on John Roebling's original churchlike design (RECORD, August 1983, pages 124-127). The jury reserved its highest praise for the

project's new fluorescent and neon lighting, which "reinforces and articulates the massive stonework of the existing structure."

9. Downs Residence, Albany, New York; Crozier Philippi Associates, Architects (Honorable Mention). Calling a 2,000-square-foot cedar-sided house "an interesting departure from the present vernacular," the jurors observed that the architects took advantage of the heavily wooded, south-facing site by designing a series of screen walls and skylights that admit the sun and define circulation patterns. "The result," the jury concluded, "is a very handsome work of architecture [that] has a strong sculptural quality."



10 David A. Gordon



11 ©Peter Aaron/ESTO

10. Lovejoy Natatorium, Buffalo, New York; Trautman Associates, Architects (Honorable Mention). Working closely with a local citizens' committee, the architects transformed an abandoned Streamline Moderne movie house into a public swimming complex. The jury particularly liked the restoration of the polychromed, glazed terra-cotta entrance facade, which they called "simple and faithful to the original design."

11. House on Eastern Long Island, Quogue, New York; Hobart Betts, Architect (Honorable Mention). For a two-acre site in a Long Island resort community, the client requested a house with maximum privacy and security, separate guest accommodations, and generous space for entertaining. The architect's solution was to divide the shingle-clad residence into five separate pavilions linked by covered

walkways and arranged to form two enclosed courtyards. Lattice-work panels and doors terminating the walkways provide visual privacy while allowing cross-ventilation for the courtyards. The jury characterized the house as "good, clean, solid design."

12. Saratoga Springs City Center and Ramada Renaissance Hotel, Saratoga Springs, New York; Planned Expansion Group, Architects (Honorable Mention). A mixed-use convention center and hotel complex located at the edge of Saratoga's 19th-century commercial and residential historic district was designed with extensive use of brick and copper to harmonize with its existing neighbors. Although some jurors felt that the center was out of scale with its context, others argued that "there is a strong sensitivity to form and detail at work here."



12 ©Elliot Fine



13



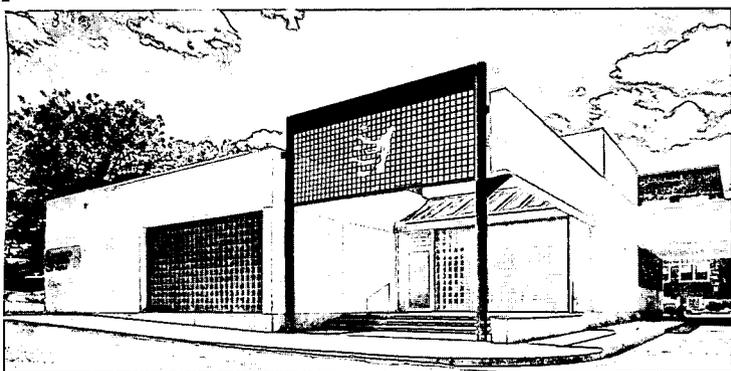
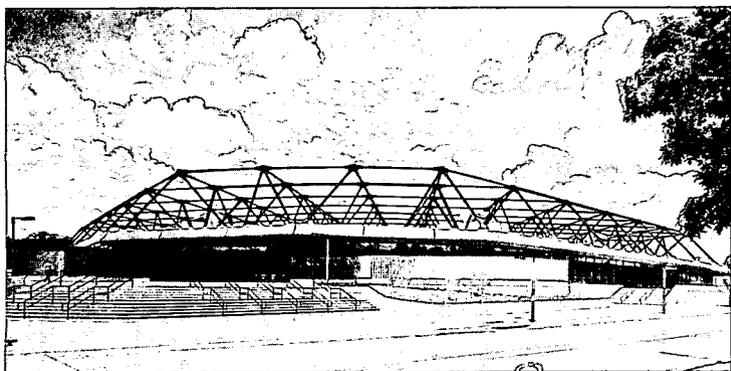
14 ©Peter Vanderwerker

13. Philip Morris USA Manufacturing Facility, Concord, North Carolina; Herbert Beckhard Frank Richlan & Associates, Architects, in association with MBA Architects & Planners (Honorable Mention). In order to reduce the apparent bulk of a three-quarter-mile-long, 1.8-million-square-foot cigarette manufacturing plant, the architects created a patterned facade comprising horizontal bands of precast concrete panels with alternating exposed aggregate and raked finishes. The primary production space features large windows and special air-movement systems that clear out the fine tobacco dust produced in the manufacturing process. The jurors lauded the architects for their "manipulation of massing and surface texture . . . a strong formal solution to the problem of [designing] a huge building."

14. The Nelson A. Rockefeller Center for the Social Sciences, Dartmouth College, Hanover, New Hampshire; Prentice & Chan, Ohlhausen, Architects (Honorable Mention). The architects opted to complete the symmetry of the east end of a 1927 academic building (RECORD, October 1984, pages 158-163) with an exact brick-by-brick replication of the original neo-Georgian architecture—a design decision that the jury called "highly appropriate to [the new building's] context." Behind the reproduced facade, the main mass of the structure exhibits a freer adaptation of historic detailing and includes stylized snow-catchers, horizontal ribbon windows, and a formal portico at the west end that leads into a courtyard and pedestrian mall. "An interesting blend of old and new," concluded the jury.

# Central States Region/AIA 1984 Design Awards

The 1984 awards program sponsored by the Central States Region of the AIA attracted 111 entries from architects practicing in Iowa, Nebraska, Kansas, Missouri, and Oklahoma. We illustrate the six winning projects below, selected by jurors Warren J. Cox, FAIA, of Washington, D. C.; Leonard S. Parker, FAIA, of Minneapolis; and Robert Yudell of Santa Monica, California.



1. Keene Residence, Crested Butte, Colorado; Bahr, Vermeer & Haecker, Architects. Located in a historic district of mountain residences, a shingle-clad vacation house was praised by the jury for harmonizing with its neighbors while still maintaining its own identity. A long open space incorporating first-floor living, dining, and kitchen areas has an exposed parallel wood truss supported by rustic tree columns. Family bedrooms and guest bunk quarters upstairs are illuminated by skylights in the peaked roof.

2. Carver-Hawkeye Arena, University of Iowa, Iowa City; CRS Sirmine, Architects. By placing a 15,000-seat sports arena into a natural ravine, the architects were able to minimize exterior wall surfaces and take advantage of the earth's insulation. Placement of the roof plane at the bottom of a steel

space-truss reduces the interior volume that requires heating or air conditioning and allows unobstructed views of the arena floor from all seats. The jury liked the way the low-profile design blends in with its wooded site.

3. American Federal/Ingersoll Branch Bank Remodeling, Des Moines, Iowa; Charles Herbert & Associates, Architects. The boxlike configuration of an existing building dictated the carefully controlled use of such rectilinear elements as exposed steel framing, metal infill grids, and glass block for a 2,200-square-foot bank addition. The jury praised the architects for creating a building that is "elegant without being overbearing or presumptuous."

4. Mid-Continent Tower, Tulsa, Oklahoma; HTB, Inc., Architects. A building expansion project incorporates a 16-story neo-Gothic



Jon B. Petersen



The Arkansas Office

office structure erected in 1918 with a 36-story addition. The new wing rises from an adjacent parking lot to the existing cornice line and then cantilevers out on two-story-high trusses that support a 20-story tower. The terra-cotta panels of the original building were duplicated, pre-assembled into steel-framed units on the ground, and hoisted into place. The jury, impressed by the architects' technical virtuosity, called the project the result of "a brilliant single idea."

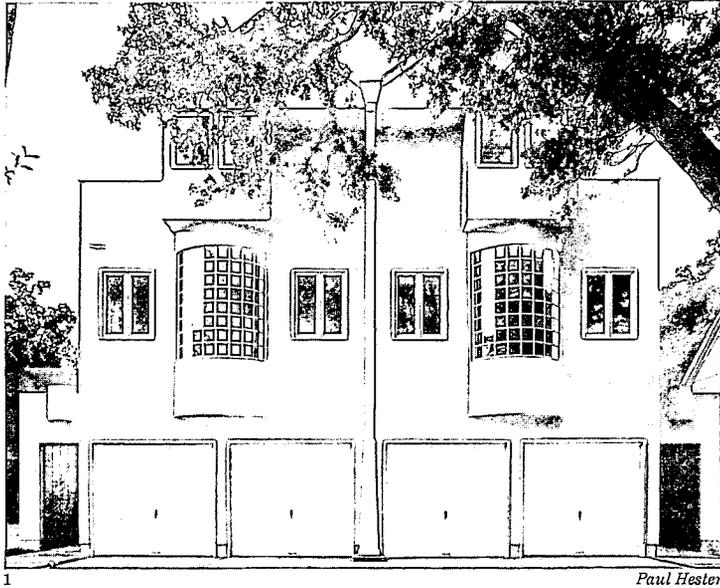
5. Mast Advertising & Publishing Building, Overland Park, Kansas; PBNA Architects. A corporate headquarters in a Kansas City suburb consists of two office wings connected by a recessed vertical circulation core. The jurors particularly liked the structure's highly textured facade—composed of concrete panels, granite, glass block, and clear glass—and praised

the building as an original. It was the only project reviewed, they noted, that could not be categorized into "an as yet recognizable architectural style."

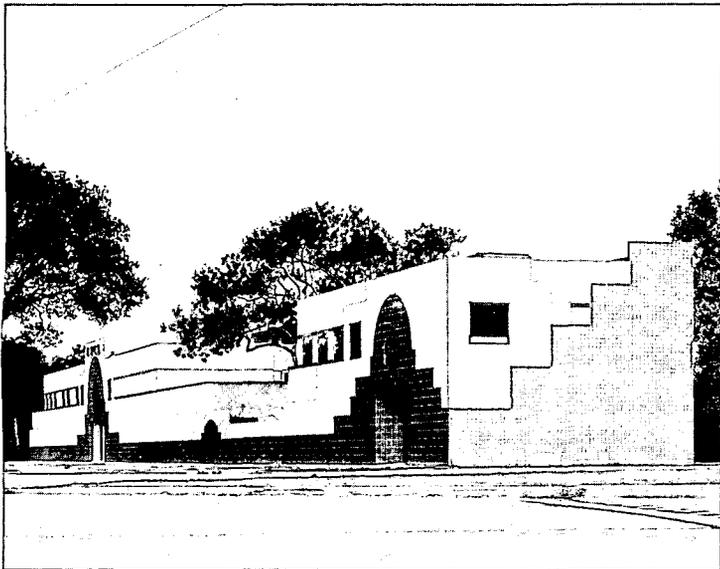
6. Boys Town of Missouri, St. James, Missouri; Ittner & Bowersox, Architects. Located on a wooded site in the Ozarks, a residential center for behaviorally disordered boys was designed to reinforce the warmth, stability, and openness that characterizes the organization's treatment program. The project comprises a renovated stone administration building, a pedestrian mall that facilitates the orderly flow of large groups of boys, and a new dining hall seating 160 (shown). The jury admired the way the architects avoided an "institutional" appearance by employing natural materials and by opening up the buildings into the landscape.

# Houston Chapter/AIA 1984 Design Awards

In its annual awards program the Houston Chapter of the AIA granted four honor awards and five honorable mention citations to architects who practice in the Texas city. Shown below are the four honor award projects, selected from 73 submissions by jurors Thomas Beeby, AIA, of Hammond Beeby and Babka in Chicago; Douglas Davis, architecture critic for Newsweek; and Frank Welch, FAIA, of Frank Welch Associates in Midland, Texas.

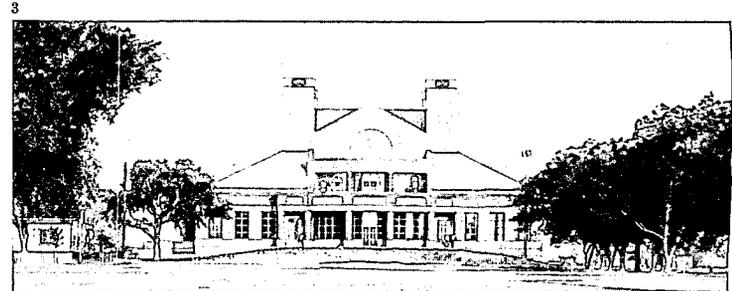
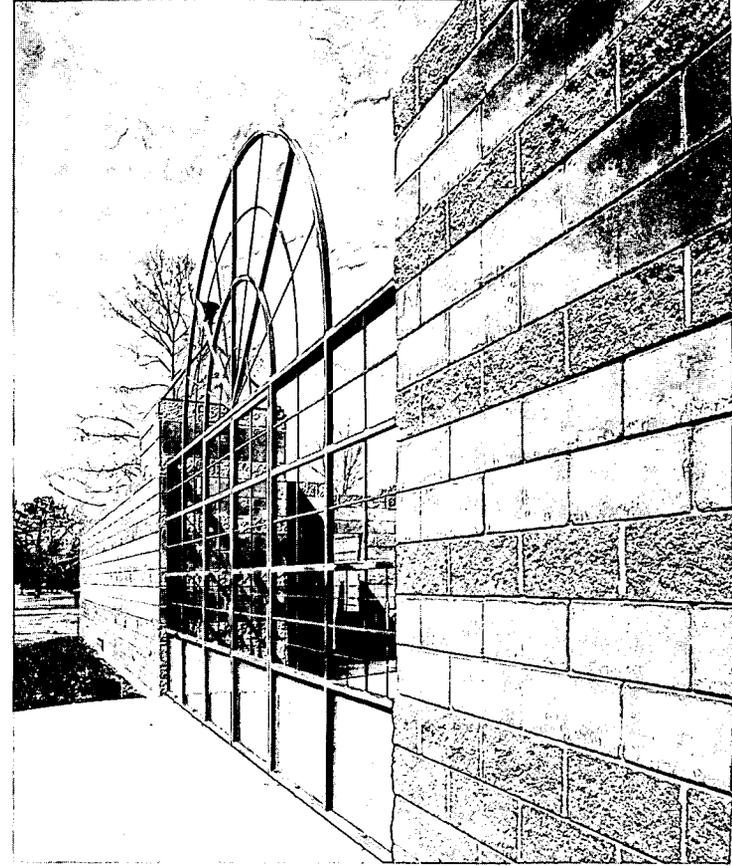


Paul Hester



1. Albans Street Town Houses, Houston, Texas; William F. Stern and Associates, Architects. Set in an established neighborhood of single-family and duplex dwellings built primarily in the 1930s, two attached town houses were designed to maintain the scale of their residential neighbors. A narrow 50-foot-wide site with six-foot side yards dictated planning and over-all massing, while rounded bays, peaked roofs, and stucco cladding recall the characteristics of early 20th-century domestic architecture in the area. Each unit has a two-car garage and two bedrooms on the ground floor, surmounted by a spatially united living room, studio loft, and kitchen/dining area above. The jury characterized the design as clean and efficient—"a lot of intelligence in a small space."

2. YWCA Masterson Branch and Metropolitan Offices, Houston, Texas; Taft Architects. Located on an irregularly shaped site overlooking a city park, this mixed-use recreational/office complex incorporates a day-care center, classrooms, a crafts room, racquetball courts, locker rooms, and a swimming pool, in addition to administrative facilities. In order to distinguish the building's recreational and office functions, the architects designed two separate wings and a pair of distinct entrances in the building's polychromed tile facade. (Blue tile trim specifically refers to the Blue Triangle, the original name and graphic symbol of the YWCA.) The jury noted that the facility's "complex needs are fully satisfied."



3. Southside Place Bath House, Houston, Texas; Taft Architects. The project requirements were to plan a new pool area and provide for changing rooms, showers, and storage on a strictly limited budget. A linear wall structure defines the edge of the park and provides a sense of entry to the pool by stepping up and forming a portal incorporating overscaled lanterns and a garden gate. Its banded concrete walls form roofless enclosures for privacy. A canvas-covered pavilion, evocative of seaside resort cabanas, shelters parents from the harsh Texas sun while they watch their children in the toddlers' pool.

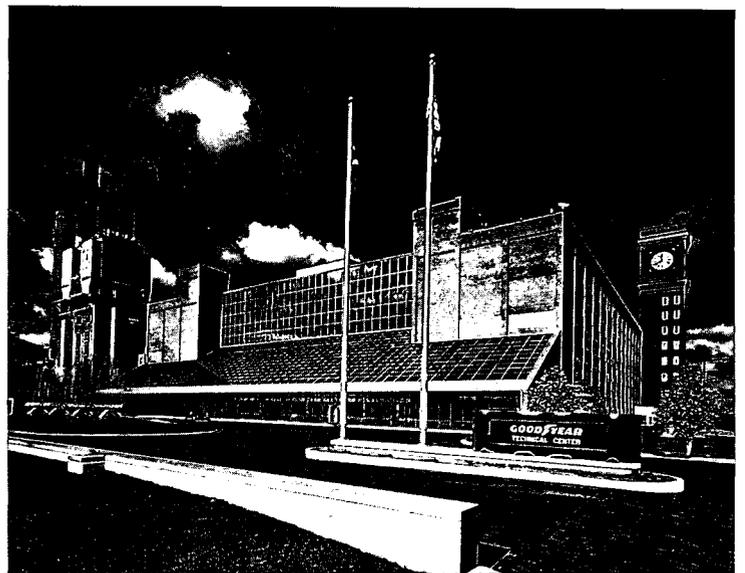
4. River Crest Country Club, Fort Worth, Texas; Taft Architects (RECORD, October 1984, pages 178-187). A mixed bag of influences—Palladio, Jefferson, Lutyens, and McKim, Mead & White—characterizes the design of a new clubhouse, built to replace a 70-year-old facility that had been destroyed by fire. Located in the Westover Hills estate district of Fort Worth, the three-story, 51,000-square-foot building incorporates formal and informal dining rooms, a men's tavern and card room, locker facilities, a grand ballroom, and related service areas. The clubhouse is sheathed in brick and terra cotta. A broad cornice ties together the structure's assorted gables, bays, and terraces, while recessed bands of small green tiles articulate the joints of a rusticated concrete basement. "Beautifully detailed," observed the jury.

# Michigan Society of Architects 1984 Honor Awards

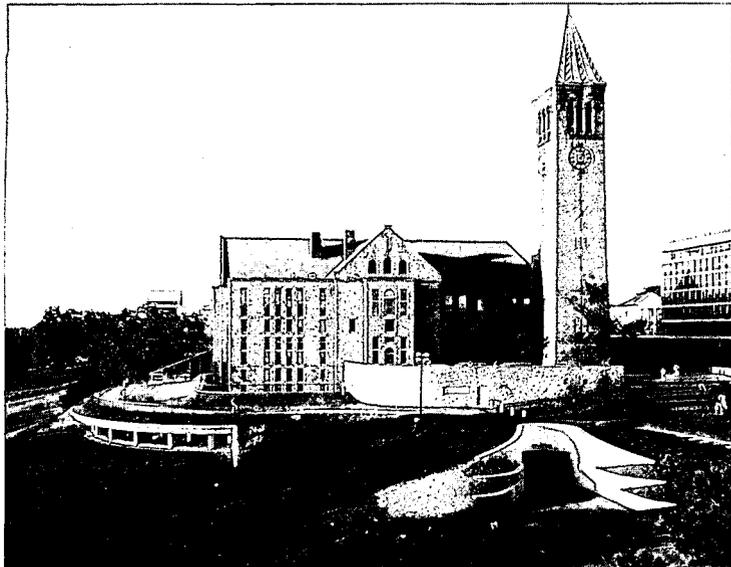
A jury consisting of Toronto architects Michael Kirkland, MRAIC, Stephen Irwin, MRAIC, and Raymond Moriyama, FRAIC, selected seven projects for top honors in the 1984 awards program sponsored by the Michigan Society of Architects. The jurors reviewed 72 competition entries and noted that the winning designs shown below ranged stylistically from "crystalline serpentine to well-behaved brick."



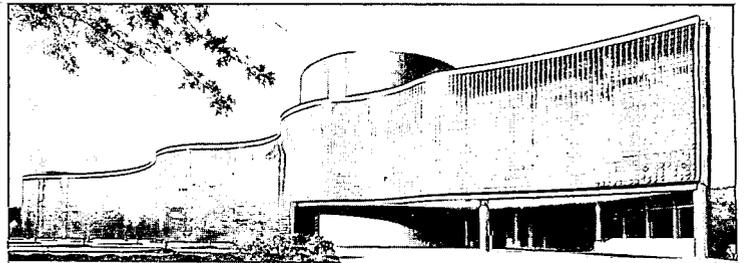
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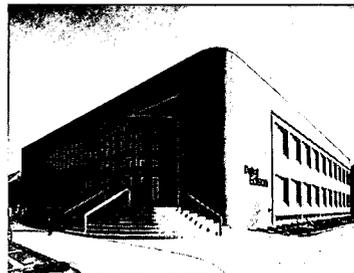
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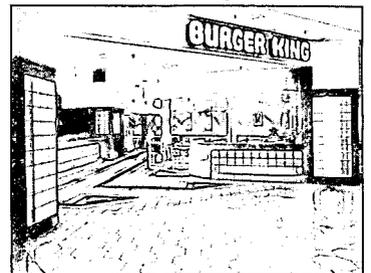


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6

Daniel Bartush



7

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1. Kresge Court Renovation, Detroit Institute of Art, Detroit, Michigan; William Kessler & Associates, Architects. The objectives of a museum renovation project included improving circulation among the institution's three major buildings and adapting the courtyard to accommodate performing arts activities without compromising the integrity of the original neo-Gothic architecture. Toward that end the architects specified a hydraulic-lift stage and motorized-trolley lighting and speakers that can be moved from view when not being used.

2. Federal Mogul Corporate Headquarters Addition, Southfield, Michigan; Rossetti Associates, Architects. A 150,000-square-foot addition to the company's existing facilities comprises general office space, a new computer facility, and a

corporate training center. The primary curtain wall materials—charcoal gray slate panels attached by horizontal aluminum channel extrusions to light-gauge metal framing—are used on both the exterior and the interior.

3. Uris Library Addition, Cornell University, Ithaca, New York; Gunnar Birkerts & Associates, Architects. A reinforced concrete reading room is set into the side of a hill at the base of the university's original 1891 library building. Continuous clerestory windows on one side of the hill provide illumination, while banded fenestration on the other side offers views of the surrounding landscape.

4. Goodyear Technical Center, Akron, Ohio; Smith, Hinchman & Grylls Associates, Architects. A vacant 70-year-old manufacturing plant was converted into a mixed-use office and research facility. One

million new bricks were produced to match the existing old brick, and a gray glass curtain wall was utilized to enclose a new lobby and atrium.

5. Electronic Data Systems/Eastern Regional Center, Camp Hill, Pennsylvania; Rossetti Associates, Architects. One-half of a 100,000-square-foot data center is windowless computer hardware space buried underground, and one-half is open-plan management and support offices stacked on the top two floors. The building's undulating reflective glass block wall, meant to recall the hilly topography of the wooded site, allows diffused light to penetrate during the day while providing privacy at night.

6. Detroit Edison Divisional Headquarters, Ann Arbor, Michigan; Harley Ellington Pierce Yee Associates, Architects. A visually arresting patterned facade

of Clearfield brick laid in a combination of soldier courses, corbel courses, and running bond characterizes a three-story, 64,000-square-foot office building. The material was selected for its compatibility with existing commercial structures located adjacent to the site. "The thick, rich wall signifies a building that is honored to be downtown," observed the jury.

7. Burger King, Briarwood Mall, Ann Arbor, Michigan; Schervish, Vogel, Merz, Cardoza, Architects. Backlighting glass block and patterned ceramic tile envelop this branch of a national fast-food chain, located in an enclosed shopping mall. The challenge for the architects was to create an individualistic restaurant design while working within guidelines established by the parent corporation.



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**H. H. Richardson: Complete Architectural Works**, by Jeffrey Karl Ochsner. Cambridge, Mass.: MIT Press, 1982 (\$50 hardcover, \$25 paperback).

*Reviewed by  
Mosette Glaser Broderick*

By any definition H. H. Richardson may well have been America's greatest 19th-century architect. Shortly after the master's death in 1886, the noted contemporary critic Marianna Van Rensselaer published her *Henry Hobson Richardson and His Works*, which remained the classic reference work on the architect until Henry-Russell Hitchcock's magisterial *The Architecture of H. H. Richardson and His Times*. Still one of Hitchcock's finest accomplishments, this book not only outlines Richardson's artistic contribution, it also places him in a broader historical context. During the time since Hitchcock's work was last reprinted in 1966, local history has come of age: small regional groups have grown in size and quality, and they have begun to document the architectural history of their respective areas, including the work of Richardson. Jeffrey Karl Ochsner's book bridges the gap between the present state of this localized research and Hitchcock's still-definitive study.

Ochsner presents Richardson's work in chronological order, with clear indications of each building's present condition. If one wishes to make a pilgrimage to surviving structures by the architect, an unusual and useful index in the book provides a listing of Richardson's work by postal zip code. Other plusses include a lavish assembly of vintage views and succinct entries on individual buildings that offer a quick reference for facts on specific commissions. For those wishing to bone up quickly on Richardson, this is the book to use.

Although Ochsner is strong on recently retrieved factual information, he is weak on historical interpretation. The complex issues of late-19th-century architecture are not fully understood by the author and are either glossed over or totally ignored in the text. He presents the complicated saga of the tower at Trinity Church in Boston, for example, without mentioning the possible contributions of John LaFarge or Stanford White. Furthermore, the interpretation of photographic evidence is sometimes problematic. For instance, one of the entries for 1869-70 shows two pictures of the

northwest corner of Park Avenue at 36th Street in New York, where Richardson built "two somber and respectable houses" for Jonathan and Frederick Sturges. The photos clearly reveal, however, that both houses stylistically date well after 1870, and city building department records indicate alterations to the exterior of the houses in 1879 by Gambrill & Ficken and again in 1895 by Charles C. Haight. In this case

the illustrations show a post-Haight version of the Richardson houses—something not noted by the author.

A final flaw with the "complete" works of H. H. Richardson is its lack of emphasis on the wealth of still-unidentified drawings awaiting study at the Houghton Library. One is tempted, then, to call this book "Toward a Complete Richardson," and it is hoped that the work will elicit additional information that

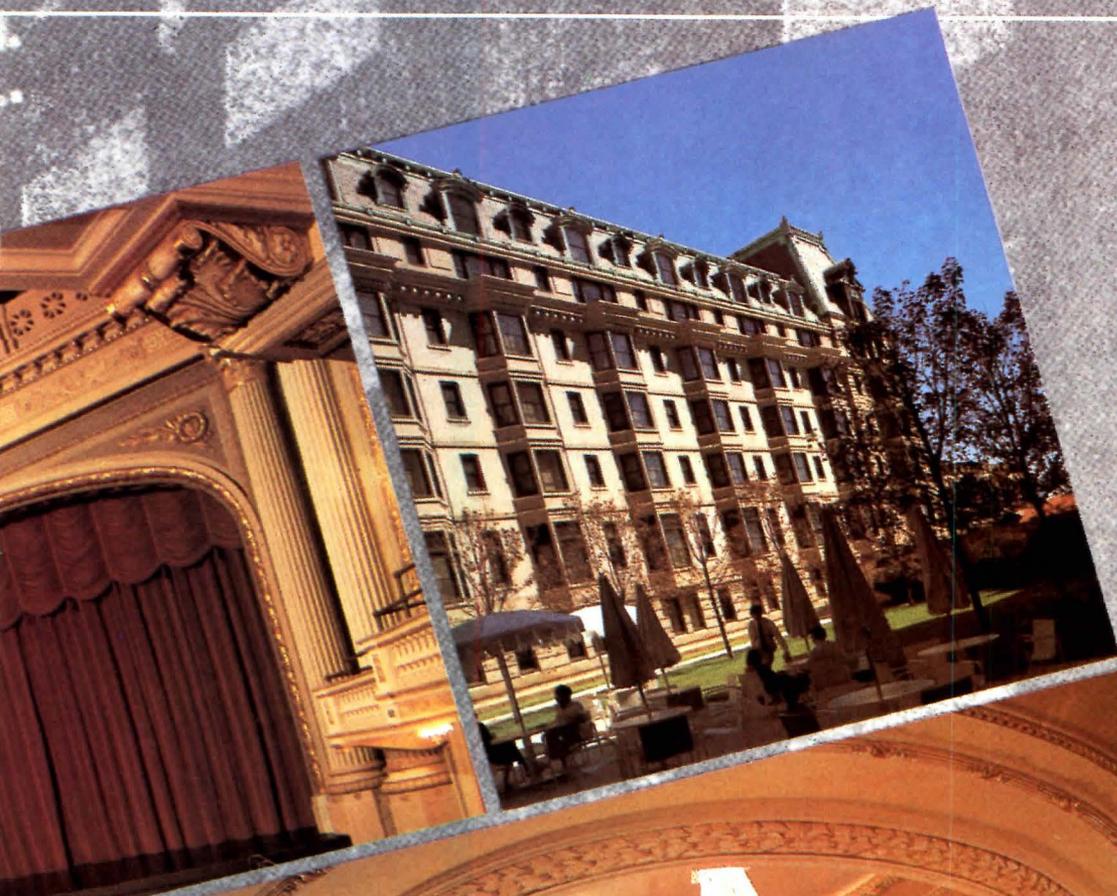
could lead to the solution of the remaining mysteries of the architect's career.

A last footnote: one can only notice on finishing the book how sad it is that so much of Richardson's work has been demolished—and one can only hope that his remaining buildings will be carefully guarded and kept from those determined to build yet another H. H. Richardson "Memorial Parking Lot."



*"I think she'll stand now for another hundred years, but what about that mess over there?"*

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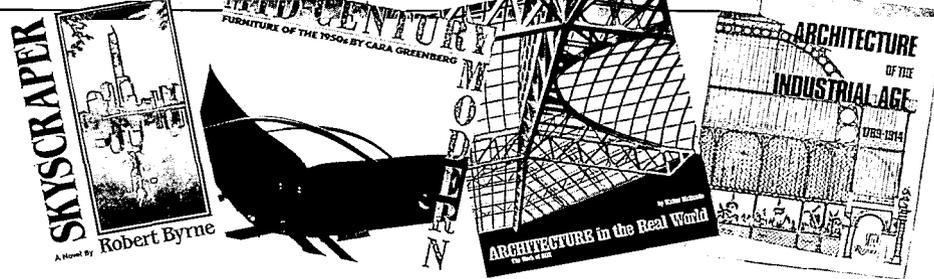
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Reviewed by Julie V. Iovine

**Skyscraper**, by Robert Byrne. New York: Atheneum, 1984, \$14.95.

A fictional engineer from Colorado whose reputation is built on solving the mystery of the Kansas City Hyatt pedestrian bridge collapse is the hero; Aram Zalain, the viciously amoral president of the Zalain Development Corporation, is the bad guy, along with just about everyone else associated with the New York construction business. The victim in this most graphic, and technically apt, novel about construction disaster: a 66-story glass tower that topples over in midtown Manhattan.

Although *Skyscraper* may sound like *The Towering Inferno*—and it has every stock character and cliché you'd expect from a "B" movie—it also makes an impassioned plea to all those connected with the building industry. The author, trained as an engineer, has an agenda and after presenting all the thrills, he ticks off in an appendix the measures he feels must be taken to prevent the fantasy of *Skyscraper* from turning into prophecy. Byrne calls for peer review of engineering plans, stiff wind-tunnel studies using scale models, and construction inspections carried out by city officials, not by developers. None of the factors contributing to the Zalain tower's downfall is particularly extraordinary. Taken individually, the construction lapses and design trade-offs—among them, poorly mixed concrete, a ten per cent reduction in structural steel through repeated computer analysis, and additional floors beyond zoning allowances awarded for community services—pose no threat. But put them all together and throw in heavy winds, illegal blastings, and water-saturated foundations (not to mention an evil and irresponsible management), and they spell doom.

That it sounds even remotely possible makes *Skyscraper* an effective cautionary tale. Of course, Byrne oversimplifies to underscore his case: architects don't count for much—"Anybody can design a building; all you need to know is how to follow handbooks"—and the whole city of New York seems to be on Zalain's payroll. These are the kinds of details that make *Skyscraper* ideal light vacation reading, but the many more disturbing points the book brings out are the ones most likely to stick in your mind long after going back to work.

**Mid-Century Modern: Furniture of the 1950s**, by Cara Greenberg. New York: Harmony Books, 1984, \$30.

The craze for artifacts from the 1950s is well into its full-moon phase, and when the tide falls back, there may not be too much left over. While *Mid-Century Modern* may look like no more than a shrewd marketing idea, it will endure because its author, Cara Greenberg, is not only a fervent enthusiast, but also a sound critic. She singles out the decade from 1947 to 1957 as the golden age of American mid-century modern. For ten short years, she writes, top designers had free rein to pursue new ideas, made possible by new technology and an eagerly acquisitive postwar boom crowd. After that, "the groundbreaking designers were quickly followed by waves of uninspired knock-offs," says Greenberg, and, later still, by even flimsier rip-offs, mass-produced in an era when patents for furniture design were non-existent.

With considerable wit and style (even the book's graphics date back to circa 1953), Greenberg sets out to rectify "the undeservedly tart reputation" of '50s design. Three styles typify The Look: the biomorphic, which was often amoeba-like; the machine-made, with its take-offs on airplane carrier imagery; and the handcrafted, especially prized among Scandinavians. The works of such star designers as Charles Eames, Eero Saarinen, and George Nelson are fully illustrated, and the firms that fostered their work—Herman Miller and Knoll International, among others—are profiled.

The glory days came to an end when quality production was overwhelmed by quantity, designers shifted from residential to corporate work, and suburbanites decided flamboyantly modern was more cold than *au courant*. The book also branches out, paying a brief visit to a fully appointed Breuer house, David Salle's retrofitted-to-the-'50s loft in New York, and a songwriter's unbelievably kitsched-out pad in Los Angeles. Another chapter picks the decade's ten best chairs—Nelson's Coconut chair and Saarinen's Womb chair are favorites—and there are brief descriptions of the Europeans, especially Italians and Scandinavians, who carried on the torch when it fizzled out in the U. S. Some will pore over *Mid-Century Modern* to find out if what they've got stashed in the attic is worth a gold mine; but others should be just as content enjoying it as design history, social commentary, and a labor of love—all in one snazzy package.

**Architecture in the Real World**, by Walter McQuade. New York: Harry N. Abrams, 1984, \$40.

This book purports to be one man's investigation into how an architectural firm operates "in the real world," as the title puts it. More simply, it is a mostly complimentary profile of HOK (Hellmuth, Obata, and Kassabaum), the large St. Louis-based firm that employs over 700 people in nine branch offices across the country and has a reputation for solid, practicable design. In the book's first 63 pages, author Walter McQuade describes principals at work and at play (if there's any time for it: Gyo Obata is notorious for keeping tight reins on almost every project in design); efficiently explains the three executive branches of design, production, and marketing; duly outlines such HOK "subsidiaries" as planning and landscape design; and gives a financial breakdown of budgets and billings. Finally, McQuade finds space for a brief tirade against the New York design world's overwhelming influence on the nation's architecture.

The remaining 168 pages are given over to photographs and catalog descriptions (without dates) of various office buildings, airports, shopping centers, schools, prisons, and hospitals designed by the firm over the past 80 years. Without a doubt Levi's Plaza in San Francisco is HOK at its best: mild-mannered and attractive or, as McQuade puts it, "a mature and controlled piece of urban architecture." The National Air and Space Museum may be the firm's best-used building. With 200 million visitors a year, it is probably the most popular museum in Washington, D. C., and HOK's design moves those hordes effectively. And then there is the \$3.5 billion King Saud University on a 2,400-acre desert site in Riyadh, Saudi Arabia, "possibly the largest architectural commission of the century so far" and now almost finished. In his original criteria for what makes a good firm go, HOK's founding father George Hellmuth put marketing and public relations right up there with design, production, and diversification. *Architecture in the Real World* shows how well it all can be done.

**Architecture of the Industrial Age, 1789-1914**, by François Loyer. New York: Skira/Rizzoli, 1983, \$50.

"The industrial economy now at full maturity has revealed its totalitarian character: it has destroyed art, as it has destroyed so many other values, for its own profit." Thus is the terribly grim ending to a most lavishly illustrated and generously produced book. It is also the one paradox author François Loyer does not comment on in his convoluted discussions, pitting history against modernity, form versus function, classicism versus eclecticism, even architect against engineer. Although the thesis that the art of architecture has been forced by consumptive industrial capitalism first into fantasy reconstructions of the past and then into absolute corruption has its fascination, Loyer's writing is bogged down in jargon. The text—which focuses almost exclusively on French examples, while the illustrations are international—reads as though it was thought in post-Marcuse German, written in French, and paraphrased into English. Complicated sentence structure stands between meaning and comprehension, as in the following example: "Architects remained divided before this dual logic: that of the self-evident architectural object, as propounded by the rationalist approach of an Henri Labrousse; and that, no less evident, of setting the building in the right place with reference to a hierarchy, clearly defining a social and political status, of which architecture would be the material representation." And one is tempted not to try to figure it out, feasting instead on the rich visuals that practically belie the tale of degeneration.

The case studies at the end of each section analyzing building types spawned by the industrial age—banks, workers' housing, trade-fair pavilions—or focusing on such issues as "reinventing Gothic," "the handling of detail," and "representations of secular power," are less theoretically didactic and much more enlightening. This may be one of the first Marxist coffee-table books every architect will want to look at, though not necessarily read.

*Julie V. Iovine is a freelance writer who contributes regularly to Connoisseur magazine.*

# VULCRAFT STACKS THE



# A variety of libraries

The printed word still lives. The five small libraries considered in this study all needed more room than they had—not for more readers *but for more books*. This is not to say that libraries and computers are strangers. For a start, most libraries these days have at least part of their collections, children's books, on one data base or another to facilitate interlibrary exchanges. But they do not exchange floppy disks. They exchange *books*.

What's more, different people use different libraries for different reasons. The familiar public library probably gets more wear and tear than either academic or special-interest libraries, where use is more intense but less physical. Public libraries attract a broad range of readers, from preschoolers wanting storybooks, to schoolchildren researching papers and looking for more adult storybooks, to grown-ups borrowing fiction (more storybooks) and history, biography, philosophy, poetry, finance, music, politics, travel, et cetera, et cetera, et cetera. And users constantly seek reference material. Moreover, public libraries try to meet the needs of their particular audiences. In Southwest Harbor, Maine, for instance, many readers consult books about local history and genealogy; architect Peter Forbes therefore placed these collections in a special study near the entrance. In Avon, Connecticut, citizens were especially concerned that youngsters and schoolchildren be encouraged to use the library; architect Norman Baier therefore integrated spaces for young adults and older adults on the main floor, at the same time allocating the entire second floor to younger children.

In university libraries, readers tend to be more of the same type than at public libraries—hardworking and quieter than most children. Further, the character of books differs—no fiction beyond that needed by literature scholars, but more volumes of profound and abstruse scholarship. And collections are larger: who knows what a scholar will want next? Student bodies differ, too. At Gwynedd-Mercy College, where commuters and evening students cannot waste precious library time browsing, architects Dagit•Saylor gave users a large room for reserved books and reading tables. At Grinnell College, where intellectual activity is part of the social scene, architect Ben Weese designed a multiformity of study possibilities, from remote and private carrels to closed rooms for argumentative discussion.

At the Margaret Chase Smith Library, the collection, not the user, engendered the building. Documents accumulated by Senator Smith during a long public career deserved preservation and accessibility for historians. But the architects, Harriman Associates, still managed to cosset the reader. *Grace Anderson*

## A small-town landmark

©Paul Ferrino



*The only noticeable addition to the Main Street facade of the library is a ramp built at the right of the porch (at top above). Though so far the only handicapped person to use it has been a woman with a walker, it has proved popular with mothers pushing strollers. At the back, however, an addition and a new entrance altered form more radically (directly above). The architect continued the building's style with a flared, shingled water table, strong cornice, and unusual 6-over-2 sash, which opens onto the board room. The large lunette in the gable, on the other hand, places the addition clearly in the 1980s. (The staircase on the right of the photo leads to the second floor of the post office next door.)*

*Southwest Harbor Public Library  
Southwest Harbor, Maine*

**Architects:**  
*Peter Forbes and Associates, Inc.—  
Peter Forbes, FAIA, partner-in-charge; David Tobias, Patrick Hickox, Roger Comee, Jeri Spurling, design and production*

**Engineers:**  
*Louis Conklin (structural); M. L. Dee (mechanical)*

**General contractor:**  
*R. M. Norwood, Inc.*

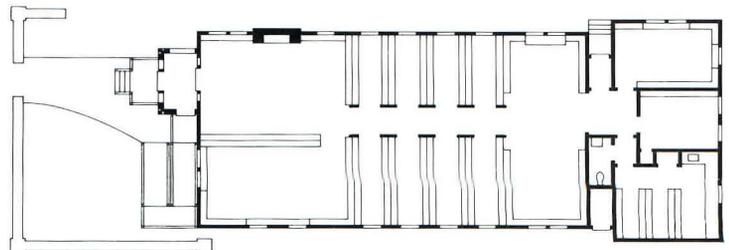
Since 1894, the public library in Southwest Harbor, Maine, has occupied this shingled house-sized building on Main Street next to the post office. Architect Peter Forbes sees the institution as almost mythically woven into the life of the small town (pop. 1,200). The present librarian started shelving books here at 40 cents an hour when she was a teenager. The present builder is the grandson of the original builder, and the foreman the great-grandson. The architect himself has summered here since boyhood. "The library *needs* to be on Main Street next to the post office," he says with some feeling.

After almost a hundred years of use, the library needed more space for books, and the fabric of the structure needed attention. The white cedar-shingled front of the building still presents essentially the same visage to Main Street, though its composition was visibly altered by the addition of a ramp and its white-painted wood railing. While the porch needed rebuilding and was extended forward for the ramp, its columns, pediment, and sidelights are as was.

Originally, the library consisted only of what is now the front room (opposite), and some years ago the town added an ell in back (the bottom row of stacks in the plan below). Forbes's additions included duplication of the ell on the north side and a new wing at the back for offices, work space, and board room. Moreover, when he allotted space, the architect had to consider three sets of users: adults, who often seek historical and genealogical information; children and young adults; and, during the summer, vacationers, who triple demand on the library's fiction collection. Historical material acquired its own room directly inside the front entrance behind a partition opposite the circulation desk (across page). Children and teenagers acquired adjacent reading rooms at the end of the central corridor. For general circulation, books are shelved in eight browsing alcoves entered through pointed arches along the corridor, and the serious browser can read in a Windsor chair below double-hung sash at the end of each alcove.

The wood columns and beams of the library both showed signs of rot. New steel-tube columns take the place of old studs, and new steel in the ceiling replaces the old beams. To mark divisions between the old and new building and to establish portals at each end of the central corridor, Forbes left the tubes exposed and painted them dark red. Proving that not all surprises hidden behind old surfaces are disagreeable, the removal of a dropped ceiling in the main room revealed the original tongue-and-groove cypress ceiling, "a boatbuilder's ceiling," Forbes terms it, in tribute to local craftsmen. A sunscoop punched through the old ceiling admits much-needed daylight.

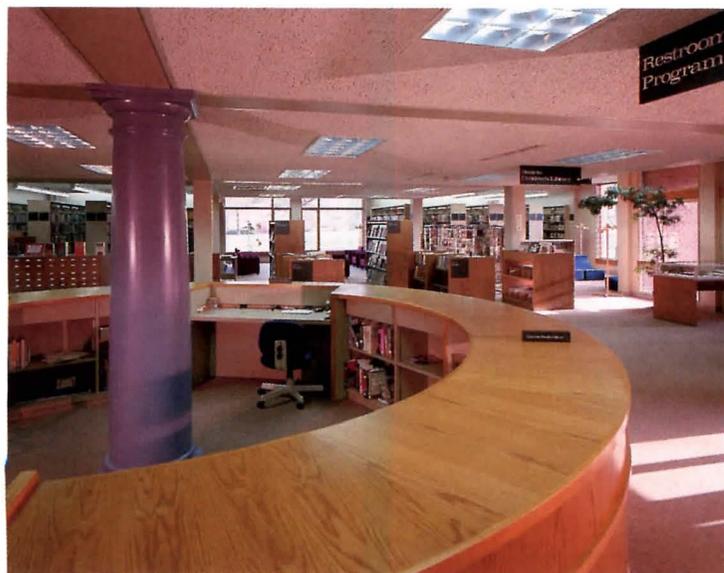
Additions, repairs, and furnishings cost \$120,000.





## A new library in the suburbs

Ken W. Sasso photos



Avon Free Public Library  
Avon, Connecticut

**Owner:**

Town of Avon

**Architects:**

Galliher Schoenhardt & Baier,  
Architects—Norman S. Baier,  
partner-in-charge

**Engineers:**

Bounds & Griffes, Engineers  
(structural); Donovan, Hammick &  
Erlandson Associates (mechanical/  
electrical)

**Landscape architects:**

CR3

**General contractor:**

A. J. Pepin & Son, Inc.

The Avon Free Public Library—the only completely new building shown in this study—serves a suburban town of 12,000 in the Farmington Valley near Hartford, Connecticut. And its residential neighbors were not overjoyed when the town selected this 2.2-acre site. Nonetheless, the town had to replace its outgrown library, and this location near the center of town had an especial virtue: it is easily reached by foot or bicycle from both the middle school and the high school. Architects Galliher Schoenhardt & Baier deliberately designed the building low and consonant with the scale of the neighborhood, at the same time investing it with a sort of traditional countenance and Richardsonian massing. While the elaborate stone carving on earlier buildings is now out of reach for construction that cost \$1.07 million, that ornament is suggested by courses of vertically set dark brick.

The library board's program requirements arose from some firm convictions. For one thing, it wanted to minimize staff for economy's sake. If necessary, the building can operate with as few as two librarians since one would have visual command of the entire ground floor from the centrally located circular main desk. For another thing, the library wanted at least a degree of integration for adults and teenagers (young adults, in library parlance), the aim being to give young people their own social turf without cutting off adult materials they might need or want. Young adults thus have their own reading lounge at the front of the building, where they share new books and periodicals with adult readers, retreating to the back of the building and its carrels when they have more serious work in mind. The entire second floor is given over to books and activities for younger children, except for an unfinished attic reserved for expansion.

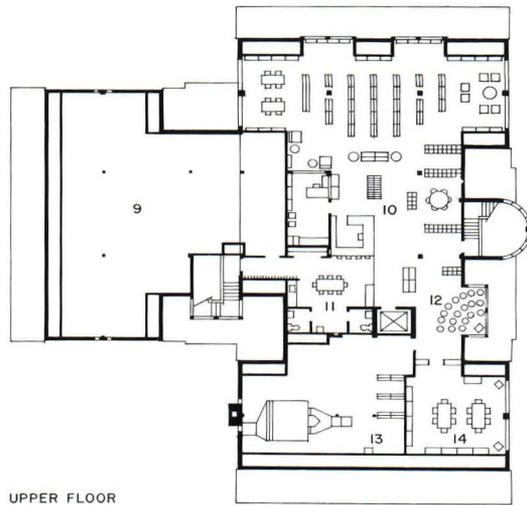
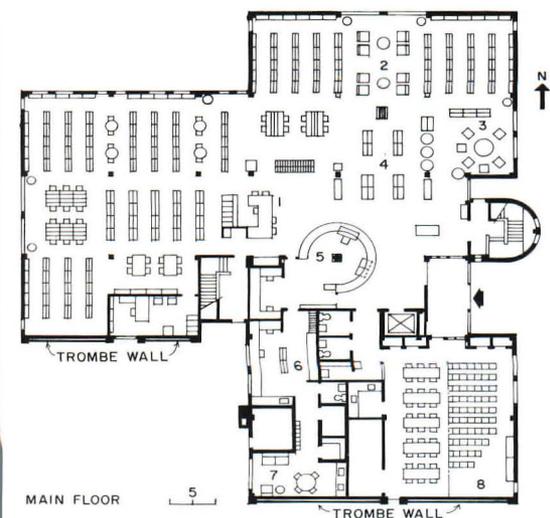
Furthermore, the owners actively desired the passive use of solar energy. Rejecting the initial and maintenance costs of a rooftop solar-energy collector, the architects chose instead a system of Trombe walls. Since the heat-absorbent black walls that used to be *de rigeur* have proved unessential to the system's efficiency, the installation at Avon uses transparent corrugated plastic to create a heat-collecting cavity against the brick wall. During the winter, louvered registers on the outer element are closed, but they are opened in the exposed brick wall indoors to draw in warmed air near the ceiling and exhaust cold air near the floor. During the summer, outer registers are opened to prevent heat build-up, and inner registers are closed to prevent the escape of conditioned air.

Even when the library closes, the public has access to a program room inside the front entrance, as well as to the room's kitchenette and the ground-floor rest rooms.



Though it has the look of many a beloved old-fashioned library, with its steep roofs, hipped dormers, and circular stair tower, the Avon Free Public Library is in fact only two years old. The plastic Trombe walls on its south side, on the other hand, evidence the building's modernity (opposite bottom right). A large arched window on the second floor lights a children's study area (opposite top left), its sill forthrightly

angled to parallel the roof outside. From the circular main desk (opposite center left), librarians can see all corners of the ground floor, including the bright blue chairs in the young adults' reading lounge and the purple chairs for adults.



1. Reference
2. Adults
3. Young adults
4. Periodicals
5. Circulation desk
6. Technical processing
7. Staff lounge
8. Program room
9. Unfinished attic
10. Children's floor
11. Crafts
12. Storytelling
13. Mechanical
14. Special collections

## A wrap-around for the quad

Tom Crane photos



Two small colleges, Gwynedd-Mercy on these pages and Grinnell College on the following, faced a similar problem with their respective libraries: projections of expected needs made 25 years ago fell woefully short. At Gwynedd-Mercy, a school known chiefly for its education in nursing and other health professions, the major cause of the library's difficulties was growth. When Lourdes Library opened in the late 1950s, the school's enrollment was 174; now it tops 2,000. Moreover, as the curriculum expanded to include business and liberal arts courses, the collections grew correspondingly. Designed for 50,000 volumes—a figure considered excessive at the time—the library by the early 1980s had 61,000 volumes, many “shelved” in boxes stacked on the floor. Additionally, the administration desired a large reading room for users of reserved books, another for periodicals, and a bookstore.

Architecturally speaking, however, designer Charles Dagit confronted a number of circumstances having nothing to do with function. The campus occupies the former estate of architect Horace Trumbauer, and the portion that includes the library is dominated by Trumbauer's rather splendid early-20th-century mansion at the top of a knoll. The college's buildings otherwise have no distinctive over-all style, consisting of Trumbauer's traditionally designed brick stables and a variety of precast buildings from the '50s, some pleasant, some undistinguished. Still further, both architect and owner feared that doubling the building's size would create unacceptable bulk in the sylvan countryside. (Besides, Dagit remembered with great fondness studying in the curved niches of Frank Furness's dark brick-and-stone library at the University of Pennsylvania and wanted to pay homage.)

Dagit struck at all existing and foreseen imperfections with one move: he wrapped the new building around the old (see site plan). By adding only a little width on three sides, he increased its bulk only a little. At the same time, the brown-and-tan brick wall encloses all but a short length of the old precast walls so that the new building harmonizes more closely with the dark brick Trumbauer house. In addition, the long curve of the new facade establishes a strong border for a lawn that now becomes a quad, with the Trumbauer house at the top (see site plan), administration building opposite, and a classroom building at the foot of the hill.

Though the addition includes all the facilities requested by the college, including a quarter-circle bookstore, the interior of the older building was also altered. The most radical change was to move the entrance from a long deck on the southwest to a narrower wall on the addition (floor plan opposite), providing more security at the exit.

The 17,000-square-foot addition cost \$1.6 million.

Lourdes Library Addition  
Gwynedd-Mercy College  
Gwynedd Valley, Pennsylvania

**Owner:**

Gwynedd-Mercy College

**Architects:**

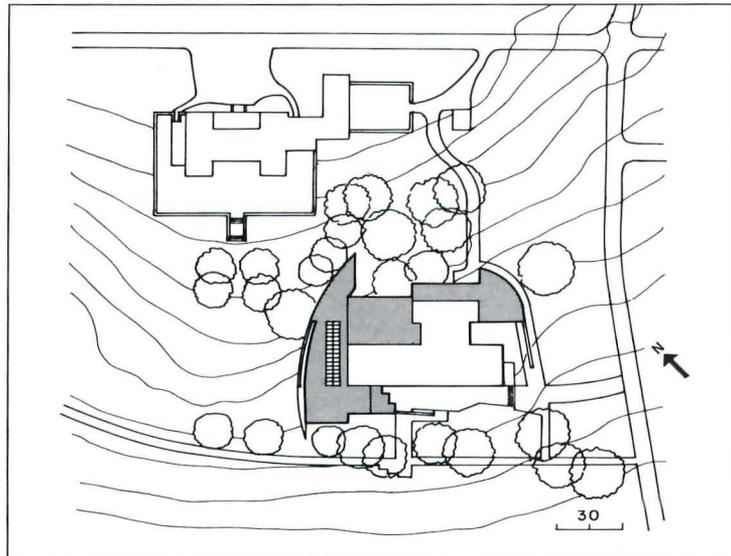
Dagit • Saylor Architects—Charles E. Dagit, Jr., FAIA, partner-in-charge; Daniel J. Freeman, project architect; Gianne P. Conard

**Engineers:**

McCormick, Taylor & Associates (structural); Paul H. Yeomans, Inc. (mechanical/electrical)

**General contractor:**

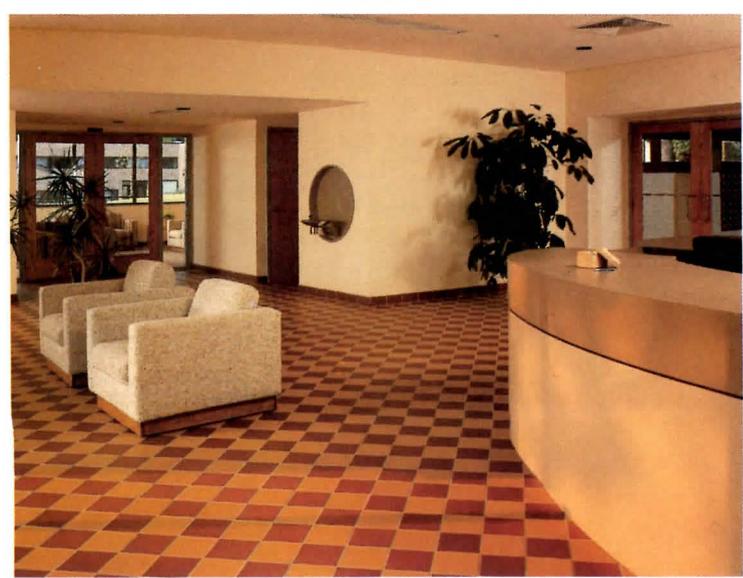
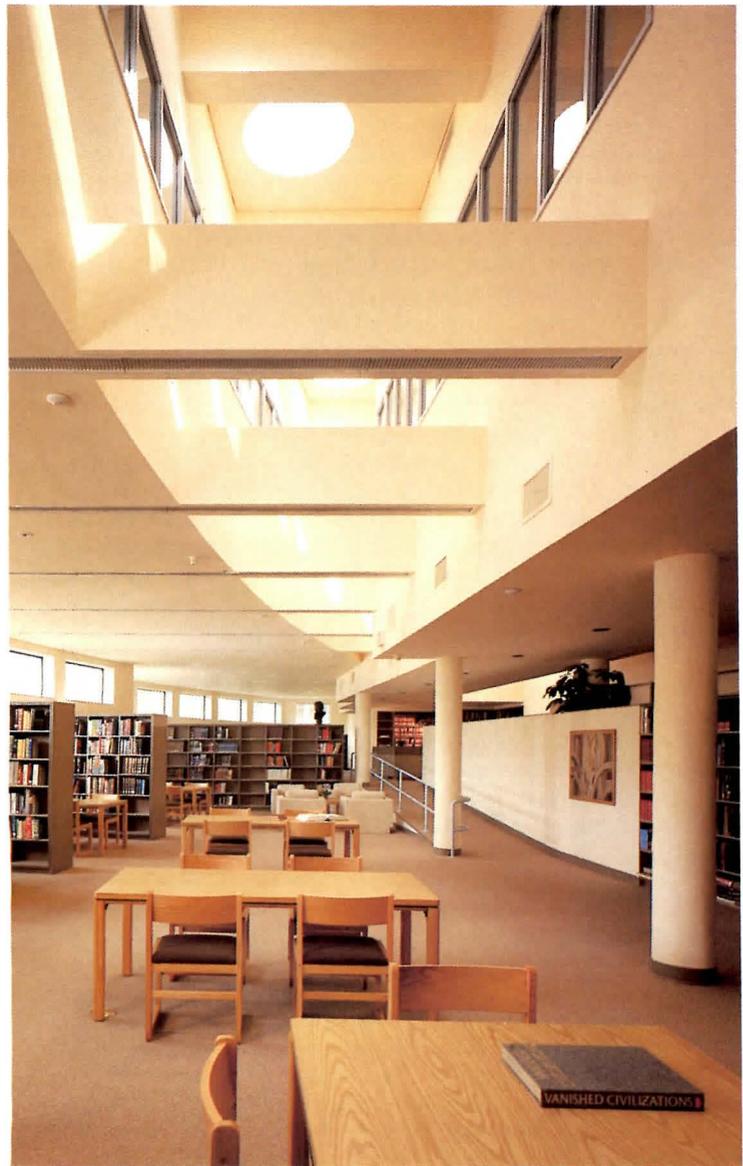
John S. McQuade Co.



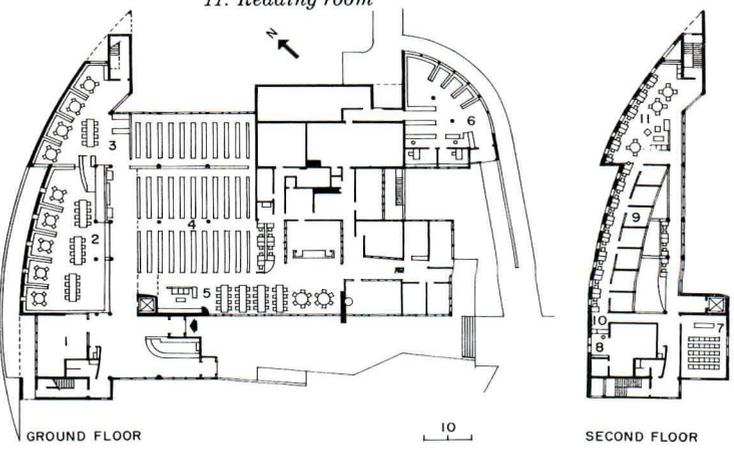
The new curving facade of the Lourdes Library wraps around the old library to add as little bulk as possible on the hillside site and to cover most of the '50s precast concrete facade (opposite). All new walls are covered with 8- by 8-inch brown brick and ornamented with a checkered pattern of brown and tan bricks at top, base, and within niches. The bicolored bricks, set on the diagonal, also appear as flooring

in the lobby (this page bottom left). A new reserved-books reading room (this page top left) gains illumination from a skylight and height from an atrium cut through the second floor. Upstairs on either side of the atrium, windowed corridors, which serve meeting rooms and carrels, look down on the reading room through a crescent of exposed beams (below right). Off the entrance lobby opposite the checkout

desk (photo bottom), a much-frequented lounge with comfortable reading chairs caters especially to the between-class needs of students who live off campus.



- 1. Lounge
- 2. Reserved books
- 3. Periodicals
- 4. Stacks
- 5. Reading room
- 6. Bookstore
- 7. Lecture/film
- 8. Audiovisual
- 9. Tutorial rooms
- 10. Carrels
- 11. Reading room



## Collegiate comfiness



It's the comfiest college library in the country, according to a list of collegiate superlatives published by *Rolling Stone* magazine. And the users' comfort and sense of well-being had great importance for the administration of Grinnell College when it remodeled the library—as well they might at a small, intellectual, and remote school in Iowa.

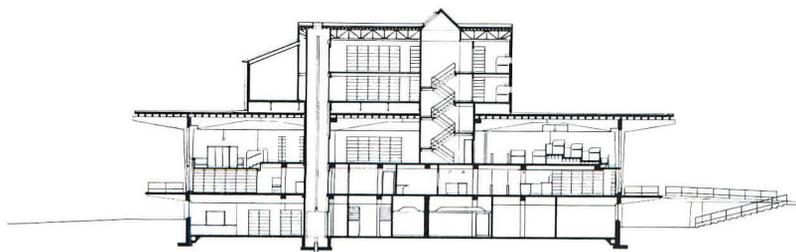
Nonetheless, the decision to remodel a building not yet 25 years old rested on more functional needs: first, to double both study space and book shelving, and, almost as important, to conserve energy (the cost of fuel has swollen since 1959). Looking at the symmetrical building designed by Walter Netsch and the Chicago office of Skidmore, Owings & Merrill, architect Ben Weese saw that, with its classic '50s glass walls and solid stone end walls, it would not admit horizontal additions. By going after vertical volume, however, Weese managed to add only 11,000 square feet to the original 45,250 and still double both study and stack space. The original eight columns and the footings were strong enough to support vertical addition, even with the heavy load imposed by books, if strict attention were paid to structural loads. The new two-story penthouse, built for stacks and carrels, thus has lightweight metal-panel walls, metal-deck flooring covered with carpet, and a steel truss roof. The original second floor, which had been a bridge joining the stone end walls, was widened at the middle to meet the glass walls, using a concrete deck at the front of the building and a metal deck at the back (see second-floor plan on following pages).

To reduce energy consumption, the architect made moves that have grown familiar since the energy crunch in the early '70s. A second layer of glazing was added to the glass walls, but though the mullions necessarily became slightly wider, the composition remains essentially the same. The stone end walls also got extra insulation. Meanwhile, an up-to-date mechanical system replaced the old one, and task lighting at each study station replaced much of the overhead lighting to reduce wattage. (As a serendipitous bonus, Weese notes, people tend to lower their voices when the light is low.) Lest people think that energy conservation can be had at low initial cost, mechanical and electrical improvements together cost \$821,500, far and away the most expensive item in the project's \$3.5-million cost.

In the end, though, the library's comfiness depends not on extra stacks and energy savings but on the comfort and enormous variety of choice offered by the furniture designed by Weese (see following pages). The college is more than just satisfied. Christopher McKee, Librarian of the College, says flatly, "There are three pieces of real architecture in this town—the Louis Sullivan bank, the Walter Burley Griffin house, and this library."



Jim Hedrich, Hedrich-Blessing photos





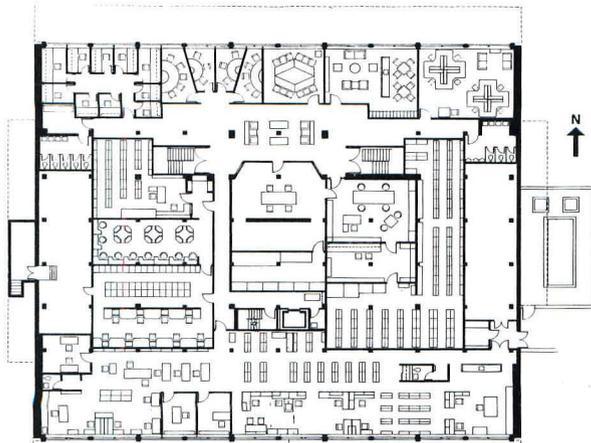
*The only visible alteration to the exterior of the Burling Library is a new penthouse (photo opposite top), which architect Ben Weese clad in metal panels to minimize load and colored pale gray to merge with a sky that is often overcast in winter. The new circulation desk (photo opposite bottom) separates entrance and exit routes, facing the reference desk and the interior of the building. Exhibit space and a sunken reading lounge*

*occupy a new balcony extended from the old second-floor mezzanine (above) as part of Weese's effort to "bring people to the windows." The red-oak fascias on balcony and mezzanine add visual warmth to the interiors: the college had found the former black-and-white decor elegant but too chilly and austere for Iowa's bleak midwinter. The stacks beneath provide support for the balcony's metal deck.*

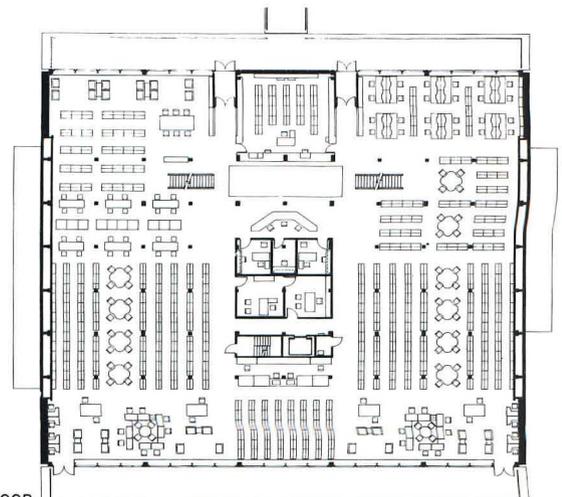
All of the furniture at the Grinnell College library was mocked-up with attached questionnaires and tested in use by the students. "And the kids really worked it over," Weese reports. The two popular carrel towers (below left) provide 19 study spaces each in areas 11 feet square: eight around the periphery at floor level, eight more on the top level, and three in a hidey-hole at the center. Users of the upper carrels, reached by ship's ladder, put

their legs in a shallow pit à la Westernized Japanese restaurants. In the area that the students call Mission Control (this page top right), tiers of carrels back fixed club chairs, all stations having good views of the outdoors. The club chairs here, in the publications section (opposite bottom left) and elsewhere are extra wide so that users can take off their shoes, put their backs against one arm and their feet against the other,

and prop their books on their knees. On the lower floor, a corridor with fabric-covered walls provides display space (this page bottom right), and behind the partition a long table allows study of prints (opposite top left). Weese designed the amoeba tables (opposite right) to give elbow room, choice of orientation and a sense of personal territory. The lower floor (plan at bottom left) provides study rooms for small groups of



LOWER FLOOR

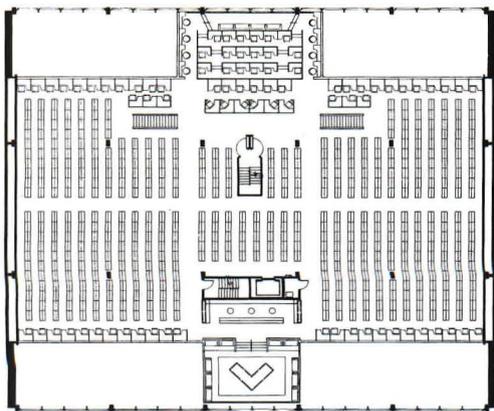


FIRST FLOOR

students and for faculty members, as well as a listening room with built-in lounge chairs, carrels, and outlets for headphones.

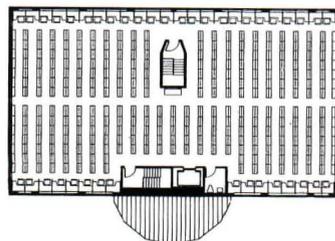
**Burling Library**  
 Grinnell College  
 Grinnell, Iowa  
**Architects:**  
 Weese Hickey Weese Architects  
 Ltd.—Ben Weese, partner-in-charge;  
 Dennis Langlely, project manager  
**Engineers:**  
 Don E. Anderson (structural);  
 Alvine & Associates (mechanical/  
 electrical)

**Consultant:**  
 Donald O. Rod (library consultant to  
 the college)  
**General contractor:**  
 Loomis Brothers, Inc.



SECOND FLOOR

10



FOURTH FLOOR

## For official documents



The programmatic requirements for the Northwood Institute Margaret Chase Smith Library were certainly unusual, perhaps unique. The one-building complex combines a scholarly library for official documents, a conference center, and an existing private house.

By law, senatorial papers must return to the state represented by the senator when he leaves office, rather than remain in Washington. Most often, they are entrusted to a university library for safekeeping, cataloging, and reference. When she retired in 1972, however, Senator Smith took her papers to her house in Skowhegan, Maine, preserving them in a converted garage. In 1979, thinking that papers accumulated over four terms in the House of Representatives, four terms in the Senate, and service as chairman of the Senate Armed Services Committee during the Eisenhower Administration deserved reader availability to scholars, Smith gave both papers and house to the Northwood Institute, a national university for business and the arts with which the senator has had long connection. (Feminists should remember, too, that Smith was the first woman to enter the Senate through election, not by appointment.)

In addition to the library, Northwood Institute also sought pleasant surroundings for small conferences and seminars. To add both library and conference space to the house, the senator and the institute commissioned Harriman Associates, whose founder, the late Alonzo B. Harriman, had designed the house for the Smiths in 1949.

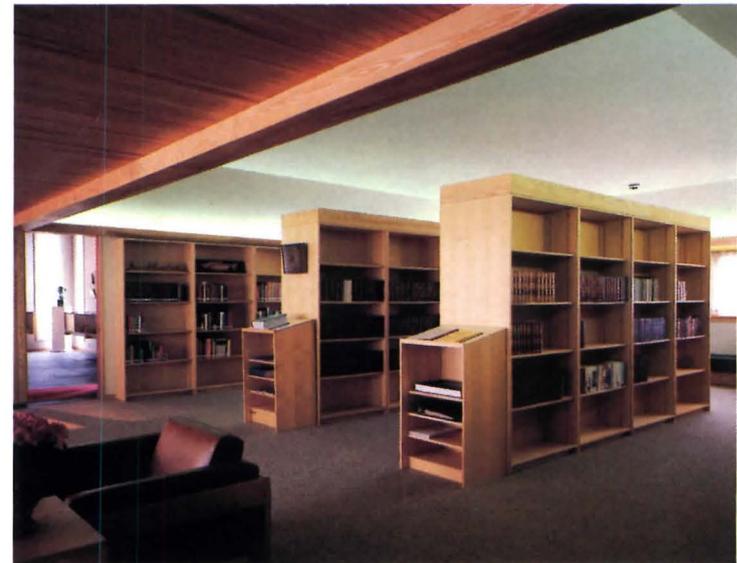
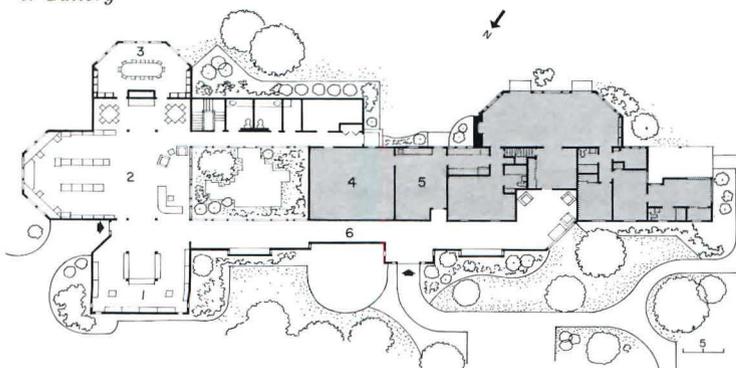
Because Smith continues to live in the house, because the new building stands in a decidedly residential neighborhood, and because grandiosity is not the senator's style, the library takes its architectural tone from the house, a postwar version of New England with white-clapboard siding and dusky red shutters. The addition, entered from a small parking lot at one side, is connected to the old front door by a new gallery along the house's front facade, which is exposed as an interior wall. Besides serving as display space, the gallery provides a private front door for Smith. At the end of the gallery, a glassed-in porch can become a small lounge for library users, though a discreet rope turns it into private territory when the senator is in residence.

The library itself, where great numbers are not expected at any one time, has an almost residential air, furnished with architect-designed casework, small reading tables, and easy chairs. A skylit exhibition area for the senator's memorabilia flanks the library inside the entrance, while a large bay window on the other flank can be closed off for seminars. For working space, the existing house yielded room: the old garage now accommodates rare books, and a breezeway was enclosed for the librarian's office.



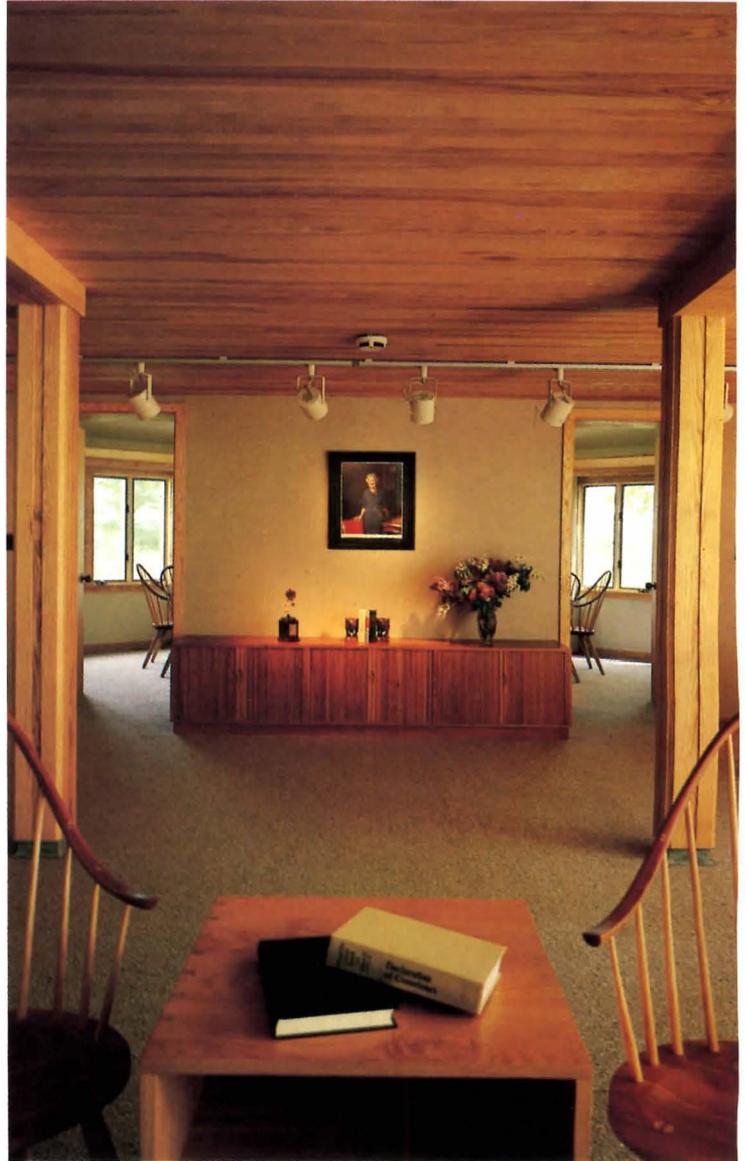
Brian Vanden Brink photos

1. Exhibition
2. Main library
3. Seminar room
4. Rare books
5. Librarian's office
6. Gallery



*In scale and materials, the Smith library defers to its residential neighborhood (opposite top), though its fenestration and cupola set it apart. The senator always wore—and still does—a fresh red rose; the attribute is carved in the lintel above the entrance. A glazed porch (opposite center) joins new gallery and old house. The architects relied heavily on native materials for the interior, using ash for casework and*

*beams in the main library (opposite bottom) and granite for flooring in the exhibit area (this page left). Furniture in the seminar room (this page bottom) and elsewhere was built of cherry and ash by the distinguished Maine cabinetmaker Thomas Moser. The bay window in the seminar room looks down to the Kennebec River.*



*Northwood Institute Margaret Chase  
Smith Library Center  
Skowhegan, Maine*  
**Owner:**  
*Northwood Institute  
Midland, Michigan*  
**Architects:**  
*Harriman Associates*  
**Engineers:**  
*Harriman Associates (structural,  
mechanical/electrical)*  
**General contractor:**  
*F. P. and C. H. Murray, Inc.*

Three projects in Japan  
Kisho Kurokawa Architect & Associates



# The metamorphosis of Kisho Kurokawa



The entrance canopy of the Wacoal Kojimachi Building in Tokyo is meant to look like a flying saucer. Standing in its shadow, I glance down the street at crows circling above the Imperial Palace moat. Architect Kisho Kurokawa points to a stainless steel sculpture inside the Wacoal lobby: "We have named this piece 'Mirror Looking into the Past'" (see pages 118-123).

Backstage at the National Bunraku Theater in Osaka, a hooded puppeteer cradles a miniature samurai in his arms. In the alcove beside us streamers hang from a Shinto shrine; at the far end of the hall the computer control room door slides shut (pages 124-129).

I run my hand across the dove gray upholstery of a lacquered armchair in the Roppongi Prince Hotel. "That cloth is an Edo-Period kimono pattern," says Kurokawa. "This couch I have covered in the silver fabric astronauts wear" (pages 130-135).

One wall of Kisho Kurokawa's Tokyo apartment is hung with 19th-century prints showing Westerners seen through Japanese eyes. Another wall is mostly glass, with views of downtown high-rises beyond the bamboo fence of a tiny terrace garden. Kurokawa beckons me to an open door, slips into sandals, and leads the way through mossy stones and stunted pines to a paper shoji screen set into a concrete wall. Behind the translucent lattice, he explains, he has reconstructed a lost 17th-century teahouse designed by Kyoto tea master Enshu Kobori: every detail of the little pavilion is faithful to plans discovered in a monastery library. After warning me to duck beneath a child-height lintel—a symbolic reminder of humility—Kurokawa apologizes that our tour must be brief. He taps his watch ruefully and laughs: "Architects and time. . ."

Time as a philosophical idea has always absorbed Kurokawa's thoughts; it is a commodity that he has never wasted, and a spirit that lurks in all of his designs. He describes his newest Tokyo project, the Wacoal Kojimachi Building (preceding pages and overleaf), as "an observatory for peering into the future," an analogy that critics might also have applied—though with different import—to his work a quarter-century ago, when he emerged as the youngest member of the Metabolist Group. Twenty-six in 1960 when the five-man cohort issued its futurist manifesto, Kurokawa was an outspoken advocate of dynamic megastructures geared to rapid technological development and continuous urban growth.

As Kurokawa expounded this vision, arbitrary barriers between past, present, and future would dissolve in a metropolis engineered for change. Architecture would endow the inhabitants of the mutable city

with systematic means for shaping their environment, almost as though men were sentient cells in a greater living organism. The forms of Modernist architecture were patently inadequate, Kurokawa decided; as an esthetic, the International Style was burdened with superficial mechanistic imagery, an obsession with the static art object, and a narrowly Western frame of reference that made it anything but international in scope. If the Metabolists adhered perforce to Modernism's abstract geometry, they would refit it to more genial patterns drawn from biology and Japanese tradition.

Kurokawa labored enthusiastically at megastructural scale, both as a contributor to the Plan for Tokyo 1960 devised by his teacher Kenzo Tange, and as the mastermind of his own Helix City. At the same time, however, he was patiently gathering practical knowledge of the industrial production methods and economic tools without which Metabolist theory could never become reality. In 1959 he published a book based on first-hand study of Soviet prefabricated housing, and subsequently researched the applications for modular habitats, space frames, and tensile structures in his own country.

A decade of experimentation culminated at Expo '70 in Osaka, where Kurokawa's Celestial Theme Pavilion and Takara Beautilion (figure 1) dramatized the potential of changeable plug-in modules and clip-on capsules before a global audience (RECORD, June 1970). Two years later, the Nakagin Capsule Tower in Tokyo (figures 2 and 3) tested the viability of these themes in a crowded real-life urban setting. Envisioned as the prototypal fragment of a larger complex, Kurokawa's daring scheme adapted shipping-container technology to the fabrication of dwelling units. Nevertheless, despite plans for periodically rearranging the cluster of movable boxes-for-living, the original tower silhouette remains unchanged (most of the 8-by-12-foot capsules were purchased as businessmen's pieds-à-terre). Looking somewhat the worse for wear, but still one of the Ginza district's most memorable landmarks, the building has ironically been frozen in time as a Metabolist period piece.

Even as he refined the megastructure-capsule theme in projects such as an "information tree" for the Sony Corporation in Osaka (figure 4), Kurokawa became increasingly aware of its limitations. He questioned the overwhelmingly technological bias of Metabolism, above all as an analytic breakdown of existence into chains of atomistic functional parts. Still looking to biology for a model truer to the actual flux of experience, he grasped at the principle of symbiosis. This concept was doubly appealing, since it also affirmed the fundamental Buddhist transcendence of dualism, overriding what Kurokawa believed to be a

A portfolio of earlier works by Kisho Kurokawa: 1. Takara Group Pavilion (Beautilion), Expo '70, Osaka, 1970; 2. Nakagin Capsule Tower, Tokyo, 1972; 3. Nakagin Capsule Tower, interior of living unit; 4. Sony Tower, Osaka, 1976; 5. Shoto Club, Tokyo, 1980; 6. Saitama Prefecture Museum of Modern Art, 1982; 7. Saitama Prefecture Museum of Modern Art, interior detail.



1

Mildred Schmeertz photo



2



3

Tomio Ohashi photos except as noted

Photo preceding page: Tomio Ohashi

Western fixation on philosophical polarities: past versus present, part versus whole, art versus technology, civilization versus nature. In his prolific architectural writings, Kurokawa began to define this reconciliation of opposites as “Metamorphosis,” an intuitive approach to social and physical change, expressed through the multivalent, ambiguous, sometimes conflicting symbols that compose the texture of present-day culture, Oriental and Occidental.

Influenced in part by the cross-cultural studies of Claude Lévi-Strauss, Kurokawa sought to formulate an architectural grammar comprehensible anywhere in the modern world but unmistakably accented with the idiom and poetic tone of Japanese precedent. He disdains equally the “‘Esperanto’ architecture constructed solely from Western languages” and the “nonsensical ‘bean curd’ of mirror-glass buildings.” The thrust and tenor of his thinking are patently akin to ideas articulated in the 1960s by Robert Venturi, even if the historical frame of reference is different (Kurokawa’s urbanism similarly bears comparison to the writings of Jane Jacobs, which he has translated into Japanese). No chauvinist, Kurokawa occasionally turns westward for visual “quotations.” When he does, he usually focuses on Mannerism or the early Baroque, favorite sources for Venturi, as well. Kurokawa has remarked, “Though the Baroque age was scientifically and technologically more advanced than the Renaissance, probably at no other time have such efforts been made to express human spirituality and sentiment. It seems to me that this was the one time in Western history that rationality and irrationality coexisted. . . .”

Kurokawa’s architecture during the ’70s and early ’80s reflected his intellectual metamorphosis. A richer palette juxtaposed stone, marble, wood, and lacquer with “high-tech” materials; a sometimes overwrought geometry layered interlocking grids over sculptural mass; and historical allusions appeared in elegant, even chic, surface decor. This mixing of cultural signals was already evident in the 1973 Summer House K, which tucked a wood-paneled teahouse inside a Cor-Ten capsule. Buildings such as the National Ethnology Museum in Osaka (1977), the Shoto Club (figure 5), and the Saitama Prefecture Museum of Modern Art (figures 6 and 7) were in essence thesis demonstrations for Kurokawa’s evolving philosophy. The Wacoal Kojimachi Building, the National Bunraku Theater, and the Roppongi Prince Hotel add new chapters to the *oeuvre incomplète*.

Fundamental to this development is a distinctly Japanese perception of urban and architectural space. Kurokawa asserts that Western spatial concepts presuppose explicit demarcation of three-dimensional enclosure and strict dualities between public and private. Japanese

space, however, is only implied by layered planes (as in scroll paintings) and by permeable, intermediate zones, such as the *engawa*, or deep-eaved verandas of traditional dwellings. Kurokawa speaks of “gray space,” just as, in a typical aphorism, he has called Japan “a culture of grays.” Westerners usually conceive gray as a mixture of black and white, he explains, whereas Japanese see gray as an infinitely variable spectrum of merging complementary colors. These muted hues are often associated with the 16th-century tea master Sen No Rikyū, who espoused such colors as the quintessence of artful simplicity. In a 1979 essay, “Rikyū Gray and the Art of Ambiguity,” published in *Japan Architect*, Kurokawa observed: “Structures are built against gravity. In contrast to this gravity, gray tones can create a detached, drifting sense, as do the streets of Kyoto in the twilight.”

The esthetic of Rikyū gray is part of an extraordinary heritage—ranging from textile design and gardening to the Bunraku puppet theater—that originated in the Edo Period (1603-1868), an era of art history that Kurokawa holds in utmost esteem: “The mass, or popular, culture of Edo, its fantastic nature, its pluralism, and its eclecticism, together with the high density of the city of Edo [Tokyo’s original name], its lack of boundaries, and its conviviality are precisely the defining features of the quality of post-Modern architecture and urban space.” Each of the three projects shown on the following pages calls to mind Edo-Period sources, sometimes “footnoting” the past with pedantic exactitude, more often updating it with thoroughly modern whimsy, irony, and high camp.

Some of Kurokawa’s historical references seem merely theatrical props, old-fashioned posies in a trendy high-tech vase. Yet the superficiality, playfulness, or patent contrivance of individual gestures need not deny the seriousness of the basic plot. In recent essays Kurokawa has cited the ideal of *hana*, the “flower,” a precept of the classic Japanese stage. Rather than striving for literal imitation of appearances, actors are counseled to divine the essence of the figure they portray: one must not lose the wholeness of art in fragments of passing moments. Quoting Zeami, a 15th-century commentator on Noh drama, Kurokawa offers a parable for his own aspirations: “If the action and manner of an old man were performed with the back and knees bent and the whole body shrunk as a real old man would be, then the flower would be gone and the performance would appear antiquated and musty. . . . The dance of an old man requires extreme delicacy and profound realization. The art of appearing to be an old man with the flowers blooming should be learned well. It is as if an ancient tree bears exquisite flowers.” *Douglas Brenner*



4



5



6

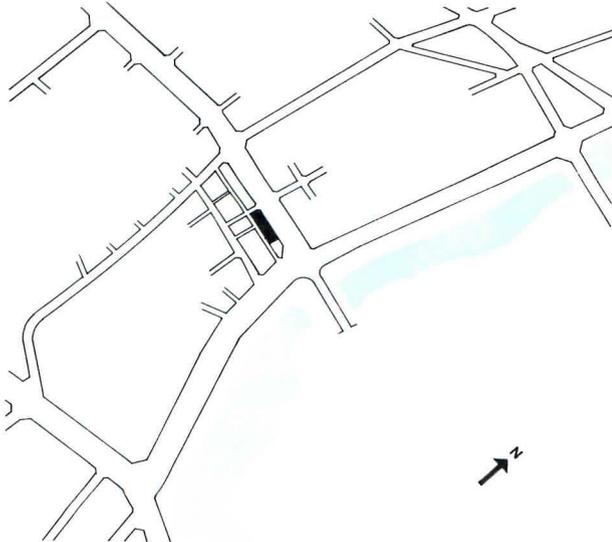


7

## Apparatus of desire



Tomio Ohashi photos



It might be the set for a Japanese remake of *Modern Times*, a giant machine plunked down with surreal incongruity at the gateway to Emperor Hirohito's Tokyo palace. Mysteriously silent, the looming engine is a *perpetuum immobile*: no turbine sparks beneath the vented hood, and even Godzilla could not budge the stationary crank.

The gears that turn here are mental, the cogs are human, and the products, the stuff of fancy. This is, with improbable logic, the new headquarters of Wacoal Inc., a Kyoto-based lingerie manufacturer who sought, and obtained, a high-profile image in the nation's capital. The site for the firm's new offices and show rooms is some of the choicest real estate in Japan. Besides the Imperial household across the street, Wacoal's neighbors include the Supreme Court, the Metropolitan Police Department, the National Diet Library, and the National Theater. Amid these august surroundings, the modish engine designed by Kisho Kurokawa assumes the iconic stature of a public monument to yet another national institution: the beloved machine.

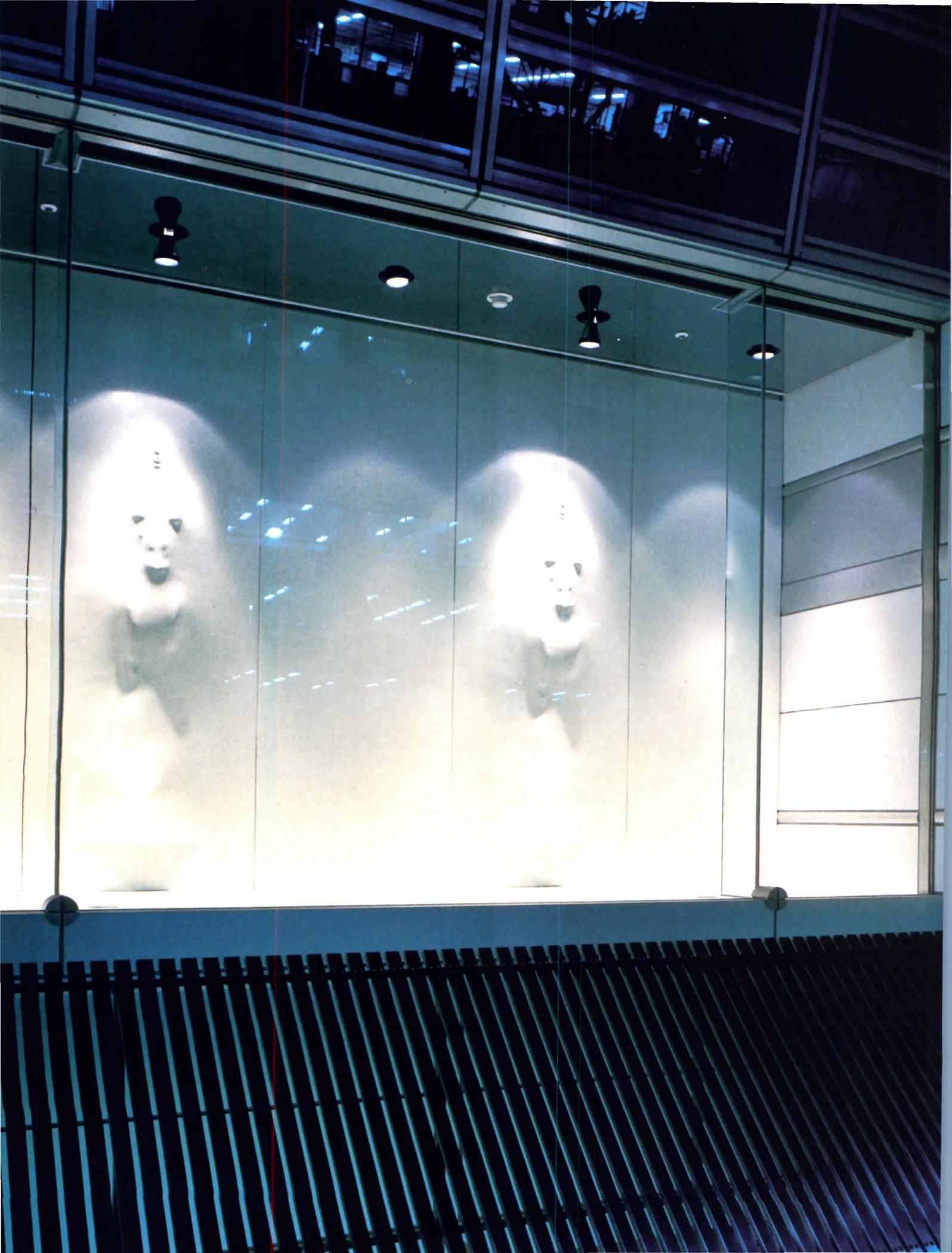
Kurokawa, like many students of contemporary Japanese culture, has noted the link between modern prosperity and Buddhism's "both/and" world view, a synthetic vision that sees man and machine not as symbolic adversaries or uneasy allies but as the warmest of friends. Japanese folk wisdom has long regarded tools as sympathetic extensions of the hands that wield them, and therefore worthy of the same care one devotes to personal cleanliness and decorum. Consider, for instance, the standard Tokyo taxi, whose white-gloved driver seats his passenger on snowy slipcovers with crocheted antimacassars, and strings a clothesline inside the trunk to dry the rags used for a daily car wash. Kurokawa finds more sophisticated examples of this tradition in Edo-Period robots, such as the 18th-century "tea-bearing doll," a spring-driven automatic servant that proffered and removed its master's drinking cup.

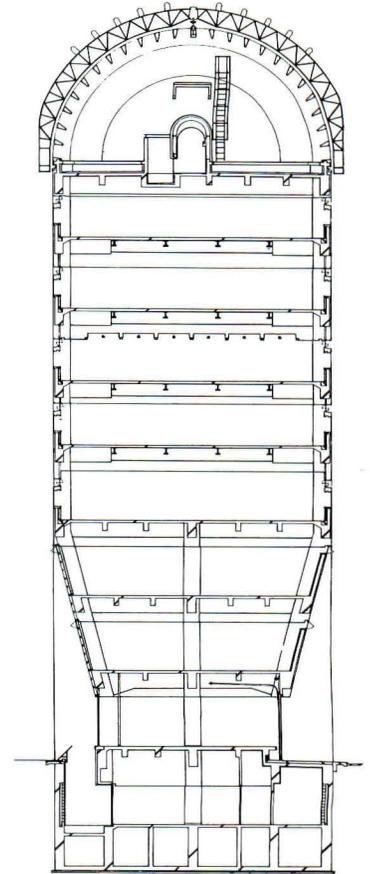
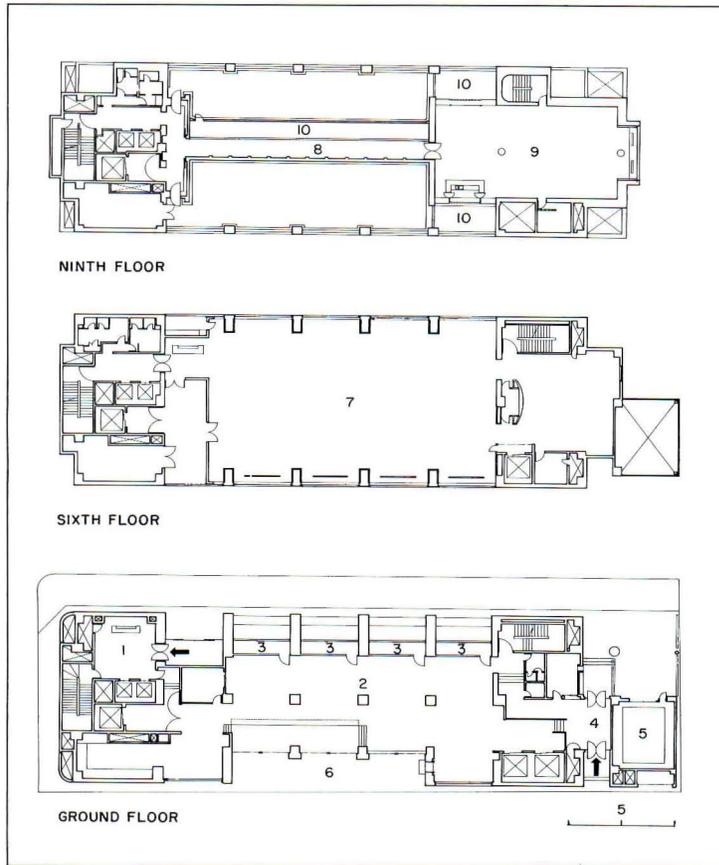
The architect invokes this lively heritage—and contrasts it with the relatively cheerless mechanistic imagery of Modernist design—in dubbing the Wacoal Building a "machine plaisante." His terminology bespeaks a Francophile taste for the "textes" of Continental semiotics, in particular the work of meta-structuralist philosophers such as Gilles Deleuze and Félix Guattari, who have advanced the notion of the "machine désirante." In essence, Kurokawa explains, this concept denotes the "unique human mechanics of diversified yet enmeshing desires," a far cry from the *machine à habiter* of the 1920s.

The creative reconciliation of a vast array of phenomena, sensations, and moods signified by Kurokawa's metaphor has been translated into extraordinary architectural diversity at the Wacoal Building. It is, at least symbolically, the ultimate machine. An exquisite cladding of aluminum and the crystallized glass called Neo Pariés embodies the refinement of superlative industrial fabrication, while specific motifs, such as the stylized wind-up crank (photo top left) and a simulated UFO marquee (photo lower right, this page) suggest points on a technological timeline extending from comparatively primitive manual apparatus to science-fiction marvels still beyond our reach. Indeed, the flying-saucer canopy, the gleaming space-capsule finish, and the tower's streamlined crown and inward tapering base hint at a ready defiance of gravity, as though the entire structure might blast off at any moment.

The destination, Captain Kurokawa announces, lies somewhere in the future, for Wacoal takes pride in its corporate prescience of fashion-yet-to-come. Not that there aren't well-thumbed navigational aids and a great deal of baggage from the past on board: true to the ideals of Metabolism (or metamorphosis), Kurokawa has set a multidirectional course, connecting memory with prophesy along an itinerary that wanders from Edo-Period Kyoto and Baroque Rome to Cape Canaveral and points unknown. This glamorous craft is styled for the adventurous passenger, even if the sticker reassuringly reads "Made in Japan."







1. Lobby
2. Store
3. Show windows
4. Employees' entrance
5. Vertical parking
6. Loading
7. Show room/studios/offices
8. Gallery
9. Royal Reception Room
10. Dry garden



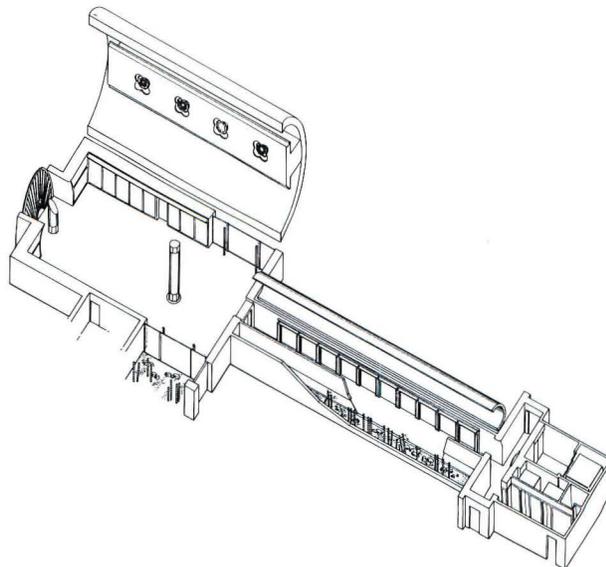
Ground-level show windows on the north facade (photo opposite) frame spectral "Body Works" designed by couturier Issey Miyaki, a sometime Wacoal consultant. The sloping grille in the foreground updates the traditional bamboo fence that protected fragile wood and paper walls from street traffic. Wacoal's skin of white crystallized glass and aluminum covers a skeleton of structural steel and reinforced concrete (mechanical equipment is housed under the curved roof). Black-bordered marble walls in the lobby (near left) recall sliding fusuma screens. The floor (and ceiling) recreate a centuries-old geomantic symbol used to divine favorable orientations. Multicolored pavers were obtained from countries along the ancient Silk Route, representing the various civilizations assimilated by Japanese culture.

*Kurokawa describes the ninth-floor Royal Reception Room (large photo below) as "a space shuttle back and forth between past, present, and future." Specific historical allusions relate this metaphor to his image of the entire Wacoal building as "an observatory for peering into the future of haute couture." The fan-patterned lunette window derives from an Edo-Period astrological chart. Mullions in a bull's-eye*

*window on the seventh floor (cover photo) trace a configuration from the Chart of Divisions and Opposites. Geomantic figures recur in executive offices (opposite bottom right). Reception room armchairs are upholstered in fabric used in astronauts' space suits. The two chairs in the foreground face a low, lowered opening (detail opposite, middle left) based on "snow viewing windows" in Kyoto. Outside the*

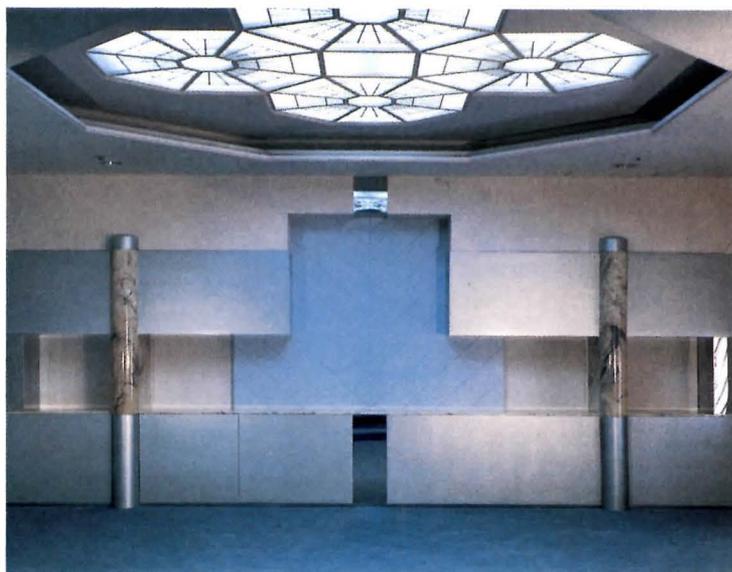
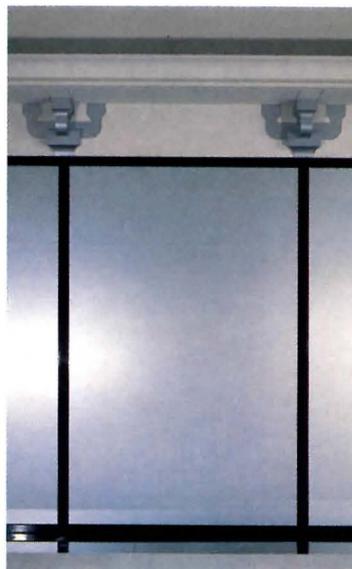
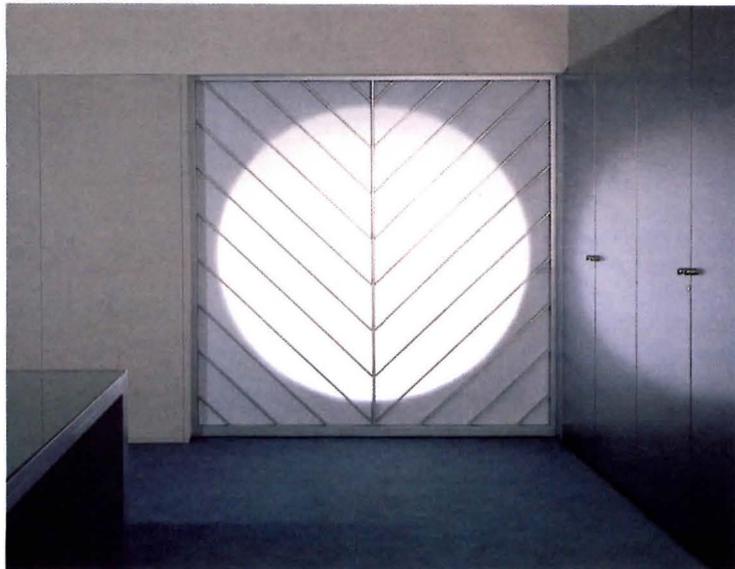


Hiroshi Kobayashi ©Shinkenchiku



glass, Kurokawa has arranged a monochrome "dry garden." Another transparent wainscot lines one side of a gallery leading to the elevators (opposite below). Here the landscape is a petrified bamboo forest (below left). The entrance to the gallery is a doorway inspired by Baroque architect Giacomo della Porta (opening pages this article); the terminus of the vaulted corridor is a lipstick-red arch enclosing yet

another Japanese astrological symbol (opposite below). By altering the contours of traditional Japanese corbels, Kurokawa has made the brackets "ghosts of their Kyoto ancestors" (top center). Familiar rafter grids are similarly transformed into tracks for sliding partitions in multipurpose show rooms (photo top right). In one office, a sliding shoji filters the light from a porthole window (top left).



Tomio Ohashi photos except as noted

*Wacoal Kojimachi Building*  
Tokyo, Japan

**Owner:**

*Wacoal Inc.*

**Architects:**

*Kisho Kurokawa Architect & Associates—Kisho Kurokawa, Jitsu Takai, Terumi Ota, Masanori Takano, Tomu Honda, Tamotsu Iisaka*

**Engineers:**

*Kisho Kurokawa Architect & Associates*

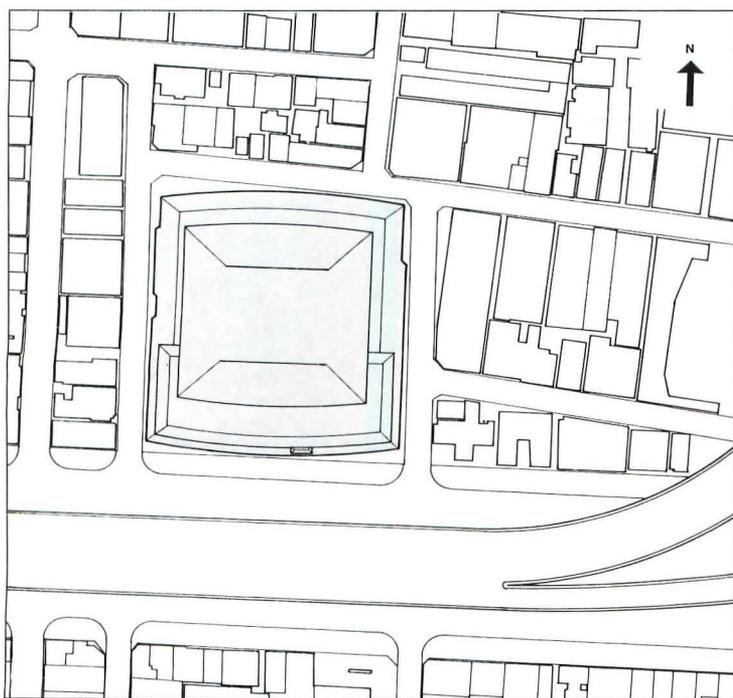
**Sculptors:**

*Minami Tada, Issey Miyake*

**General contractors:**

*Joint venture of Takenaka Komuten Co., Ltd., and Tokyu Construction Co., Ltd.*

## Remembered lines



Like many Westerners attending a Bunraku play for the first time, I wondered whether the puppeteers would distract me from the puppets. Three men in full view of the audience manipulate each of the stringless marionettes (some are nearly two-thirds life-size). A master puppeteer in formal kimono controls the doll's head and right arm; one black-hooded assistant operates the left arm and another helper moves the legs. A singer or chorus intones dialogue and narration from an open platform beside the stage, to the accompaniment of a three-stringed *samisen*. Each performer in this multimedia spectacle is a virtuoso, yet so deft is the coordination of gesture, voice, and music, that the puppets seem independently alive. The dramas of star-crossed love and heroic valor are demanding adult fare: the enactment of a classic play, unabridged, can last all day.

Customarily, a puppeteer does not attain full mastery of his art until he has served a decades-long apprenticeship. "You might be able to learn all the basics after only 10 years of training," says Mr. Takami Ikoma, the National Bunraku Theater's public relations director, "but then you still need to experience the full range of life. This does not usually happen until you are in your 60s. But then your powers soon decline. The flowering of Bunraku is brief."

The genre takes its name from Bunrakuken, director of the premier troupe in 19th-century Osaka. Before the ascendancy of movies and television, the puppet theater was one of Japan's most popular entertainments, with origins traceable at least as far back as the 1600s. But ever since World War II, dwindling audiences and a lack of aspiring puppeteers have threatened Bunraku's extinction. The National Bunraku Theater was founded by the Japanese Agency for Cultural Affairs, with support from Osaka's regional and municipal government and local sake brewers, in the hope of rescuing the performance and study of this venerable art. The focus of the building program developed by Kisho Kurokawa was a theater in which audiences could observe every roll of an eye or flick of a fan through which the miniature actors signal expressive nuances. Other functional requirements included costume and scenery shops, studios for carving and repairing wooden puppet heads, a rehearsal hall, scholarly archives, and an exhibition gallery.

The recently completed theater stands appropriately close to the former location of Bunrakuken's first stage. Otherwise, the present-day surroundings are less than ideal. The property's major frontage adjoins a noisy elevated highway; the other three sides face narrow streets with no sidewalk connection to the downtown entertainment center several blocks away. "Sunlight restrictions" limited the building height, while underground sewer pipes precluded lot-line excavation. Turning adversity to advantage, Kurokawa lifted the theater one story above ground and inserted a latticed porch around three facades. Besides affording pedestrians a sheltered passageway, this intermediate "gray space" encourages the public to enter the lower lobby. Here, without buying a ticket, one can sample Bunraku on videotape, view an exhibition, or dine in a small restaurant (theatergoers customarily take *bento* lunch boxes to their seats).

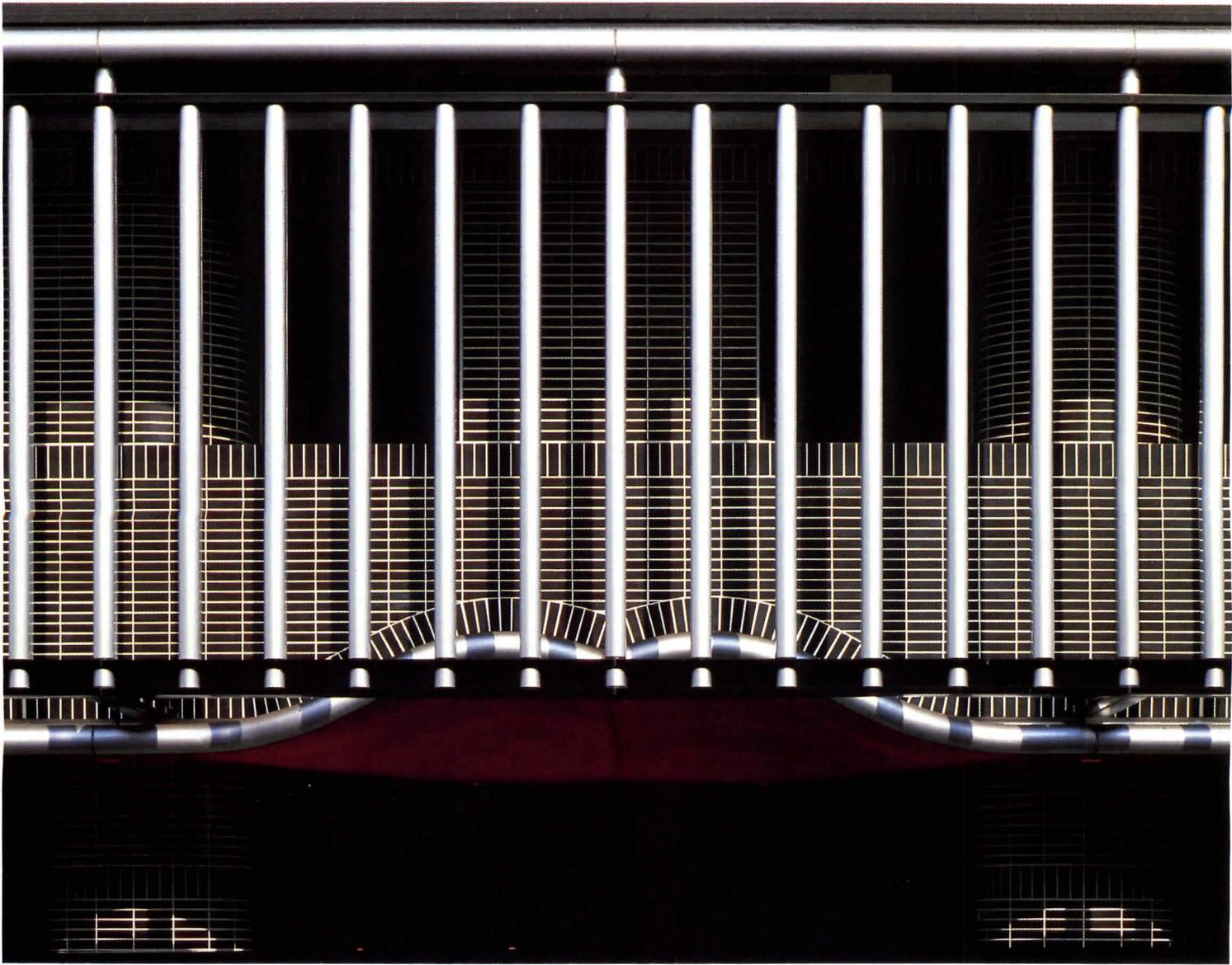
Silhouetted against charcoal-gray tile walls, the aluminum grille (opposite) recalls the bamboo palings of early open-air theaters and old town-house fences. The cornice-level oriel is a vestige of the towers where drummers announced the start of a show. Cupid's-bow "Chinese windbreak" gables derive from the ornamental roofs of 17th-century stage-houses. Inside, the subtly varied grid of the facades becomes a decorative web, which Kurokawa embroiders with denser historical references. The public areas are as charmingly theatrical as Bunraku sets, especially when a matinee crowd turns out in its best kimonos. In years gone by, I was told by Mr. Ikoma, "We Osakans used to go to Bunraku in casual clothes. But now, in the new building, I feel I should dress up in a good suit. That's what happens when you bring a Tokyo architect to Osaka."



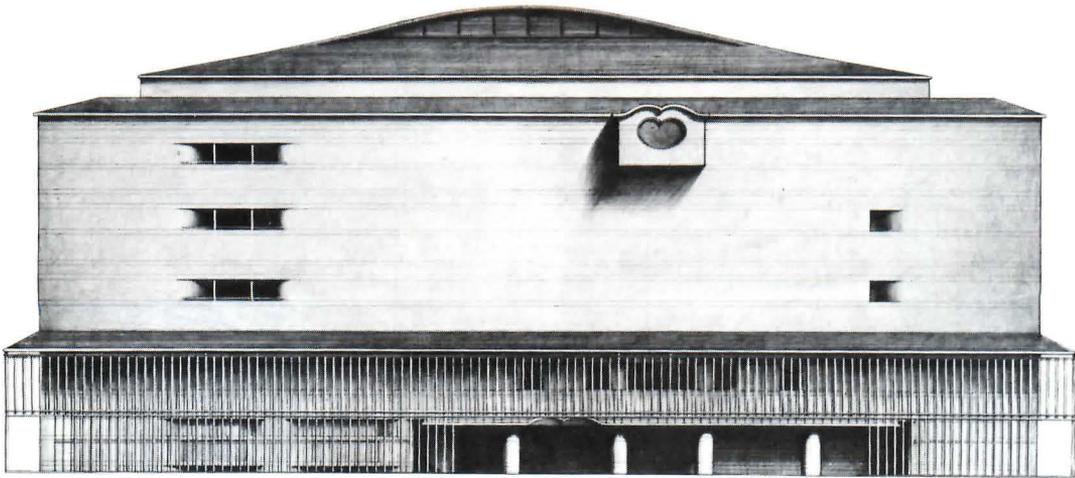
Audiences at the earliest puppet plays sat on straw mats in the open air; thatched roofs sheltered the performers. During the 17th century, theater architecture grew more elaborate, with Chinese gables above the stage and a drum tower over the entrance. Nineteenth- and 20th-century innovations included tiers of box seats and eclectic Eurasian decor. A typical prewar Osaka Bunraku theater boasted a Renaissance Revival facade decked with paper lanterns and straw-wrapped sake jars (near right).



Courtesy Kisho Kurokawa

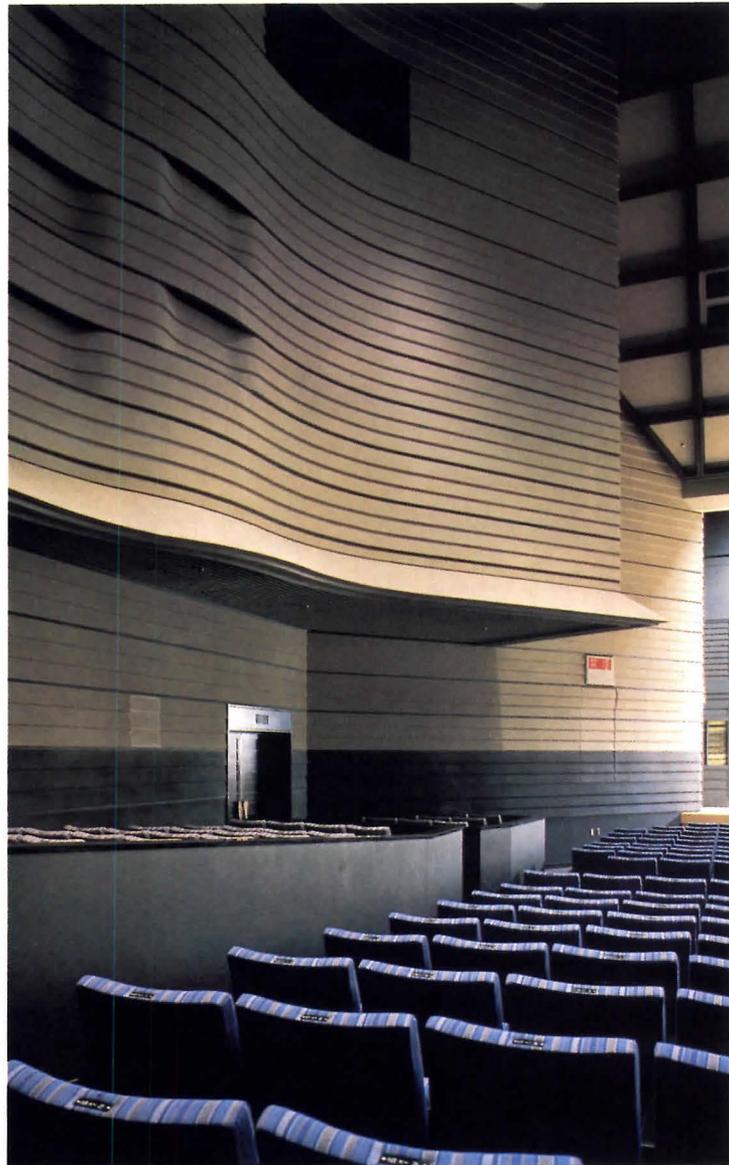
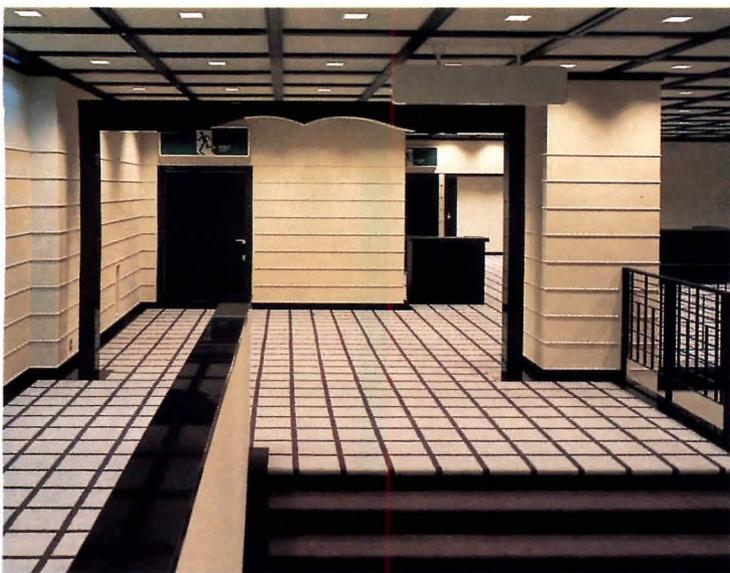


*Tomio Ohashi photos except as noted*

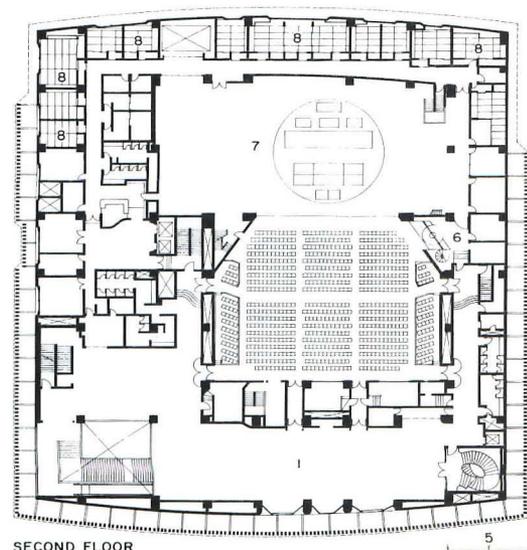
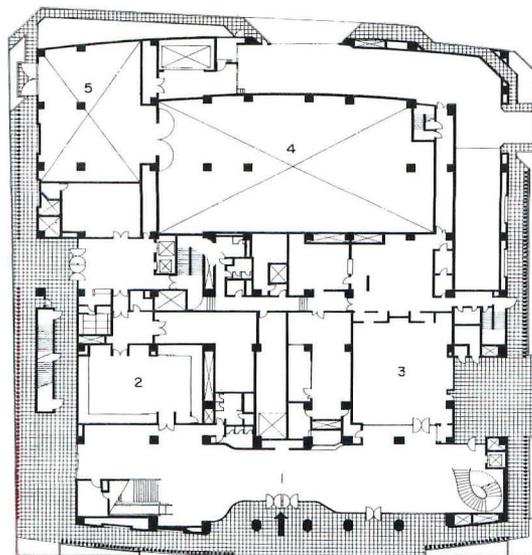


Stairs and escalators lead to a second-story ticketholders' lobby (top and bottom left). Following Japanese precedent, Kurokawa deliberately juxtaposes grids of different scale. He animates this orthogonal regularity with strong colors and curvilinear forms, such as a winding staircase, a cut-out lintel (bottom left), sinuous walls (below right), and decorative hardware (overleaf). These flourishes, Kurokawa notes, reflect

an exuberantly ornamental aspect of Japanese architecture that has always coexisted with an esthetic of restraint—an ambivalence that foreign observers such as Bruno Taut and Walter Gropius ignored in their search for Oriental parallels to International Style austerity. Within the Bunraku theater, hinoki cypress clapboard and kimono-striped seats compose a subtle foil to the brilliant spectacle onstage. In the



1. Lobby
2. Exhibition gallery
3. Restaurant
4. Pit
5. Set production
6. Narrator and musician's turntable-platform
7. Stage
8. Dressing room/studio



upper photo, the stage is set with a landscape backdrop often used in Noh dramas; a hanamichi runway, standard equipment for Kabuki performances, thrusts well into the auditorium. The lower photo shows the stage equipped for Bunraku, complete with a platform for the narrator, chorus, and samisen player. These performers sit on a turntable that swings them out of view during scene changes and at the

final curtain. To ensure visibility, the house capacity is modest: 753 seats in total (seven, five, and three being auspicious numerals). Floors, walls, and ceiling are structurally independent of the building shell, to isolate the performance hall from street noise and subway vibration. Sound-absorbing walls are perforated sheet aluminum with a baked finish. The ceiling is extruded aluminum over plasterboard.



The reach of Kurokawa's stylistic references matches the allusive texts of Bunraku literature, at once popular and refined. Moon-shaped door handles were based on fusuma pulls at the 17th-century Katsura Detached Palace in Kyoto (near right); stairwell windows evoke the characteristic lintels of old storehouses (opposite). Against the backdrop of a diminutive Edo-Period interior, members of the National Bunraku Theater troupe guide their charges (below).

**National Bunraku Theater**  
Osaka, Japan

**Owner:**  
Agency for Cultural Affairs, Japan

**Architects:**  
Kisho Kurokawa Architect & Associates—Kisho Kurokawa, Jitsu Takai, Koji Kimura, Aiko Mogi, Naoto Ogane, Isshi Okazaki, Masanori Takano, Hideo Koike, Hisato Tajima

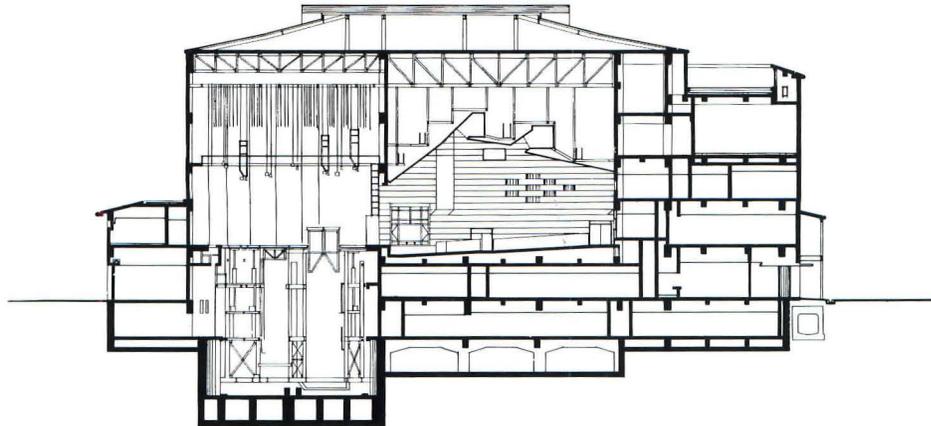
**Engineers:**  
Gengo Matsui and MUSA Engineering Consultants Inc. (structural); Inuzuka Engineering Consultants (mechanical); Karasawa Architectural and Acoustic Design (acoustic)

**Furniture designers:**  
Kisho Kurokawa and Tamotsu Iisaka

**General contractors:**  
Joint venture of Takenaka Komuten Co., Ltd., and The Zenitaka Corporation



Tomio Ohashi photos except as noted





Roppongi Prince Hotel  
Tokyo, Japan  
Kisho Kurokawa Architect &  
Associates

## Transient pleasures



*The Roppongi Prince Hotel stands on the former site of the Finnish Embassy. Next door is the high-rise headquarters of IEM Japan and around the corner, a congeries of cafés, discotheques, bars, and boutiques. The hotel facades are clad in a fine grid of white ceramic tiles, trimmed with colorful horizontal pinstripes and ribbons of aluminum-window sash in a bright enamel finish. Marble panels in the*

*shape of Edo-Period windows adorn a polygonal corner bay above the entrance. Inside the main courtyard, shiny torii gates stand below sinuous tiers of balconies. Thermal panels warm the deck of a year-round swimming pool encased in transparent tempered glass. A computerized solar mirror mounted on the roof (lower right corner in photo near right) tracks the sun and beams its rays into the court.*

Bagels, quenelles, and sushi; reggae, fusion, and country-and-western; Armani, Dior, and Madame Hanai—the sensory delights of Tokyo's Roppongi district are purveyed to cosmopolites with exacting standards. The profusion of cafés, restaurants, and night clubs that lures the local jeunesse dorée also attracts international arbiters of taste in show business, fashion, and the arts. Persuading this fickle élite to eat, drink, and spend the night in a downtown Roppongi hostelry was the task set for Kisho Kurokawa by the well-known Prince Hotel chain. The proprietors had concluded that their clientele would welcome an alternative to luxury hotels such as Tokyo's celebrated Akasaka Prince (designed by Kenzo Tange), a 761-room tower of aluminum and mirror glass with a white-on-white marble atrium.

Kurokawa insisted that the traveler who frequents Roppongi is bored with universal clichés of hotel decor, be they “modern” slick or “old world” rococo. “I felt it was time to build a hotel that is intellectually stimulating,” the architect recalls, “a hotel that has wit and style, and allows us to enjoy the conviviality that most public architecture forbids.” The comparatively small size of the Roppongi Prince (221 guest rooms in nine stories) lends itself to an atmosphere of intimacy, casual elegance, and vivacity. It is meant to be a smart town house rather than a palace, and its location amid narrow side streets enhances the effect of exclusivity. Kurokawa designed an essentially introverted building, and veiled it from passers-by with dense thickets of bamboo. An appliqué of marble medallions in Edo-Period window patterns, and thin bands of brilliant red and green, only hint at the decorative flourishes behind bland white-tiled facades.

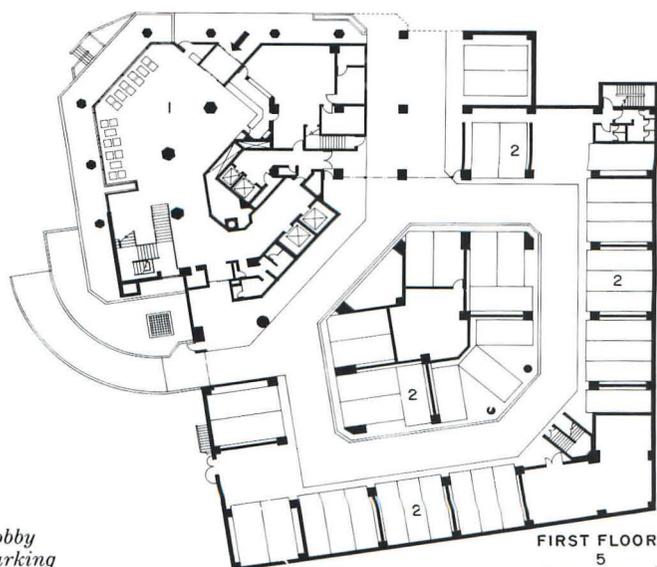
“Architecture should be more like literature,” says Kurokawa. “I want people to feel excited about turning the page.” If his hotel has a narrative structure, it is essentially theatrical. His prologue to the tale of Roppongi is an entry aglow with Kabuki colors (photo overleaf). The lobby offers ornamental subplots and foreshadowings: floor patterns abstracted from Oriental manuscripts, a Baroque portal under a topsyturvy stairway inspired by M. C. Escher graphics, elevators adorned with electronic-circuitry motifs (overleaf). Kurokawa's plot thickens as each restaurant and bar reveals an astonishing shift of scene and mood: a neoclassical garden, a Japanese inn, a star-gazing cabaret of Dr. Caligari, New-Wave ruins bathed in neon. . . . The grand finale is a serpentine courtyard with opera-loge balconies above a see-through glass-walled swimming pool. Polished chrome *torii* gates catch the glint of turquoise wavelets, and one can imagine Esther Williams on the diving board, costumed as Madame Butterfly. Kurokawa, no doubt, will have choreographed every splash.





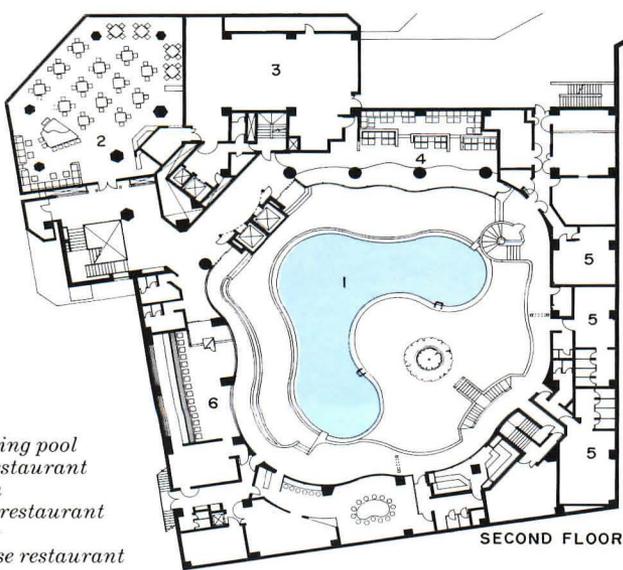
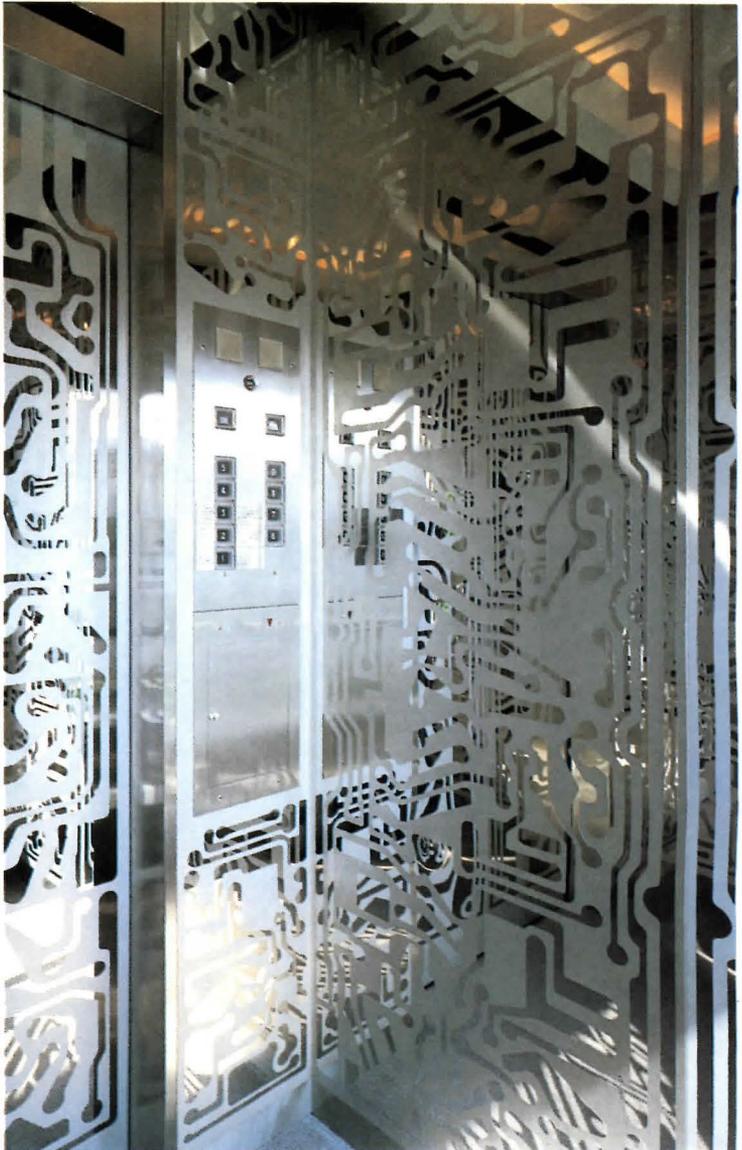
A narrow glass-walled slot rises the full height of the entry bay to bring the bamboo grove inside the lobby (bottom photo this page, plan below). Hexagonal columns enameled in six Kabuki-theater colors rise from a marble floor laid in geomantic patterns. The aluminum-paneled walls (background left in top left photo) are contoured to suggest precast concrete—complete with bolt holes—a hint of visual jokes to come.

The pièce de résistance is a stairway-to-everywhere (and nowhere) inspired by the optical illusions of Dutch graphic artist M. C. Escher (this page, top right). Elevators are decorated with a computer-circuitry motif (opposite right) that Kurokawa first used at the Sony Tower in Osaka; viewed from the central courtyard, the transparent cabs look like illuminated paper lanterns. Guest rooms are compact

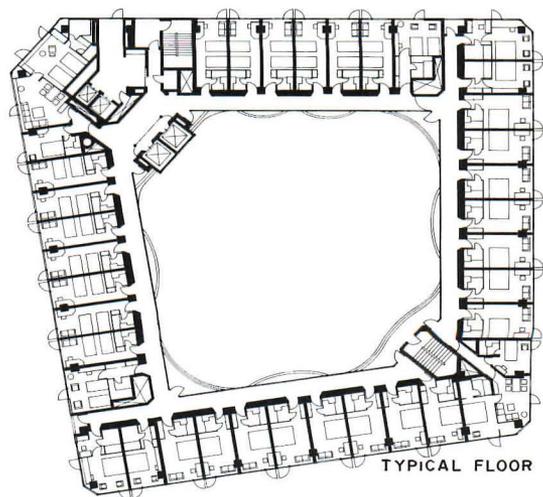


and ingeniously planned, showing the same logistical skill displayed in Kurokawa's capsule dwellings. The predominant fixture color is black, representing, says the architect, a double code: Japanese simultaneously associate black with antique lacquer and with the high-tech casework of fine audio equipment and car dashboards. Alternative guest-room hues are red and white, traditional celebratory

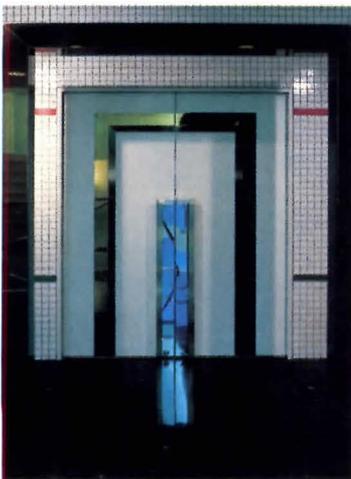
colors. Bedspreads are printed in a confetti pattern of random squares often worked into writing paper for congratulatory messages. Conical torchères recall lanterns displayed at a spring festival for young girls. Custom-made lacquered furniture is upholstered in cloth fashionable during the Edo Period; the couch cover is space-suit material. The yukata robe provided for each guest is Rikyū gray.



1. Swimming pool
2. Main restaurant
3. Kitchen
4. Italian restaurant
5. Lockers
6. Japanese restaurant



Kurokawa describes the spirit of his decor as “the tugging and pulling of signs and simulacra embedded here and there.” These kaleidoscopic glimpses of overlapping worlds include the trompe-l’oeil bar ceiling, painted in the manner of Escher (top left). “Here,” says Kurokawa, “I feel I am in the Berlin of Marlene Dietrich and the Blue Angel, far from the sunny Ville Radieuse of Le Corbusier.” There are also flashes of Western iconography in an occasional Mannerist or Baroque detail, such as the Michelangelesque tabernacle that frames a view of the main restaurant (opposite). One enters the dining room through nesting torii gates (bottom left) and dines among plaster nymphs on rough concrete pedestals. More raw concrete is served up with Italian food in the eroded walls of a neon grotto (center photo). The door frame of the tempura restaurant (bottom right) forms three graduated rectangles: the largest oblong is scaled to accommodate a samurai in armor, the medium-size opening marks the dimensions of a standard tatami mat, and the smallest approximates the “crouching door” of a teahouse.



Roppongi Prince Hotel  
Tokyo, Japan

**Owner:**  
Kokudo Keikaku Co., Ltd.

**Architects:**  
Kisho Kurokawa Architect &  
Associates—Kisho Kurokawa,  
Atsushi Fuchibe, Takeshi  
Nishimura, Mitsuko Kogawara,  
Takeo Masuda

**Engineers:**  
Kisho Kurokawa Architect &  
Associates and Takumi Orimoto &  
Associates (structural); Kisho  
Kurokawa Architect & Associates  
and Kumagai-Gumi Co., Ltd.  
(mechanical)

**Interior designers:**  
Kisho Kurokawa, Atsushi Fuchibe,  
Takeshi Nishimura, Mitsuko  
Kogawara

**Furniture designers:**  
Kisho Kurokawa, Mitsuko  
Kogawara, Tamotsu Isaka

**General contractor:**  
Kumagai-Gumi Co., Ltd.



# Classic contemporary

CIGNA South Office Building  
Bloomfield, Connecticut  
The Architects Collaborative, Architects

If the new addition to CIGNA's headquarters campus defies dating, looking (save for the now *de rigeur* atrium) as though it might have matriculated at any time in the past decade . . . well, that's what the client wanted: CIGNA's charge to The Architects Collaborative was "contemporary, but not faddish." (Nor was TAC, which continues to swim against the shifting tides of post-Modernism, averse.)

Behind this stance was the company's pride in its two existing classics by SOM's Gordon Bunshaft, including the original home office, a flawlessly detailed '50s jewel with interiors by Florence Knoll, which won plaudits as a low-rise first cousin to Lever House. Not surprisingly, in the latest round of expansion CIGNA's broad concern was to match the dauntingly high standard set previously while bowing to more than a quarter-century of rapidly developing technology—and rapidly rising energy costs: no glass boxes, however jewel-like, in the '80s.

The brief to the design team of TAC and interior planners Interspace Inc, soon joined by Turner Construction, was for a "50-year building": flexible, durable—and hospitable. For while the semi-rural site is lyrical, it is also . . . remote. Enlightened self-interest suggested that the park-like setting be exploited as a recruiter and retainer of staff—an attraction outside (through recreational use) and in (under a directive that all employees enjoy an outdoor view). In this spirit, the program included a range of amenities, from varied dining areas to a "company store," to transform a hive of 2,200 workers into a comfortable place to work and a pleasurable place to be. Thus environmental richness, joined with long-term mutability, energy consciousness, cost-effectiveness consistent with quality—and distinctive design—became the bywords for yet another CIGNA "landmark."

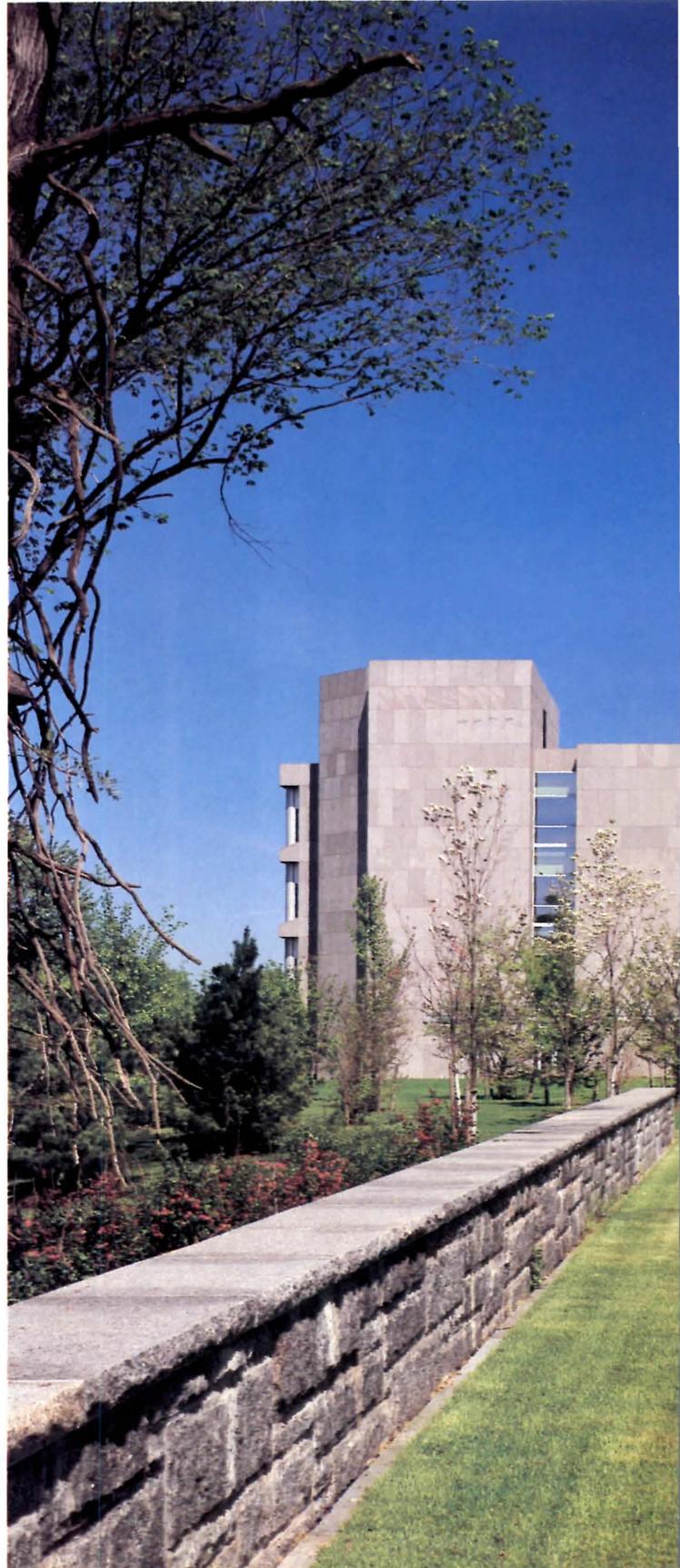
The new building on the rolling 65-acre campus was sited overlooking a spring-fed pond to the south of the original headquarters—distant enough to avoid a clash of styles, near enough to enhance the over-all building ensemble—and oriented with major exposures to north and south for optimum sun control—the key to natural lighting, and so to energy efficiency. Held by code to four stories and by conviction to openness to daylight and views, the 534,000-square-foot structure was strung out in a footprint of 890 by 260 feet, with parallel offset wings on either side of a two-level atrium that TAC describes as the embodiment of its design philosophy.

Certainly it is the fundament of its design. In addition to amplifying natural light, the atrium serves as the social hub of the employee community and brings human scale to a building equivalent to a felled 80-story tower. It is also the circulation hub, linking the building floors via a central escalator and glass elevators at the ends of the court, and connecting its wings with flying bridges. In the upper-level bays, central corridors alternate with balconies to add to the variety of visual and spatial experiences employees enjoy.

Though lacking the bravura of the atrium, the office floors are as skillfully planned, playing their crispness and polish against its varied textures, exuberant landscaping, and colorful adjunct spaces. Divided into four column-free pods arranged in mirror image around the atrium, the bright and airy working areas respond to the directive for unobstructed views via a remarkable custom-designed lighting/partition system. All interior walls parallel to the windows consist of post-free glass panels which float beneath a "ceiling" sketched in by light tubes that in fact support them (RECORD, April 1963, pp. 160-167).

The watch-like precision of detailing that marks the partition system is but the most striking example of the extraordinary attention to detail and the high level of materials and finish to be found throughout—and without—CIGNA's new headquarters. From the carefully matched rosy granite of the skin and the sleek aluminum columns threaded through its spandrels to the simplest (but ergonomic, of course) secretary chair, the building says "quality."

Says TAC principal-in-charge John Harkness, "We tried for '80s elegance." And succeeded. *Margaret Gaskie*



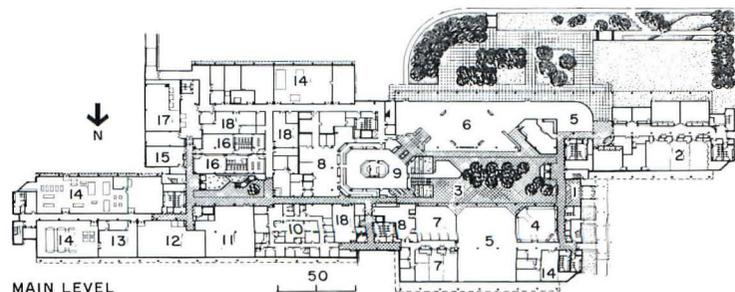
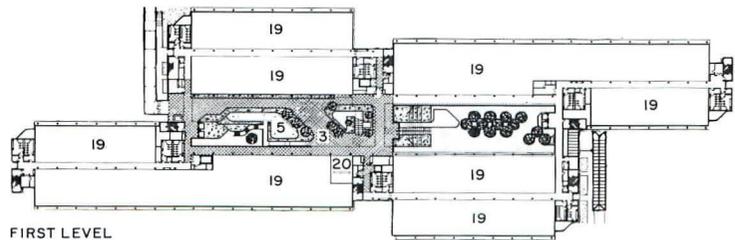


Arrival at the CIGNA headquarters entrance, set in the angle of offset pods, is heralded by a colonnade that intersects with the glazed canopy and sloping skylight over the lobby introducing the atrium. The end walls of the atrium are the exceptions to the rule that places windows on the north and south elevations while shrouding the east and west facades. These, however, are not neglected, but clad in pink

Canadian granite veneer panels with the look of cut stone, massed to anchor the building as well as enclose its service cores and mask rooftop mechanical equipment. On the long facades, spandrels and outside columns shield the continuous glazing, limiting solar gain while admitting daylight to augment the artificial lighting within. On the south (detail and section bottom opposite), this

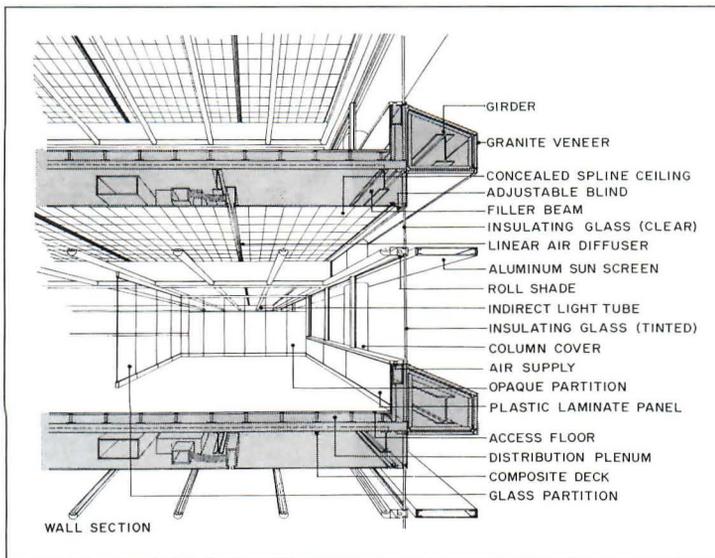
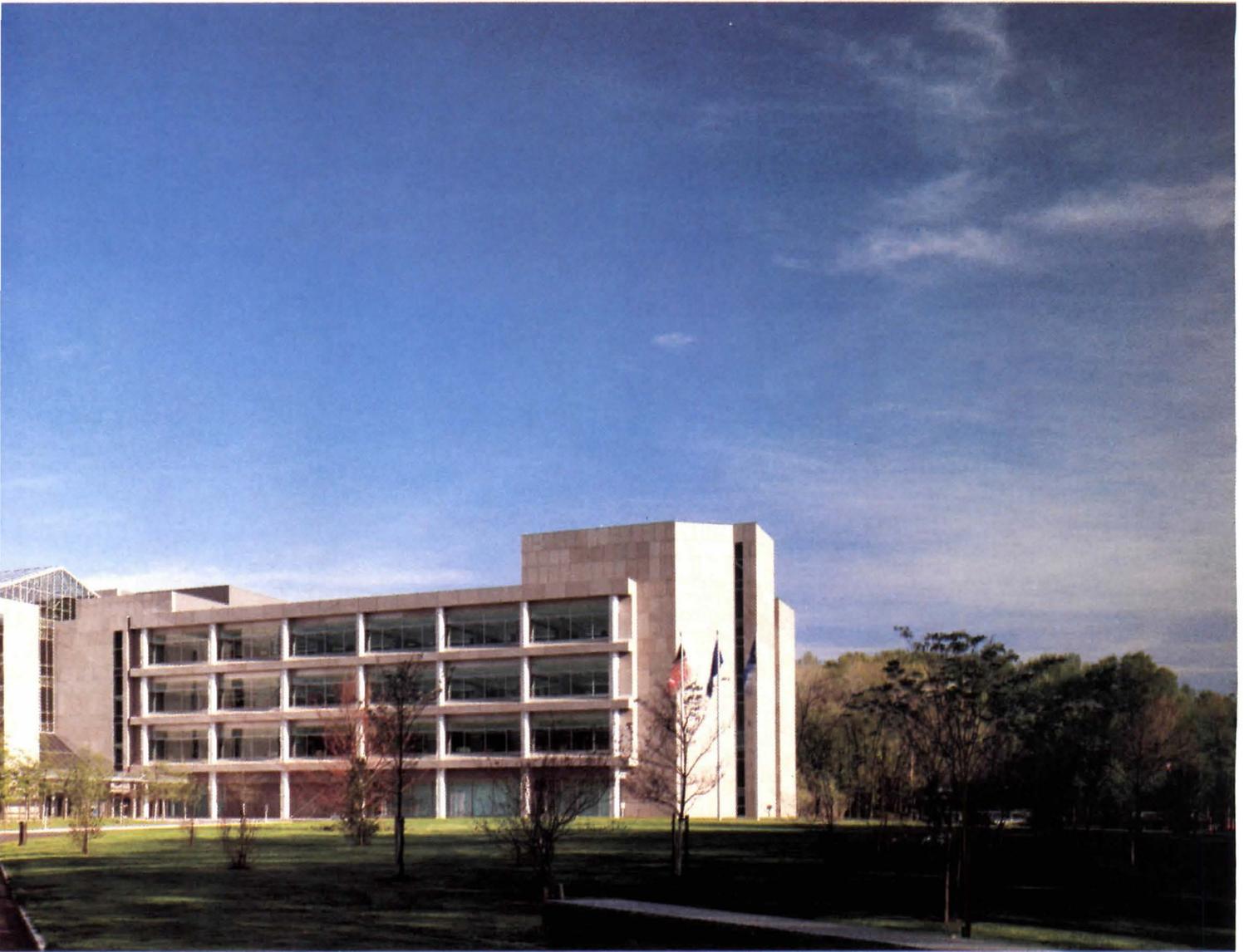


1. Entrance
2. Training facilities
3. Atrium
4. Employee store
5. Lounge
6. Cafeteria
7. Dining
8. Kitchen
9. Servery
10. Employee health service
11. Mail
12. Shell space
13. Shop
14. Mechanical
15. Exercise
16. Locker
17. Dock
18. Storage
19. Offices
20. Bank



structural shield is reinforced by a slender aluminum sunshade that both protects the glazed facade from summer sun and reflects light back into the work spaces. Above the light shelf are slim slat blinds adjusted twice a year to direct sunlight upward to the ceiling; below it are mesh roller shades. (The glazing on both facades is of one-inch insulating glass with large tinted panels topped by clerestories for "vision light.") The

satiny, aluminum-sheathed exterior columns that permit the unbroken spans of vision glass also provide unbroken spans of space within the 48- and 66-foot office pods. And they bring to the facades the contrasts of texture and verticality that, with the play of light, shade, and reflection, animate the surfaces and modulate the scale of a building as long as three football fields.



Among the claims to fame of CIGNA's original cutting-edge home-office building was its configuration as a transparent hollow rectangle around a landscaped (but "look, don't touch") inner court, a back-to-nature notion new at the time. Times have changed. It is now as implausible to glaze all exposures of a building as to place its most human feature off-limits to employees. So in the new CIGNA

headquarters, elevations are oriented and designed for climate control, and the open court becomes a skylit atrium that is itself a key element in the energy conservation strategy. Its clear glass skylight, which can be shaded on the south as needed, pours daylight into the court and adjacent work areas, making feasible the 66-foot-deep office bays that overlook it from outboard balcony corridors. Nor is it just a

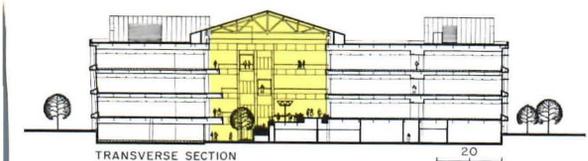
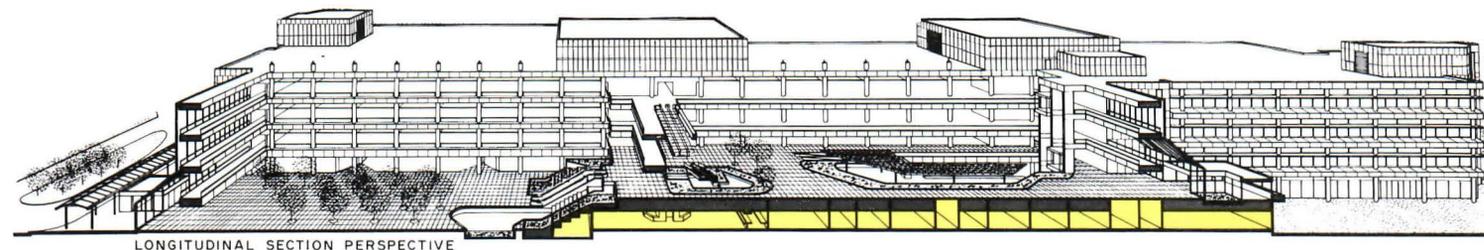


jumped-up path, but a usable—and heavily used—focal space. Responding to the building's east-west placement on its sloping site, the two-level atrium rises from a four-story-high space on the west to a berm built over below-grade support spaces on the east (photos below and right opposite, and sections at bottom). Since the west end is above grade, the entrance lobby and clearly defined employee service areas—

cafeteria, dining rooms, and lounges—are placed there, with access to outdoor light and terraces (see plans on page 138). From the entrance (photo bottom opposite) one moves through a landscape of low spreading trees that culminates in a burbling pool at the escalator base, past a terrace where the cafeteria spills out to tables shaded by pyramidal umbrellas, and on to a network of bridges and escalators

that gives access to and among the office floors, as do glass-fronted elevators at the atrium's ends. On the upper level, the main entry for employees coming from the garage and parking areas, the landscape changes to lush plantings that lend further shelter to a recessed, space-frame-roofed reading lounge and frame a pool from which water cascades to the lower pool. An open stair in a light well leads to the

service areas below. John Harkness likens the atrium landscape to a Chinese garden which "needs people to complete it." Indeed, it is the flow of people that gives the space a vitality that contrasts with the serenity of its plantings and water elements, and sets off the clarity and tautness of its enclosing shell: honed granite panels, pristine white laminate-sheathed columns, and, over all, the soaring space frame.



Though inspired in large part by the client's emphasis on exposure to the outside landscape and the resulting abundance of daylight, as well as the demand for flexibility, the elegant lighting/partition system designed for the CIGNA offices (RECORD, April 1983, pp. 160-167) itself creates a handsome and polished interior landscape. (See representative office module below and executive office at bottom.) Artificial and natural

lighting combine to produce glare-free illumination over-all, while the movable glass partitions open unbroken views to the outdoors and the atrium. To free the placement of interior walls within the three-by-six-foot grid used throughout the large open office spaces, and to allow mechanical systems to pass over them, beams were dropped below the ceiling plane to a height of 9.5 feet and spanned by light tubes on six-



foot centers. These not only provide indirect light but support the partitions. The partition system is based on 3-foot-wide by 9.5-foot-high, clerestory-capped opaque panels that can support hang-on furniture components; opaque panels with a nine-inch glass edge at one side, used where panels are to meet the window walls off the mullions; all-glass panels; and glass and opaque doors. The absence of panel frames gives the

assembly an air of insubstantiality intensified by the lack of posts: because they are braced by the light tubes above, panels meet at near-invisible butt joints. The meticulously faceted glass panels contrast tellingly with the rich textures and colors of the fabric-covered panels and furnishings and fittings of the office spaces, color-coded by pod in cinnamon, red, blue, and green. A like richness is to be

found in the employee service areas (cafeteria below and training/conference room at bottom), where a spectrum of color and texture plays against neutral walls of art fabric and mahogany slats. The cafeteria and lounge areas are softened to sight and sound by vaulted fabric ceilings.



**CIGNA South Office Building**  
Bloomfield, Connecticut

**Owner:**

CIGNA Corporation

**Architects:**

The Architects Collaborative—John C. Harkness, principal-in-charge; Richard A. Sabin, co-principal and project manager; Stephen Dauphine, project manager; Timothy Coppola, project landscape architect

**Interior space planners and designers:**

Interspace Incorporated—Barbara F. Graf, project executive; Victor Antes, project director; Mary McAuley, project designer; Rinaldo Veseliza, project architect

**Engineers:**

LeMessurier Associates/SCI (structural); Syska & Hennessy (mechanical/electrical)

**Consultants:**

Raymond Grenald Associates (lighting); Barton-Aschman Associates, Inc. (traffic); Van Der Ryn Calthorpe & Partners (energy); Romano/Gatland (food services); John W. Powell (security); McPhail Associates, Inc. (geotechnical); Schirmer Engineering (fire protection); Philip J. Todisco (specifications); David Carsen, P. C. (bridges)

**Interior consultants:**

Raymond Grenald Associates (lighting); Robert Hansen Associates (acoustics); Hoppmann Corporation (audio-visual)

**Construction manager:**

Turner Construction Company—Philip B. Lovell, project manager

# The French connection



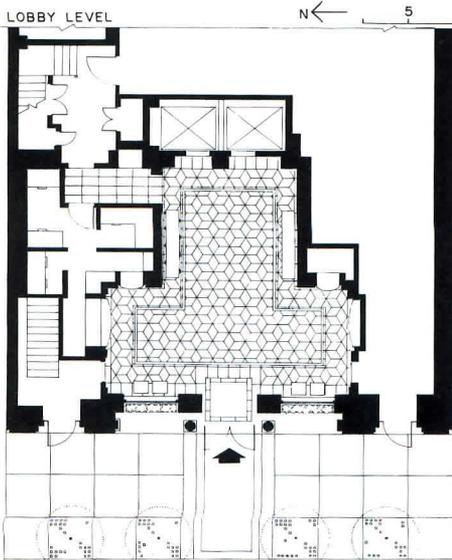
Morgans Hotel  
New York City  
Andrée Putman, Designer



After countless schemes for a new facade had been proposed and rejected, a bit of archaeology turned up the grand arches and columns that had been hidden within a sandwich of white marble and gypboard since the early '60s. Morgans's innkeepers Ian Schrager and Steve Rubell liked the 1927-era facade's "monolithic" quality, so they not-so-simply had it re-detailed and clad in limestone.



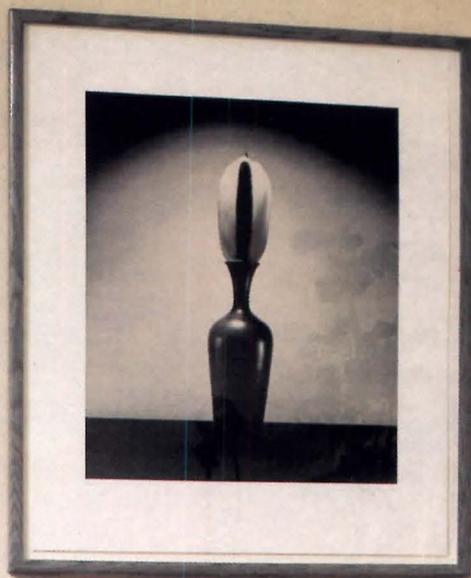
© Paul Warchol photos



Though Conrad Hilton would have balked, there's not so much as a discreet bronze plaque identifying Morgans Hotel on Madison Avenue in Manhattan. The reason? According to co-owner Ian Schrager: "If you don't know where it is, then perhaps you shouldn't stay here." While Schrager's variation on the familiar if-you-have-to-ask-how-much-you-can't-afford-it theme may strike some as surprisingly arrogant for a neophyte hotelier, it is helpful to remember that the 36-year-old entrepreneur and his partner Steve Rubell made their fame and fortune keeping half of New York City standing outside in the rain while Bianca Jagger tripped the light fantastic inside at Studio 54. In other words, Schrager is entitled to a bit of arrogance—not only for the wildly successful discotheque, which, during its notorious heyday, rarely allowed an issue of *People* magazine to go to press without a mention, but for Morgans, which, three months after opening, boasts the highest occupancy rate of any hotel in the city. The latter success is all the more impressive considering that a mere 18 months ago Morgans was the down-at-the-heels Executive Hotel, a source of particular embarrassment to its up-and-coming lower Madison Avenue neighborhood owing to telltale half-day rates and a dubiously loyal clientele. After joining forces with developer Phil Pilevsky, Schrager and Rubell acquired the architecturally undistinguished 18-story brick pile and embarked on their search for a designer who could create a high-style but low-key "home-away-from-home" for those for whom the phrase "living well is the best revenge" might have been coined. After 19 interviews, Schrager and Rubell tapped Andrée Putman, the Paris-based designer who also heads Ecart International, manufacturer and distributor of furniture, carpets, and accessories by a host of modern masters, including Eileen Gray, Rene Herbst, and Robert Mallet-Stevens. Though Putman is not yet a household word in this country, her reputation as high priestess of avant-garde international style is traveling at Concorde speed—thanks, at least in part, to the ever-breathless editors at *Vanity Fair* who recently dubbed her nothing less than "the most exciting interior designer on either side of the Atlantic." While the designation is surely open to debate, Putman's considerable talent for blending the austere and the opulent is not. Her show rooms, apartments, boutiques, and offices for Yves Saint Laurent, Karl Lagerfeld, Thierry Mugler, and Azzedine Alaïa, among other *haut couture* luminaries, bespeak an especially sure, and especially eclectic, decorative hand. Her skills served her well at Morgans, since the hotel's transformation was to be achieved with a modest \$4.5-million budget, and without modifications to the existing room configurations.

"I was destined to work on hotels because I'm enormously sensitive to the shock of hotels," opines Putman, before embarking on a diatribe against the "vulgarity" that characterizes so many contemporary hostelries. But somewhat surprisingly, considering her avant-garde standing, Putman's alternative to the flocked wallpaper, quilted bedspread, shag carpeting, and sunset-over-Maui landscapes was that perennial favorite, quiet good taste. Subtle colors, almost imperceptibly patterned fabrics, and a loving eye to detail and amenity distinguish Morgans's 154 rooms. And if at first glance the interior designer's art doesn't show, she'll take that as a compliment. To some, the diminutive single rooms (as well as the commodious suites) recall a ship's cabin—richly grained bird's-eye maple cabinetry lines the window walls to conceal incandescent lighting and provide not only wardrobes and storage space, but cushioned window seats. Putman's signature shades-of-gray palette is ubiquitous, but happily enlivened by the multicolored pointillistic speckles of the pebbly paint washing not only the rooms but the public corridors. Pinstriped ticking covers the duvets on the beds and acts as the perfect complement to the (what else?) gray-flannel lounge chairs. Yet elegant though the rooms may be, Putman's finest moment takes place in the bathroom, where black-and-white chessboard tile, bus-stop-shelter shower doors, and spindly-legged stainless-steel surgeons' sinks reinforce Madame Putman's reputation as grand dame of high tech. If there is a lapse in Morgans's consistently superior design marks, it's in the lobby: The 3-D harlequin floor with its *trompe l'oeil* play of granite and carpet (plan left) and the shimmering pattern-glass walls with their shoji-like bronze mullions, like bickering spouses in an unhappy marriage, delight more alone than together (facing page). The clientele, however, probably won't notice, as the hotel's Giorgio Armani-clad porters whisk them from limousine to elevator with lightning speed. And besides, Morgans's typical guest doesn't have time to dally in the lobby—what with all those places to go and people to see. *Charles K. Gande*



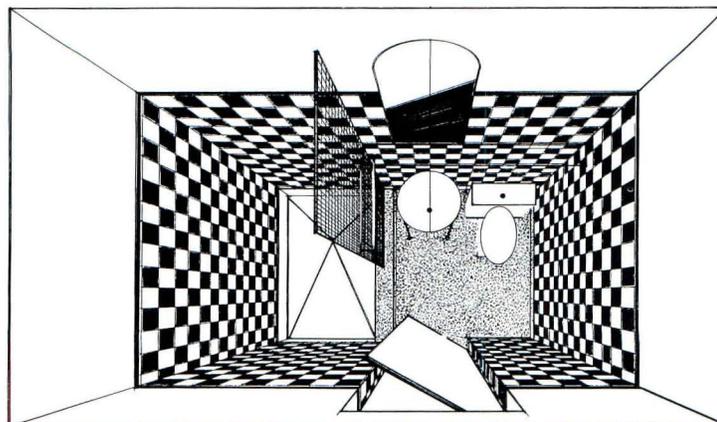




Since the metamorphosis of the shabby Executive Hotel into the de rigueur Morgans Hotel was to be achieved without significant alteration to the 57-year-old plan (below), and since the budget was appreciably less than generous, designer Andrée Putman wisely opted to focus on "as many surface treatments as possible." Perhaps the most impressive of those surface treatments was achieved by a recently developed paint: Georges Seurat might have admired the pointillistic quality of the pebbly paint's subtle color range (photos below and facing page). But in addition to its considerable esthetic merit, adds pragmatic hotelier Ian Schrager, the paint has a talent for hiding imperfections in 1927-vintage plaster. The second-glance richness of the walls is characteristic of designer Putman's approach to furniture selection: nothing flashy or too conspicuous—only bird's-eye maple vanities (that double as desks), down-scaled adaptations of Josef Hoffmann's 1911 Haus Koller Chair, a Putman-designed brushed-aluminum low table, the classic Mallet-Stevens chair. . . an Eileen Gray area rug. And as for art? Putman turned to long-time friend, avant-garde photographer Robert Mapplethorpe (best known for his nude studies of female bodybuilder Lisa Lyon) for a near-erotic series of flower portraits (facing page). The chessboard trim in the corridor carpet is a signature Putman motif (photo far left). The 10-room duplex penthouse (above), which features a spectacular greenhouse view of the Empire State Building, is a far cry from its gilded "Presidential Suite" counterparts farther uptown. More appropriate, Morgans's management likes to think, for the likes of Boy George and Brooke Shields, two recent occupants.



"The first idea was to avoid the bedspread, because the idea of a bedspread is disgusting," opines *Andrée Putman*, who feels similarly about the "idea" of an upholstered headboard. Her hygienic alternative at Morgans is duvets with pinstriped cotton covers for the beds and gray canvas slipcovers for the headboards—both are whisked to the laundry after every check-out. The bird's-eye maple cabinetry that encases wardrobes and frames cozy window seats was fabricated in Limoges (right)—Putman couldn't find the exact gray finish and grain she sought in this country, so French carpenters were shuttled back and forth for exact measurements and no-less-exact installation (photo right). Though the bulk of Morgans's rooms are conventional in plan, there is one idiosyncratic exception: A-frame Room 1902—inserted into a former storage attic—breaks down the traditional barrier between bed and bath (photo below). It's not for everyone, perhaps. Morgans's much publicized chessboard bathrooms, however, are. Although the glass shower door (and, in some rooms, water closet door) is high-maintenance, and although it's hard to wash your face at the stainless-steel surgeons' sink without hitting your head on the oversize fittings, few complaints have been registered. Although the bathrooms are nothing less than spectacular, on certain mornings-after the graphic chessboard could be slightly overwhelming. A soft touch, however, is supplied by the lights flanking the arched mirror. They are, as the lights are everywhere at Morgans, incandescent. Why not the more conventional fluorescent? Because, according to Putman, "with fluorescent light you have a real hard time looking at your face... it's as if you were being punished."



*Morgans Hotel*  
New York City

**Owners:**

Steve Rubell, Ian Schrager,  
Phil Pilevsky

**Interior designer:**

*Andrée Putman*

**Architects:**

Richard Rice; Haigh Space  
(architectural services, facade);  
Michael Overington (project  
manager); Dan Stewart (project  
coordinator)

**Consultants:**

Jules Fisher/Paul Marantz  
(lighting); Don Kaufman (colorist);  
Robert Isabell (landscape);  
Tracy Turner (accessories and  
graphics); Purchasing Associates  
(purchasing agent)

**General contractor:**

J. L. Murphy



# The evolving design vocabulary of fabric structures

By Horst Berger

Ten years ago, when ARCHITECTURAL RECORD encouraged me to write an article on fabric membrane structures (February 1975: "The Engineering Discipline of Tent Structures"), no one could have predicted the development this new technology would undergo in the decade ahead. Only one permanent building with a tension-structure roof—the Student Center at LaVerne College (photo 1)—had been completed. The Pontiac Silverdome (photo 2) was under construction, and several other air-supported roofs and tension structures were in various stages of design. Though these projects and ongoing developments in material technology and computer-aided design began, ten years ago, to demonstrate the potential, the future was not clear. Generally, fabric structures were regarded as too temporary and unproven for use in permanent applications.

Today, more than 25 major permanent buildings with fabric structure roofs are completed and successfully in use, and no longer is there any doubt about the important role structural fabrics will play in the built environment. Not only have existing membrane materials and predicted forms been proven successful on a major scale, but a second generation of materials has emerged, more powerful design methods have been developed, and new forms and building types have been created, each making use of the integrated properties of strength, seamless construction, translucency, and reflectivity to produce building spaces never achieved before.

Since the completion of the Pontiac Silverdome in 1975, no major stadium has been roofed with conventional materials. The Haj Terminal of the Jeddah International Airport in Saudi Arabia (photo 3), at 4.6 million sq ft the world's largest roof structure, is a success not only as a superior means of covering a large area, but for its intrinsic ability to transform the desert into an oasis—without the need for expensive, energy-consuming machinery.

Under smaller, but no less interesting, fabric roofs, department stores and malls exhibit merchandise more naturally and attractively than ever. Florida Festival of Sea World in Orlando (photo 4), a 70,000-sq-ft shopping and entertainment space, demonstrates the potential of encapsulated communities, housing lush subtropical plants. The newly completed horticulture exhibit at Callaway Gardens in Georgia (photo 5) is one of the first applications of the newest fabric material, a high-translucency silicon-coated fabric.

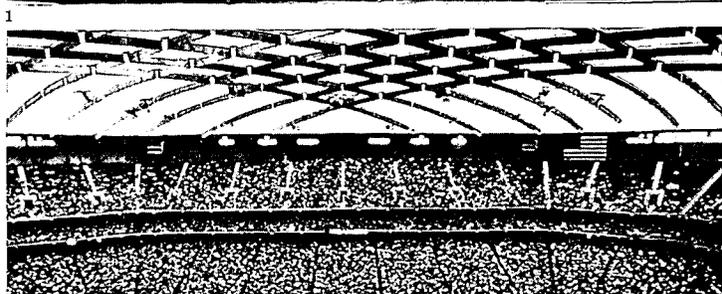
While materials and technology have advanced and are offered by a number of experienced fabricator-contractors, there is a major obstacle to the wider application of fabric tension structures—a general lack of familiarity among most architects with their behavior and design. The

assumed temporary nature and vulnerability associated with the words "fabric" and "tent" obscure the fact that these structures are safer and more reliable than many conventional systems—because they are practically weightless and provide a continuous, flexible, watertight skin. The complexity of a fabric structure's three-dimensional curvilinear configuration hides the underlying simplicity of its structural system—which relies only on tension and curvature for its capability to carry loads. This simplicity makes the visible membrane form a true image of the force-flow itself.

For fabric structures, architectural form and structural function are one and the same. As a result, engineering and architecture are inseparable, and an understanding of the structure is an essential design tool. Because of the close relationship between visual appearance and structural behavior, such an understanding is not difficult to develop. Observing these structures is an excellent way of beginning to be able to design them.

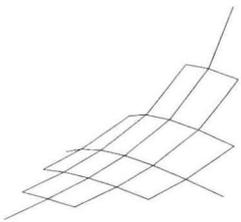
If, in any portion of the membrane, the fabric stresses in the warp and fill directions are the same for the prestress condition (the stress situation without such external loads as wind or snow), the membrane will have equal curvature in these two directions (figure 6). Extending this basic condition into a larger area determines the form of a fabric segment between its boundaries—created by cables or other structural elements. Rigid boundaries, such as walls, beams, and arches, can take any shape as long as they create a useful curvature along the edge of the membrane and are capable of resisting the stresses from it. Cables as boundaries of membrane panels take on their particular shape as a result of the membrane stress pattern and the support system of the structure. Figure 7 shows a hyperboloid surface defined by four curved edges forming a four-point structure, a basic element of tension-structure systems. A tent shape created by combining four such four-point structures is shown in figure 8. Figure 9 shows the generation of multiple tent systems based on this single, basic element.

The need for an integrated design process, however, goes beyond form and structure. Fabric tension structures are at the same time structure and envelope, building sculpture and architectural space, lighting system and acoustical environment. Structure, construction, and material behavior enter into the design process as much as the functional requirements of the space, the choice of proportions, and the relationship to the exterior environment. The structure, however, remains the major design tool, and is the basis for the accompanying study of completed and planned fabric tension structures.

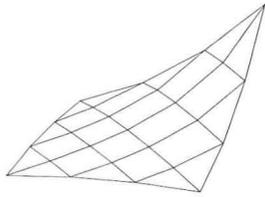


*Horst Berger is the senior partner of Horst Berger Partners. For 15 years before that, he was a principal of Geiger Berger Associates, which was responsible for much of the design and engineering of projects shown here. On the Haj Terminal, Berger consulted to Skidmore, Owings & Merrill in the early stages of the project, and later to Owens-Corning Fiberglas as a structural consultant in the final design.*

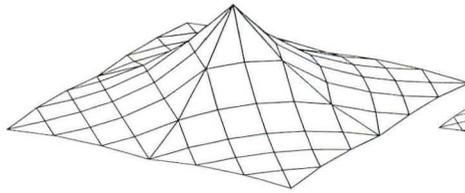
*Architects of the projects on this and the following pages are noted in the credits. Not mentioned in the credits, but deserving of special thanks for their help in supplying photographs, are Owens-Corning Fiberglas and Chemfab-Birdair, the makers and fabricators of Teflon-coated fiberglass, and ODC, which produces and fabricates silicon-coated fiberglass.*



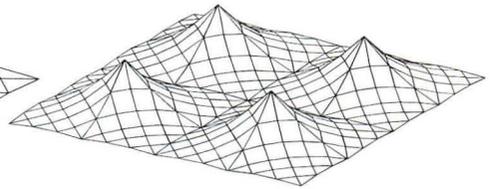
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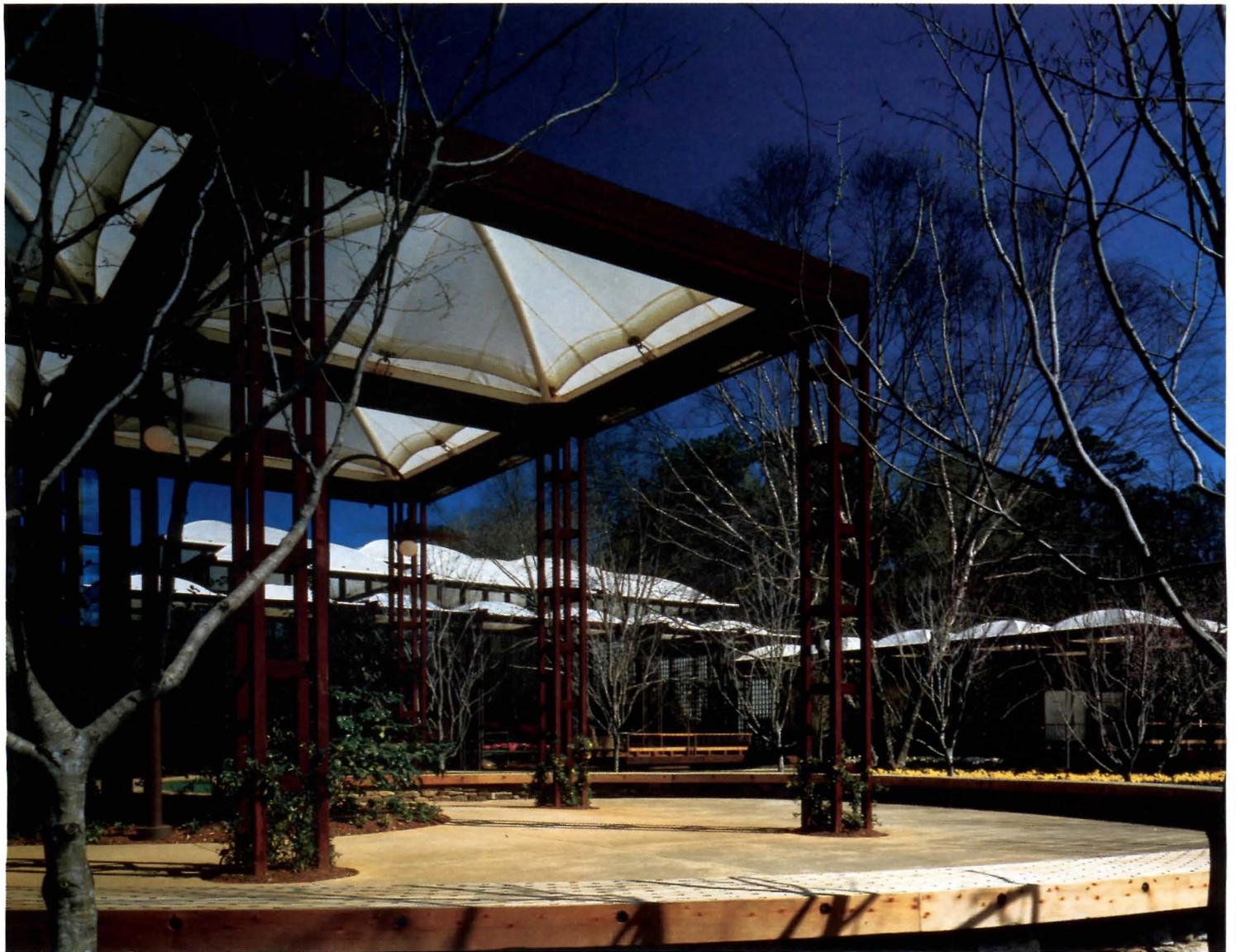
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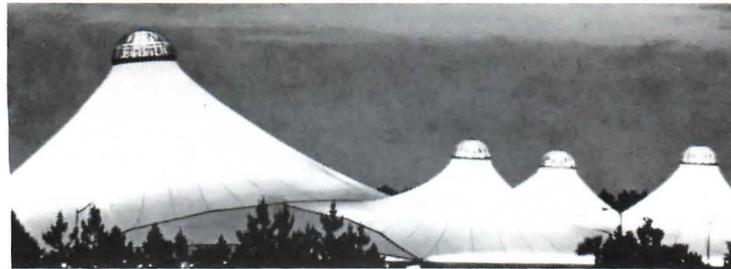
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Paul G. Beswick



3



4

1. La Verne College Student Activities Center, La Verne, California; architects: The Shaver Partnership; structural engineer: T. Y. Lin.  
 2. Pontiac Silverdome, Pontiac, Michigan; architects: O'Dell/Hewlett & Luchenbach, Inc.; structural engineer: HNTB; fabric roof designers/engineers: Geiger Berger Associates.  
 3. Jeddah Haj Terminal, Jeddah,

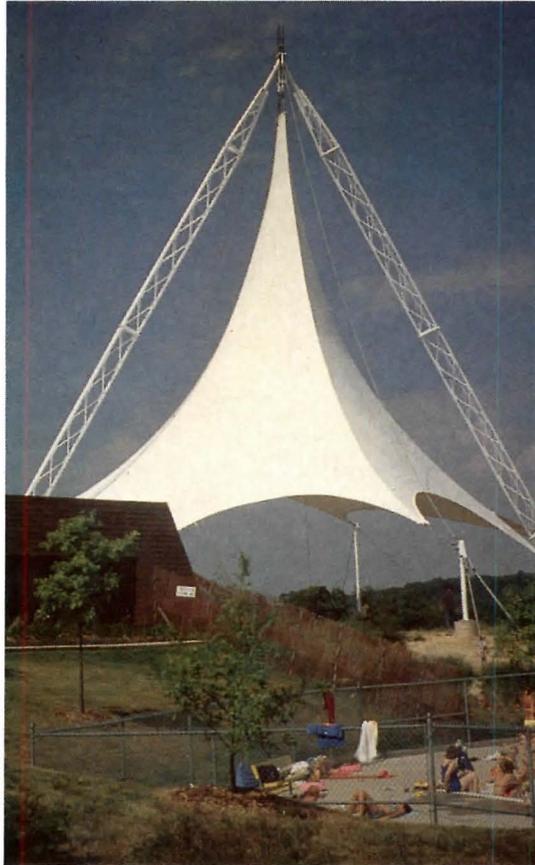
Saudi Arabia; architects/engineers: Skidmore, Owings & Merrill.  
 4. Florida Festival, Orlando, Florida; architects: Robert Lamb Hart Associates; structural engineer: Geiger Berger Associates.  
 5. Callaway Gardens Horticultural Center, Pine Mountain, Georgia; architects: Craig, Gaulden & Davis, Inc.; structural engineer: Geiger Berger Associates.

Tent-like structures, by their very nature, belong to the same family of center-supported structural systems as suspension bridges and double cantilevers. They are most easily supported by central poles, but in order to span a space without such a central support they may bear on arches or more complex compression structures such as the point-support systems shown in many of the examples.

A very simple approach is shown in the configuration of the outdoor roof cover at Queeney Park in St. Louis County (photo 10) protecting a skating rink in the winter and an exhibition tennis facility in the summer. The free span is created by a large A-frame supporting the main structural peak in combination with peripheral posts restrained by stay cables. The A-frame for Queeney Park uses carefully optimized truss masts 110 ft in length to bring the large compressive force to the ground with a minimum of structural steel. The membrane is supported by a central ridge cable and restrained by edge catenaries with no additional cables in the membrane surface. The use of two such A-frame supports is the basis for the roof system of the Tennessee Pavilion (photo 12), which covers the 1,500 seats of an amphitheater for the Knoxville World's Fair. The cantilever effect of the space frames is achieved by external stay cables. A radial roof system is used for the membrane shapes, with radial cables in the membrane surface used to achieve the desired uniform prestress of the fabric. The roof cover of the new Terrace Pavilion for the Crown Center in Kansas City (photo 11) also uses A-frames, this time in a symmetrical arrangement, to support the two roof peaks. The membrane is supported by ridge cables and is restrained against uplift by a pair of intersecting valley cables.

Another approach to creating a free-span membrane structure vocabulary is demonstrated in the largest application to date, at the Haj Terminal in Jeddah. The 21 tent units of each of the 10 modules are supported from a series of interior and exterior pylons by overhead suspension cables. Each tent unit is a radial system spanning 150 by 150 ft and restrained at the periphery by edge catenaries or valley cables. The central support consists of a double ring facilitating the erection and stressing of the large-scale membrane system. The edge pylons are designed to resist the vertical and horizontal forces of the tensioned membrane structure.

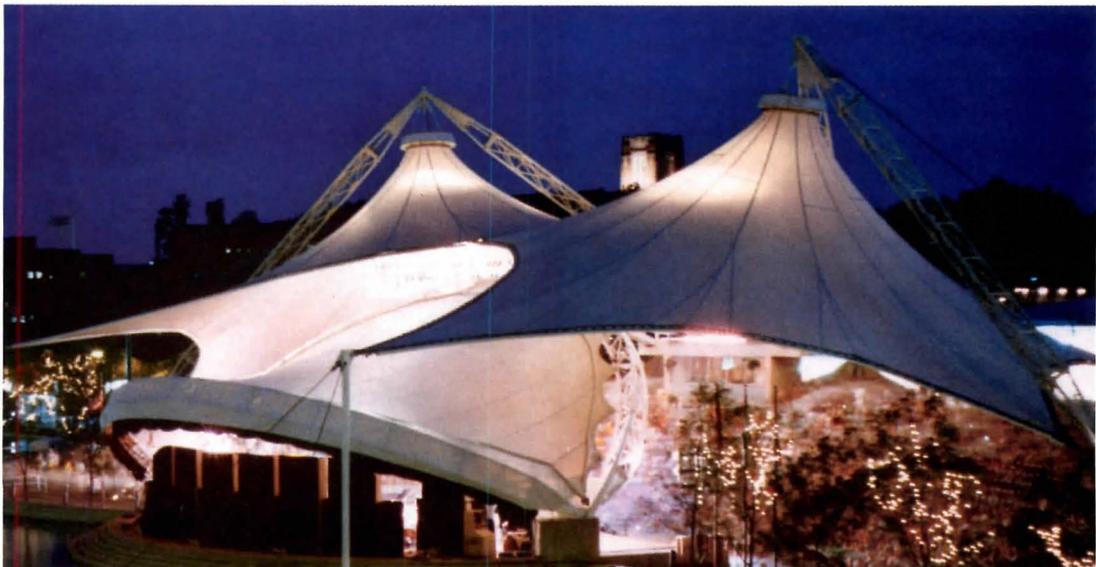
A similar principle of edge restraint, in this case by exterior masts or pylons, is shown in photo 15, one of several structures



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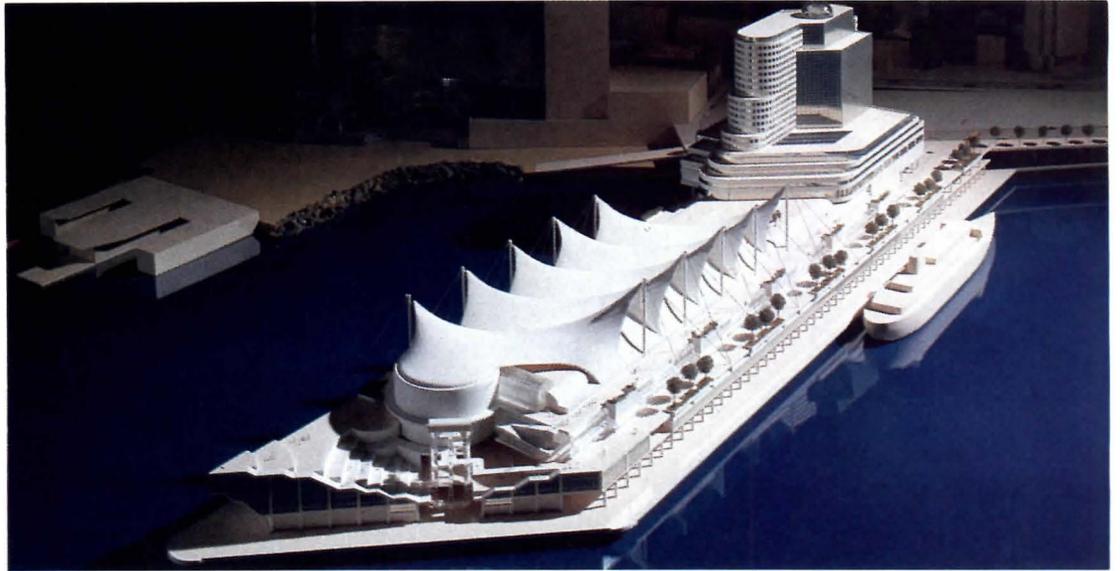
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10. Queeney Park Pavilion, St. Louis; architect: Jones/Mayer Associates; fabric roof designers/engineers: Geiger Berger Associates.  
 11. Crown Center Square Pavilion, Kansas City, Missouri; architect/engineer: Geiger Berger Associates.  
 12. Tennessee Pavilion, Knoxville World's Fair, Knoxville, Tennessee; architect: McCarty, Bullock, Holsapple, Inc; structural engineer: Geiger Berger Associates.

designed for the Bicentennial celebration in Philadelphia in 1976, which led to many of the later designs, including Jeddah. The exterior masts are held by stay cables. The membrane itself consists of a series of one-way folded shapes spanning the 60 ft between masts. They are supported by ridge cables, valley cables and edge catenaries, with no additional cables in the membrane surface.

A variation of this principle is used in the design of the exhibition hall roof of Canada Harbour Place in Vancouver (photo 13), which is to open as part of Expo '86. The photo shows the stretch-fabric study model used to explore the three-dimensional shape of the structure. Such models are an excellent means of developing and studying structural membrane shapes and were the basis for most of the designs discussed. Here the tent units are arranged in a skewed plan responding to the city's street pattern and spanning 180 ft between edge pylons. The roof has a double skin, the inner fabric serving as an acoustical liner.

The desire to avoid interior supports without the disadvantage of requiring large efforts for the anchorage of peripheral systems led to the "integrated-frame membrane structure" (photo 16). It was first conceived by (and a U. S. patent awarded to) this writer as a means of using fabric structures in housing—a use that has not yet materialized. The basic square plan form presents an A-frame on all four sides, a familiar shape closely associated with house forms. Only small areas close to the four corners would have limited head room. The structural principle of the integrated-frame membrane structure (inframembrane) is to balance all the internal forces within the system, so that only the resultant forces from the weight of the structure and the superimposed loads (wind and snow) would reach the foundations. The structure shown in photo 16 demonstrates this principle courageously, for it is not anchored to the ground but simply sits on the pavement. By extending the inframembrane principle into polygons, a structural system is created that combines features of the tent, the dome, and the space truss. Photo 17 shows a study model of the structure designed for the 300-ft-dia roof of an arena in Venezuela, with a removable center section. The 10-sided structure for Sea World in San Diego (photo 14) amplifies the application of the principle by adding cantilever extensions around the perimeter, thus covering a much larger plan area and creating a low edge periphery. This roof structure has a 130-ft-dia plan dimension and

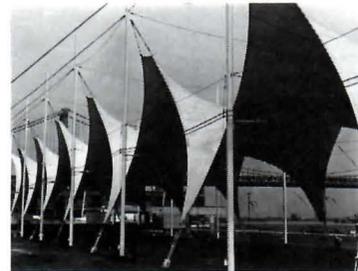


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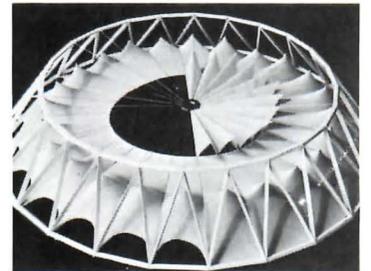
Robert C. French



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13. Canada Harbour Place, Vancouver, British Columbia; architects: Downs/Archambalt; Musson Cattell & Partners and Zeidler Roberts Partnership; structural engineer: Read, Jones, Christoffersen; fabric roof: Geiger Berger Associates.  
14. Sea World, San Diego, California; designers/engineers: Geiger Berger Associates.  
15. Pavilion for Bicentennial

celebration, Philadelphia; designers/engineers: Geiger Berger Associates.  
16. Inframembrane; designer/engineer: Horst Berger (patented).  
17. Concept for a stadium, San Christobal, Venezuela; designers/engineers: Geiger Berger Associates.

18-22. Riyadh International Stadium, Riyadh, Saudi Arabia; architect: Ian Fraser, John Roberts & Partners; tensile roof design: Geiger Berger Associates.



18

rests on 10 concrete piers. The low periphery permits the use of fabric enclosure panels, which span between edge catenaries and the ground slab. The 282-ft-dia octagonal membrane structure of the Bullocks Department Store in San Mateo takes this concept a step further. By placing the opaque, conventionally constructed portions of the building in a peripheral ring, its roof could be utilized as anchorage for the cantilever portion of the structure and could replace the compression ring at the top of the A-frames by tying them back to the peripheral solid roof.

The first design for the Riyadh International Stadium in Saudi Arabia (photo 18), the largest of these roof structures, returned to the basic principle of the inframembrane system. This immense structure has an outside dia of 950 ft and a center opening of 420 ft (note the full-size Jeddah modules used as entrance canopies in the foreground at left). The covered plan area is 530,000 sq ft, one third larger than any stadium roof to date. With the opening covered, which would have been feasible within this design, the resulting roof area would have been over 700,000 sq ft. Since it was not essential to include the wide concourse within the free span, and since a more tent-like appearance was not only acceptable but desired, the introduction of masts under the 24 peak points was investigated. This arrangement (photos 19 and 20) meant only a slight encroachment of eight masts into the seating area—at the least important places—and drastically decreased the amount of steel required by eliminating the visually dominating external frame members. The high points are supported by masts 165 ft in height. The outer edge points are held by a system created by a sloping mast extended from the same footing as the main mast, and two triangulated tie-down cables connected to peripheral foundation elements. The downward anchorage of the system consists of ground anchor points restraining the valley cables and the edge catenaries of the membrane structure. They are combined with the main drainage structure of the roof system. The inner edge of the membrane system is formed by a huge circular ring cable, equilibrating the horizontal tensile forces of the 24 units and acting as a balancing and damping component for the total structure. Photos 21 and 22 show the roof during construction. When finished, this structure will create a huge area of shaded space which, like the Haj Pavilion, will transform the harsh climate into a comfortable environment of impressive scale and exciting sculptural form.



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# The nature of architectural fabrics

Few building materials impact a completed building like the fabric of a fabric structure. As Horst Berger notes in his article beginning on the preceding pages, fabric (tension) structures are at the same time structure and envelope, building sculpture and architectural space, lighting system and acoustical environment.

Of all the roles fabric plays, however, none is as important as its structural function. To assume and maintain an intended shape, architectural fabrics must withstand an initial prestressing load, which may be induced by air or vacuum for air-supported structures, and one or more masts, frames, or arches for tension structures. Superimposed loads from snow, wind, or construction workers walking on the roof must be handled as well. The only way the fabric membrane can withstand loads and channel them to the ground is through tension—or more accurately, the ability to withstand tension through tensile strength.

Historically, tensile strength in a membrane has been derived from fibers, either those inherent in animal skins and used as tents for eons, or plant fibers like hemp or cotton, spun into yarns and woven into canvas or duck. The tensile strength of these latter materials, and their economy, once made them popular for circus tents and other temporary structures. But because they burned readily and were short-lived, new synthetic fibers, primarily nylon, polyester and fiberglass, were quickly pressed into service as they became more available and proven. Each type of fiber has unique properties that suit it to different applications. Their performance in a fabric depends greatly upon how they are spun into yarns, how the yarns are woven, the coating, and the method of coating. In general, the greater the area of fibers in a fabric's cross section, the higher its tensile strength.

The selection of coatings, which protect the fibers and create the surface properties of the finished fabric, is just as important as the selection of fibers for a particular application. Vinyl, *Teflon*, and silicon are the most commonly used coatings today. For permanent architectural applications, architectural fabrics must satisfy a number of requirements. These include reliable tensile strength, non-combustibility, and long life. Other desirable properties are high translucency, low heat absorption, dirt rejection, and ease of handling. *Teflon*-coated fiberglass, silicon-coated fiberglass, and vinyl-coated polyester are the most popular coating-fiber combinations in use today.

## Teflon-coated fiberglass

Though fiberglass fabrics coated with neoprene and other synthetic elastomers or vinyl were used on a variety of early fabric structures, it wasn't until 1973 that a *Teflon*-coated fiberglass fabric was installed in a tension structure at LaVerne College. The development grew out of the efforts of Dr. Harold Gores, then head of the Educational Facilities Laboratory of the Ford Foundation. Gores's mandate was to stimulate the development of economical ways of encapsulating space at colleges and universities. One of the ways he did this was to fund the innovative work of David Geiger, who engineered the air-supported U. S. Pavilion at the Osaka World's Fair in 1970. At about the same time, Gores, who was somewhat of a materials expert himself, organized the first meetings between DuPont, maker of *Teflon*, and Owens-Corning Fiberglas in 1971. Shortly thereafter, two other companies that possessed necessary technology were brought in: J. P. Stevens, a weaver, and Chemical Fabrics Corporation, a coater that was already coating *Teflon* onto fabrics used for baking cookies via assembly line. Gores's hopes that this consortium would produce a commercially viable material that would meet the building codes for permanent architecture were realized in little over a year.

*Teflon*-coated fiberglass is a remarkable building material. Fiberglass, with its extremely high modulus and ability to be extruded into thin, flexible filaments called Beta fibers, provides a substrate that is stronger than steel in tension, that creeps less, yet has greater flexibility. Coated with a thin layer of *Teflon*, the resultant fabric is, in many ways, indestructible. Chemically inert *Teflon* rejects pollutants, including dirt which could detract from the material's pleasant white appearance and reduce its reflectivity and translucency. Its hard surface resists abrasion. The fabric will support combustion only at extremely high temperatures and in oxygen-rich atmospheres. The fabric imparts a pleasant translucency to daylight—a *Teflon*-coated fabric with 8 per cent translucency reflects approximately three-fourths of the light striking it. Half of the remaining light is absorbed by the fabric and given off as heat energy. The remaining light (up to a maximum of 16 per cent) will be transmitted through the fabric. Even when the fabric is configured for maximum energy savings, which can often require double layers or more, *Teflon*-coated fiberglass can deliver illumination levels sufficient for

most activities imaginable. In virtually all cases, the quality of illumination is striking.

## Silicon-coated fiberglass

Silicon-coated fiberglass is a relative newcomer to the architectural fabric structures market. Its initial success on a half-dozen projects, most notably the horticulture exhibit at Callaway Gardens in Georgia, can be traced back to a venture in 1981 between Oak Industries, which possessed coating technology, and Dow Corning, the producer of silicon rubber. Silicon rubber is noted for its enduring retention of flexibility, resilience, and elasticity over a wide temperature range. When applied to fiberglass, which because of its high modulus is somewhat stiff, silicon imparts a measure of flexibility, and the glass fibers are less likely to suffer damage from careless handling during erection than with a similar fabric coated with *Teflon*.

In addition to flexibility, fiberglass, when coated with silicon, derives greater trapezoidal tear resistance than with a *Teflon* coating. This is most likely because the *Teflon* coating holds fibers rigidly in the matrix in which they are woven; the more flexible silicon coating enables the fibers to slide and act together to disperse the point stresses that can cause a tear. In the case of translucency, silicon-coated fabrics can be made to transmit no light or as much as 90 per cent of the light striking them, compared to no more than 16 per cent for comparable *Teflon*-coated fiberglass. The implications of this difference are broad, embodying such issues as energy, plant growth, and esthetics. One advantage of silicon-coated fiberglass is that it can be used in double layers, with either an air space or a translucent fiberglass insulation, to save energy and improve acoustics while maintaining a relatively high level of ambient light. Silicon-coated fiberglass offers most, but not all, of the fire resistance of *Teflon*-coated fiberglass. Because the material is new, this is an area needing further study. Other questions are its dirt rejection and abrasion resistance and the long-term performance of seams, which must be held together with an adhesive rather than heat-bonded as with *Teflon*-coated fiberglass. Because both fabrics are available only as part of a system that includes fabrication and erection, relative costs are meaningless.

## Vinyl-coated polyester

Polyester came into prominent use as a yarn fiber for architectural fabrics during the 1960s, gradually

replacing nylon, which had been used almost exclusively until that point. The switch was made primarily because, in character, though both yarns are technically plastics, their behaviors in tension are nearly opposites. Nylon, with its much lower modulus compared to polyester, stretches easily under load but recovers very nearly to its original length when unstressed. Polyester has much greater resistance to stretching under load, but is more subject to permanent deformation if stressed beyond a certain point. Other properties favoring polyester's use were its low sensitivity to moisture (a real problem with nylon), good resistance to ultraviolet light and most chemicals, and generally lower cost. Though nylon is still a popular fiber for many industrial fabrics, polyester coated with polyvinyl chloride has almost entirely replaced nylon for architectural applications. Vinyl-coated polyester, at less than 90 cents per sq yd for the best grade, is far less costly than either silicon- or *Teflon*-coated fiberglass. The flexible polyvinyl chloride coating can be formulated in any color and to suit a variety of climates and chemical environments. A choice of surface textures is available as well. But even the best vinyl-coated fabrics are subject to creep—stretching under load—which could result in sagging of the fabric and require periodic retensioning. Creep, however, say manufacturers and even designers, can be an asset—a built-in forgiveness that makes for simpler patterning and erection. Another development, which keeps the material looking newer longer, is a *Tedlar* coating that repels dirt—something that uncoated vinyl fabrics don't do well. Manufacturers claim life-expectancies for their top-grade fabrics well in excess of 10 years.

Because, at this time, vinyl-coated polyester fails some of the tests that have long been used by the major U. S. Building Code agencies to classify varying degrees of combustibility, the material is generally limited to use in temporary structures. Vinyl-coated polyesters, while they melt readily in the presence of flame, do not support combustion on their own. On this bone of contention, manufacturers of the material, including Seaman Corporation, the largest manufacturer of vinyl-coated architectural fabrics and *Helios*, a large fabricator/erector, are waging an active campaign to find greater acceptance of the material by code officials and architects in "permanent architectural structures."  
*James B. Gardner*

# Fabric structure pioneers look back—and envision the future

To aficionados of architectural fabric structures, the image of Walter Bird standing atop a 54-ft-high air-supported dome (which as an aeronautical engineer at Cornell he developed and helped to erect in Buffalo, in 1948) is as familiar as it is symbolic. Mr. Bird shows this slide (photo 1) nearly every time he talks about fabric structures, and his keynote address to a group of 200 engineers, architects, artists, professors, and manufacturers attending the Architectural Fabric Structures Institute International Symposium, held last November 27-30 in Orlando, was no exception.

The symposium, which was the first truly international conference on fabric structures in 10 years, attracted foreign guests from as far away as Japan and Australia. Its first two days were devoted to presentations, the third day to visits of local fabric structures, most notably the Florida Festival Pavilion at Sea World, designed by Horst Berger, and the Sun Bowl in Tampa, designed by CRS.

The significance of Mr. Bird's slide (photo 1) was that the success of the "radome" at protecting delicate radar equipment spurred him to further study materials in the early 1950s and resulted in several innovative fabric designs. Some of those fabrics, which were installed in the 1960s in several

radomes he designed, still survive, under loadings of up to 450 lb/sq in.—four times the loading of the fabric tension structures built today. Entrepreneurial instincts led Bird to form Birdair Structures in 1956. This company, still influential today, helped make possible many much-publicized fabric structures.

Mr. Bird's exuberant survey of important early developments in fabric structures was a fitting keynote address. His praise of colleagues' contributions and his challenge to the "new generation of designers" in the audience to continue those developments because modern fabric structures "are only on the first rung of the ladder to success," generated a sense of camaraderie and purpose among attendees. Further, it was an excellent foundation on which the more than 40 speakers who followed him could build the official conference theme.

The purpose of the conference, according to the symposium's chairman, architect Todd Dalland of FTL in New York, was not just to be a forum for consolidating the industry's advancing structural and technical expertise, but to stimulate the design community to a greater awareness of the formal role in architecture that fabric structures might play. "Structural fabrics are building materials. Permanent fabric structures are buildings. Fabric buildings that embody knowledge of the art and science of construction are architecture," Dalland said.

None of the speakers was as optimistic in this regard as architect Paul Kennon of CRS, a firm that has designed several excellent recreational buildings at universities using long-span fabric roofs supported by air. Such a facility is the student center at the

University of Florida (photos 2 and 3). Noting clients' needs to enclose larger spaces on increasingly constrained budgets, and given the esthetic rift between designers who view buildings as machines for living or as living organisms, energy and lighting issues, and structural solutions that need not rely on conventional framing, Kennon projected a future for fabric structures limited only by imagination. The mild interest that many architects have accorded fabrics so far can be attributed, Kennon said, to the fact that "most architects like to look back to move forward. This will change."

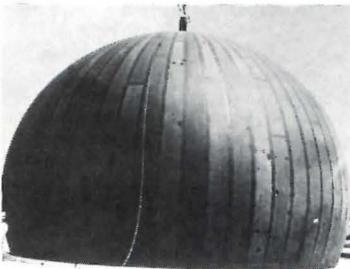
Architect Nicholas Goldsmith of FTL in New York expanded upon this idea, not only by pointing out the limited historical precedents for fabric structures, but by emphasizing the reliance most architects place on historical scholarship rather than confidence in new technology. "Architects are not trained to manipulate non-rectangular forms, and this is the very basic ability required to design fabric structures," Goldsmith said. "This makes the design process unfamiliar and threatening."

David Geiger, of Geiger & Associates, made it clear that economy and not custom mandated the popularity of a design for air-supported domes he developed that has been used to cover the last 9 of the 15 enclosed stadiums in the world. Used first for the U. S. Pavilion at the 1970 World's Fair at Osaka, the design is a cable network that produces a low-profile roof while exerting a surprisingly low bending force on the compression ring to which the cables are anchored. Even more innovative than the air-supported design is Geiger's new cable dome, (figure 5)—a system of trusses

formed with prestressing strand and pipe struts arranged in a radial network. The cable dome obviates the large mechanical systems and special doorways necessary to create the pressure differential required for an air-supported dome. When used in spans greater than 300 ft, a cable dome's costs can be kept under \$20 per sq ft. This economy is a major reason why four new stadiums now in design will be covered by a cable dome.

Horst Berger, another pioneer, stressed in his talk that fabric structures now must truly be considered architecture and not merely a quirk of building technology. "Fabric structures fulfill an important fundamental goal of architecture," Berger said. "They create a special and dramatic environment—one that is unique and separate from the general environment." Berger's quintessential example of this was the Haj Terminal in Jeddah. "It is magnificent," Berger said, "not just because it covers a remarkable area (105 acres) and will last a long time, but because it completely transforms a torrid, overly bright Saudi desert into a gently luminous, and coolly expansive space—with no need of any mechanical systems."

Developments such as Geiger's and Berger's have made fabric structures practical and desirable for a growing number of applications. Yet, their accomplishments would not have been possible without the knowledge contributed by materials suppliers, mathematicians, physicists, and computer scientists—and several speakers discussed ways to more accurately predict the strength of materials under a variety of loadings. Others presented findings of research



1. AN/6B Radome, United States Air Force, Cornell Aeronautical Laboratory; engineer: Walter W. Bird.  
2.,3. Stephen C. O'Connell Center for Student Activities, University of Florida, Gainesville; CRS Serrine Architecture—Paul Kennon, design principal; structural engineer: Geiger Berger.

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3

4. Munich Aviary, Munich; architect: Jorg Gribl; tensile structure design: Frei Otto.

5. Design for Cable Dome; David Geiger, Geiger Associates.

6. Model of Palacio Guell Chapel; architect: Antonio Gaudi y Cornet;

constructed at Institute for Lightweight Structures, Stuttgart.  
7. Exhibit, The 20th Century Environment, The Carborundum Museum of Ceramics, Niagara Falls; artist: Aleksandra Kasuba.  
8. The Bradford Exchange office

addition, Chicago; project architect: Weese Hickey Weese; tensile structure design: FTL Associates—Todd Dalland; structural engineers: Horst Berger Partners.

designed to better understand materials' behavior relative to acoustics and energy. Still other talks focused on advancements in computer technology that will begin to enable designers to more easily generate computer models of fabric structures, better analyze their behavior under various stresses, determine lengths and prestress levels for valley, ridge, and boundary cables, and create more accurate patterns for fabricating the material. Donald Greenberg, who heads the Program of Computer Graphics at Cornell University, dazzled his audience by explaining how software being written by students there enables computers to generate almost-photographic-quality images of buildings that don't exist (RECORD, September 1984).

Much less technical in scope but no less thought-provoking were the comments of Frei Otto. As his work as an architect, engineer, and sculptor has evolved throughout his career, it has stimulated many architects and engineers to creative developments of their own. Otto's expressed interest was not just to build more fabric structures, but to explore the "dramatic potential of naturally occurring materials and forms." This drive, it was clear from listening to Otto, stemmed not just from a deep respect for nature, but from the belief that much of what man has wrought is destructive of nature and becoming more so. With his own work, he explained the shortcomings of fabric structures. Materials, he said, account for many of these shortcomings, but commercial interests cause more and greater mistakes, often resulting in structures that "stand against, rather than with, nature." A tension structure Otto showed as humble

progress towards buildings that fit more harmoniously into nature, while serving an intended function, was an aviary in Munich he designed using a woven stainless-steel wire butt-welded on site into a continuous, seamless wave-grid (photo 4). The structure keeps the birds in, but lets people and nature in as well. Further, in many lights the structure seems to disappear.

Otto revealed his ideals for more perfect structures with several dozen photographs of models developed at his research institute. There, about a dozen people study lightweight structures full-time. One of the most interesting images was a replica of a model that Gaudi constructed to derive the structure for his Palacio Guell (photo 6). The model is made like a macramé plant hanger. When photographed and the image turned upside down, it becomes an exact replica of the structure. Because it is formed by the laws of physics, it is very efficient. Other thought-provoking images were soap bubbles in wind tunnels, wrinkles in a sheet, and twelve identical piles of sand arranged in a near-perfect grid. To this last image, Otto juxtaposed the model from which the piles were made, a board of sand with twelve holes in it and 12 depressions, left when the sand poured out. This was not playtime. Otto is very serious

about his work. In each instance, these images have resulted in noteworthy structures.

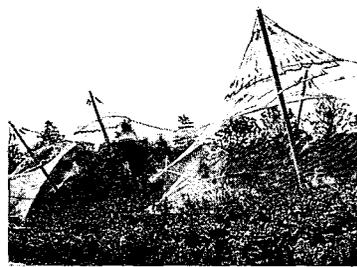
Because of his own interests, it was only natural that Otto would be excited by the remarks of artist/sculptor Aleksandra Kasuba, whose luncheon talk followed Otto's morning address. Kasuba, who for 15 years has been "pursuing, with a stretchy knit nylon, how forms happen because of tension," demonstrated with photographs the dramatic impact that curvilinear forms induced by tension can make in space, beginning with her own apartment (RECORD, August 1971). This led to a succession of commissions in which she nearly always let her intuition have free rein (photo 7). "I felt as though I was scratching at the surface of some basic physical laws—and they gave," she said.

A highlight of the conference was an after-dinner address by Edmund Happold, engineer and principal of the firm Buro Happold of Bath, England. Happold discussed, with relish, three people, "the best in the United States and Europe," who made extraordinary contributions to the field of fabric structures. "Gross deformation is not a new way to carry loads," Happold said in preface, "but perfecting it to the points they did is quite a feat." He was speaking of Fred Severud,

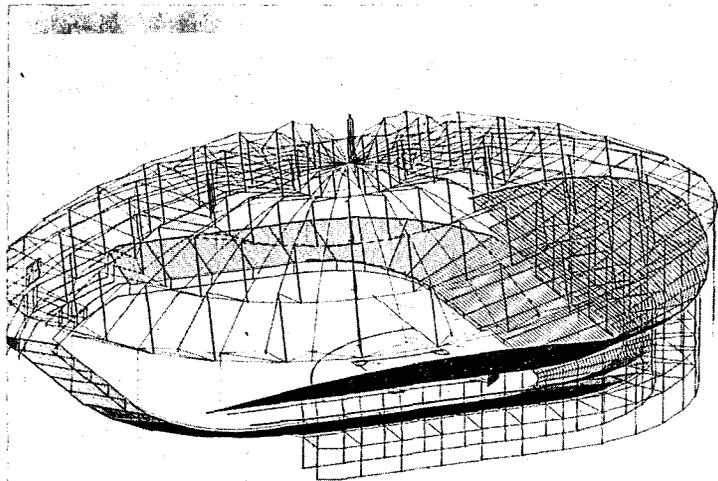
Walter Bird, and Frei Otto, each of whom were presented awards for design excellence by Richard Seaman, president of the Architectural Fabric Structures Institute, following Happold's talk.

In attempting to define what it was about Fred Severud as an engineer that made his work stand out (the Yale hockey rink was the example), Happold, a strong advocate of an integrated design process, sounded something of a conference theme. He said that engineers, before their work could be of any consequence, must relate their engineering ability—which requires dealing constantly with innovation—to the abilities of architects—whose interest is not to be innovative, but to create and maintain continuity.

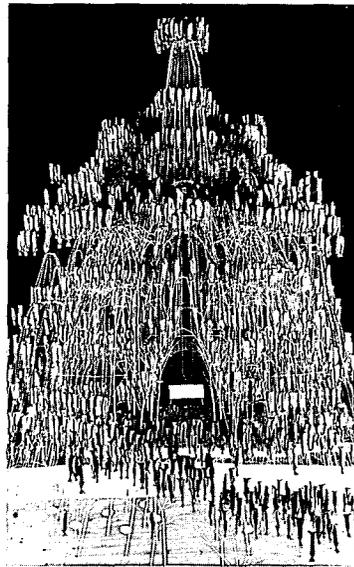
Conference chairman Dalland, whose own firm, FTL, recently designed the interior and exterior tensile structures for an office complex near Chicago called the Bradford Exchange (photo 8), developed this idea further by saying that before this integrated design process could happen, engineers would need to make their technical expertise more available and palatable to architects, and manufacturers would need to relinquish much of the control over the design process they have. "Architects must have the opportunity to interpret the possibilities of this building type for human use, before they embrace it," Dalland said. He added, "Fabric structures will never be accepted by the public as prestigious architecture until they are designed and interpreted by architects, until the public perceives that they are designed by architects, rather than manufacturers and engineers, and until many architects are designing them." J. B. G.



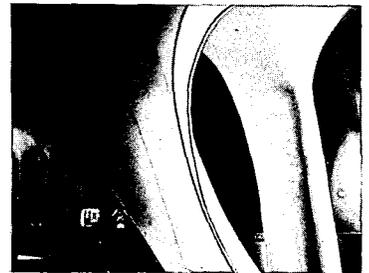
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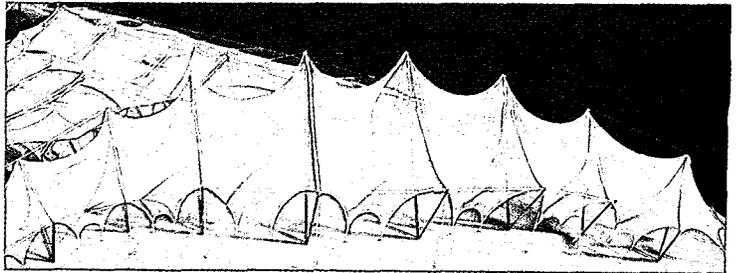
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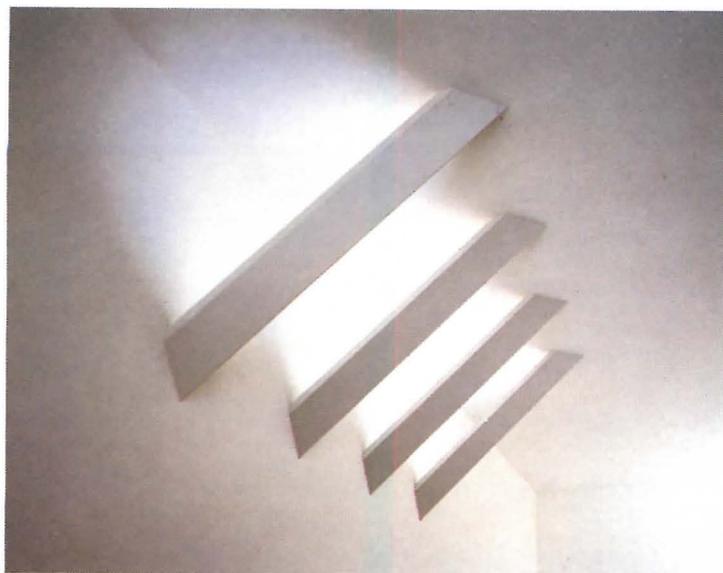
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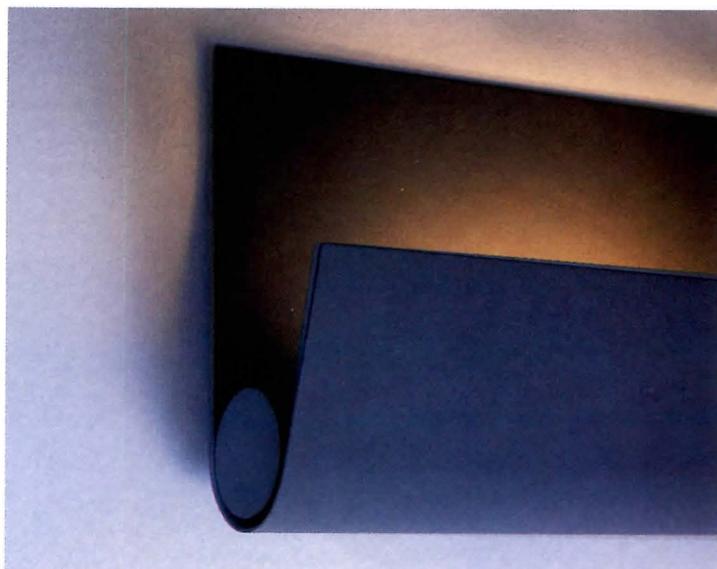
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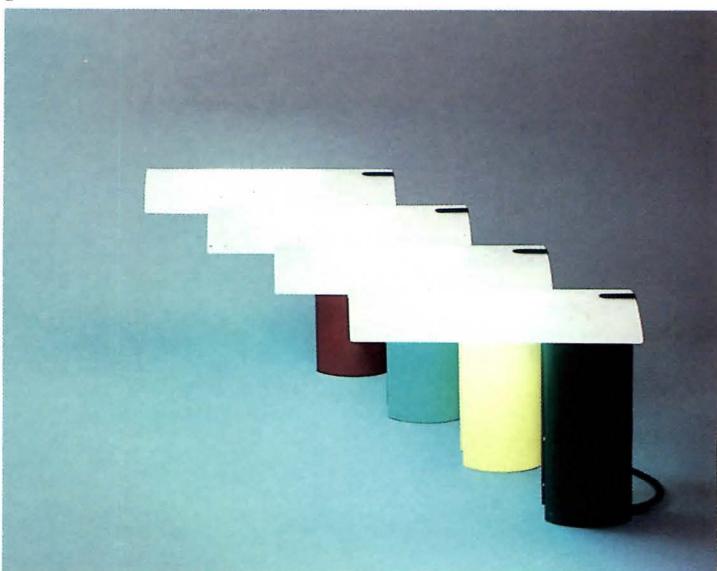
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## High-lights

Japanese architect and product designer Masayuki Kurokawa (no relation to Kisho Kurokawa, whose work is featured in this issue) has developed a line of lighting fixtures that is now available through Limn. A proponent of what he calls "Dissymmetrical Architecture," Kurokawa argues in his writings for an incomplete and non-ordered built environment, which he claims is the true physical complement of our contemporary—i.e., chaotic—society. Kurokawa's lighting fixtures may, indeed, be interpreted as cursory expressions of "dissymmetry," scoffing, in their high-tech whimsy, at such high-flown principles as order, balance, and stability. The wall- or ceiling-mounted *Angolo* (1, four units are shown) is both a lighting fixture and a piece of minimalist decoration made from a white-painted faceted

steel bar. The unit is available in two sizes and with two different methods of light distribution. The 3-ft model has a 20 W fluorescent bulb and the 2.5-ft model has a 15 W bulb. The toy-like, 18-in.-high *Mechabeans* task light (2) also comes in two styles. The trunk-base model (right in photo) has an adjustable head that can rotate a full 360 deg and a bulb housing that can pivot from a completely horizontal to a completely vertical position. The *Junior* stem-base model (left in photo) has an adjustable shade that can flip up and down. Both versions have a dimmer, and are made of a heavy steel that can be specified in white, silver, and black or in combinations of red, green, purple, and blue.

Koch + Lowy has introduced several new ambient- and task-lighting units that, as their names imply, make less recondite

references. The new *Wave* designed by Ch. Gevers (3) can be specified in a pin-up—with a cord and plug—or a permanent wall-bracket version. The fixture is available in polished brass or chrome with a white lacquered enamel finish, or in black and gray *Nextel*—a suede-like, matte finish that is said to resist scratches and hide fingerprints. Each unit is 7 1/2 in. high, 12 in. long, and 3 in. deep. In-house designer Peter Sierakowski has also added the *Wings* series to the manufacturer's line. This group includes ceiling-hung, wall-mounted, and desktop (shown, 4) models. The desktop version has a frosted, white glass shade and a base that is available in black and gray *Nextel* or forest green, burgundy, yellow, and jade enamel. Each task light is 10 in. high and has a 12 in. by 5 in. shade.

1. *Angolo*, Masayuki Kurokawa; Limn, San Francisco.

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2. *Mechabeans*, Masayuki Kurokawa; Limn, San Francisco.

Circle 301 on reader service card

3. *Wave*, Ch. Gevers; Koch + Lowy, Long Island City, N. Y.

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4. *Wings*, Peter Sierakowski; Koch + Lowy, Long Island City, N. Y.

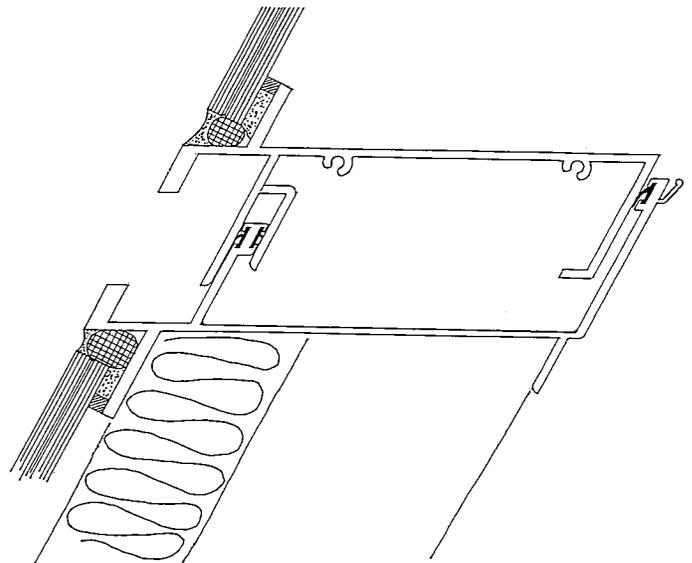
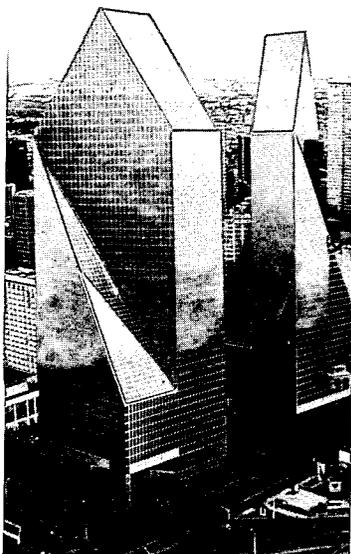
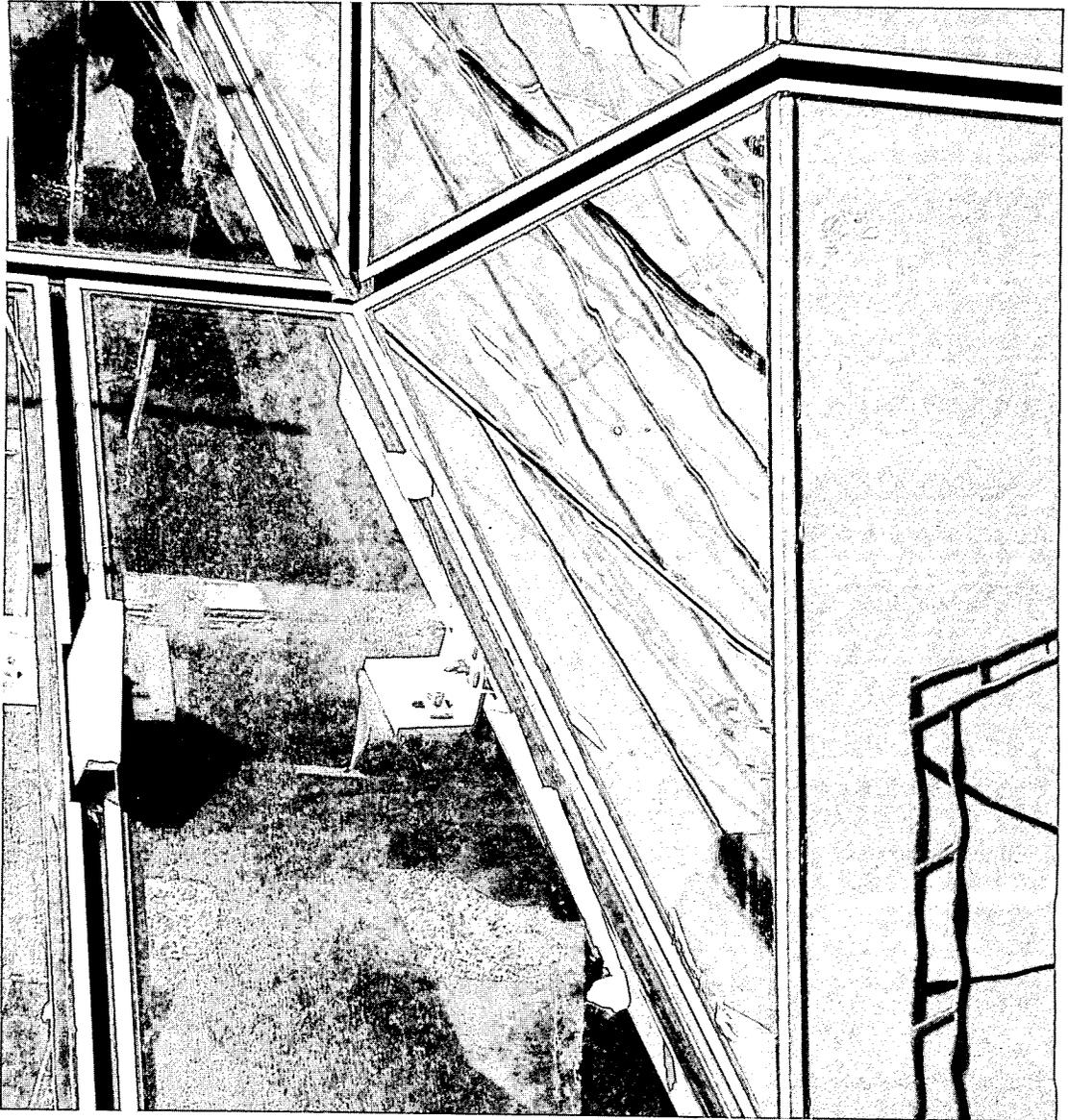
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## On the surface

The problems of curtain-wall systems have, over the years, been well documented in the architectural press. Ever since Gordon Bunshaft popularized the glass box—and the curtain wall—with his design for Lever House, architects using such systems have been plagued with leakage, panels that pop out, and, on occasion, a certain lack of volumetric complexity. In an effort to address these issues, Flour City Architectural Metals has developed a new glass curtain-wall system for the exterior of the Allied Bank Tower in Dallas, which is scheduled for completion in June 1986. Designed by I. M. Pei and Partners, Harry Weese & Associates, and the WZMH Group, the 60-story, 720-ft tower is part of a downtown development that will ultimately include a twin tower sited at a 90 deg rotation. Flour City will engineer, fabricate, and install the Tower's entire 500,000 sq ft of curtain wall.

The manufacturer's new beadless, four-sided silicone glazing system is intended to increase flexibility in curtain-wall design. Several geometric shapes, including cubes, parallelepipeds, tetrahedrons, and rhomboids, have been combined to create the Allied Tower's 10-sided envelope. For the vertical surfaces, Flour City has specified 1/4-in. heat-strengthened green glass; on sloping planes, glazed panels are made from 9/16-in. reflective laminated heat-strengthened green glass. This glass has been designed for up to 75 lb of pressure per sq ft (almost twice the standard range), which should enable it to withstand a wind velocity of up to 175 mph. In an effort to eliminate shipping damage and maintain quality control, moreover, glass is inserted into aluminum framing units, sprayed with silicone, and allowed to cure at a factory near the site.

The manufacturer has also developed special drainage systems to manage cascading water on sloped curtain-wall areas during heavy rains. Excess water will run into gutters below each glass panel and be siphoned from the channels by plastic tubes located in the mullions (see diagram lower right). This guttering system will capture any water that may penetrate the outside skin and drain it into the window-washing track. What appears, then, to be another simple glass box added to the Dallas skyline has not been all that simple. Flour City Architectural Metals, Div. of E. G. Smith Construction Products, Inc., Glen Cove, N. Y.  
*Circle 304 on reader service card*  
*Continued on page 173*





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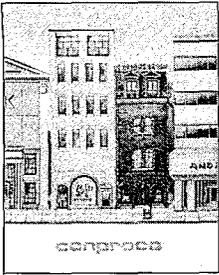
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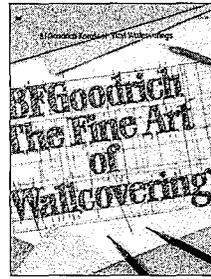
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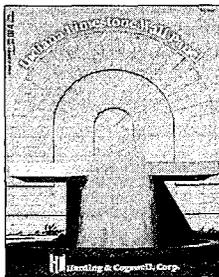
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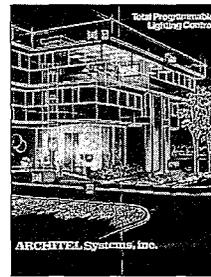
**Insulation systems**  
An 8-page color brochure features the manufacturer's three exterior insulation systems, each designed to respond to specific requirements of new construction. Exterior insulation products for building restoration projects are also reviewed in the literature. Conproco Corp., Hooksett, N. H.  
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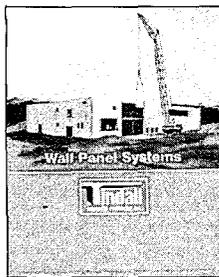
**Vinyl wallcoverings**  
*Koroseal* vinyl wallcoverings are featured in an 18-page color brochure. *Tedlar*, a wallcovering coating said to resist water and most acids, alkalis, and solvents, is described in the literature. The manufacturer's new patterns and colors are shown. BFGoodrich, Dublin, Ohio.  
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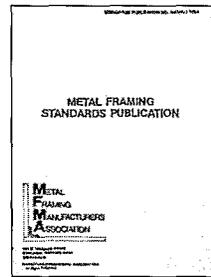
**Limestone panel system**  
An 8-page color brochure features the manufacturer's *Thin Wall System*. A diagram of a typical unit, composed of steel tracks, C-studs with channel bridging, optional sprayed-on insulation, and limestone cladding, is included in the literature. Harding & Cogswell Corp., Bedford, Ind.  
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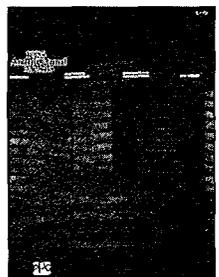
**Lighting control**  
A new lighting control system is reviewed in a 6-page color brochure. The system's dimmer-relay rack, which permits the combination of up to 24 dimmers and one relay in one enclosure, is described. The system is said to monitor the presence of people and the amount of natural light. Architel Systems, Inc., New York City.  
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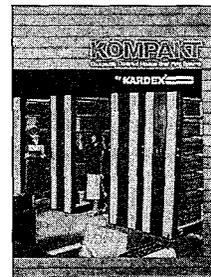
**Concrete wall-panel systems**  
The manufacturer's precast/prestressed concrete wall-panel systems are reviewed in an 8-page color brochure. Flat wall panels for quick construction, and double-tee panel systems for load-bearing applications are described in the literature. Insulation U-factors are given. Tindall Concrete Products, Inc., Spartanburg, S. C.  
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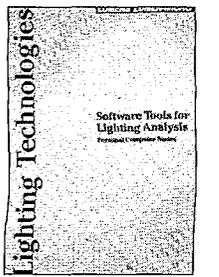
**Metal framing**  
A 30-page guide provides information on continuous slot metal channel systems. The manufacturing of ferrous and nonferrous metal framing systems, which consist of channels with inturred lips and fastening hardware, is reviewed. Metal Framing Manufacturers Association, Chicago.  
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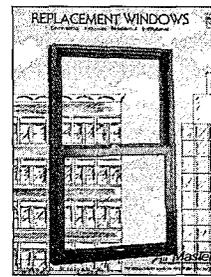
**Curtain wall framing**  
Several different systems for curtain wall framing, fixed window framing, and glass storefronts and entrances are reviewed in a 12-page color brochure. Diagrams showing details of the manufacturer's five exterior flush-glazing systems are included in the literature. PPG Industries, Pittsburgh.  
*Circle 403 on reader service card*



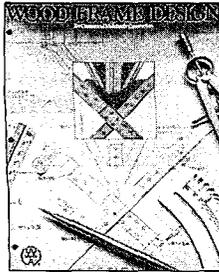
**Filing systems**  
The *Kompakt* electronically controlled movable shelf filing system is featured in a 12-page color brochure. The operation of the movable shelves on double-flanged steel roller wheels is reviewed. Photos show several space-saving configurations. Kardex Systems, Inc., Marietta, Ohio.  
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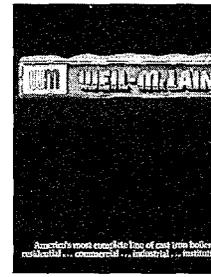
**Lighting analysis software**  
Two new software programs for interior lighting analysis are described in a 6-page brochure. *Lumen\$* compares lighting design alternatives on an average footcandle basis and *Lumen-Micro* can complete a point-by-point analysis of lighting systems. Lighting Technologies, Boulder, Colo.  
*Circle 404 on reader service card*



**Replacement windows**  
The manufacturer's line of aluminum-clad replacement windows is featured in a 12-page catalog. Commercial, industrial, residential, and institutional models are illustrated and described in the literature. Special panning and trims for custom installations are shown. Air Master, Bensalem, Pa.  
*Circle 410 on reader service card*



**Wood-frame design**  
A 40-page manual contains data on three- and four-story commercial and residential wood-frame construction. Sections on wood foundations, wood shrinkage and compression, wind and seismic conditions, sound control, and fire resistance ratings are included. Western Wood Products Association, Portland, Ore.  
*Circle 405 on reader service card*



**Boilers**  
An 8-page catalog reviews the manufacturer's line of residential and commercial boilers. High-efficiency residential boilers, atmospheric gas commercial boilers, and multi-fuel commercial boilers are reviewed in separate sections. Weil-McLain, Michigan City, Ind.  
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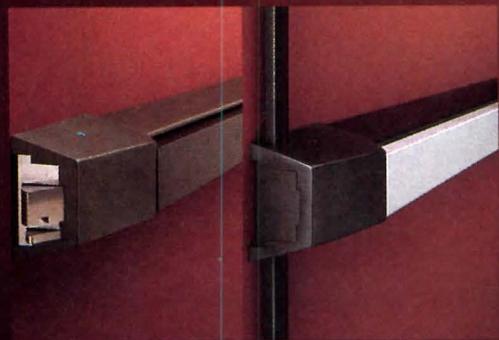
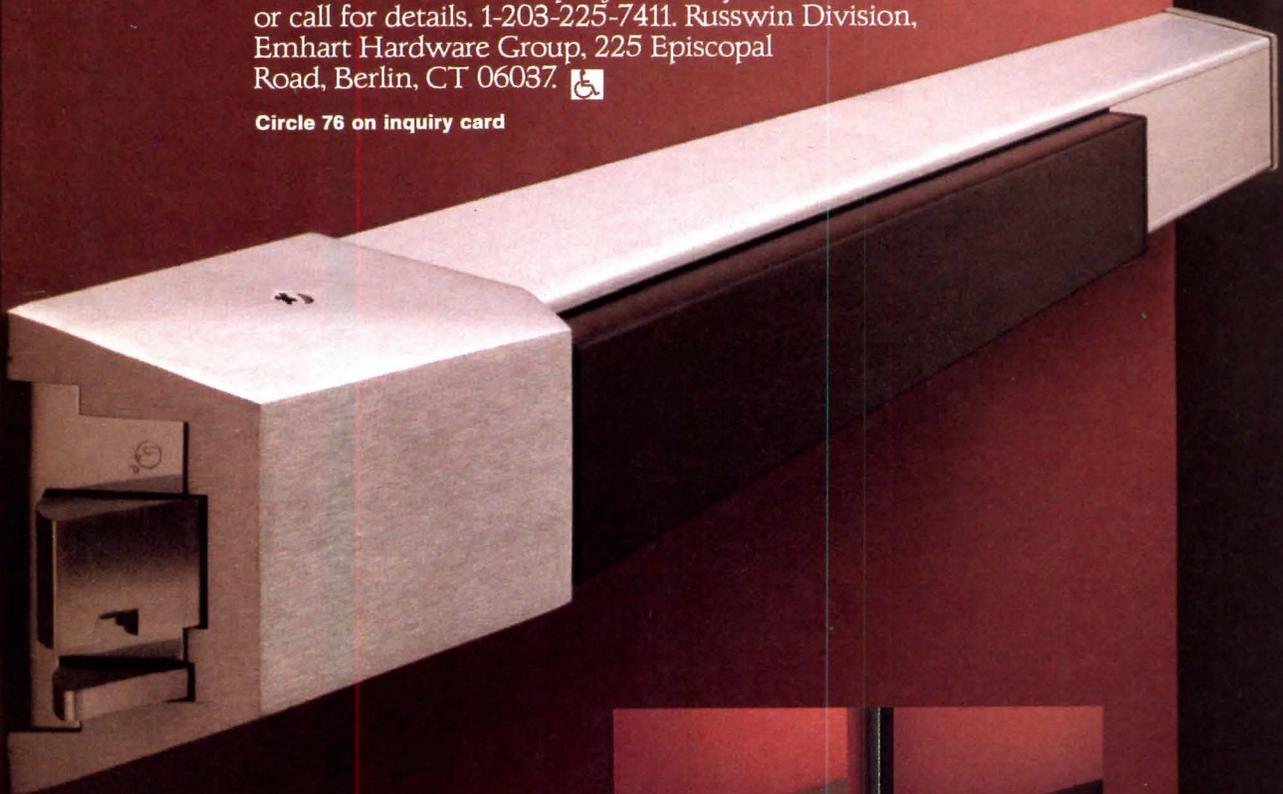
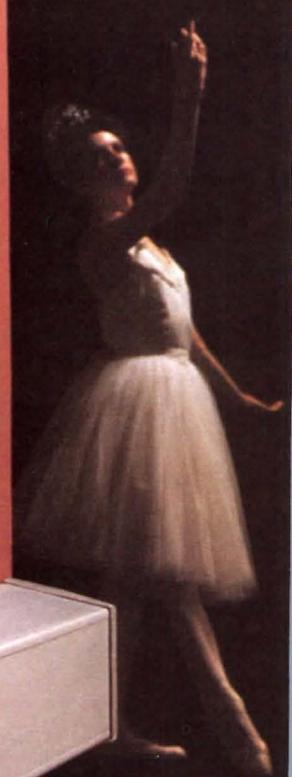
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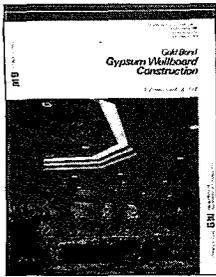
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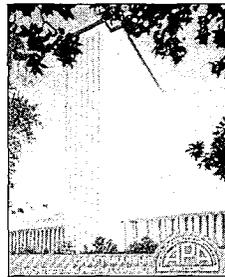
**Gypsum wallboard**  
A 50-page color brochure contains information on gypsum wallboard for residential and nonresidential construction and renovation. Light steel-frame partitions, single-layer and double-layer construction, and moisture-resistant gypsum wallboard systems are reviewed. Gold Bond Building Products, Charlotte, N. C.  
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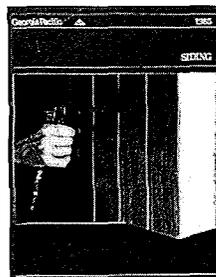
**Work platform**  
The *Access Satellite* mobile platform is featured in a 12-page color brochure. The construction of the platform—which extends up to 50 ft and is fixed to a frame that is driven up a mast—is described. Distribution configurations of maximum platform loads are shown. Access Engineering Inc., Charlotte, N. C.  
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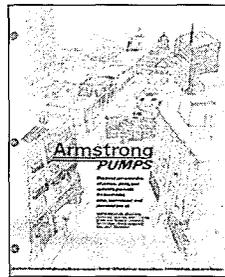
**Cement backer**  
A 4-page brochure describes installation methods for *Latapanel MFR-100* cement backer board. The backer board is fire-rated and is said to be water-resistant. The product can also be used as a ceramic tile backer or on exterior curtain wall panels. Laticrete International, Inc., Bethany, Conn.  
*Circle 413 on reader service card*



**Precast concrete**  
A 24-page color brochure reviews the available designs, shapes, colors, and finishes of the manufacturer's precast concrete. Sections on precast details and connections for concrete and steel structures are included in the literature. Preco Industries, Ltd., Plainview, N. Y.  
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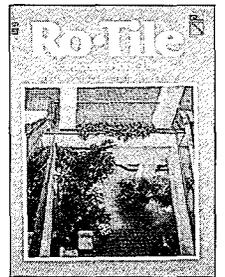
**Siding**  
A 12-page catalog describes and illustrates the manufacturer's lumber, plywood, and hardboard siding lines. The species, patterns, and grades of each siding line are reviewed. Application data and installation and finishing information are included in the literature. Georgia-Pacific Corp., Atlanta.  
*Circle 414 on reader service card*



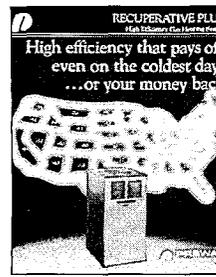
**Pumps**  
A line of pumps and related parts intended for use in boosting water pressure, heating and cooling, and sewage systems is featured in a 6-page brochure. Centrifugal, industrial, and horizontal split case pumps, and flow-balancing and measuring valves are described. Armstrong Pumps Inc., North Tonawanda, N. Y.  
*Circle 420 on reader service card*



**Skylights**  
The manufacturer's line of glass and acrylic skylights is reviewed in a 16-page color brochure. Vault, continuous ridge, pyramid, polygon, dome, and vented models are shown. A new skylight designed to reduce conductive and convective energy loss is featured in the literature. Plasteco, Inc., Houston.  
*Circle 415 on reader service card*



**Concrete tile**  
A line of concrete floor tiles intended for commercial, institutional, and residential applications is featured in a 12-page color brochure. The manufacturing process, which steam-cures extruded concrete into high-density tiles, is described in the literature. Ro-Tile, Inc., Lodi, Calif.  
*Circle 421 on reader service card*



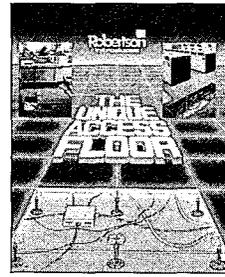
**Gas heating system**  
The manufacturer's *Recuperative Plus* gas heating system is featured in a 4-page color brochure. The aluminum steel heat exchanger, which warms air up to 400-500F before a power vent pulls the air through a second exchanger to capture additional heat, is described. Preway Industries, Inc., Evansville, Ind.  
*Circle 416 on reader service card*



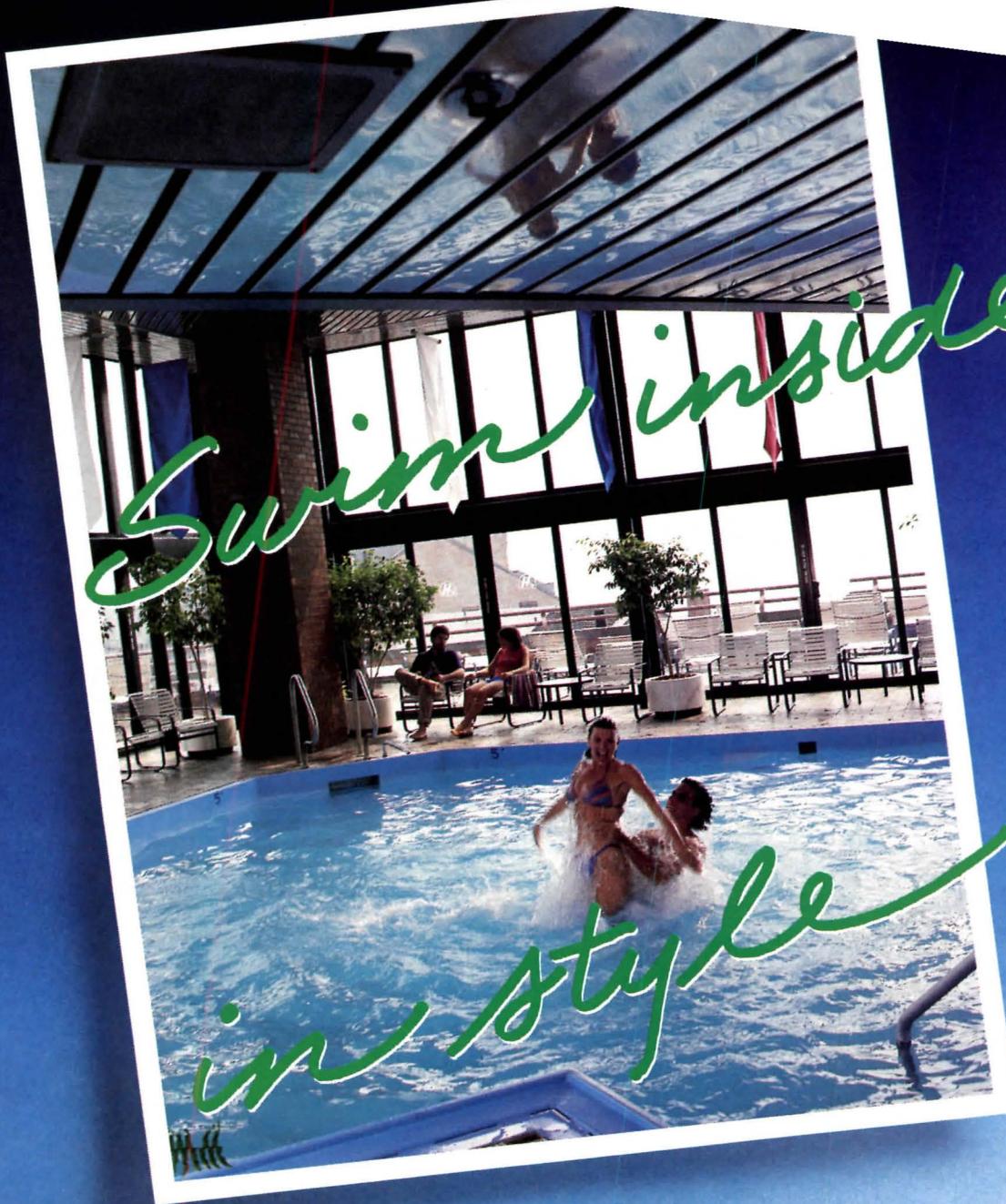
**Heat-control system**  
A 10-page brochure describes the *Pace* weather-based heat-control system that is said to replace heat at the same rate that it is lost from the building envelope. Diagrams show how the open-loop system and the temperature sensors are used to modulate heat output. General Electronic Engineering, Inc., Rahway, N. J.  
*Circle 422 on reader service card*



**Electric eraser**  
A 4-page mini color brochure features the manufacturer's new *Pacer II* cord or cordless electric eraser. The eraser's charging console—which can also be used as a holding stand—is described in the literature. Accessories, including drill, model building, and burnishing sets, are reviewed. Pierce Business Products, Inc., St. Paul.  
*Circle 417 on reader service card*



**Access-floor system**  
A folder of data sheets contains information on the manufacturer's new access-floor system. The mineral fiber-reinforced-floor panels, made from a composite material, are said to accommodate a variety of coverings. H. H. Robertson Co., Pittsburgh.  
*Circle 423 on reader service card*



Whoever said a swimming pool has to be rectangular? Not the designers of Boston's Marriott Long Wharf Hotel. And certainly not Overly Manufacturing which produced the pool which conforms to the ship's prow design of the structure. Thanks to the versatility of aluminum and the skill of our craftsmen, we build pools in the size and configuration of your choice, including circular therapy pools. Or truncated arrowheads. Even rectangular pools.

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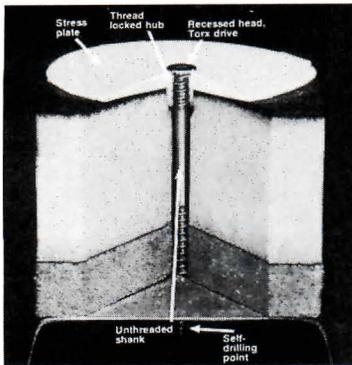
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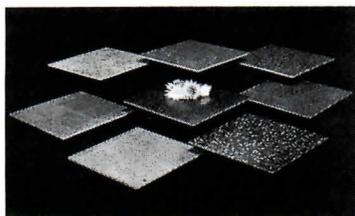
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Fallbrook, CA 92028  
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#### Roof insulation fastening

The *Plate-Fix* roof insulation fastening system features a stress plate/fastener lock intended to prevent fastener heads from popping up and damaging the membrane. The thread locking between the stress plate and screw is said to resist traffic loads of approximately 400 lb. Fabco Fastening Systems, Townsend Div. of Textron Inc., Stanfield, N. C.  
 Circle 305 on reader service card



#### Poured-in-place granite

*Granitech-1* poured-in-place granite is a stone surfacing made from granite, quartz, and other hard aggregates that are bound together with a clear epoxy. The product is said to have greater chemical resistance and wear durability than standard epoxy terrazzo. Fairfield Scientific, Inc., Fairfield, Iowa.  
 Circle 306 on reader service card



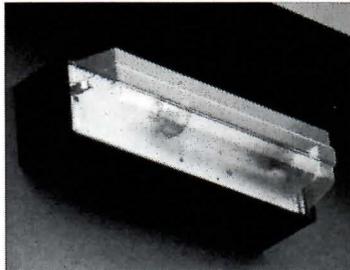
#### Whirlpool bath

The *Arista* two-person whirlpool bath features the *Water Rainbow* bath filler and the *Magic Touch* whirlpool control switch. The unit has four adjustable whirlpool jets and two air-mixture controls. The tub is made of high-gloss acrylic reinforced with fiberglass and is available in a selection of colors. Jacuzzi Whirlpool Bath, Walnut Creek, Calif.  
 Circle 307 on reader service card



#### Shingles

The new *Chaparral II* line of glass fiber shingles features various sized tabs and a random pattern to give roofs a textured appearance. The shingles have a Class A fire rating and are covered by the manufacturer's warranty. Owens-Corning Fiberglas Corp., Toledo.  
 Circle 308 on reader service card



#### Outdoor lighting

A new line of low-pressure sodium lights is intended for walkway or street lighting. Designed for mounting on poles, walls, or ceilings, the fixtures are made of heavy gauge aluminum and molded acrylic. TrimbleHouse Corp., Norcross, Ga.  
 Circle 309 on reader service card



#### Faucets

The manufacturer's new *Chantal* line of wide-spread baked enamel faucets is available in white and champagne. The faucets can be specified with either brass or chrome trim. Kolson, Inc., Great Neck, N. Y.  
 Circle 310 on reader service card  
 Continued on page 175

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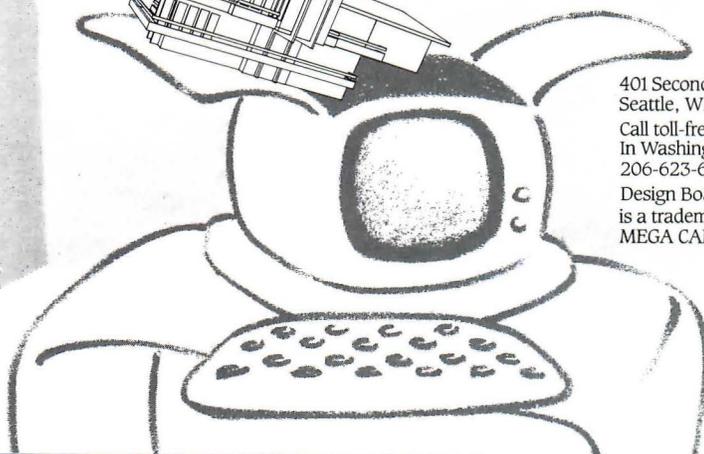
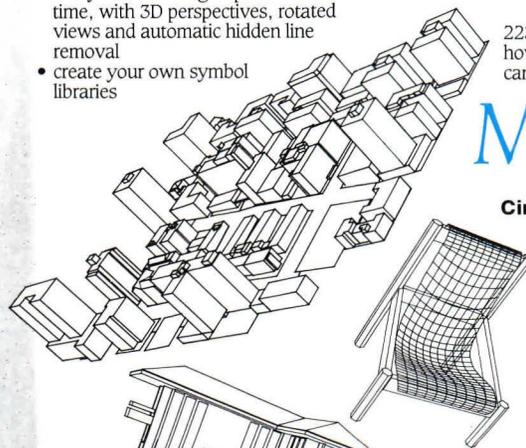
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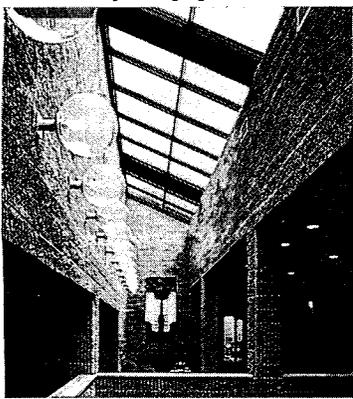
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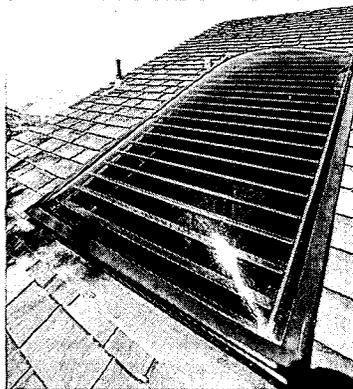
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**Concrete block**

The manufacturer's split fluted, colored concrete block can be used for both interior and exterior applications. The load-bearing blocks can be tinted with iron oxide pigments to match a specified color. Balcon, Inc., Baltimore.

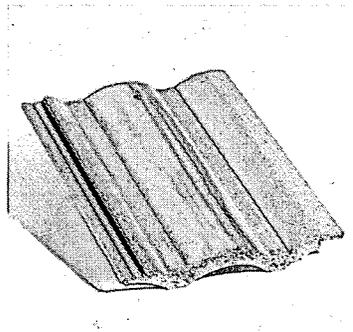
Circle 311 on reader service card



**Skylight blinds**

The new traversing and rotating Skyview Blinds are available in 1,200 different colors and louver sizes and in spans of up to 145 in. They come mounted on the manufacturer's dual-rod, cordless tracks. United Vertical Blinds Corp., Pico Rivera, Calif.

Circle 312 on reader service card



**Roofing tile**

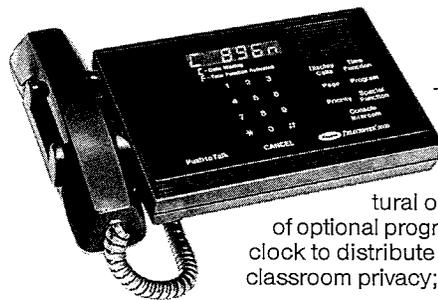
New Duralite concrete roofing tiles are said to weigh approximately 300 lb less per square than standard concrete tiles, in most cases eliminating the need for structural reinforcement. The tile has a Class A fire rating and comes with the manufacturer's 40-year limited warranty. The tiles are available in a selection of colors and styles. Celotex-Marley, Hollister, Calif.

Circle 313 on reader service card  
Continued on page 177

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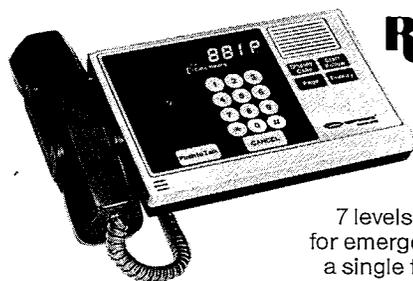
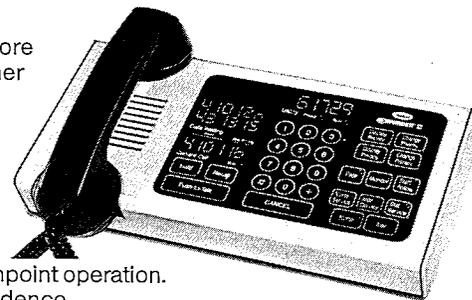
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Bay Area Rapid Transit Headquarters, Oakland, California.

Architect: Hellmuth-Obata & Kassabaum, San Francisco, California.

# free ~~and~~ Daylighting vs solar shading

“... the lowest life cycle cost and energy use were obtained with daylighting coupled with clear glazing and exterior sun-control blinds,” according to a study of life cycle costs and energy use analyzing various sun control and daylighting options on high rise office buildings, commissioned by the Department of Energy.\*

## Consider these facts which affect office building operating costs:

**FACT:** 50% of the energy bill in a typical office is for artificial lighting.

**FACT:** 50% of office cooling energy is required just to remove heat generated by the artificial lighting.

**FACT:** 25–50% of the normally required tons of perimeter air conditioning can be eliminated by using Baumann Exsotrol™\*\*\* blinds.

**FACT:** 50% of a commercial building's electric bill represents “peak demand”—the 30 minute period in the year when the most electricity is used.

## Solar control—outside blinds, “7 times better” . . . HUD\*\*\*

The most effective way to stop solar heat gain is to block the sun before it strikes the glass. Exterior blinds are 7 times more effective for

cooling than interior window treatments. Clear glazing and Baumann Exsotrol blinds have a shading coefficient of 0.14—more protection from radiant and conductive heat than any tinted or reflective glazing and interior blind combination.

## Daylighting—clear glass 10 times better

Clear glazing transmits 10 times more visible light than the best reflective glazing. With the blinds in their working position, every slat is a light shelf. Workstations 20 ft. from windows maintain an illumination level of 200–500 lux. Workstations near windows remain cool and glare free. Baumann blinds provide diffused “northlight” quality light on all elevations.

Using clear glazing alone as the daylighting concept only reshuffles the energy use ratio. Daylighting concepts are optimized when combined with Baumann Exsotrol blinds.

## Flexibility—accept or reject the sun

Flexibility is the reason Baumann Exsotrol blinds are the most effective solar control product in the market today.

Just before the sun strikes the glass, the blinds can be lowered and adjusted to the proper angle to give 100% solar protection while allowing natural daylight to enter. The raising, lowering and adjustment of the blind slats may be motorized or manual. Motorized blinds can be computer controlled to respond to sun, wind, rain, time of day and weekend occupancy.

Having dark glass on a building is like wearing sun glasses 24 hours a day. Unlike fixed shading systems (including dark glass) Baumann Exsotrol blinds can be completely retracted when not needed on cloudy days, or when the sun is shining on other elevations. Blinds can be retracted on sunny winter weekends when solar gain is desirable, during window washing or window replacement.

## Perfect protection for all seasons

Unlike overhangs, setbacks or fixed louvers, Baumann Exsotrol blinds provide 100% shading of the glass, regardless of season or elevation.

Overhangs are designed primarily for protection against the south summer noon sun. They are impractical on east and west elevations, and

ineffective against the glare and heat of low sun angles during fall, winter and spring.

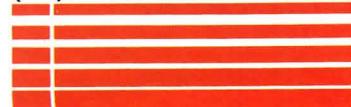
## Baumann blinds save more than they cost

- Eliminate up to 50% of perimeter air conditioning.
- Eliminate need for costly special glazing.
- Eliminate need for most interior window treatments.
- Reduce perimeter lighting requirements.
- Lower “peak demand” and total electrical operating costs for the life of the building
- Provide excellent hurricane protection.
- When programmed as movable insulation, help stop winter nighttime heat loss.

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\*Report LBL-12298 of DOE contract W-7405-ENG-48 with Lawrence Berkeley Laboratory.

\*\*\*U.S. Department of Housing and Urban Development publication, “In the Bank or Up the Chimney?”

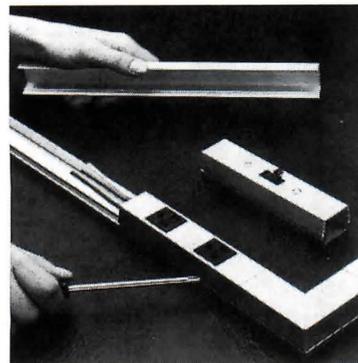
\*\*Exsotrol = EXterior SOLAR conTROL



**Photovoltaic lamps**

*Sunlight* outdoor lighting features a photovoltaic system that captures the sun's energy and converts it to electrical energy, which is then stored in a battery that powers a fluorescent light. The 4W lamp turns on automatically at dusk and provides approximately 140 lumens of light. SunAmp Systems, Inc., Scottsdale, Ariz.

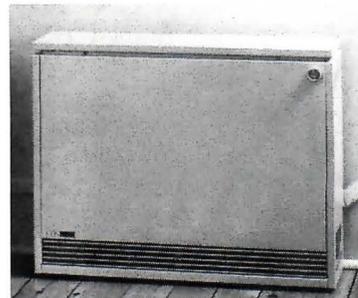
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**Raceway system**

A new surface-wiring system is intended for use as either a continuous-run wiring raceway or as a power source. The system is constructed from an aluminum alloy that is extruded and anodized with a satin finish. Switches and receptacles can be located at selected points along the raceway. AT Power Systems, Los Angeles.

Circle 315 on reader service card



**Electric storage heater**

The manufacturer's new electric storage heater is designed to fit closer to the wall than standard models. The heater gains heat during off-peak, low-cost hours. Ceramic bricks in the storage core hold in the heat up to 24 hrs, distributing it as needed by surface radiation and forced convection. Con-Elec Corp., Colchester, Vt.

Circle 316 on reader service card  
Continued on page 185

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**Designer** — Los Angeles based firm with staff of 15 and growing needs talented Chief Designer. Minimum 5 yrs. experience in design of commercial and office buildings. Furnish resume and salary history. Respond in confidence: P-1545, Architectural Record.

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**Specification Writer** — 70-person Architectural/Structural/Civil firm needs individual experienced in writing CSI format specifications and will also be responsible for maintaining firm's reference library. Requires degree in Architecture plus is knowledgeable of structural and civil construction methods and terminology. Send resume and salary requirements to Blythe Hawes, USKH, 2515 "A" Street, Anchorage, Alaska 99503. USKH is an EOE.

**Chief of Project (Energy Conservation): East Africa;** start 3/85 for 18 mths.-2 yrs. Required Advanced architectural or engineering degree. Experience in energy conservation in building sector, passive solar construction, some familiarity with solar/wind technologies. Good French. Desired: previous project management experience; previous LDC living experience (prefer Africa). Send CV to D. Read, VITA, P.O. Box 12438, Arlington, Va. 22209 or call (703) 276-1800.

**Assistant Professor — Interior Design** — Specialization in one of the following: Interior Architectural Design Technology, CAD, sketching and rendering techniques. Terminal degree required. University of Wisconsin — Madison (608) 262-2651. April 1 closing.

**Design Director** — We are representing a dynamic, 100-person San Francisco architectural firm seeking a Design Director. This person will be responsible for the quality of design on all architectural projects, will function on a Principal-level and will report directly to the CEO. In addition to demonstrated design abilities, this leadership position requires proven communication, presentation and people management skills. The ideal candidate will hold a degree in architecture and will have a minimum of 10 years experience in large-scale commercial projects, with a concentration in high-rise office, residential and hotel projects. Familiarity with CAD is preferred. The firm offers an attractive compensation package, with a base salary in the range of \$50,000-\$60,000, depending on experience and capabilities. Qualified candidates are invited to send a resume to: The Coxe Group, 3170 Sacramento St., San Francisco, CA 94115. EOE M/F/H.

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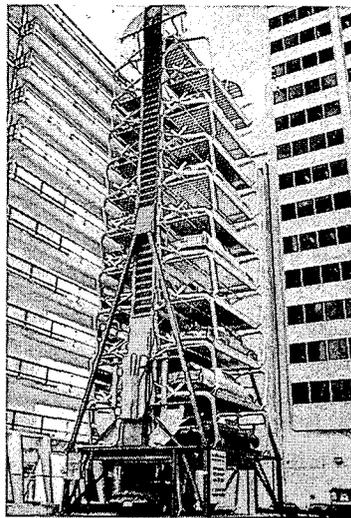
The University of North Carolina at Charlotte's developing architectural program, which is dedicated to addressing major architectural issues, seeks faculty committed to working together to provide innovative, holistic and rigorous architectural education. Person desired to: (1) teach architectural history courses for the 1985-86 Academic Year. Emphasis is upon making the subject a significant part of an architect's education. Person will teach two history courses in the Fall Semester, and one in the Spring Semester plus a seminar-lecture course on preservation, history of cities, theory or related topics. Salary and Visiting Professional rank commensurate with qualifications. Forward letter describing approach to teaching architecture with vitae to: Dean Charles C. Hight, College of Architecture, UNC-Charlotte, N.C. 28223. Affirmative Action/Equal Opportunity Employer. Deadline for receipt of applications is April 1, 1985.

**Architecture Faculty Positions** — The Department of Architecture is seeking outstanding candidates for full-time tenure track and temporary faculty positions in the areas of architectural history and/or historic preservation beginning September, 1985. Duties will include teaching classes in the highly-regarded professional architecture program and the small but growing graduate program in historic preservation. Because of our commitment to cross-disciplinary education, especially at the undergraduate level, preference will be given to applicants who are qualified to teach in another area of the curriculum in addition to their specialty. Candidates should have terminal degree in specialty area and recognized achievements in research, scholarship, or creative practice. Talent and ability as a stimulating teacher plus ability to pursue research or creative practice is as important as formal qualifications. The excellent facilities and resources of the College of Architecture and Planning include a comprehensive library and slide collection, microcomputer and computer graphics laboratories, an active community-based projects program, and an archive of historic Indiana sites and structures which contains much untapped source material for the interested researcher. Applicants should send letters of inquiry, curriculum vita, transcripts, and three letters of reference to Professor Marvin E. Rosenman, Chairman, Department of Architecture, College of Architecture and Planning, Ball State University, Muncie, Indiana 47306. Applications must be postmarked by April 15, 1985. Ball State University Practices Equal Opportunity in Education and Employment.

## POSITIONS WANTED

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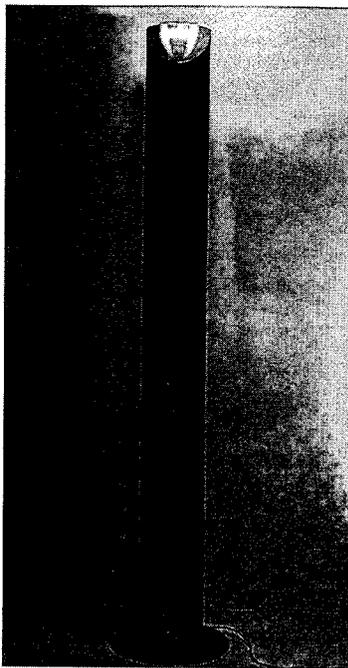
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The City of Phoenix, Arizona, is requesting applications from registered architects for the design of the Phoenix Municipal Government Center. From the applicants, the City will invite up to ten firms to participate in a two-phase competition. The first phase is a concept competition for a site master plan of the multi-building complex. From these entries, the City will invite up to five firms to submit a design for the \$24.4 million Fire, Criminal Justice and Municipal Center Building. Participants in each phase will be offered compensation. Application deadline is April 17, 1985. The competition will be judged and a design commission awarded before December 31, 1985. Application materials are limited to AIA Document B431, Architect's Qualification Statement, and up to 20 identified slides contained in a single 8.5 x 11 in. vinyl slide holder. To receive a prospectus or to send an application, write to:

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For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified

### Pages 102-103

Southwest Harbor Public Library by Peter Forbes and Associates, Inc.  
Page 102—Shingles: GAF. Leaders and gutters: Alcoa. Paints: Benjamin Moore. Skylight: Velux.

Page 103—Uplights: Conran. Drywall: U. S. Gypsum. Shelving and paneling: Custom by architects.

### Pages 104-105

Avon Free Public Library by Galliher Schoenhardt & Baier  
Page 104—Windows: Pella Clad. Lighting: Columbia (Parabolome). Carpeting: J & J Industries. Tables and chairs: Adden. Ceiling tile: Celotex (Texturetone). Stacks: Wilson. Circulation desk: Custom by architects, fabricated by Creative Design & Woodworking. (bottom) Grille: PPG (Aiolite). Trombe wall: Custom. Glazing: Cyro (Exolite). Brick: K-F (Heritage R).  
Page 105—Flagpole: Morgan-Francis. Bollards: Moldcast Lighting (Pericline Round). Shingles: GAF (Timberline).

### Pages 106-107

Lourdes Library Addition by Dagit Saylor Architects  
Page 106—Tile: Taylor. Windows: Thermal Break, Kawneer. Glazing: PPG. Downlights: Moldcast.  
Page 107—(left) Paints: Sherwin-Williams. Parabolic fixtures: Illuminated Concepts. Carpeting: Bigelow (Grosgrain II). Stacks: Wilson. (right) Skylights: CD Bohem. (bottom) Tile flooring: American Olean. Doors: Cal Wood. Pulls: Kawneer. Fountain: Haws.

### Pages 108-111

Burling Library by Weese Hickey Weese Ltd.  
Page 108—Wall cladding: E. G. Smith. Windows: Kawneer. Circulation desk: Custom by architects, fabricated by American Medical Designs. Light fixtures: Columbia. Carpeting: Mohawk (Summation Knit). Ceiling tile: U. S. Gypsum. Stacks: Library Bureau.  
Page 109—Flat file: Hamilton. Drafting lights: Luxo. Paints: Benjamin Moore.  
Pages 110-111—Paneling, upholstered seating, loft carrell: Custom by architects, fabricated by American Medical Designs. Linear fixtures: Lam. Bentwood chairs: Thonet. Locksets: Corbin. Track lighting: Lightolier. Pendant lights: Koch + Lowy.

### Pages 112-113

Margaret Chase Smith Library Center by Harriman Associates  
Page 112—Slate: Buckingham. Skylights: Fisher. Windows: Anderson.  
Page 113—Carpeting: Stratton. Paneling and casework: Custom, by Pond Cove Millwork. Linen wallcovering: Maharom. Track lighting and exits: Prescolite. Slate flooring: Buckingham. (bottom) Table and chairs: Thomas Moser Contract Furniture.  
Continued on page 189

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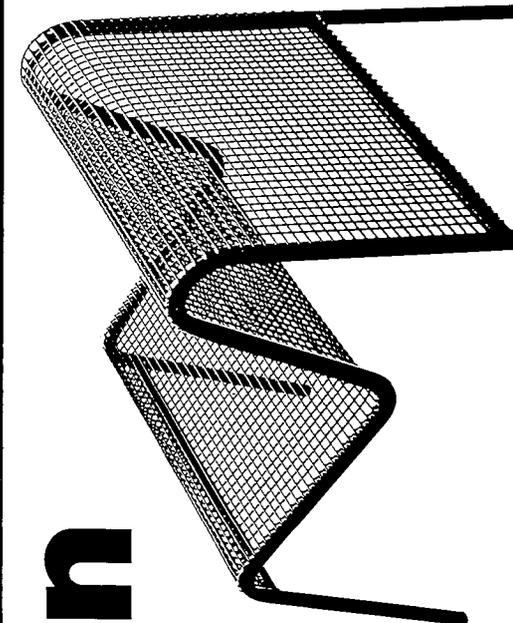
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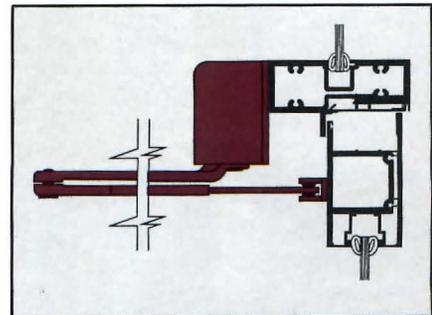
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Continued from page 101

Pages 136-143  
CIGNA South Office Building  
by The Architects Collaborative Inc.  
Pages 136-137—Granite: National Granite.  
Atrium and canopy: Fisher. Bollards:  
Stern. Flagpoles: Morgan Francis.  
Pages 138-139—Windows and sunshades:  
Ampat Eastern. Glazing: PPG (Solux).  
Page 140—(upper left) Lighting cylinders:  
Stern. Downlights: Lightolier. Railings:  
Ampat Midwest (Clearrail). Laminate:  
Valley City. Graphics: Sol Lewitt.  
Sprinklers: Viking. Escalators: Otis  
Elevator Co. (upper right) Shade structure:  
Unistrut N. East. Canvas: Brickel. (lower  
right) Clock: Simplex. Light tubes:  
Peerless. Tile: Dennis Ruabon. Carpeting:  
Edward Fields. Entrance: Kawneer. Chairs:  
Cumberland. Table: Trimark. Planter:  
GlassForm.

Page 141—Ceramic tile: American Olean.  
Tables: Colecraft. Seating: Thonet.  
Page 142—(top) Indirect lighting: Peerless.  
Open plan system: Steelcase. Partition  
system: Custom by Interspace Inc.,  
engineered/manufactured by  
SunarHauserman. Covering: Guilford.  
Carpet tile: Milliken. Seating: Comforto.  
Pull-up seating: Knoll. Ceiling: Armstrong.  
Fluorescents: Norelco (Noreko Color 80).  
Paints: Pittsburgh. (bottom) Sofa and  
lounge chairs: David Edward. Carpeting:  
Galleria. Table: Architectural Supplements.  
Furniture: Hardwood House. Seating:  
Knoll.

Page 143—(top) Ceiling: Custom by  
Interspace, manufactured by Architectural  
Fabric Systems. Fabric: Tandem. Carpet  
tile: Milliken. Banquette: Modern  
Woodcrafts. Upholstery: General Tire  
(Royal Naugahide). Downlights: Lightolier.  
Seating: Thonet. Tables: Colecraft. (bottom)  
Vertical blinds: Louver Drape. A/V Wall:  
Custom millwork by Valley City Ltd.  
Fabric: Guilford. Ceiling tile: Armstrong.  
Suspension system: Chicago Metallic. Lay-  
in troffer: Lightolier. Cube table: Modern  
Woodcrafts. Seating: Knoll.

## Pages 144-151

Morgans Hotel  
by Andrée Putman, Designer  
Pages 144-145—Entrance: Giehner Iron  
Works. Limestone: Miller Druck. Archways  
and columns: Dryvit. Capitals: Felbel.  
Page 146—(bottom) Lobby floor: Granite  
Industries of Vermont.

Page 147—Chair: Maville Interiors.  
Carpeting: Paul Wieland. Paint: Surface  
Protection Industries Zolatone Process.  
Page 148—Side chair: Rene Herbst, by  
Ecart. Floor lamp: Koch + Lowy. Table:  
Physical Health Dynamics. Desk: Maville  
Interiors.

Page 149—(top) Coffee table: Ecart. Floor  
lamp: Mariano Fortuny, by Ecart. Table  
and chairs: Knoll. (lower) Ash urn:  
Architectural Supplements. Carpet: Hugh  
Mackay Holdings.

Page 150—Banquette seat cushions and  
chair: Corn Upholstery. Banquette fabric:  
Naj Oleri. Headboard: Angles. Gray flannel  
fabric: Kravet. Duvet cover fabric:  
S. Beckenstein. Blankets: Mort L. Bloom  
Design. Wall light: Koch + Lowy. Soffit  
light fixture: CGL Lighting. Blinds:  
Levelor. (bottom) Bath light fixture:  
Koch + Lowy. Stainless steel brackets,  
rails, and sink frame: Newmark. Sink: Just  
Sinks. Hand-held shower: Simmons.  
Faucets and spouts: Chicago Faucet.  
Mosaic tile: Zanin Tile. Chairs: Mallet  
Stevens, by Ecart. Table: Ecart.

Page 151—Shower curtain: Ames  
Industries. Toilet: American Standard. Tile:  
Hastings. Tub: Twyford. Tub fittings:  
Speakman. Granite/epoxy floor: Dextox  
by Asbestolith.

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Number, including symbols from your list below. Ignore blank boxes. Wait for the prompt before entering each subsequent number (maximum numbers).

1.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
2.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
3.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
4.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
5.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
6.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
7.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
8.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
9.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
10.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
11.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
12.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
13.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
14.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
15.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
16.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#
17.	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	#	#

### END STAC SESSION:

- When you have entered all Inquiry Selection Numbers the recording prompts, "Enter next inquiry number," End call by entering:

\* \* 9 1 # #

If you are a subscriber and need assistance, call 212/512-3442. If you are not a subscriber, fill out the subscription card in this issue, or call Architectural Record Subscription Services at 914/628-0821.



# Our finish takes a beating. Beautifully.

## P3 almeicolor™ for anodized aluminium.

Now there's a color anodized aluminium finish that's durable enough to use even on exterior surfaces. P3 almeicolor from Amchem. And finishes produced by P3 almeicolor are as beautiful as they are durable, with a rich tone unequalled by any other color anodizing process.

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a Henkel company



The Dearborn Inn was developed in 1930 by Henry Ford I to accommodate visitors to the Ford Motor Company.

## “The Dearborn Inn offers Early American charm and modern American convenience with Sloan OPTIMA<sup>®</sup> No-Hands restrooms.”

The impressive Early American surroundings of the Dearborn Inn attract thousands of guests annually. Equally impressive are the “behind the scenes” conveniences that add to the Inn’s comfort



without detracting from its charm —the Sloan

OPTIMA No-Hands automated flush valves in the lobby restroom are one example.

A Sloan OPTIMA system uses an electronic sensor that “sees” the

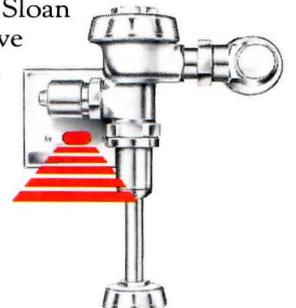
user and automatically flushes the sanitary fixture—or turns the sink faucet or appliance on and off—only as needed. This eliminates unflushed urinals and toilets as well as assures that faucets and hand dryers are turned off after use.

The results: Reduced water usage. A cut in energy consumption. Fewer repairs. Less maintenance. And cleaner restroom fixtures that help assure the comfort of guests and visitors.

The Sloan OPTIMA system meets all building codes and installs easily in virtually any new or retrofit

situation. The system is also adaptable to soap dispensers, hand dryers, shower heads, and more.

Ask your Sloan representative about Sloan No-Hands automated systems. Or write us.



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